

# AFM


## Airplane Flight Manual

APPROVED



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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>AFM</b><br><br><b>LNR</b><br><br><b>List of Normal Revision</b> | Page n°01 |
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| N° Rev | Edition Date | Authority Reference  | Insertion Date<br>(Should be integrated in<br>Airline<br>documentation at<br>that date) |
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| 1      | JAN 18       | This Airplane Flight Manual is approved by the European Aviation Safety Agency (EASA)<br>Approval Reference: 10063879 - NOV 17       | -   |
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| 6      | JUN 20       | The technical content of this document is approved under the authority of the DOA Ref.<br>EASA.21J.044: EGO-5173/19 - FEB 20         | -   |
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| 22     | MAR 21       | The technical content of this document is approved under the authority of the DOA Ref.<br>EASA.21J.044: 18025 - FEB 21           | -   |
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| 25     | JUN 21       | The technical content of this document is approved under the authority of the DOA Ref.<br>EASA.21J.044: EGO-151/21 - APR 21      | -   |
| 26     | JUN 21       | The technical content of this document is approved under the authority of the DOA Ref.<br>EASA.21J.044: EGO-1388/21 - MAY 21     | -   |
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| 28     | JUN 21       | The technical content of this document is approved under the authority of the DOA Ref.<br>EASA.21J.044: EGO-1560/21 - JUN 21     | -   |
| 29     | JUN 21       | The technical content of this document is approved under the authority of the DOA Ref.<br>EASA.21J.044: 18035 and 18036 - JUN 21 | -   |



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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>AFM</b><br><br><b>RNR</b><br><br><b>Reason of Normal Revision</b> | Page n°01 |
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| N° Rev | Revision Date | Reason For Issue   | Impacted DM  |
|--------|---------------|--|--|
| 10.0   | JUL 20        | <ul style="list-style-type: none"> <li>- No content change, Retrofit Configuration Management</li> <li>- Update of the content in order to replace -Center of Gravity Envelope- by -Certified Center of Gravity Envelope-.</li> <li>- Update of the content in order to replace -Center of Gravity Envelope- by -Certified Center of Gravity Envelope- and Retrofit Configuration Management</li> <li>- Wording modification to be in accordance with OACI definitions and Creation of a refer to: FCOM-PRO-NOP-ANOR-ADVERSE WEATHER GROUND ICING CONDITIONS-Operational Guidance for Operation in Ground Icing Conditions-Preflight Check to list associated Definitions.</li> <li>- Improvement of the content in case of Resolution Advisory. Deletion of the Warning (following EASA SIB 2013-11R1).</li> <li>- Addition of a footnote linked to Transient case.</li> <li>- addition of a hyperlink reference to BUS Equipment List section.</li> <li>- No content change, configuration management updated</li> <li>- For NAMS system options and pre NAMS: ENG BLEED replaces BLEED VALVE</li> </ul> | <ul style="list-style-type: none"> <li>AFM.LIM.2.1.1 Structural Limitations<br/>0706</li> <li>AFM.LIM.2.2.1 Certified Center of Gravity Envelope<br/>0685</li> <li>AFM.LIM.2.2.1 Certified Center of Gravity Envelope<br/>0706</li> <li>AFM.LIM.4.4.2 Atmospheric Icing Conditions<br/>ALL</li> <li>AFM.LIM.5.34.7.1 Limitations<br/>ALL</li> <li>AFM.LIM.5.70.1.1 Engine Parameters<br/>ALL</li> <li>AFM.PRO.NNO.EMR.24.01.E24.01 DC GEN 1+2 FAULT<br/>ALL</li> <li>AFM.PRO.NNO.EMR.26.3.E26.02 AFT SMOKE<br/>ALL</li> <li>AFM.PRO.NNO.EMR.26.7.E26.06 FWD SMOKE<br/>ALL</li> </ul> |


| N° Rev | Revision Date | Reason For Issue   | Impacted DM   |
|--------|---------------|--|---|
|        |               | - Create new PITCH CONTROL JAM at TAKEOFF or LANDING procedure                           | AFM.PRO.NNO.EMR.27.1.E27.01<br>PITCH CONTROL JAM AT TAKEOFF OR LANDING<br>ALL |
|        |               | - FIRE HANDLE (affected ENG) replaces FIRE HANDLE (red light on).                        | AFM.PRO.NNO.EMR.70.01.E70.01<br>ENG 1(2) FIRE AT TAKEOFF<br>ALL               |
|        |               | - ENG RELIGHT.....MONITOR procedure line is replaced by ENG RELIGHT : MONITOR.           | AFM.PRO.NNO.EMR.70.05.E70.05<br>ENG 1+2 FLAME OUT<br>ALL                      |
|        |               | - No content change, configuration management updated                                    | AFM.PRO.NNO.EMR.99.1.E99.01<br>BOMB ON BOARD<br>ALL                           |
|        |               | - Addition of a comment linked to - AUTO PRESS DUMP...ON- action line (FCOM impact only) | AFM.PRO.NNO.EMR.99.3.E99.03<br>DITCHING<br>ALL                                |
|        |               | - Addition of a comment linked to - AUTO PRESS DUMP...ON- action line (FCOM impact only) | AFM.PRO.NNO.EMR.99.5.E99.05<br>EMERGENCY EVACUATION (ON GROUND)<br>ALL        |
|        |               | - Addition of a comment linked to - AUTO PRESS DUMP...ON- action line (FCOM impact only) | AFM.PRO.NNO.EMR.99.6.E99.06<br>FORCED LANDING<br>ALL                          |
|        |               | - Procedure review   | AFM.PRO.NNO.EMR.99.8.E99.08<br>SEVERE ICING<br>ALL                            |
|        |               | - Introduction of the FCOM procedure in AFM  | AFM.PRO.NNO.ABN.21.1.3.A21.03<br>PACK 1+2 VALVES FAULT<br>ALL                 |
|        |               | - Update of the table: 6700 replaces 6800 in FL 250 column.                              | AFM.PRO.NNO.ABN.21.2.1.A21.10<br>AUTO PRESS FAULT<br>ALL                      |
|        |               | - PACK 1+2 replace by PACK VALVE 1+2   | AFM.PRO.NNO.ABN.21.2.3.A21.14<br>EXCESS CAB DELTA P<br>ALL                    |
|        |               | - Modification of a comment (Impact FCOM only). Deletion of the CAPT stick information.  | AFM.PRO.NNO.ABN.24.3.1.A24.11<br>DC BUS 1 OFF<br>ALL                          |

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|        |               | - Addition of - DC SVCE-UTLY BUS pb : MAINTAIN ON - action line, and an associated comment (Impact FCOM only).  | AFM.PRO.NNO.ABN.24.3.2.A24.12<br>DC BUS 2 OFF<br>ALL                |
|        |               | - Create new DM : PITCH CONTROL JAM IN FLIGHT   | AFM.PRO.NNO.ABN.27.2.1.A27.06<br>PITCH CONTROL JAM IN FLIGHT<br>ALL |
|        |               | - Pitch Disconnect Procedure is modified to take into account the modifications of Elevator Jam Procedure   | AFM.PRO.NNO.ABN.27.2.2.A27.07<br>PITCH DISCONNECT<br>ALL            |
|        |               | - No content change, configuration management updated   | AFM.PRO.NNO.ABN.28.3.A28.05<br>FUEL LEAK<br>ALL                     |
|        |               | - Aircraft configuration management update. Addition of a layer in order to inform that the feeder jet pump of the affected tank is unavailable (FCOM). Replace EACH TANK by AFFECTED TANK. | AFM.PRO.NNO.ABN.28.4.A28.06<br>FUEL LO LVL<br>ALL                   |
|        |               | - No content change, configuration management update.   | AFM.PRO.NNO.ABN.30.3.2.A30.15<br>DEGRADED PERF<br>ALL               |
|        |               | - No content change, structure improvement.   | AFM.PRO.NNO.ABN.30.3.3.A30.16<br>SEVERE ICING DETECTION<br>ALL      |
|        |               | - No content change, configuration management updated   | AFM.PRO.NNO.ABN.31.2.1.A31.05<br>MFC 1A+1B FAULT<br>ALL             |
|        |               | - Update of the AHRS1 comment, in order to describe the effect of AHRS1 malfunction on the stabilization signal (Impact FCOM only)  | AFM.PRO.NNO.ABN.34.2.1.A34.05<br>AHRS 1(2) FAILURE<br>ALL           |
|        |               | - Replace PFD with EADI/EHSI.   | AFM.PRO.NNO.ABN.34.2.6.A34.10<br>EFIS COMP<br>ALL                   |

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|        |               | - Modification content : Deleted BLEED VALVE - Added ENG BLEED  | AFM.PRO.NNO.ABN.36.1.A36.02<br>BLEED LEAK 1(2)<br>ALL           |
|        |               | - Content Modification ENG BLEED instead of BLEED VALVE   | AFM.PRO.NNO.ABN.36.2.A36.03<br>BLEED 1(2) OVHT<br>ALL           |
|        |               | - Modification Title and content : Deleted BLEED VALVE - Added : ENG BLEED  | AFM.PRO.NNO.ABN.36.3.A36.04<br>ENG BLEED 1(2) FAULT<br>ALL      |
|        |               | - The EEC FAULT light condition and EEC RESET procedure line are moved just after START A & B selection. Configuration management update. | AFM.PRO.NNO.ABN.70.2.2.A70.09<br>ENG RESTART IN FLIGHT<br>ALL   |
|        |               | - No content change, configuration management update  | AFM.PRO.NNO.ABN.99.2.03<br>Approach and Landing<br>ALL          |
|        |               | - No content change, Retrofit management update   | AFM.PRO.NOP.NOR.1.1.1 ATPCS<br>Dynamic Test<br>ALL              |
|        |               | - Addition of FDAU check.   | AFM.PRO.NOP.NOR.1.1.5 APM<br>ALL                                |
|        |               | - Uniformization of FUEL SO RED light wording   | AFM.PRO.NOP.NOR.1.2.1 Engine<br>Fire Protection<br>ALL          |
|        |               | - No content change, Configuration management update  | AFM.PRO.NOP.NOR.1.2.3 ATPCS<br>Static Test<br>ALL               |
|        |               | - Procedure review  | AFM.PRO.NOP.ANOR.1.2.2<br>Procedure for Icing Conditions<br>ALL |
|        |               | - Update to revise some hyperlinks.   | AFM.PRO.SPO.13.1.2 Takeoff<br>ALL                               |
|        |               | - No content change - Configuration management updated  | AFM.PRO.SPO.16.1.1 General<br>Limitations<br>ALL                |

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|        |               | <ul style="list-style-type: none"> <li>- No content change, Retrofit Configuration Management</li> <li>- Create DM for configuration management</li> <li>- No technical change , aircraft configuration update.</li> <li>- No content change, configuration management update</li> <li>- No content change, configuration management updated</li> <li>- No Content Change - Retrofit Configuration Management</li> <li>- Harmonize and correct the wording concerning the required landing distance on wet runways - configuration management update</li> <li>- Harmonize and correct the wording concerning the required landing distance on wet runways.Retrofit Configuration Management</li> <li>- Harmonize and correct the wording concerning the required landing distance on wet runways.Retrofit Configuration Management</li> <li>- Revision of the content in order to improve the Number installed to 10 and the Number required to 9.</li> <li>- No technical change, configuration management update.</li> </ul> | <p>AFM.PRO.SPO.16.3.1 Center of Gravity Envelop<br/>ALL</p> <p>AFM.PRO.SPO.20.1.1 Applicability<br/>ALL</p> <p>AFM.PRO.SPO.21.2.1.3 Minimum Equipment Required<br/>0706</p> <p>AFM.PRO.SPO.21.2.1.5 Normal Approach and Landing Sequence<br/>0706</p> <p>AFM.PER.1.3.1.05 Ground Effect Speed Correction<br/>ALL</p> <p>AFM.PER.3.3.2.11.1.01 Flaps 15<br/>ALL</p> <p>AFM.PER.5.1.1 General<br/>ALL</p> <p>AFM.PER.5.2.3.1.1.1 Flaps 30<br/>ALL</p> <p>AFM.PER.5.2.3.1.1.2 Flaps 30 - Delayed Braking at 80kts IAS<br/>ALL</p> <p>AFM.DEV.1.27.02 Flap Lower Surface Trailing Edge<br/>ALL</p> <p>AFM.DEV.1.55.1 Vertical Stabilizer Attach Fitting Rubber Plug<br/>ALL</p> |


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|        |               | <ul style="list-style-type: none"> <li>- No content change, Configuration management updated</li> <li>- No Content Change - Retrofit Configuration Management</li> <li>- No Content Change - Retrofit Configuration Management</li> <li>- Introduction of the ANTISKID....OFF procedure line to shutoff the antiskid system when inoperative for aircraft dispatch - APQ_1515Add information for landing brake energy in the Limitations and Performances/ Landing paragraphs - EFP 2613/18Retrofit Configuration Management</li> <li>- Homogenization of the DM title with the container title.</li> <li>- Homogenization of the DM title with the container title.</li> <li>- No Content Change - Retrofit Configuration Management</li> <li>- No content change, Retrofit Configuration Management</li> <li>- No content change, Retrofit Configuration Management</li> </ul> | <ul style="list-style-type: none"> <li>AFM.DEV.2.2.01.4 Effect of Gear Down on Final Takeoff and Weight Penalty on Single Engine Ceiling Computation<br/>ALL</li> <li>AFM.DEV.2.4.01.01 Dispatch with Flaps Retracted<br/>ALL</li> <li>AFM.DEV.2.5.01.1 Dispatch with One Wheel Brake Deactivated or Removed<br/>ALL</li> <li>AFM.DEV.2.6.01.1 Dispatch with Antiskid System Inoperative<br/>ALL</li> <li>AFM.DEV.2.10.01.3 Effect on Takeoff Distance<br/>ALL</li> <li>AFM.DEV.2.10.01.5 Effect on Second Segment Weight<br/>ALL</li> <li>AFM.DEV.2.16.01.1 Flight with Pitch Elevators Disconnected<br/>ALL</li> <li>AFM.APP.1.04 Configuration<br/>ALL</li> <li>AFM.APP.1.05 Certification Noise Levels<br/>0685</li> </ul> |
|        |               | <ul style="list-style-type: none"> <li>- No content change, Retrofit Configuration Management</li> </ul>   | <ul style="list-style-type: none"> <li>AFM.APP.1.05 Certification Noise Levels<br/>0706</li> </ul>   |

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| 22.0   | APR 21        | <ul style="list-style-type: none"> <li>- Revision of the AFM. General. Introduction chapter with the Commercial designation clarification. Creation of the Commercial designation chapter for clarification purpose.</li> <li>- Update consists in introducing a Minimum Flight Weight value</li> <li>- Update consists in introducing a Minimum Flight Weight value</li> <li>- Update consists in introducing a Minimum Flight Weight value</li> <li>- Update consists in introducing a Minimum Flight Weight value</li> <li>- Improvement of the structure in order to add "Unloading" in the title</li> <li>- Improvement of the illustration for clarification purpose.</li> <li>- Content update in order to remove NP setting informations</li> <li>- Replace -B-RNAV- by -RNAV 5- and -P-RNAV- by -RNAV 1-.</li> <li>- The irrelevant nav aids (ILS, LOC, LOC/DME) are removed from the list for VDEV check.</li> <li>- Replace -B-RNAV- by -RNAV 5- and -P-RNAV- by -RNAV 1-The irrelevant nav aids (ILS, LOC, LOC/DME) are removed from the list for VDEV check. LOC is also removed from the list for NPA.</li> <li>- Clarification of the hyperlinks relative to the associated system inoperative list.</li> </ul> | AFM.GEN.1.1 Introduction<br><br>AFM.LIM.2.1.1 Structural Limitations<br>AFM.LIM.2.1.1 Structural Limitations<br>AFM.LIM.2.2.1 Certified Center of Gravity Envelope<br>AFM.LIM.2.2.1 Certified Center of Gravity Envelope<br>AFM.LIM.2.3.1 Loading - Unloading Instruction<br>AFM.LIM.4.1.1 Environmental Envelope<br>AFM.LIM.4.4.2 Atmospheric Icing Conditions<br>AFM.LIM.5.34.1.1 General<br>AFM.LIM.5.34.1.2 Limitations<br>AFM.LIM.5.34.1.2 Limitations<br><br>AFM.PRO.NNO.EMR.24.01.E24.01 DC GEN 1+2 FAULT |

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|        |               | - Smoke Procedure updated<br>Action line "GOGGLES....SET" replaced by "GOGGLES....DON"   | AFM.PRO.NNO.EMR.26.1.E26.01<br>SMOKE or FUMES                                       |
|        |               | - Smoke Procedure updated  | AFM.PRO.NNO.EMR.26.2.E26.02<br>ELECTRICAL SMOKE                                     |
|        |               | - Smoke Procedure updated  | AFM.PRO.NNO.EMR.26.3.E26.03<br>AIR COND SMOKE                                       |
|        |               | - Modification of smoke procedures   | AFM.PRO.NNO.EMR.26.4.E26.04<br>FWD SMOKE  |
|        |               | - Smoke Procedure updated  | AFM.PRO.NNO.EMR.26.6.E26.06<br>AFT SMOKE  |
|        |               | - Revision of the classification from abnormal-amber into emergency-red procedure  | AFM.PRO.NNO.EMR.27.1.E27.01<br>PITCH CONTROL JAM AT TAKEOFF OR LANDING              |
|        |               | - Structure-wording improvement in order to clarify that timer of 30s start after the Disch completion of the agent 1.         | AFM.PRO.NNO.EMR.70.01.E70.01<br>ENG 1(2) FIRE AT TAKEOFF                            |
|        |               | - Structure-wording improvement in order to clarify that timer of 30s start after the Disch completion of the agent 1.         | AFM.PRO.NNO.EMR.70.02.E70.02<br>ENG 1(2) FIRE OR SEVERE MECHANICAL DAMAGE IN FLIGHT |
|        |               | - Structure-wording improvement in order to clarify that timer of 30s start after the Disch completion of the agent 1.         | AFM.PRO.NNO.EMR.70.03.E70.03<br>ENG 1(2) FIRE OR SEVERE MECHANICAL DAMAGE ON GROUND |
|        |               | - Update of the Note in order to provide different links to all VmHB values.   | AFM.PRO.NNO.EMR.70.05.E70.05<br>ENG 1+2 FLAME OUT                                   |
|        |               | - Revision of the procedure in order to cover single and double doors and for clarification purpose                            | AFM.PRO.NNO.EMR.99.2.E99.02<br>COCKPIT DOOR LOCKING SYSTEM                          |
|        |               | - Harmonization of the condition Just before ditching for BRACE FOR IMPACT order (for ditching and forced landing procedures). | AFM.PRO.NNO.EMR.99.3.E99.03<br>DITCHING   |
|        |               | - No technical change, aircraft configuration management.  | AFM.PRO.NNO.EMR.99.4.E99.04<br>EMERGENCY DESCENT                                    |



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| N° Rev | Revision Date | Reason For Issue   | Impacted DM  |
|--------|---------------|--|--|
|        |               | <ul style="list-style-type: none"> <li>- Caution added to avoid human factor ambiguity. Standardization of TLU actions wording.</li> <li>- Addition of a Note linked to MAX FLIGHT TIME value (FCOM only).</li> <li>- Addition of a MAX TIME value and an associated note.</li> <li>- The Notes order is modified to highlight Brake energy Refer to. Maximum pitch value -10- is replaced by -8- for all ATR 42 and -8- by -6- for all ATR 72. The - FLAPS 0 landing- part is shifted right to be integrated into the - During flare- part.</li> <li>- Pitch Disconnect Procedure is modified to take into account the modifications of Elevator Jam Procedure</li> <li>- Standardization of TLU actions wording.</li> <li>- No content change, configuration management update</li> <li>- Rewording of the actions and precisions added</li> <li>- Harmonization of the procedure with 600 version aircraft.</li> <li>- Amendment of the second condition for clarification purpose.</li> <li>- Addition of icing conditions and speed monitorings, in the absence of APM</li> <li>- Standardization of turbo fan wording (FCOM only).</li> <li>- Standardization of turbo fan wording (FCOM only).</li> </ul> | <p>AFM.PRO.NNO.EMR.99.10.E99.10<br/>UNRELIABLE AIRSPEED INDICATION</p> <p>AFM.PRO.NNO.ABN.21.1.3.A21.03<br/>PACK 1+2 VALVES FAULT</p> <p>AFM.PRO.NNO.ABN.21.2.3.A21.14<br/>EXCESS CAB DELTA P</p> <p>AFM.PRO.NNO.ABN.27.1.5.A27.05<br/>REDUCED FLAPS LANDING</p> <p>AFM.PRO.NNO.ABN.27.2.2.A27.07<br/>PITCH DISCONNECT</p> <p>AFM.PRO.NNO.ABN.27.4.3.A27.19<br/>TLU FAULT</p> <p>AFM.PRO.NNO.ABN.28.2.A28.04<br/>FUEL LEAK DETECTION</p> <p>AFM.PRO.NNO.ABN.28.6.A28.08<br/>FUEL UNBALANCED</p> <p>AFM.PRO.NNO.ABN.29.1.A29.01<br/>HYD BLUE (GREEN) LO LVL</p> <p>AFM.PRO.NNO.ABN.30.2.1.A30.05<br/>AFR AIR BLEED FAULT</p> <p>AFM.PRO.NNO.ABN.30.3.1.A30.14<br/>APM FAULT</p> <p>AFM.PRO.NNO.ABN.31.1.2.A31.02<br/>MFC 1B FAULT</p> <p>AFM.PRO.NNO.ABN.31.1.4.A31.04<br/>MFC 2B FAULT</p> |

| N° Rev | Revision Date | Reason For Issue  | Impacted DM   |
|--------|---------------|---|---|
|        |               | - Standardization of turbo fan wording (FCOM only).   | AFM.PRO.NNO.ABN.31.2.1.A31.05<br>MFC 1A+1B FAULT              |
|        |               | - Standardization of TLU actions wording.   | AFM.PRO.NNO.ABN.31.2.2.A31.06<br>MFC 1A+2A FAULT              |
|        |               | - Standardization of turbo fan wording (FCOM only).   | AFM.PRO.NNO.ABN.31.2.3.A31.07<br>MFC 1A+2B FAULT              |
|        |               | - Standardization of turbo fan wording (FCOM only).   | AFM.PRO.NNO.ABN.31.2.4.A31.08<br>MFC 1B+2A FAULT              |
|        |               | - Standardization of turbo fan wording (FCOM only).   | AFM.PRO.NNO.ABN.31.2.5.A31.09<br>MFC 1B+2B FAULT              |
|        |               | - Correction of the comment associated with LDG GEAR lever ...DOWN procedure line for clarification purpose (FCOM only).                          | AFM.PRO.NNO.ABN.32.5.A32.05<br>LDG GEAR UNSAFE INDICATION     |
|        |               | - Procedure moved to the AFM for certification constraint. ENG is added just before BLEEDS 1+2.   | AFM.PRO.NNO.ABN.32.6.A32.06<br>LANDING WITH ABNORMAL LDG GEAR |
|        |               | - Update of the procedure and removal of the condition during taxi<br>-If bleed leak persists- in order to comply with MMEL 21-50-01 limitations. | AFM.PRO.NNO.ABN.36.1.A36.02<br>BLEED LEAK 1(2)                |
|        |               | - -REVERSE : NOT AVAILABLE- is replaced by -REVERSE : DO NOT USE- for harmonization purpose.  | AFM.PRO.NNO.ABN.70.1.4.A70.05<br>PEC 1(2) FAULT               |
|        |               | - No content change, procedure moved to the AFM for certification constraints   | AFM.PRO.NNO.ABN.99.1.2.A99.02<br>DOORS UNLK IN FLIGHT         |
|        |               | - No content change - Structure improvement   | AFM.PRO.NNO.ABN.99.2.04<br>Missed Approach                    |
|        |               | - No content change, procedure moved to the AFM for certification constraints   | AFM.PRO.NNO.ABN.99.4.1.A99.06<br>VOLCANIC ASH ENCOUNTER       |
|        |               | - Replace -B-RNAV- by -RNAV 5-.   | AFM.PRO.NNO.ASU.1.1 GPS                                       |
|        |               | - No content modification, configuration management update  | AFM.PRO.NOP.NSU.3.1.1 General                                 |

| N° Rev | Revision Date | Reason For Issue  | Impacted DM   |
|--------|---------------|---|---|
|        |               | - No content modification, configuration management update  | AFM.PRO.NOP.NSU.3.1.2 Inputs  |
|        |               | - No content modification, configuration management update  | AFM.PRO.NOP.NSU.3.1.3 Outputs   |
|        |               | - No content modification, configuration management update  | AFM.PRO.NOP.NSU.3.1.4 Operation   |
|        |               | - No technical change, aircraft configuration management.   | AFM.PRO.NOP.NOR.3.1 Takeoff   |
|        |               | - No technical change, aircraft configuration management.   | AFM.PRO.NOP.ANOR.1.1.2 Procedure for Takeoff with Ground Icing Conditions |
|        |               | - Link updated: FCOM-PER 6-Cruise icing Icing Conditions replaces PER.1.3.2.01 Cruise (FCOM only) | AFM.PRO.NOP.ANOR.1.2.2 Procedure for Icing Conditions                     |
|        |               | - No content change, structural revision of chapter to add flude type III option                  | AFM.PRO.NOP.ANOR.1.3.01.01 Introduction                                   |
|        |               | - No content change, structural revision of chapter to add flude type III option                  | AFM.PRO.NOP.ANOR.1.3.01.02 Method 1                                       |
|        |               | - No content change, structural revision of chapter to add flude type III option                  | AFM.PRO.NOP.ANOR.1.3.01.03 Method 2                                       |
|        |               | - No content change, Retrofit Configuration Management  | AFM.PRO.SPO.16.3.1 Center of Gravity Envelop                              |
|        |               | - No content change, configuration management update.   | AFM.PRO.SPO.21.2.1.2 Performance Envelope in Approach                     |
|        |               | - Addition of Probe Heating in the minimum equipment list for CAT II operations.                  | AFM.PRO.SPO.21.2.1.3 Minimum Equipment Required                           |
|        |               | - ZRA threshold 800 ft is deleted   | AFM.PRO.SPO.21.2.1.4 Approach and Landing Preparation                     |
|        |               | - The 800ft threshold is replaced by 1000ft,  | AFM.PRO.SPO.21.2.1.5 Normal Approach and Landing Sequence                 |
|        |               | - The 800ft threshold is replaced by 1000ft,  | AFM.PRO.SPO.21.2.3.2.01 General   |

| N° Rev | Revision Date | Reason For Issue  | Impacted DM  |
|--------|---------------|---|--|
|        |               | <ul style="list-style-type: none"> <li>- The 800ft threshold is replaced by 1000ft, landing distance coefficient is replaced by 1.15.</li> <li>- The 800ft threshold is replaced by 1000ft.</li> <li>- The 800ft threshold is replaced by 1000ft.</li> <li>- Improve the wording in order to avoid confusion. Delta V replace by Delta V = IAS-CAS (kt) and VC(kt) by CAS(kt).</li> <li>- Improve the wording in order to avoid confusion. Delta V replace by Delta V = IAS-CAS (kt) and VC(kt) by CAS(kt).</li> <li>- Improve the wording in order to avoid confusion. VC(kt) replace by CAS(kt).</li> <li>- Improvement of the content in order to update the second graph. Improve the wording in order to avoid confusion. Delta V replace by Delta V = IAS-CAS (kt).</li> <li>- Improvement of the content in order to update the second graph. Improve the wording in order to avoid confusion. VC(kt) replace by CAS(kt).</li> <li>- No content change, configuration management updated</li> <li>- No content change, configuration management updated</li> <li>- No content change, configuration management updated</li> <li>- No content change, configuration management updated</li> </ul> | <ul style="list-style-type: none"> <li>AFM.PRO.SPO.21.2.3.2.02 A-C Systems</li> <li>AFM.PRO.SPO.21.2.3.2.03 Flight Instruments</li> <li>AFM.PRO.SPO.21.2.3.2.04 AFCS and ADU</li> <li>AFM.PER.1.3.1.01 Ground Effect Speed Correction</li> <li>AFM.PER.1.3.2.02 Speed Correction Flaps 15</li> <li>AFM.PER.1.3.2.03 Altitude Correction Flaps 15</li> <li>AFM.PER.1.3.4.01 Speed Correction Flaps 30</li> <li>AFM.PER.1.3.4.02 Altitude Correction Flaps 30</li> <li>AFM.PER.3.3.2.11.1.01 Flaps 15</li> <li>AFM.PER.5.1.1 General</li> <li>AFM.PER.5.2.3.1.1.1 Flaps 30</li> <li>AFM.PER.5.2.3.1.1.2 Flaps 30 - Delayed Braking at 80kts IAS</li> </ul> |

| N° Rev | Revision Date | Reason For Issue  | Impacted DM  |
|--------|---------------|---|--|
|        |               | <ul style="list-style-type: none"> <li>- Update of the Placard definition and Wording improvement of the sentence -as additional deviations may require the aircraft not to be used as revenue service- to avoid ambiguity.</li> <li>- Update of the placard criteria in case of aircraft limitation linked to the item</li> <li>- Update of the placard criteria in case of aircraft limitation linked to the item</li> <li>- Update of the placard criteria in case of aircraft limitation linked to the item</li> <li>- Update of the placard criteria in case of aircraft limitation linked to the item</li> <li>- Update of the placard criteria in case of aircraft limitation linked to the item, andCorrection of the dispatch condition from -One may be inoperative- by -One or both may be inoperative-.</li> <li>- Update of the placard criteria in case of aircraft limitation linked to the item</li> <li>- Update of the placard criteria in case of aircraft limitation linked to the item</li> <li>- No content change, configuration management updated</li> <li>- No content change, configuration management updated</li> <li>- No content change, configuration management updated</li> </ul> | <ul style="list-style-type: none"> <li>AFM.DEV.1.1.01 General</li> <li>AFM.DEV.1.27.01 Flap Hinge Fairing</li> <li>AFM.DEV.1.32.01 Main Gear Door</li> <li>AFM.DEV.1.32.02 Main Gear Foldable Doors</li> <li>AFM.DEV.1.32.03 Nose Gear Forward Door</li> <li>AFM.DEV.1.32.04 Nose Gear Aft Door</li> <li>AFM.DEV.1.52.7 Access Door to Tail Cone Bay</li> <li>AFM.DEV.1.61.01 Propeller Spinner</li> <li>AFM.DEV.2.4.01.01 Dispatch with Flaps Retracted</li> <li>AFM.DEV.2.5.01.1 Dispatch with One Wheel Brake Deactivated or Removed</li> <li>AFM.DEV.2.6.01.1 Dispatch with Antiskid System Inoperative</li> </ul> |

| N° Rev | Revision Date | Reason For Issue  | Impacted DM   |
|--------|---------------|---|---|
| 29.0   | JUN 21        | <ul style="list-style-type: none"> <li>- No content change, configuration management updated</li> <li>- Contaminated runway definition updated</li> <li>- Dm created in order to split EGPWS and TAWS information.</li> <li>- No technical change, aircraft configuration management.</li> <li>- Addition of a Note in order to inform about an inhibition delay of 3 minutes before AUTHORIZED ACCESS TEST.</li> <li>- Update of some hyperlinks.</li> <li>- Add a note to clarify Method 2 and update of some hyperlinks.</li> <li>- Introduction of the concept of the actual landing distance</li> <li>- Complete DM revision to introduce the concept of the actual landing distance.</li> <li>- Create new "Maximum Recommended Crosswind" chapter.</li> <li>- Updated the 5 cases considered to takeoff</li> <li>- Complete DM revision to introduce the concept of the actual landing distance</li> <li>- Updated DM title to introduce the concept of actual landing distance</li> </ul> | <p>AFM.DEV.2.16.01.1 Flight with Pitch Elevators Disconnected</p> <p>AFM.LIM.4.2.2 Crosswind<br/>ALL</p> <p>AFM.LIM.5.34.4.1 Limitations<br/>ALL</p> <p>AFM.PRO.NNO.ABN.24.3.3.A24.13 DC EMER BUS OFF<br/>ALL</p> <p>AFM.PRO.NOP.NOR.1.1.4 Cockpit door security system check<br/>ALL</p> <p>AFM.PRO.NOP.ANOR.1.3.01.02 Method 1<br/>ALL</p> <p>AFM.PRO.NOP.ANOR.1.3.01.03 Method 2<br/>ALL</p> <p>AFM.PRO.SPO.1.2.4.01 Performances<br/>ALL</p> <p>AFM.PRO.SPO.13.1.1 Introduction<br/>ALL</p> <p>AFM.PRO.SPO.13.1.2 Maximum Recommended Crosswind<br/>ALL</p> <p>AFM.PRO.SPO.13.1.3 Takeoff<br/>ALL</p> <p>AFM.PRO.SPO.13.1.5 Landing<br/>ALL</p> <p>AFM.PRO.SPO.13.2.1.1 Actual Landing Distance<br/>ALL</p> |

| N° Rev | Revision Date | Reason For Issue   | Impacted DM  |
|--------|---------------|--|--|
|        |               | - Updated DM title to introduce the concept of actual landing distance                             | AFM.PRO.SPO.13.2.2.1 Actual Landing Distance Corrections<br>ALL    |
|        |               | - Updated DM title to introduce the concept of actual landing distance                             | AFM.PRO.SPO.13.3.1.1 Actual Landing Distance<br>ALL                |
|        |               | - Updated DM title to introduce the concept of actual landing distance                             | AFM.PRO.SPO.13.3.2.1 Actual Landing Distance Corrections<br>ALL    |
|        |               | - Updated DM title to introduce the concept of actual landing distance                             | AFM.PRO.SPO.13.4.1.1 Actual Landing Distance<br>ALL                |
|        |               | - Updated DM title to introduce the concept of actual landing distance                             | AFM.PRO.SPO.13.4.2.1 Actual Landing Distance Corrections<br>ALL    |
|        |               | - Title change: NORMAL PROCEDURE into GENERAL INFORMATION.   | AFM.PRO.SPO.21.2.1.1 Approved Configurations<br>0706-0775          |
|        |               | - 2021-01-25 09:13:44No content change, configuration management update.                           | AFM.PRO.SPO.21.2.1.2 Performance Envelope in Approach<br>0706-0775 |
|        |               | - Addition of Probe Heating in the minimum equipment list for CAT II operations.                   | AFM.PRO.SPO.21.2.1.3 Minimum Equipment Required<br>0706-0775       |
|        |               | - Merge of PRO.SPO Cat II chapter and PRO.NOP.ANOR Cat II chapter. Removal of task sharing part.   | AFM.PRO.SPO.21.2.2.2 Normal Approach Sequence<br>0706-0775         |
|        |               | - Merge of PRO.SPO Cat II chapter and PRO.NOP.ANOR Cat II chapter. No content change.              | AFM.PRO.SPO.21.2.2.3 Normal Landing Sequence<br>0706-0775          |
|        |               | - Revision of the Landing Distance paragraph in order to add "For flight preparation computation:" | AFM.PER.5.1.1 General<br>0685-0706                                 |
|        |               | - Revision of the Landing Distance paragraph in order to add "For flight preparation computation:" | AFM.PER.5.1.1 General<br>0775                                      |

| N° Rev | Revision Date | Reason For Issue  | Impacted DM  |
|--------|---------------|---|--|
|        |               | - "Actual Landing Distance " replaces "Landing Distance"        | AFM.DEV.2.4.01.01 Dispatch with Flaps Retracted<br>0685-0706                       |
|        |               | - "Actual Landing Distance " replaces "Landing Distance"        | AFM.DEV.2.4.01.01 Dispatch with Flaps Retracted<br>0775                            |
|        |               | - "Actual Landing Distance " replaces "Landing Distance"        | AFM.DEV.2.5.01.1 Dispatch with One Wheel Brake Deactivated or Removed<br>0685-0706 |
|        |               | - "Actual Landing Distance " replaces "Landing Distance"        | AFM.DEV.2.5.01.1 Dispatch with One Wheel Brake Deactivated or Removed<br>0775      |
|        |               | - Actual Landing Distance " replaces "Landing Distance"         | AFM.DEV.2.6.01.1 Dispatch with Antiskid System Inoperative<br>0685-0706            |
|        |               | - Actual Landing Distance " replaces "Landing Distance"         | AFM.DEV.2.6.01.1 Dispatch with Antiskid System Inoperative<br>0775                 |
|        |               | - Update of noise level ICAO - Annex 16 Chapter 4 to Chapter 14 | AFM.APP.1.02 Noise Levels<br>ALL   |



| Status | Data Module   | Revision Number | Configuration |
|--------|---------------|-----------------|---------------|
|        | AFM.GEN.1.1   | 0.3             | ALL           |
|        | AFM.GEN.1.2   | 1.1             | ALL           |
|        | AFM.GEN.1.3   | 1.1             | ALL           |
|        | AFM.GEN.2.1   | 1.2             | ALL           |
|        | AFM.GEN.2.2   | 1.2             | ALL           |
|        | AFM.GEN.3.1   | 1.5             | ALL           |
|        | AFM.GEN.3.2   | 1.1             | ALL           |
|        | AFM.GEN.3.3   | 13.2            | ALL           |
|        | AFM.GEN.4.1   | 0.1             | ALL           |
|        | AFM.LIM.1.1   | 0.1             | ALL           |
|        | AFM.LIM.1.2   | 0.1             | ALL           |
|        | AFM.LIM.1.3   | 0.1             | ALL           |
|        | AFM.LIM.1.4   | 1.1             | ALL           |
|        | AFM.LIM.1.5   | 0.1             | ALL           |
|        | AFM.LIM.1.6   | 0.1             | ALL           |
|        | AFM.LIM.1.7   | 0.1             | ALL           |
|        | AFM.LIM.2.1.1 | 1.1             | 0685;0775     |
|        | AFM.LIM.2.1.1 | 2.1             | 0706          |
|        | AFM.LIM.2.1.2 | 0.2             | ALL           |
|        | AFM.LIM.2.2.1 | 5.1             | 0685;0775     |
|        | AFM.LIM.2.2.1 | 3.1             | 0706          |
|        | AFM.LIM.2.3.1 | 1.1             | ALL           |
|        | AFM.LIM.2.4.1 | 0.2             | ALL           |
|        | AFM.LIM.3.1.1 | 0.1             | ALL           |
|        | AFM.LIM.3.1.2 | 1.0             | ALL           |
|        | AFM.LIM.3.2.1 | 0.1             | ALL           |
|        | AFM.LIM.3.2.2 | 1.1             | ALL           |
|        | AFM.LIM.3.2.3 | 0.1             | ALL           |
|        | AFM.LIM.3.2.4 | 0.1             | ALL           |
|        | AFM.LIM.3.3.1 | 1.1             | ALL           |

| Status | Data Module       | Revision Number | Configuration |
|--------|-------------------|-----------------|---------------|
|        | AFM.LIM.3.4.1.1.1 | 0.1             | ALL           |
|        | AFM.LIM.3.4.2.1.1 | 0.1             | ALL           |
|        | AFM.LIM.3.4.3.1   | 0.1             | ALL           |
|        | AFM.LIM.3.5.1     | 1.2             | ALL           |
|        | AFM.LIM.3.5.2     | 0.1             | ALL           |
|        | AFM.LIM.3.5.3     | 0.2             | ALL           |
|        | AFM.LIM.4.1.1     | 3.1             | ALL           |
|        | AFM.LIM.4.2.1     | 0.2             | 0775          |
|        | AFM.LIM.4.2.1     | 0.1             | 0685-0706     |
| R      | AFM.LIM.4.2.2     | 5.1             | ALL           |
|        | AFM.LIM.4.3.1     | 1.3             | ALL           |
|        | AFM.LIM.4.4.1     | 3.1             | ALL           |
|        | AFM.LIM.4.4.2     | 8.1             | ALL           |
|        | AFM.LIM.4.4.3     | 1.3             | ALL           |
|        | AFM.LIM.5.21.1    | 0.1             | ALL           |
|        | AFM.LIM.5.22.1    | 2.1             | ALL           |
|        | AFM.LIM.5.24.1    | 1.0             | ALL           |
|        | AFM.LIM.5.27.1    | 1.2             | ALL           |
|        | AFM.LIM.5.29.1    | 3.2             | ALL           |
|        | AFM.LIM.5.30.1    | 0.2             | ALL           |
|        | AFM.LIM.5.31.1    | 1.1             | ALL           |
|        | AFM.LIM.5.32.1    | 0.2             | ALL           |
|        | AFM.LIM.5.33.1    | 0.1             | ALL           |
|        | AFM.LIM.5.34.1.1  | 0.1             | 0685          |
|        | AFM.LIM.5.34.1.1  | 1.1             | 0706-0775     |
|        | AFM.LIM.5.34.1.2  | 1.1             | 0685          |
|        | AFM.LIM.5.34.1.2  | 3.2             | 0706-0775     |
| N      | AFM.LIM.5.34.4.1  | 0.3             | ALL           |
|        | AFM.LIM.5.34.5.1  | 2.0             | ALL           |
|        | AFM.LIM.5.34.5.2  | 1.1             | 0775          |

| Status | Data Module                      | Revision Number | Configuration |
|--------|----------------------------------|-----------------|---------------|
|        | AFM.LIM.5.34.7.1                 | 0.4             | 0685          |
|        | AFM.LIM.5.34.7.1                 | 2.1             | 0706-0775     |
|        | AFM.LIM.5.34.7.2                 | 1.1             | ALL           |
|        | AFM.LIM.5.34.8.1                 | 6.1             | ALL           |
|        | AFM.LIM.5.34.8.2                 | 2.0             | ALL           |
|        | AFM.LIM.5.34.8.3                 | 2.0             | ALL           |
| D      | AFM.LIM.5.34.3.1                 | 1.1             | ALL           |
|        | AFM.LIM.5.52.1                   | 0.1             | ALL           |
|        | AFM.LIM.5.52.2                   | 0.1             | ALL           |
|        | AFM.LIM.5.70.1.1                 | 3.1             | ALL           |
|        | AFM.LIM.5.70.1.2                 | 0.1             | ALL           |
|        | AFM.LIM.5.70.2.1                 | 1.1             | ALL           |
|        | AFM.LIM.5.70.3.1                 | 0.1             | ALL           |
|        | AFM.LIM.5.70.4.1                 | 2.1             | ALL           |
|        | AFM.LIM.5.70.4.2                 | 3.1             | ALL           |
|        | AFM.LIM.5.70.4.3                 | 0.1             | ALL           |
|        | AFM.LIM.5.70.4.4                 | 0.1             | ALL           |
|        | AFM.LIM.5.70.4.5                 | 1.1             | ALL           |
|        | AFM.LIM.5.70.4.6                 | 0.1             | ALL           |
|        | AFM.LIM.5.70.5.1                 | 1.1             | ALL           |
|        | AFM.PRO.GEN.1.1                  | 0.1             | ALL           |
|        | AFM.PRO.GEN.1.2                  | 0.1             | ALL           |
|        | AFM.PRO.GEN.1.3                  | 0.1             | ALL           |
|        | AFM.PRO.GEN.1.4                  | 1.0             | ALL           |
|        | AFM.PRO.GEN.1.5                  | 0.1             | ALL           |
|        | AFM.PRO.NNO.EMR.01.0<br>1        | 0.1             | ALL           |
|        | AFM.PRO.NNO.EMR.24.0<br>1.E24.01 | 7.1             | ALL           |
|        | AFM.PRO.NNO.EMR.26.1.<br>E26.01  | 6.2             | ALL           |

| Status | Data Module                      | Revision Number | Configuration |
|--------|----------------------------------|-----------------|---------------|
|        | AFM.PRO.NNO.EMR.26.2.<br>E26.02  | 3.3             | ALL           |
|        | AFM.PRO.NNO.EMR.26.3.<br>E26.03  | 5.1             | ALL           |
|        | AFM.PRO.NNO.EMR.26.4.<br>E26.04  | 6.7             | ALL           |
|        | AFM.PRO.NNO.EMR.26.6.<br>E26.06  | 5.3             | ALL           |
|        | AFM.PRO.NNO.EMR.27.1.<br>E27.01  | 2.1             | ALL           |
|        | AFM.PRO.NNO.EMR.70.0<br>1.E70.01 | 4.5             | ALL           |
|        | AFM.PRO.NNO.EMR.70.0<br>2.E70.02 | 2.4             | ALL           |
|        | AFM.PRO.NNO.EMR.70.0<br>3.E70.03 | 3.4             | ALL           |
|        | AFM.PRO.NNO.EMR.70.0<br>5.E70.05 | 8.3             | ALL           |
|        | AFM.PRO.NNO.EMR.99.1.<br>E99.01  | 1.1             | ALL           |
|        | AFM.PRO.NNO.EMR.99.2.<br>E99.02  | 2.1             | ALL           |
|        | AFM.PRO.NNO.EMR.99.3.<br>E99.03  | 6.1             | ALL           |
|        | AFM.PRO.NNO.EMR.99.4.<br>E99.04  | 1.0             | ALL           |
|        | AFM.PRO.NNO.EMR.99.5.<br>E99.05  | 3.1             | ALL           |
|        | AFM.PRO.NNO.EMR.99.6.<br>E99.06  | 6.1             | ALL           |
|        | AFM.PRO.NNO.EMR.99.8.<br>E99.08  | 1.15            | ALL           |
|        | AFM.PRO.NNO.EMR.99.9.<br>E99.09  | 2.1             | ALL           |
|        | AFM.PRO.NNO.EMR.99.1<br>0.E99.10 | 4.1             | ALL           |

| Status | Data Module                       | Revision Number | Configuration |
|--------|-----------------------------------|-----------------|---------------|
|        | AFM.PRO.NNO.ABN.01.1              | 1.1             | ALL           |
|        | AFM.PRO.NNO.ABN.21.1.<br>1.A21.01 | 4.2             | ALL           |
|        | AFM.PRO.NNO.ABN.21.1.<br>2.A21.02 | 2.5             | ALL           |
|        | AFM.PRO.NNO.ABN.21.1.<br>3.A21.03 | 2.0             | ALL           |
|        | AFM.PRO.NNO.ABN.21.2.<br>1.A21.10 | 4.1             | ALL           |
|        | AFM.PRO.NNO.ABN.21.2.<br>2.A21.13 | 7.1             | ALL           |
|        | AFM.PRO.NNO.ABN.21.2.<br>3.A21.14 | 4.3             | ALL           |
|        | AFM.PRO.NNO.ABN.22.1.<br>A22.01   | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.22.2.<br>A22.02   | 1.1             | ALL           |
|        | AFM.PRO.NNO.ABN.22.3.<br>A22.03   | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.22.4.<br>A22.04   | 2.2             | ALL           |
|        | AFM.PRO.NNO.ABN.22.5.<br>A22.05   | 1.2             | ALL           |
|        | AFM.PRO.NNO.ABN.22.6.<br>A22.10   | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.22.7.<br>A22.13   | 1.2             | ALL           |
|        | AFM.PRO.NNO.ABN.24.1.<br>1.A24.01 | 1.1             | ALL           |
|        | AFM.PRO.NNO.ABN.24.1.<br>2.A24.02 | 1.0             | ALL           |
|        | AFM.PRO.NNO.ABN.24.2.<br>1.A24.06 | 4.2             | ALL           |
|        | AFM.PRO.NNO.ABN.24.2.<br>2.A24.07 | 4.2             | ALL           |

| Status | Data Module                       | Revision Number | Configuration |
|--------|-----------------------------------|-----------------|---------------|
|        | AFM.PRO.NNO.ABN.24.2.<br>3.A24.08 | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.24.2.<br>4.A24.09 | 3.2             | ALL           |
|        | AFM.PRO.NNO.ABN.24.3.<br>1.A24.11 | 5.1             | ALL           |
|        | AFM.PRO.NNO.ABN.24.3.<br>2.A24.12 | 4.1             | ALL           |
| R      | AFM.PRO.NNO.ABN.24.3.<br>3.A24.13 | 4.0             | ALL           |
|        | AFM.PRO.NNO.ABN.24.3.<br>4.A24.15 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.24.3.<br>5.A24.18 | 1.1             | ALL           |
|        | AFM.PRO.NNO.ABN.24.3.<br>6.A24.19 | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.24.3.<br>7.A24.20 | 2.2             | ALL           |
|        | AFM.PRO.NNO.ABN.27.1.<br>1.A27.01 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.27.1.<br>2.A27.02 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.27.1.<br>4.A27.04 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.27.1.<br>5.A27.05 | 5.1             | ALL           |
|        | AFM.PRO.NNO.ABN.27.2.<br>1.A27.06 | 0.5             | ALL           |
|        | AFM.PRO.NNO.ABN.27.2.<br>2.A27.07 | 5.1             | ALL           |
|        | AFM.PRO.NNO.ABN.27.2.<br>3.A27.10 | 3.0             | ALL           |
|        | AFM.PRO.NNO.ABN.27.2.<br>4.A27.12 | 2.3             | ALL           |
|        | AFM.PRO.NNO.ABN.27.2.<br>5.A27.13 | 3.2             | ALL           |

| Status | Data Module                       | Revision Number | Configuration |
|--------|-----------------------------------|-----------------|---------------|
|        | AFM.PRO.NNO.ABN.27.3.<br>1.A27.15 | 2.2             | ALL           |
|        | AFM.PRO.NNO.ABN.27.3.<br>2.A27.16 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.27.4.<br>1.A27.17 | 1.1             | ALL           |
|        | AFM.PRO.NNO.ABN.27.4.<br>2.A27.18 | 2.3             | ALL           |
|        | AFM.PRO.NNO.ABN.27.4.<br>3.A27.19 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.28.1.<br>A28.03   | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.28.2.<br>A28.04   | 1.0             | ALL           |
|        | AFM.PRO.NNO.ABN.28.3.<br>A28.05   | 4.0             | ALL           |
|        | AFM.PRO.NNO.ABN.28.4.<br>A28.06   | 5.1             | ALL           |
|        | AFM.PRO.NNO.ABN.28.6.<br>A28.08   | 2.2             | ALL           |
|        | AFM.PRO.NNO.ABN.29.1.<br>A29.01   | 5.1             | ALL           |
|        | AFM.PRO.NNO.ABN.29.2.<br>A29.02   | 2.3             | ALL           |
|        | AFM.PRO.NNO.ABN.29.3.<br>A29.03   | 3.3             | ALL           |
|        | AFM.PRO.NNO.ABN.29.4.<br>A29.04   | 3.6             | ALL           |
|        | AFM.PRO.NNO.ABN.29.5.<br>A29.06   | 1.0             | ALL           |
|        | AFM.PRO.NNO.ABN.29.6.<br>A29.07   | 1.2             | ALL           |
|        | AFM.PRO.NNO.ABN.30.1.<br>1.A30.01 | 2.0             | ALL           |
|        | AFM.PRO.NNO.ABN.30.1.<br>2.A30.02 | 1.1             | ALL           |

| Status | Data Module                       | Revision Number | Configuration |
|--------|-----------------------------------|-----------------|---------------|
|        | AFM.PRO.NNO.ABN.30.2.<br>1.A30.05 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.30.2.<br>2.A30.06 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.30.2.<br>3.A30.07 | 0.3             | ALL           |
|        | AFM.PRO.NNO.ABN.30.2.<br>4.A30.08 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.30.2.<br>5.A30.09 | 0.2             | ALL           |
|        | AFM.PRO.NNO.ABN.30.3.<br>1.A30.14 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.30.3.<br>2.A30.15 | 7.0             | ALL           |
|        | AFM.PRO.NNO.ABN.30.3.<br>3.A30.16 | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.30.3.<br>4.A30.17 | 3.2             | ALL           |
|        | AFM.PRO.NNO.ABN.31.1.<br>1.A31.01 | 1.0             | ALL           |
|        | AFM.PRO.NNO.ABN.31.1.<br>2.A31.02 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.31.1.<br>3.A31.03 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.31.1.<br>4.A31.04 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.31.2.<br>1.A31.05 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.31.2.<br>2.A31.06 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.31.2.<br>3.A31.07 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.31.2.<br>4.A31.08 | 4.1             | ALL           |
|        | AFM.PRO.NNO.ABN.31.2.<br>5.A31.09 | 4.1             | ALL           |



| Status | Data Module                       | Revision Number | Configuration |
|--------|-----------------------------------|-----------------|---------------|
|        | AFM.PRO.NNO.ABN.31.2.<br>6.A31.10 | 6.1             | ALL           |
|        | AFM.PRO.NNO.ABN.32.1.<br>A32.01   | 2.4             | ALL           |
|        | AFM.PRO.NNO.ABN.32.2.<br>A32.02   | 2.5             | ALL           |
|        | AFM.PRO.NNO.ABN.32.3.<br>A32.03   | 2.3             | ALL           |
|        | AFM.PRO.NNO.ABN.32.4.<br>A32.04   | 2.2             | ALL           |
|        | AFM.PRO.NNO.ABN.32.5.<br>A32.05   | 4.1             | ALL           |
|        | AFM.PRO.NNO.ABN.32.6.<br>A32.06   | 3.0             | ALL           |
|        | AFM.PRO.NNO.ABN.34.1.<br>1.A34.01 | 1.1             | ALL           |
|        | AFM.PRO.NNO.ABN.34.1.<br>2.A34.02 | 2.1             | ALL           |
|        | AFM.PRO.NNO.ABN.34.1.<br>3.A34.03 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.34.2.<br>1.A34.05 | 4.1             | ALL           |
|        | AFM.PRO.NNO.ABN.34.2.<br>6.A34.10 | 4.1             | ALL           |
|        | AFM.PRO.NNO.ABN.36.1.<br>A36.02   | 5.6             | ALL           |
|        | AFM.PRO.NNO.ABN.36.2.<br>A36.03   | 5.3             | ALL           |
|        | AFM.PRO.NNO.ABN.36.3.<br>A36.04   | 4.3             | ALL           |
|        | AFM.PRO.NNO.ABN.70.1.<br>3.A70.03 | 0.2             | ALL           |
|        | AFM.PRO.NNO.ABN.70.1.<br>4.A70.05 | 3.1             | ALL           |
|        | AFM.PRO.NNO.ABN.70.1.<br>5.A70.06 | 1.3             | ALL           |

| Status | Data Module                       | Revision Number | Configuration |
|--------|-----------------------------------|-----------------|---------------|
|        | AFM.PRO.NNO.ABN.70.2.<br>1.A70.07 | 0.5             | ALL           |
|        | AFM.PRO.NNO.ABN.70.2.<br>2.A70.09 | 2.3             | ALL           |
|        | AFM.PRO.NNO.ABN.70.3.<br>1.A70.14 | 0.6             | ALL           |
|        | AFM.PRO.NNO.ABN.70.3.<br>2.A70.18 | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.70.4.<br>1.A70.30 | 1.1             | ALL           |
|        | AFM.PRO.NNO.ABN.99.1.<br>1.A99.03 | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.99.1.<br>2.A99.02 | 1.0             | ALL           |
|        | AFM.PRO.NNO.ABN.99.2.<br>01       | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.99.2.<br>03       | 4.1             | ALL           |
|        | AFM.PRO.NNO.ABN.99.2.<br>04       | 2.2             | ALL           |
|        | AFM.PRO.NNO.ABN.99.3.<br>01       | 0.1             | ALL           |
|        | AFM.PRO.NNO.ABN.99.4.<br>1.A99.06 | 1.0             | ALL           |
|        | AFM.PRO.NNO.ASU.1.1               | 1.1             | 0685          |
|        | AFM.PRO.NNO.ASU.1.1               | 0.2             | 0706-0775     |
|        | AFM.PRO.NNO.ASU.1.2               | 0.1             | ALL           |
|        | AFM.PRO.NNO.ASU.1.3               | 0.5             | 0775          |
|        | AFM.PRO.NOP.NSU.2.1               | 0.2             | ALL           |
|        | AFM.PRO.NOP.NSU.3.1.1             | 2.0             | ALL           |
|        | AFM.PRO.NOP.NSU.3.1.2             | 1.0             | ALL           |
|        | AFM.PRO.NOP.NSU.3.1.3             | 1.0             | ALL           |
|        | AFM.PRO.NOP.NSU.3.1.4             | 1.0             | ALL           |
|        | AFM.PRO.NOP.NSU.4.1               | 0.1             | ALL           |

| Status | Data Module                    | Revision Number | Configuration |
|--------|--------------------------------|-----------------|---------------|
|        | AFM.PRO.NOP.NOR.1.1.1          | 4.0             | ALL           |
|        | AFM.PRO.NOP.NOR.1.1.2          | 3.5             | ALL           |
|        | AFM.PRO.NOP.NOR.1.1.3          | 3.1             | ALL           |
| R      | AFM.PRO.NOP.NOR.1.1.4          | 2.2             | ALL           |
|        | AFM.PRO.NOP.NOR.1.1.5          | 3.1             | ALL           |
|        | AFM.PRO.NOP.NOR.1.2.1          | 4.1             | ALL           |
|        | AFM.PRO.NOP.NOR.1.2.2          | 2.2             | ALL           |
|        | AFM.PRO.NOP.NOR.1.2.3          | 2.0             | ALL           |
|        | AFM.PRO.NOP.NOR.1.2.4          | 2.1             | ALL           |
|        | AFM.PRO.NOP.NOR.2.01           | 0.1             | ALL           |
|        | AFM.PRO.NOP.NOR.3.1            | 1.0             | ALL           |
|        | AFM.PRO.NOP.NOR.4.01           | 1.1             | ALL           |
|        | AFM.PRO.NOP.NOR.5.01           | 0.6             | ALL           |
|        | AFM.PRO.NOP.NOR.6.1            | 2.2             | ALL           |
|        | AFM.PRO.NOP.ANOR.1.1.<br>1     | 1.1             | ALL           |
|        | AFM.PRO.NOP.ANOR.1.1.<br>2     | 2.0             | ALL           |
|        | AFM.PRO.NOP.ANOR.1.2.<br>1     | 4.1             | ALL           |
|        | AFM.PRO.NOP.ANOR.1.2.<br>2     | 3.0             | ALL           |
|        | AFM.PRO.NOP.ANOR.1.2.<br>3     | 0.3             | ALL           |
|        | AFM.PRO.NOP.ANOR.1.3.<br>01.01 | 3.1             | ALL           |
| R      | AFM.PRO.NOP.ANOR.1.3.<br>01.02 | 3.4             | ALL           |
| R      | AFM.PRO.NOP.ANOR.1.3.<br>01.03 | 3.3             | ALL           |
|        | AFM.PRO.NOP.ANOR.1.5.<br>01    | 0.1             | ALL           |

| Status | Data Module             | Revision Number | Configuration |
|--------|-------------------------|-----------------|---------------|
|        | AFM.PRO.NOP.ANOR.1.6.01 | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.1.1.1     | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.1.2.1     | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.1.3.1     | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.1.3.2     | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.1.3.3     | 1.1             | ALL           |
|        | AFM.PRO.SPO.1.1.4.1     | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.2.1.01    | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.2.2.01    | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.2.3.1     | 0.1             | ALL           |
|        | AFM.PRO.SPO.1.2.3.2     | 0.2             | ALL           |
|        | AFM.PRO.SPO.1.2.3.3     | 1.1             | ALL           |
| R      | AFM.PRO.SPO.1.2.4.01    | 1.0             | ALL           |
|        | AFM.PRO.SPO.2.1.1       | 0.1             | ALL           |
|        | AFM.PRO.SPO.3.1.1       | 1.0             | ALL           |
|        | AFM.PRO.SPO.4.1.1       | 0.1             | ALL           |
|        | AFM.PRO.SPO.5.1.1       | 0.1             | ALL           |
|        | AFM.PRO.SPO.6.1         | 0.1             | ALL           |
|        | AFM.PRO.SPO.6.2         | 0.1             | ALL           |
|        | AFM.PRO.SPO.8.1.1       | 0.1             | ALL           |
|        | AFM.PRO.SPO.11.1.1      | 0.1             | ALL           |
|        | AFM.PRO.SPO.12.1.1      | 0.1             | ALL           |
| R      | AFM.PRO.SPO.13.1.1      | 2.18            | ALL           |
| N      | AFM.PRO.SPO.13.1.2      | 0.4             | ALL           |
| R      | AFM.PRO.SPO.13.1.3      | 4.4             | ALL           |
|        | AFM.PRO.SPO.13.1.4      | 1.2             | ALL           |
| R      | AFM.PRO.SPO.13.1.5      | 2.3             | ALL           |
| R      | AFM.PRO.SPO.13.2.1.1    | 2.1             | ALL           |
| R      | AFM.PRO.SPO.13.2.2.1    | 2.1             | ALL           |

| Status | Data Module                 | Revision Number | Configuration |
|--------|-----------------------------|-----------------|---------------|
|        | AFM.PRO.SPO.13.2.3.1        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.3.2        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.5.1        | 0.2             | ALL           |
|        | AFM.PRO.SPO.13.2.5.2        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.6.1        | 1.2             | ALL           |
|        | AFM.PRO.SPO.13.2.7.1        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.7.2        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.8.1        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.8.2        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.9.1        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.2.9.2        | 0.4             | ALL           |
| R      | AFM.PRO.SPO.13.3.1.1        | 2.1             | ALL           |
| R      | AFM.PRO.SPO.13.3.2.1        | 2.1             | ALL           |
|        | AFM.PRO.SPO.13.3.3.1.1      | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.3.4.1.1      | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.3.5.1.1      | 1.2             | ALL           |
|        | AFM.PRO.SPO.13.3.6.1        | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.3.7.1.1      | 1.1             | ALL           |
| R      | AFM.PRO.SPO.13.4.1.1        | 2.1             | ALL           |
| R      | AFM.PRO.SPO.13.4.2.1        | 2.1             | ALL           |
|        | AFM.PRO.SPO.13.4.3.1.1      | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.4.4.1.1      | 1.1             | ALL           |
|        | AFM.PRO.SPO.13.4.5.1.0<br>1 | 1.3             | ALL           |
|        | AFM.PRO.SPO.13.4.6.1        | 1.3             | ALL           |
|        | AFM.PRO.SPO.13.4.7.1.1      | 1.1             | ALL           |
|        | AFM.PRO.SPO.16.1.1          | 1.0             | ALL           |
|        | AFM.PRO.SPO.16.2.1.1        | 0.1             | ALL           |
|        | AFM.PRO.SPO.16.2.2.1        | 0.1             | ALL           |
|        | AFM.PRO.SPO.16.3.1          | 2.0             | ALL           |

| Status | Data Module  | Revision Number | Configuration |
|--------|--|-----------------|---------------|
|        | AFM.PRO.SPO.16.4.1   | 0.1             | ALL           |
|        | AFM.PRO.SPO.20.1.1   | 0.1             | ALL           |
|        | AFM.PRO.SPO.21.1.01  | 1.0             | 0706-0775     |
| MT     | AFM.PRO.SPO.21.2.1.1<br>Move From NORMAL PROCEDURES<br>Move To GENERAL INFORMATION | 0.1             | 0706-0775     |
| MT     | AFM.PRO.SPO.21.2.1.2<br>Move From NORMAL PROCEDURES<br>Move To GENERAL INFORMATION | 1.0             | 0706-0775     |
| MT     | AFM.PRO.SPO.21.2.1.3<br>Move From NORMAL PROCEDURES<br>Move To GENERAL INFORMATION | 3.0             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.2.1   | 1.2             | 0706-0775     |
| N      | AFM.PRO.SPO.21.2.2.2   | 3.4             | 0706-0775     |
| D      | AFM.PRO.SPO.21.2.2.2   | 2.1             | 0706-0775     |
| N      | AFM.PRO.SPO.21.2.2.3   | 0.4             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.2.4   | 0.1             | 0706-0775     |
| MF     | AFM.PRO.SPO.21.2.2.5<br>Move From NORMAL PROCEDURES<br>Move To GENERAL INFORMATION | 0.1             | 0706-0775     |
| MF     | AFM.PRO.SPO.21.2.2.6<br>Move From NORMAL PROCEDURES<br>Move To GENERAL INFORMATION | 1.0             | 0706-0775     |
| MF     | AFM.PRO.SPO.21.2.2.7<br>Move From NORMAL PROCEDURES<br>Move To GENERAL INFORMATION | 2.1             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.3.01  | 0.1             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.4.1.0<br>1  | 0.1             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.4.2.0<br>1  | 1.3             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.4.2.0<br>2  | 2.1             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.4.2.0<br>3  | 2.1             | 0706-0775     |
|        | AFM.PRO.SPO.21.2.4.2.0<br>4  | 2.1             | 0706-0775     |
|        | AFM.PRO.SPO.21.3.1.1   | 0.1             | 0706-0775     |

| Status | Data Module            | Revision Number | Configuration |
|--------|------------------------|-----------------|---------------|
|        | AFM.PRO.SPO.21.3.1.2   | 0.1             | 0706-0775     |
|        | AFM.PER.1.1.01         | 1.1             | ALL           |
|        | AFM.PER.1.2.01         | 0.1             | ALL           |
|        | AFM.PER.1.3.1.01       | 3.1             | ALL           |
|        | AFM.PER.1.3.2.02       | 2.1             | ALL           |
|        | AFM.PER.1.3.2.03       | 2.1             | ALL           |
|        | AFM.PER.1.3.3.01       | 0.1             | ALL           |
|        | AFM.PER.1.3.4.01       | 2.1             | ALL           |
|        | AFM.PER.1.3.4.02       | 2.2             | ALL           |
|        | AFM.PER.2.1.1          | 0.1             | ALL           |
|        | AFM.PER.2.1.2.1        | 1.1             | ALL           |
|        | AFM.PER.2.1.3.1        | 1.1             | ALL           |
|        | AFM.PER.2.1.4.1        | 1.1             | ALL           |
|        | AFM.PER.3.1.01         | 0.1             | ALL           |
|        | AFM.PER.3.2.1.1        | 2.1             | ALL           |
|        | AFM.PER.3.2.2.1        | 2.1             | ALL           |
|        | AFM.PER.3.3.1.1        | 0.1             | ALL           |
|        | AFM.PER.3.3.1.2        | 1.2             | ALL           |
|        | AFM.PER.3.3.2.1.1.1.1  | 0.1             | ALL           |
|        | AFM.PER.3.3.2.1.2.1    | 1.2             | ALL           |
|        | AFM.PER.3.3.2.2.1.1    | 1.2             | ALL           |
|        | AFM.PER.3.3.2.2.2.1    | 0.1             | ALL           |
|        | AFM.PER.3.3.2.3.1.1.04 | 1.1             | ALL           |
|        | AFM.PER.3.3.2.3.1.3.01 | 1.1             | ALL           |
|        | AFM.PER.3.3.2.3.2.1    | 0.9             | ALL           |
|        | AFM.PER.3.3.2.4.1.1.1  | 0.1             | ALL           |
|        | AFM.PER.3.3.2.4.2.1    | 0.4             | ALL           |
|        | AFM.PER.3.3.2.5.1.1    | 0.1             | ALL           |
|        | AFM.PER.3.3.2.6.1.1.05 | 0.1             | ALL           |
|        | AFM.PER.3.3.2.6.1.3.01 | 1.2             | ALL           |

| Status | Data Module            | Revision Number | Configuration |
|--------|------------------------|-----------------|---------------|
|        | AFM.PER.3.3.2.6.2.1    | 1.7             | ALL           |
|        | AFM.PER.3.3.2.7.1.1.01 | 0.1             | ALL           |
|        | AFM.PER.3.3.2.7.2.1    | 0.5             | ALL           |
|        | AFM.PER.3.3.2.8.1      | 0.1             | ALL           |
|        | AFM.PER.3.3.2.9.1.1.01 | 0.1             | ALL           |
|        | AFM.PER.3.3.2.9.1.3.01 | 1.7             | ALL           |
|        | AFM.PER.3.3.2.9.2.1    | 0.1             | ALL           |
|        | AFM.PER.3.3.2.10.1     | 0.1             | ALL           |
|        | AFM.PER.3.3.2.10.2     | 0.2             | ALL           |
|        | AFM.PER.3.3.2.11.1.01  | 3.0             | 0685-0706     |
|        | AFM.PER.3.3.2.11.1.01  | 4.0             | 0775          |
|        | AFM.PER.3.3.2.12.1.01  | 0.1             | ALL           |
|        | AFM.PER.3.3.2.13.1     | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.1   | 3.1             | ALL           |
|        | AFM.PER.3.3.2.14.1.2   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.3   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.4   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.5   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.6   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.7   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.8   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.1.9   | 0.2             | ALL           |
|        | AFM.PER.3.3.2.14.2.1   | 2.2             | ALL           |
|        | AFM.PER.3.3.2.14.2.2   | 1.3             | ALL           |
|        | AFM.PER.3.3.2.14.2.3   | 1.2             | ALL           |
|        | AFM.PER.3.4.1.01       | 0.1             | ALL           |
|        | AFM.PER.3.4.2.1        | 1.5             | ALL           |
|        | AFM.PER.4.1.01         | 0.1             | ALL           |
|        | AFM.PER.4.2.2.1.1      | 0.2             | ALL           |
|        | AFM.PER.4.2.2.2.1      | 0.1             | ALL           |



| Status | Data Module         | Revision Number | Configuration |
|--------|---------------------|-----------------|---------------|
| R      | AFM.PER.5.1.1       | 6.1             | 0685-0706     |
| R      | AFM.PER.5.1.1       | 5.1             | 0775          |
|        | AFM.PER.5.1.2       | 0.6             | ALL           |
|        | AFM.PER.5.1.3       | 0.5             | ALL           |
|        | AFM.PER.5.2.1.1.1.1 | 1.1             | ALL           |
|        | AFM.PER.5.2.1.2.1   | 1.5             | ALL           |
|        | AFM.PER.5.2.2.01    | 1.2             | ALL           |
|        | AFM.PER.5.2.3.1.1.1 | 7.0             | 0775          |
|        | AFM.PER.5.2.3.1.1.1 | 3.0             | 0685-0706     |
|        | AFM.PER.5.2.3.1.1.2 | 2.0             | 0685-0706     |
|        | AFM.PER.5.2.3.1.1.2 | 5.0             | 0775          |
|        | AFM.PER.5.2.3.1.2.1 | 1.0             | ALL           |
|        | AFM.PER.5.2.3.1.2.2 | 0.3             | ALL           |
|        | AFM.PER.5.2.3.2.1   | 1.1             | ALL           |
|        | AFM.PER.5.2.3.2.2   | 0.8             | ALL           |
|        | AFM.PER.5.2.4.1.2   | 1.2             | ALL           |
|        | AFM.PER.5.2.4.1.3   | 0.2             | ALL           |
|        | AFM.PER.5.2.4.2.1.1 | 1.2             | ALL           |
|        | AFM.PER.5.2.4.2.2.1 | 0.4             | ALL           |
|        | AFM.PER.5.2.4.2.2.2 | 0.1             | ALL           |
|        | AFM.PER.5.2.4.2.2.3 | 0.3             | ALL           |
|        | AFM.PER.5.2.4.2.2.4 | 0.1             | ALL           |
|        | AFM.PER.5.2.4.2.3.1 | 1.1             | ALL           |
|        | AFM.PER.5.2.4.2.3.2 | 0.4             | ALL           |
|        | AFM.PER.5.2.4.2.3.3 | 0.7             | ALL           |
|        | AFM.DEV.1.1.01      | 4.3             | ALL           |
|        | AFM.DEV.1.2.01      | 2.1             | ALL           |
|        | AFM.DEV.1.3.01      | 2.1             | ALL           |
|        | AFM.DEV.1.23.01     | 0.1             | ALL           |
|        | AFM.DEV.1.27.01     | 1.1             | ALL           |


| Status | Data Module       | Revision Number | Configuration |
|--------|-------------------|-----------------|---------------|
|        | AFM.DEV.1.27.02   | 1.1             | ALL           |
|        | AFM.DEV.1.32.01   | 3.1             | ALL           |
|        | AFM.DEV.1.32.02   | 3.1             | ALL           |
|        | AFM.DEV.1.32.03   | 2.1             | ALL           |
|        | AFM.DEV.1.32.04   | 2.2             | ALL           |
|        | AFM.DEV.1.32.05   | 0.1             | ALL           |
|        | AFM.DEV.1.32.06   | 0.2             | ALL           |
|        | AFM.DEV.1.52.1    | 0.1             | ALL           |
|        | AFM.DEV.1.52.2    | 0.1             | ALL           |
|        | AFM.DEV.1.52.3    | 0.5             | ALL           |
|        | AFM.DEV.1.52.4    | 1.1             | ALL           |
|        | AFM.DEV.1.52.5    | 0.1             | ALL           |
|        | AFM.DEV.1.52.6    | 0.1             | ALL           |
|        | AFM.DEV.1.52.7    | 1.1             | ALL           |
|        | AFM.DEV.1.52.8    | 0.1             | ALL           |
|        | AFM.DEV.1.53.1    | 0.2             | ALL           |
|        | AFM.DEV.1.55.1    | 2.1             | ALL           |
|        | AFM.DEV.1.61.01   | 1.1             | ALL           |
|        | AFM.DEV.1.79.01   | 1.3             | ALL           |
|        | AFM.DEV.2.1.1     | 2.4             | ALL           |
|        | AFM.DEV.2.1.2     | 0.1             | ALL           |
|        | AFM.DEV.2.2.01.1  | 0.6             | ALL           |
|        | AFM.DEV.2.2.01.2  | 0.1             | ALL           |
|        | AFM.DEV.2.2.01.3  | 0.1             | ALL           |
|        | AFM.DEV.2.2.01.4  | 3.1             | ALL           |
|        | AFM.DEV.2.3.01.01 | 4.0             | ALL           |
| R      | AFM.DEV.2.4.01.01 | 6.1             | 0685-0706     |
| R      | AFM.DEV.2.4.01.01 | 4.1             | 0775          |
|        | AFM.DEV.2.4.01.03 | 0.1             | ALL           |
|        | AFM.DEV.2.4.01.04 | 0.1             | ALL           |

| Status | Data Module        | Revision Number | Configuration |
|--------|--------------------|-----------------|---------------|
|        | AFM.DEV.2.4.01.05  | 0.1             | ALL           |
| R      | AFM.DEV.2.5.01.1   | 6.1             | 0685-0706     |
| R      | AFM.DEV.2.5.01.1   | 5.1             | 0775          |
|        | AFM.DEV.2.5.01.2   | 1.3             | ALL           |
| R      | AFM.DEV.2.6.01.1   | 3.1             | 0685-0706     |
| R      | AFM.DEV.2.6.01.1   | 4.1             | 0775          |
|        | AFM.DEV.2.6.01.2   | 1.1             | ALL           |
|        | AFM.DEV.2.6.01.3   | 0.2             | ALL           |
|        | AFM.DEV.2.7.01.1   | 2.2             | ALL           |
|        | AFM.DEV.2.7.01.2   | 0.1             | ALL           |
|        | AFM.DEV.2.7.01.3   | 0.1             | ALL           |
|        | AFM.DEV.2.7.01.4   | 1.1             | ALL           |
|        | AFM.DEV.2.8.01.1   | 0.7             | ALL           |
|        | AFM.DEV.2.8.01.2   | 0.1             | ALL           |
|        | AFM.DEV.2.8.01.3   | 0.1             | ALL           |
|        | AFM.DEV.2.8.01.4   | 0.1             | ALL           |
|        | AFM.DEV.2.8.01.5   | 0.1             | ALL           |
|        | AFM.DEV.2.10.01.1  | 3.2             | ALL           |
|        | AFM.DEV.2.10.01.2  | 0.1             | ALL           |
|        | AFM.DEV.2.10.01.3  | 1.1             | ALL           |
|        | AFM.DEV.2.10.01.4  | 0.1             | ALL           |
|        | AFM.DEV.2.10.01.5  | 1.1             | ALL           |
|        | AFM.DEV.2.10.01.6  | 1.0             | ALL           |
|        | AFM.DEV.2.10.01.7  | 1.0             | ALL           |
|        | AFM.DEV.2.10.01.8  | 1.0             | ALL           |
|        | AFM.DEV.2.10.01.9  | 1.0             | ALL           |
|        | AFM.DEV.2.10.01.10 | 1.0             | ALL           |
|        | AFM.DEV.2.10.01.11 | 1.0             | ALL           |
|        | AFM.DEV.2.11.1.1   | 2.1             | ALL           |
|        | AFM.DEV.2.12.01.1  | 1.4             | ALL           |

| Status | Data Module       | Revision Number | Configuration |
|--------|-------------------|-----------------|---------------|
|        | AFM.DEV.2.12.01.2 | 0.1             | ALL           |
|        | AFM.DEV.2.12.01.3 | 0.1             | ALL           |
|        | AFM.DEV.2.12.01.4 | 1.1             | ALL           |
|        | AFM.DEV.2.13.01.1 | 3.1             | ALL           |
|        | AFM.DEV.2.13.01.2 | 0.1             | ALL           |
|        | AFM.DEV.2.13.01.3 | 1.2             | ALL           |
|        | AFM.DEV.2.16.01.1 | 5.0             | 0685-0706     |
|        | AFM.DEV.2.16.01.1 | 4.0             | 0775          |
|        | AFM.APP.1.01      | 1.2             | ALL           |
| R      | AFM.APP.1.02      | 3.2             | ALL           |
|        | AFM.APP.1.03      | 0.2             | ALL           |
|        | AFM.APP.1.04      | 1.0             | ALL           |
|        | AFM.APP.1.05      | 2.0             | 0685;0775     |
|        | AFM.APP.1.05      | 1.0             | 0706          |

| Modification Number | Title   | Validity           |
|---------------------|---|--------------------|
| 00069               | AUTOFLIGHT - AFCS - USE A CAT II APPROVED AP/FD DOWN TO 50 FEET   | 0706 / 0775        |
| 01112               | AUTO FLIGHT - RETROFIT CAT.2 CAPABILITY TO A/C DELIVERED WITH CAT.1 CAPABILITY.                           | 0706 / 0775        |
| 01466               | NAVIGATION - REPLACE AHRS'S BY EQUIPMENT "-934"NAVIGATION   | 0685 / 0706 / 0775 |
| 01603               | ELECTRICAL POWER - T.R.U. - INSTALLATION ON FULL PROVISION  | 0685 / 0706 / 0775 |
| 02094               | FUSELAGE - REAR SECTION - REINFORCE STRINGERS 6 AND 13 ON SIDE PANELS                                     | 0685 / 0706 / 0775 |
| 02141               | WATER/WASTE - TOILET TANK - INSTALL DC MOTOR  | 0685 / 0706 / 0775 |
| 02171               | FLIGHT CONTROLS - PITCH TRIM - CHANGE WORDING OF ASYMETRY WARNING   | 0685 / 0706 / 0775 |
| 03037               | PNEUMATIC - ECS - MODIFY ISOLATING VALVE OPENING CONTROL IN TAXIING                                       | 0685 / 0706 / 0775 |
| 03168               | ATR 72 - AUTOMATIC FLIGHT - REPLACE AFC COMPUTER  | 0685 / 0706 / 0775 |
| 03522               | GENERAL - CERTIFY FOR 15KT TAILWIND TAKEOFF AND LANDING   | 0775               |
| 03530               | FLIGHT CONTROLS -ELEVATOR INSTALL CLUTCH RECONDITIONING DEVICE (PROD.SOLUTION)                            | 0685 / 0706 / 0775 |
| 03625               | NAVIGATION : INSTALL SFE TCAS COMPUTER.   | 0685 / 0706 / 0775 |
| 03832               | NAVIGATION : REPLACE COLLINS TCAS COMPUTER  | 0685 / 0706 / 0775 |
| 04111               | IGNITION - CHANGE "CONTINUOUS RELIGHT "TO " MANUAL IGNITION" ON AIRCRAFT EQUIPPED WITH AUTOMATIC RELIGHT. | 0685 / 0706 / 0775 |
| 04116               | ATR42-72 - HYDRAULIC POWER - RELOCATE GREEN PUMP CONTROL CIRCUIT BREAKER                                  | 0685 / 0706 / 0775 |
| 04366               | AUTOPILOT - MODIFY ELECTRICAL POWER SUPPLIES  | 0685 / 0706 / 0775 |
| 04371               | PROPELLERS 14SF-11E PROPELLER CONTROL - INSTALL ELECTRONIC REGULATION ON ATR 72.200.                      | 0685 / 0706 / 0775 |

| Modification Number | Title  | Validity           |
|---------------------|--|--------------------|
| 04373               | FLIGHT CONTROLS - AILERON AND TAB -INSTALL AILERONS FITTED WITH SPRING TABS WITH GUST LOCK   | 0685 / 0706 / 0775 |
| 04440               | STABILIZERS - REPLACE THE ACTUAL ALUMINIUM VERTICAL FIN BY A NEW ONE RFC NO IN CARBON EPOXY  | 0685 / 0706 / 0775 |
| 04457               | PROPELLERS - INSTALL 568F 6 BLADE PROPELLERS (WITH ELECTRONIC REGULATION)  | 0685 / 0706 / 0775 |
| 04584               | PNEUMATIC - AIR LEAK DETECTION SYSTEM - REPLACE SENSING ELEMENTS   | 0685 / 0706 / 0775 |
| 04651               | ENGINE - INSTALL PW 127F ENGINE  | 0685 / 0706 / 0775 |
| 04671               | GENERAL - INCREASE MTOW TO 22500 KGS & MZFW TO 20300 KGS   | 0685 / 0706 / 0775 |
| 04686               | FUEL - QUANTITY INDICATION - ADD LOW LEVEL DETECTION SYSTEM  | 0685 / 0706 / 0775 |
| 05016               | NAVIGATION - NEW RADAR PRIMUS P660   | 0685 / 0706 / 0775 |
| 05020               | NAVIGATION - INSTALL HT1000 ON GPS/GNSS BUS WIRING PROVISION   | 0685 / 0706 / 0775 |
| 05024               | FUSELAGE - WING TO FUSELAGE FAIRING - REPLACE SILICONE AERODYM. SEALS BY BRUSH SEALS   | 0685 / 0706 / 0775 |
| 05040               | LIGHTS - PAX COMPARTMENT EXTERIOR LIGHTING - REPLACE ESCAPE PATH MARKING SYSTEM.   | 0685 / 0706 / 0775 |
| 05146               | NAVIGATION - TCAS - INSTALL COLLINS TCAS TTR921.   | 0685 / 0706 / 0775 |
| 05176               | NAVIGATION - GNSS - LOAD SOFTWARE FINAL BASELINE.  | 0685 / 0706 / 0775 |
| 05205               | NAVIGATION - ATC/TCAS - ACQUIRE ALTITUDE VIA BUS ARINC 429   | 0685 / 0706 / 0775 |
| 05310               | NAVIGATION - EGPWS MKVIII - BASIC MODESACTIVATION AND PROVISION FOR ENHANCED NAVIGATION - EGPWS MKVIII - ACTIV.MODES BASIQUES & PROVISION ENHANCED | 0685 / 0706 / 0775 |

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| Modification Number | Title  | Validity           |
|---------------------|--|--------------------|
| 05311               | NAVIGATION - EGPWS MKVIII -EGPWS/HT1000 COUPLING                           | 0685 / 0706 / 0775 |
| 05313               | NAVIGATION - EGPWS MKVIII -ENHANCED PART ACTIVATION                        | 0685 / 0706 / 0775 |
| 05377               | EQUIPMENT/FURNISHINGS - WIRING FOR COCKPIT ENTRANCE SECURISED              | 0685 / 0706 / 0775 |
| 05434               | EQUIPMENT/FURNISHINGS - INSTALL DOOR ON ELECTRICAL PROVISION               | 0685 / 0706 / 0775 |
| 05465               | EQUIPMENT/FURNISHINGS - SECURIZED DOOR - REPLACE FITTINGS ON STRUCTURE     | 0706 / 0775        |
| 05467               | NAVIGATION - EGPWS - INSTALL EGPWS MKVIII P/N 965-1206-011                 | 0685 / 0706 / 0775 |
| 05555               | GENERAL - INCREASE MZFW AND MTOW BY 300 KGS ON 72-212A MODEL               | 0706               |
| 05567               | INDICATING/RECORDING SYSTEM - INSTALL AND ACTIVATE MPC                     | 0685 / 0706 / 0775 |
| 05570               | NAVIGATION - ACTIVATE ENHANCED SURVEILLANCE CAPABILITY                     | 0685 / 0706 / 0775 |
| 05768               | NAVIGATION - APPROVAL OF SINGLE GNSS FOR RNAV/GNSS RNP APPROACH (RNP APCH) | 0706 / 0775        |
| 06055               | LANDING GEAR - NEW MESSIER - BUGATTI BRAKES                                | 0775               |
| 08861               | SURVEILLANCE - UPGRADE SURVEILLANCE FOR ATR LEGACY (USAL)                  | 0775               |

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| FSN  | MSN  | Registration Number | Model   |
|------|------|---------------------|---------|
| 0051 | 0706 | 9S-ABD              | 72-212A |
| 0052 | 0685 | 9S-AAD              | 72-212A |
| 0053 | 0775 | 9S-AIB              | 72-212A |

***ATR***

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**AFM**

**CRT**

**Cross Reference Table**

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| <b>BU / 75</b>    | <b>TOC</b>              |           |
| <b>AFM</b>        | <b>Table of Content</b> | Page n°01 |

## GENERAL INFORMATION

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| .                          | Customized AFM.....                    | <a href="#">page 03</a> |
| .                          | AFM Revisions.....                     | <a href="#">page 03</a> |
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| <b>MANUAL ORGANIZATION</b> |  | <b>GEN.2</b>            |
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## 1 Introduction

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APPROVED

This Airplane Flight Manual (AFM) is a reference document approved by EASA and published by ATR.

It is not established as an operational document to be used directly by the crew in flight. Operational Manuals for in-flight use by the flight crew must include appropriate AFM contents as required by the National Regulations.

AFM is specific to a given certified aircraft model, which is specified in the Heading section.

ATR 72-500 is the commercial designation of the ATR 72-212A aircraft model.

## 2 Customized AFM

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The operator's customized AFM content is extracted from the approved aircraft model envelope, reflecting the specific configuration of an aircraft/ fleet for the concerned operator/ owner.

ATR provides a manual which reflects the aircraft configuration at delivery, and the subsequent revisions to reflect configuration changes as a result of application of ATR approved modifications.

Operators/owners are responsible to inform ATR without delay, the effective changes to the aircraft configuration after delivery through ATR Service Bulletin (SB), in order to received updates/revisions.

ATR will not provide revisions/updates, and thus will not assume the responsibility of any effect on the AFM:

- Due to modifications installed by third parties without an ATR SB, and/or
- Due to modifications installed through an ATR SB, if ATR is not informed of the SB embodiment.

## 3 AFM Revisions


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For each revision, a new List of Effective Data Module (LEDM) is issued. The LEDM shows the issue date of the revision, the container code and the aircraft configuration. In addition, the individual effectivity per MSN is stated for each mentioned DM.

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|---|--|------------------------|
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## 1 AFM Chapters

|                                      |          |
|--------------------------------------|----------|
| 51422fbf-1b55-4155-b81f-687230865c02 | 1.2      |
|                                      | ALL      |
|                                      | APPROVED |

The AFM contents are divided as the following:

- GEN: General Information
- LIM: Limitations
- PRO: Procedures are divided into 4 parts:
  - o GEN: General Information
  - o NNO: Abnormal and Emergency Procedures
  - o NOP: Normal Operations Procedures
  - o SPO: Special Operations
- PER: Performances
- DEV: Deviation Guide
- APP: Appendices
- SUP: Supplements.

The preliminary pages provide update status, approval references, List of Effective Data Modules (LEDM) & List of MODs (LOM).

The Abnormal and Emergency Procedures are organized by aircraft system following the ATA numbering system, as much as practical, (21. Air Conditioning, 22. Auto Pilot, 23 Communication, etc...). To easily locate a procedure, within a subchapter (i.e 21. Air Conditioning) the procedures are presented in alphabetical order.

The Deviation Guide chapter includes the Configuration Deviation List (CDL) and dispatch supplements.

The Appendices chapter includes certified external noise and appendices related to corporate configurations.

The Supplements chapter contains information to cover specific regulatory difference for some foreign national authorities.

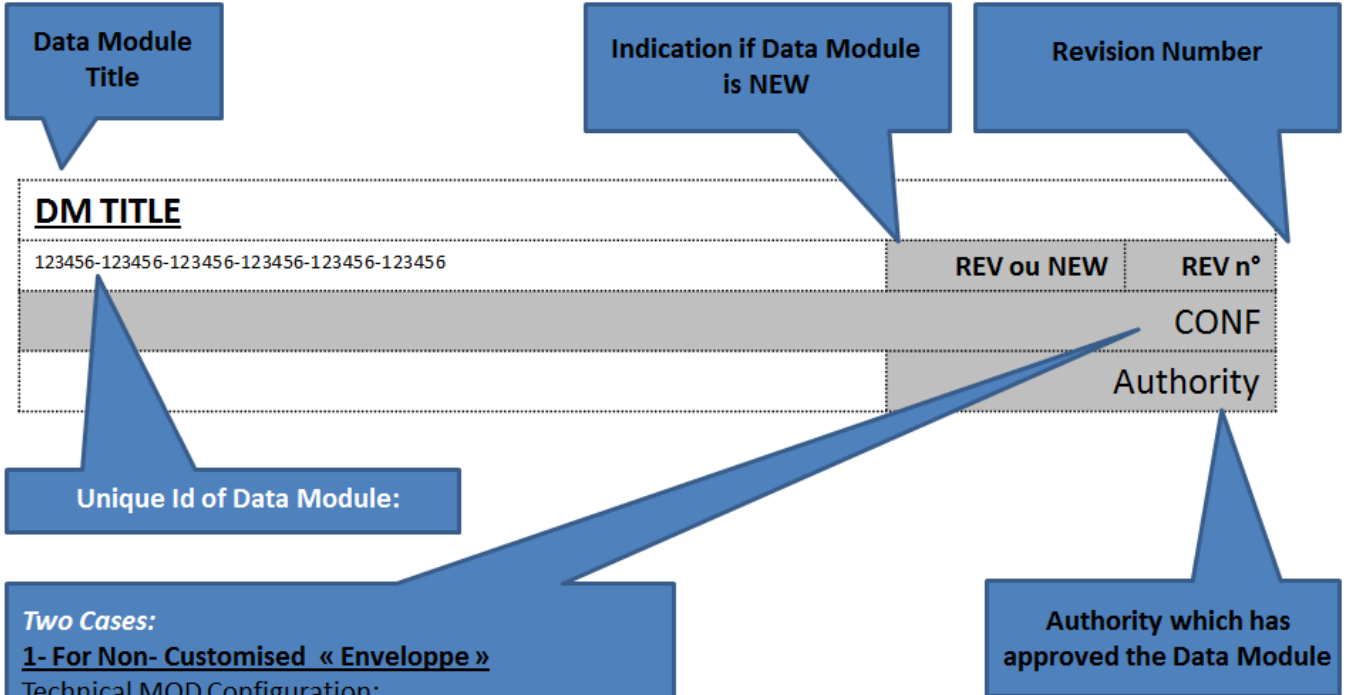
## 2 Contents Identification


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| 15de2ecb-a247-42ee-a2cf-ed97b7cdc998 | 1.2      |
|                                      | ALL      |
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The contents are managed in Data Module (DM).

Each DM strip is tagged with unique DM Id and provides information related to the DM such as: revision number, approval authority, aircraft effectivity (or technical configuration (Modification Number) in case of envelop/non customized AFM edition).

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|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>GENERAL INFORMATION</b><br><br><b>EXPLANATIONS</b> | GEN.3<br><br>Page n°06 |
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## 1 Definition

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|--------------------------------------|-------------------------------|

The following definitions of Warning, Caution, Note are extracted from, CS-25 (Chapter AMC 25.1581, paragraph 3-e) and adapted to ATR flight operational documentation as applicable.

When a Warning, Caution, or Note is applied to a flight crew procedure, the Warning, Caution, or Note may be followed by flight crew action “CHALLENGE..... RESPONSE” as shown below:

### Note

#### Note

- Any procedure or technique, etc... considered essential to emphasize.
- Used as advisory information or as a reference.

### Caution

#### CAUTION

- An operating procedure, technique, etc... that may result in damage to equipment if not carefully followed.
- Used when possible corrective action is needed.

▶ CHALLENGE ..... RESPONSE

### Warning

#### WARNING


- ANY PROCEDURE OR TECHNIQUE, ETC... THAT MAY RESULT IN INJURY OR LOSS OF LIFE IF NOT CAREFULLY FOLLOWED.
- USED FOR AN IMMEDIATE CORRECTIVE ACTION

▶ CHALLENGE ..... RESPONSE

#### ▶ LAND ASAP

Land as soon as possible at the nearest airport where a safe landing can be made. This information is applicable to a time-critical situation.



|   |   |                               |
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## 2 Unit Conversion

|                                      |                        |
|--------------------------------------|------------------------|
| eb870c8f-697a-4127-a562-7d29d17261cc | 1.1<br>ALL<br>APPROVED |
|--------------------------------------|------------------------|

|                              |                                     |                                    |
|------------------------------|-------------------------------------|------------------------------------|
| Weight                       | 1 kg = 2.2046 lb                    | 1 lb = 0.4536 kg                   |
| Length – Altitude – Distance | 1 m = 3.2808 ft<br>1 m = 39.3701 in | 1 ft = 0.3048 m<br>1 in = 0.0254 m |
| Pressure                     | 1 hPa = 0.0145 psi                  | 1 psi = 69 hPa                     |
| Temperature                  | 1 °C = (1 °F - 32) x .555           | 1 °F = 1 °C x 1.8 + 32             |


## 3 Glossary of Standard Nomenclature

|                                      |             |
|--------------------------------------|-------------|
| 3473513c-92bc-4e37-ac7d-074a852a0df7 | 13.2<br>ALL |
|--------------------------------------|-------------|

### A

|                      |  |
|----------------------|--|
| <b>AAS</b> .....     | Anti-icing Advisory System                             |
| <b>ABN</b> .....     | Abnormal   |
| <b>ABV</b> .....     | Above  |
| <b>A/C</b> .....     | Aircraft   |
| <b>AC</b> .....      | Alternating Current                                    |
| <b>ACARS</b> .....   | Aircraft Communication Addressing and Reporting System |
| <b>ACAS</b> .....    | Airborne Collision Avoidance System                    |
| <b>AC BTC</b> .....  | AC Bus Tie Contactor                                   |
| <b>AC BTR</b> .....  | AC Bus Tie Relay                                       |
| <b>ACCU</b> .....    | Accumulator  |
| <b>AC EBTC</b> ..... | AC Emer Bus Transfer Contactor                         |
| <b>ACM</b> .....     | Air Cycle Machine                                      |
| <b>ACP</b> .....     | Audio Control Panel                                    |
| <b>ACS</b> .....     | Air Conditioning System                                |
| <b>ACW</b> .....     | Alternating Current Wild Frequency                     |
| <b>ADC</b> .....     | Air Data Computer                                      |
| <b>ADF</b> .....     | Automatic Direction Finding                            |
| <b>ADI</b> .....     | Attitude Director Indicator                            |
| <b>ADN</b> .....     | Avionic Data Network                                   |


cont'd... >>>

|   |   |                               |
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*cont'd... >>>*

|                      |  |
|----------------------|--|
| <b>ADS</b> .....     | Air Data System                              |
| <b>ADS-B</b> .....   | Automatic Dependent Surveillance - Broadcast |
| <b>ADU</b> .....     | Advisory Display Unit                        |
| <b>AFCS</b> .....    | Automatic Flight Control System              |
| <b>AFDX</b> .....    | Avionic Full Duplex                          |
| <b>A/FEATH</b> ..... | Auto Feathering                              |
| <b>AFM</b> .....     | Airplane Flight Manual                       |
| <b>AFR</b> .....     | Airframe                                     |
| <b>AFU</b> .....     | Auto Feather Unit                            |
| <b>AGB</b> .....     | Accessory Gear Box                           |
| <b>AGL</b> .....     | Above Ground Level                           |
| <b>AH</b> .....      | Ampere - Hours                               |
| <b>AHRS</b> .....    | Attitude and Heading Reference System        |
| <b>AHRU</b> .....    | Attitude and Heading Reference Unit          |
| <b>AIDS</b> .....    | Aircraft Integrated Data System              |
| <b>AIL</b> .....     | Aileron                                      |
| <b>ALT</b> .....     | Altitude                                     |
| <b>ALTM</b> .....    | Altimeter                                    |
| <b>ALTN</b> .....    | Alternate                                    |
| <b>ANN</b> .....     | Annunciator                                  |
| <b>AOA</b> .....     | Angle of attack                              |
| <b>AP</b> .....      | Auto-Pilot                                   |
| <b>APC</b> .....     | Active Phase Control                         |
| <b>APM</b> .....     | Aircraft Performance Monitoring              |
| <b>APP</b> .....     | Approach                                     |
| <b>APS</b> .....     | Ambient Pressure Sensor                      |
| <b>ARINC</b> .....   | Aeronautical Radio Incorporated              |
| <b>ARM</b> .....     | Armed  |
| <b>A/S</b> .....     | Antiskid                                     |
| <b>ASAP</b> .....    | As Soon As Possible                          |
| <b>ASCB</b> .....    | Avionics Standard Communication Bus          |
| <b>ASD</b> .....     | Accelerate Stop Distance                     |
| <b>ASI</b> .....     | Air Speed Indicator                          |
| <b>ASTR</b> .....    | AC Stand by Bus Transfer Relay               |

*cont'd... >>>*

|   |   |                        |
|---|---|------------------------|
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*cont'd... >>>*

|                    |   |
|--------------------|---|
| <b>ASYM</b> .....  | Asymmetry                               |
| <b>ATC</b> .....   | Air Traffic Control                     |
| <b>ATE</b> .....   | Automatic Test Equipment                |
| <b>ATPCS</b> ..... | Automatic Take off Power Control System |
| <b>ATT</b> .....   | Attitude                                |
| <b>ATTND</b> ..... | Attendant                               |
| <b>AUTO</b> .....  | Automatic                               |
| <b>AUX</b> .....   | Auxiliary                               |
| <b>AVAIL</b> ..... | Available                               |
| <b>AZ</b> .....    | Azimuth                                 |
| <b>AZWF</b> .....  | Actual Zero Fuel Weight                 |

## B

|                   |                                 |
|-------------------|---------------------------------|
| <b>BARO</b> ..... | Barometric                      |
| <b>BAT</b> .....  | Battery                         |
| <b>BC</b> .....   | Back Course                     |
| <b>BITE</b> ..... | Built in Test Equipment         |
| <b>BLW</b> .....  | Below                           |
| <b>BPCU</b> ..... | Bus Power Control Unit          |
| <b>BPU</b> .....  | Battery Protection Unit         |
| <b>BRG</b> .....  | Bearing                         |
| <b>BRK</b> .....  | Brake                           |
| <b>BSPS</b> ..... | Bleed Switching Pressure Sensor |
| <b>BSC</b> .....  | Battery Start Contactor         |
| <b>BTC</b> .....  | Bus Tie Contactor               |
| <b>BTR</b> .....  | Bus Tie Relay                   |
| <b>BXR</b> .....  | Battery Transfer Relay          |

## C

|                  |                        |
|------------------|------------------------|
| <b>CAB</b> ..... | Cabin                  |
| <b>CAC</b> ..... | Crew Alerting Computer |

*cont'd... >>>*



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cont'd... >>>

|             |   |
|-------------|---|
| CAN.....    | Controller Area Network                 |
| CAP.....    | Crew Alerting Panel                     |
| CAPT.....   | Captain                                 |
| CAS.....    | Calibrated Airspeed                     |
| CAT.....    | Category                                |
| C/B.....    | Circuit Breaker                         |
| CBV.....    | Cross Bleed Valve                       |
| CCAS.....   | Centralized Crew Alerting System        |
| CCW.....    | Counter clockwise                       |
| CD.....     | Coefficient of Drag                     |
| CDI.....    | Course Deviation Indicator              |
| CDL.....    | Configuration Deviation List            |
| CDLS.....   | Cockpit Door Locking System             |
| CDS.....    | Cockpit Display System                  |
| CDTS.....   | Compressor Discharge Temperature Sensor |
| CDU.....    | Cabin Display Unit                      |
| CFC.....    | Constant Frequency Contactor            |
| CFR.....    | Code of Federal Regulations             |
| CG.....     | Center of Gravity                       |
| CHAN.....   | Channel                                 |
| CHC.....    | Charge Contactor                        |
| CHG.....    | Charge                                  |
| C/L.....    | Check List                              |
| CL.....     | Condition Lever or Coefficient of Lift  |
| CLA.....    | Condition Lever Angle                   |
| CLB.....    | Climb                                   |
| CLR.....    | Clear                                   |
| CM.....     | Crew Member                             |
| CNTNR.....  | Container                               |
| CNTR.....   | Contacting                              |
| CNTRS.....  | Contrast                                |
| COM.....    | Communication                           |
| COMPT.....  | Compartment                             |
| COMPTR..... | Computer                                |

cont'd... >>>

|   |   |                               |
|---|---|-------------------------------|
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*cont'd... >>>*

|                      |                               |
|----------------------|-------------------------------|
| <b>CONFIG</b> .....  | Configuration                 |
| <b>CONT</b> .....    | Continuous                    |
| <b>CORRECT</b> ..... | Correction                    |
| <b>CPA</b> .....     | Closest Point of Approach     |
| <b>CPCS</b> .....    | Cabin Pressure Control System |
| <b>CPL</b> .....     | Auto Pilot Coupling           |
| <b>CPM</b> .....     | Core Processing Module        |
| <b>CRC</b> .....     | Continuous Repetitive Chime   |
| <b>CRG</b> .....     | Cargo                         |
| <b>CRS</b> .....     | Course                        |
| <b>CRT</b> .....     | Cathode Ray Tube              |
| <b>CRZ</b> .....     | Cruise                        |
| <b>CTL</b> .....     | Control                       |
| <b>CVR</b> .....     | Cockpit Voice Recorder        |
| <b>CW</b> .....      | Clockwise                     |

## D

|                      |   |
|----------------------|---|
| <b>DADC</b> .....    | Digital Air Data Computer               |
| <b>DADS</b> .....    | Digital Air Data System                 |
| <b>DC</b> .....      | Direct Current                          |
| <b>DCA</b> .....     | Data Concentration Application          |
| <b>DEC</b> .....     | Decrease                                |
| <b>DELTA P</b> ..... | Differential Pressure                   |
| <b>DEV</b> .....     | Deviation                               |
| <b>DFDR</b> .....    | Digital Flight Data Recorder            |
| <b>DGAC</b> .....    | Direction Générale de l'Aviation Civile |
| <b>DGR</b> .....     | Degraded                                |
| <b>DH</b> .....      | Decision Height                         |
| <b>DIFF</b> .....    | Differential                            |
| <b>DIM</b> .....     | Light Dimmer                            |
| <b>DISC</b> .....    | Disconnect                              |
| <b>DISCH</b> .....   | Discharge                               |

*cont'd... >>>*


*cont'd... >>>*

|           |                              |
|-----------|------------------------------|
| DIST..... | Distance                     |
| DLK.....  | Datalink                     |
| DM.....   | Data Module                  |
| DME.....  | Distance Measuring Equipment |
| DN.....   | Down                         |
| DSPL..... | Display                      |
| DU.....   | Display Unit                 |

## E

|            |   |
|------------|---|
| EADI.....  | Electronic Attitude Director Indicator    |
| EASA.....  | European Aviation Safety Agency           |
| EBCC.....  | Emergency Battery Charge Contactor        |
| EBTC.....  | Emer Bus Transfer Contactor               |
| ECL.....   | Electronic Checklist                      |
| ECS.....   | Environmental Control System              |
| ECU.....   | Electronic Control Unit                   |
| E/E.....   | Electrical/Electronic                     |
| EEC.....   | Electronic Engine Control                 |
| EFB.....   | Electronic Flight Bag                     |
| EFCP.....  | EFIS Control Panel                        |
| EFIS.....  | Electronic Flight Instrument System       |
| EFOB.....  | Estimated Fuel On Board                   |
| EFVS.....  | Enhanced Flight Vision System             |
| EGHR.....  | External Ground Handling Relay            |
| EGPWS..... | Enhanced Ground Proximity Warning System  |
| EHSI.....  | Electronic Horizontal Situation Indicator |
| EHV.....   | Electro Hydraulic Valve                   |
| ELEC.....  | Electrical                                |
| ELEV.....  | Elevator                                  |
| ELV.....   | Elevation                                 |
| EMER.....  | Emergency                                 |
| ENG.....   | Engine                                    |

*cont'd... >>>*

|   |   |                        |
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|                     |  |
|---------------------|--|
| <b>EPC</b> .....    | External Power Contactor                                   |
| <b>EPE</b> .....    | Estimated Position Error                                   |
| <b>EQPT</b> .....   | Equipment  |
| <b>ERACKV</b> ..... | Emergency Ram Air Check Valve                              |
| <b>ERAV</b> .....   | Emergency Ram Air Valve                                    |
| <b>ERIU</b> .....   | Engine Rating Interface Unit                               |
| <b>ERP</b> .....    | Eye Reference Point  |
| <b>ESS</b> .....    | Essential  |
| <b>ET</b> .....     | Elapsed Time   |
| <b>ETOPS</b> .....  | Extended-range Twin Engine Operations Performance Standard |
| <b>EVS</b> .....    | Enhanced Vision Sensor                                     |
| <b>EWD</b> .....    | Engine and Warning Display                                 |
| <b>EXC</b> .....    | External Power/Service Bus Contactor                       |
| <b>EXH</b> .....    | Exhaust  |
| <b>EXT</b> .....    | External   |

## **F**

|                    |                                   |
|--------------------|-----------------------------------|
| <b>FAA</b> .....   | Federal Aviation Administration   |
| <b>FAF</b> .....   | Final Approach Fix                |
| <b>FAIL</b> .....  | Failed, Failure                   |
| <b>FAR</b> .....   | Federal Aviation Regulations      |
| <b>FCOC</b> .....  | Fuel Cooled Oil Cooler            |
| <b>FCOM</b> .....  | Flight Crew Operating Manual      |
| <b>FCU</b> .....   | Fuel Control Unit                 |
| <b>FCV</b> .....   | Flow control Valve                |
| <b>FD</b> .....    | Flight Director                   |
| <b>FDA</b> .....   | Flight Display Application        |
| <b>FDAU</b> .....  | Flight Data Acquisition Unit      |
| <b>FDEP</b> .....  | Flight Data Entry Panel           |
| <b>FEATH</b> ..... | Feathered                         |
| <b>FF</b> .....    | Fuel Flow                         |
| <b>FGCP</b> .....  | Flight Guidance and Control Panel |

*cont'd... >>>*



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cont'd... >>>

FGS..... Flight Guidance System

FI..... Flight Idle

FL..... Flight Level

FLT..... Flight

FMA..... Flight Mode Annunciators

FMS..... Flight Management System

F/O..... First Officer

FOB..... Fuel On Board

FODU..... Feeder Overheat detection Unit

FOS..... Flight Operations Software

FOV..... Field of View

FPA..... Flight Path Angle

FPLN..... Flight Plan

FPV..... Flight Path Vector

FQI..... Fuel Quantity Indication

FSN..... Fleet Serial Number

FSV..... Flow Sensor Venturi

FTO..... Final Take Off

FTR..... Feather

FU..... Fuel Used

FWA..... Flight Warning Application

FWD..... Forward

FWS..... Flight Warning System

**G**

GA..... Go Around

GAL..... Galley

GC..... Generator Contactor

GCR..... Ground Clutter Reduction


GCU..... Generator Control Unit

GDM..... Group of Data Module

GEN..... Generator

cont'd... >>>



|   |   |                        |
|---|---|------------------------|
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**GI**..... Ground Idle  
**GMT**.....Greenwich Mean Time  
**GND**..... Ground  
**GNSS**..... Global Navigation Satellite System  
**GPS**..... Global Positioning System  
**GPU**..... Ground Power Unit  
**GPWS**.....Ground Proximity Warning System  
**G/S**..... Glide Slope  
**GS**..... Ground Speed  
**GXS**..... ACW Generator/Service Bus Contactor

**H**

**HBOV**..... Handling Bleed Overboard Valve  
**HBV**.....Handling Bleed Valve  
**HD**..... Head Down  
**HDG**.....Heading  
**HDLG**..... Handling  
**HEBTC**.....Hot Emer Battery Transfer Contactor  
**HF**.....High Frequency  
**HFOM**..... Horizontal Figure Of Merit  
**HI**..... High  
**HLD**.....Hold  
**HMBTC**..... Hot Main Battery Transfer Contactor  
**HMD**..... Head Mounted Display  
**HMU**..... Hydromechanical Unit  
**HOBV**..... Handling Overboard Valve  
**HP**..... High Pressure  
**HPV**..... High Pressure Valve  
**HSI**..... Horizontal Situation Indicator  
**HTG**..... Heating  
**HU**.....Head Up  
**HYD**..... Hydraulic

*cont'd... >>>*



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*cont'd... >>>*

**I**

|            |   |
|------------|---|
| IAF.....   | Initial Approach Fix                      |
| IAS.....   | Indicated Air Speed                       |
| IASC.....  | Integrated Air System Control             |
| ICAO.....  | International Civil Aviation Organisation |
| ICP.....   | Index Control Panel                       |
| IDT.....   | Ident                                     |
| IEP.....   | Ice Evidence Probe                        |
| IESI.....  | Integrated Electronic Standby Instrument  |
| I.F.....   | Intermediate Frequency                    |
| IFR.....   | Instrument Flight Rules                   |
| IGN.....   | Ignition                                  |
| ILS.....   | Instrument Landing System                 |
| IMC.....   | Instrumental Meteorological Conditions    |
| IMU.....   | Inertial Measurement Unit                 |
| IN.....    | Inertial Navigation                       |
| INC.....   | Increase                                  |
| IND.....   | Indicator                                 |
| IN/HG..... | Inches of Mercury                         |
| INHIB..... | Inhibit                                   |
| INOP.....  | Inoperative                               |
| INS.....   | Inertial Navigation System                |
| INST.....  | Instrument                                |
| INT.....   | Interphone                                |
| INU.....   | Inertial Navigation Unit                  |
| INV.....   | Inverter                                  |
| IOM.....   | Input Output Module                       |
| IPD.....   | Inter-Pupillary Distance                  |
| IRS.....   | Inertial Reference System                 |
| ISA.....   | International Standard Atmosphere         |
| ISOL.....  | Isolation                                 |
| ISV.....   | Isolation Shut-off Valve                  |
| ITT.....   | Inter Turbine Temperature                 |

*cont'd... >>>*

|   |   |                               |
|---|---|-------------------------------|
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cont'd... >>>

**J**

**JAA**..... Joint Aviation Authorities  
**JAR**..... Joint Aviation Requirements  
**JIC**..... Job Instruction Card

**L**

**LAT**..... Lateral  
**LAV**..... Lavatory  
**LBA**..... Lowest Blade Angle  
**LDG**..... Landing  
**LEDM**..... List of Effective Data Module  
**L/G**..... Landing Gear  
**LH**..... Left Hand  
**LIM**..... Limitation  
**LMG**..... Left Main Gear  
**LMU**..... Light Managing Unit  
**LNAV**..... Lateral Navigation  
**LO**..... Low  
**LOC**..... Localizer  
**LOM**..... List of MODs  
**LOS**..... Line Of Sight  
**LP**..... Low Pressure  
**LRU**..... Line Replaceable Unit  
**LT**..... Light  
**LVL**..... Level

**M**

**MAC**..... Mean Aerodynamic Chord  
**MAN**..... Manual  
**MAP**..... Ground Mapping

cont'd... >>>



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*cont'd... >>>*

|              |       |                                     |
|--------------|-------|-------------------------------------|
| <b>MAX</b>   | ..... | Maximum                             |
| <b>MBCC</b>  | ..... | Main Battery Charge Contactor       |
| <b>MBTC</b>  | ..... | Main Bus Transfer Contactor         |
| <b>MC</b>    | ..... | Master Caution                      |
| <b>MCDU</b>  | ..... | Multi Function Control Display Unit |
| <b>MCP</b>   | ..... | Multi Function Control Panel        |
| <b>MCT</b>   | ..... | Maxi Continuous Thrust              |
| <b>MDA</b>   | ..... | Minimum Descent Altitude            |
| <b>MEA</b>   | ..... | Minimum en route Altitude           |
| <b>MECH</b>  | ..... | Mechanic                            |
| <b>MEL</b>   | ..... | Minimum Equipment List              |
| <b>MFC</b>   | ..... | Multi Function Computer             |
| <b>MFCU</b>  | ..... | Mechanical Fuel Control Unit        |
| <b>MFD</b>   | ..... | Multi Function Display              |
| <b>MFW</b>   | ..... | Minimum Flight Weight               |
| <b>MGT</b>   | ..... | Management                          |
| <b>MIC</b>   | ..... | Microphone                          |
| <b>MIN</b>   | ..... | Minimum                             |
| <b>MIP</b>   | ..... | Main Instruments Panel              |
| <b>MISC</b>  | ..... | Miscellaneous                       |
| <b>MIXTS</b> | ..... | Mix Temperature Sensor              |
| <b>MKR</b>   | ..... | Marker                              |
| <b>MLG</b>   | ..... | Main Landing Gear                   |
| <b>MLS</b>   | ..... | Microwave Landing System            |
| <b>MLW</b>   | ..... | Maximum Landing Weight              |
| <b>MMEL</b>  | ..... | Master Minimum Equipment List       |
| <b>MMO</b>   | ..... | Maximum Operating Mach              |
| <b>MMPU</b>  | ..... | Multi Media Player Unit             |
| <b>MOD</b>   | ..... | Modification                        |
| <b>MP</b>    | ..... | Maintenance Procedure               |
| <b>MPC</b>   | ..... | Multi Purpose Computer              |
| <b>MPU</b>   | ..... | Micro Processor Unit                |
| <b>MSA</b>   | ..... | Minimum Safe Altitude               |
| <b>MSG</b>   | ..... | Messages                            |

*cont'd... >>>*

|   |   |                        |
|---|---|------------------------|
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- MSIS**..... Minimum Severe Icing Speed
- MSN**..... Manufacturer Serial Number
- MTOW**..... Maximum Takeoff Weight
- MW**..... Master Warning
- MZFW**..... Maximum Zero Fuel Weight


**N**

- NAC**..... Nacelle
- NACA**..... National Advisory Committee for Aeronautics
- NAMS**..... New Air Management System
- NAV**..... Navigation
- ND**..... Navigation Display
- NDB**..... Non Directional Beacon or Navigation Database (GPS)
- NEG**..... Negative
- NG**..... Nose Gear
- NH**..... High Pressure Spool Rotation Speed
- NIL**..... Nothing, No Object
- NL**..... Low Pressure Spool Rotation Speed
- NLG**..... Nose Landing Gear
- NM**..... Nautical Mile
- NORM**..... Normal
- NOTAM**..... Notice To Airmen
- NP**..... Propeller Rotation Speed
- NPU**..... Navigation Processor Unit
- NUC**..... Non Uniformity Correction
- NVM**..... Non Volatile Memory
- N/W**..... Nose Wheel
- NWS**..... Nose Wheel Steering

**O**

- OAT**..... Outside Air Temperature

*cont'd... >>>*

|   |   |                               |
|---|---|-------------------------------|
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|                       |                              |
|-----------------------|------------------------------|
| <b>OBS</b> .....      | Omni Bearing Selector        |
| <b>OSD</b> .....      | Operational Suitability Data |
| <b>OT</b> .....       | Other Traffic                |
| <b>OTF</b> .....      | Optical tracker Fixed unit   |
| <b>OUTB</b> .....     | Outboard                     |
| <b>OVBD</b> .....     | Overboard                    |
| <b>OVERTEMP</b> ..... | Overtemperature              |
| <b>OVHD</b> .....     | Overhead                     |
| <b>OVHP</b> .....     | OverHead Panel               |
| <b>OVHT</b> .....     | Overheat                     |
| <b>OVLY</b> .....     | Overlay                      |
| <b>OVRD</b> .....     | Override                     |
| <b>OVSPD</b> .....    | Overspeed                    |
| <b>OXY</b> .....      | Oxygen                       |

**P**

|                    |  |
|--------------------|--|
| <b>PA</b> .....    | Passenger Address                        |
| <b>PAX</b> .....   | Passenger                                |
| <b>PBE</b> .....   | Protective Breathing Equipment           |
| <b>PBN</b> .....   | Performance Based Navigation             |
| <b>PCU</b> .....   | Propeller Control Unit                   |
| <b>PDPS</b> .....  | Pack Discharge Pressure Sensor           |
| <b>PDTS</b> .....  | Pack Discharge Temperature Sensor        |
| <b>PEBMV</b> ..... | Parking/Emergency Braking Metering Valve |
| <b>PEC</b> .....   | Propeller Electronic Control             |
| <b>PF</b> .....    | Pilot Flying                             |
| <b>PFD</b> .....   | Primary Flight Display                   |
| <b>PFTS</b> .....  | Power Feeder Thermal Sensor              |
| <b>PIPS</b> .....  | Pressure Inlet Pressure Sensor           |
| <b>PITS</b> .....  | Pack Inlet Temperature Sensor            |
| <b>PIU</b> .....   | Propeller Interface Unit                 |
| <b>PL</b> .....    | Power Lever                              |

*cont'd... >>>*

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>GENERAL INFORMATION</b><br><br><b>EXPLANATIONS</b> | GEN.3<br><br>Page n°21 |
|---|---|------------------------|


*cont'd... >>>*

|                      |                                      |
|----------------------|--------------------------------------|
| <b>PLA</b> .....     | Power Lever Angle                    |
| <b>PM</b> .....      | Pilot Monitoring                     |
| <b>PNL</b> .....     | Panel                                |
| <b>POS</b> .....     | Position                             |
| <b>PR</b> .....      | Pressure                             |
| <b>PRESS</b> .....   | Pressurization                       |
| <b>PRIM</b> .....    | Primary                              |
| <b>PRKG</b> .....    | Parking                              |
| <b>PROC</b> .....    | Procedure                            |
| <b>PROP</b> .....    | Propeller                            |
| <b>PROX SW</b> ..... | Proximity Switch                     |
| <b>PRSOV</b> .....   | Pressure Regulating & Shut Off Valve |
| <b>PRV</b> .....     | Pressure Regulating Valve            |
| <b>PSEU</b> .....    | Proximity Switch Electronic Unit     |
| <b>PSI</b> .....     | Pound per Square Inch                |
| <b>PSU</b> .....     | Passenger Service Unit               |
| <b>PSV</b> .....     | Propeller Servo Valve                |
| <b>PT</b> .....      | Point                                |
| <b>PT</b> .....      | Proximity traffic TCAS               |
| <b>PTB</b> .....     | Power Trim Box                       |
| <b>PTS</b> .....     | Pack Temperature Sensor Channels     |
| <b>PTT</b> .....     | Push to talk, Push to test           |
| <b>PTW</b> .....     | Pitch Thumb Wheel                    |
| <b>PVCU</b> .....    | Power and Video Control Unit         |
| <b>PVM</b> .....     | Propeller Valve Module               |
| <b>PWM</b> .....     | Pulse Width Modulation               |
| <b>PWR</b> .....     | Power                                |

**Q**

|                  |                          |
|------------------|--------------------------|
| <b>QAR</b> ..... | Quick Access Recorder    |
| <b>QRC</b> ..... | Quick Release Control    |
| <b>QRH</b> ..... | Quick Reference Handbook |

*cont'd... >>>*

|   |   |                               |
|---|---|-------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>GENERAL INFORMATION</b><br><br><b>EXPLANATIONS</b> | <b>GEN.3</b><br><br>Page n°22 |
|---|---|-------------------------------|

*cont'd... >>>*


QRT.....Quick Reference Table  
QT.....Quart  
QTY.....Quantity

**R**

RA.....Resolution Advisory TCAS or Radio Altimeter  
RAD/ALT.....Radio Altitude  
RAD/INT.....Radio/Interphone  
RAIM.....Receiver Autonomous Integrity Monitoring  
RARV.....Ram Air Regulating Valve  
RCAU.....Remote Control Audio Unit  
RCDR.....Recorder  
RCL.....Recall  
RCP.....Refuel Control Panel  
RCT.....Rain Echo Attenuation Compensation Technique  
RCU.....Releasable Centering Unit  
RECIRC.....Recirculation  
REV.....Reverse  
RGA.....Reserve Go-Around  
RGB.....Reduction Gear Box  
RH.....Right Hand  
RLY.....Relay  
RMA.....Radio Management Application  
RMG.....Right Main Gear  
RMI.....Radio Magnetic Indicator  
RMS.....Radio Management System  
RNAV.....Area Navigation  
RNP.....Required Navigation Performance  
RPM.....Revolution Per Minute  
RQD.....Required  
RQRD.....Required  
RTO.....Reserve Takeoff

*cont'd... >>>*



|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>GENERAL INFORMATION</b><br><br><b>EXPLANATIONS</b> | GEN.3<br><br>Page n°23 |
|---|---|------------------------|

*cont'd... >>>*

**RTOW**.....Regulatory Take-Off Weight  
**RUD**..... Rudder  
**RVDT**..... Rotary Variable Differential Transducer  
**RWS**..... Reactive Windshear  
**RWY**.....Runway

**S**

**SAT**..... Static Air Temperature  
**SB**..... Service Bulletin  
**SBAS**..... Satellite Based Augmentation System  
**SBTC**.....Stand By bus Transfer Contactor  
**SBY**..... Stand By  
**SC**..... Single Chime, Starter Contactor  
**SCU**.....Signal Conditioning Unit  
**SD**..... System Display  
**SDTC**.....Static Inverter Override Transfer Contactor  
**SEC**..... Secondary  
**SELCAL**..... Selective Calling  
**SFV**..... Safety Valve  
**SG**.....Symbol Generator  
**SGL**..... Single  
**SGU**..... Symbol Generator Unit  
**SHP**..... Shaft Horse Power  
**SID**..... Standard Instrument Departure  
**SMA**..... System Maintenance Advisory  
**SMK**.....Smoke  
**SMKG**..... Smoking  
**SO**..... Shut-Off  
**S.O**..... Shut-Off  
**SOV**.....Shut Off Valve  
**SPD**..... Speed  
**SPLR**..... Spoiler

*cont'd... >>>*


*cont'd... >>>*

|                     |                                   |
|---------------------|-----------------------------------|
| <b>SPLY</b> .....   | Supply                            |
| <b>SPS</b> .....    | Single-point Performance Software |
| <b>SSR</b> .....    | Secondary Surveillance Radar      |
| <b>STAB</b> .....   | Stabilizer                        |
| <b>STAR</b> .....   | Standard Arrival                  |
| <b>STBY</b> .....   | Standby                           |
| <b>STR</b> .....    | Service Bus Transfer Relay        |
| <b>STRG</b> .....   | Steering                          |
| <b>SURV</b> .....   | Surveillance                      |
| <b>SVCE</b> .....   | Service                           |
| <b>SVS</b> .....    | Synthetic Vision System           |
| <b>SWM</b> .....    | Switch Module                     |
| <b>SYNPHR</b> ..... | Synchrophaser                     |
| <b>SYS</b> .....    | System                            |

## T

|                    |  |
|--------------------|--|
| <b>T2CAS</b> ..... | Traffic and Terrain Collision Avoidance System |
| <b>T3CAS</b> ..... | TAWS, TCAS and Transponder combined unit       |
| <b>TA</b> .....    | Traffic Advisory TCAS                          |
| <b>TAD</b> .....   | Terrain Awareness Display                      |
| <b>TAS</b> .....   | True Air Speed                                 |
| <b>TAT</b> .....   | Total Air Temperature                          |
| <b>TAWS</b> .....  | Terrain Awareness Warning System               |
| <b>TBD</b> .....   | To be Determined                               |
| <b>TCAS</b> .....  | Traffic Alert and Collision Avoidance System   |
| <b>TCF</b> .....   | Terrain Clearance Floor                        |
| <b>TCS</b> .....   | Touch Control Steering                         |
| <b>TCV</b> .....   | Temperature Control Valve                      |
| <b>T/D</b> .....   | Time Delay                                     |
| <b>TD</b> .....    | Type Design                                    |
| <b>TEMP</b> .....  | Temperature                                    |
| <b>TGT</b> .....   | Target   |

*cont'd... >>>*

|   |   |                        |
|---|---|------------------------|
| <br><b>BU / 75</b><br><b>AFM</b> | <b>GENERAL INFORMATION</b><br><br><b>EXPLANATIONS</b> | GEN.3<br><br>Page n°25 |
|---|---|------------------------|

*cont'd... >>>*

TIC..... Turbine Inlet Control  
TK..... Tank  
TLU..... Travel Limiting Unit (Rudder)  
TM..... Torque Motor  
T.O..... Takeoff  
TOD..... Take-Off Distance  
TOR..... Take-Off Run  
TOW..... Take Off weight  
TQ..... Torque  
TRU..... Transformer Rectifier Unit  
TSCU..... Torque Signal Conditioning Unit  
TTG..... Time To Go


**U**

UBC..... Utility Bus Contactor  
U/F..... Underfloor  
UHF..... Ultra High Frequency  
UNCPL..... Uncouple  
UNDV..... Undervoltage  
UNLK..... Unlock  
USB..... Upper SideBand  
UTLY..... Utility

**V**

V1..... Decision Speed  
V2..... Second Segment Speed  
VCCU..... Video Cabin Command Unit  
VCP..... Virtual Control Panel  
VENT..... Ventilation  
VENTS..... Ventilated Temperature Sensor  
VERT..... Vertical

*cont'd... >>>*

|   |   |                               |
|---|---|-------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>GENERAL INFORMATION</b><br><br><b>EXPLANATIONS</b> | <b>GEN.3</b><br><br>Page n°26 |
|---|---|-------------------------------|

*cont'd... >>>*

|                   |                                  |
|-------------------|----------------------------------|
| <b>VFOM</b> ..... | Vertical Figure Of Merit         |
| <b>VFR</b> .....  | Visual Flight Rules              |
| <b>VHF</b> .....  | Very High Frequency              |
| <b>VMC</b> .....  | Visual Meteorological Conditions |
| <b>VMO</b> .....  | Maximum Operating Speed          |
| <b>VNAV</b> ..... | Vertical Navigation              |
| <b>VOR</b> .....  | VHF OMNI Directional Range       |
| <b>VPRL</b> ..... | Vertical Path Reference Line     |
| <b>VR</b> .....   | Rotation Speed                   |
| <b>VS</b> .....   | Vertical Speed                   |
| <b>VSI</b> .....  | Vertical Speed Indicator         |
| <b>VU</b> .....   | Visual Unit                      |


**W**

|                   |                             |
|-------------------|-----------------------------|
| <b>WARN</b> ..... | Warning                     |
| <b>WAT</b> .....  | Weight Altitude Temperature |
| <b>WBM</b> .....  | Weight and Balance Manual   |
| <b>WE</b> .....   | Water Extractor             |
| <b>WOW</b> .....  | Weight On Wheel             |
| <b>WPT</b> .....  | Waypoint                    |
| <b>W/S</b> .....  | Windshear                   |
| <b>WS</b> .....   | Water Sprayer               |
| <b>WX</b> .....   | Weather Mode                |
| <b>WXR</b> .....  | Weather Radar               |

**X**

|                    |             |
|--------------------|-------------|
| <b>X</b> .....     | Cross       |
| <b>XFEED</b> ..... | Cross feed  |
| <b>XFR</b> .....   | Transfer    |
| <b>XPDR</b> .....  | Transponder |

*cont'd... >>>*

|   |   |                        |
|---|---|------------------------|
| <br><b>BU / 75</b><br><b>AFM</b> | <b>GENERAL INFORMATION</b><br><br><b>EXPLANATIONS</b> | GEN.3<br><br>Page n°27 |
|---|---|------------------------|

cont'd... >>>

**Y**

**YD**..... Yaw Damper

**Z**

**ZA**..... Aircraft Altitude

**Z CAB**..... Cabin Altitude

**ZCTH**..... Theoretical Cabin Altitude

**ZFW**..... Zero Fuel Weight

**ZP**..... Pressure Altitude

**ZPRL**..... Zero Pitch Reference Line

**ZRA**..... Radio Altimeter Altitude

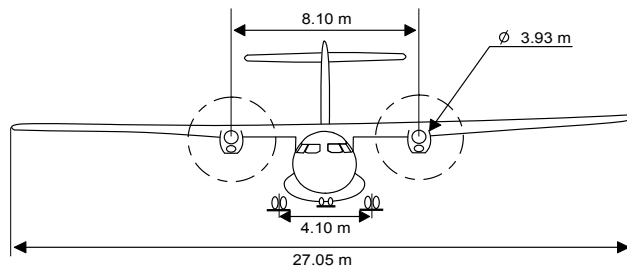
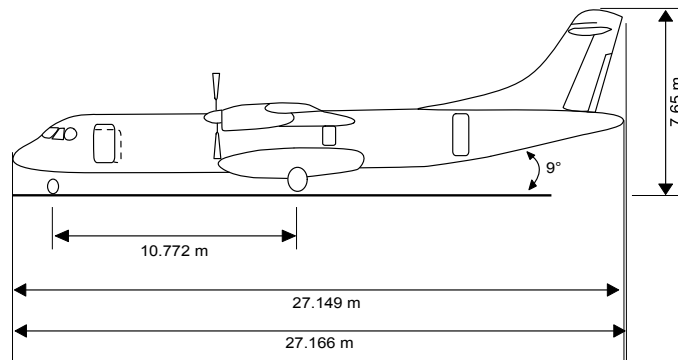
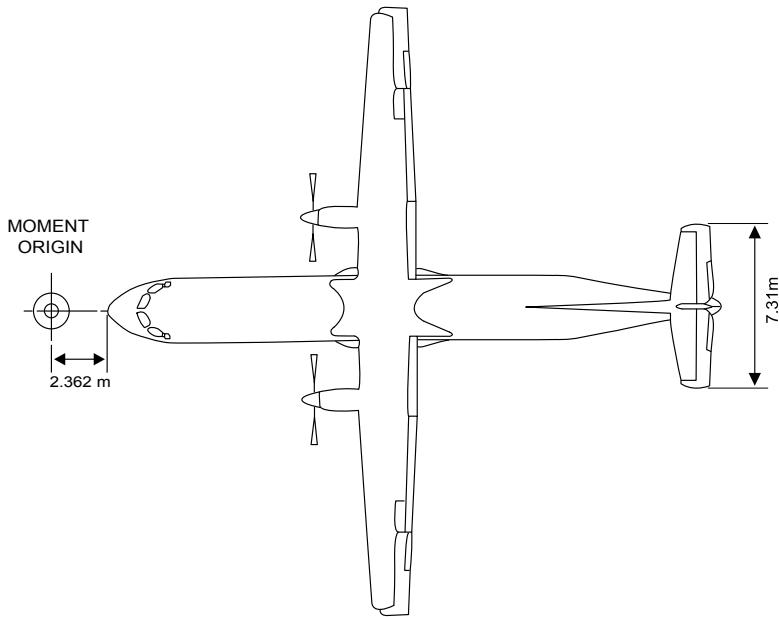
# 1 Aircraft Dimensions

4ad7dcab-3c9b-4713-a545-5883bc8e2e51

0.1

ALL

APPROVED



|            |                  |           |
|------------|------------------|-----------|
| <b>ATR</b> | <b>AFM</b>       | LIM.      |
| BU / 75    | TOC              |           |
| AFM        | Table of Content | Page n°01 |

## LIMITATIONS

### GENERAL LIMITATIONS

LIM.1

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| . | Kinds of Operation.....             | page 03 |
| . | Minimum Flight Crew.....            | page 03 |
| . | Performance Configuration.....      | page 03 |
| . | Maximum Operating Altitude.....     | page 03 |
| . | Maneuvering Limit Load Factors..... | page 03 |
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### WEIGHT AND LOADING

LIM.2

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### SPEEDS

LIM.3

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### OPERATIONAL PARAMETERS

LIM.4

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|---|---|---|


**SYSTEMS**

**LIM.5**

---

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| 70. | POWER PLANT.....                      | page 32 |



|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>GENERAL LIMITATIONS</b> | LIM.1<br><br>Page n°03 |
|---|--|------------------------|

## 1 Introduction

|                                      |          |
|--------------------------------------|----------|
| 3e920159-6867-4bdb-809a-5059f15e96e7 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Law requires the observance of the limitations.

When operating in accordance with an approved appendix or supplement to this AFM, these limitations apply, unless amended by such appendix or supplement.

## 2 Kinds of Operation

|                                      |          |
|--------------------------------------|----------|
| 39c36470-bd17-4491-9888-80a05bc67d9a | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

The aircraft is certified in the transport category for day and night operations, in the following conditions when the appropriate equipment and instruments required by the airworthiness and operating regulations are approved, installed and in an operable condition:

- VFR and IFR
- Flight in icing conditions
- Reverse thrust taxi (single or twin engine).

## 3 Minimum Flight Crew

|                                      |          |
|--------------------------------------|----------|
| 4e716386-fd2a-4057-8be2-86720ae8d222 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

2 Pilots.

## 4 Performance Configuration

|                                      |          |
|--------------------------------------|----------|
| a6294274-7351-4b3c-aec2-be2f9c726bcd | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

[Refer to PER.1.2.01 Performance Configuration](#) for aircraft configuration associated with certified performances.

## 5 Maximum Operating Altitude

|                                      |          |
|--------------------------------------|----------|
| 5e0f199b-a433-4e46-8d33-496abde00c11 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Maximum Operating Altitude.....25 000 ft

## 6 Maneuvering Limit Load Factors

|                                      |          |
|--------------------------------------|----------|
| 50f667d9-e2a5-4754-b6ff-2f59e971a16f | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Gear and flaps retracted..... +2.5 g to -1 g  
Gear and/or flaps extended..... +2 g to 0 g



BU / 75

AFM

## LIMITATIONS

### GENERAL LIMITATIONS

LIM.1

Page n°04

## 7 Maximum Number of Seats

### Maximum Number of Passenger Seats

3aa06c79-256d-4522-a2ab-31c8d54cd9b6

0.1

ALL

APPROVED

74 as limited by emergency exits configuration.

## 1 WEIGHT

### 1.1 Structural Limitations

be4328f2-45e3-40b6-a303-e268bf89c017

1.1

0685;0775

APPROVED

| WEIGHT                   | kg     |
|--------------------------|--------|
| MAXIMUM RAMP WEIGHT      | 22 670 |
| MAXIMUM TAKEOFF WEIGHT   | 22 500 |
| MAXIMUM LANDING WEIGHT   | 22 350 |
| MAXIMUM ZERO FUEL WEIGHT | 20 300 |
| MINIMUM FLIGHT WEIGHT    | 13 000 |


19fc371d-83fe-414b-8d19-700ac1ac82a9

2.1

0706

APPROVED

| WEIGHT                   | kg     |
|--------------------------|--------|
| MAXIMUM RAMP WEIGHT      | 22 970 |
| MAXIMUM TAKEOFF WEIGHT   | 22 800 |
| MAXIMUM LANDING WEIGHT   | 22 350 |
| MAXIMUM ZERO FUEL WEIGHT | 20 800 |
| MINIMUM FLIGHT WEIGHT    | 13 000 |

|   |  |                                       |
|---|--|---------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>WEIGHT AND LOADING</b><br><br><b>WEIGHT</b> | <b>LIM.2</b><br><br><br><br>Page n°05 |
|---|--|---------------------------------------|

## 1.2 Performance Limitations

d9f9dcf93-3353-474a-b6fc-fbf2883a62e3

0.2

ALL

APPROVED

Maximum takeoff weight and maximum landing weight may be reduced by performance requirements related to the following ([Refer to PERFORMANCE](#)) :

- Climb performance (first and second segment, final takeoff and en route, approach and landing climb)
- Available runway length (takeoff and landing)
- Tyre limit speed
- Brake energy limit, observe BRK TEMP alert for takeoff
- Obstacle clearance (takeoff and en route)
- En route and landing weight.

## 2 CERTIFIED CENTER OF GRAVITY ENVELOPE

### 2.1 Certified Center of Gravity Envelope

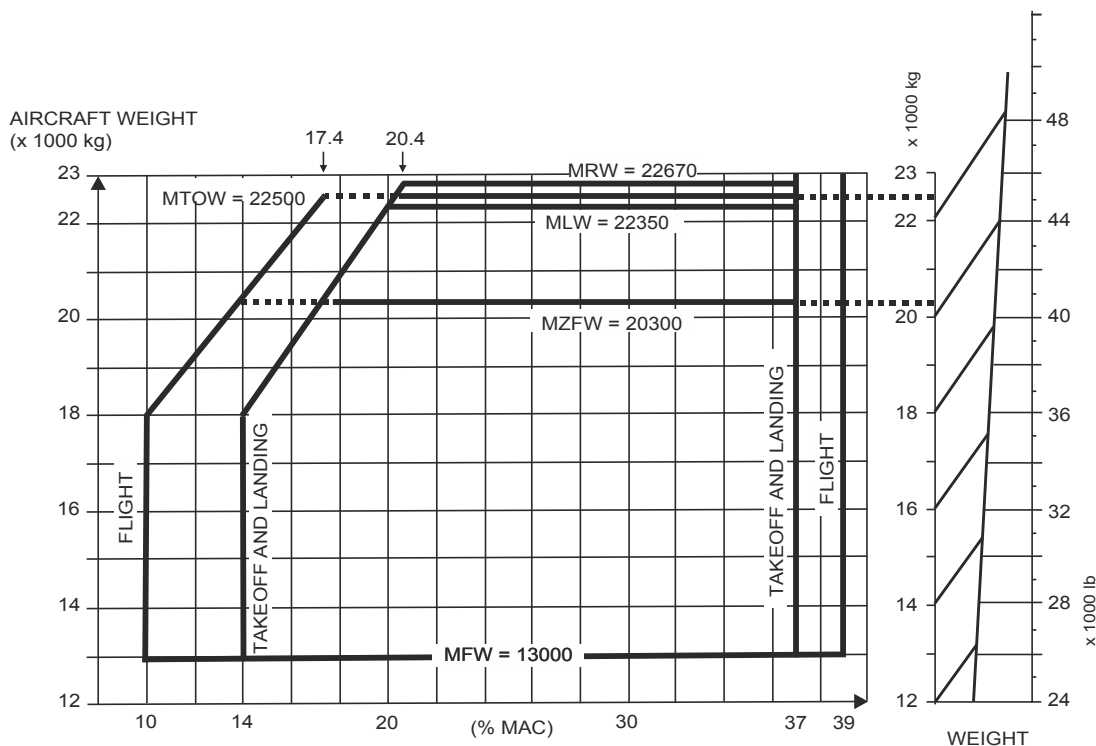
c17edad1-5236-4a12-9315-6ebffad1dfb8

5.1

0685;0775

APPROVED

For definition of reference (Mean Aerodynamic Chord ( MAC ) and moments origin) : [Refer to GENERAL INFORMATION.](#)



ICN-7X-Y-000000-T-FB429-00012-M-02-N

- Fig. 1 : Certified Center of Gravity Envelope -

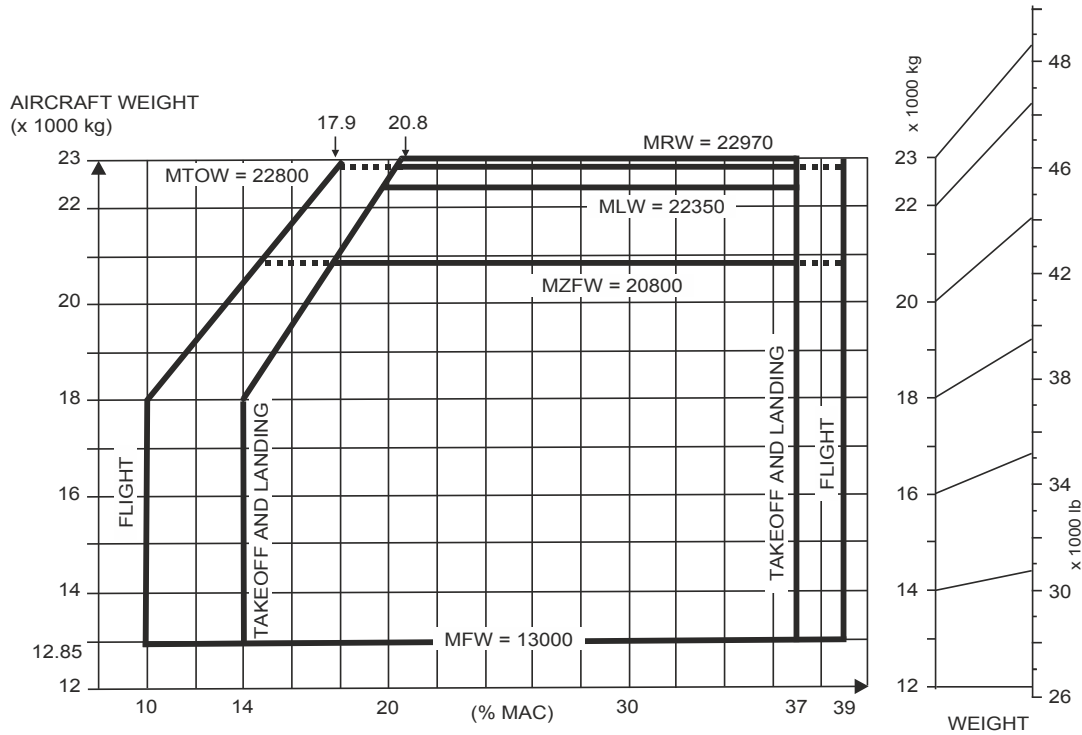
335c07b5-5cc3-4254-9e68-b7eec8eeadc7

**3.1**

**0706**

**APPROVED**

For definition of reference (Mean Aerodynamic Chord ( MAC ) and moments origin) : [Refer to GENERAL INFORMATION.](#)



ICN-7X-Y-000000-T-FB429-00012-R-02-N

**- Fig. 1 : Certified Center of Gravity Envelope -**

**3 LOADING - UNLOADING**

**3.1 Loading - Unloading Instruction**

2fbc5f8d-4e75-45f5-b4ac-b2c59220c55e

**1.1**

**ALL**

**APPROVED**

The aircraft must be loaded in accordance with the loading instructions given in the WEIGHT AND BALANCE manual.

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>WEIGHT AND LOADING</b><br><br><b>PASSENGER BOARDING - DISEMBARKING</b> | LIM.2<br><br>Page n°07 |
|---|---|------------------------|

## 4 PASSENGER BOARDING - DISEMBARKING

### 4.1 Tail Prop

|                                       |            |
|---------------------------------------|------------|
| _113cfa48-713d-4881-b5ed-fee98587279d | <b>0.2</b> |
|                                       | ALL        |
|                                       | APPROVED   |

Before passenger boarding/diseMBarking:

- The tail prop must be installed
- A possible toppling over should be taken into account if more than 7 persons move near the rear part of an unloaded aircraft.


## 1 DEFINITIONS

### 1.1 Operating Speeds

|                                      |            |
|--------------------------------------|------------|
| a3463c00-c4db-4f73-a10f-76655c0f3580 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

|                            |  |
|----------------------------|--|
| <b>V<sub>1</sub></b>       | V <sub>1</sub> is the maximum speed at which the flight crew can decide to reject the takeoff and is ensured to stop the aircraft within the limits of runway. |
| <b>V<sub>LOF</sub></b>     | Speed at which the lift overcomes the weight.  |
| <b>V<sub>R</sub></b>       | Speed at which rotation is initiated to reach V <sub>2</sub> at 35 ft height.  |
| <b>V<sub>2</sub></b>       | Takeoff, safety speed reached at 35 ft height with one engine failed and providing second segment climb gradient not less than the minimum (2.4 %).            |
| <b>V<sub>min OPS</sub></b> | Minimal flight speed based on flying conditions and aircraft configuration.  |
| <b>V<sub>mLB</sub></b>     | Minimum maneuver speed, in Low Bank (15 ° MAX), depending on flaps configuration (V <sub>mLB0</sub> , V <sub>mLB15</sub> ....) and phase of flight.            |
| <b>V<sub>mHB</sub></b>     | Minimum maneuver speed, in High Bank (27 ° MAX), depending on flaps configuration (V <sub>mHB0</sub> , V <sub>mHB15</sub> ....) and phase of flight.           |
| <b>V<sub>FTO</sub></b>     | Final Takeoff speed used during Final Segment with one engine inoperative and providing climb gradient not less than the minimum (1.2 %).                      |
| <b>V<sub>REF</sub></b>     | Final approach reference speed for the determination of the certified landing distance.  |
| <b>V<sub>APP</sub></b>     | Final Approach speed is the operational speed used during landing taking into account corrections (Wind/Gust/Failure).   |

*cont'd... >>>*

|   |   |                               |
|---|---|-------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SPEEDS</b><br><br><b>DEFINITIONS</b> | <b>LIM.3</b><br><br>Page n°08 |
|---|---|-------------------------------|

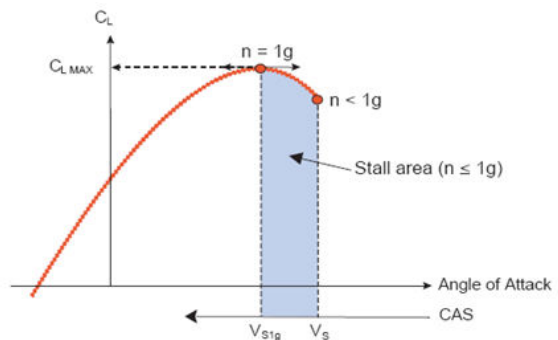
cont'd... >>>

|                        |   |
|------------------------|---|
| <b>V<sub>GA</sub></b>  | Go-Around Speed   |
| <b>V<sub>FGA</sub></b> | Final Go-Around Speed. Best climb gradient speed after the go-around acceleration altitude. The higher value between Final Takeoff (VFTO) and Drift-down speed. |

## 1.2 Limit Speeds

|                                      |                        |
|--------------------------------------|------------------------|
| ef0361cf-e190-4133-83c4-06f66ddaa4e8 | 1.0<br>ALL<br>APPROVED |
|--------------------------------------|------------------------|


|                        |  |
|------------------------|--|
| <b>V<sub>S</sub></b>   | Conventional stall speed, when the lift suddenly collapses. At that moment, the load factor is always less than one.   |
| <b>V<sub>S1g</sub></b> | Stall speed which corresponds to the maximum lift coefficient, just before the lift starts decreasing. At that moment, the load factor is still equal to one.<br>$V_S = 0.94 \times V_{S1g}$ |



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|                        |  |
|------------------------|--|
| <b>V<sub>SR</sub></b>  | 1 g stall speed for a specified configuration. It is function of the aircraft weight   |
| <b>V<sub>MO</sub></b>  | Maximum operating speed. <a href="#">Refer to LIM.3.2.1 Maximum Operating Speed VMO-MMO.</a>   |
| <b>M<sub>MO</sub></b>  | Maximum operating mach. <a href="#">Refer to LIM.3.2.1 Maximum Operating Speed VMO-MMO.</a>  |
| <b>V<sub>A</sub></b>   | Maximum design maneuvering speed. <a href="#">Refer to LIM.3.2.2 Maximum Design Maneuvering Speed V<sub>A</sub>.</a>   |
| <b>V<sub>MCG</sub></b> | Minimum Control speed on the Ground from which a sudden failure of the critical engine can be controlled by use of primary flight controls only, with the other engine operating at RTO power. |

cont'd... >>>

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SPEEDS</b><br><br><b>AIRSPEEDS</b> | LIM.3<br><br>Page n°09 |
|---|---|------------------------|

cont'd... >>>

|                        |   |
|------------------------|---|
| <b>V<sub>MCA</sub></b> | Minimum Control speed in flight at which the aircraft can be controlled with 5 ° bank, in case of failure of the critical engine with the other engine at RTO power (takeoff flaps setting and gear retracted.)   |
| <b>V<sub>MCL</sub></b> | Minimum flight speed at which aircraft can be controlled with 5 ° bank in case of failure of the critical engine, the other being set at GA power (landing flaps setting, gear extended) and which provides rolling capability specified by regulations. <a href="#">Refer to LANDING VMCL.</a> |
| <b>V<sub>FE</sub></b>  | Maximum speed for each Flaps Extended. <a href="#">Refer to LIM.3.2.3 Maximum Flaps Extended Operating Speeds VFE.</a>  |
| <b>V<sub>LE</sub></b>  | Maximum speed with Landing gear Extended <a href="#">Refer to LIM.3.2.4 Maximum Landing Gear Extended and Operating Speeds VLE-VLO.</a>   |
| <b>V<sub>LO</sub></b>  | Maximum speed to Operate Landing gears (Lowering, Retracting). <a href="#">Refer to LIM.3.2.4 Maximum Landing Gear Extended and Operating Speeds VLE-VLO.</a>   |

## 2 AIRSPEEDS

### 2.1 Maximum Operating Speed VMO-MMO

|                                      |          |
|--------------------------------------|----------|
| 89d33190-1b50-4bfc-b68a-8b47eac9c488 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

The flight crew shall not intentionally exceed this limit, in any flight phase.

|                       |            |
|-----------------------|------------|
| V <sub>MO</sub> ..... | 250 kt CAS |
| M <sub>MO</sub> ..... | 0.55       |

### 2.2 Maximum Design Maneuvering Speed V<sub>A</sub>

|                                      |          |
|--------------------------------------|----------|
| a482d996-e8d5-42ae-92d4-70b67bc19b97 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |


Full application of roll and yaw controls should be confined to speeds below V<sub>A</sub>. Maneuvers involving angles of attack near the stall should be confined to speeds below V<sub>A</sub>.

|                      |            |
|----------------------|------------|
| V <sub>A</sub> ..... | 175 kt CAS |
|----------------------|------------|

#### CAUTION

Rapid and large alternating controls inputs, especially in combination with large changes in pitch, roll or yaw (e.g. large sideslip angles) may result in structural damage at any speed, including below maneuvering speed V<sub>A</sub>.

cont'd... >>>

|   |   |                            |
|---|---|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SPEEDS</b><br><br><b>AIRSPEEDS</b> | LIM.3<br><br><br>Page n°10 |
|---|---|----------------------------|

cont'd... >>>

**CAUTION**

When elevators are uncoupled, dual opposite inputs from left and right control columns are strictly forbidden as it may result in structural damage at any speed, including below maneuvering speed  $V_A$ .

**2.3 Maximum Flaps Extended Operating Speeds VFE**

|                                      |            |
|--------------------------------------|------------|
| af9d8caa-7d06-43e2-a8d4-a5dad991eb71 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |
| FLAPS 15.....                        | 185 kt CAS |
| FLAPS 30.....                        | 150 kt CAS |

**2.4 Maximum Landing Gear Extended and Operating Speeds VLE-VLO**

|                                      |            |
|--------------------------------------|------------|
| 46778557-2874-4321-bcd5-58cf2e48c437 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |
| $V_{LE}$ .....                       | 185 kt CAS |
| $V_{LO}$ during extension.....       | 170 kt CAS |
| $V_{LO}$ during retraction.....      | 160 kt CAS |



### 3 STALL SPEEDS

#### 3.1 Stall Speeds

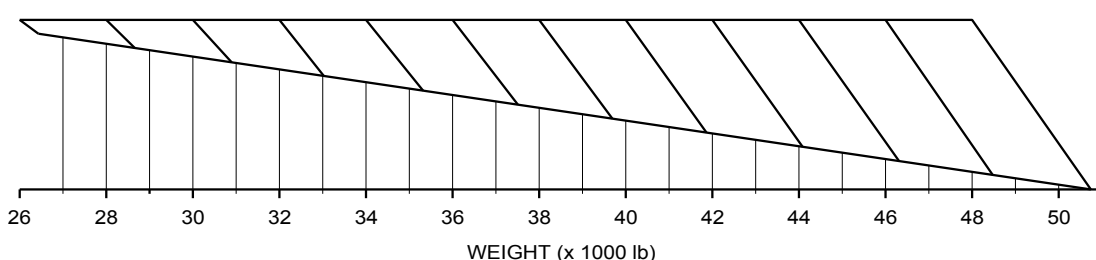
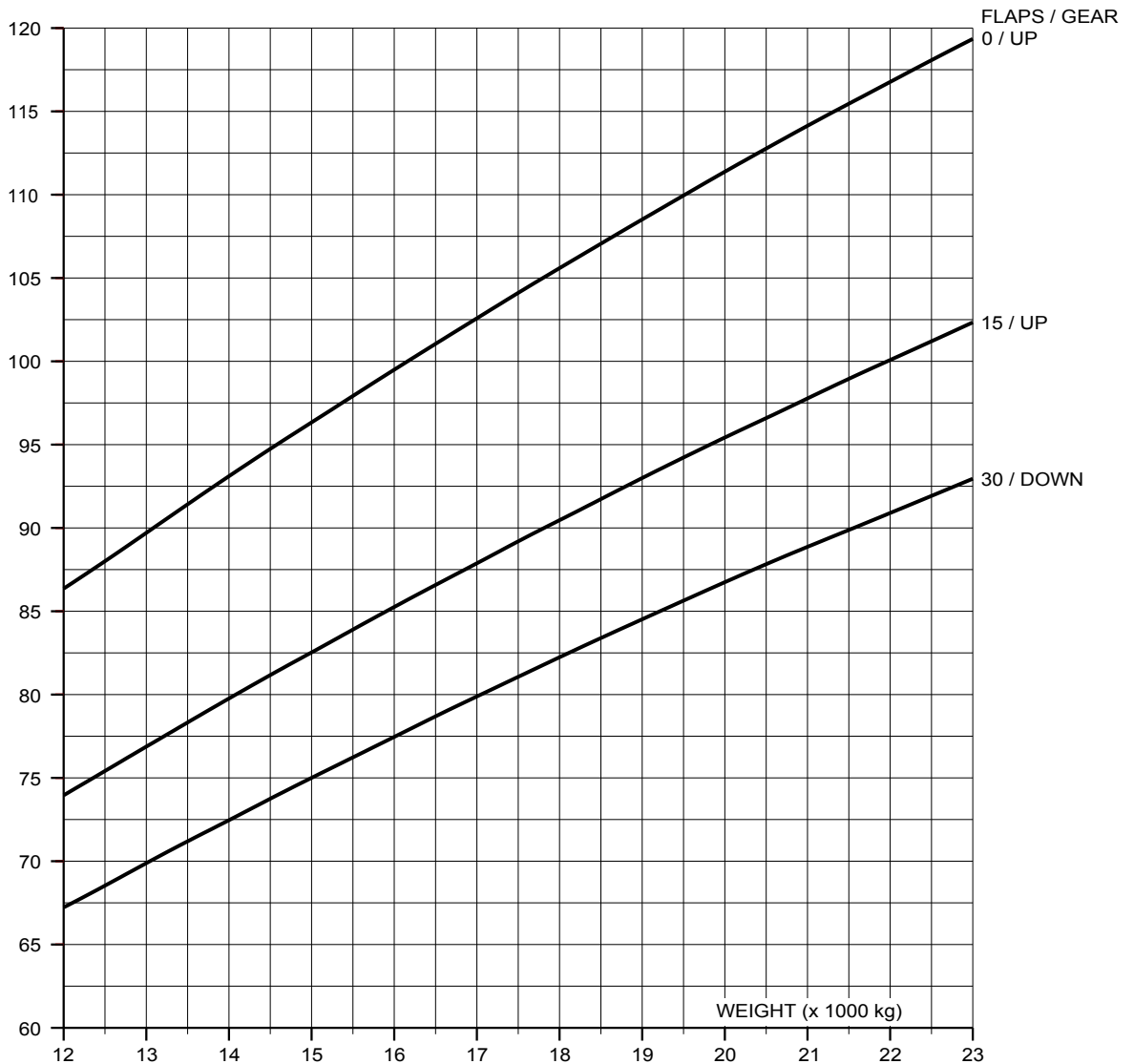
01471656-d04b-48ab-83f3-c16b702a19e9

1.1

ALL

APPROVED

VSR - CAS (kt)





## 4.2 TAKEOFF VMCA

### 1 Flaps 15

### Flaps 15

3dda6612-2c46-4ee9-a6a4-0a5ae9723681

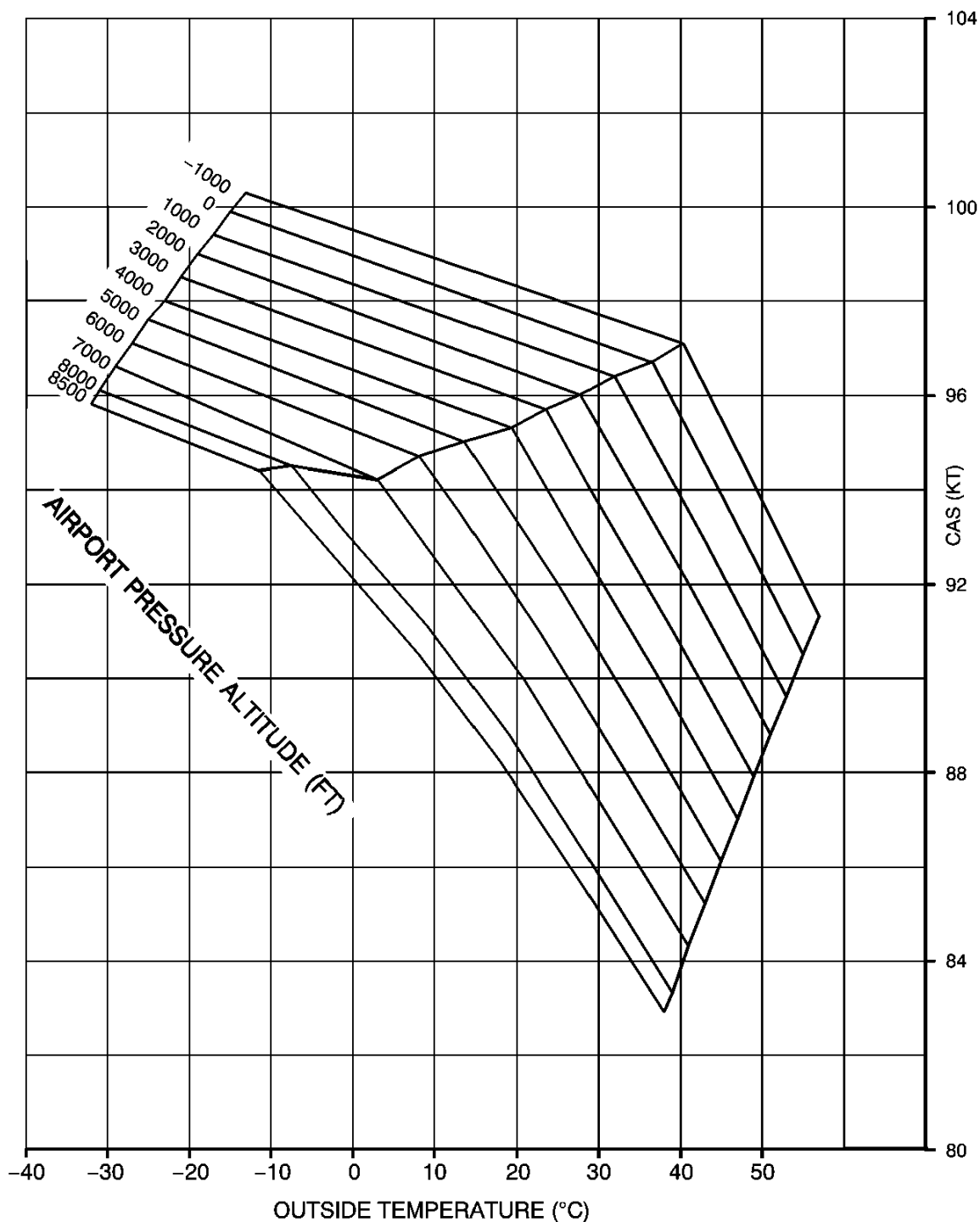
0.1

ALL

APPROVED

MINIMUM CONTROL SPEED IN FLIGHT - VMCA (FLAPS 15)

PW127F / PW127M / PW127N – BOOST OFF



|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SPEEDS</b><br><br><b>MINIMUM CONTROL SPEEDS</b> | LIM.3<br><br>Page n°14 |
|---|--|------------------------|

## 4.3 LANDING VMCL

### 4.3.1 Landing VMCL

|                                      |            |
|--------------------------------------|------------|
| 0a9b3e76-5e14-409e-ac33-159981f7c640 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

|               |           |
|---------------|-----------|
| FLAPS 30..... | 98 kt CAS |
| FLAPS 15..... | 98 kt CAS |

## 5 MINIMUM MANEUVER OPERATING SPEEDS

### 5.1 Introduction

|                                      |            |
|--------------------------------------|------------|
| 53b197a2-08fe-43da-be76-fade6e9e00c1 | <b>1.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Minimum maneuver operating speeds are defined in order to provide sufficient margin against stall.

They will vary with:

- Normal or icing conditions
- Weight
- Configuration
- Type of maneuver (HI or LO BANK).

They are defined by a minimum ratio to the appropriate stall speed given in [Refer to LIM.3.3.1 Stall Speeds](#) or by  $V_2$  when applicable.

### 5.2 Normal Conditions

|                                      |            |
|--------------------------------------|------------|
| a64d53d1-1683-4f8a-b276-4a1051b97326 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

| FLAPS | $V_{mHB}$   | $V_{mLB}$     |
|-------|---|---------------|
| 0     | 1.23 $V_{SR}$ and not less than $V_{MCL}$ during approach | 1.18 $V_{SR}$ |
| 15    |   | $V_2$         |
| 30    |   | Not used      |

### 5.3 Icing Conditions

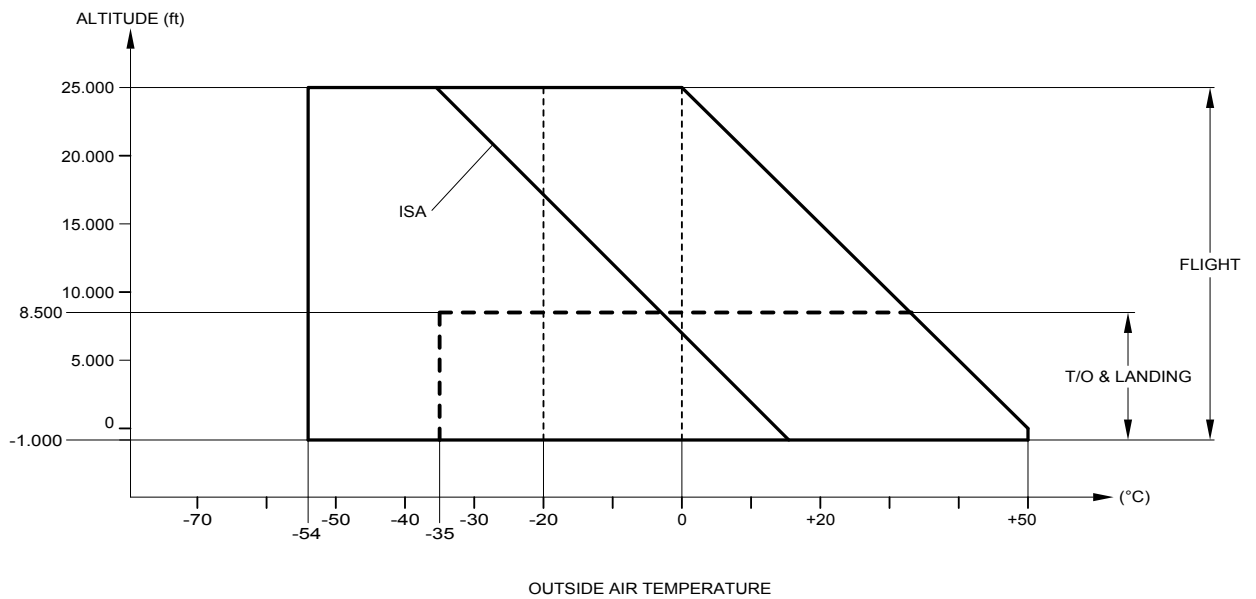
|                                      |            |
|--------------------------------------|------------|
| b7e4f722-53d6-4940-bdc4-edb27fcd6885 | <b>0.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

[Refer to PRO.NOP.ANOR.1.2.3 Minimum Maneuver - Operating Icing Speeds](#)

# 1 ENVIRONMENTAL

## 1.1 Environmental Envelope

|                                      |   |
|--------------------------------------|---|
| eaf91684-37c2-4227-896e-16b04214b80b | <b>3.1</b><br><b>ALL</b><br><b>APPROVED</b> |
|--------------------------------------|---|



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**Note**

*Refer to LIM.SYSTEMS.POWER PLANT.Fuel System for fuel temperature limitation.*

# 2 WIND LIMITATION

## 2.1 Tailwind


|                                      |  |
|--------------------------------------|--|
| 954f68ea-0c5c-446e-a3d7-d9b22f1e40ef | <b>0.2</b><br><b>0775</b><br><b>APPROVED</b> |
|--------------------------------------|--|

Takeoff and Landing

Tailwind limit..... 15 kt

**Note**

*The limitation for tailwinds greater than 10 kt reflects the capability of the aircraft as evaluated in terms of airworthiness but does not constitute approval for operations under tailwinds exceeding 10 kt in case such operational approval is required by the National Authorities to the Operators.*

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>OPERATIONAL PARAMETERS</b><br><br><b>WIND LIMITATION</b> | LIM.4<br><br>Page n°16 |
|---|---|------------------------|

|                                      |            |
|--------------------------------------|------------|
| d16bbd31-37d2-4903-8892-75dc51b7593e | <b>0.1</b> |
|                                      | 0685-0706  |
|                                      | APPROVED   |

Takeoff and Landing

Tailwind limit..... 10 kt

## 2.2 Crosswind

|                                      |            |            |
|--------------------------------------|------------|------------|
| a3a0d0c7-3579-4b2b-84b2-1d156cb6a349 | <b>REV</b> | <b>5.1</b> |
|                                      |            | ALL        |
|                                      |            | APPROVED   |

The maximum demonstrated crosswind on dry runway is:

Takeoff..... 35 kt

Landing FLAPS 30..... 35 kt

The maximum recommended crosswind on wet runway is:

Takeoff..... 28 kt

Landing FLAPS 30..... 28 kt

For contaminated runway, [Refer to PRO.SPO.13.1.2 Maximum Recommended Crosswind.](#)

For crosswind operations, [Refer to FCOM OPERATIONS IN WIND CONDITIONS.](#)

## 3 RUNWAY

### 3.1 Runway Slope

|                                      |            |
|--------------------------------------|------------|
| 12c30841-cefa-466f-b78b-45bbe6fd7787 | <b>1.3</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Maximum mean runway slope..... ±2 %

For operations on runways slope beyond 2 %, [Refer to RUNWAYS SLOPE BEYOND 2 %.](#)

## 4 ICING CONDITIONS

### 4.1 Ground Icing Conditions


|                                      |            |
|--------------------------------------|------------|
| 70b81fac-b235-4cc1-b62f-12ba722dc327 | <b>3.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

● **Ground Icing conditions exist when:**

- OAT on the ground is at or below 5 °C and,
- Surface snow, standing water or slush is present on the ramps, taxiways and runways.

● **Operation in ground icing conditions:**

- For associated procedures [Refer to ATMOSPHERIC ICING CONDITIONS.](#)
- For advisory information on contaminated runways penalties [Refer to CONTAMINATED RUNWAY \(ADVISORY MATERIAL\)](#) and [Refer to FCOM.PERFORMANCES.](#)

|   |  |                            |
|---|--|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>OPERATIONAL PARAMETERS</b><br><br><b>ICING CONDITIONS</b> | LIM.4<br><br><br>Page n°17 |
|---|--|----------------------------|

## 4.2 Atmospheric Icing Conditions

|                                      |                 |
|--------------------------------------|-----------------|
| 09e3cbc1-f76c-4904-9f05-780a4032208b | <b>8.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

- **Atmospheric icing conditions exist when:**

- OAT on the ground and for takeoff is at or below 5 °C
- TAT in flight is at or below 7 °C
- Visible moisture in any form is present (such as clouds, fog, mist, rain, snow, sleet, or ice crystals).

- **Operation in atmospheric icing conditions:**

**Takeoff is prohibited when frost, snow or ice is adhering to the wing, tail, control surfaces, engine air inlets or propellers.**

For more information about aircraft surfaces contamination, [Refer to FCOM - Preflight Check](#).  
Some systems must be operative in icing conditions [Refer to LIM.5.30.1 Ice and Rain Protection](#).

## 4.3 Severe Icing Conditions

d9df816a-de30-4524-8883-420eea0d990d

1.3

ALL

APPROVED

### WARNING

SEVERE ICING MAY RESULT FROM ENVIRONMENTAL CONDITIONS OUTSIDE OF THOSE FOR WHICH THE AIRCRAFT IS CERTIFICATED.

FLIGHT IN FREEZING RAIN, FREEZING DRIZZLE, OR MIXED ICING CONDITIONS (SUPER COOLED LIQUID WATER AND ICE CRYSTALS) MAY RESULT IN ICE BUILD UP ON PROTECTED SURFACES EXCEEDING THE CAPABILITY OF THE ICE PROTECTION SYSTEM, OR MAY RESULT IN ICE FORMING AFT OF THE PROTECTED SURFACES.

THIS ICE MAY NOT BE SHED USING THE ICE PROTECTION SYSTEMS, AND MAY SERIOUSLY DEGRADE THE PERFORMANCE AND CONTROLLABILITY OF THE AIRCRAFT.

- **The following weather conditions may be conducive to severe in-flight icing:**

- Visible rain at temperatures close to 0 °C ambient air temperature (SAT)
- Droplets that splash or splatter on impact at temperatures close to 0 °C ambient air temperature (SAT)

- **During flight, severe icing conditions that exceed those for which the aircraft is certificated are determined by the following:**

- Ice covering all or a substantial part of the unheated section of either side window, and/or
- Unable to reach or maintain target speed, and/or
- The following secondary indications:
  - o Water splashing and streaming on the windshield
  - o Unusually extensive ice accumulated on the airframe in areas not normally observed to collect ice
  - o Accumulation of ice on the lower surface of the wing, aft of the protected area
  - o Accumulation of ice on the propeller spinner farther aft than normally observed.


- **Operations in severe icing conditions**

If one of these fact is observed, immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions. Apply procedure specified in the Emergency Procedures chapter, [Refer to EMERGENCY PROCEDURES](#).

The autopilot may mask tactile cues that indicate adverse changes in handling characteristics. So, the use of the autopilot is prohibited when:

- Severe icing defined above exists, or
- Unusual lateral trim requirements are encountered while the aircraft is in icing conditions, or
- Autopilot trim warnings are encountered while the aircraft is in icing conditions.



|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>AIR CONDITIONING</b> | LIM.5<br><br>Page n°19 |
|---|---|------------------------|

## 21 AIR CONDITIONING

### 21.1 Pressurization

|                                      |          |
|--------------------------------------|----------|
| a7fc672d-de27-491d-8c90-733fdeffaf65 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

|   |           |
|---|-----------|
| Maximum differential pressure.....                                    | 6.35 psi  |
| Maximum negative differential pressure.....                           | -0.5 psi  |
| Maximum differential pressure for landing.....                        | 0.35 psi  |
| Maximum differential pressure for OVBD VALVE full open selection..... | 1 psi     |
| Maximum altitude for one bleed off operation .....                    | 20 000 ft |

## 22 AUTO FLIGHT

### 22.1 Automatic Flight Control System

|                                      |          |
|--------------------------------------|----------|
| 3f51e871-99bf-4000-870d-9bf67278caf2 | 2.1      |
|                                      | ALL      |
|                                      | APPROVED |

Select a FD mode before AP engagement.

Minimum height for AP engagement after takeoff..... 100 ft

NAV mode for VOR approach with either AP or FD is authorized only if:

- A collocated DME is available
- DME HOLD is not selected.

Minimum height for use of either AP or FD:

- Except during takeoff or approach..... 1 000 ft
- VS or IAS mode during approach ..... 160 ft
- CAT I APP mode..... 160 ft

For CAT II operation, [Refer to CAT 2 APPROACH.](#)

## 24 ELECTRICAL POWER


### 24.1 Electrical System

|                                      |          |
|--------------------------------------|----------|
| a9298c1b-49a7-42db-81e2-0eddea1a6b1b | 1.0      |
|                                      | ALL      |
|                                      | APPROVED |

Single DC GEN operation :

- **In flight, if OAT exceeds ISA + 25**

Flight level must be limited to FL200.

|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>FLIGHT CONTROLS</b> | LIM.5<br><br>Page n°20 |
|---|--|------------------------|

## 27 FLIGHT CONTROLS

### 27.1 Flaps

|   |  |            |
|---|--|------------|
| <small>45c194a4-4b36-4162-ac33-256aff611625</small> |  | <b>1.2</b> |
|   |  | ALL        |
|   |  | APPROVED   |

Holding with any flaps extended is prohibited in icing conditions (except for single engine operations).

## 29 HYDRAULIC POWER

### 29.1 Hydraulic Fluids

|   |  |            |
|---|--|------------|
| <small>7393315a-afcf-46f7-8eaf-6ccd588f53ef</small> |  | <b>3.2</b> |
|   |  | ALL        |
|   |  | APPROVED   |

All hydraulic fluids compliant with technical specification : NSA 307110  
Compliant fluids are listed in the AMM (Chapter 20, 20-31-30)

## 30 ICE AND RAIN PROTECTION

### 30.1 Ice and Rain Protection

|   |  |            |
|---|--|------------|
| <small>1f431dc4-7cb1-44d2-a881-0c3321d4803d</small> |  | <b>0.2</b> |
|   |  | ALL        |
|   |  | APPROVED   |

#### 1) Icing Conditions

All icing detection lights must be operative before a night flight.

The ice detector must be operative.

## 31 INDICATING AND RECORDING SYSTEMS


### 31.1 Instrument Marking

|   |  |            |
|---|--|------------|
| <small>8f781152-545d-4e21-9284-22576d66108f</small> |  | <b>1.1</b> |
|   |  | ALL        |
|   |  | APPROVED   |

Red arc or radial line : minimum and maximum limits.

Amber arc : caution area.

Green arc : normal area.

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>LANDING GEAR</b> | LIM.5<br><br>Page n°21 |
|---|---|------------------------|

## 32                    **LANDING GEAR**

### 32.1            **Landing Gear**

|   |  |                 |
|---|--|-----------------|
| <small>556604ed-1220-4eba-8072-7bbbdf315916</small> |  | <b>0.2</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

Do not perform pivoting (sharp turns) upon a landing gear with fully braked wheels except in case of emergency.

In case of ground speed over 165 kt all tyres must be replaced.

Towbarless towing is prohibited, unless the towbarless towing operations are performed in compliance with the appropriate operational requirements *Refer to (JAR-OPS-1 for Commercial Air Transportation)* using towbarless towing vehicles that are designed and operated to preclude damage to the aeroplane nose wheel steering system or which provide a reliable and unmistakable warning when damage to the steering system may have occurred. Towbarless towing vehicles that are specifically accepted for ATR aircraft are listed in ATR Service Letter 72-09-6001.

## 33                    **LIGHTS**

### 33.1            **Cabin Lighting**

|   |  |                 |
|---|--|-----------------|
| <small>0cc722a5-4ccc-4aba-a025-0dc013e1dfa4</small> |  | <b>0.1</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

Before each flight, use the general cabin lighting system for at least 15 min.

## 34                    **NAVIGATION**


### 34.1            **GPS**

#### 34.1.1        **General**

|   |  |                 |
|---|--|-----------------|
| <small>a6ed2a4b-d503-4283-809e-ffc0232f0e9a</small> |  | <b>0.1</b>      |
|   |  | <b>0685</b>     |
|   |  | <b>APPROVED</b> |

The Honeywell/Trimble GNSS 1000:

- Complies with TSO C 129 and TSO C 115B
- Is installed in compliance with FAA AC 20-129, FAA AC 20-130A, FAA AC 20-138 and DGAC CRI S-9902
- Has been demonstrated to meet the requirements of JAA TGL n°2, REV1, and FAA AC 20-138 and FAA Notice N8110-60.

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>NAVIGATION</b> | LIM.5<br><br>Page n°22 |
|---|---|------------------------|

|                                      |           |
|--------------------------------------|-----------|
| 1864ac32-9d59-4e0d-8df9-85910fa89555 | 1.1       |
|                                      | 0706-0775 |
|                                      | APPROVED  |

The Honeywell/Trimble GNSS HT1000:


- Complies with TSO C 129 and TSO C 115B
- Is installed in compliance with FAA AC 20-130A and FAA AC 20-138 for navigation use
- Is installed in compliance with FAA AC 20-129 for the advisory Baro-VNAV use
- Has been demonstrated to meet primary means of navigation in oceanic/remote areas in accordance with FAA Notice N8110-60
- Has been demonstrated to meet the En-route continental RNAV 5 requirements of JAA TGL n°2, REV1 or equivalent in single HT1000 configuration
- Has been demonstrated to meet the RNAV 1 requirements of JAA TGL n°10
- Has been demonstrated to meet the RNAV (GNSS) non-precision approach requirements of AC 20-138 and RNP APCH specification in single HT1000 configuration.

### 34.1.2 Limitations

|                                      |          |
|--------------------------------------|----------|
| 2ceac016-0600-4470-8f8a-85c8e1da4070 | 1.1      |
|                                      | 0685     |
|                                      | APPROVED |

The operators must apply to their national authority to get an approval to conduct operations.

- Honeywell / Trimble GNSS HT 1000 must operate with HT 1000-060 software version or any later approved version
- The system must be used with an updated active database and the waypoints must be cross-checked with official charts
- This equipment is approved for use as:
  - o Primary navigation means for oceanic and remote operations when only one long range navigation system is required
  - o Additional navigation means, en route, in terminal area and for non precision approach operations until the missed approach point with respect of the MDA  
Stand-alone GPS approach is not approved. Appropriate functional ground based navigation aids (VOR, VOR/DME, VORTAC, NDB, NDB/DME) must be continuously cross-checked during the approach.
  - o Advisory VNAV means.  
VDEV function must be continuously monitored.

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>NAVIGATION</b> | LIM.5<br><br>Page n°23 |
|---|---|------------------------|

|                                      |           |
|--------------------------------------|-----------|
| bc39a308-0eaa-4867-a73e-20be046b113a | 3.2       |
|                                      | 0706-0775 |
|                                      | APPROVED  |

The operators must apply to their national authority to get an approval to conduct operations.

- Honeywell / Trimble GNSS HT 1000 must operate with HT1000-060 software version or any later approved version
- The approval of the system is based on the assumption that the navigation database has been validated for intended use
- This system is approved in dual configuration for use for oceanic and remote operations as a primary navigation means
- In single HT1000 configuration, the system is approved for use for oceanic and remote operations when only one long range navigation system is required
- This system is approved for RNAV en route continental (RNAV 5) and RNAV terminal area operations like RNAV SID/STAR (RNAV 1)

**Note**

*This system is approved in any of the following configurations: AP coupling, FD only or raw data (HSI information).*

- This system is also approved as an additional navigation way for conventional en route continental operations, conventional terminal operations (SID/STAR) and conventional non-precision approach (e.g. NDB, VOR/DME,...) provided that:
  - o Approved navigation equipment, other than GNSS, required for the route to be flown is installed and operational
  - o When the system is used to fly non-precision approach not promulgated as RNAV (GNSS) approach or when procedure coordinates (SID/STAR, Approach) cannot be guaranteed as WGS84, raw data (conventional navigation information) are displayed to verify the correct RNAV (GNSS) guidance.
- Dual and single HT1000 configurations are approved for RNAV (GNSS) non-precision approach provided that:
  - o The flight crew respects the published MDA (without VNAV credit)
  - o The published approach procedure is referenced to WGS84 coordinates or equivalent
  - o Before starting the approach, the flight crew checks that for single configuration GNSS is operating without DGR annunciation
  - o APP annunciation must be displayed in cyan on EHSI for final approach
  - o RNAV (GNSS) non-precision approaches are performed only if a non-GNSS approach procedure is available at destination or at alternate destination
  - o RNAV (GNSS) non-precision approaches must be rejected in case of DGR annunciation on EHSI and/or UNABLE RNP message on MCDU affecting the RNAV (GNSS) used for guidance
  - o Approved navigation equipment, other than RNAV (GNSS), required for the approach to be flown (at destination and at any required alternate airport) are installed and operational.

ILS, LOC, LOC BC, LDA, SDF, and MLS approaches are not taken into account.
- The RNAV (GNSS) system is approved for use as advisory Baro-VNAV system.

|                |                    |           |
|----------------|--------------------|-----------|
| <b>ATR</b>     | <b>LIMITATIONS</b> | LIM.5     |
| <b>BU / 75</b> | <b>SYSTEMS</b>     |           |
| <b>AFM</b>     | <b>NAVIGATION</b>  | Page n°24 |

cont'd... >>>

VDEV function must be continuously cross-checked by appropriate functional ground based navigation aids (VOR, VOR/DME, VORTAC, NDB, NDB/DME)

- If GNSS must be used in oceanic/remote area, RNAV 5 (if DME are not available), RNAV 1 or for approach phases, the availability of the GPS integrity (RAIM or FDE functions) must be checked by the operator using prediction tool available in the GNSS during the preflight planning phase or any other approved tool.

## 34.4 EGPWS

### 34.4.1 Limitations

#### EGPWS

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| 761934d8-9cd1-4b09-bb32-e11a83d2910e | <b>NEW</b> | <b>0.3</b>      |
|                                      |            | <b>ALL</b>      |
|                                      |            | <b>APPROVED</b> |

- 1) Navigation is not to be predicted on the use of the terrain display.

#### Note

*The Terrain display is designed to serve as a situational awareness tool only. It does not have the integrity, accuracy or fidelity on which to solely base decisions for terrain or obstacle avoidance.*

- 2) To avoid giving nuisance alerts, the predictive EGPWS functions must be inhibited when landing at an airport that is not included in the airport database.
- 3) If ILS 2 glideslope signal is inoperative, EGPWS mode 5 alert is inhibited.


## 34.5 ATC - XPDR

### 34.5.1 SSR Mode S Enhanced Surveillance

|                                      |  |                 |
|--------------------------------------|--|-----------------|
| b02a05f9-c6fd-40fe-9c3d-df233e204284 |  | <b>2.0</b>      |
|                                      |  | <b>ALL</b>      |
|                                      |  | <b>APPROVED</b> |

The installed Mode S system satisfies the data requirements of ICAO Doc 7030/4, Regional Supplementary Procedures for SSR Mode S Enhanced Surveillance in designated European airspace. The capability to transmit data parameters is shown in column 2:

cont'd... >>>

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>NAVIGATION</b> | LIM.5<br><br>Page n°25 |
|---|---|------------------------|

cont'd... >>>

| Parameter                              | Available/Not available |
|--|-------------------------|
| Magnetic Heading<br>Indicated Airspeed | Available               |
| Mach No                                | Available               |
| Vertical Rate                          | Available               |
| Roll Angle                             | Available               |
| True Air Speed                         | Available               |
| True Track Angle                       | Available               |
| Groundspeed                            | Available               |
| Selected Altitude                      | Available               |
| Barometric Pressure Setting            | Available               |

### 34.5.2 ATC function

|                                      |                         |
|--------------------------------------|-------------------------|
| 25eb1f28-e1c4-4187-8026-921553933320 | 1.1<br>0775<br>APPROVED |
|--------------------------------------|-------------------------|

The installed transponder system is able to respond to interrogations in Modes A, C, S and to broadcast ADS-B out version 2 extended squitters.

System is compliant to CS ACNS subpart D “Certification and acceptable means of compliance for airborne communications, navigation and surveillance systems” ( CS ACNS.D.ELS/EHS and CS ACNS.D.ADSB requirements), with deviation request CS-ACNS#1 agreed by EASA.

The installed ADS-B OUT system has been shown to meet the equipment requirements of 14 CFR 91.227.

## 34.7 PBN CAPABILITIES


### 34.7.1 PBN Capabilities

|                                      |                         |
|--------------------------------------|-------------------------|
| 2fa9ce7c-10bc-40e0-8cbf-a47776575199 | 0.4<br>0685<br>APPROVED |
|--------------------------------------|-------------------------|

PBN capability of Honeywell/Trimble GNSS 1000 operating with HT 1000-60 (or later) software is RNAV5 .

Minimum required equipment to enter RNAV5 airspace is:

cont'd... >>>

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>NAVIGATION</b> | LIM.5<br><br>Page n°26 |
|---|---|------------------------|

cont'd... >>>

- 1 RNAV system, implying:
  - o 1 Current and valid navigation database
  - o 1 MCDU
  - o Navigation Source selection (on ECP)
  - o 1 VOR and 1 DME capable of VOR/DME and /or DME/DME position computation or 1 GNSS receiver
- 1 EHSI
- 1 EADI.

d5373898-ec99-4065-9839-c48a624176c9

2.1

0706-0775

APPROVED

PBN capability of Honeywell/Trimble GNSS 1000 operating with HT 1000-60 (or later) software is RNAV5, RNAV2, RNAV1, RNP1, RNP APCH (LNAV).

Minimum Equipment Required:

Minimum required equipment to enter RNAV 5 airspace is:

- 1 RNAV system, implying:
  - o 1 current and valid navigation database
  - o 1 MCDU
  - o Navigation Source selection (on ECP)
  - o 1 VOR and 1 DME capable of VOR/DME and /or DME/DME position computation or 1 GNSS receiver
- 1 EHSI
- 1 EADI.

Minimum required equipment to enter RNAV1/RNAV2 airspace is:

- 1 RNAV system, implying:
  - o 1 Current and valid navigation database
  - o 1 MCDU
  - o NAV SOURCE selection
  - o 1 DME capable of DME/DME position computation or 1 GNSS receiver (GPS may be required for RNAV1 terminal procedures)
- 1 CDI (NAV lateral deviation)
- 1 EHSI
- 1 EADI.


Minimum required equipment to enter RNP1 airspace is:

- 1 RNAV system, implying:
  - o 1 Current and valid navigation database
  - o 1 MCDU
  - o Navigation Source selection (on ECP)
  - o 1 DME capable of DME/DME position computation AND 1 GNSS receiver
- 1 CDI (NAV lateral deviation)
- 1 EHSI
- 1 EADI.

Minimum required equipment to start an RNP APCH (LNAV) operations:

cont'd... >>>



|   |   |                            |
|---|---|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>NAVIGATION</b> | LIM.5<br><br><br>Page n°27 |
|---|---|----------------------------|

cont'd... >>>

- 1 RNAV system, implying:
  - o 1 Current and valid navigation database
  - o 1 MCDU
  - o Navigation Source selection (on ECP)
  - o 1 GNSS receiver
- 1 CDI (NAV lateral deviation)
- 1 EHSI
- 1 EADI
- 1 AHRS
- 1 ADC.

### 34.7.2 PBN OPERATION

|                                      |          |
|--------------------------------------|----------|
| 2dfcb892-b8e3-4614-9928-6ac99b33cc18 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |


For all PBN operations listed here-in:

- If the missed approach procedure is based on conventional means (NDB, VOR, DME), all related navigation equipment must be installed and serviceable.
- The associated ground based nav aids must also be operational.

**Note**

*For all RNAV operations listed here bellow, the Fault Detection & Exclusion (FDE) or the Receiver autonomous integrity monitoring (RAIM) must be functional.*

*For all RNP operations described here bellow, the FDE (or RAIM) and the on-board performance monitoring and alerting capabilities must be functional.*

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>NAVIGATION</b> | LIM.5<br><br>Page n°28 |
|---|---|------------------------|

## 34.8 TCAS

### 34.8.1 Limitations

|                                      |          |
|--------------------------------------|----------|
| baf7140b-c97a-4f8a-8914-3901a73b77c3 | 6.1      |
|                                      | ALL      |
|                                      | APPROVED |

The limitations in Section LIM are applicable with the addition of the following:

- 1) TCAS operation is approved for use in VFR meteorological conditions (VMC) and IFR meteorological conditions (IMC).
- 2) The flight crew must not initiate escape maneuvers using information from the traffic display only or from a traffic advisory (TCAS) only.  
These displays and advisory are designed only for assistance in visually locating the traffic and do not have the resolution necessary for use in evasive maneuvering.
- 3) When an RA occurs, the pilot flying shall respond immediately to RA displays and aural alerts, maneuvering as indicated, unless doing so would jeopardize the safe operation of the aircraft.

#### CAUTION

Once a non crossing RA has been issued the vertical speed should be accurately adjusted to comply with the RA, in order to avoid negating the effectiveness of a coordinated maneuver by the intruder.

- 4) Escape maneuvering should be made with the autopilot disengaged, and limited to the minimum required to comply with the RA. The flight crew must immediately return to the previous ATC clearance when the TCAS “CLEAR OF CONFLICT” voice message is announced.
- 5) Before performing RA’s climb or increase climb, the flight crew should select the appropriate engine power setting on the power MGT selector and, if necessary, manually adjust CL 1+2.
- 6) When a climb or increase climb RA occurs with the aircraft in the landing configuration or in the go-around phase, a normal procedure of go-around should be followed including the appropriate power increase and configuration changes.
- 7) Because of the limited number of inputs to TCAS for determination of aircraft performance inhibits, there are instances where inhibiting RA’s would be appropriate, however it is not possible to do so. In these cases, TCAS may command maneuvers which may significantly reduce stall margins or result in stall warning. Conditions where this may occur include operations with a bank angle (wings level is assumed), weight, altitude, and temperature combinations outside those noted below, leaving aircraft in landing configuration during climb RA on approach, engine out operation, and abnormal configurations such as landing gear not retracted or stick pusher/shaker failure.

The table ([Refer to LIM.5.34.8.2 Climb Resolution Advisory Flight Envelope](#)) outlines the parameters used in the development of the performance inhibits. This table does not consider worst turboprop flight conditions particularly operation using minimum operation airspeeds as are sometimes required (e.g. obstacle clearance or ATC constraints). In all cases, stall warning must be given in priority over climb RA commands.

|                |                                     |           |
|----------------|-------------------------------------|-----------|
| <b>ATR</b>     | <b>LIMITATIONS</b>                  | LIM.5     |
| BU / 75<br>AFM | <b>SYSTEMS</b><br><b>NAVIGATION</b> | Page n°29 |

cont'd... >>>

**Note**

*TCAS is viewed as a supplement to the flight crew who, with the aid of the ATC system, has the primary responsibility for avoiding mid-air collisions.*

**WARNING**

PRIORITY MUST BE GRANTED TO INCREASING AIRSPEED WHEN REACHING STALL WARNING EVEN WHEN THIS REQUIRES DEVIATION FROM AN RA COMMAND ISSUED BY THE TCAS.

### 34.8.2 Climb Resolution Advisory Flight Envelope

35cac735-ad0d-4270-bf0f-b9cfb5327e40


2.0

ALL

APPROVED

| FLIGHT ENVELOPE IN WHICH CLIMB RESOLUTION ADVISORY CAN BE ACHIEVED WITHOUT STICK PUSHER / SHAKER ACTIVATION |  |  |                          |          |                   |  |
|---|--|--|--------------------------|----------|-------------------|--|
| FLIGHT REGIME   | WEIGHT ALTITUDE TEMP                           | POWER  | FLAPS                    | GEAR     | AIRSPEED          |  |
|   |  |  |                          |          | INITIAL           | MIN.   |
| Takeoff   | FAR25/<br>JAR25<br>Climb limit                 | Takeoff  | 15                       | Up       | $V_2 + 20$        | $1.13 V_{SR}$                                      |
| Approach  | FAR25/<br>JAR25<br>Climb limit                 | Spin up to go-around power during maneuver from power for level flight             | 15                       | Up       | $1.51 V_{SR}$     | $1.13 V_{SR}$                                      |
| Landing<br>Transitioning to go-around at RA   | FAR25/<br>JAR25<br>Climb limit                 | Spin up to go-around power during maneuver from power required for 3 ° Glide Slope | Transition from 30 to 15 | Dn to Up | $V_{APP} + 10$    | $1.13 V_{SR}$                                      |
| En route  | Critical Wt / ALT giving 1.3 g to Buffet onset | Power for level flight increased to MCT  | Up                       | Up       | Long Range Cruise | Higher of $1.13 V_{SR}$ if defined or buffet onset |

cont'd... >>>

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>NAVIGATION</b> | LIM.5<br><br>Page n°30 |
|---|---|------------------------|

cont'd... >>>

Temperature range up to ISA +27 °C

|                 |                      |   |           |
|-----------------|----------------------|---|-----------|
| Altitude range: | En route             | 0 | 25 000 ft |
|                 | Takeoff              | 0 | 6 000 ft  |
|                 | Approach and landing | 0 | 7 000 ft  |

Wings level assumed

### 34.8.3 Inhibition Schemes


|                                      |          |
|--------------------------------------|----------|
| be42621b-aaaf-46f7-80d4-c33e334b06fb | 2.0      |
|                                      | ALL      |
|                                      | APPROVED |

| NON ICING CONDITIONS |            |                   |
|----------------------|------------|-------------------|
| CONFIGURATION        | RA CLIMB   | RA INCREASE CLIMB |
| FLAPS 0              | AUTHORIZED | AUTHORIZED        |
| FLAPS 15 T.O         | AUTHORIZED | INHIBITED         |
| FLAPS 15 Approach    | AUTHORIZED | AUTHORIZED        |
| FLAPS 30             | AUTHORIZED | INHIBITED         |

| ICING CONDITIONS  |               |                   |           |
|-------------------|---------------|-------------------|-----------|
| CONFIGURATION     | RA CLIMB      | RA INCREASE CLIMB |           |
| FLAPS 0           | Z < 20 000 ft | AUTHORIZED        | INHIBITED |
|                   | Z > 20 000 ft | INHIBITED         | INHIBITED |
| FLAPS 15 T.O      | AUTHORIZED    | INHIBITED         |           |
| FLAPS 15 Approach | AUTHORIZED    | INHIBITED         |           |
| FLAPS 30          | INHIBITED     | INHIBITED         |           |

**Note**

- 1) *Flight crew is authorized to deviate from the current ATC clearance to the extent necessary to comply with a TCAS resolution advisory.*
- 2) *Maneuvers based solely on information displayed on the traffic display are prohibited.*

|   |  |                            |
|---|--|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>DOORS</b> | LIM.5<br><br><br>Page n°31 |
|---|--|----------------------------|

|           |              |
|-----------|--------------|
| <b>52</b> | <b>DOORS</b> |
|-----------|--------------|

### 52.1 Cargo Door Operation

|                                      |            |
|--------------------------------------|------------|
| 5c5010fd-2cbe-42d8-8139-ef06ea0c245c | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Do not operate cargo door with a lateral wind component of more than 45 kt.

### 52.2 Cockpit Door Security System

|                                      |            |
|--------------------------------------|------------|
| 6b9257f3-32a6-4fd3-b177-c4ff2ece2c99 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Cockpit door must be checked closed and locked before taxi.

## 70 POWER PLANT

### 70.1 ENGINES

#### 70.1.1 Engine Parameters

38c14879-b55c-4771-8d82-5d43f535f5fa

3.1

ALL

APPROVED

**Operating limits with no unscheduled maintenance action required.**

Beyond these limits *Refer to maintenance manual* .

| POWER SETTING          | TIME LIMIT          | TQ (%)            | ITT (°C)     | NH (%)     | NL (%) | NP (%)           | OIL PRESS (PSI)         | OIL TEMP (°C) <sup>b</sup> |
|------------------------|---------------------|-------------------|--------------|------------|--------|------------------|-------------------------|----------------------------|
| RESERVE TAKEOFF        | 10 min <sup>f</sup> | 100 <sup>a</sup>  | 800          | 103.2      | 104.2  | 101              | 55 to 65                | 0 to 125                   |
| NORMAL TAKEOFF         | 5 min               | 90 <sup>a</sup>   | <sup>e</sup> | 101.9      | 101.4  | 101              | 55 to 65                | 0 to 125                   |
| MAXIMUM CONTINUOUS     | NONE <sup>g</sup>   | 90.9 <sup>a</sup> | 800          | 103.2      | 104.2  | 101              | 55 to 65                | 0 to 125                   |
| GROUND IDLE            |                     |                   |              | 66 minimum |        |                  | 40 minimum <sup>d</sup> | -40 to 125                 |
| HOTEL MODE             |                     |                   | 715          |            |        |                  | 55 to 65                | 125                        |
| TRANSIENT <sup>h</sup> | 20 s                | 120               | 840          | 106.4      | 106.8  | 106 <sup>c</sup> | 40 to 100               |                            |
|                        | 5 s                 |                   |              |            |        | 120              |                         |                            |
| OTHER                  |                     |                   |              |            |        | 106 <sup>c</sup> |                         |                            |
|                        | 20 min              |                   |              |            |        |                  |                         | 140                        |
| STARTING               | 5 s                 |                   | 950          |            |        |                  |                         | -54 minimum                |

<sup>a</sup> Value linked to 100 % NP.

<sup>b</sup> The flight crew must maintain the oil temperature above 45 °C in order to ensure protection for the engine air inlet against ice accumulation.

<sup>c</sup> Authorized to achieve a flight provided that TQ does not exceed 75.2 % in CLB and 73.13 % in CRZ.

<sup>d</sup> Up to 75 % NH only.

<sup>e</sup> ITT limits depend on outside air temperature. [Refer to LIM.5.70.1.3 ITT Limitation at Normal Takeoff Rating](#) chapter.

<sup>f</sup> Time beyond 5 min is for single engine operations only.

<sup>g</sup> MCT rating is the MAX power certified for continuous use. Only for in-flight emergencies use the MCT.

<sup>h</sup> Transient is defined as change in temperature caused by movement of the PLA or CLA or an altitude change.

#### Note

*Flight with an engine running and the propeller feathered is not permitted.*

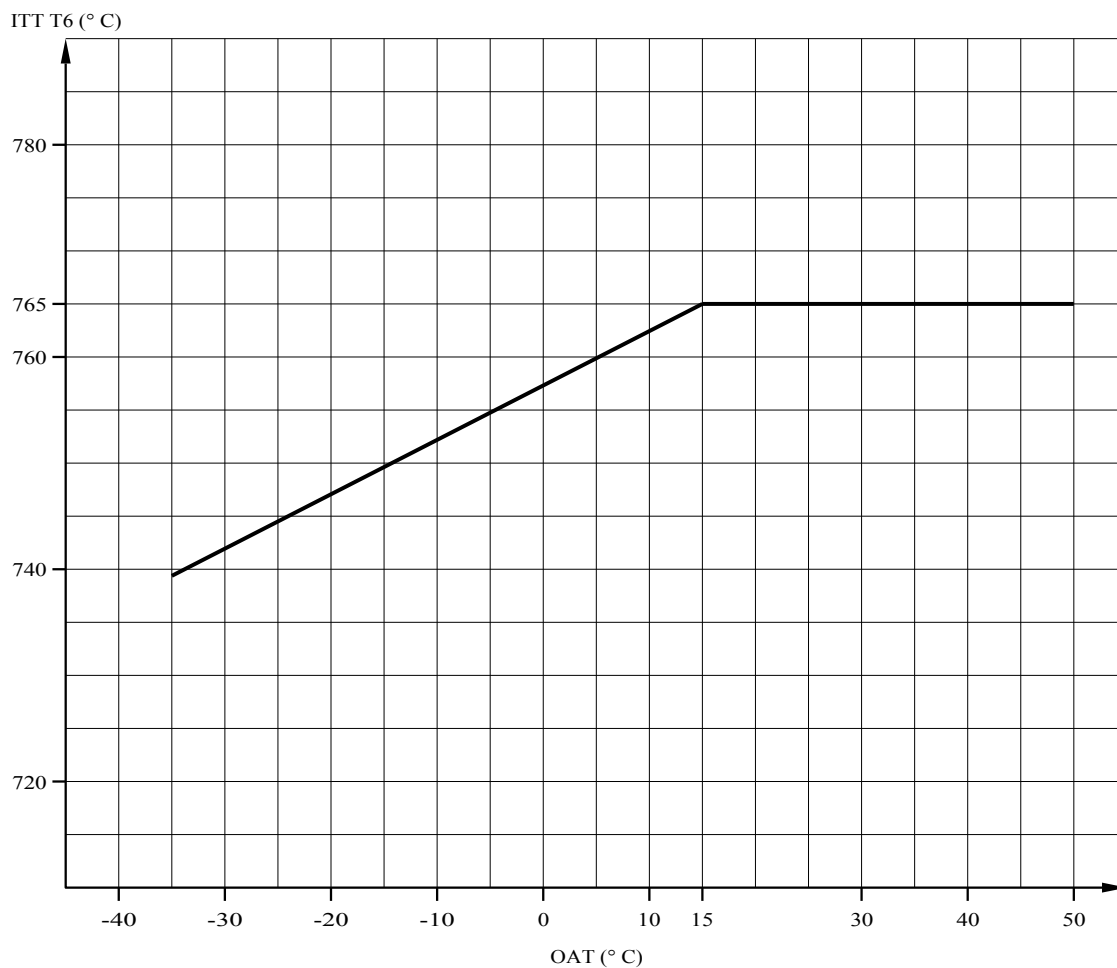
### 70.1.2 ITT Limitation at Normal Takeoff Rating


5e1a21d5-83a6-40e5-8655-9e656dc37a0d

0.1

ALL

APPROVED



|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>POWER PLANT</b> | LIM.5<br><br>Page n°34 |
|---|--|------------------------|

## 70.2 OIL SYSTEM

### 70.2.1 Oil System

|                                      |                 |
|--------------------------------------|-----------------|
| 1d528ba4-ca6a-4f90-95e0-7aeda8c07461 | <b>1.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

Refer to specification PWA 521 type II .

## 70.3 STARTER

### 70.3.1 Starter

|                                      |                 |
|--------------------------------------|-----------------|
| a67b7d33-cb4f-458c-abea-8de9db88f2d8 | <b>0.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

3 starts within 1 min 30 s maximum combined starter running time followed by 4 min OFF.

## 70.4 FUEL SYSTEM

### 70.4.1 Fuel

|                                      |                 |
|--------------------------------------|-----------------|
| 23fd279d-e6f9-4dfb-beb6-9669a2b225c3 | <b>2.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

Acceptable fuels : Jet A, Jet A1, JP5 and RT, TS1.

Use of JP4 and Jet B is prohibited.

**Note**

Refer to Consumable Material Data (CMD) to check permitted fuel additives.

### 70.4.2 Fuel Temperature

|                                      |                 |
|--------------------------------------|-----------------|
| 0243e85b-8bb4-4336-9028-4837871679b2 | <b>3.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |


- For flight preparation, a minimum fuel temperature must be taken into account to ensure adequate relight:
  - o -34 °C JET A, JET A1 and RT, TS1.
  - o -26 °C for fuel type JP5.
- Maximum temperature:
  - o 57 °C for fuel types JET A, JET A1, JP 5 and RT, TS1.

### 70.4.3 Refueling

|                                      |                 |
|--------------------------------------|-----------------|
| dec9d2ab-9c2a-4037-85b7-0846c0f408df | <b>0.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

Maximum pressure.....3.5 bar (50 psi)



|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>LIMITATIONS</b><br><br><b>SYSTEMS</b><br><br><b>POWER PLANT</b> | LIM.5<br><br>Page n°35 |
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#### 70.4.4 Usable Fuel

|                                      |            |
|--------------------------------------|------------|
| 5dceee0e-517b-499f-9e41-11b71f6faba3 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Total quantity of fuel usable in each tank ..... 2 500 kg

**Note**

*Fuel remaining in the tanks when quantity indicators show zero is not usable in flight.*

#### 70.4.5 Fuel Unbalance

|                                      |            |
|--------------------------------------|------------|
| 8d835b5d-9830-40b7-a357-9d68a2a82357 | <b>1.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Maximum fuel unbalance..... 730 kg

#### 70.4.6 Fuel Feeding

|                                      |            |
|--------------------------------------|------------|
| 0ee0db76-b99a-492f-b017-cdb704674acc | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Each electrical pump is able to supply one engine in the whole flight envelope.

One electrical pump and associated jet pump are able to supply both engines in the whole flight envelope.

### 70.5 PROPELLERS

#### 70.5.1 Propellers

|                                      |            |
|--------------------------------------|------------|
| 18888a3a-628d-4b3f-b358-0721a5904c7f | <b>1.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

TWO HAMILTON STANDARD HS 568 F-1

##### 1) Ground Operation

- Avoid static operation between 41.6 % and 62.5 % NP
- Avoid use of feather above 66.6 % TQ
- Perform engine run up into the wind.

##### 2) Ground or Flight Operation

*Refer to the propeller maintenance manual in case of propeller overspeed or overtorque.*

##### 3) Flight Operation

ATR aircraft are protected against a positioning of power levers below the flight idle stop in flight by an IDLE GATE device.

Any attempt to override this protection is prohibited.

Such positioning may result in loss of aircraft control or may result in an engine overspeed condition and consequent loss of engine power.

***ATR***

**BU / 75**

**AFM**

**LIMITATIONS**


**SYSTEMS**

**POWER PLANT**

**LIM.5**

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## GEN - GENERAL INFORMATIONS

**GENERAL INFORMATIONS**

**PRO.GEN**

|           |                                   |                |
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|           | Definition - Flight Crew.....     | page 03        |
|           | Procedure Application.....        | page 03        |
|           | Procedures Initiation.....        | page 03        |
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***ATR***

**BU / 75**

**AFM**

**AFM**


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## 1 Introduction

|                                      |            |
|--------------------------------------|------------|
| b99b42cf-93ce-4261-8930-efa4b7e8327f | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

The procedures contained in this chapter have been established and recommended by the aircraft manufacturer and approved by the Airworthiness Authorities as acceptable procedures for a correct use of the aircraft.

## 2 Definition - Flight Crew

|                                      |            |
|--------------------------------------|------------|
| 67adecf8-3b52-486b-a150-d05f8a13250a | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

|             |   |
|-------------|---|
| <b>CAPT</b> | Refers to Captain, occupying the left hand seat.        |
| <b>F/O</b>  | Refers to First Officer, occupying the right hand seat. |
| <b>PF</b>   | PF is the Pilot Flying.                                 |
| <b>PM</b>   | PM is the Pilot Monitoring.                             |

## 3 Procedure Application

|                                      |            |
|--------------------------------------|------------|
| 31d590ac-b885-4ab2-9eca-f56afb56ca0e | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

The **Emergency and Abnormal Procedures** represent the actions applicable in an event of failures to ensure adequate safety for the completion of the flight.

They are applied based on the “Read and Do” principle except for the memory items.

Generally, the associated alerts warn the flight crew of aircraft system failures:

- **Master Warning** + Continuous Repetitive Chime + local alert light
- **Master Caution** + Single Chime + local alert light

**Normal Procedures** consist of basic system test for flight preparations and only particular information considered useful for a phase of flight.

ATR provides expanded normal procedures in the FCOM.


## 4 Procedures Initiation

|                                      |            |
|--------------------------------------|------------|
| 2f7864eb-b1c1-46b3-b99e-b8d16473820f | <b>1.0</b> |
|                                      | ALL        |
|                                      | APPROVED   |

No action shall be initiated (apart from depressing MW pb):

- Until flight path is stabilized
- Under 400 ft above runway (except for propeller feathering after engine failure during approach at reduced power if go-around is considered).

Before procedure initiation, flight crew must assess the situation as a whole, taking into consideration the failures (when fully identified) and the constraints imposed.

|   |  |                                |
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## 5 Procedure Presentation

|                                      |          |
|--------------------------------------|----------|
| 3e76a972-5342-4c12-8e8a-bd72d9561ee9 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

The procedures titles are arranged as much as practical, in this order: name of **system**, then **function**, then **system's state** and finally the **phase** (when applicable).

When a procedure applies to either one of the two identical aircraft systems it is indicated as **SYSTEM 1(2)**.

When procedure is applicable to dual system failure then it is indicated as **SYSTEM 1+2**.

As much as practical, nomenclature to identify a push buttons, switches, selectors, lights..., in the procedures follow the cockpit panels' cerograph/labeling.

### 1) Memory Item

Memory item are BOXED.

Boxed actions are considered time-critical and should be memorized and executed from memory.

### 2) Actions

Actions are identified by the symbol ►

Actions can be immediate in the form of ► CHALLENGE.....RESPONSE

Or lasting in the form of ► SYSTEM STATE or ACTION or VALUE : DESCRIPTION

A lasting action can be for the remaining of flight, phase, or as long as a condition exist.

### 3) Conditions


When an action(s) is dependent of a condition the condition is identified by the symbol ■

### 4) Phases

When actions have to be applied at phase of procedure/flight is identified by the symbol ●

### 5) Information

Applicable information associated with an action of failure situation is presented in all capital letters without any symbol e.g. MAINTENANCE ACTION REQUIRED, AP CAN BE REENGAGED.

|   |   |  |
|---|---|--|
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**EMERGENCY PROCEDURES**

**.NNO.EMR**

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## 01.01 Introduction

49827bca-d1ef-4584-93c8-ad2cb0a4124b

0.1

ALL

APPROVED

- The recommended procedures contained in this chapter have been established by the aircraft manufacturer and approved by the Airworthiness Authorities for application in the event of a serious failure
- It is assumed that in general, all failures are indicated by the operation of specific system warnings and/or by direct observation
- Actions recommended may result in the loss of systems not associated with the failure
- Whenever fire is encountered on the aircraft, landing at the nearest suitable airport is recommended.  
After any fire suppression or smoke evacuation procedure (even though smoke has been dissipated), fire suppression shall be confirmed visually. Else land as soon as possible
- Whenever a fire extinguisher is discharged in the cockpit, the flight crew should go to 100 % oxygen.

**24 ELECTRICAL SYSTEM**

**DC GEN 1+2 FAULT**

a5a61789-3c99-4ea4-acf8-e5a7d07de54e 7.1  
ALL  
APPROVED

- ▶ PF ..... CAPT
- ▶ DC GEN 1 ..... RESET
- ▶ DC GEN 2 ..... RESET
- **If one generator recovered**
  - ▶ DC GEN 1(2) FAULT procedure ( [A24.15](#) ) ..... APPLY
- **If no generator recovered**
  - ▶ HYD GREEN PUMP ..... OFF
  - ▶ TRU ..... ON
    - **If no TRU arrow light**
      - ▶ MAX IMC FLIGHT TIME : 30 min
      - ▶ TRU ..... OFF
      - ▶ **LAND ASAP**


- ▶ BAT sw ..... OVRD
- ▶ CAB PRESS RATE knob ..... 9 O'CLOCK (MAN position)
- ▶ CAB PRESS MODE SEL ..... MAN
- ▶ AVIONICS VENT EXHAUST MODE ..... OVBD
- ▶ ATC (VHF 1) ..... NOTIFY
- ▶ MIN CAB LT ..... OFF
- ▶ ADC sw ..... SELECT ADC 1
- ▶ ATC ..... SELECT ATC 1
- ▶ TLU sw ..... LO SPD
  - **When RUD TLU LO SPD comes on**
    - ▶ TLU sw ..... AUTO
  - **If IAS above 180 kt**
    - ▶ LARGE RUDDER INPUT ..... AVOID
- ▶ STICK PUSHER-SHAKER FAULT procedure ( [A27.13](#) ) ..... APPLY
- ▶ SIDE WINDOWS pb ..... OFF
- ▶ WINDSHIELD HTG pb ..... OFF
- ▶ AUTO PRESS FAULT procedure ( [A21.10](#) ) ..... APPLY
- ▶ BUS EQUIPMENT LIST ..... CHECK

[Refer to STBY BUSSES AND BAT ONLY LOST EQUIPMENT LISTS](#)

*(FCOM-PROCEDURES-NNO-ABN-24-ELECTRICAL-POWER-4-LOST EQUIPMENT LIST-1-STBY BUSSES AND BAT ONLY LOST EQUIPMENT LISTS)*

- **For approach**
  - ▶ PAX INSTRUCTIONS ..... USE PA
  - ▶ HYD X FEED ..... ON

*cont'd... >>>*

|   |  |   |
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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>EMERGENCY PROCEDURES</b> | <b>PRO.NNO.EMR</b><br><br><br>Page n°05 |
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cont'd... >>>

- **At touchdown**

- ▶ IDLE GATE lever ..... PULL

|           |              |
|-----------|--------------|
| <b>26</b> | <b>SMOKE</b> |
|-----------|--------------|

**SMOKE or FUMES**

7d2c74a9-e6e1-4855-8fb5-15c18e9b8b95

**6.2**

ALL

APPROVED

■ **If smoke/fumes in the cockpit**

- ▶ CREW OXY MASKS..... DON / 100 %
- ▶ GOGGLES..... DON
- ▶ CREW COMMUNICATIONS..... ESTABLISH
- ▶ RECIRC FANS 1+2..... OFF
- ▶ AP ..... ON

- ▶ CABIN CREW COMMUNICATIONS..... ESTABLISH

**CAUTION**

ELEC SMK warning may be triggered by an air conditioning smoke source.

- ▶ SMOKE / FUMES SOURCE ..... IDENTIFY

■ **If electrical smoke/fumes identified**

- ▶ ELECTRICAL SMOKE procedure ( [E26.02](#) ) ..... APPLY

■ **If air conditioning smoke/fumes identified**

- ▶ AIR COND SMOKE procedure ( [E26.03](#) ) ..... APPLY

■ **If FWD SMK comes on or smoke/fumes in FWD zone of aircraft**

- ▶ FWD SMOKE procedure ( [E26.04](#) ) ..... APPLY

■ **If AFT SMK comes on or smoke/fumes in aft zone of aircraft**


- ▶ AFT SMOKE procedure ( [E26.06](#) ) ..... APPLY

■ **If smoke/fumes source not identified**

**Note**

*Refer to [FCOM - QRH PRO/NNO/EMR/26/SMOKE SOURCE DETECTION](#) provides additional guidance to identify smoke/fumes source.*

- ▶ ELECTRICAL SMOKE procedure ( [E26.02](#) ) ..... APPLY

|   |  |                                     |
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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>EMERGENCY PROCEDURES</b> | <b>PRO.NNO.EMR</b><br><br>Page n°06 |
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## ELECTRICAL SMOKE

|                                      |          |
|--------------------------------------|----------|
| 50eded2b-d359-477f-b1eb-1f4e07b3d10e | 3.3      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ SMOKE or FUMES procedure ( [E26.01](#) ) ..... APPLY

### CAUTION

ELEC SMK warning may be triggered by an air conditioning smoke source

- ▶ AVIONICS VENT EXHAUST MODE..... OVBD
- ▶ AIR FLOW.....HIGH
- ▶ DC SVCE & UTLY BUS..... OFF
- ▶ DC BTC ..... ISOL
- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ ACW GEN 1 + 2..... OFF
- ▶ SUSPECTED EQUIPMENT..... OFF

#### ■ If smoke source not identified

- ▶ **LAND ASAP**
- ▶ ACW GEN 1+2 LOSS procedure ( [A24.09](#) ) ..... APPLY


#### ■ If smoke source identified

- ▶ OPERATING EQUIPMENT..... RESTORE

#### Note

*Restore ACW GEN, DC BTC and/or DC SVCE & UTLY BUS if appropriate*

- ▶ AFFECTED EQUIPMENT FAULT PROCEDURES..... APPLY
- **When  $\Delta P$  below 1 psi**
  - ▶ OVBD VALVE ..... FULL OPEN
  - ▶ AVIONICS VENT EXHAUST MODE..... NORM

|   |  |                                  |
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## AIR COND SMOKE

e10128ed-55e0-4062-ba90-de025e1cd54c

5.1

ALL

APPROVED

- ▶ SMOKE or FUMES procedure ( [E26.01](#) ) ..... APPLY
- ▶ PACK VALVE 1..... OFF
- ▶ MAX FL : 200/MEA

### CAUTION

Air conditioning smoke may trigger an ELEC SMK warning. Do not apply ELECTRICAL SMOKE procedure in this case.

#### ■ If smoke persists

- ▶ PACK VALVE 1..... ON
- ▶ PACK VALVE 2..... OFF
- ▶ ENG PARAMETERS : CAREFULLY MONITOR

#### ■ If ENG amber on CAP associated to local ITT alert

- OR -

#### ■ Total loss of NL indication


- OR -

#### ■ Engine abnormality clearly identified (NH, NL, ITT indications, noise, surge...)

### CAUTION

Identify the engine that shows signs of abnormal operation in order to avoid shutting down the safe engine.

- ▶ PL (affected ENG)..... FI
- ▶ CL (affected ENG)..... FTR THEN FUEL S.O.
- ▶ **LAND ASAP**
- ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY

|   |  |                              |
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## FWD SMOKE

|                                      |   |
|--------------------------------------|---|
| 057ea1a6-e8c4-4158-a983-ef79edf9da04 | <b>6.7</b><br><b>ALL</b><br><b>APPROVED</b> |
|--------------------------------------|---|

▶ SMOKE or FUMES procedure ( [E26.01](#) ) ..... APPLY

### ■ If passenger configuration

- ▶ CABIN CREW (PA)..... ADVISE FOR ACTION
- ▶ AVIONICS VENT EXHAUST MODE ..... OVBD
- ▶ AIR FLOW.....HIGH
- ▶ EXTRACT AIR FLOW lever ..... CLOSED
- ▶ **LAND ASAP**
- **When ΔP below 1 psi**
  - ▶ OVBD VALVE ..... FULL OPEN
  - ▶ AVIONICS VENT EXHAUST MODE ..... NORM

### ■ If cargo configuration

#### CAUTION

FWD SMK warning may be triggered by an air conditioning smoke source.

- ▶ CAB PRESS MODE SEL ..... MAN
- ▶ CAB ALT ..... MAX INCREASE
- ▶ CREW OXY MASKS..... AS RQRD

### ■ If dual bleed operation

- ▶ ENG BLEED 2..... OFF

### ■ If dual pack operation

- ▶ PACK VALVE 2..... OFF
- ▶ CAB VENT AIR FLOW..... OFF
- ▶ FLT COMPT TEMP SEL ..... HOT

### ▶ **LAND ASAP**

### ■ If immediate landing is not possible

- ▶ FL : 160/HIGHER (FL 200 is recommended)

#### ■ When EXCESS CAB ALT warning is triggered

- ▶ CAB ALT ..... MAINTAIN MAX INCREASE

#### Note

*Other smoke detection alarms maybe triggered during smoke evacuation process.  
Disregard them.*

## AFT SMOKE

0af7a442-901d-41b5-bbfa-0c5b1f3bb452

5.3

ALL

APPROVED

▶ SMOKE or FUMES procedure ( [E26.01](#) ) ..... APPLY

### ■ If passenger configuration

▶ CABIN CREW (PA)..... ADVISE FOR ACTION

▶ AIR FLOW..... HIGH

▶ **LAND ASAP**

### ■ If cargo configuration

#### CAUTION

AFT SMK warning may be triggered by an air conditioning smoke source.

▶ CAB PRESS MODE SEL ..... MAN

▶ CAB ALT ..... MAX INCREASE

▶ CREW OXY MASKS..... AS RQRD

### ■ If dual bleed operation

▶ ENG BLEED 2..... OFF

### ■ If dual pack operation

▶ PACK VALVE 2..... OFF

▶ CAB VENT AIR FLOW..... OFF

▶ FLT COMPT TEMP SEL ..... HOT

▶ **LAND ASAP**

### ■ If immediate landing is not possible

▶ FL : 160/HIGHER (FL 200 is recommended)

#### ● When EXCESS CAB ALT warning is triggered

▶ CAB ALT ..... MAINTAIN MAX INCREASE

#### Note

*Other smoke detection alarms may be triggered during smoke evacuation process.  
Disregard them.*

## 27 FLIGHT CONTROLS

### PITCH CONTROL JAM AT TAKEOFF OR LANDING

e2d6a6fe-cd3a-4bd2-a65d-c2f93ffd7cfc

2.1

ALL

APPROVED

▶ MAX IAS : 180 kt

▶ CONTROL COLUMNS..... UNCOUPLE

▶ FREE CONTROL COLUMN..... IDENTIFY

▶ PF..... FREE CONTROL COLUMN SIDE

▶ PITCH DISCONNECT procedure ( [A27.07](#) ) ..... APPLY

**70 POWER PLANT****ENG 1(2) FIRE AT TAKEOFF**

a59ac6be-ceda-4256-adc0-efba27c1cca1

4.5

ALL

APPROVED

**Note**

*Captain may decide to shut down affected engine before reaching acceleration altitude, but not before 400 ft AGL*

- **WHEN AIRBORNE**

- ▶ LDG GEAR..... UP

- **AT ACCELERATION ALTITUDE**

- ▶ PWR MGT ..... MCT

- **AT VFTO**

- **If normal conditions**

- ▶ FLAPS..... 0

- **If icing conditions**

- ▶ FLAPS : MAINTAIN 15°

- ▶ PL (affected ENG)..... FI

- ▶ CL (affected ENG)..... FTR THEN FUEL S.O.

- ▶ FIRE HANDLE (affected ENG)..... PULL

- **If fire persists after 10 s**

- ▶ AGENT 1 (affected ENG)..... DISCH

- **If fire persists 30 s after AGENT 1 DISCH**

- ▶ AGENT 2 (affected ENG)..... DISCH

- ▶ **LAND ASAP**

- ▶ BLEED (operating ENG)..... OFF (if necessary)

- ▶ ATC..... NOTIFY

- ▶ ENG (affected) : DO NOT RESTART

- ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY



## ENG 1(2) FIRE OR SEVERE MECHANICAL DAMAGE IN FLIGHT

a82963e0-df9b-43e1-a3fe-b607b9a30dc1

2.4

ALL

APPROVED

- |   |                    |
|---|--------------------|
| ▶ PL (affected ENG).....  | FI                 |
| ▶ CL (affected ENG).....  | FTR THEN FUEL S.O. |
| ▶ FIRE HANDLE (affected ENG).....                                 | PULL               |
| <b>■ If fire persists after 10 s</b>                              |                    |
| ▶ AGENT 1 (affected ENG).....                                     | DISCH              |
| <b>■ If fire persists 30 s after AGENT 1 DISCH</b>                |                    |
| ▶ AGENT 2 (affected ENG).....                                     | DISCH              |
| <b>▶ LAND ASAP</b>  |                    |
| ▶ ATC.....  | NOTIFY             |
| ▶ ENG (affected) : DO NOT RESTART                                 |                    |
| ▶ SINGLE ENG OPERATION procedure ( <a href="#">A70.12</a> ) ..... | APPLY              |

## ENG 1(2) FIRE OR SEVERE MECHANICAL DAMAGE ON GROUND

57751aa9-ee1c-400c-9bf1-83f854c2e5e2

3.4

ALL

APPROVED

- |   |                    |
|---|--------------------|
| ▶ AIRCRAFT.....   | STOP               |
| ▶ BRAKE HANDLE.....   | PARKING            |
| ▶ CL 1+2.....   | FTR THEN FUEL S.O. |
| ▶ FIRE HANDLE (affected ENG).....   | PULL               |
| <b>■ If fire persists</b>   |                    |
| ▶ AGENT 1 (affected ENG).....   | DISCH              |
| <b>■ If fire persists 30 s after AGENT 1 DISCH</b>                            |                    |
| ▶ AGENT 2 (affected ENG).....   | DISCH              |
| ▶ ATC (VHF 1).....  | NOTIFY             |
| <b>■ If evacuation required</b>   |                    |
| ▶ EMERGENCY EVACUATION (ON GROUND) procedure ( <a href="#">E99.05</a> ) ..... | APPLY              |

**ENG 1+2 FLAME OUT**

ff73daa7-8686-4574-82b6-79e3bef1e42a

8.3

ALL

APPROVED

- ▶ PF ..... CAPT
- ▶ PL 1 + 2 ..... FI
- **If NH drops below 30 %**
  - ▶ CL 1+2 ..... FTR THEN FUEL S.O.
  - ▶ OPTIMUM SPEED .....  $V_{mHB}$

**Note***In order to determine  $V_{mHB}$ :*

- In landing configuration, [Refer to OPSDATA](#), or
- In other configurations, [Refer to PER.6.3.1 Reduced Flaps Landing Configuration VAPP](#).

- ▶ FUEL SUPPLY ..... CHECK
- ▶ CAPT EHSI ..... OFF
- ▶ ATC (VHF1) ..... NOTIFY
- ▶ ENG START selector ..... START A & B

● **RELIGHT SEQUENCE ON ENG 2 THEN ENG 1**

- ▶ ENG START pb ..... ON
- **When NH above 10 %**
  - ▶ CL ..... FTR
  - ▶ ENG RELIGHT : MONITOR
  - ▶ CL ..... AS RQRD
  - ▶ PL ..... AS RQRD
- **If no restart**
  - ▶ CL ..... FTR THEN FUEL S.O.

■ **If only one engine recovered**

- ▶ SYSTEMS (affected) ..... RESTORE
- ▶ APM ..... OFF
- ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY


■ **If NO engine recovered**

- ▶ ENG START selector ..... OFF & START ABORT
- ▶ FUEL PUMPS 1+2 ..... OFF

**CAUTION**

Do not select avionics vent exhaust mode to OVBD.

- ▶ FORCED LANDING procedure ( [E99.06](#) ) .....APPLY
- OR-
- ▶ DITCHING procedure ( [E99.03](#) ) ..... APPLY

|   |  |                                  |
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|           |                      |
|-----------|----------------------|
| <b>99</b> | <b>MISCELLANEOUS</b> |
|-----------|----------------------|

**BOMB ON BOARD**

|   |                 |
|---|-----------------|
| <small>2b93c24e-4da1-403c-94d4-ec8ab5af4582</small> | <b>1.1</b>      |
|   | <b>ALL</b>      |
|   | <b>APPROVED</b> |

- ▶ ATC..... NOTIFY
- ▶ LANDING ELEVATION..... SET CAB ALT
- ▶ ALT SEL..... DESCENT TO CABIN ALTITUDE
- ▶ LOAD FACTORS : AVOID
- ▶ BOMB : HANDLE CAREFULLY AND AVOID SHOCKS

PLACE BOMB NEAR SERVICE DOOR PREFERABLY IN A BAG ATTACHED TO THE DOOR HANDLE

SURROUND IT WITH DAMPING MATERIAL

- ▶ CABIN CREW OXYGEN AND FIRE EXTINGUISHER..... MOVE FORWARD
- ▶ PAX ..... MOVE FORWARD/CRASH POSITION

● **When Z aircraft = Z cabin**

- ▶ APPROACH CONFIGURATION..... FLAPS 15
- ▶ LDG GEAR..... DOWN
- ▶ AUTO PRESS DUMP..... ON
- ▶ SERVICE DOOR..... UNLOCK
- ▶ **LAND ASAP**

## COCKPIT DOOR LOCKING SYSTEM

b7b305b6-04c8-47d7-8b38-6c2fd94f541c

2.1

ALL

APPROVED

### ■ If Electrical Power Lost

- ▶ MANUAL LOCK BOLT..... CLOSE POSITION

#### Note

*When the door is locked with the manual bolt, the emergency access to the cockpit is not available*


*It is recommended that at least two crew members must remain in the cockpit during that time*

### ■ If cockpit door is jammed in closed position and need to exit the cockpit

- ▶ THIRD OCCUPANT SEAT (if any)..... FOLD UP
- ▶ TWO HORIZONTAL LATCHES ON THE LEFT PANEL DOOR..... CHECK OPEN
- ▶ COCKPIT DOOR LOCKING SYSTEM sw..... OFF
- ▶ DOORS..... PUSH

### ■ If cockpit door still jammed in closed position

- ▶ ELECTRICAL PLUG ON TOP LEFT OF THE LEFT DOOR..... DISCONNECT
- ▶ FOUR RED SAFETY PINS FROM THE DOORS..... REMOVE
- ▶ VERTICAL DOOR HANDLE..... OPEN
- ▶ DOORS..... PUSH & REMOVE

|   |  |                              |
|---|--|------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>EMERGENCY PROCEDURES</b> | PRO.NNO.EMR<br><br>Page n°15 |
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## DITCHING

cffde8c7-e5c3-44a7-a08e-2e2c5b434d9e

6.1

ALL

APPROVED

### • Preparation

- ▶ ATC (VHF1 or HF)..... NOTIFY
- ▶ XPDR 1..... 7700
- ▶ CABIN CREW (PA)..... NOTIFY
- ▶ CABIN AND COCKPIT..... PREPARE
- ▶ GPWS ..... OFF
- ▶ SIGNS..... ON
- ▶ EMER EXIT LT ..... ON
- ▶ LANDING ELEVATION ..... SET PRESSURE ALTITUDE
- ▶ EMER LOC XMTR..... MAN

### • For approach

- ▶ AUTO PRESS DUMP..... ON
- ▶ LDG GEAR : KEEP UP

#### ■ If no engine operates

- ▶ HYD AUX PUMP pb pedestal ..... PRESS
  - **Within 10 s**
    - ▶ FLAPS (if available)..... 30
- ▶ PACKS 1+2..... OFF
- ▶ OVBD VALVE..... FULL CLOSE
- ▶ ENG START selector ..... OFF & START ABORT
- ▶ CABIN REPORT..... OBTAIN

### • At 500 ft AGL

- ▶ DITCH pb ..... ON


### • Just before ditching

#### Note

*In case of night ditching, both engines shut down is performed at captain's discretion as no landing lights available with propellers feathered.*

- ▶ BRACE FOR IMPACT..... ORDER
- ▶ FLARE ..... INITIATE
- ▶ OPTIMAL PITCH ATTITUDE..... 9°
- ▶ CL 1+2..... FTR THEN FUEL S.O.
- ▶ FIRE HANDLES 1+2..... PULL
- ▶ FUEL PUMPS 1+2..... OFF

### • For evacuation

|   |  |   |
|---|--|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>EMERGENCY PROCEDURES</b> | <b>PRO.NNO.EMR</b><br><br><br>Page n°16 |
|---|--|---|

cont'd... >>>

■ **If any doors under the water line**

- ▶ DOOR : DO NOT OPEN
- ▶ EVACUATION (PA)..... INITIATE
- ▶ ATC (VHF1)..... NOTIFY


● **Before leaving aircraft**

- ▶ EMER LOC XMTR.....CHECK EMITTING
- ▶ BAT ..... OFF

**EMERGENCY DESCENT**

|                                      |                 |
|--------------------------------------|-----------------|
| 4dc6bcd4-6d75-4df6-936c-2957ccc89e3d | <b>1.0</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

- |                            |           |
|----------------------------|-----------|
| ▶ CREW OXY MASKS.....      | AS RQRD   |
| ▶ CREW COMMUNICATIONS..... | AS RQRD   |
| ▶ GOGGLES.....             | AS RQRD   |
| ▶ DESCENT.....             | INITIATE  |
| ▶ PL 1+2.....              | FI        |
| ▶ CL 1+2.....              | 100% OVRD |
- ▶ OXYGEN PAX SUPPLY..... AS RQRD
  - ▶ IAS : VMO/MMO (or less if structural damage is suspected)
  - ▶ SIGNS..... ON
  - ▶ ATC ..... NOTIFY
  - ▶ MEA ..... CHECK

|   |  |   |
|---|--|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>EMERGENCY PROCEDURES</b> | <b>PRO.NNO.EMR</b><br><br><br><br>Page n°17 |
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## EMERGENCY EVACUATION (ON GROUND)

9d94a5cb-a461-49e5-9ebb-d233509dc7d4

3.1

ALL

APPROVED

- ▶ AIRCRAFT ..... STOP
- ▶ BRAKE HANDLE ..... PARKING
- ▶ ATC (VHF1) ..... NOTIFY
- ▶ AUTO PRESS DUMP ..... ON
- ▶ MIN CAB LT ..... ON
- ▶ CABIN CREW (PA) ..... NOTIFY
- ▶ CL 1+2 ..... FTR THEN FUEL S.O.
- ▶ FIRE HANDLES 1+2 ..... PULL
- ▶ AGENTS ..... DISCH AS RQRD
- ▶ ENG START selector ..... OFF & START ABORT
- ▶ FUEL PUMPS 1+2 ..... OFF
- ▶ EMER EXIT LT ..... ON
- ▶ EVACUATION (PA) ..... INITIATE
- **Before leaving aircraft**
  - ▶ BAT ..... OFF

**FORCED LANDING**

fc6d2df6-567b-4ea1-8c43-c5afba33b769

6.1

ALL

APPROVED

**• Preparation**

- ▶ ATC (VHF1 or HF)..... NOTIFY
- ▶ XPDR 1..... 7700
- ▶ CABIN CREW (PA)..... NOTIFY
- ▶ CABIN AND COCKPIT..... PREPARE
- ▶ GPWS ..... OFF
- ▶ SIGNS..... ON
- ▶ EMER EXIT LT ..... ON
- ▶ LANDING ELEVATION..... SET PRESSURE ALTITUDE
- ▶ EMER LOC XMTR..... MAN

**• For approach and landing**

- ▶ AUTO PRESS DUMP..... ON
- ▶ LDG GEAR..... DOWN AS RQRD

**■ If no engine operates**

- ▶ HYD AUX PUMP pb pedestal..... PRESS

**• Within 10 s**

- ▶ FLAPS (if available)..... 30
- ▶ ENG START selector ..... OFF & START ABORT
- ▶ CABIN REPORT..... OBTAIN

**• Just before landing**

- ▶ BRACE FOR IMPACT..... ORDER

**Note**


*In case of night forced landing, both engines shut down is performed at captain's discretion as no landing lights available with propellers feathered.*

- ▶ CL 1+2..... FTR THEN FUEL S.O.
- ▶ FIRE HANDLES 1+2..... PULL
- ▶ FUEL PUMPS 1+2..... OFF

**• When aircraft has stopped**

- ▶ BRAKE HANDLE (if available)..... PARKING
- ▶ CABIN CREW (PA)..... NOTIFY
- ▶ AGENTS..... DISCH
- ▶ EVACUATION (PA)..... INITIATE
- ▶ ATC (VHF1)..... NOTIFY



|   |  |   |
|---|--|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>EMERGENCY PROCEDURES</b> | <b>PRO.NNO.EMR</b><br><br><br><br>Page n°19 |
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cont'd... >>>

- **Before leaving aircraft**

- ▶ EMER LOC XMTR.....CHECK EMITTING
- ▶ BAT ..... OFF

## SEVERE ICING

7442ce17-701e-4142-b39e-038dde74f989

1.15

ALL

APPROVED

- |   |            |
|---|------------|
| ▶ IAS : ICING BUG + 30 kt (or ICING BUG IF FLAPS 15 EXTENDED) |            |
| ▶ PWR MGT .....   | MCT        |
| ▶ PL 1+2.....   | ADJUST     |
| ▶ CL 1+2.....   | 100 % OVRD |
- ▶ DESCENT..... INITIATE
  - ▶ MEA / RECOMMENDED MAXIMUM ICING FLIGHT LEVEL..... CHECK

**CAUTION**

Firmly hold control column and wheel to avoid non-expected aircraft movements at AP disengagement

- ▶ AP ..... DISENGAGE

- **If not able to accelerate and maintain IAS above ICING BUG + 30 kt with flaps 0**  
- OR -

- **If not able to accelerate and maintain IAS above ICING BUG with flaps 15**

- ▶ LOW BANK..... SET
- ▶ SEVERE ICING CONDITION..... ESCAPE
- ▶ ATC ..... NOTIFY

- **If abnormal aircraft roll behavior**

- ▶ STALL procedure ( [E99.09](#) ) ..... APPLY

- **As long as aircraft is not clear of ice**

- ▶ FLAPS : DO NOT RETRACT

- **For landing**

- ▶ APPROACH CONFIGURATION ..... FLAPS 15  
HIGH BANK CAN BE SET
- ▶ REDUCED FLAPS LANDING procedure ( [A27.05](#) ) ..... APPLY

**Note**

[Refer to PRO.NNO.ABN.30.3.3.A30.16 SEVERE ICING DETECTION](#) for information on severe icing indications.

**STALL**

58995808-e615-41b3-8bb9-b0f2175ed226

2.1

ALL

APPROVED

- ▶ CONTROL COLUMN..... PUSH
- ▶ ENG PWR ..... INCREASE
- If **FLAPS 0**
  - ▶ FLAPS..... EXTEND TO 15
  - ▶ BANK..... WINGS LEVEL

**WARNING**

- ▶ STICK PUSHER ACTIVATION : NO OPPOSITE ACTION
- ▶ FLAPS : DO NOT RETRACT
- ▶ RUDDER : USE WITH CARE
- ▶ ATC ..... NOTIFY
- **When out of stall**
  - ▶ FLIGHT PATH..... RECOVER SMOOTHLY

## UNRELIABLE AIRSPEED INDICATION

0a314fca-b8ce-48f7-8041-a4cb01a34a5c

4.1

ALL

APPROVED

### CAUTION

Unreliable airspeed indication procedure has to be applied only when the three airspeed sources (both ADC and IESI) indications differ.

- |   |                 |
|---|-----------------|
| ▶ AP/YD .....                               | OFF             |
| ▶ FD .....                                  | STBY            |
| ▶ PITCH : MAINTAIN                          |                 |
| ▶ TQ : MAINTAIN                             |                 |
| <b>■ If at takeoff or GA below 1 500 ft</b> |                 |
| ▶ PITCH.....                                | 8 ° IMMEDIATELY |
| ▶ ICING CONDITIONS.....                     | ESCAPE          |
| ▶ VOLCANIC ASHES CONDITIONS.....            | ESCAPE          |

- ▶ AP and/or YD USE : PROHIBITED
- ▶ PROBES HTG ..... CHECK ON
- ▶ DE/ANTI ICING..... CHECK ON
- ▶ APM ..... OFF

STALL ALARM STILL RELIABLE

- ▶ GPS SPEED INFORMATION (IF AVAILABLE)..... USE

### • Takeoff phase, at or above acceleration altitude

- ▶ ALTITUDE : MAINTAIN AT LEAST 30 s
- ▶ FLAPS..... 0
- ▶ PITCH..... 8 °

LAND AT NEAREST SUITABLE AIRPORT

### • Climb

- ▶ TLU sw ..... LO SPD
- ▶ PWR MGT ..... CLB
- ▶ PL 1+2..... NOTCH
- ▶ PITCH..... ADJUST FOLLOWING TABLE

| Altitude (ft)           | 5 000 | 10 000 | 15 000 | 20 000 |
|-------------------------|-------|--------|--------|--------|
| Normal conditions pitch | 7 °   | 5 °    | 4 °    | 3 °    |
| Icing conditions pitch  | 6 °   | 4 °    | 3 °    | 2 °    |

### • Cruise

- ▶ ALTITUDE : MAINTAIN
- ▶ TLU sw ..... HI SPD

cont'd... >>>

cont'd... >>>

**Note**

*Average pitch around 0 ° at cruise speed.*

- ▶ PWR MGT ..... CRZ
- ▶ PL 1+2.....NOTCH

● **Descent**

- ▶ TLU sw ..... HI SPD
- ▶ PITCH : MAINTAIN AT -2.5 °
- ▶ PL 1+2.....ADJUST TO 30 % TQ

● **Initial Approach**

**CAUTION**

Perform transition from clean to LDG configuration in level flight. Refer to ALTIMETER.  
If possible, maintain level flight during 30 s between each configuration update.

- ▶ TLU sw ..... LO SPD
- ▶ TQ ..... ADJUST FOLLOWING TABLE

| Aircraft configuration - Average speed | TQ (Altitude of 3 000 ft) |      |      |
|--|---------------------------|------|------|
|  | 14 T                      | 18 T | 22T  |
| FLAPS 0 - 180 kt                       | 35 %                      | 45 % | 50 % |
| FLAPS 15 - 150 kt                      | 35 %                      | 40 % | 45 % |
| FLAPS 30 - 130 kt                      | 45 %                      | 45 % | 50 % |


- ▶ FLAPS.....15
- ▶ LDG GEAR..... DOWN
- ▶ PWR MGT ..... TO
- ▶ FLAPS.....30

● **Final Approach**

- ▶ PL 1+2..... ADJUST 35 % TQ
- ▶ Before Landing procedure ( 21 ) ..... APPLY

**Note**

*Set an average pitch of -5 ° for a 3 ° slope approach.*

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>AFM</b><br><br><b>TOC</b><br><b>Table of Content</b> | <b>PRO.NNO.ABN</b><br><br><br>Page n°01 |
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**ABNORMAL PROCEDURES**

**.NNO.ABN**

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***ATR***

**BU / 75**

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## 01.1 Introduction

|                                      |          |
|--------------------------------------|----------|
| 83461db9-ea9b-4041-bdbf-69a578f6a025 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

- The recommended procedures contained in this chapter have been established by the aircraft manufacturer and approved by the Airworthiness Authorities as acceptable procedures for a proper use of the aircraft
- They provide the actions to be followed in case of failures that are not considered as emergency cases (these cases are covered in the Emergency Procedures chapter, [Refer to EMERGENCY PROCEDURES](#))
- Only particular operations that are considered useful to highlight are presented. Procedures that are considered to be “basic airmanship” are therefore not covered.

## 21 AIR CONDITIONING

### 21.1 AIR CONDITIONING

#### DUCT 1(2) OVHT

|                                      |          |
|--------------------------------------|----------|
| b47cb9f6-a287-4938-a109-f9af2e65710c | 4.2      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ TEMP SEL (affected side)..... MAN
- ▶ COMPT TEMP selector (affected side)..... COLD
- ▶ DUCT TEMPERATURE : MONITOR

#### Note

*Make sure DUCT temperature remains positive to avoid possible pack turbine damage.*

#### ■ If alert persists

- ▶ PACK VALVE (affected side)..... OFF
- ▶ MAX FL : 200/MEA
- **At high altitude**
  - ▶ LARGE RAPID POWER CHANGES : AVOID

#### PACK 1(2) VALVE FAULT

|                                      |          |
|--------------------------------------|----------|
| 2920dd9e-f5d2-4839-a270-df0cfca9ec64 | 2.5      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ PACK VALVE (affected side)..... OFF
- ▶ MAX FL : 200/MEA
- **At high altitude**
  - ▶ LARGE RAPID POWER CHANGE : AVOID

## PACK 1+2 VALVES FAULT

87f45607-b5f9-41b1-815e-dc8f8432eac6 2.0  
ALL  
APPROVED

- ▶ MAX FL : 100 or MEA
- ▶ MAX FLIGHT TIME : 80 min
- **When  $\Delta P < 1$  psi**
  - ▶ OVBD VALVE.....FULL OPEN
  - ▶ CAB PRESS RATE knob ..... 9 O’CLOCK (MAN position)
  - ▶ CAB PRESS MODE SEL ..... MAN
  - ▶ CAB PRESS RATE knob ..... MAX INCREASE

## 21.2 PRESSURIZATION

### AUTO PRESS FAULT


840538b9-f542-468b-9d3f-202570c694de 4.1  
ALL  
APPROVED

- ▶ CAB PRESS RATE knob ..... 9 O’CLOCK (MAN position)
- ▶ CAB PRESS MODE SEL ..... MAN
- ▶ CAB PRESS RATE knob ..... AS RQRD TO ADJUST TARGET CAB ALT

| FL                  | 140   | 170   | 200   | 220   | 240   | 250   |
|---------------------|-------|-------|-------|-------|-------|-------|
| TARGET CAB ALT (ft) | 2 500 | 3 300 | 4 200 | 5 200 | 6 200 | 6 700 |

- **Before descent**
  - **If CAB ALT above landing elevation**
    - ▶ CAB PRESS RATE knob .....DECREASE
    - ▶ CAB ALT RATE..... ADJUST 400 ft/min DN
  - **If CAB ALT below landing elevation**
    - ▶ CAB PRESS RATE knob ..... INCREASE
    - ▶ CAB ALT RATE..... ADJUST 1 000 ft/min UP MAX
- **When CAB ALT = landing elevation**
  - ▶ CAB PRESS RATE knob ..... 9 O’CLOCK (MAN position) & MONITOR
- **After landing**
  - ▶ CAB PRESS RATE knob ..... MAX INCREASE



|   |   |                              |
|---|---|------------------------------|
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## EXCESS CAB ALT

51062107-8c24-4ed8-bf29-b3510963112e

7.1

ALL

APPROVED

- ▶ CAB PRESS indicator .....CHECK
- **If rapid decompression**
  - ▶ EMERGENCY DESCENT procedure ( [E99.04](#) ) ..... APPLY
- **If cabin altitude > 10 000 ft confirmed**
  - ▶ CAB PRESS RATE knob .....9 O'CLOCK (MAN POSITION)
  - ▶ CAB PRESS MODE SEL ..... MAN
  - ▶ CAB PRESS RATE knob .....DECREASE
- **If EXCESS CAB ALT persists**
  - ▶ CREW OXY MASKS..... DON
  - ▶ CREW COMMUNICATIONS..... ESTABLISH
  - ▶ OXYGEN PAX SUPPLY..... AS RQRD
  - ▶ OXYGEN PRESSURE..... CHECK
  - ▶ DESCENT..... INITIATE AS RQRD
  - ▶ MAX FL : 100/MEA

## EXCESS CAB DELTA P

40fe8e77-b971-42fb-8877-9a6fa6f918a7

4.3

ALL


APPROVED

- ▶ CAB PRESS RATE knob..... 9 O'CLOCK (MAN position)
- ▶ CAB PRESS MODE SEL ..... MAN
- ▶ CAB PRESS RATE knob..... MAX INCREASE
- **If EXCESS CAB DELTA P persists**
  - ▶ DESCENT ..... INITIATE
  - ▶ MAX FL : 100/MEA

### Note

*Closing of the pack valves may trigger EXCESS CAB ALT alert*

- ▶ PACK VALVE 1+2..... OFF
- ▶ MAX FLIGHT TIME : 80 min
- **When  $\Delta P < 1$  psi**
  - ▶ OVBD VALVE.....FULL OPEN

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br>Page n°06 |
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## 22 AUTOPILOT

### ABNORMAL FLIGHT CHARACTERISTICS IN ROLL

|                                      |            |
|--------------------------------------|------------|
| 462544ce-8518-4979-8578-8d2c06b887a7 | <b>2.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ CONTROL COLUMN & WHEEL..... HOLD FIRMLY
- ▶ AP..... DISENGAGE
- ▶ AIL TRIM..... ADJUST
- **When lateral trims adjusted**  
AP CAN BE REENGAGED

### ADU FAILURE

|                                      |            |
|--------------------------------------|------------|
| 486ede53-6814-4fe9-bd49-1ad347605a57 | <b>1.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ IAS & VS MODE..... USE TCS
- ALT SEL MODE LOST
- **If amber AP MSG appears on EADI**  
- OR -
- **If composite mode**
  - ▶ CONTROL COLUMN & WHEEL..... HOLD FIRMLY
  - ▶ AP ..... DISENGAGE

### AILERON MISTRIM

#### AILERON MISTRIM (ADU MESSAGE)

|                                      |            |
|--------------------------------------|------------|
| b3ddeb48-0e5a-45d0-bfcb-3e90d3a94191 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |


- ▶ CONTROL COLUMN & WHEEL..... HOLD FIRMLY
- ▶ AP ..... DISENGAGE
- ▶ LATERAL TRIMS..... ADJUST
- **When lateral trims adjusted**  
AP CAN BE REENGAGED

### AP PITCH TRIM FAIL

#### AP PITCH TRIM FAIL (ADU MESSAGE)

|                                      |            |
|--------------------------------------|------------|
| 357f812f-0771-4927-8c81-e6d58229ff82 | <b>2.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ CONTROL COLUMN & WHEEL..... HOLD FIRMLY
- ▶ AP ..... DISENGAGE

|   |   |                                     |
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## DADC DATA INVALID (ADU MESSAGE)

|                                      |                 |
|--------------------------------------|-----------------|
| 9406b3be-4b30-4e67-9b12-5b3e09f2ea5b | <b>1.2</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

- ▶ INSTRUMENTS..... XCHECK
- ▶ ADC FAILED..... IDENTIFY
- ▶ ADC sw ..... SELECT VALID ADC
- **If ADC 1 is failed**
  - ▶ C/B ADS / ADC 1 EMER SPLY ..... PULL
  - ▶ C/B MFC / 1A AUX / ADC 1 HOT SPLY.....PULL
  - ▶ ADC 1(2) FAILURE procedure ( [A34.01](#) ) ..... APPLY
- **If ADC 2 is failed**
  - ▶ C/B ADS / ADC 2 .....PULL
  - ▶ ADC 1(2) FAILURE procedure ( [A34.01](#) ) ..... APPLY

## EXCESSIVE LATERAL TRIM REQUIRED

|                                      |                 |
|--------------------------------------|-----------------|
| 01d6225f-bd86-482f-b380-aa21838f4101 | <b>2.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |


- ▶ CONTROL COLUMN & WHEEL..... HOLD FIRMLY
- ▶ AP..... DISENGAGE
- ▶ AIL TRIM..... ADJUST
- **When lateral trims adjusted**  
AP CAN BE REENGAGED

## PITCH MISTRIM

### PITCH MISTRIM (ADU MESSAGE)

|                                      |                 |
|--------------------------------------|-----------------|
| b89e3646-42fc-47be-85ba-0c58e3683af7 | <b>1.2</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

- ▶ CONTROL COLUMN & WHEEL..... HOLD FIRMLY
- ▶ AP ..... DISENGAGE
- ▶ PITCH TRIM..... ADJUST
- **When pitch trim adjusted**  
AP CAN BE REENGAGED

|   |   |   |
|---|---|---|
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## 24 ELECTRICAL

### 24.1 AC

#### AC BUS 1 OFF

|   |  |            |
|---|--|------------|
| <small>78b3063d-3f93-4059-96a5-945aae8b549c</small> |  | <b>1.1</b> |
|   |  | ALL        |
|   |  | APPROVED   |

- **If AC BUS 1 OFF persists after 10 s**
  - ▶ DC BTC..... RESET
- **If AC BUS 1 OFF persists**
  - ▶ AC BUS 1 LOST EQUIPMENT LIST..... CHECK

#### AC BUS 2 OFF

|   |  |            |
|---|--|------------|
| <small>3e222127-ae2b-4167-84e1-93f3f04445d0</small> |  | <b>1.0</b> |
|   |  | ALL        |
|   |  | APPROVED   |


- **If AC BUS 2 OFF persists after 10 s**
  - ▶ DC BTC..... RESET
- **If AC BUS 2 OFF persists**
  - ▶ PF..... CAPT
  - ▶ AC BUS 2 LOST EQUIPMENT LIST..... CHECK

### 24.2 ACW

#### ACW BUS 1 OFF

|   |  |            |
|---|--|------------|
| <small>f205b6d2-737a-41dc-800a-5cc72f96b956</small> |  | <b>4.2</b> |
|   |  | ALL        |
|   |  | APPROVED   |

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ ICE ACCRETION : VISUALLY MONITOR
- ▶ ACW GEN 1 .....OFF
- ▶ ADC sw .....SELECT ADC 2
- ▶ PF ..... F/O
- ▶ HYD X FEED pb .....ON
- ▶ IAS & ALT : PERIODICALLY COMPARE WITH STBY INST
- ▶ ACW BUS 1 LOST EQUIPMENT LIST.....CHECK
- ▶ AFFECTED EQUIPMENT FAULT PROCEDURES.....APPLY
- **If IAS disagree**
  - ▶ DADC DATA INVALID (ADU MESSAGE) procedure ( [A22.05](#) ) ..... APPLY
- **After touchdown**
  - ▶ TAXI : ON ENG 1+2

|   |   |                                     |
|---|---|-------------------------------------|
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## ACW BUS 2 OFF

9ee3b1f8-89f5-4b13-baf5-ac522b89fd03

4.2

ALL

APPROVED

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ ICE ACCRETION : VISUALLY MONITOR
- ▶ ACW GEN 2 .....OFF
- ▶ ADC sw .....SELECT ADC 1
- ▶ PF ..... CAPT
- ▶ HYD X FEED pb .....ON
- ▶ IAS & ALT : PERIODICALLY COMPARE WITH STBY INST
- ▶ ACW BUS 2 LOST EQUIPMENT LIST.....CHECK
- ▶ AFFECTED EQUIPMENT FAULT PROCEDURES.....APPLY
- **If IAS disagree**
  - ▶ DADC DATA INVALID (ADU MESSAGE) procedure ( [A22.05](#) ) ..... APPLY
- **After touchdown**
  - ▶ TAXI : ON ENG 1+2

## ACW GEN 1(2) FAULT

a2785ca0-e701-4a66-89f4-d46fbfae4ecf

0.1

ALL

APPROVED

- ▶ ACW GEN (affected side)..... OFF
- ▶ ICING CONDITIONS : LEAVE AND AVOID
- **If ACW GEN 2 FAULT**
  - **After touchdown**
    - ▶ TAXI : ON ENG 1+2

## ACW GEN 1+2 LOSS

c858266e-b1b6-4aec-b623-1a40c9700866

3.2

ALL

APPROVED

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ ICE ACCRETION : VISUALLY MONITOR
- ▶ STBY ALT & IAS .....USE AS REFERENCE
- ▶ IAS & ALT : PERIODICALLY COMPARE WITH STBY INST
- ▶ ACW GEN 1 + 2..... OFF
- ▶ HYD X FEED ..... CHECK OFF
- ▶ ACW GEN 1+2 LOSS LOST EQUIPMENT LIST..... CHECK
- ▶ AFFECTED EQUIPMENT FAULT procedure..... APPLY
- ▶ HYD BLUE PUMP..... OFF
- ▶ HYD GREEN PUMP.....OFF
- ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.5

### ● Before landing

LDG GEAR NORMAL OPERATION LOST

- ▶ LDG GEAR lever .....DOWN
- ▶ BLUE PRESSURE..... CHECK
- ▶ FLAPS 15..... AS RQRD
- ▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) .....APPLY
- ▶ FLAPS 30..... AS RQRD

### ● After touchdown

NORMAL BRAKE OPERATION LOST.

- ▶ REVERSE..... AS RQRD
- ▶ BRAKE HANDLE..... EMER/AS RQRD
- ▶ TAXI : ON ENG 1+2

## 24.3 DC

### DC BUS 1 OFF

|                                      |            |
|--------------------------------------|------------|
| ffaedc9b-827f-4809-88b0-fa80aa1721e0 | <b>5.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ DC GEN 1 .....OFF
- ▶ PF ..... F/O
- ▶ AUTO PRESS FAULT procedure ( [A21.10](#) ) ..... APPLY
- ▶ DC SVCE/UTLY BUS pb : MAINTAIN ON
- ▶ DC BUS 1 LOST EQUIPMENT LIST ..... CHECK
- ▶ AFFECTED EQUIPMENT FAULT procedure ..... APPLY

#### Note

- CAS digital part is no longer supplied. Only warnings (level 3, red) are processed
- Stick pusher is lost without FAULT alarm.

#### • At touchdown

- ▶ IDLE GATE lever .....PULL

### DC BUS 2 OFF

|                                      |            |
|--------------------------------------|------------|
| f11fd1f8-4711-4c04-8b8c-7b8ae1884bad | <b>4.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ DC GEN 2 .....OFF
- ▶ PF ..... CAPT
- ▶ ADC sw .....SELECT ADC 1
- ▶ VHF ..... SELECT SYS 1
- ▶ ATC .....SELECT SYS 1
- ▶ DC SVCE/UTLY BUS pb : MAINTAIN ON
- ▶ DC BUS 2 LOST EQUIPMENT LIST ..... CHECK
- ▶ AFFECTED EQUIPMENT FAULT procedure ..... APPLY
- ▶ PAX INSTRUCTIONS ..... USE PA

#### • After touchdown

- ▶ TAXI : ON ENG 1+2

**DC EMER BUS OFF**

0058e085-94f7-4125-a4c4-6b004026db1a

REV

4.0

ALL

APPROVED

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ HYD BLUE PUMP ..... OFF
- ▶ HYD X FEED ..... ON

**TQ INDICATION LOST**

- ▶ TRU ..... ON

**■ If DC EMER BUS recovered****CAUTION**

Do not restore HYD BLUE PUMP

- ▶ TRU : MAINTAIN ON
- MAINTENANCE ACTION REQUIRED

**■ If DC EMER BUS not recovered (TQ indications loss persists)**

- ▶ TRU ..... OFF
- ▶ VHF 2 / XPDR 2 ..... USE
- ▶ DESCENT ..... INITIATE
- ▶ MAX FL : 100/MEA
- ▶ STBY PITCH TRIM ..... USE AS RQRD
- ▶ LANDING ELEVATION ..... SET PRESSURE ALTITUDE
- ▶ FLIGHT TIME : MINIMIZE
- ENGINE FIRE DETECTION LOST
- ▶ TLU ..... HI or LO SPD BASED ON IAS
- ▶ ICE ACCRETION : MONITOR IEP
- ▶ DC EMER BUS OFF EQUIPMENT LIST ..... CHECK
- ▶ AFFECTED EQUIPMENT FAULT PROCEDURES ..... APPLY

**■ If ice accretion**

- ▶ DE ICING AIRFRAME FAULT procedure ( [A30.07](#) ) ..... APPLY
- ▶ DE ICING MODE SEL FAULT procedure ( [A30.08](#) ) ..... APPLY
- ▶ ANTI ICING PROP 1(2) FAULT procedure ( [A30.02](#) ) ..... APPLY
- ▶ ANTI ICING HORNS 1(2) FAULT procedure ( [A30.01](#) ) ..... APPLY

**● Before landing**

- ▶ N/W STEERING ..... OFF
- ▶ ANTISKID FAULT procedure ( [A32.01](#) ) ..... APPLY

**● After touchdown**

- ▶ TAXI : ON ENG 1+2



## DC GEN 1(2) FAULT

|                                      |          |
|--------------------------------------|----------|
| 6596ca1b-6a30-4dc5-b5db-447f37e3d80d | 2.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ DC GEN (affected)..... OFF
- If OAT > ISA +25
  - ▶ MAX FL : 200
- After landing
  - ▶ TAXI : ON ENG 1+2
- At parking
  - If DC GEN 2 FAULT
    - ▶ GPU (if available)..... CONNECT
    - ▶ CL 1..... FUEL S.O.

## DC SVCE-UTLY BUS SHED

|                                      |          |
|--------------------------------------|----------|
| 61c399f9-5eb3-4116-a673-acbbd716422c | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ DC SVCE/UTLY BUS..... AS RQRD
- If DC SVCE/UTLY BUS is set to OFF position
  - ▶ DC SVCE/UTLY BUS SHED LOST EQUIPMENT LIST..... CHECK

## EMER(MAIN) BAT CHG FAULT

|                                      |          |
|--------------------------------------|----------|
| 336083b9-daae-473e-bf9c-5dd1290031c4 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ BAT CHG (affected)..... OFF

## EMER+MAIN BAT CHG LOSS

|                                      |                               |
|--------------------------------------|-------------------------------|
| 3cc66d3f-96b1-4b10-a7e2-2f0a033e0b64 | <b>2.2</b><br>ALL<br>APPROVED |
|--------------------------------------|-------------------------------|

- ▶ MFC MODULES (one at a time)..... RESET
- **If EMER + MAIN BAT recovered**  
 MAINTENANCE ACTION REQUIRED.
- **If EMER + MAIN BAT CHG LOSS persists**
  - **If no BAT arrow**  
 MAINTENANCE ACTION REQUIRED.
  - **If BOTH BAT arrows turned on**
    - **If one ACW GEN lost**
      - ▶ HYD BLUE PUMP..... OFF
      - ▶ HYD X FEED..... ON
    - ▶ TRU..... ON
  - **If TRU ON**
    - ▶ FLIGHT TIME : MINIMIZE (without battery charge)
  - **If TRU failure**
    - ▶ **LAND ASAP**

## 27 FLIGHT CONTROLS

### 27.1 FLAPS

#### FLAPS ASYM


|                                      |                               |
|--------------------------------------|-------------------------------|
| fb241c40-75aa-450f-85f8-47947913854e | <b>2.1</b><br>ALL<br>APPROVED |
|--------------------------------------|-------------------------------|

- ▶ FLAPS CONTROL lever ..... NEAR FLAPS PRESENT POSITION
- **For approach**
  - ▶ REDUCED FLAPS LANDING procedure ( [A27.05](#) ) ..... APPLY

#### FLAPS JAM

|                                      |                               |
|--------------------------------------|-------------------------------|
| 25574cb0-5e59-4522-a5d2-53f17342260c | <b>2.1</b><br>ALL<br>APPROVED |
|--------------------------------------|-------------------------------|

- ▶ FLAPS CONTROL lever ..... NEAR FLAPS PRESENT POSITION
- **For approach**
  - ▶ REDUCED FLAPS LANDING procedure ( [A27.05](#) ) ..... APPLY

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°15 |
|---|---|-------------------------------------|

## FLAPS UNLK

d83c9f41-5062-4b93-935f-2a547ddfa279

3.1

ALL

APPROVED

- **Before V<sub>1</sub>**
  - ▶ TAKEOFF..... ABORT
- **After V<sub>1</sub>**
  - ▶ V<sub>R</sub>, V<sub>2</sub>.....INCREASE BY 10 kt
- **If alarm occurs during approach**
  - ▶ GO-AROUND..... PERFORM
  - ▶ V<sub>GA</sub> ..... INCREASE BY 10 kt
- **When possible**
  - ▶ FLAPS..... 0
- **For approach**
  - ▶ REDUCED FLAPS LANDING procedure ( [A27.05](#) ) .....APPLY

## REDUCED FLAPS LANDING

acbcc094-35d0-493a-8efd-c260092eadd6 5.1  
ALL  
APPROVED

- ▶ GPWS ..... FLAP OVRD
- ▶ STEEP SLOPE APPROACH ( $\geq 4.5^\circ$ ) : PROHIBITED

| FLAPS | LDG DIST FLAPS 30<br>MULTIPLY BY | APP/LDG SPD                        |
|-------|----------------------------------|------------------------------------|
| 0     | 2.2                              | $V_{mHB0}$<br>+ wind effect + 5 kt |
| 15    | 2                                | $V_{mHB15}$<br>+ wind effect       |

■ If severe icing procedure applied & aircraft not clear of ice

| FLAPS | LDG DIST FLAPS 30<br>MULTIPLY BY | APP/LDG SPD                              |
|-------|----------------------------------|--|
| 15    | 2.12                             | $V_{mHB15}$ ICING<br>+ wind effect +5 kt |

**Note**

*Refer to [Landing Brake Energy](#) to determine maximum landing weight limited by braking energy for normal or delayed braking. BRK TEMP HOT alert may be triggered and wheel fuse plug melting may occur.*

*Refer to [Landing Distance](#) to determine LDG DIST FLAPS 30. Use for calculation LDG DIST FLAPS 30 delayed braking if landing performed with delayed braking technique. Then apply LDG DIST FLAPS 30 multiplication factor.*

*Refer to [Reduced Flaps Landing Configuration VAPP](#) to determine APP/LDG SPD.*

**Note**

*If delayed braking technique is used, braking is performed at:*

- 90 kt for FLAPS 15 landing
- 100 kt for FLAPS 0 landing.


● **During flare**

- ▶ PITCH ATTITUDE : DO NOT EXCEED  $6^\circ$

● **For FLAPS 0 landing**

● **At 10 ft**

- ▶ ENG POWER..... SLOWLY REDUCE

|   |   |                              |
|---|---|------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br>Page n°17 |
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## 27.2 PITCH

### PITCH CONTROL JAM IN FLIGHT

3424d208-0ddb-4574-aaa4-a501d78aaaf9

0.5

ALL

APPROVED

#### ■ If IAS > 180 kt

- ▶ IAS..... REDUCE


#### Note

- *Apply normal effort on control column*
- *Use pitch trim to reduce effort on control column*
- *Reduce PL if flight conditions permit it.*

*Pitch trim reversal can occur after pitch control jam, use caution when acting on pitch trim*

#### ● When IAS reduction is no longer possible or when IAS < 180 kt

- ▶ CONTROL COLUMNS EFFORT..... REDUCE USING PITCH TRIM
- ▶ CONTROL COLUMNS..... UNCOUPLE
- ▶ FREE CONTROL COLUMN..... IDENTIFY
- ▶ PF..... FREE CONTROL COLUMN SIDE
- ▶ PITCH DISCONNECT procedure ( [A27.07](#) ) ..... APPLY

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br>Page n°18 |
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## PITCH DISCONNECT


|                                      |                 |
|--------------------------------------|-----------------|
| 7097bc84-1837-4948-9e23-3ffb09f016e9 | <b>5.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

|                               |                          |
|-------------------------------|--------------------------|
| ▶ FREE CONTROL COLUMN(S)..... | IDENTIFY                 |
| ▶ PF .....                    | FREE CONTROL COLUMN SIDE |
| ▶ MAX IAS : 180 kt            |                          |

**CAUTION**

When elevators are uncoupled, dual opposite inputs from left and right control columns are strictly forbidden as it may result in structural damage to the horizontal stabilizer.

- ▶ MAX BANK ANGLE : 30 ° UNTIL FLAPS EXTENSION
  - ▶ ICING CONDITIONS : LEAVE AND AVOID
- PITCH CONTROL EFFICIENCY REDUCED
- ▶ MIN IAS : NOT LESS THAN  $V_{mHB}$  or  $V_{mLB} + 10$  kt
- **If one elevator is stuck to full down position**
    - ▶ MAX IAS : 154 kt
    - ▶ FLAPS : EXTEND IF NECESSARY
  - **If elevator jamming occurs at takeoff**
    - ▶ MAX IAS : 161 kt
    - ▶ FLAPS : MAINTAIN IF NECESSARY
  - **If other cases**
    - ▶ MAX IAS : 180 kt
  - **If left elevators is jammed**  
STICK PUSHER MUST BE CONSIDERED INOPERATIVE.
  - **If right elevator is jammed**  
AP CANNOT BE REENGAGED.
- **For approach**
    - ▶ STEEP SLOPE APPROACH ( $\geq 4.5^\circ$ ) : PROHIBITED
    - ▶ LAND AT AIRPORT WITH MINIMUM CROSSWIND
    - ▶ ILS CAT 2 : PROHIBITED
    - ▶  $V_{APP}$  ([Refer to OPSDATA](#))..... INCREASE BY 10 kt
    - ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.15
  - **During flare**
    - ▶ PL 1+2..... REDUCE SMOOTHLY
  - **At parking**
    - **If pitch disconnect occurred in flight**  
MAINTENANCE ACTION REQUIRED

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br><br>Page n°19 |
|---|---|---|

cont'd... >>>

■ **If pitch disconnect occurred on ground**

- ▶ PITCH RECONNECTION ON GROUND procedure ( [A27.09](#) ) ..... APPLY

**PITCH TRIM ASYM**

**PITCH TRIM ASYM (LOCAL LIGHT)**

|                                      |            |
|--------------------------------------|------------|
| b77f6a26-ba63-41c2-8237-9891e9a6d43d | <b>3.0</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ AP DISENGAGEMENT..... CONFIRM MANUALLY
- ▶ NORMAL & STBY PITCH TRIMS : DO NOT USE
- ▶ PITCH TRIM INOPERATIVE procedure ( [A27.12](#) ) ..... APPLY

**PITCH TRIM INOPERATIVE**

|                                      |            |
|--------------------------------------|------------|
| 2dfaad04-1c6a-4c14-b8c6-f12ccd1e264d | <b>2.3</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ CURRENT CONFIGURATION & SPEED : MAINTAIN AS LONG AS POSSIBLE
- **For approach**
  - ▶ STEEP SLOPE APPROACH ( $\geq 4.5^\circ$ ) : PROHIBITED
  - ▶ FLAPS..... EXTEND AT  $V_{FE}$  FOR EACH CONFIGURATION
  - ▶  $V_{APP}$  ([Refer to OPSDATA](#))..... INCREASE BY 10 kt
  - ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.15

**STICK PUSHER-SHAKER FAULT**

|                                      |            |
|--------------------------------------|------------|
| 3133eb8f-2084-43ef-960f-9cf7df74c5ae | <b>3.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ STICK PUSHER / SHAKER pb ..... OFF
- ▶ TCAS ..... TA ONLY
- ▶ MINIMUM MANEUVER OPERATING SPEEDS..... INCREASE BY 10 kt
- **For approach**
  - ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.15

## 27.3 ROLL

### AILERON JAM

79c71d12-5b20-4998-a017-b20d6bfa1435

2.2

ALL

APPROVED

- ▶ MAX BANK ANGLE : 25 °
- ▶ HYD BLUE PUMP..... OFF
- ▶ HYD AUX PUMP..... OFF
- ▶ LAND AT AIRPORT WITH MINIMUM CROSSWIND
- **For approach**
  - ▶ STEEP SLOPE APPROACH ( $\geq 4.5^\circ$ ) : PROHIBITED
  - ▶ HYD BLUE PUMP..... ON
  - ▶ HYD AUX PUMP..... ON

#### CAUTION

Do not extend flaps in turn.


- **When in landing configuration**

- ▶ HYD BLUE PUMP..... OFF
- ▶ HYD AUX PUMP..... OFF

- **Immediately after touchdown**

- ▶ HYD BLUE PUMP..... ON
- ▶ HYD AUX PUMP..... ON



|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°21 |
|---|---|-------------------------------------|

## SPOILER JAM

a1ef1356-4f9a-4449-b156-7a99d6736795

2.1

ALL

APPROVED

- ▶ MAX BANK ANGLE : 25 °
- ▶ HYD BLUE PUMP..... OFF
- ▶ HYD AUX PUMP..... OFF
- ▶ LAND AT AIRPORT WITH MINIMUM CROSSWIND
- **For approach**
  - ▶ MAX CROSSWIND : 20 kt (DRY RUNWAY)
  - ▶ STEEP SLOPE APPROACH ( $\geq 4.5$  °) : PROHIBITED
  - ▶ HYD BLUE PUMP..... ON
  - ▶ HYD AUX PUMP..... ON

### CAUTION

Do not extend flaps in turn.

- **When in landing configuration**
  - ▶ HYD BLUE PUMP..... OFF
  - ▶ HYD AUX PUMP..... OFF
- **Immediately after touchdown**
  - ▶ HYD BLUE PUMP..... ON
  - ▶ HYD AUX PUMP..... ON

## 27.4 YAW

### DUTCH ROLL TENDENCY-RUDDER RELEASABLE CENTERING UNIT FAIL


5adb2da5-39ba-4e5d-8a68-0b80e36b52bd

1.1

ALL

APPROVED

- **If YD is available**
  - ▶ YD ..... ENGAGE
- **If YD is not available**
  - ▶ RUDDER PEDALS : BLOCK MOVEMENT

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br><br>Page n°22 |
|---|---|---|

## RUDDER JAM

|                                      |            |
|--------------------------------------|------------|
| 574d1539-ade9-40a8-8851-fe33ec599bc7 | <b>2.3</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ DIFFERENTIAL POWER..... USE TO MINIMIZE SIDESLIP
- **For approach**
  - ▶ STEEP SLOPE APPROACH ( $\geq 4.5^\circ$ ) : PROHIBITED
  - ▶ LAND AT AIRPORT WITH MINIMUM CROSSWIND
  - ▶ FLAPS.....30
- **At touchdown before power reduction below FI**
  - ▶ NOSE..... DOWN


## TLU FAULT

|                                      |            |
|--------------------------------------|------------|
| 0f6850f9-84f7-455c-a1bb-79e6b8f84e05 | <b>3.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- **In flight**
    - ▶ TLU sw ..... HI or LO SPD based on IAS
- Note**

*Set TLU to HI SPEED above 185 kt*

*Set TLU to LO SPEED below 185 kt*
- **If TLU sw in HI SPD position and TLU FAULT persists after 40 s**
    - ▶ MAX IAS : 180 kt
    - ▶ LARGE RUDDER INPUT..... AVOID
  - **Before approach, when IAS < 185 kt**
    - ▶ TLU sw ..... LO SPD
  - **If RUD TLU LO SPD green light remains off after 40 s**
    - **For Approach**
      - ▶  $V_{APP}$  ([Refer to OPSDATA](#))..... NOT LESS THAN  $V_{mHB} + 10$  kt
      - ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.15
      - ▶ MAX CROSSWIND : 15 kt (Dry runway/TLU HI SPD)
      - ▶ RUDDER LATERAL CONTROL : LIMITED

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br><br>Page n°23 |
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## 28 FUEL

### FUEL FEED LO PR

22e3cbf6-0d71-4a29-8eac-96e138406950

3.1

ALL

APPROVED

▶ FUEL PUMP (affected side)..... CONFIRM ON

▶ ENG (affected) PARAMETERS : MONITOR

■ **If engine runs down**

- OR -

■ **If fuel quantity decreases significantly**

▶ **LAND ASAP**

**CAUTION**

X feed valve keep closed

▶ PL (affected ENG) ..... FI

▶ CL (affected ENG) ..... FTR THEN FUEL S.O.

▶ FUEL PUMP (affected side).....OFF

▶ FIRE HANDLE (affected ENG).....PULL

▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY

### FUEL LEAK DETECTION

e4f1bcf6-a1c4-4f7c-b4f9-91d32d0ef846

1.0

ALL

APPROVED

A fuel leak may be detected by:

- Sum of fuel on board (FOB), read in steady flight at cruise level, and fuel used (FU), FOB +FU significantly less than fuel at departure
- Total fuel quantity decreasing at an abnormal rate
- Fuel unbalance
- Tank emptying too fast (leak from engine or a hole in a tank)
- Excessive fuel flow (leak from engine)
- Fuel smell in the cabin.
- Fuel spray from engine or wing tip (leak from engine or hole in tank).

■ **If fuel leak suspected:**

▶ FUEL LEAK procedure ( [A28.05](#) ) ..... APPLY

## FUEL LEAK

2c399503-39ec-45a9-a888-d9f8c0d19764

4.0

ALL

APPROVED

### ■ If leak confirmed

#### ▶ **LAND ASAP**

### ■ If leak from engine (excessive fuel flow or feed spray from engine)

- ▶ PL (affected ENG) ..... FI
- ▶ CL (affected ENG) ..... FTR THEN FUEL S.O.
- ▶ FUEL PUMP (affected side).....OFF
- ▶ FIRE HANDLE (affected ENG).....PULL

### ■ If excessive fuel flow was identified before engine shutdown

FUEL X FEED VALVE CAN BE OPENED.

### ■ In all other cases

- ▶ FUEL X FEED : KEEP CLOSED
- ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY

### ■ If leak not located

- ▶ FUEL X FEED : KEEP CLOSED

### ● Before landing

- ▶ ATC ..... NOTIFY

## FUEL LO LVL

c6f7333a-f729-411e-96f6-995230574496

5.1

ALL

APPROVED

- ▶ EXCESSIVE AIRCRAFT ATTITUDES : AVOID

### ■ If both LO LVL lights come on

#### ▶ **LAND ASAP**

### ■ If only one LO LVL light comes on

#### ■ If leak suspected

- ▶ FUEL LEAK procedure ( [A28.05](#) ) ..... APPLY


#### ■ If no leak suspected

##### ■ If Fuel Quantity Indication < 160 kg (352 lb)

- ▶ FUEL X FEED ..... ON

##### ■ If Fuel Quantity Indication ≥ 160 kg (352 lb)

- ▶ FUEL X FEED : KEEP CLOSED
- ▶ FUEL COMSUMPTION : MONITOR
- ▶ UNUSABLE FUEL IN AFFECTED TANK : 130 kg (287 lb)

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°25 |
|---|---|-------------------------------------|

## FUEL UNBALANCED

e5187a5a-038d-4f45-8503-1a06d542c41d

2.2

ALL

APPROVED

### ■ If FUEL LEAK suspected

- ▶ FUEL LEAK procedure ( [A28.05](#) ) ..... APPLY

### ■ If normal fuel condition

#### ■ If LEFT TANK QTY > RIGHT TANK QTY

- ▶ FUEL X FEED ..... IN LINE
- ▶ FUEL PUMP LEFT.....CHECK ON
- ▶ FUEL PUMP RIGHT..... OFF

#### ● When fuel balanced

- ▶ FUEL PUMP RIGHT.....ON
- ▶ FUEL X FEED..... X LINE

#### ■ If LEFT TANK QTY < RIGHT TANK QTY

- ▶ FUEL X FEED ..... IN LINE
- ▶ FUEL PUMP RIGHT.....CHECK ON
- ▶ FUEL PUMP LEFT..... OFF

#### ● When fuel balanced

- ▶ FUEL PUMP LEFT.....ON
- ▶ FUEL X FEED..... X LINE

## 29 HYDRAULIC SYSTEM

### HYD BLUE (GREEN) LO LVL

|   |  |            |
|---|--|------------|
| <small>191238a6-7ad4-4456-835d-666ea6668cd8</small> |  | <b>5.1</b> |
|   |  | ALL        |
|   |  | APPROVED   |

■ **If blue hydraulic system affected**

- ▶ HYD X FEED.....CHECK OFF
- ▶ HYD BLUE PUMP..... OFF
- ▶ HYD AUX PUMP..... OFF
- ▶ HYD BLUE SYS LOST EQUIPMENT LIST.....CHECK

● **For approach**

- ▶ REDUCED FLAPS LANDING procedure ( [A27.05](#) ) ..... APPLY

● **At landing**

- N/W STEERING LOST
- ▶ DIFFERENTIAL BRAKING : USE
  - ▶ TAXI : ON ENG 1+2

■ **If green hydraulic system affected**

- ▶ HYD X FEED.....CHECK OFF
- ▶ HYD GREEN PUMP.....OFF
- ▶ LDG DIST ([Refer to OPSDATA](#))..... MULTIPLY BY 1.5
- ▶ HYD GREEN SYS LOST EQUIPMENT LIST..... CHECK

● **Before landing**

- NORMAL BRAKING LOST
- ▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) .....APPLY


● **After touchdown**

- ▶ REVERSE.....AS RQRD
- ▶ BRAKE HANDLE..... EMER/AS RQRD
- ▶ TAXI : ON ENG 1+2

### HYD BLUE (GREEN) LO PR

|   |  |            |
|---|--|------------|
| <small>098137bc-857a-40d8-a354-0913db80e84e</small> |  | <b>2.3</b> |
|   |  | ALL        |
|   |  | APPROVED   |

- ▶ HYD (affected) PUMP ..... OFF
- ▶ HYD X FEED..... ON
- ▶ TAXI : ON ENG 1+2

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°27 |
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## HYD BLUE (GREEN) OVHT

|                                      |            |
|--------------------------------------|------------|
| e1160674-5890-4625-9943-4f2fd7ee43df | <b>3.3</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ HYD (affected) PUMP ..... OFF
- ▶ HYD X FEED..... ON
- ▶ TAXI : ON ENG 1+2

## HYD BLUE AND GREEN PUMPS LOSS

|                                      |            |
|--------------------------------------|------------|
| 2011782a-5138-437a-a3ab-9aabfea161b2 | <b>3.6</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ HYD BLUE PUMP..... OFF
- ▶ HYD GREEN PUMP.....OFF
- ▶ HYD X FEED..... CHECK OFF
- ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.5
- ▶ HYD BLUE SYS LOST EQUIPMENT LIST.....CHECK
- ▶ HYD GREEN SYS LOST EQUIPMENT LIST..... CHECK

### ● Before landing

NORMAL BRAKING LOST

- ▶ LDG GEAR lever .....DOWN
- ▶ HYD BLUE PRESSURE.....CHECK
- ▶ FLAPS 15.....AS RQRD
- ▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) .....APPLY

LDG GEAR CANNOT BE RETRACTED

- ▶ FLAPS 30.....AS RQRD

### ● After touchdown

- ▶ REVERSE..... AS RQRD
- ▶ BRAKE HANDLE.....EMER/AS RQRD
- ▶ TAXI : ON ENG 1+2

## HYD AUX LO PR


|                                      |            |
|--------------------------------------|------------|
| a2000060-9324-4a51-87c3-ed06601b3715 | <b>1.0</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ HYD AUX PUMP ..... OFF

## HYD AUX OVHT

|                                      |            |
|--------------------------------------|------------|
| 07c2a700-7763-433d-bd7e-f53566c6f81f | <b>1.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ HYD AUX PUMP ..... OFF

|   |   |                              |
|---|---|------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br>Page n°28 |
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## 30 ICE AND RAIN

### 30.1 ANTI ICING

#### ANTI ICING HORNS 1(2) FAULT

|                                      |          |
|--------------------------------------|----------|
| 6d786588-d174-4815-8719-f57398c6c063 | 2.0      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ ANTI ICING HORNS (affected side)..... OFF
- **If icing conditions**
  - **Every 5 min**
    - ▶ FLIGHT CONTROLS..... CHECK FREE

#### ANTI ICING PROP 1(2) FAULT

|                                      |          |
|--------------------------------------|----------|
| 54c30b8a-391c-4267-8e6b-a52e783893e2 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ ANTI ICING PROP (affected side)..... OFF
- **If propeller unbalance becomes excessive due to ice**
  - **For 5 min**
    - ▶ CL 1+2..... 100 % OVRD


### 30.2 DE ICING

#### AFR AIR BLEED FAULT

|                                      |          |
|--------------------------------------|----------|
| deef5c13-8f91-4dd9-8029-70cca940046a | 3.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ AFR AIR BLEED..... OFF
- **If DE ICING ENG FAULT light comes on after 10 s**
  - ▶ DE ICING ENG (affected side)..... OFF
  - ▶ AFR AIR BLEED..... ON
  - ▶ AFR AIR BLEED FAULT light..... CHECK OFF
- **If DE ICING ENG FAULT light stays OFF on both sides**
  - ▶ DE ICING AIRFRAME FAULT procedure ( [A30.07](#) ) .....APPLY



|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°29 |
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## DE-ANTI ICING MODE SEL AUTO FAULT

|                                      |          |
|--------------------------------------|----------|
| 0e5926b3-770a-451e-8873-24efa7c0e08d | 3.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ DE-ANTI ICING MODE SEL AUTO..... MAN
- **If SAT < -10 °C**
  - ▶ ANTI ICING MODE SEL SAT < -10 C° .....ON
- **If SAT < -20 °C**
  - ▶ ANTI ICING MODE SEL SAT < -10 C° .....ON
  - ▶ DE ICING SAT < -20 C° ..... SLOW

## DE ICING AIRFRAME FAULT

|                                      |          |
|--------------------------------------|----------|
| 024c82f4-59c5-4e2d-9c87-794c89c95482 | 0.3      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ DE ICING AIRFRAME..... OFF
- ▶ MINIMUM ICING SPEEDS.....INCREASE BY 15 kt
- **If icing conditions**
  - ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.25
- **If ice accretion**
  - ▶ STEEP SLOPE APPROACH ( $\geq 4.5^\circ$ ) : PROHIBITED

## DE ICING MODE SEL FAULT


|                                      |          |
|--------------------------------------|----------|
| a3c11962-054d-4095-88a2-a5efb3de1ffb | 2.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ DE ICING MODE SEL..... OVRD
- ▶ DE ICING : MONITOR
- **If ENG 1(2) FLAME OUT in flight**
  - ▶ DE ICING MODE SEL ..... RELEASE PB

## DE ICING ENG 1(2) FAULT

|                                      |          |
|--------------------------------------|----------|
| d59bcb90-dd29-4d71-b5a6-2a21423d324e | 0.2      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ ENG (affected) PARAMETERS : MONITOR
- ▶ DE ICING ENG (affected side).....OFF

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br><br>Page n°30 |
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### 30.3 MPC

#### APM FAULT

|                                      |          |
|--------------------------------------|----------|
| 251d2f3c-39e1-4615-88f0-72faeeae90c6 | 2.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ APM.....OFF
- ▶ ICING CONDITIONS : MONITOR
- ▶ SPEED : MONITOR

#### DEGRADED PERF

|                                      |          |
|--------------------------------------|----------|
| 2f79979d-d05b-4192-af81-3dc226e1b184 | 7.0      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ IAS : MAINTAIN ABOVE ICING BUG +10 kt
- ▶ IAS & V/S : MONITOR
- ▶ FLIGHT PATH : AMEND

**Note**

- *It is recommended to accelerate above icing bug + 30 kt.*
- *[Refer to OPSDATA](#) to determine recommended maximum icing Flight Level.*

■ **If in icing condition**

- ▶ ANTI ICING systems .....CHECK ON
- ▶ DE ICING systems .....CHECK ON

■ **If not able to accelerate and maintain IAS above icing bug +30 kt**


- ▶ AP .....OFF
- ▶ LOW BANK.....SET

**Note**

*[Refer to PRO.NNO.ABN.30.3.3.A30.16 SEVERE ICING DETECTION](#) for severe icing indications information*

■ **If any severe icing indication**

- ▶ SEVERE ICING procedure ( [E99.08](#) ) .....APPLY
- ▶ ICING CONDITIONS : MONITOR

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°31 |
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## SEVERE ICING DETECTION

|                                     |            |
|-------------------------------------|------------|
| 0542fc4c-6eb7-439a-b570-9935ed5ffb0 | <b>0.1</b> |
|                                     | ALL        |
|                                     | APPROVED   |

### SEVERE ICING main indications :

- Ice covering all/substantial parts of unheated side window (visual cue)
- Unable to maintain IAS above ICING BUG +10 kt
- Unable to maintain V/S above 100 ft/min AVERAGE at icing bug +10 kt
- Abnormal vibrations

### ■ If any severe icing indication :

- ▶ SEVERE ICING procedure ( [E99.08](#) ) ..... APPLY

### Supplementary indications:

- Water splashing/streaming on the windshield
- Unusual extensive ice accreted on the airframe in areas not normally observed to collect ice
- Accumulation of ice on the lower surface of the wing aft of the protected areas
- Accumulation of ice on propeller spinner farther aft than normally observed

### Weather conditions that can result in severe in-flight icing:

- Visible rain at temperatures close to 0 °C (SAT)
- Droplets that splash or splatter on impact at temperature close to 0 °C (SAT).

## INCREASE SPEED

|                                      |            |
|--------------------------------------|------------|
| 540a3436-9a23-43cf-aa13-ad19fe5b6abb | <b>3.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- |                          |
|--------------------------|
| ▶ IAS : ICING BUG +30 kt |
|--------------------------|
- ▶ SEVERE ICING procedure ( [E99.08](#) ) ..... APPLY

## 31 INDICATING AND RECORDING SYSTEM

### 31.1 SINGLE FAILURE

#### MFC 1A FAULT

|                                      |            |
|--------------------------------------|------------|
| ab9c4d1d-a302-4e8a-88e9-ae481422854a | <b>1.0</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ MFC 1A..... RESET
- If MFC 1A FAULT persists
  - ▶ MFC 1A..... OFF
  - ▶ MFC 1A MODULE LOST EQUIPMENT LIST..... CHECK

**MFC 1B FAULT**

640a6b9a-baca-42a8-b1c2-55f4c96f1bd3

3.1

ALL

APPROVED

▶ MFC 1B..... RESET

**■ If MFC 1B FAULT persists**

▶ MFC 1B..... OFF

**● During taxi**

▶ PACK VALVE 1..... OFF

▶ OVBD VALVE..... FULL OPEN

**● Before takeoff**

▶ PACK VALVE 2..... OFF

**● After takeoff**

▶ LDG GEAR : KEEP DOWN 1 MINUTE EXCEPT IN CASE OF EMERGENCY

▶ PACK VALVE 1+2..... ON

**● In flight**

▶ OVBD VALVE..... FULL CLOSE

▶ MFC 1B MODULE LOST EQUIPMENT LIST..... CHECK

**● After landing**


▶ PACK VALVE 1..... OFF

▶ OVBD VALVE..... FULL OPEN

**● At Parking****CAUTION**Carefully monitor  $\Delta P$  before door opening.

▶ PACK VALVE 1+2..... OFF

▶ COCKPIT COM HATCH..... OPEN

|   |   |                              |
|---|---|------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br>Page n°33 |
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## MFC 2A FAULT

bd02f06e-9453-4d3a-91a0-f1e94f0d6db7

2.1

ALL

APPROVED

- ▶ MFC 2A..... RESET
- **If MFC 2A FAULT persists**
  - ▶ MFC 2A..... OFF
  - **Before takeoff**
    - ▶ OVBD VALVE..... FULL OPEN
  - **In flight**
    - ▶ IDLE GATE : MONITOR
    - ▶ AVIONICS VENT EXHAUST MODE..... OVBD
    - ▶ MFC 2A MODULE LOST EQUIPMENT LIST..... CHECK
  - **At touchdown**
    - ▶ IDLE GATE : MONITOR
  - **After landing**
    - ▶ OVBD VALVE..... FULL OPEN

**MFC 2B FAULT**

ab25f78f-57a0-42e3-8db4-9090459e9a05

3.1

ALL

APPROVED

▶ MFC 2B..... RESET

**■ If MFC 2B FAULT persists**

▶ MFC 2B..... OFF

**● During taxi**

▶ PACK VALVE 2..... OFF

▶ OVBD VALVE..... FULL OPEN

**● Before takeoff**

▶ PACK VALVE 1..... OFF

**● After takeoff**

▶ LDG GEAR : KEEP DOWN 1 MINUTE EXCEPT IN CASE OF EMERGENCY

▶ PACK VALVE 1+2..... ON

**● In flight**

▶ OVBD VALVE..... FULL CLOSE

▶ MFC 2B MODULE EQUIPMENT LIST..... CHECK

**● After landing**


▶ PACK VALVE 2..... OFF

▶ OVBD VALVE..... FULL OPEN

**● At parking****CAUTION**Carefully monitor  $\Delta P$  before door opening.

▶ PACK VALVE 1+2..... OFF

▶ COCKPIT COM HATCH..... OPEN

|   |   |                              |
|---|---|------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br>Page n°35 |
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## 31.2 DUAL FAILURE

### MFC 1A+1B FAULT

2a24d06c-6ae3-4dc8-8120-171fb735ecf0

2.1

ALL

APPROVED

- ▶ MFC 1A..... RESET
- **After MFC 1A RESET**
  - ▶ MFC 1B..... RESET
- **If one MFC module recovered**
  - ▶ MFC (affected module) procedure..... APPLY
- **If MFC 1A + 1B Fault persist**
  - ▶ MFC 1A + 1B..... OFF
  - **Before takeoff**
    - ▶ PACK VALVE 1..... OFF
    - ▶ OVBD VALVE ..... FULL OPEN
    - ▶ RETURN TO PARKING
  - **In flight**
    - ▶ ICING CONDITIONS : LEAVE AND AVOID
    - ▶ ANTI ICING PROP 1 ..... OFF
    - ▶ ANTI ICING PROP 1(2) FAULT procedure ( [A30.02](#) ) ..... APPLY
    - ▶ DE ICING MODE SEL ..... OVRD AS RQRD
    - ▶ PACK VALVE 1 ..... OFF
    - ▶ BLEED VALVE 1 ..... OFF
    - ▶ OVBD VALVE ..... FULL CLOSE
    - ▶ ENG BLEED 1(2) FAULT procedure ( [A36.04](#) ) ..... APPLY
    - ▶ MFC 1A + 1B MODULES LOST EQUIPMENT LIST ..... CHECK
  - **Before landing**
    - ▶ ATPCS ..... OFF
    - ▶ V<sub>APP</sub> ([Refer to OPSDATA](#)) ..... NOT LESS THAN V<sub>mHB</sub> +10 kt
    - ▶ LDG DIST ([Refer to Landing Distance](#)) ..... MULTIPLY BY 1.15
  - **After landing**
    - ▶ OVBD VALVE..... FULL OPEN
  - **At Parking**

**CAUTION**

Carefully monitor ΔP before door opening.

    - ▶ PACK VALVE 2..... OFF
    - ▶ COCKPIT COM HATCH..... OPEN

## MFC 1A+2A FAULT

ebea129e-19aa-4b76-a0ca-6281bdf83646

2.1

ALL

APPROVED

▶ MFC 1A..... RESET

### ● After MFC 1A RESET

▶ MFC 2A..... RESET

### ■ If one MFC module recovered

▶ MFC (affected module) procedure..... APPLY

### ■ If MFC 1A + 2A Fault persist

▶ MFC 1A + 2A..... OFF

#### ● Before takeoff

▶ RETURN TO PARKING

▶ OVBD VALVE ..... FULL OPEN

#### ● In flight

▶ TLU sw ..... HI or LO SPD based on IAS

▶ AVIONICS VENT EXHAUST MODE..... OVBD

▶ GPWS ..... OFF

▶ MFC 1A + 2A MODULES LOST EQUIPMENT LIST..... CHECK

#### ■ If airframe deicing is ON

▶ BOOTS INFLATION : MONITOR

AIRFRAME FAULT AMBER ALERT IS LOST.

#### ● Below 1 000 ft AGL

▶ AP USE : PROHIBITED

#### Note

*ADC 2 outputs lost and VOR 2, ADF 2, CRS 2 lost.*

#### ● Before landing

▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) .....APPLY

LDG GEAR CANNOT BE RETRACTED


#### ● At touchdown

▶ IDLE GATE : MONITOR

#### ● After landing

▶ OVBD VALVE ..... FULL OPEN



|   |   |                                  |
|---|---|----------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br><br>Page n°37 |
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## MFC 1A+2B FAULT

6485533d-6da4-4083-8ee4-6c64f4703bf5

3.1

ALL

APPROVED

- ▶ MFC 1A..... RESET
- **After MFC 1A RESET**
  - ▶ MFC 2B..... RESET
- **If one MFC module recovered**
  - ▶ MFC (affected module) procedure..... APPLY
- **If MFC 1A + 2B Fault persist**
  - ▶ MFC 1A + 2B..... OFF
- **Before takeoff**
  - ▶ RETURN TO PARKING
  - ▶ PACK VALVE 2..... OFF
  - ▶ OVBD VALVE ..... FULL OPEN
- **In flight**
  - ▶ OVBD VALVE ..... FULL CLOSE
  - ▶ HYD BLUE PUMP ..... OFF
  - ▶ HYD X FEED ..... ON
  - ▶ DE ICING MODE SEL ..... OVRD AS RQRD
  - ▶ MFC 1A + 2B MODULES LOST EQUIPMENT LIST.....CHECK
- **Before landing**
  - FLAPS CONTROL LOST
  - ▶ REDUCED FLAPS LANDING procedure ( [A27.05](#) ) ..... APPLY
  - ▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) .....APPLY
  - LDG GEAR CANNOT BE RETRACTED
- **After landing**
  - ▶ PACK VALVE 2 ..... OFF
  - ▶ OVBD VALVE ..... FULL OPEN
- **At parking**
  - ▶ **CAUTION**
  - Carefully monitor  $\Delta P$  before door opening.
  - ▶ PACK VALVE 1+2 ..... OFF
  - ▶ COCKPIT COM HATCH ..... OPEN

## MFC 1B+2A FAULT

213bd2d9-5e9b-4045-a195-aa7a53863dc7

4.1

ALL

APPROVED

▶ MFC 1B..... RESET

### ● After MFC 1B RESET

▶ MFC 2A..... RESET

### ■ If one MFC module recovered

▶ MFC (affected module) procedure..... APPLY

### ■ If MFC 1B + 2A Fault persist

▶ MFC 1B + 2A..... OFF

#### ● Before takeoff

▶ RETURN TO PARKING

▶ PACK VALVE 1..... OFF

▶ OVBD VALVE ..... FULL OPEN

#### ● In flight

▶ AVIONICS VENT EXHAUST MODE..... OVBD

▶ DE ICING MODE SEL ..... OVRD AS RQRD

▶ MFC 1B + 2A MODULES LOST EQUIPMENT LIST.....CHECK

#### Note

*F/O IAS indicator is lost and VOR 2, ADF 2, CRS 2 not available on RMI 2.*

#### ● Before landing

FLAPS CONTROL LOST

▶ REDUCED FLAPS LANDING procedure ( [A27.05](#) ) ..... APPLY

▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) .....APPLY

LDG GEAR CANNOT BE RETRACTED

#### ● At touchdown

▶ IDLE GATE : MONITOR

#### ● After landing

▶ PACK VALVE 1 ..... OFF

▶ OVBD VALVE ..... FULL OPEN

#### ● At parking

#### CAUTION

Carefully monitor  $\Delta P$  before door opening.

▶ PACK VALVE 2 ..... OFF

▶ COCKPIT COM HATCH ..... OPEN

## MFC 1B+2B FAULT

58665077-f058-4155-b1c0-220d4ae9b6df

4.1

ALL

APPROVED

- ▶ MFC 1B..... RESET
- **After MFC 1B RESET**
  - ▶ MFC 2B..... RESET
- **If one MFC module recovered**
  - ▶ MFC (affected module) procedure..... APPLY
- **If MFC 1B + 2B Fault persist**
  - ▶ MFC 1B + 2B..... OFF
- **Before takeoff**
  - ▶ RETURN TO PARKING
  - ▶ PACK VALVE 1+2..... OFF
  - ▶ OVBD VALVE ..... FULL OPEN
- **In flight**
  - ▶ OVERHEAD panel : MONITOR
  - ▶ MFC 1B + 2B MODULES LOST EQUIPMENT LIST..... CHECK
- **Before landing**

**Note**

*ATPCS operates, only ARM light inhibited.*

  - ▶ N/W STEERING ..... OFF
  - ▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) ..... APPLY

LDG GEAR CANNOT BE RETRACTED.
- **After touchdown**
  - ▶ IDLE GATE lever ..... PULL
  - ▶ DIFFERENTIAL BRAKING ..... USE
- **After landing**
  - ▶ OVBD VALVE ..... FULL OPEN
  - ▶ ANTI ICING HORNS ..... RELEASE
  - ▶ PROBE HTG ..... OFF
- **At Parking**

**CAUTION**

Carefully monitor  $\Delta P$  before door opening.

  - ▶ PACK VALVE 1+2 ..... OFF
  - ▶ COCKPIT COM HATCH ..... OPEN

**Note**

*External power cannot be used.*

**MFC 2A+2B FAULT**

6c4f6e9c-c3ec-4d27-bc3e-19c260b9e42a

6.1

ALL

APPROVED

- ▶ MFC 2A..... RESET
- **After MFC 2A RESET**
  - ▶ MFC 2B..... RESET
- **If one MFC module recovered**
  - ▶ MFC (affected module) procedure..... APPLY
- **If MFC 2A + 2B Fault persist**
  - ▶ MFC 2A + 2B.....OFF
  - **Before takeoff**
    - ▶ RETURN TO PARKING
    - ▶ BLEED VALVE 2..... OFF
    - ▶ PACK VALVE 2..... OFF
    - ▶ OVBD VALVE ..... FULL OPEN
  - **In flight**
    - ▶ ICING CONDITIONS : LEAVE AND AVOID
    - ▶ AVIONICS VENT EXHAUST MODE..... OVBD
    - ▶ ANTI ICING PROP 2 ..... OFF
    - ▶ ANTI ICING PROP 1(2) FAULT procedure ( [A30.02](#) ) .....APPLY
    - ▶ DE ICING MODE SEL ..... OVRD AS RQRD
    - ▶ PACK VALVE 2 ..... OFF
    - ▶ BLEED VALVE 2..... OFF
    - ▶ ENG BLEED 1(2) FAULT procedure ( [A36.04](#) ) ..... APPLY
    - ▶ MFC 2A + 2B MODULES LOST EQUIPMENT LIST ..... CHECK
  - **Before landing**
    - ▶ ATPCS .....OFF
    - ▶ V<sub>APP</sub> ([Refer to OPSDATA](#))..... NOT LESS THAN V<sub>mHB</sub> +10 kt
    - ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.15
  - **At touchdown**
    - ▶ IDLE GATE : MONITOR
  - **After landing**
    - ▶ OVBD VALVE ..... FULL OPEN
  - **At Parking**
    - ▶ **CAUTION**
    - Carefully monitor ΔP before door opening.
    - ▶ PACK VALVE 1..... OFF
    - ▶ COCKPIT COM HATCH..... OPEN

## 32      LANDING GEAR

### ANTISKID FAULT

|   |  |            |
|---|--|------------|
| <small>d2e6ba6c-ddb0-41a0-b8a8-c98f2801fcc9</small> |  | <b>2.4</b> |
|   |  | ALL        |
|   |  | APPROVED   |

- ▶ ANTISKID..... OFF
- ▶ LDG DIST ([Refer to Landing Distance](#))..... MULTIPLY BY 1.4
- **At touchdown**
  - ▶ REVERSE..... AS RQRD
  - ▶ NORMAL BRAKE..... USE WITH CARE
  - ▶ BRAKE HANDLE..... EMER/AS RQRD

### BRK TEMP HOT

|   |  |            |
|---|--|------------|
| <small>5efa5dd3-b6f5-4983-b72a-2289bc1656d0</small> |  | <b>2.5</b> |
|   |  | ALL        |
|   |  | APPROVED   |

- **On ground**
  - ▶ PL..... CHECK ON GI

**Note**

*Taxi at low speed, use reverse if necessary.*

- ▶ RETURN TO PARKING
- ▶ BRAKES..... USE WITH CARE
- **At parking**
  - ▶ GROUND CREW..... ADVISE
  - ▶ WHEEL CHOCKS..... USE
  - ▶ BRAKE HANDLE..... BRK OFF

MAINTENANCE ACTION REQUIRED.

- **In flight**
  - **If flight conditions permit**
    - ▶ MAX IAS : VLO
    - ▶ LDG GEAR..... DOWN
    - ▶ LDG GEAR : DO NOT RETRACT UNTIL BRK TEMP HOT OFF

### **LDG GEAR GRAVITY EXTENSION**

68505afb-6d64-43b3-a3da-017d198637dc

**2.3**

**ALL**

**APPROVED**

- ▶ LDG GEAR lever .....DOWN

**CAUTION**

Do not twist handle when operating. Pulling has to be done above pedestal level and maintain until green lights are on.

- ▶ EMER EXTENSION HANDLE : PULL & MAINTAIN UP
- ▶ TCAS ..... TA ONLY

**LDG GEAR CANNOT BE RETRACTED**

**■ If abnormal LDG GEAR indication**

- ▶ LANDING WITH ABNORMAL LDG GEAR procedure ( [A32.06](#) ) ..... APPLY

### **LDG GEAR RETRACTION NOT POSSIBLE**


a654afce-bb01-42aa-96b0-1043f0b65baf

**2.2**

**ALL**

**APPROVED**

- ▶ ICING CONDITIONS : LEAVE AND AVOID
- ▶ MAX IAS : 185 kt
- ▶ LDG GEAR lever .....DOWN
- ▶ CCAS ..... RECALL
- ▶ TCAS ..... TA ONLY
- ▶ IDLE GATE : MONITOR

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br><br>Page n°43 |
|---|---|---|

## LDG GEAR UNSAFE INDICATION

a09ab046-939e-48bf-b962-8138ae0c8376

4.1

ALL

APPROVED

### ■ If LDG GEAR selected DOWN

#### ■ If GREEN light OFF on one panel only

▶ UNSAFE INDICATION..... DISREGARD

#### ■ If GREEN light OFF on both panels

▶ LDG GEAR GRAVITY EXTENSION procedure ( [A32.03](#) ) .....APPLY

### ■ If LDG GEAR selected UP

#### ■ If RED light ON on one panel only

▶ UNSAFE INDICATION..... DISREGARD

#### ■ If RED or GREEN light ON on both panels

▶ ICING CONDITIONS : LEAVE AND AVOID

▶ IAS MAX : 160 kt

▶ LDG GEAR lever ..... DOWN

▶ TCAS ..... TA ONLY

## LANDING WITH ABNORMAL LDG GEAR

e8a731de-050f-44f8-aa1a-84e1d3f8eda4

3.0

ALL

### • Preparation

- ▶ CABIN CREW (PA)..... NOTIFY
- ▶ ATC ..... NOTIFY
- ▶ XPDR ..... AS RQRD
- ▶ SIGNS..... ON
- ▶ GPWS ..... OFF
- ▶ CABIN AND COCKPIT..... PREPARE
- ▶ FUEL WEIGHT..... IF POSSIBLE, REDUCE

#### ■ If abnormal nose LDG GEAR

- ▶ CG LOCATION (if possible)..... AFT

#### ■ If abnormal main LDG GEAR

- ▶ FUEL UNBALANCE (if possible)..... ESTABLISH

#### Note

*Reduce fuel on side with failed LDG GEAR, and do not exceed fuel unbalance limit 730 kg (1 609 lb).*

### • Approach

- ▶ LDG GEAR lever ..... DOWN
- ▶ LDG GEAR EMER EXTENSION HANDLE..... PULL
- ▶ ENG START selector ..... OFF & START ABORT
- ▶ CABIN REPORT..... OBTAIN

### • Before landing

- ▶ ENG BLEEDS 1+2..... OFF
- ▶ BRACE FOR IMPACT..... ORDER

### • At touchdown

- ▶ PL 1+2..... GI
- ▶ CL 1+2..... FTR THEN FUEL S.O.

### • After touchdown


- ▶ FIRE HANDLES 1+2..... PULL

### • When aircraft has stopped

- ▶ BRAKE HANDLE..... PARKING
- ▶ CABIN CREW (PA)..... NOTIFY
- ▶ FUEL PUMPS 1+2..... OFF
- ▶ AGENTS..... DISCH
- ▶ EVACUATION (PA)..... INITIATE

### • Before leaving aircraft



|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°45 |
|---|---|-------------------------------------|

cont'd... >>>

▶ BAT ..... OFF

## 34      NAVIGATION

### 34.1      ADC

#### ADC 1(2) FAILURE

|                                      |            |
|--------------------------------------|------------|
| 951875ee-1850-48bf-9ddd-2792f4834a18 | <b>1.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ ADC sw ..... SELECT VALID ADC
- ▶ AP CPL pb ..... OPERATIVE SIDE

AP/FD UPPER MODE CAN BE REENGAGED

- ▶ ATC sw ..... SELECT VALID ADC

#### ■ If ADC 1 FAILED

- ▶ GPWS ..... OFF
- ▶ LANDING ELEVATION ..... SET PRESSURE ALTITUDE

#### ADC 1+2 FAILURE

|                                      |            |
|--------------------------------------|------------|
| 44b90680-9a64-4a94-898e-5153295a9552 | <b>2.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ PF ..... CAPT
- ▶ STBY INST ..... USE
- ▶ CAB PRESS RATE knob ..... 9 O'CLOCK (MAN POSITION)
- ▶ CAB PRESS MOSE SEL ..... MAN
- ▶ TCAS ..... STBY
- ▶ ENG PARAMETERS : MONITOR
- ▶ GPWS ..... OFF
- ▶ DE-ANTI ICING MODE SEL AUTO FAULT procedure ( [A30.06](#) ) ..... APPLY
- ▶ TLU FAULT procedure ( [A27.19](#) ) ..... APPLY
- ▶ AUTO PRESS FAULT procedure ( [A21.10](#) ) ..... APPLY

AHRS 1+2 A/ERECT FAIL COME ON


#### ■ If flight instruments parameters deviate

- ▶ SPEED & LEVEL ..... STABILIZE
- During 15 s
  - ▶ AHRS 1+2 A/ERECT FAIL ..... PRESS

#### ADC SW FAULT

|                                      |            |
|--------------------------------------|------------|
| 50e7ab2a-2870-494b-a834-6bfe43b8f364 | <b>3.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ ADC sw ..... SELECT ALTERNATE ADC

|   |   |                              |
|---|---|------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br>Page n°46 |
|---|---|------------------------------|

## 34.2 AHRS

### AHRS 1(2) FAILURE

|                                      |          |
|--------------------------------------|----------|
| 887fa1f0-f81a-47a9-a107-a855315f1927 | 4.1      |
|                                      | ALL      |
|                                      | APPROVED |

▶ ATT/HDG (affected side)..... ALTERNATE SYS

● **When wings level**

▶ REMAINING AHRS OUTPUTS : PERIODICALLY X CHECK WITH STBY INSTs

### EFIS COMP

|                                      |          |
|--------------------------------------|----------|
| a4375ab7-2f52-4702-9ffa-a412134faade | 4.1      |
|                                      | ALL      |
|                                      | APPROVED |

■ **If ROL, PIT, ATT, HDG cautions appears on EFIS**

▶ BOTH EADI/EHSI AND STBY INSTs ... .. COMPARE TO IDENTIFY AFFECTED AHRS

▶ ATT/HDG (affected side)..... ALTERNATE SYS

■ **If AHRS 1 is affected**

▶ C/B ATT/HDG/AHRS 1 NORM SPLY ..... PULL

▶ C/B ATT/HDG/AHRS 1 AUX SPLY .....PULL

AP CAN BE REENGAGED

■ **If AHRS 2 is affected**

▶ C/B ATT/HDG/AHRS 2 NORM SPLY ..... PULL

▶ C/B ATT/HDG/AHRS 2 AUX SPLY FLT ..... PULL

AP CAN BE REENGAGED

■ **If LOC / GS / ILS caution appears on EFIS**

▶ NAV SOURCES..... CHECK

▶ VOR/ILS (affected side)..... PRESS AS RQRD

## 36 PNEUMATIC

### BLEED LEAK 1(2)

|                                      |          |
|--------------------------------------|----------|
| 7980c112-c7cf-4fb6-a2dc-9d48ae45b8cd | 5.6      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ PACK VALVE (affected side)..... OFF
- ▶ ENG BLEED (affected side)..... OFF
- **On ground**
  - ▶ RETURN TO PARKING
- **In flight**
  - ▶ MAX FL : 200/MEA
- **At high altitude**
  - ▶ LARGE RAPID POWER CHANGE : AVOID

#### CAUTION

Do not restore ENG BLEED in flight.

### BLEED 1(2) OVHT

|                                      |          |
|--------------------------------------|----------|
| d7dcac37-a180-451a-b1e0-89cd6cc2fe6f | 5.3      |
|                                      | ALL      |
|                                      | APPROVED |


- ▶ PACK VALVE (affected side)..... OFF
- ▶ ENG BLEED (affected side)..... OFF
- ▶ MAX FL : 200/MEA
- **At high altitude**
  - ▶ LARGE RAPID POWER CHANGE : AVOID

### ENG BLEED 1(2) FAULT

#### ENG BLEED 1(2) FAULT

|                                      |          |
|--------------------------------------|----------|
| e84dba68-0197-4c73-aecf-1894e77fc9ed | 4.3      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ PACK VALVE (affected side)..... OFF
- ▶ ENG BLEED (affected side)..... OFF
- ▶ MAX FL : 200/MEA
- **At high altitude**
  - ▶ LARGE RAPID POWER CHANGE : AVOID

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br>Page n°48 |
|---|---|---|

## 70 POWER PLANT

### 70.1 CONTROLS

#### EEC 1(2) FAULT

|                                      |          |
|--------------------------------------|----------|
| d721c653-1ce3-469c-9aa7-fc3065222491 | 0.2      |
|                                      | ALL      |
|                                      | APPROVED |

▶ ATPCS..... OFF

#### CAUTION

Do not reset EEC Flashing

#### ● When flight conditions permit

- ▶ PL (affected ENG)..... RETARD IN GREEN SECTOR
- ▶ EEC (affected ENG)..... RESET

#### ■ If EEC recovered

- ▶ ATPCS..... ON
- ▶ PL (affected ENG)..... RESTORE POWER

#### ■ If EEC fault persists

- ▶ EEC (affected ENG)..... OFF
- ▶ PL (affected ENG)..... MOVE WITH CARE
- ▶ PL (affected ENG)..... RESTORE POWER

#### ■ In the following cases : icing conditions, engine(s) flame out, emergency descent, severe turbulence, heavy rain


- ▶ MAN IGN..... ON

#### ● In final approach

- ▶ CL 1 + 2..... 100 % OVRD

#### ● After landing

- ▶ TAXI : ENG (affected) FEATHERED
- ▶ ACW BTC..... CHECK CLOSED

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br><br>Page n°49 |
|---|---|---|

## PEC 1(2) FAULT

a2f727b9-f20f-464c-b445-4da290f34f7d

3.1

ALL

APPROVED

### ■ If in short final approach (below 400 ft RA)

▶ GO-AROUND..... PERFORM

### ● Above 400 ft or when flight conditions permit

▶ CL (affected ENG)..... 100 % OVRD

▶ PEC (affected ENG)..... RESET

### ■ If PEC recovered

▶ CL(affected ENG)..... AUTO

### ■ If PEC fault persists

▶ PEC (affected ENG)..... OFF

▶ PL (affected ENG)..... MOVE WITH CARE

### ● For landing

▶ CL 1+2 ..... 100 % OVRD

▶ PL : KEEP AT OR ABOVE FI UNTIL NOSE WHEEL ON GROUND

▶ REVERSE (affected ENG) : DO NOT USE

### ● After landing

▶ TAXI : ON ENG 1+2

▶ ACW BTC ..... CHECK CLOSED

## PEC 1(2) SGL CH

fad4caf4-f077-4d91-adb0-f0a64d09be50

1.3

ALL

APPROVED

### ● In flight

▶ PEC 1(2) : DO NOT RESET

### ● For landing

▶ PEC 1(2) FAULT..... ANTICIPATE

## 70.2 ONE ENGINE INOPERATIVE

### ENG 1(2) FLAME OUT IN FLIGHT

ed6c37d4-1713-47ed-9a05-503f67d19c63

0.5

ALL

APPROVED

- ▶ PL (affected ENG)..... F
- If NH drops below 30 % (no immediate relight)
  - ▶ CL (affected ENG)..... FTR THEN FUEL S.O.
- If damage suspected
  - ▶ FIRE HANDLE (affected ENG)..... PULL
  - ▶ **LAND ASAP**
  - ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY
- If no damage suspected
  - ▶ ENG RESTART IN FLIGHT procedure ( [A70.09](#) ) ..... APPLY
- If not successful
  - ▶ **LAND ASAP**
  - ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY

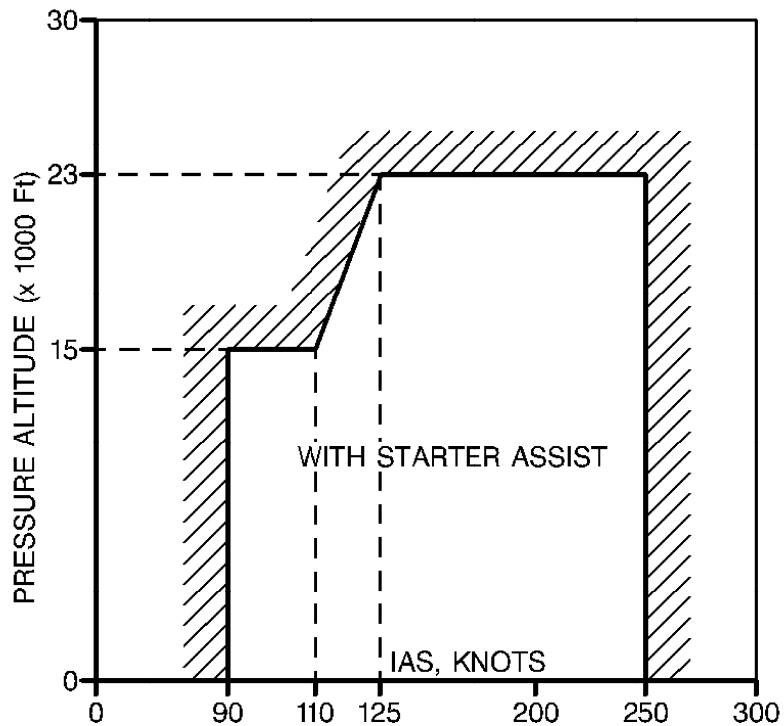
## ENG RESTART IN FLIGHT

cd385555-cd3b-49a3-8eac-5d3cffe60553

2.3

ALL

APPROVED



ICN-XX-Y-700000-T-FB429-00001-C-01-N

- ▶ ENVELOPE RELIGHT.....CHECK
- ▶ FUEL SUPPLY.....CHECK
- ▶ CL ..... FUEL S.O.
- ▶ PL ..... FI

### ■ If propeller is feathered after ATPCS sequence

**CAUTION**

Before attempting restart the PWR MGT must be out of TO position

- ▶ PWR MGT ..... MCT
- ▶ ENG START selector ..... START A & B
- ▶ EEC ..... RESET


### ■ If EEC FAULT persists

- ▶ EEC..... OFF
- ▶ ENG START pb ..... ON

### ● When NH at or above 10 %

- ▶ CL ..... FTR

cont'd... >>>

|   |   |                                  |
|---|---|----------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br><br>Page n°52 |
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cont'd... >>>

▶ ENG RELIGHT..... MONITOR

■ **If engine fails to restart within 10 s**

- ▶ CL ..... FUEL S.O.
- ▶ ENG START selector ..... OFF & START ABORT

**Note**

Wait at least 30 s before attempting a new RESTART. [Refer to LIM.5.70.1.2](#)  
[Overtemperature Limit for Starting](#)


■ **If no restart**

- ▶ **LAND ASAP**
- ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) .....APPLY

■ **If engine recovered**

- ▶ CL .....AUTO
- ▶ PL ..... ADJUST TO OTHER ENG
- ▶ ENG START selector ..... OFF & START ABORT
- ▶ SYSTEMS AFFECTED..... RESTORE
- ▶ APM..... OFF



|   |   |                                  |
|---|---|----------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>ABNORMAL PROCEDURES</b> | PRO.NNO.ABN<br><br><br>Page n°53 |
|---|---|----------------------------------|

## 70.3 PARAMETERS

### ENG 1(2) OIL LO PR

610b79eb-4bb4-48bd-9405-ac68a9992fa5

0.6

ALL

APPROVED

- ▶ PL (affected ENG)..... FI
- **If both OIL LO PR alert on CAP and local alert are activated**
  - ▶ CL (affected ENG)..... FTR THEN FUEL S.O.
  - ▶ **LAND ASAP**
  - ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) ..... APPLY
- **If only local alert is activated**
  - ▶ CL (affected ENG)..... FTR THEN FUEL S.O.
  - **After engine shut down**
    - ▶ CL (affected ENG)..... FTR
    - **If CCAS activated after 30 s (normal warning delay)**
      - ▶ CL (affected ENG)..... FUEL S.O.
      - ▶ ENG RESTART IN FLIGHT procedure ( [A70.09](#) ) .....APPLY
    - **If CCAS not activated after 30 s**
      - ▶ CL (affected ENG)..... FUEL S.O.
      - ▶ **LAND ASAP**
      - ▶ SINGLE ENG OPERATION procedure ( [A70.12](#) ) .....APPLY
- **If OIL LO PR alert only activated on CAP**
  - ▶ ALERT : DISREGARD  
MAINTENANCE ACTION REQUIRED
  - ▶ OIL PRESS LOCAL ALERT : MONITOR
- **If single engine operation**
  - ▶ NP (feathered ENG) : MONITOR
  - **If NP (feathered ENG) above 10 %**
    - ▶ IAS : LIMIT NOT TO EXCEED NP 101 %
    - ▶  $V_{APP}$ ..... INCREASE BY 10 kt



BU / 75  
AFM

PROCEDURES

NON NORMAL OPERATIONS  
ABNORMAL PROCEDURES

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**ENG NAC OVHT**

d239ce99-8b7b-41b9-8759-ee3045ad2cf7

0.1

ALL

APPROVED

• **During hotel mode operation**

- ▶ PL 2..... GI
- ▶ CL 2..... FTR THEN FUEL S.O.

• **During taxi**

- ▶ AIRCRAFT..... STOP
- ▶ PL 2..... SLIGHTLY INCREASE POWER

■ **If NAC OVHT persist within 30 s**

- ▶ PL 2.....GI
- ▶ CL 2..... FTR THEN FUEL S.O.

**70.4 OTHERS**

**FIRE LOOP 1A (1B) (2A) (2B) FAULT**

0a3f20ab-f634-483d-a156-091eba772bec

1.1

ALL

APPROVED

- ▶ LOOP (affected side)..... OFF

**99 MISCELLANEOUS**

**99.1 DETECTION-INDICATION**

**OXYGEN LO PR**

d19796d8-f720-409a-96f8-cc83cc2da03b

0.1

ALL

APPROVED


- ▶ OXY MAIN SUPPLY.....OFF

• **After 2 seconds**

- ▶ OXY MAIN SUPPLY.....ON

■ **If oxygen LO PR light persists**

- ▶ OXY MAIN SUPPLY.....OFF
- ▶ OXYGEN PORTABLE UNIT.....USE AS RQRD

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br><br>Page n°55 |
|---|---|---|

## DOORS UNLK IN FLIGHT

bd53a9da-cf53-4e0a-ad81-a82caee95ca

1.0

ALL

APPROVED

■ **If FWD COMPT UNLK light comes on**

NO CREW ACTION REQUIRED

■ **If any other DOOR UNLK light comes on**


- ▶ SIGNS..... ON
- ▶ DOOR (affected)..... VISUALLY CHECK

■ **If unlocked confirmed**

- OR -

■ **Visual check not possible**

- ▶ LANDING ELEVATION : 9 000 ft
- ▶ MAX FL : 100 OR MEA

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br><br>Page n°56 |
|---|---|---|

## 99.2 FLYING WITH ONE ENGINE INOPERATIVE

### 99.2.01 Takeoff

|                                      |          |
|--------------------------------------|----------|
| 0e342e9e-62a5-4a22-ac61-5a094bda29d7 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

#### Rejected Takeoff (Engine Flame Out Before V<sub>1</sub>)

Immediately and simultaneously:

- ▶ BRAKES.....MAXIMUM
- ▶ PL 1+2..... GI / REVERSE

#### Takeoff with Engine Flame Out Between V<sub>1</sub> and V<sub>2</sub>

- At V<sub>R</sub>

- ▶ Rotate to the safe pitch attitude.

- With a positive vertical speed

- ▶ LDG GEAR..... RETRACT  
*Use rudder and control wheel to control aircraft heading maintaining aircraft wings essentially levelled.*

- ▶ Climb at V<sub>2</sub>

- At acceleration altitude

- If normal conditions

- ▶ BLEED 1+2.....CONFIRM OFF
    - ▶ ACCELERATE UP TO 1.18 V<sub>SR</sub> FLAPS 0
    - ▶ FLAPS..... RETRACT
    - ▶ CLIMB : CONTINUE AT THIS SPEED
    - ▶ PWR MGT selector..... MCT  
*On expiry of RTO power limiting time*

- If icing conditions

- ▶ BLEED 1+2.....CONFIRM OFF
    - ▶ ACCELERATE UP TO 1.27 V<sub>SR</sub>
    - ▶ FLAPS 15 : MAINTAIN
    - ▶ CLIMB : CONTINUE AT THIS SPEED
    - ▶ PWR MGT selector..... MCT  
*On expiry of RTO power limiting time*


#### CAUTION

RTO POWER IS ONLY AUTHORIZED FOR 10 min

#### Engine Flame Out During Initial Climb Out

Proceed as above however, if the flame out occurs above V<sub>2</sub> it is recommended to maintain the speed reached without exceeding V<sub>2</sub> + 10 kt.

*cont'd... >>>*

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NON NORMAL OPERATIONS</b><br><br><b>ABNORMAL PROCEDURES</b> | <b>PRO.NNO.ABN</b><br><br>Page n°57 |
|---|---|-------------------------------------|

cont'd... >>>

In any case the minimum speed must be equal to  $V_2$ .

### 99.2.03 Approach and Landing

|                                      |            |
|--------------------------------------|------------|
| 3fe4bd8a-4005-41f0-b651-3b116b2ee0b7 | <b>4.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ BLEED 1+2.....OFF
- ▶ NORMAL APPROACH & LANDING CONFIGURATIONS..... SELECT

**Note**

*At touchdown, do not reduce below FI before nose wheel is on the ground.*

**Note**

*[Refer to LANDING PERFORMANCE DETERMINATION](#): for normal or delayed breaking performance determination.*

### 99.2.04 Missed Approach

|                                      |            |
|--------------------------------------|------------|
| bed5555a-1e83-4b37-a7a6-03e3e32ef680 | <b>2.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ GO-AROUND procedure ( 1 ) ..... APPLY
- **At acceleration altitude**
  - ▶ Proceed as for a takeoff with engine flame out between  $V_1$  and  $V_2$  ([Refer to PRO.NNO.ABN.99.2.01 Takeoff](#))

## 99.3 ABORTED TAKEOFF WITH ALL ENGINES OPERATIVE

### 99.3.01 Aborted Takeoff with All Engines Operative

|                                      |            |
|--------------------------------------|------------|
| e98887a3-7206-4a59-8e86-bea09d68fb74 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

● **Immediately and simultaneously**

- ▶ PL 1+2.....GI
- ▶ BRAKES.....AS RQRD
- ▶ REVERSE..... AS RQRD

## 99.4 OTHER

### VOLCANIC ASH ENCOUNTER

|                                      |            |
|--------------------------------------|------------|
| 6634c557-6f42-4d56-b8a3-14ba2dc249f0 | <b>1.0</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ 180 ° TURN ..... INITIATE
- ▶ DESCENT (if possible)..... INITIATE
- ▶ ATC ..... NOTIFY
- **If conditions permit**
  - ▶ PL 1+2 ..... RETARD
  - ▶ IAS ([Refer to OPSDATA](#))..... V<sub>mHB</sub>
  - ▶ HDG MODE..... HIGH BANK
  - ▶ CREW OXY MASKS..... ON / 100 %
  - ▶ CABIN CREW..... NOTIFY
  - ▶ PASSENGER OXYGEN..... AS RQRD
  - ▶ AIR FLOW..... HIGH
  - ▶ ENG PARAMETERS : MONITOR


**Note**

*In extreme case, it could be necessary to consider precautionary engine shut down and engine restart in flight. If both engines flame out, refer to BOTH ENGINE FLAME OUT procedure.*

- ▶ AIRSPEED INDICATORS : MONITOR

VOLCANIC ASH COULD CLOG THE PITOT PROBES.

- **If engine flame out**
  - ▶ ENG 1(2) FLAME OUT IN FLIGHT procedure ( [A70.07](#) ) ..... APPLY
- **If airspeed unreliable or lost**
  - ▶ AIRCRAFT ATTITUDE ..... ADJUST
  - ▶ PL 1+2..... ADJUST
  - ▶ UNRELIABLE AIRSPEED INDICATION procedure ( [E99.10](#) ) .....APPLY

|   |   |                                     |
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## 1.1 GPS

### Procedures Following Failure

8b63d6eb-e2f9-4cdb-bb71-4b13e4d313d7

1.1

0685

APPROVED

- In the event of DGR alarm lighting the flight crew must crosscheck the aircraft position using conventional means or must revert to an alternative way of navigation.
- In addition, where the coupled DME option is not installed or if the coupled DME is not operative, the following procedures apply for RNAV 5 operations
  - o During the preflight planning phase, the availability of GPS integrity (RAIM) must be confirmed for the intended flight (route and time). Dispatch must not be made in the event of predicted continuous loss of RAIM of more than 5 min for any part of the intended flight.
  - o Traditional navigation equipment must be selected to available aids so as to enable immediate crosschecking or reversion in the event of loss of GPS navigation capability.

### Procedures Following Failure

211a026a-4993-490b-bfb2-9b20d5f4e99d

0.2

0706-0775

APPROVED

- For RNAV (GNSS) non-precision approach, in the event of DGR alarm lighting or if UNABLE RNP message occurs, perform a go-around unless suitable visual reference is available
- In case of loss of navigation or navigation degradation resulting in the loss of the required navigation performance flight crew must inform ATC and revert to alternate navigation ways.

## 1.2 TCAS

### Procedures Following Failure

14bf6543-a4ae-468c-9dd3-0cc71354fb3d


0.1

ALL

APPROVED

The procedures following failure are applicable with the addition of the following:

- The TCAS selector must be turned TA ONLY in the following cases:
  - o Engine out operations
  - o Stick pusher/shaker failure
  - o Flight with landing gear down.
- The TCAS selector must be turned STBY in the following cases:
  - o ATC request
  - o ADC 1 failure
  - o Errors or differences between independent air data sources.

|   |   |   |
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### 1.3 ADS-B

#### Procedures Following Failure

|                                      |            |
|--------------------------------------|------------|
| d56492b1-476c-41b1-a006-6cf508c48e37 | <b>0.5</b> |
|                                      | 0775       |
|                                      | APPROVED   |

An amber "ADSB FAIL" caution message can be displayed on ATC system failure indicator in case of :

- ATC failure, or
- Loss of ADSB function


If ADSB FAIL caution message is displayed on cockpit FAIL indicator, flight crew should switch to opposite ATC.

If ADSB FAIL caution message is still displayed after ATC switching, the flight crew should inform the Air Navigation Service Provider (ANSP), as appropriate, using any published contingency procedures.

#### Note

*Failure of the GNSS system, used by on-board navigation systems, will not affect ADSB (ADSB uses its own GPS system)*



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## 2 DOORS

### 2.1 CDLS Use Policy

|   |  |            |
|---|--|------------|
| <small>da95fcf8-f1da-49a6-bc56-5f38591b8f40</small> |  | <b>0.2</b> |
|   |  | ALL        |
|   |  | APPROVED   |

The CDLS must be set to ON before passengers boarding starts.

The CDLS can be set to OFF after all passengers disembark.

## 3 NAVIGATION

### 3.1 TAWS - GPWS

#### 3.1.1 General

|   |  |            |
|---|--|------------|
| <small>eda6b2f6-9ea6-43ff-be69-58ee7f26ecb4</small> |  | <b>2.0</b> |
|   |  | ALL        |
|   |  | APPROVED   |

Following a EGPWS warning, the flight crew must immediately focus their attention on terrain proximity or excessive lateral attitude.

Positive action to alter the flight path or/and to change the configuration should be initiated immediately.

#### 3.1.2 Inputs

|   |  |            |
|---|--|------------|
| <small>8fe6a309-f184-4965-abb8-b7e34120b90b</small> |  | <b>1.0</b> |
|   |  | ALL        |
|   |  | APPROVED   |

EGPWS is associated with the following systems:

- ADC 1
- Radio altimeter
- ILS 2
- SGU 1 and 2
- Flaps position
- Landing gear position
- GNSS (if installed) or EGPWS internal GPS card
- AHRS 1
- Weather radar.

### 3.1.3 Outputs

16bba03b-7990-4329-92b1-b1643e2db363

1.0

ALL


APPROVED

#### 1) Basic GPWS Modes

- For modes 1 - 2 - 3, and 4
  - o Visual warning: Red GPWS lights come on
  - o Aural alerts (warning):
    - Mode 1: SINK RATE PULL UP
    - Mode 2: TERRAIN PULL UP
    - Mode 3: DON'T SINK
    - Mode 4: Based on speed and/or flaps/gear setting:
      - o TOO LOW TERRAIN, or
      - o TOO LOW GEAR, or
      - o TOO LOW FLAPS.
- For mode 5
  - o Visual warning: Amber GS lights come on.
  - o Aural alert (warning): GLIDE SLOPE
- For mode 6
  - o Aural alerts (warning):
    - MINIMUMS MINIMUMS
    - FIVE HUNDRED
    - BANK ANGLE, BANK ANGLE

#### 2) Enhanced Modes

- For TCF mode (Terrain Clearance Floor)
  - o Visual warning: Red GPWS lights come on
  - o Aural alert (warning): TOO LOW TERRAIN
- For TAD (Terrain Awareness & Display) mode
  - o Visual warning: Red GPWS lights come on
  - o Aural alerts:
    - Caution:
      - o TERRAIN AHEAD - TERRAIN AHEAD, or
      - o OBSTACLE AHEAD - OBSTACLE AHEAD
    - Warning:
      - o TERRAIN AHEAD - PULL UP, or
      - o OBSTACLE AHEAD - PULL UP .
  - o EFIS display: Conflicting terrain in red or yellow.

|   |   |   |
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### 3.1.4 Operation

|                                      |          |
|--------------------------------------|----------|
| acc9cefa-a1dd-46cd-b7bf-9ebb9168ae7e | 1.0      |
|                                      | ALL      |
|                                      | APPROVED |

- During normal operations GPWS sw should be always set on NORM position and TERR pb must be pressed in
- In case of emergency conditions GPWS sw and TERR pb may be turned on OFF position. Refer to chapter PRO-NNO-EMR-05 Ditching and Forced Landing
- In case of landing in abnormal flaps conditions GPWS sw may be turned on OVRD position. Refer to chapter PRO-NNO-ABN-06, Flight Controls
- Terrain/Obstacle Awareness Caution. When a terrain awareness CAUTION occurs, verify the aircraft flight path and correct it if required. If in doubt, perform a climb until the CAUTION alert stops
- Terrain/Obstacle Awareness Warning. If a terrain awareness WARNING occurs, immediately initiate and continue a climb that will provide maximum terrain clearance until all alerts stop. Only vertical manoeuvres are recommended, unless operating in visual meteorological conditions (VMC), and/or the pilot determines, based on available information, that turning in addition to the vertical escape manoeuvre is a safer course of action.

#### Note

- *All modes are inhibited by stall warning*
  - *Mode 5 is active only when ILS 2 is tuned on the correct frequency and gear down*
  - *GPWS or TERR FAULT lighting indicates that some or all basic or enhanced modes are lost.*
- In that case, the remaining alerts must be considered as valid and taken into account.*
- *If the WX radar control is selected OFF, no terrain information will be displayed on the EHSI and TERR FAULT amber light will be came on.*
- Even in case of a radar failure, select the STBY position.*

## 4 FLIGHT CONTROLS

### 4.1 Pitch

|                                      |          |
|--------------------------------------|----------|
| 10376166-5bce-4e8e-b4ab-5fb0c45aaeb8 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

In flight aggressive or large elevators input should be avoided. Such inputs may lead to high loads and result in structural damage.

#### CAUTION

The aircraft must be controlled from one control column only. Dual input in opposite direction may result in a pitch disconnect.

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**NORMAL PROCEDURES**

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# 1      **SYSTEM TEST**

## **1.1      DAILY CHECKS**

### **1.1.1      ATPCS Dynamic Test**

|                                      |                 |
|--------------------------------------|-----------------|
| 38608412-9724-49bd-99da-7e76a59e60fa | <b>4.0</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

#### **CAUTION**


Do not perform ATPCS test while taxiing as ACW is temporarily lost. Consequently both main hydraulic pumps are lost.

#### **Note**

*In order to protect the feathering pumps from damage, 10 min delays between test and takeoff, or between static/dynamic tests must be respected.*

#### **Initial Setting**

- ▶ PL 1+2..... GI
- ▶ CL 1+2..... AUTO
- ▶ ATPCS pb ..... NO LIGHT
- ▶ PWR MGT..... T.O.
- ▶ ATPCS TEST selector : TURN & HOLD LEFT ARM POSITION
  - ▶ ATPCS ARM light..... COMES ON
  - ▶ TQ ..... INCREASE
  - ▶ NP & NH ..... DECREASE
- ▶ ATPCS TEST selector : TURN & HOLD ENG 1 POSITION
  - ▶ ENG 2..... UPTRIM
  - ▶ TQ 2..... NO CHANGE
  - ▶ ENG 2 NP & NH ..... INCREASE SLIGHTLY
  - ▶ TQ 1..... DECREASE below 18 %
  - **After 2.15 s**
    - ▶ ATPCS ARM light..... TURN OFF
    - ▶ ENG 1..... FEATHER
    - ▶ NP 1 indication..... DECREASE BELOW 20 %
- ▶ ATPCS TEST selector : RELEASE NEUTRAL POSITION
  - ▶ ENG 1 ..... UNFEATHER
- **When ENG 1+2 are back to normal idle values**
  - ▶ ATPCS TEST selector : TURN & HOLD RIGHT ARM POSITION
    - ▶ ATPCS ARM light ..... COMES ON
    - ▶ TQ ..... INCREASE
    - ▶ NP & NH ..... DECREASE
- ▶ ATPCS TEST selector : TURN & HOLD ENG 2 POSITION

|   |   |   |
|---|---|---|
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- ▶ ENG 1..... UPTRIM
- ▶ TQ 1 ..... NO CHANGE
- ▶ ENG 1 NP & NH ..... INCREASE SLIGHTLY
- ▶ TQ 2..... DECREASE below 18 %
- **After 2.15 s**
  - ▶ ATPCS ARM light..... TURN OFF
  - ▶ ENG 2..... FEATHER
  - ▶ NP 2 indication..... DECREASE BELOW 20 %
- ▶ ATPCS TEST selector : RELEASE NEUTRAL POSITION
  - ▶ ENG 2..... UNFEATHER

### 1.1.2 Stick Pusher-Shaker Test

|                                      |            |
|--------------------------------------|------------|
| a4ac7db9-fc5f-4c0b-a65e-0be098f1c0e5 | <b>3.5</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ GUST LOCK lever..... OFF
- ▶ CONTROL COLUMN..... NOSE DOWN POSITION
- ▶ WARN selector ..... STICK PUSHER YES
- ▶ PTT pb ..... PRESS & HOLD
  - ▶ CRICKET..... SOUNDS
  - ▶ STICK SHAKER..... OPERATES
- **After 10 s**
  - ▶ CHAN 1 & CHAN 2 lights..... COME ON
  - ▶ STICK PUSHER lights..... COME ON
  - ▶ STICK PUSHER..... OPERATES
- ▶ PTT pb ..... RELEASE
- ▶ WARN selector ..... NORM FLT
- ▶ GUST LOCK lever..... ON
- ▶ CONTROL COLUMN..... LOCK NOSE UP POSITION

### 1.1.3 Trims

|                                      |            |
|--------------------------------------|------------|
| b5aad612-3e2a-401d-b81e-c4fee79f5a57 | <b>3.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ PITCH, ROLL & YAW TRIM..... CHECK


**Note**

*Check full travel normal trim activation in both directions by simultaneously pressing both control rocker switches.*

*For few seconds press independently each single control rocker switch and check the non-activation of the corresponding TRIM in both possible directions.*

- ▶ TRIM INDICATOR..... CHECK

cont'd... >>>

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cont'd... >>>

- ▶ WHOOLER (for pitch trim only)..... SOUNDS
- ▶ STBY PITCH TRIM OPERATION ..... CHECK
  - ▶ TRIM INDICATOR..... CHECK
  - ▶ WHOOLER ..... SOUNDS
- ▶ STBY PITCH TRIM sw ..... GUARDED & OFF POSITION
- ▶ TRIMS..... RESET FOR TAKEOFF
  - ▶ TRIM INDICATOR..... CHECK

### 1.1.4 Cockpit door security system check

|                                      |     |          |
|--------------------------------------|-----|----------|
| f74053a2-a1d5-4b43-b542-8413068b5712 | REV | 2.2      |
|                                      |     | ALL      |
|                                      |     | APPROVED |

- ▶ COCKPIT DOOR..... CLOSED
  - ▶ FAULT light..... COMES ON
- ▶ CDLS sw ..... ON
  - ▶ FAULT light..... TURNS OFF

In Cargo compartment, on DOOR CALL panel

- ▶ EMER pb ..... PRESS
  - ▶ OPEN light..... FLASHES

In the cockpit, on COCKPIT DOOR panel

- ▶ BUZZER..... SOUNDS
- ▶ OPEN light..... FLASHES

#### DENIED ACCESS TEST

In the cockpit, on COCKPIT DOOR panel

- ▶ TOGGLE sw ..... DENY
  - ▶ BUZZER..... SILENCES
  - ▶ OPEN light..... TURNS OFF

In Cargo compartment, on DOOR CALL panel

- ▶ OPEN light..... TURNS OFF
- ▶ DENIED light..... COMES ON

**Note**

*After Denied Access Test accomplishment, EMER and CALL modes are not available during 3 min.*

#### AUTHORIZED ACCESS TEST

In Cargo compartment, on DOOR CALL panel

- ▶ EMER pb .....PRESS

In the cockpit, on COCKPIT DOOR panel

- ▶ TOGGLE sw ..... OPEN
  - ▶ OPEN light..... COMES ON

cont'd... >>>

|                |  |             |
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cont'd... >>>

- ▶ RIGHT COCKPIT DOOR..... RELEASED
- ▶ MANUAL LOCKING BOLT..... FONCTIONAL CHECK

### 1.1.5 APM

|                                      |                        |
|--------------------------------------|------------------------|
| 3fec0cdb-c9f0-4475-9b52-34d40f21d745 | 3.1<br>ALL<br>APPROVED |
|--------------------------------------|------------------------|

- ▶ APM TEST pb : PRESS & HOLD  
On both flight crew panels.
- ▶ CRUISE SPEED LOW light..... COMES ON
- ▶ DEGRADED PERF light..... COMES ON
- ▶ MC..... COMES ON
- ▶ SC ..... SOUNDS
- ▶ INCREASE SPEED light..... FLASHES
- ▶ FAULT light..... COMES ON
- ▶ FDAU light..... COMES ON
- ▶ ANTI ICING on CAP..... COMES ON
- ▶ APM TEST pb ..... RELEASE
- ▶ ALL LIGHTS..... TURN OFF

## 1.2 EACH FLIGHT CHECKS

### 1.2.1 Engine Fire Protection

|                                      |                        |
|--------------------------------------|------------------------|
| 020e7657-14c2-4fee-8e7e-3305768780e7 | 4.1<br>ALL<br>APPROVED |
|--------------------------------------|------------------------|

- ▶ FIRE HANDLE..... IN/LATCHED/LOCK WIRED
  - ▶ ALL lights..... TURN OFF
- ▶ ENG 1(2) SQUIB TEST pb : PRESS & HOLD
  - ▶ AGENT 1+2 SQUIB lights..... COME ON
- ▶ ENG 1(2) SQUIB TEST pb ..... RELEASE
  - ▶ AGENTS 1+2 SQUIB lights..... TURN OFF
- ▶ ENG TEST sw 1(2) : HOLD FAULT POSITION
  - ▶ Associated LOOP A & B lights..... COME ON
  - ▶ MC..... COMES ON
  - ▶ SC ..... SOUNDS
  - ▶ LOOP on CCAS ..... COMES ON
- ▶ ENG TEST sw 1(2)..... RELEASE
  - ▶ ALL lights..... TURN OFF
- ▶ ENG TEST sw 1(2) : HOLD FIRE POSITION
  - ▶ FIRE HANDLE light 1(2)..... COMES ON
  - ▶ MW ..... COMES ON

cont'd... >>>

|                |  |             |
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- ▶ CRC ..... SOUNDS
- ▶ ENG FIRE on CCAS ..... COMES ON
- ▶ MW ..... PRESS
- ▶ CL 1(2) ..... SET OUT OF FUEL S.O.
  - ▶ CL FUEL SO RED light.....COMES ON
- ▶ CL 1(2) ..... FUEL S.O.
  - ▶ CL FUEL SO RED light..... TURNS OFF
- ▶ ENG TEST sw 1(2).....RELEASE
  - ▶ ALL lights.....TURN OFF

### 1.2.2 Trims

|                                      |            |
|--------------------------------------|------------|
| 957ae098-4176-4b5a-a27c-8b08f8b89513 | <b>2.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ PITCH, ROLL & YAW TRIM ..... CHECK
  - ▶ TRIM INDICATOR..... CHECK
  - ▶ WHOOLER (for pitch trim only)..... SOUNDS
- ▶ TRIMS..... RESET FOR TAKEOFF
- ▶ STBY PITCH sw ..... GUARDED & OFF POSITION
  - ▶ TRIM INDICATOR..... CHECK

### 1.2.3 ATPCS Static Test

|                                      |            |
|--------------------------------------|------------|
| df8beb7e-501c-4158-8d09-8167809227d0 | <b>2.0</b> |
|                                      | ALL        |
|                                      | APPROVED   |

#### ATPCS test on ENG 1 then ENG 2


- ▶ ATPCS TEST selector : TURN ARM POSITION
  - ▶ ATPCS ARM light..... COMES ON
- ▶ ATPCS TEST selector : ENG 1(2) POSITION
  - ▶ ENG 2(1).....UPTRIM
  - **After 2.15 s**
    - ▶ ATPCS ARM light..... TURNS OFF

### 1.2.4 CVR-DFDR

|                                      |            |
|--------------------------------------|------------|
| 4a9fd4e3-d5f6-4ee1-83de-5650de7b09c9 | <b>2.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ RCDR pb ..... PRESS
  - ▶ RCDR ON light..... COMES ON
- ▶ CVR TEST pb .....PRESS
  - ▶ CVR POINTER.....IN THE GREEN ARC
- ▶ RESET pb ..... PRESS

cont'd... >>>

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cont'd... >>>

- ▶ STATUS SYST light..... TURN OFF
- ▶ RCDR ON light..... TURN OFF
- ▶ STATUS SYST light..... COMES ON

## 2 BEFORE TAXI

### 2.01 Before Taxi

|                                      |          |
|--------------------------------------|----------|
| c40ea730-756b-4167-ac59-0615a2350ea3 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ APM WEIGHT selector.....SELECT MINIMUM WEIGHT
- ▶ APM WEIGHT selector.....SELECT TAKEOFF WEIGHT

## 3 TAKEOFF

### 3.1 Takeoff

|                                      |          |
|--------------------------------------|----------|
| 30bebf09-f6a5-44f2-baa4-d4e71c3d316d | 1.0      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ ANTI-SKID..... TEST
- ▶ FLAPS..... 15
- ▶ PITCH TRIM..... AS RQRD
- ▶ PWR MGT ..... TO
- ▶ CL 1+2..... AUTO

● **BOTH EEC ON**

- ▶ PL 1+2..... IN THE NOTCH
- ▶ ATPCS ARM light..... CHECK COMES ON

● **At V<sub>R</sub>**

- ▶ PITCH ..... ROTATE
- ▶ AIRSPEED : MAINTAIN AT OR ABOVE V<sub>2</sub>

● **When positive climb**


- ▶ GEAR UP..... ORDER

● **At safe height**

- ▶ SPEED : ACCELERATE UP TO AT LEAST V<sub>FTO</sub> (FLAPS 0)
- ▶ FLAPS ..... RETRACT

**Note**

For takeoff with EEC OFF, [Refer to DEV.2.8.01.1 Dispatch with One EEC OFF](#)

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NORMAL OPERATIONS</b><br><br><b>NORMAL PROCEDURES</b> | <b>PRO.NOP.NOR</b><br><br><br>Page n°09 |
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## 4 IN FLIGHT

### 4.01 In Flight

|   |  |                 |
|---|--|-----------------|
| <small>291853b1-79d9-4333-ab2c-1e4525868391</small> |  | <b>1.1</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

▶ APM lights & CAUTION : MONITOR

■ **Cruise speed low light comes on**

Appears in cruise only to inform the flight crew that an abnormal drag increases induces a speed decrease of more than 10 kt compared with the expected speed.

- ▶ ICING CONDITIONS : MONITOR
- ▶ SPEED : MONITOR

## 5 NORMAL LANDING

### 5.01 Normal Landing

|   |  |                 |
|---|--|-----------------|
| <small>cdd90df5-6de4-4e79-a901-d4da2b31a7b1</small> |  | <b>0.6</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

- ▶ FLAPS..... 15
- ▶ LANDING GEAR..... DOWN / 3 GREEN
- ▶ RUD TLU LO SPD light.....CHECK ON
- ▶ FLAPS..... 30
- ▶ PWR MGT..... TO

● **On ground**

**Note**

Refer to LANDING: For normal or delayed braking performance determination.

- ▶ BRAKES..... AS RQRD

● **When nosewheel touchdown**

- ▶ PL 1+2..... GI
- ▶ ENG 1+2 LO PITCH lights..... CHECK ON

**CAUTION**


If a thrust dissymmetry occurs or if one LO PITCH light is not on, the use of any reverser is prohibited.

## 6 GO-AROUND

### 6.1 GO-AROUND

|   |  |                 |
|---|--|-----------------|
| <small>a4eb7d3c-e740-4797-8367-86c1aded564a</small> |  | <b>2.2</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

Both engines are operating.

|   |   |                                  |
|---|---|----------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NORMAL OPERATIONS</b><br><br><b>NORMAL PROCEDURES</b> | PRO.NOP.NOR<br><br><br>Page n°10 |
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*cont'd...* >>>


- **Simultaneously**

- ▶ GA pb ON PL ..... PRESS
- ▶ GO-AROUND POWER..... APPLY
- ▶ FLAPS lever .....RETRACT ONE NOTCH
- ▶ PITCH .....ROTATE TO GA PITCH
- ▶ GO-AROUND SPEED.....ACCELERATE & MAINTAIN

- **When positive rate of climb**

- ▶ LDG GEAR lever ..... UP



|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>AFM</b><br><br><b>TOC</b><br><br><b>Table of Content</b> | <b>PRO.NOP.ANOR</b><br><br><br><b>Page n°01</b> |
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**ADDITIONAL NORMAL PROCEDURES**

**.NOP.ANOR**

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# 1 **ADVERSE WEATHER**

## **1.1 GROUND ICING CONDITIONS**

### **1.1.1 Definition**

|   |  |                 |
|---|--|-----------------|
| <small>e1fe40ef-fc75-4284-81da-6e0a750fdd2e</small> |  | <b>1.1</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

- **Ground icing conditions exist when:**
  - OAT on the ground is at or below 5 °C
  - Surface snow, standing water
  - Slush is present on the ramps, taxiways, and runways.
- **Operation in ground icing conditions:**
  - For advisory information on contaminated runways penalties [Refer to PRO.SPO.CONTAMINATED RUNWAY \(ADVISORY MATERIAL\)](#) and [Refer to FCOM.PERFORMANCES](#).

### **1.1.2 Procedure for Takeoff with Ground Icing Conditions**

|   |  |                 |
|---|--|-----------------|
| <small>49709e53-75f1-43d6-86c5-60e9250e249e</small> |  | <b>2.0</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

► PROP ANTI ICE ONLY..... ON

**Note**

*It is recommended when possible to cycle landing gear after takeoff.*

**Minimum maneuver / operating speeds**

The normal minimum maneuver / operating speeds are applicable.  
[Refer to CONTAMINATED RUNWAY \(ADVISORY MATERIAL\)](#) for advisory information on contaminated runways penalties.

**Note**

*Horns anti icing must not be selected ON to avoid lowering AOA of the stall warning threshold.*


## **1.2 ATMOSPHERIC ICING CONDITIONS**

### **1.2.1 Definitions**

|   |  |                 |
|---|--|-----------------|
| <small>cbaefd77-e011-493d-9738-48cde5b6e5a4</small> |  | <b>4.1</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

**1) Icing Condition**

- Icing conditions exist when:
- OAT on the ground and for takeoff is at or below 5 °C or when TAT in flight is at or below 7 °C
  - And visible moisture in any form is present (such as clouds, fog, mist, rain, snow, sleet or ice crystals).

|   |  |  |
|---|--|--|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NORMAL OPERATIONS</b><br><br><b>ADDITIONAL NORMAL PROCEDURES</b> | <b>PRO.NOP.ANOR</b><br><br><br>Page n°04 |
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cont'd... >>>

Ice accretion can be identified at first visual indication of ice build-up in any aircraft surface or by the advisory ice detector.

**2) Severe Icing**

**Detection**

Weather conditions that can result in severe in-flight icing:

- Visible rain at temperatures close to 0 °C (SAT)
- Droplets that splash or splatter on impact at temperature close to 0 °C (SAT).

First indications:

- Unable to reach or maintain target speed/rate of climb
- Ice covering all/substantial parts of unheated side window (visual cue).

Secondary indications (visual cues):

- Water splashing/streaming on the windshield
- Unusual extensive ice accreted on the airframe in areas normally observed to not collect ice
- Accumulation of ice on the lower surface of the wing rear of the protected areas
- Accumulation of ice on propeller spinner farther rear than normally observed.

**1.2.2 Procedure for Icing Conditions**

|                                      |            |
|--------------------------------------|------------|
| f31f6381-49de-47e4-9a30-6be0d76d9d20 | <b>3.0</b> |
|                                      | ALL        |
|                                      | APPROVED   |


- ▶ IAS : MAINTAIN AT OR ABOVE ICING BUG
- ▶ ANTI ICING systems..... ON
- ▶ ICE ACCRETION : MONITOR
- **When ice accretion is observed/detected**
  - ▶ DE ICING systems..... ON
- **In FLAPS 0 configuration**
  - ▶ IAS : MAINTAIN AT OR ABOVE ICING BUG +10 kt
  - ▶ IAS & V/S : MONITOR

**Note**

[Refer to SEVERE ICING DETECTION](#) for severe icing indications information.

- **If any severe icing indication**
  - ▶ SEVERE ICING procedure ( [E99.08](#) ) .....APPLY
- **When leaving icing conditions**
  - ▶ ANTI ICING & DE ICING systems..... TURN OFF AS RQRD

cont'd... >>>

|   |  |  |
|---|--|--|
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• **When aircraft is visually verified clear of ice**

**Note**

*The aircraft is considered clear of ice when IEP is free of ice.*

- ▶ ICING AOA pb ..... OFF
- ▶ NORMAL SPEED : USE

### 1.2.3 Minimum Maneuver - Operating Icing Speeds

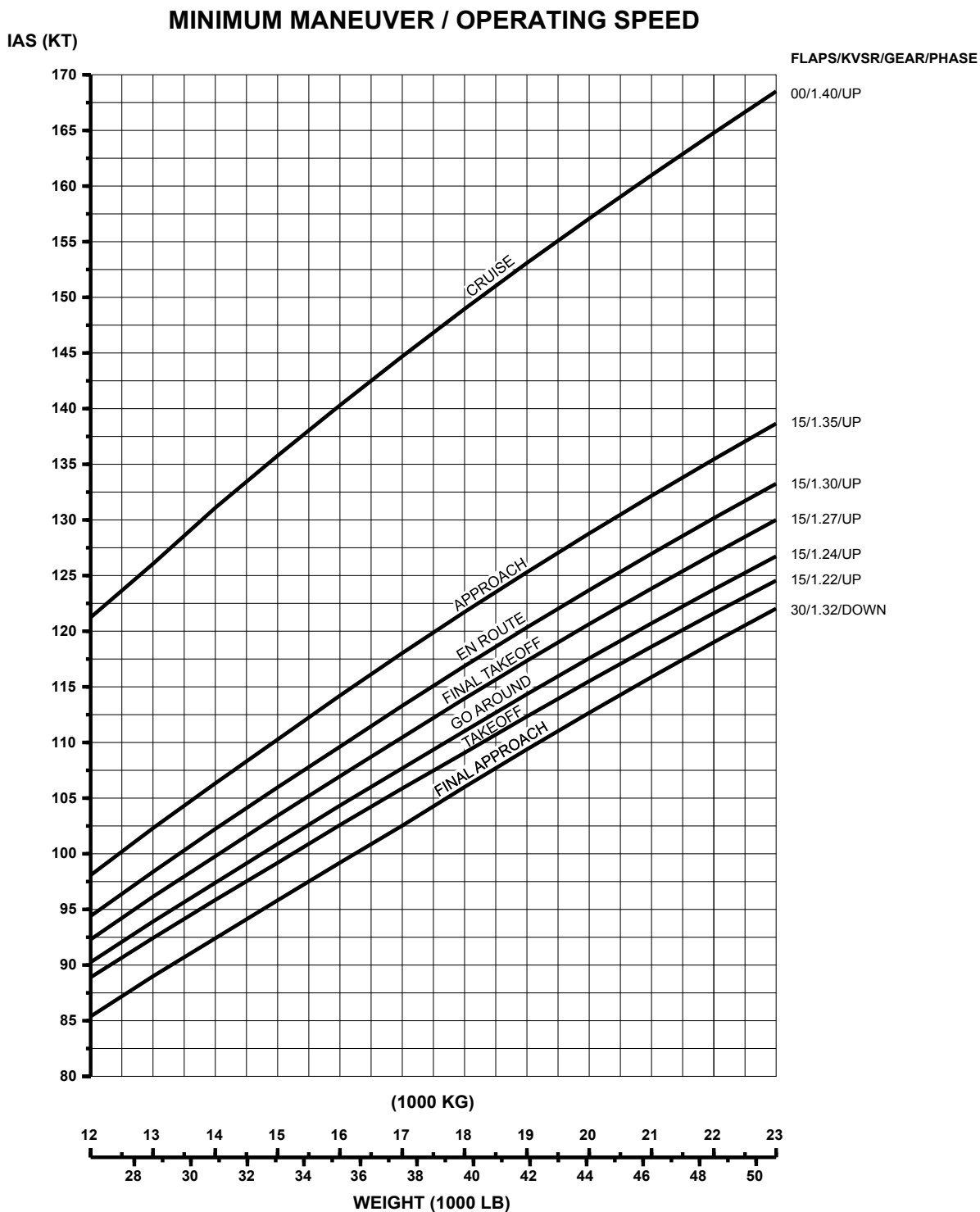
1a02d1d5-fd23-4dcc-9f68-37f3164f4433 0.3  
ALL  
APPROVED


- When ICING AOA green light is ON, the following minimum icing speeds must be observed :

| FLAPS | MINIMUM MANEUVER / OPERATING ICING SPEED |                 | MAXIMUM BANK ANGLE |
|-------|--|-----------------|--------------------|
| 0     | 1.40 V <sub>SR</sub>                     |                 | 15 °               |
| 15    | 1.22 V <sub>SR</sub>                     | T.O 2nd segment | 15 °               |
|       | 1.27 V <sub>SR</sub>                     | Final Takeoff   | 15 °               |
|       | 1.30 V <sub>SR</sub>                     | En route        | 15 °               |
|       | 1.35 V <sub>SR</sub>                     | Approach        | 30 °               |
|       | 1.24 V <sub>SR</sub>                     | Go-Around       | 15 °               |
| 30    | 1.32 V <sub>SR</sub>                     | Final Approach  | 30 °               |

**CAUTION**  
 For obstacle clearance, the en route configuration with engine failure is FLAPS 15 at a minimum speed of 1.30 V<sub>SR</sub> if ice accretion is observed.

cont'd... >>>



|   |  |  |
|---|--|--|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NORMAL OPERATIONS</b><br><br><b>ADDITIONAL NORMAL PROCEDURES</b> | <b>PRO.NOP.ANOR</b><br><br><br>Page n°08 |
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## 1.3 TAKEOFF AFTER USE OF FLUIDS II OR IV

### 01 TAKEOFF AFTER USE of FLUIDS II or IV

#### Introduction

|                                      |                 |
|--------------------------------------|-----------------|
| 9d4b1394-452e-46f3-bc45-0a78d151762d | <b>3.1</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

This content applies only to aircraft de/anti iced before takeoff, using fluids type II or type IV.

These types of fluids may lead to an increase in control forces necessary to rotate, and then to a modification of takeoff performances.

Therefore one of the following methods must be applied when in such situation:

- [Refer to Method 1](#)
- [Refer to Method 2.](#)

#### Note

*Compliance Method 2 requires dedicated crew training.*

#### Method 1

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| b435f2e4-22a8-49a9-8836-c5d24475b07e | <b>REV</b> | <b>3.4</b>      |
|                                      |            | <b>ALL</b>      |
|                                      |            | <b>APPROVED</b> |

##### 1) GENERAL

No change.

##### 2) LIMITATIONS

No change.

##### 3) PROCEDURES

No change.

##### 4) PERFORMANCES

The performances in [Refer to AFM-PER](#) for dry runways and in [Refer to AFM-PRO-SPO-13](#) for non dry runways are applicable with the addition of the following for takeoff computations :

- Determine  $V_R$  for the lowest available  $V_2$
- Consider  $V_1 = V_R$
- Increase TOR, TOD, ASD by 25 %.


##### 5) DEVIATION GUIDE

Data contained in [Refer to AFM-DEV](#) are applicable with the addition of the following :

- For the dispatch cases :
  - o Apply takeoff penalties due to the system failure
  - o Then apply takeoff penalties due to the use of fluids type II or IV.
- Dispatch is not authorized in the following cases :
  - o Ferry flight with pitch elevators disconnected
  - o Takeoff with flaps retracted.

**cont'd... >>>**



|   |  |  |
|---|--|--|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>NORMAL OPERATIONS</b><br><br><b>ADDITIONAL NORMAL PROCEDURES</b> | <b>PRO.NOP.ANOR</b><br><br><br>Page n°09 |
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## 6) APPENDICES

No change.

## 7) SUPPLEMENTS

No change.

## Method 2

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| 72023028-246c-440e-b7d9-f7aae39f0970 | <b>REV</b> | <b>3.3</b>      |
|                                      |            | <b>ALL</b>      |
|                                      |            | <b>APPROVED</b> |

### 1) GENERAL

No change.

### 2) LIMITATIONS

No change.

#### Note

*Compliance Method 2 requires dedicated crew training.*

### 3) PROCEDURES

#### a) Normal Procedures

The Captain must be the PF and the pre-takeoff briefing must include below abnormal procedures impact.

#### b) Emergency Procedures

No change.

#### c) Abnormal Procedures

The procedures in [Refer to AFM-PRO](#) are applicable with the addition of the following:

- In case of difficulties to rotate, the Captain should require PM assistance
- In that case, on Captain order, PM pulls the control column until 5 ° pitch attitude is reached, then PM releases the controls.

### 4) PERFORMANCES

The performances in [Refer to AFM-PER](#) for dry runways and in [Refer to AFM-PRO-SPO-13](#) for non dry runways are applicable with the addition of the following for takeoff computations :


- Increase TOD by 70 m.

### 5) DEVIATION GUIDE

Data contained in [Refer to AFM-DEV](#) are applicable with the addition of the following :

- For the dispatch cases :
  - o Apply takeoff penalties due to the system failure
  - o Then apply takeoff penalties due to the use of fluids type II or IV.
- Dispatch is not authorized in the following cases :
  - o Ferry flight with pitch elevators disconnected
  - o Takeoff with flaps retracted.

cont'd... >>>

|   |  |  |
|---|--|--|
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**6) APPENDICES**

No change.

**7) SUPPLEMENTS**

No change.

**1.5 SEVERE TURBULENCE**

**1.5.01 Severe Turbulence**

|                                      |            |
|--------------------------------------|------------|
| f17586a5-4f05-4074-8af8-645e13c589cf | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

- ▶ SIGNS..... ON
- ▶ SPEED : MAINTAIN AT or BELOW  $V_{RA}$  180 kt CAS

**1.6 HEAVY RAIN**

**1.6.01 Heavy Rain**

|                                      |            |
|--------------------------------------|------------|
| 0adfcd5c-1345-478c-9e86-f577a212e354 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Not applicable

|                   |                         |           |
|-------------------|-------------------------|-----------|
| <b><i>ATR</i></b> | <b>AFM</b>              | PRO.SPO   |
| <b>BU / 75</b>    | <b>TOC</b>              |           |
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## SPO - SPECIAL OPERATIONS

### SPECIAL OPERATIONS

PRO.SPO

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# **1 STEEP SLOPE APPROACH**

## **1.1 STEEP SLOPE APPROACH**

### **1.1.1 APPLICABILITY**

#### **1.1.1.1 STEEP SLOPE APPROACH**

##### **Applicability**

|                                      |  |            |
|--------------------------------------|--|------------|
| 90317a05-6d93-4791-8dae-0804d8de06fd |  | <b>0.1</b> |
|                                      |  | ALL        |
|                                      |  | APPROVED   |

(APPROACH SLOPE > 4.5 °)  
NOT APPLICABLE.

### **1.1.2 LIMITATIONS**

#### **1.1.2.1 Limitations**

|                                      |  |            |
|--------------------------------------|--|------------|
| 98a9ae39-0813-4c9e-889c-bce2c51a5dae |  | <b>0.1</b> |
|                                      |  | ALL        |
|                                      |  | APPROVED   |

(APPROACH SLOPE > 4.5 °)  
NOT APPLICABLE.

### **1.1.3 PROCEDURES**

#### **1.1.3.1 Emergency Procedures**

|                                      |  |            |
|--------------------------------------|--|------------|
| a6290fbe-d52f-491b-b3d4-f80b4577da45 |  | <b>0.1</b> |
|                                      |  | ALL        |
|                                      |  | APPROVED   |

(APPROACH SLOPE > 4.5 °)  
NOT APPLICABLE.

#### **1.1.3.2 Abnormal Procedures**


|                                      |  |            |
|--------------------------------------|--|------------|
| 41b58321-a863-4ae2-8fbb-a9af64d8c594 |  | <b>0.1</b> |
|                                      |  | ALL        |
|                                      |  | APPROVED   |

(APPROACH SLOPE > 4.5 °)  
NOT APPLICABLE.

#### **1.1.3.3 Normal Procedures**

|                                      |  |            |
|--------------------------------------|--|------------|
| 7fb15325-d909-4dd8-ae03-dc61be353230 |  | <b>1.1</b> |
|                                      |  | ALL        |
|                                      |  | APPROVED   |

(APPROACH SLOPE > 4.5 °)  
NOT APPLICABLE.

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>STEEP SLOPE APPROACH</b> | <b>PRO.SPO</b><br><br><br>Page n°04 |
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## 1.1.4 PERFORMANCES

### 1.1.4.1 Performances

|                                      |            |
|--------------------------------------|------------|
| c54494ec-2b0c-4675-8411-45c8f14b47e6 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

(APPROACH SLOPE > 4.5 °)

NOT APPLICABLE.

## 1.2 MANUAL APPROACH WITH PERFORMANCE CREDIT

### 1.2.1 APPLICABILITY

#### 1.2.1.01 Applicability

|                                      |            |
|--------------------------------------|------------|
| 44f4dbbe-175b-4b9b-a1f0-af4e600874ac | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

(APPROACH SLOPE > 4.5 °)

NOT APPLICABLE

### 1.2.2 LIMITATIONS

#### 1.2.2.01 Limitations

|                                      |            |
|--------------------------------------|------------|
| e5f6978b-14f8-44c3-93b0-b0b9a72ebfd6 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

(APPROACH SLOPE > 4.5 °)

NOT APPLICABLE

### 1.2.3 PROCEDURES

#### 1.2.3.1 Emergency Procedures

|                                      |            |
|--------------------------------------|------------|
| 905fd0eb-6b18-44fc-92be-c4c9d5303931 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

(APPROACH SLOPE > 4.5 °)


NOT APPLICABLE

#### 1.2.3.2 Abnormal Procedures

|                                      |            |
|--------------------------------------|------------|
| 356c88f3-051c-4bf9-b6d2-993348ec8f9c | <b>0.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

(APPROACH SLOPE > 4.5 °)

NOT APPLICABLE

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>STEEP SLOPE APPROACH</b> | <b>PRO.SPO</b><br><br><br>Page n°05 |
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### 1.2.3.3 Normal Procedures

|                                      |          |
|--------------------------------------|----------|
| 4fc16447-b6f6-409d-921f-8ef1485ad533 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

(APPROACH SLOPE > 4.5 °)  
NOT APPLICABLE

## 1.2.4 PERFORMANCES

### 1.2.4.01 Performances

|                                      |     |          |
|--------------------------------------|-----|----------|
| 83611ad4-3c01-44ff-814b-3a06c4a1c4d0 | REV | 1.0      |
|                                      |     | ALL      |
|                                      |     | APPROVED |

(APPROACH SLOPE > 4.5 °)  
NOT APPLICABLE

## 2 HIGH ALTITUDE RUNWAYS

### 2.1 APPLICABILITY

#### 2.1.1 Applicability

|                                       |          |
|---------------------------------------|----------|
| _0d3de3fb-de6b-48d1-8b97-1e66322e9aa5 | 0.1      |
|                                       | ALL      |
|                                       | APPROVED |

(Runways altitude above 8 500 ft and up to 11 000 ft)  
NOT APPLICABLE

## 3 ETOPS

### 3.1 GENERAL

#### 3.1.1 Applicability

|                                       |          |
|---------------------------------------|----------|
| _46dc77ac-ab21-4f73-8efe-aac85d51fb9e | 1.0      |
|                                       | ALL      |
|                                       | APPROVED |

NOT APPLICABLE


## 4 OPERATION ON NARROW RUNWAYS

### 4.1 APPLICABILITY

#### 4.1.1 Applicability

|                                       |          |
|---------------------------------------|----------|
| _2156ff0a-de93-4e51-8935-e33fa3d69571 | 0.1      |
|                                       | ALL      |
|                                       | APPROVED |

Runway width < 30 m (98 ft)  
NOT APPLICABLE

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><br><b>RUNWAYS SLOPE BEYOND 2 %</b> | <b>PRO.SPO</b><br><br><br><br>Page n°06 |
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## 5 RUNWAYS SLOPE BEYOND 2 %

### 5.1 APPLICABILITY

#### 5.1.1 Applicability

|                                      |          |
|--------------------------------------|----------|
| ffc699ff-8505-4a5d-8b72-dee2c29888ef | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Runways slope beyond 2 %.

NOT APPLICABLE

## 6 HIGH LATITUDE OPERATIONS

### 6.1 Conditions

|                                      |          |
|--------------------------------------|----------|
| 5785866f-5b91-4fe3-9386-29850acf886d | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Abnormal heading errors may occur on aircraft equipped with the Honeywell AH-600 AHRS during high latitude operations, where the earth's magnetic lines of force have inclinations of greater than 75 °.

### 6.2 Procedures

|                                      |          |
|--------------------------------------|----------|
| 036f60b8-7a35-4e09-a889-0cde9b4cf51c | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

- ▶ Take special care to keep the slip indicator centered in order to minimize heading errors.
- ▶ Crosscheck AHRS heading information with standby compass information.

## 8 DRY UNPAVED RUNWAYS

### 8.1 APPLICABILITY

#### 8.1.1 Applicability

|                                      |          |
|--------------------------------------|----------|
| 910f98ae-701e-4d7a-81fb-79437f02f7db | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

NOT APPLICABLE.

## 11 20 KT TAILWIND TAKEOFF


### 11.1 APPLICABILITY

#### 11.1.1 Applicability

|                                      |          |
|--------------------------------------|----------|
| 48699420-1c3f-425a-a1a7-1bcbfdef2e22 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

NOT APPLICABLE



|   |  |                                     |
|---|--|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><br><b>OPERATION ON CORAL RUNWAY</b> | <b>PRO.SPO</b><br><br><br>Page n°07 |
|---|--|-------------------------------------|

## 12 OPERATION ON CORAL RUNWAY

### 12.1 APPLICABILITY

#### 12.1.1 Applicability

|   |  |                 |
|---|--|-----------------|
| <small>ce24572e-3ceb-428f-a529-98e40b25b380</small> |  | <b>0.1</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

NOT APPLICABLE

## 13 CONTAMINATED RUNWAY (ADVISORY MATERIAL)

### 13.1 GENERAL

#### 13.1.1 Introduction

|   |            |                 |
|---|------------|-----------------|
| <small>6d100fa0-b5ec-4574-8122-ace29086e0fa</small> | <b>REV</b> | <b>2.18</b>     |
|   |            | <b>ALL</b>      |
|   |            | <b>APPROVED</b> |

This information has been prepared by the manufacturer and approved by the Authority in the form of guidance material, to assist operators in developing appropriate guidance, recommendations or instructions for use by their flight crews when operating on wet/contaminated runway surface conditions.


Unless otherwise stated, this information does not in any way replace or amend the operating limitations and performance information listed in other parts of this approved Airplane Flight Manual.

A runway is considered as contaminated if a significant portion of its surface area (whether in isolated areas or not), within the length and width being used, is covered by one or more of the following substances:

- Compact Snow
- Dry Snow with depth higher than 3 mm (1/8")
- Heavy Frost
- Ice
- Slush with depth higher than 3 mm (1/8")
- Standing Water with depth higher than 3 mm (1/8")
- Wet Snow with depth higher than 3 mm (1/8").

Takeoff performance and Actual Landing Distance charts of this chapter are provided for the following runway status:

- Slush or water 3 mm < depth ≤ 6.3 mm (1/8" < depth ≤ 1/4") ( WATER COVERED RUNWAY: 6.3 mm (0.25 in) charts (for takeoff))
- Slush or water 6.3 mm < depth ≤ 12.7 mm (1/4" < depth ≤ 1/2") ( WATER COVERED RUNWAY : 12.7 mm (0.5 in) charts (for takeoff))
- Slush or water 3 mm < depth ≤ 12.7 mm (1/8" < depth ≤ 1/2") (WATER COVERED RUNWAY VALID UP TO 12.7 mm (0.5 in) DEPTH charts (for landing))
- Compact snow
- Ice.

|   |  |                                 |
|---|--|---------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY MATERIAL)</b> | <b>PRO.SPO</b><br><br>Page n°08 |
|---|--|---------------------------------|

cont'd... >>>

Following tables provide recommended equivalence between Runway Surface Descriptor, RWYCC and Runways Status.

**Runway with contaminants other than snow/compact snow:**

| Runway surface descriptor |   | Runway Status   |   | RWYCC- Pilot report of runway braking action |
|---------------------------|---|---|---|--|
|                           |   | T/O   | LDG   |  |
| DRY                       | -   | Dry   |   | 6  |
| FROST                     | -   | Wet   |   | 5-GOOD                                       |
| WET                       | ≤ 3 mm (1/8")                                     |   |   |  |
| STANDING WATER            | ≤ 3 mm (1/8")                                     |   |   |  |
| SLUSH                     | ≤ 3 mm (1/8")                                     |   |   |  |
| -                         | -   | Compact snow  |   | 4-GOOD to MEDIUM                             |
| SLIPPERY WET              | -   | Compact snow  |   | 3-MEDIUM                                     |
| -                         | -   | Slush or water<br>3 mm < depth ≤ 6.3 mm<br>(1/8" < depth ≤ 1/4")    | Slush or water<br>3 mm < depth ≤ 12.7 mm<br>(1/8" < depth ≤ 1/2") |  |
| -                         | -   | Slush or water<br>6.3 mm < depth ≤ 12.7 mm<br>(1/4" < depth ≤ 1/2") | Slush or water<br>3 mm < depth ≤ 12.7 mm<br>(1/8" < depth ≤ 1/2") |  |
| STANDING WATER SLUSH      | 3 mm < depth ≤ 6.3 mm<br>(1/8" < depth ≤ 1/4")    | Slush or water<br>3 mm < depth ≤ 6.3 mm<br>(1/8" < depth ≤ 1/4")    | Slush or water<br>3 mm < depth ≤ 12.7 mm<br>(1/8" < depth ≤ 1/2") | 2-MEDIUM to POOR                             |
|                           | 6.3 mm < depth ≤ 12.7 mm<br>(1/4" < depth ≤ 1/2") | Slush or water<br>6.3 mm < depth ≤ 12.7 mm<br>(1/4" < depth ≤ 1/2") | Slush or water<br>3 mm < depth ≤ 12.7 mm<br>(1/8" < depth ≤ 1/2") |  |
| ICE                       | -   | Ice   |   | 1-POOR                                       |
| WET ICE                   | -   | Prohibited  |   | 0-LESS THAN POOR                             |

Determine for each available entry (Runway Surface Descriptor and/or RWYCC), the corresponding Runway Status. Then, determine the performance associated to each Runway Status and retain the longest distance.

**Example:**

Actual Landing Distance computation with:

- Runway Surface descriptor = Slippery Wet
- RWYCC = 2-MEDIUM to POOR.


"Slippery wet" corresponds to Runway Status "Compact snow".

"2-MEDIUM to POOR" corresponds to Runway Status Slush or water 3 mm < depth ≤ 12.7 mm (1/8" < depth ≤ 1/2").

Determine ALD associated to each Runway Status and retain the longest distance.

**Runway with snow/compact snow:**

cont'd... >>>

|   |  |                                 |
|---|--|---------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY MATERIAL)</b> | <b>PRO.SPO</b><br><br>Page n°09 |
|---|--|---------------------------------|

cont'd... >>>

| Runway surface descriptor                  |   | Runway Status  |  | RWYCC - Pilot report of runway braking action |
|--|---|--|--|---|
|  |   | T/O  | LDG  |   |
| DRY SNOW                                   | ≤ 3 mm (1/8")                               | Wet  |  | 5-GOOD  |
| WET SNOW                                   | ≤ 3 mm (1/8")                               |  |  |   |
| COMPACT SNOW (OAT ≤ -15°C)                 | -   | Compact snow   |  | 4-GOOD to MEDIUM                              |
| SPECIALLY PREPARED WINTER RUNWAY           | -   | Compact snow   |  | 3-MEDIUM                                      |
| COMPACT SNOW (OAT > -15°C)                 | -   | Compact snow   |  |   |
| DRY SNOW / DRY SNOW ON TOP OF COMPACT SNOW | 4 mm ≤ depth ≤ 10 mm (1/4")                 | Compact snow   |  |   |
|  | 4 mm ≤ depth ≤ 5 mm (1/8" < depth < 1/4")   | Slush or water<br>3 mm < depth ≤ 6.3 mm (1/8" < depth ≤ 1/4")    | Slush or water<br>3 mm < depth ≤ 12.7 mm (1/8" < depth ≤ 1/2") |   |
|  | 11 mm ≤ depth ≤ 25 mm (1/2" ≤ depth ≤ 1")   |  |  |   |
| WET SNOW / WET SNOW ON TOP OF COMPACT SNOW | 6 mm ≤ depth ≤ 10 mm (1/4")                 | Slush or water<br>6.3 mm < depth ≤ 12.7 mm (1/4" < depth ≤ 1/2") |  |   |
| SLUSH                                      | 26 mm ≤ depth ≤ 50 mm (2")                  | Slush or water<br>3 mm < depth ≤ 6.3 mm (1/8" < depth ≤ 1/4")    | Slush or water<br>3 mm < depth ≤ 12.7 mm (1/8" < depth ≤ 1/2") | 2-MEDIUM to POOR                              |
|  | 11 mm ≤ depth ≤ 20 mm (1/2" ≤ depth ≤ 3/4") | Slush or water<br>6.3 mm < depth ≤ 12.7 mm (1/4" < depth ≤ 1/2") |  |   |
| ICE  | -   | Ice  |  | 1-POOR  |
| WATER ON TOP OF COMPACT SNOW               | -   | Prohibited   |  | 0-LESS THAN POOR                              |
| DRY SNOW OR WET SNOW ON TOP OF ICE         | -   |  |  |   |

Determine for each available entry (Runway Surface Descriptor and/or RWYCC), the corresponding Runway Status.

Then, determine the performance associated to each Runway Status and retain the longest distance.

**Note**

"Specially Prepared Winter Runway" is a runway with:

- a dry frozen surface of compact snow, and/or
- ice which has been treated with sand or grit, or
- a surface that has been mechanically treated to improve runway friction.

### 13.1.2 Maximum Recommended Crosswind

c654aabf-c9f7-4d85-b280-0f6284d0f3e7

NEW


0.4

ALL

APPROVED

Non-Dry Runway Maximum Recommended Crosswind depending on Runway surface descriptor and RWYCC :

| Runway surface descriptor           | Reported Depth<br>mm ( <i>inch</i> )                                   | RWYCC - Pilot<br>report of runway<br>braking action | Maximum<br>Recommended<br>Crosswind<br>T.O and LDG |
|-------------------------------------|--|---|--|
| FROST                               | -  |   |  |
| WET                                 | -  |   |  |
| STANDING WATER                      | ≤ 3 mm ( <i>1/8"</i> )   | 5 - GOOD  | 28 kt  |
| SLUSH                               | ≤ 3 mm ( <i>1/8"</i> )   |   |  |
| DRY SNOW                            | ≤ 3 mm ( <i>1/8"</i> )   |   |  |
| WET SNOW                            | ≤ 3 mm ( <i>1/8"</i> )   |   |  |
| SPECIALLY PREPARED<br>WINTER RUNWAY | -  | 4 - GOOD to<br>MEDIUM                               | 22 kt  |
| COMPACT SNOW (OAT ≤<br>-15 °C)      | -  |   |  |
| SLIPPERY WET                        | -  | 3 - MEDIUM  | 16 kt  |
| COMPACT SNOW (OAT ><br>-15 °C)      | -  |   |  |
| DRY SNOW                            | 3 mm < depth ≤ 50 mm<br>( <i>1/8"</i> < <i>depth</i> ≤ <i>2"</i> )     |   |  |
| DRY SNOW ON TOP OF<br>COMPACT SNOW  | ≤ 50 mm (≤ <i>2"</i> )   |   |  |
| WET SNOW                            | 3 mm < depth ≤ 20 mm<br>( <i>1/8"</i> < <i>depth</i> ≤ <i>3/4"</i> )   | 2 - MEDIUM to<br>POOR                               | 16 kt  |
| WET SNOW ON TOP OF<br>COMPACT SNOW  | ≤ 20 mm (≤ <i>3/4"</i> )   |   |  |
| STANDING WATER                      | 3 mm < depth ≤ 12.7 mm<br>( <i>1/8"</i> < <i>depth</i> ≤ <i>1/2"</i> ) | 1 - POOR  | 10 kt  |
| SLUSH                               |  |   |  |
| ICE                                 | -  |   |  |

|   |  |                                 |
|---|--|---------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY MATERIAL)</b> | <b>PRO.SPO</b><br><br>Page n°11 |
|---|--|---------------------------------|

### 13.1.3 Takeoff

|                                      |     |          |
|--------------------------------------|-----|----------|
| fbfa30c0-895f-4487-bd76-7c42486817cb | REV | 4.4      |
|                                      |     | ALL      |
|                                      |     | APPROVED |

5 cases have been considered:

- Wet
- Slush or Water 6.3 mm (0.25 in)
- Slush or Water 12.7 mm (0.5 in)
- Compacted snow
- Ice.

The performance determination philosophy remains the same as in this chapter ([Refer to AFM V1 Limited by VMCG](#)) for  $V_1$  limited by  $V_{MCG}$  data.

For each runway condition are provided:

- Takeoff run
- Takeoff distance (between brakes release, and 15 ft height with one engine inoperative)

#### Note

*If 35 ft is required at the end of TOD:*

- o Apply TOR, TOD calculated on a dry runway for wet, compacted snow, and ice runways
- o Apply TOR, TOD corrections given in this chapter ([Refer to AFM Takeoff Distance Corrections](#)) to the 15 ft computation, for water covered runways.

- Accelerate stop distance. They are basically computed with the use of both reverses. Additional pages are provided to supply data in case of no reverse, and are to be used for flight preparation.

Since the effect of asymmetrical reverse thrust is not predictable with a sufficient accuracy on contaminated runways, it is therefore not recommended to use single engine reverse thrust for accelerate stop

- $V_R$  (for contaminated runway only – No change for wet runway).

These data are provided for atmospheric non icing conditions. In case of atmospheric icing conditions, [Refer to AFM-PER-TAKEOFF-ICING CONDITIONS](#) to combine both effects (runway conditions + atmospheric icing conditions).


#### Note

- 1) Wind, and slope corrections are the same as for dry runways
- 2) Operation on a wet or contaminated runway at a weight in excess of that permitted on an equivalent dry runway is not permitted.

### 13.1.4 V1 Limited by VMCG

|                                      |  |          |
|--------------------------------------|--|----------|
| feb02e66-14ad-49a3-9456-14006eb09d51 |  | 1.2      |
|                                      |  | ALL      |
|                                      |  | APPROVED |

[Refer to FCOM.LIM.SPEEDS.MINIMUM CONTROL SPEEDS.V1 Limited by VMCG](#)

|   |  |   |
|---|--|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | <b>PRO.SPO</b><br><br><br><br>Page n°12 |
|---|--|---|

### 13.1.5 Landing

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| ff97f860-73ec-4abc-8fec-8b8a55b03e70 | <b>REV</b> | <b>2.3</b>      |
|                                      |            | <b>ALL</b>      |
|                                      |            | <b>APPROVED</b> |

Three cases of contaminated runways have been considered:

- Slush or Water 12.7 mm (0.5 in)
- Compacted snow
- Ice.

The Actual Landing Distance is computed with, and without the use of reversers.

Since the effect of asymmetrical reverse thrust is not predictable with a sufficient accuracy on contaminated runways, it is therefore not recommended to use single engine reverse thrust.

Only the Actual Landing Distances without reversers are to be used for flight preparation.

To determine the Required Landing Distance, apply national operational regulations.

The following data are provided for atmospheric non icing conditions.

In case of atmospheric icing conditions, [Refer to ICING CONDITIONS](#) to combine both effects (runway conditions + atmospheric icing conditions).

### 13.2 WATER COVERED RUNWAY

#### 1 Actual Landing Distance

#### Actual Landing Distance

1cd3f152-a509-45d5-8ac5-63d29ca2a7dd

REV

2.1

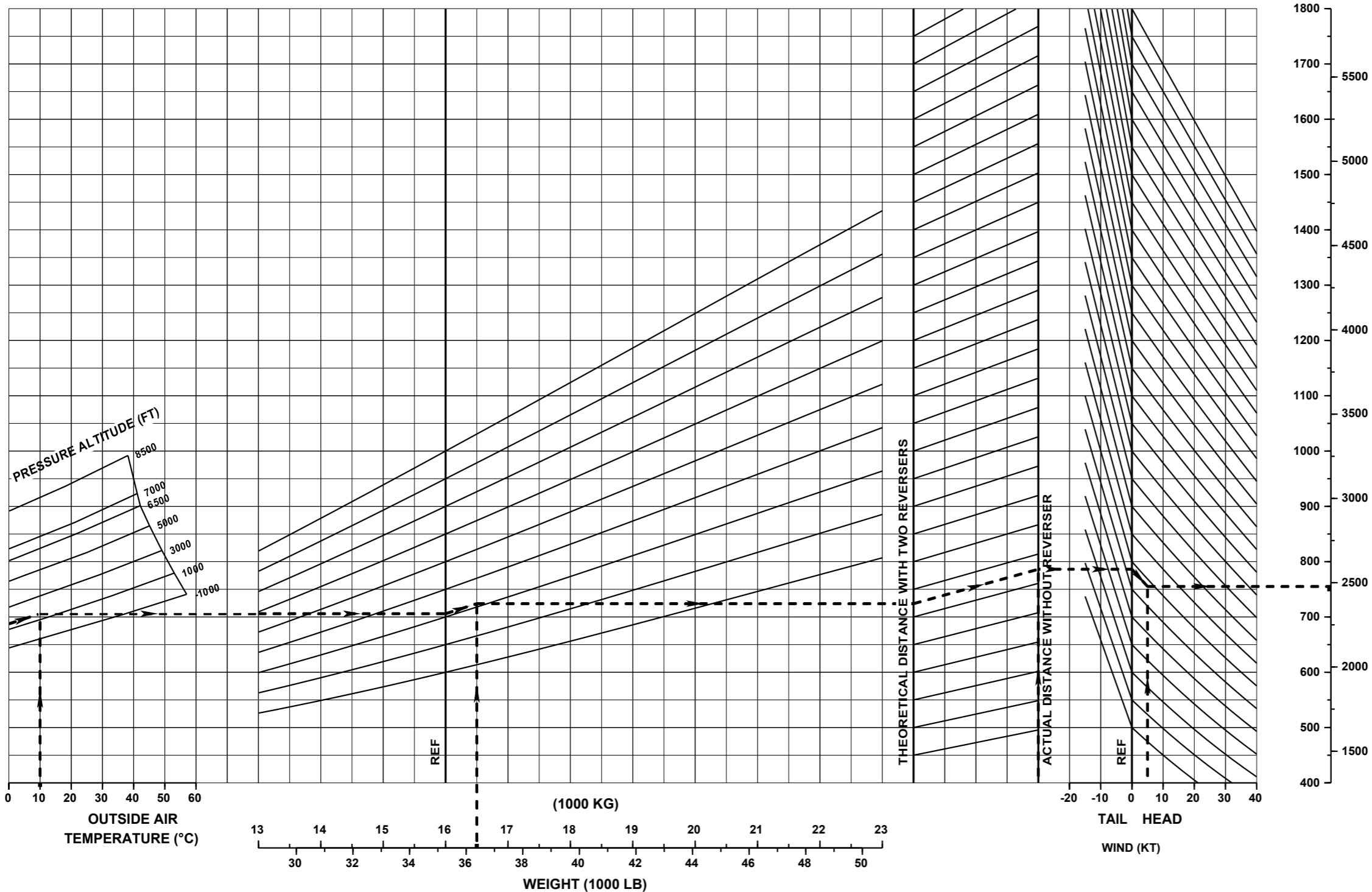
ALL

APPROVED

LANDING DISTANCE (FLAPS 30)

WATER COVERED RUNWAY VALID UP TO 12.7 mm (0.5 in) DEPTH

(M) (FT)



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°14 |
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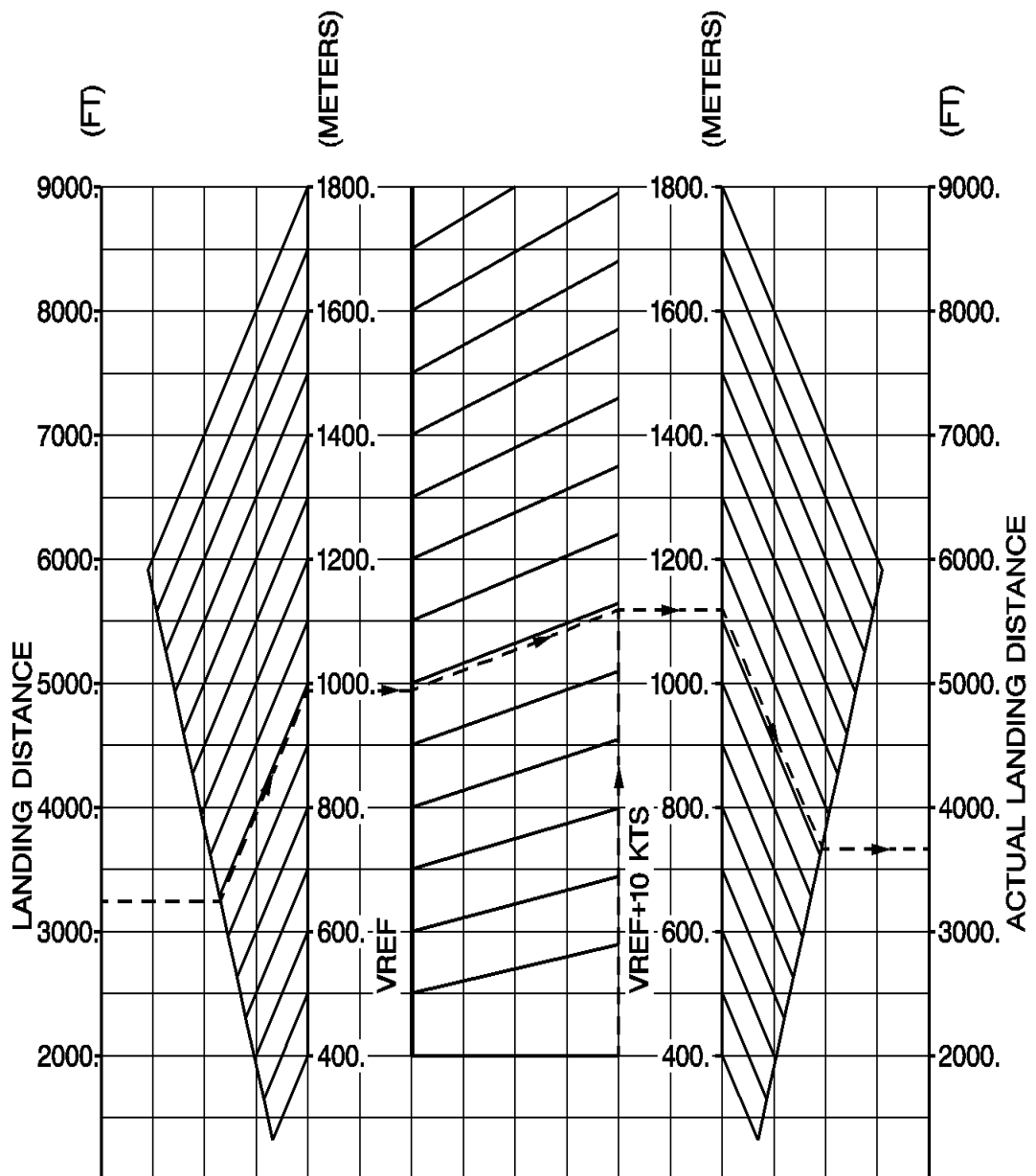
## 2 Actual Landing Distance Corrections

### Actual Landing Distance Corrections

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| a81ab1c5-36ea-4bb1-8d82-87b30dcd1703 | <b>REV</b> | <b>2.1</b>      |
|                                      |            | <b>ALL</b>      |
|                                      |            | <b>APPROVED</b> |

### LANDING DISTANCE CORRECTIONS

**WATER COVERED RUNWAY VALID UP TO 12.7 mm (0.5 in) DEPTH**



***ATR***

**BU / 75**

**AFM**

**PROCEDURES**

**SPECIAL OPERATIONS  
CONTAMINATED RUNWAY (ADVISORY  
MATERIAL)**

**PRO.SPO**

**Page n°16**

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### 3 Takeoff Run

#### Takeoff Run - 6.3 mm (0.25 in)

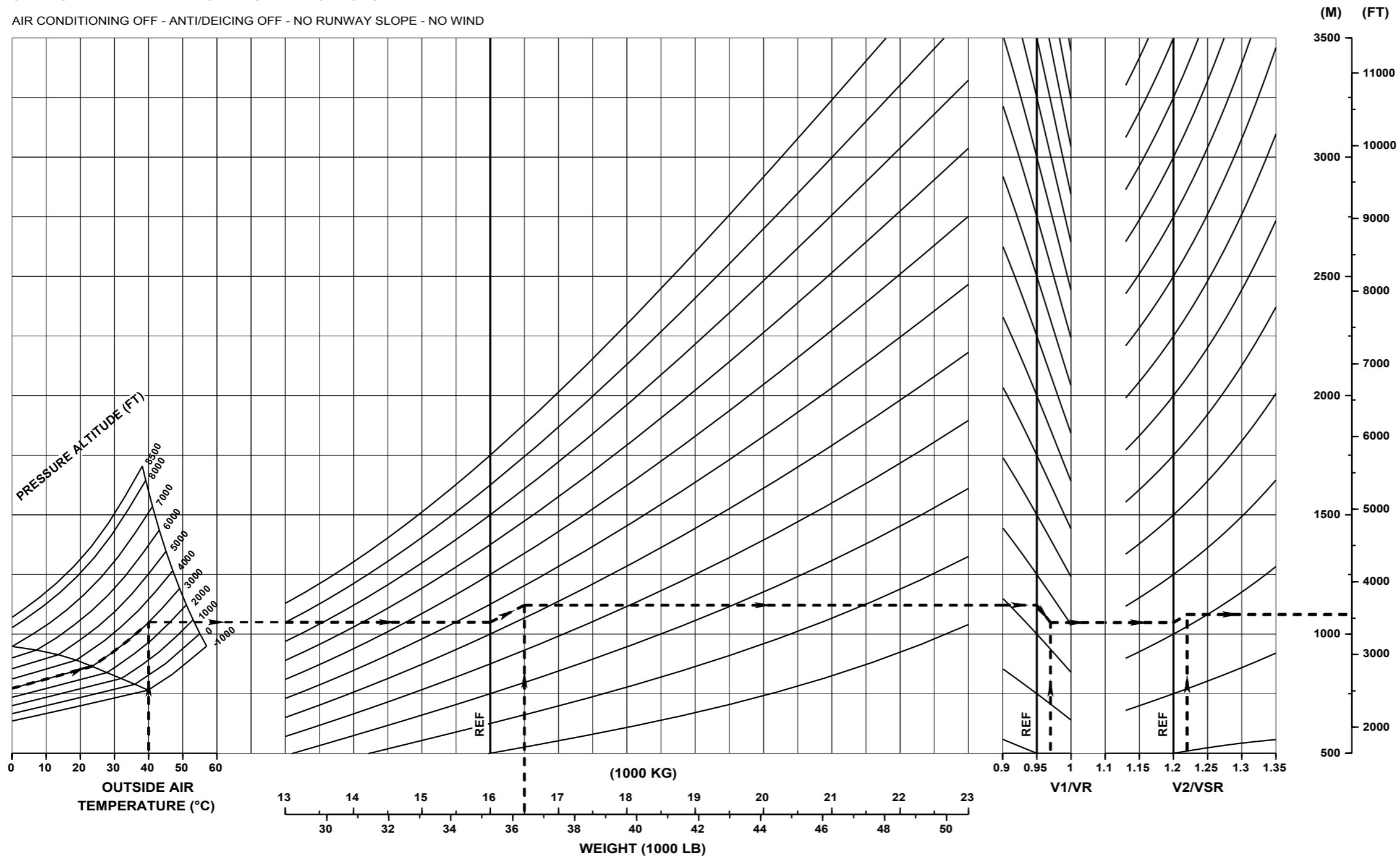
1cd2c35a-4311-4e02-bab6-167068f6ad5d

1.1  
ALL  
APPROVED

PW127F / PW127M / PW127N - BOOST OFF  
TAKEOFF RUN (FLAPS 15)

WATER COVERED RUNWAY: 6.3 mm (0.25 in)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O/ RTO POWER  
AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°18 |
|---|--|--------------------------|

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Takeoff Run - 12.7 mm (0.5 in)

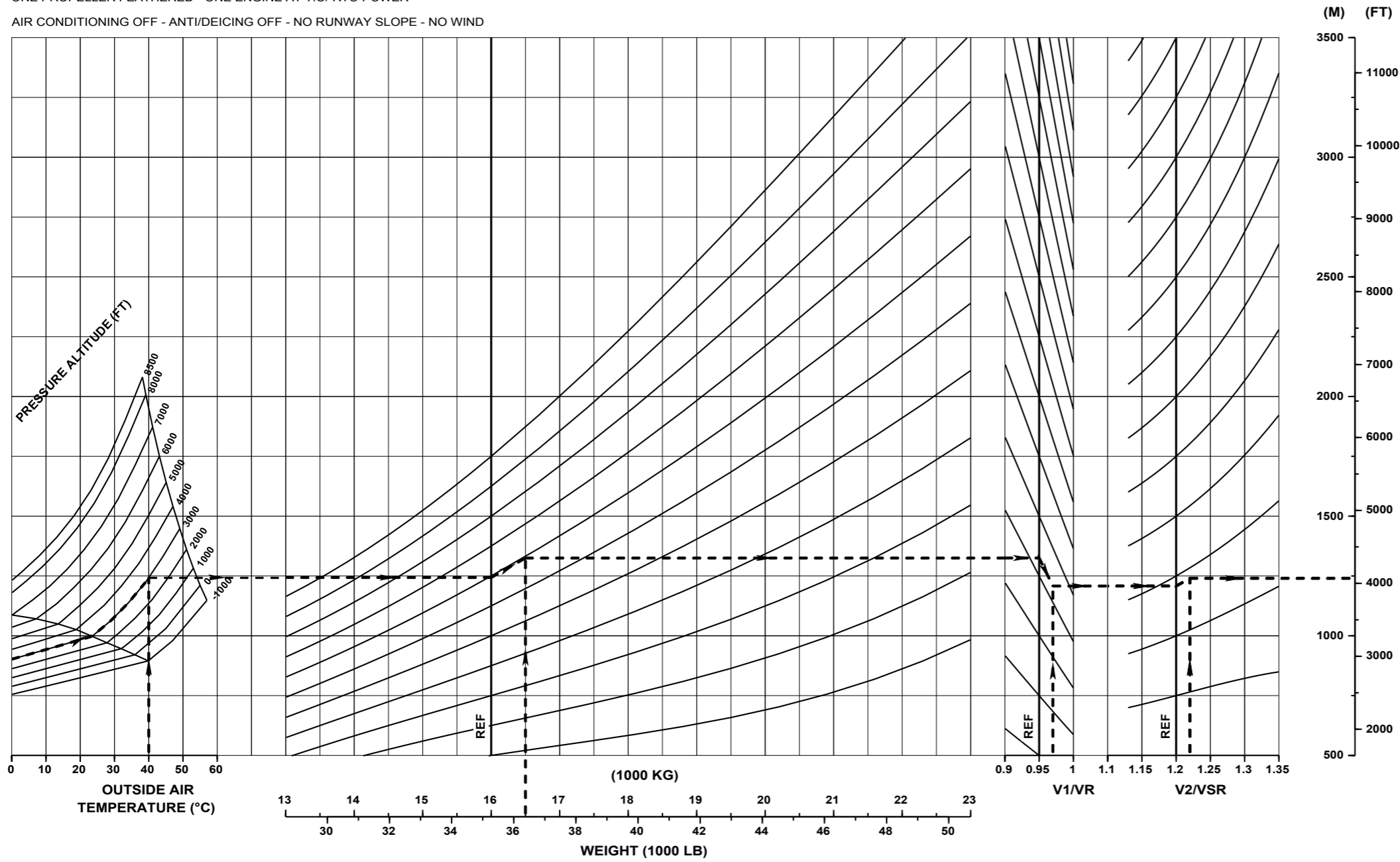
19e2efa6-82bd-418d-a1e9-c69581bd5b30

1.1  
ALL  
APPROVED

PW127F / PW127M / PW127N - BOOST OFF  
TAKEOFF RUN (FLAPS 15)

WATER COVERED RUNWAY : 12.7 mm (0.5 in)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O/ RTO POWER  
AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°20 |
|---|--|--------------------------|

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### 5 Takeoff Distance Takeoff Distance - 6.3 mm (0.25 in)

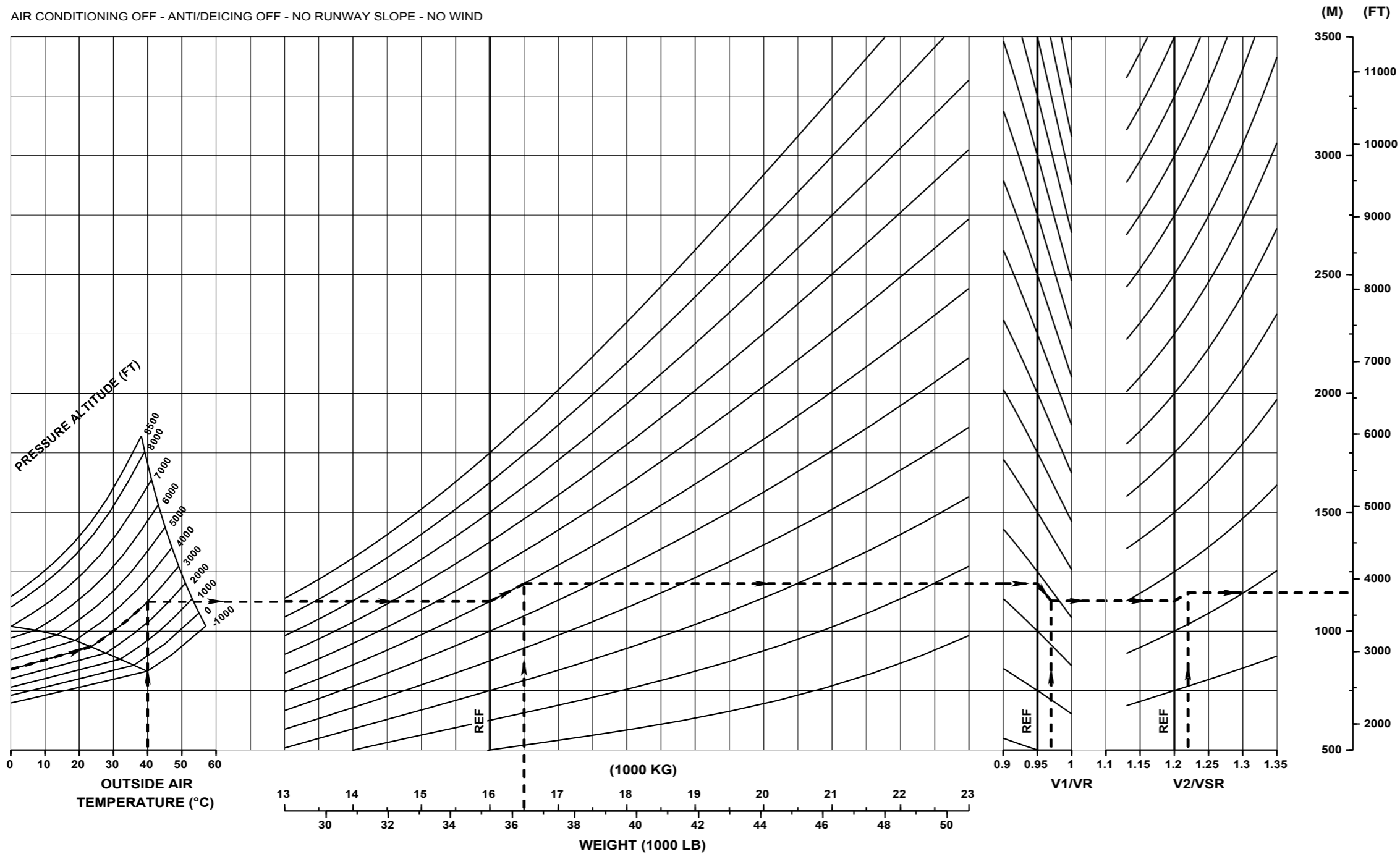
0ae63d98-a6ca-4f6d-88af-c175e4612841

0.2  
ALL  
APPROVED

PW127F / PW127M / PW127N - BOOST OFF  
TAKEOFF DISTANCE (FLAPS 15)

WATER COVERED RUNWAY: 6.3 mm (0.25 in)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O/ RTO POWER  
AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°22 |
|---|--|--------------------------|

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Takeoff Distance - 6.3 mm (0.25 in) - 12.7 mm (0.5 in)

4a7e5939-7ddf-45d7-bb05-c4b490a74f84

1.1  
ALL  
APPROVED

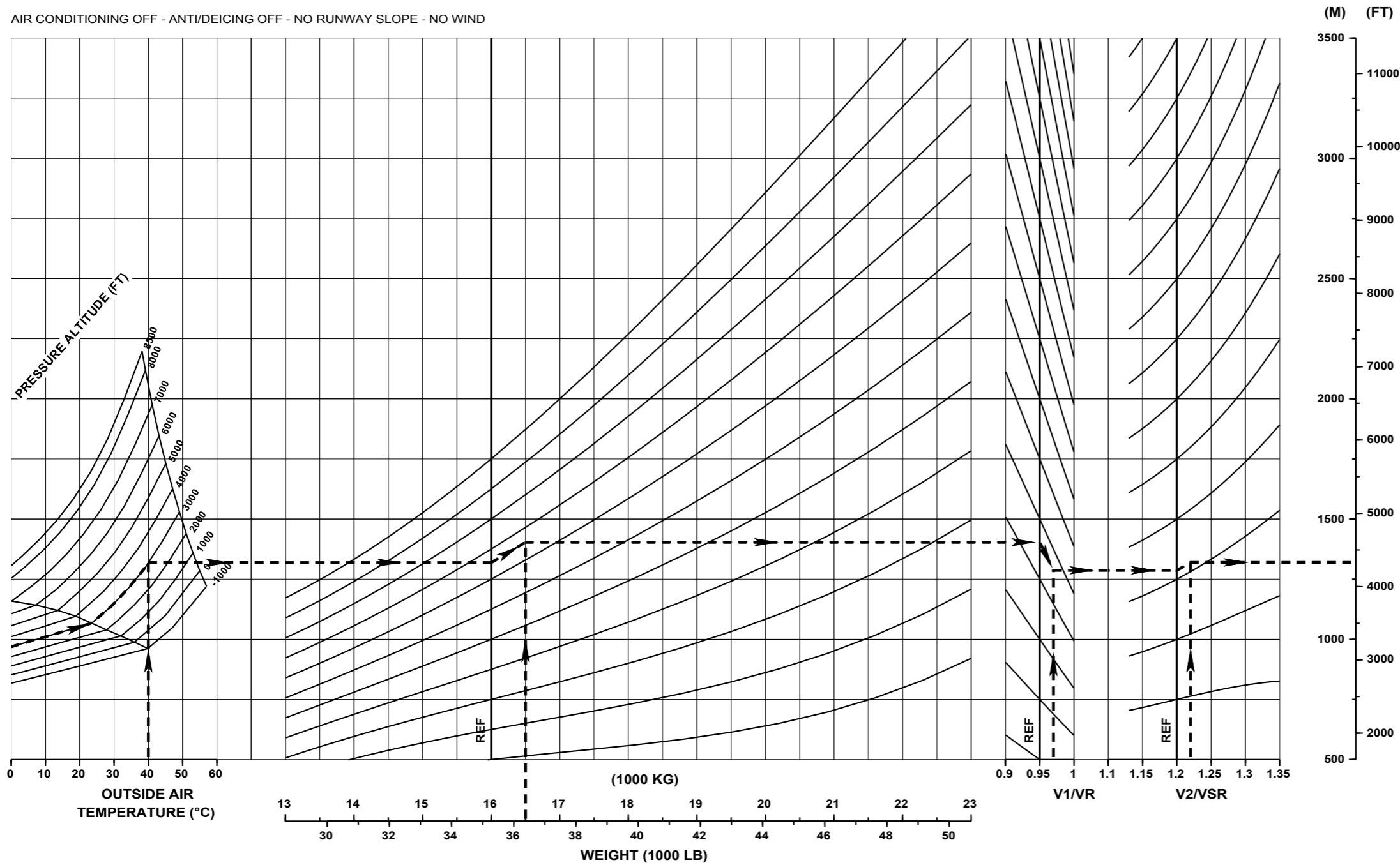
PW127F / PW127M / PW127N - BOOST OFF

WATER COVERED RUNWAY : 12.7 mm (0.5 in)

TAKEOFF DISTANCE (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O/RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°24 |
|---|--|--------------------------|

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## 6 Takeoff Distance Corrections

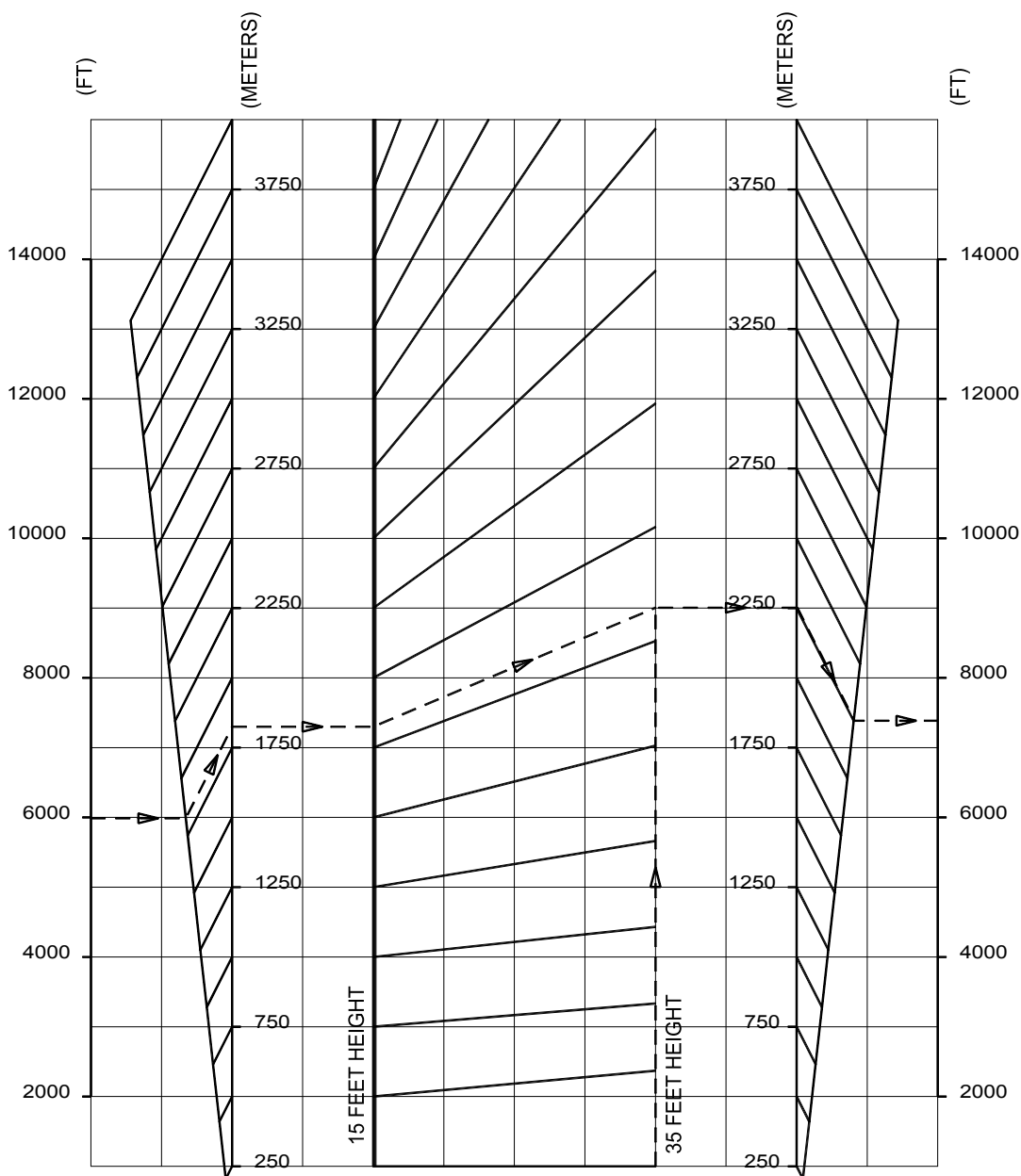
### Takeoff Distance Corrections

a0904be1-ca45-42d0-9f5a-06b7510c390e

**1.2**  
**ALL**  
**APPROVED**

### TAKEOFF DISTANCE CORRECTIONS (FLAPS 15)

**WATER COVERED RUNWAY : 6.3 mm (0.25 in) - 12.7 mm (0.5 in)**



***ATR***

**BU / 75**

**AFM**

**PROCEDURES**

**SPECIAL OPERATIONS  
CONTAMINATED RUNWAY (ADVISORY  
MATERIAL)**

**PRO.SPO**

Page n°26

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### 7 Accelerate Stop Distance Accelerate Stop Distance - 6.3 mm (0.25 in)

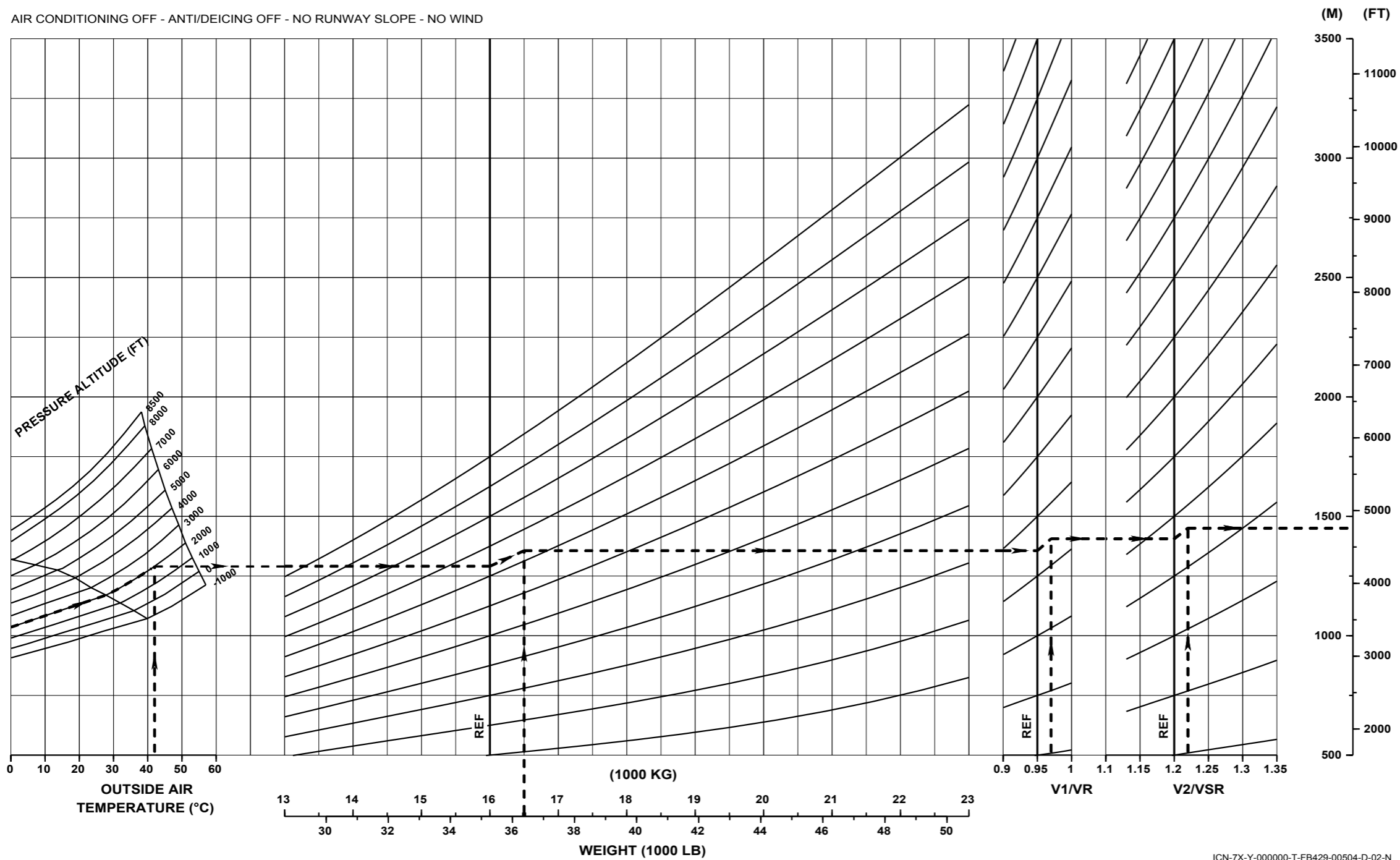
dfdd2f3c-2c31-4d55-b677-d7cf89a83d98

1.1  
ALL  
APPROVED

PW127F / PW127M / PW127N - BOOST OFF  
ACCELERATE STOP DISTANCE (FLAPS 15)

WATER COVERED RUNWAY: 6.3 mm (0.25 in)

TWO ENGINES OPERATIVE OR ONE ENGINE FAILED  
AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°28 |
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Accelerate Stop Distance - 12.7 mm (0.5 in)

0115fc53-b824-46b2-8a91-08d4e20d4570

1.1  
ALL  
APPROVED

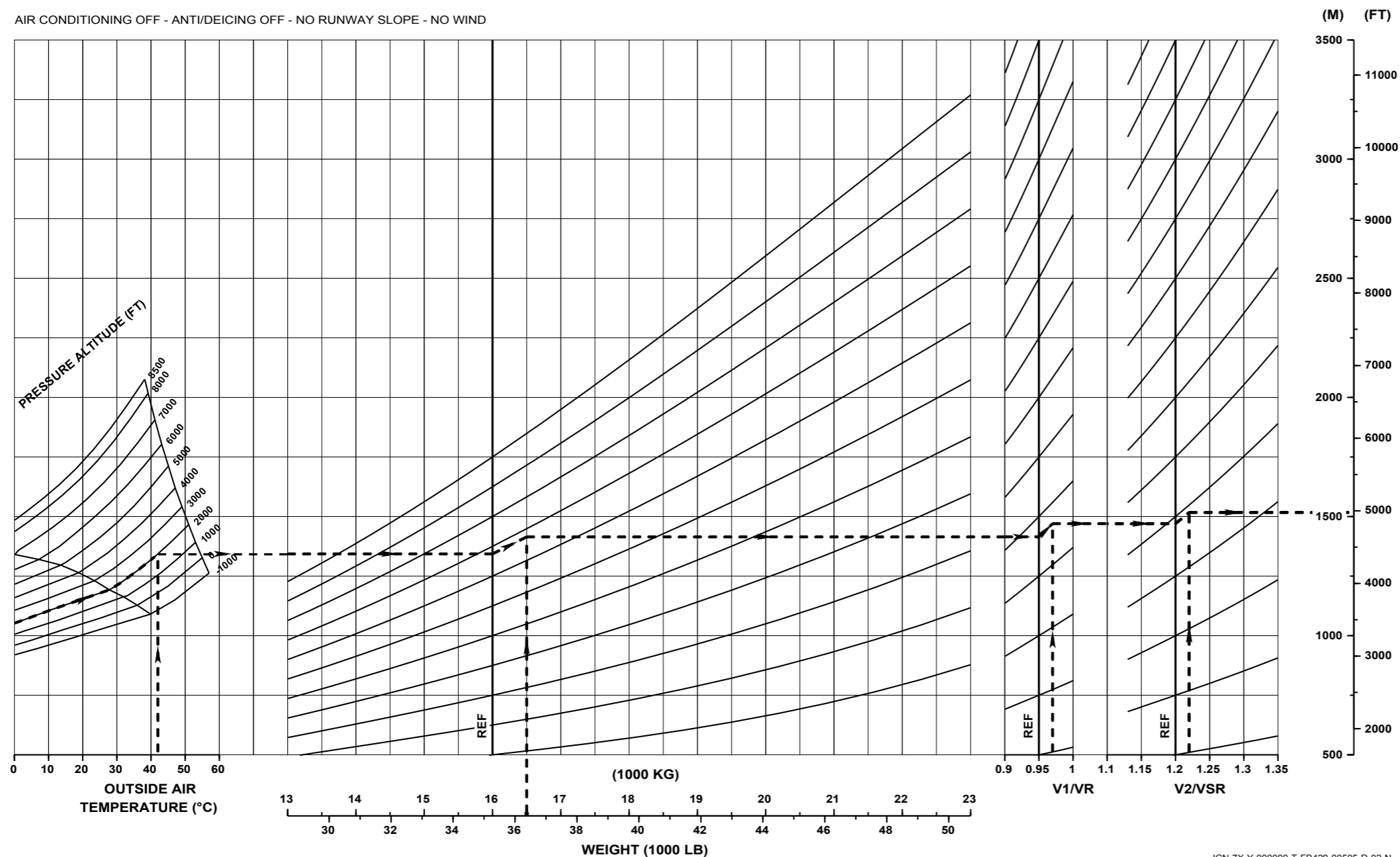
PW127F / PW127M / PW127N - BOOST OFF

WATER COVERED RUNWAY : 12.7 mm (0.5 in)

ACCELERATE STOP DISTANCE (FLAPS 15)

TWO ENGINES OPERATIVE OR ONE ENGINE FAILED

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°30 |
|---|--|--------------------------|

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# 8 Accelerate Stop Distance Corrections

## Accelerate Stop Distance Corrections - 6.3 mm (0.25 in)

0400eb4d-e69f-47a2-92d5-e100602d82c3

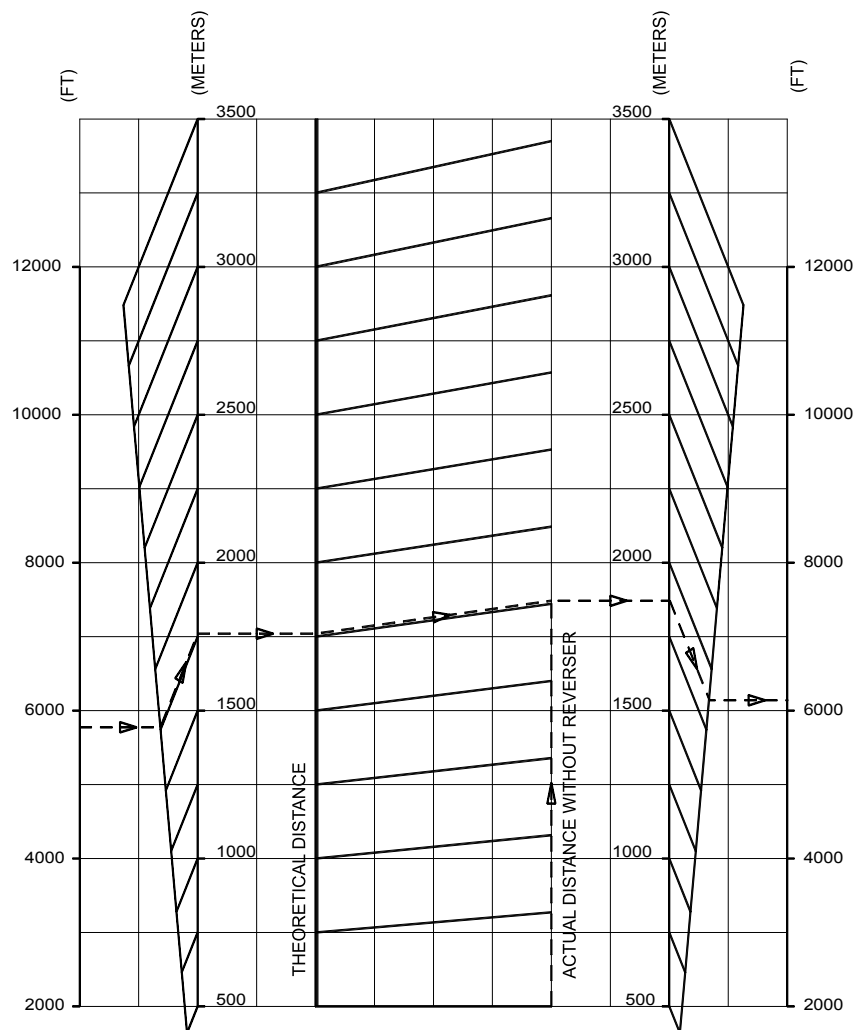
1.1

ALL

APPROVED

### ACCELERATE STOP DISTANCE CORRECTIONS (FLAPS 15)

#### WATER COVERED RUNWAY: 6.3 mm (0.25 in)



**Accelerate Stop Distance Corrections - 12.7 mm (0.5 in)**

639c9494-9c6c-4cf4-9a00-b327f1c67838

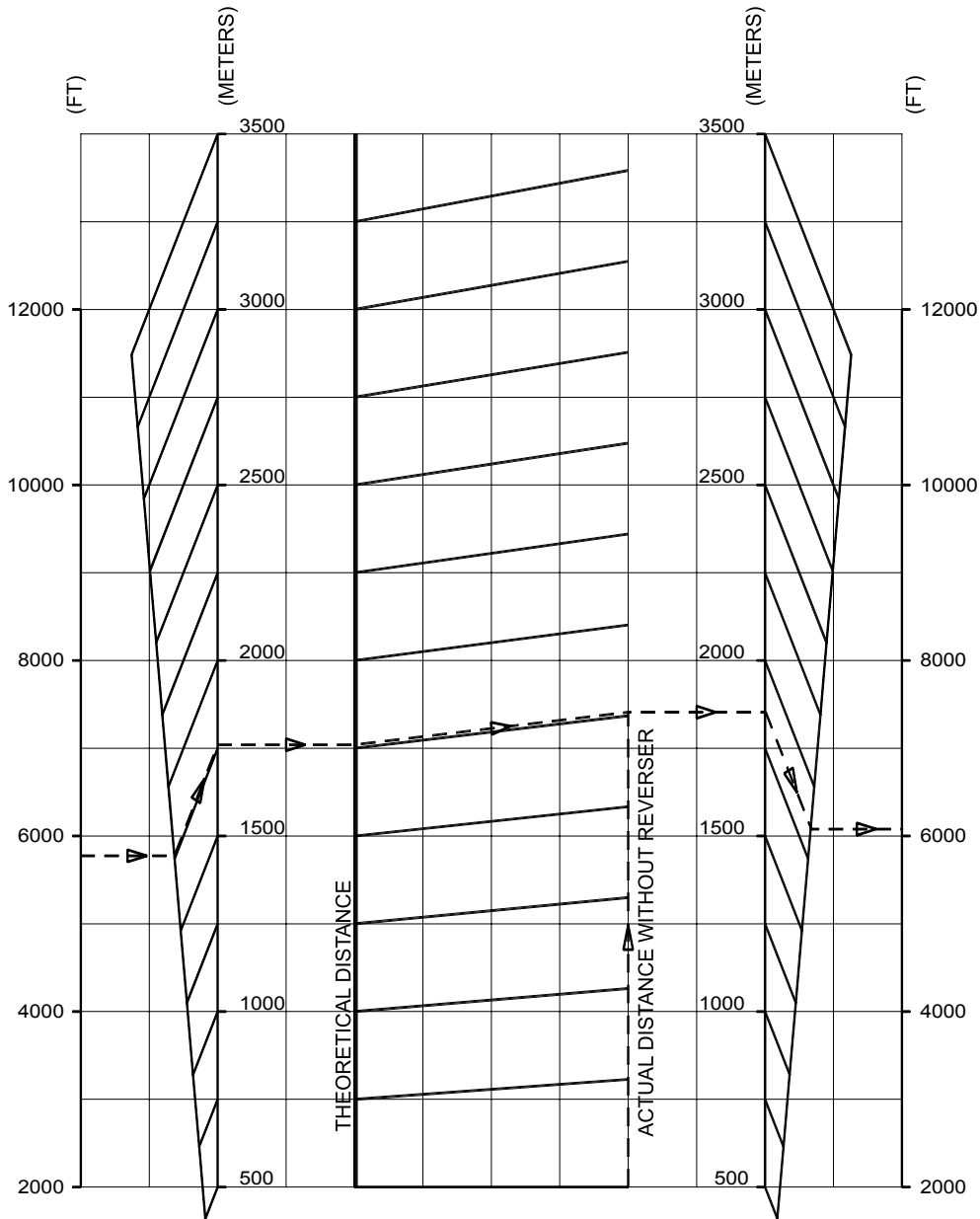
1.1

ALL

APPROVED

**ACCELERATE STOP DISTANCE CORRECTIONS (FLAPS 15)**

**WATER COVERED RUNWAY : 12.7 mm (0.5 in)**



### 9 Rotation Speed VR Rotation Speed VR - 6.3 mm (0.25 in)

558897f6-9dee-41df-8c1c-0d5ef1d97eb7

1.1  
ALL  
APPROVED

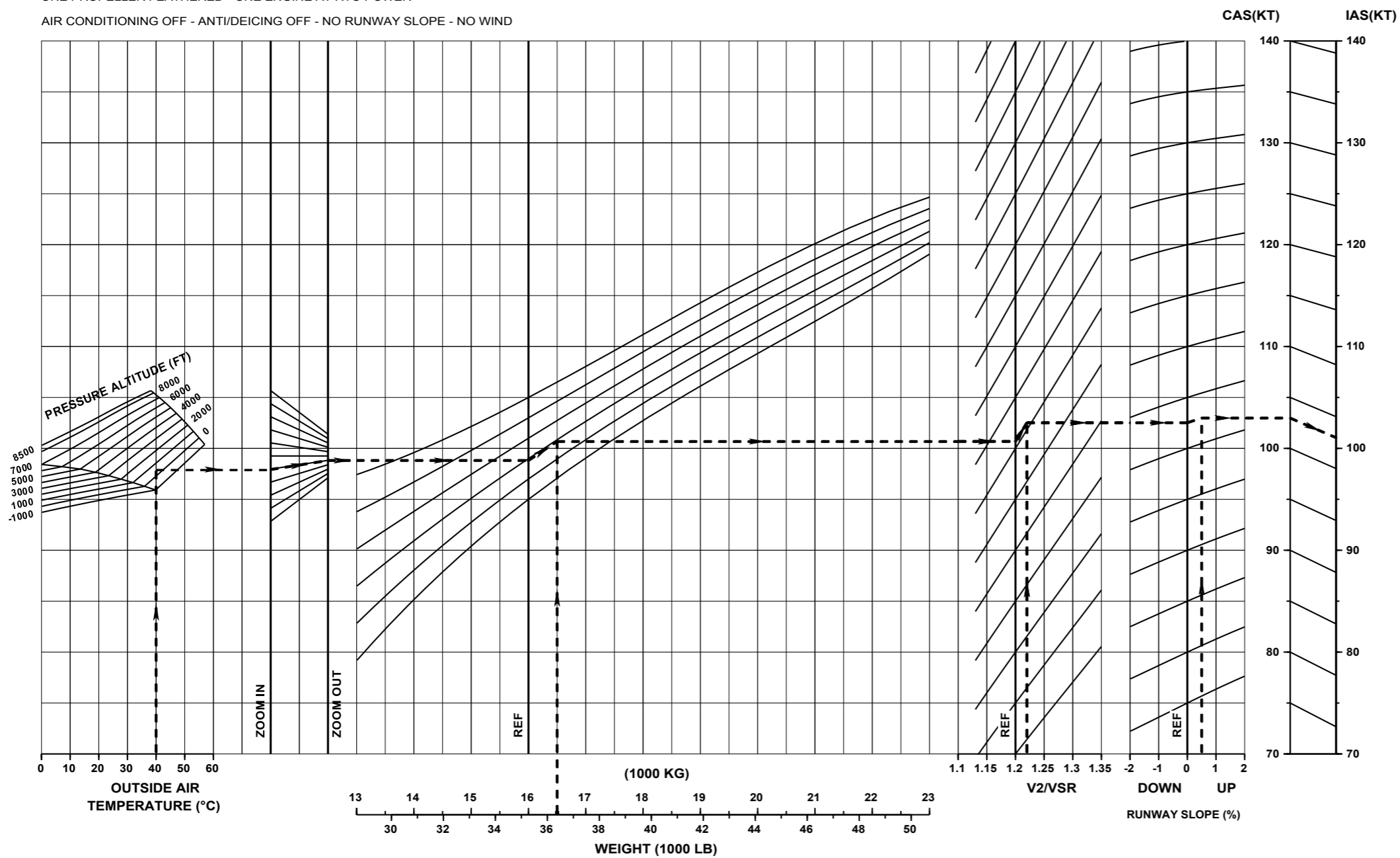
PW127F / PW127M / PW127N - BOOST OFF

WATER COVERED RUNWAY: 6.3 mm (0.25 in)

ROTATION SPEED VR (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°34 |
|---|--|--------------------------|

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Rotation Speed VR - 12.7 mm (0.5 in)

d8535992-1655-458c-b9da-59a7acceaf1

0.4  
ALL  
APPROVED

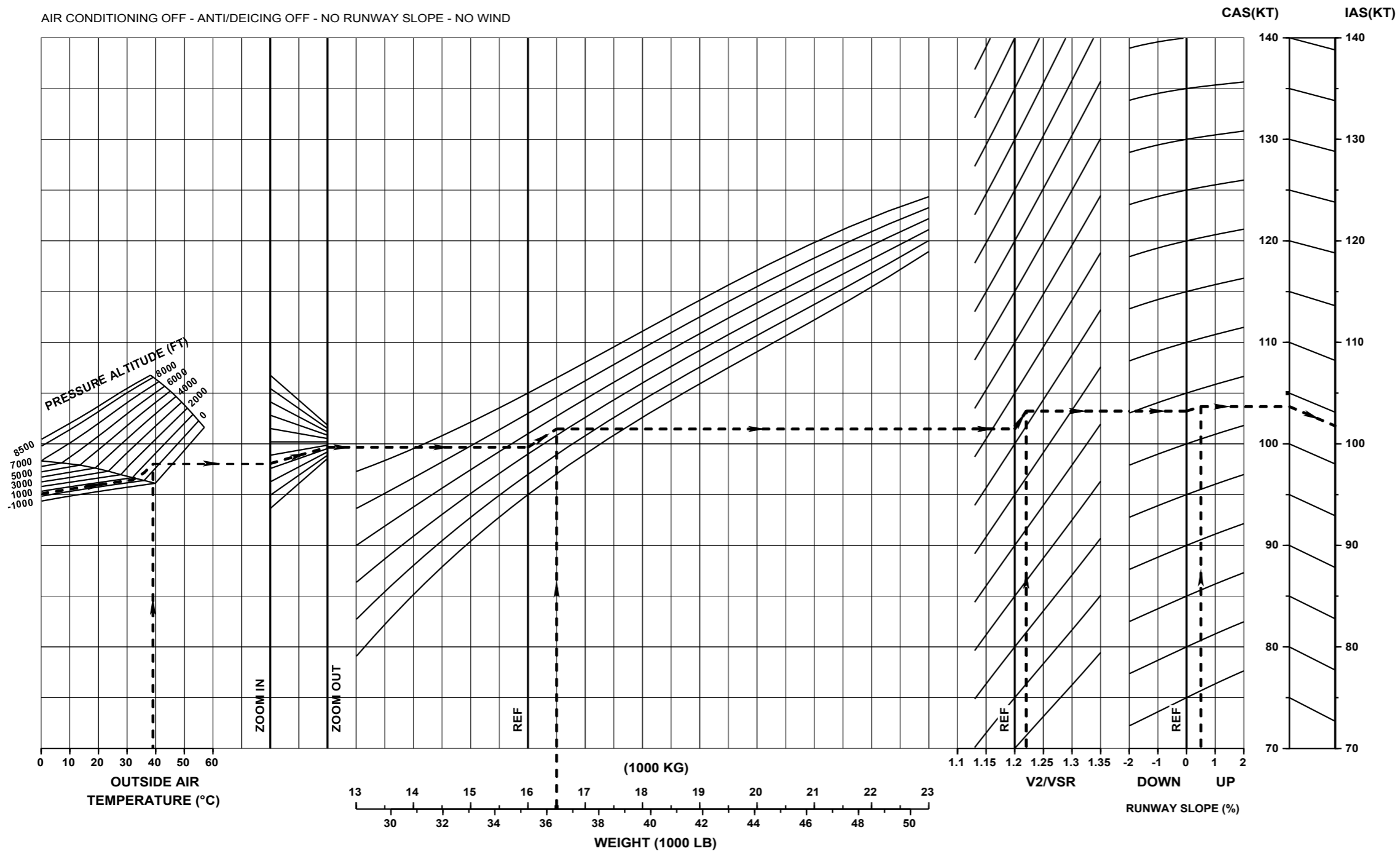
PW127F / PW127M / PW127N - BOOST OFF

WATER COVERED RUNWAY : 12.7 mm (0.5 in)

ROTATION SPEED VR (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°36 |
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### 13.3 COMPACT SNOW COVERED RUNWAY

#### 13.3.1 ACTUAL LANDING DISTANCE

##### 13.3.1.1 Actual Landing Distance

ebc730e7-744a-4aba-9553-5e3ad5fc1982

REV

2.1

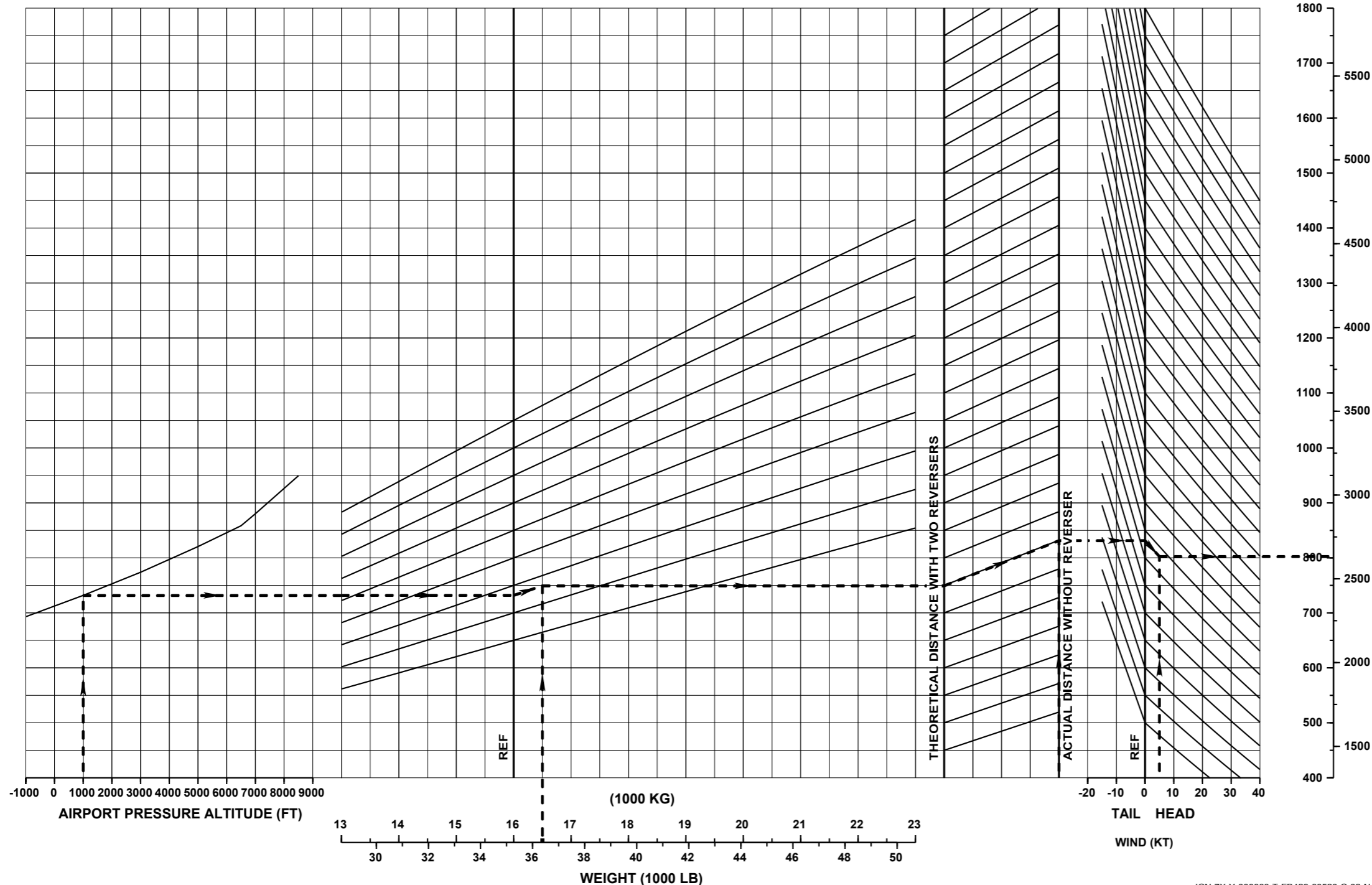
ALL

APPROVED

LANDING DISTANCE (FLAPS 30)

COMPACT SNOW COVERED RUNWAY


(M) (FT)



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°38 |
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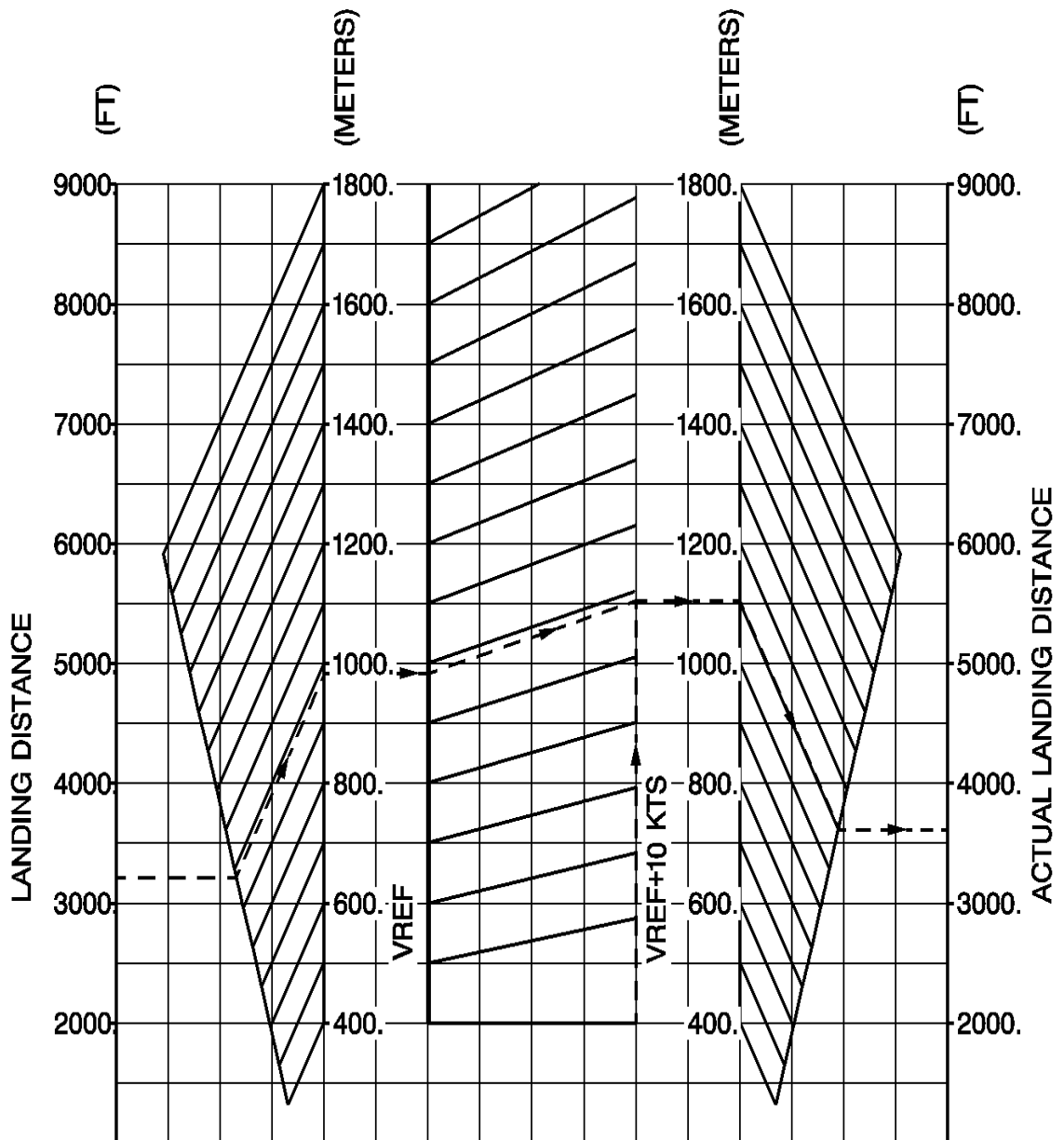
|   |  |                          |
|---|--|--------------------------|
| <br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY MATERIAL)</b> | PRO.SPO<br><br>Page n°39 |
|---|--|--------------------------|

## 13.3.2 ACTUAL LANDING DISTANCE CORRECTIONS

### 13.3.2.1 Actual Landing Distance Corrections

|                                      |     |          |
|--------------------------------------|-----|----------|
| 3aeac441-2f49-4ed2-875d-7e6ff8ab7718 | REV | 2.1      |
|                                      |     | ALL      |
|                                      |     | APPROVED |

#### LANDING DISTANCE CORRECTION COMPACT SNOW COVERED RUNWAY



***ATR***

**BU / 75**

**AFM**

**PROCEDURES**

**SPECIAL OPERATIONS  
CONTAMINATED RUNWAY (ADVISORY  
MATERIAL)**

**PRO.SPO**

Page n°40

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### 13.3.3 TAKEOFF RUN

#### 1 Flaps 15

#### Flaps 15

a431b190-b96d-4fb5-a7ce-4d1d71a28c4d

1.1  
ALL  
APPROVED

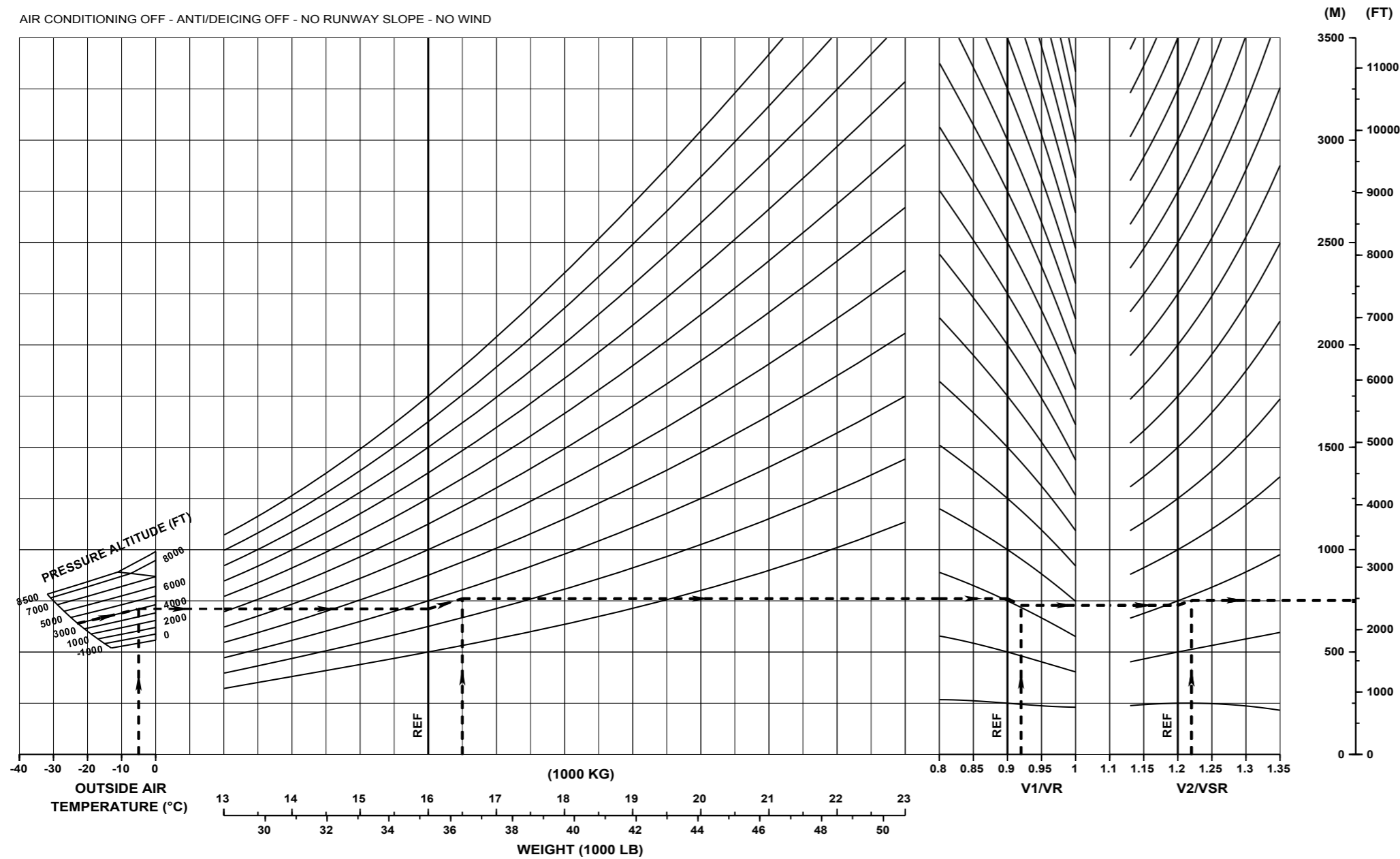
PW127F / PW127M / PW127N - BOOST OFF

COMPACT SNOW COVERED RUNWAY

TAKEOFF RUN (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O/ RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°42 |
|---|--|--------------------------|

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### 13.3.4 TAKEOFF DISTANCE

#### 1 Flaps 15

#### Flaps 15

51bf4e3a-cced-4b69-b885-c0d56d05ea6c

1.1  
ALL  
APPROVED

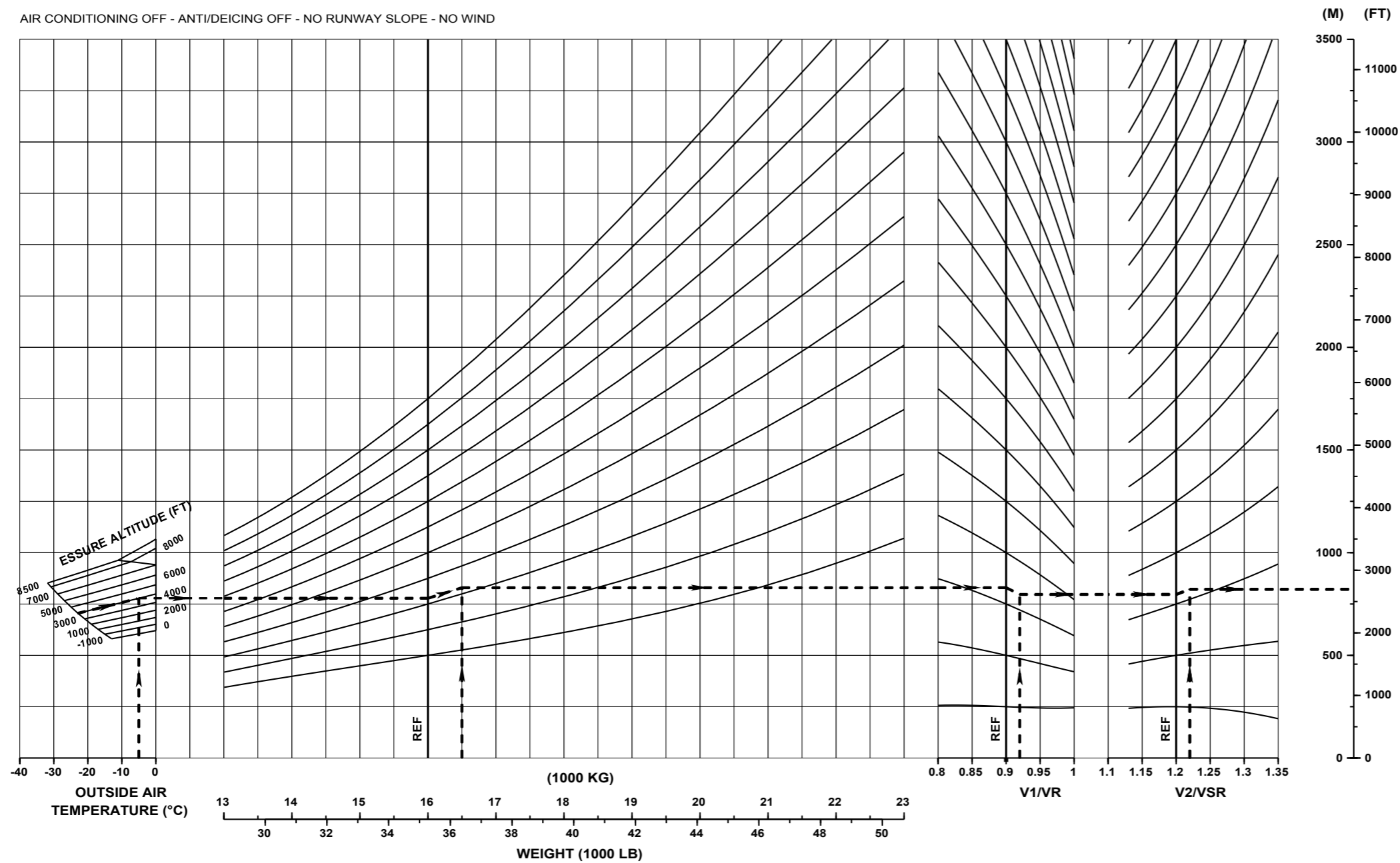
PW127F / PW127M / PW127N - BOOST OFF

COMPACT SNOW COVERED RUNWAY

TAKEOFF DISTANCE (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O/ RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°44 |
|---|--|--------------------------|

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### 13.3.5 ACCELERATE STOP DISTANCE

#### 1 Flaps 15

#### Flaps 15

fc1c5844-f0f3-4b1d-8764-783f1b1e836a

1.2  
ALL  
APPROVED

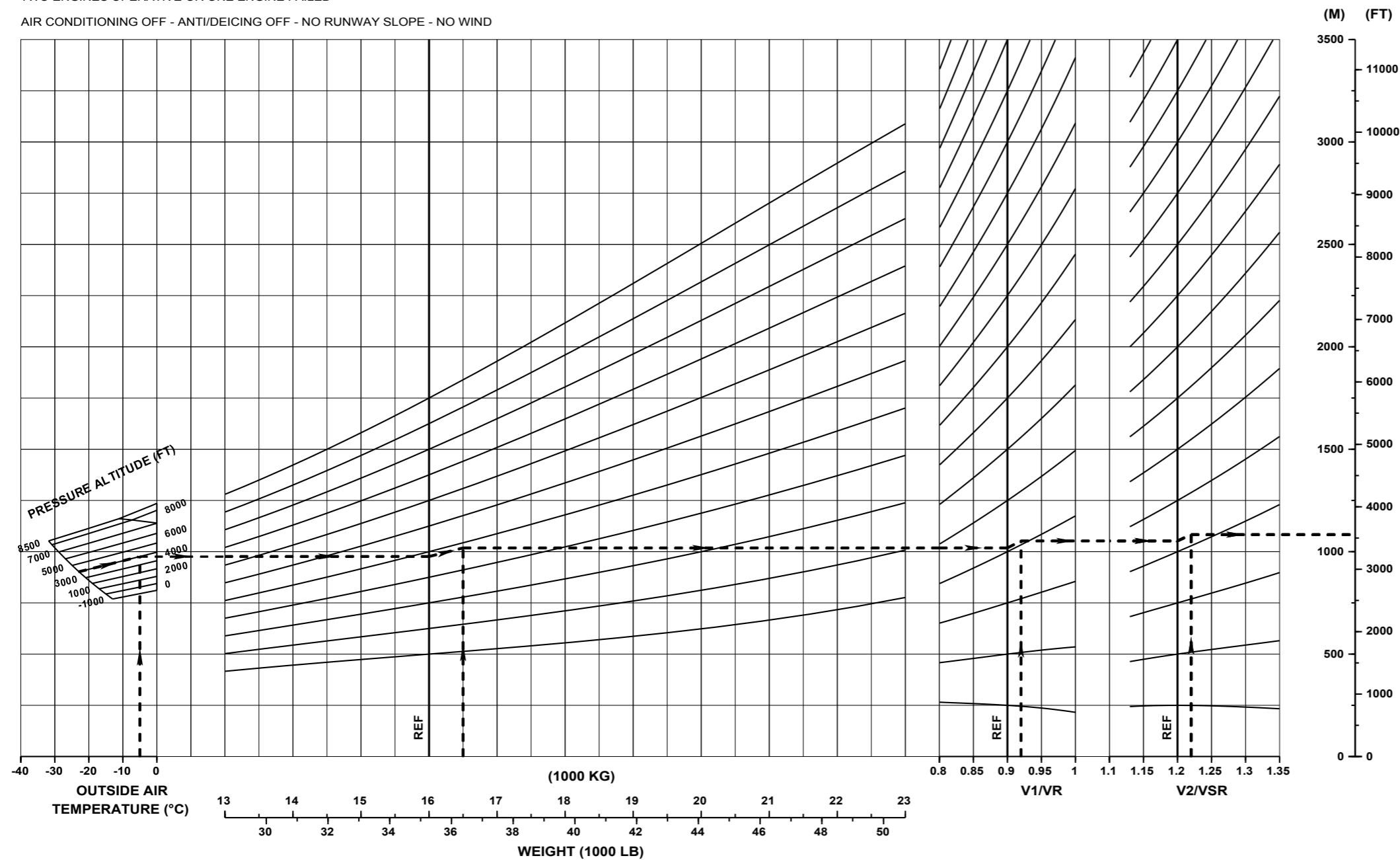
PW127F / PW127M / PW127N - BOOST OFF

COMPACT SNOW COVERED RUNWAY

ACCELERATE STOP DISTANCE (FLAPS 15)

TWO ENGINES OPERATIVE OR ONE ENGINE FAILED

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°46 |
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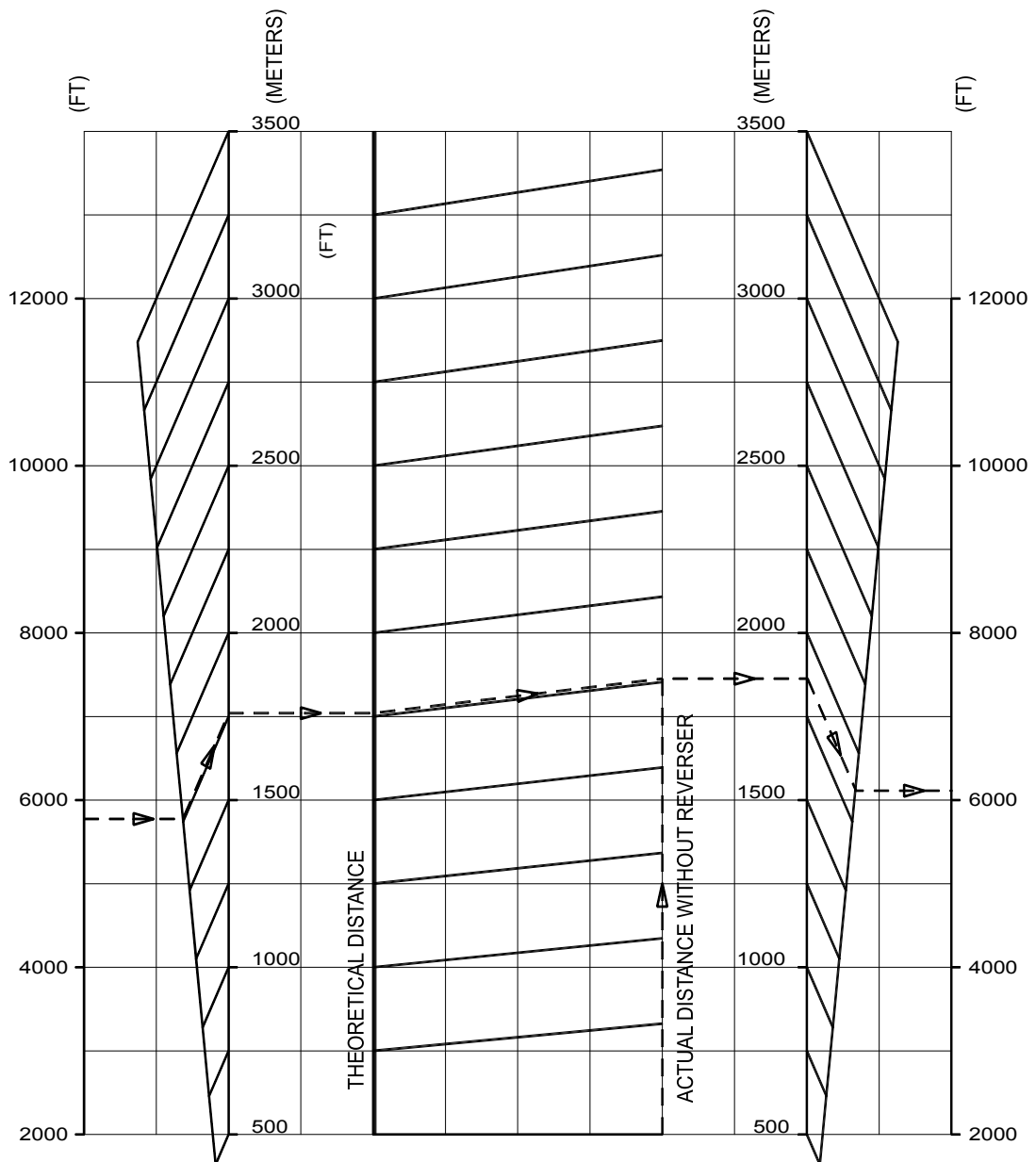


## 13.3.6 ACCELERATE STOP DISTANCE CORRECTIONS

### 13.3.6.1 Flaps 15

f9423c28-c78a-4d0c-930c-50fa70e8984c 1.1  
ALL  
APPROVED

### ACCELERATE STOP DISTANCE CORRECTIONS (FLAPS 15) COMPACT SNOW COVERED RUNWAY



***ATR***

**BU / 75**

**AFM**

**PROCEDURES**

**SPECIAL OPERATIONS  
CONTAMINATED RUNWAY (ADVISORY  
MATERIAL)**

**PRO.SPO**

**Page n°48**

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### 13.3.7 ROTATION SPEED VR

#### 1 Flaps 15

#### Flaps 15

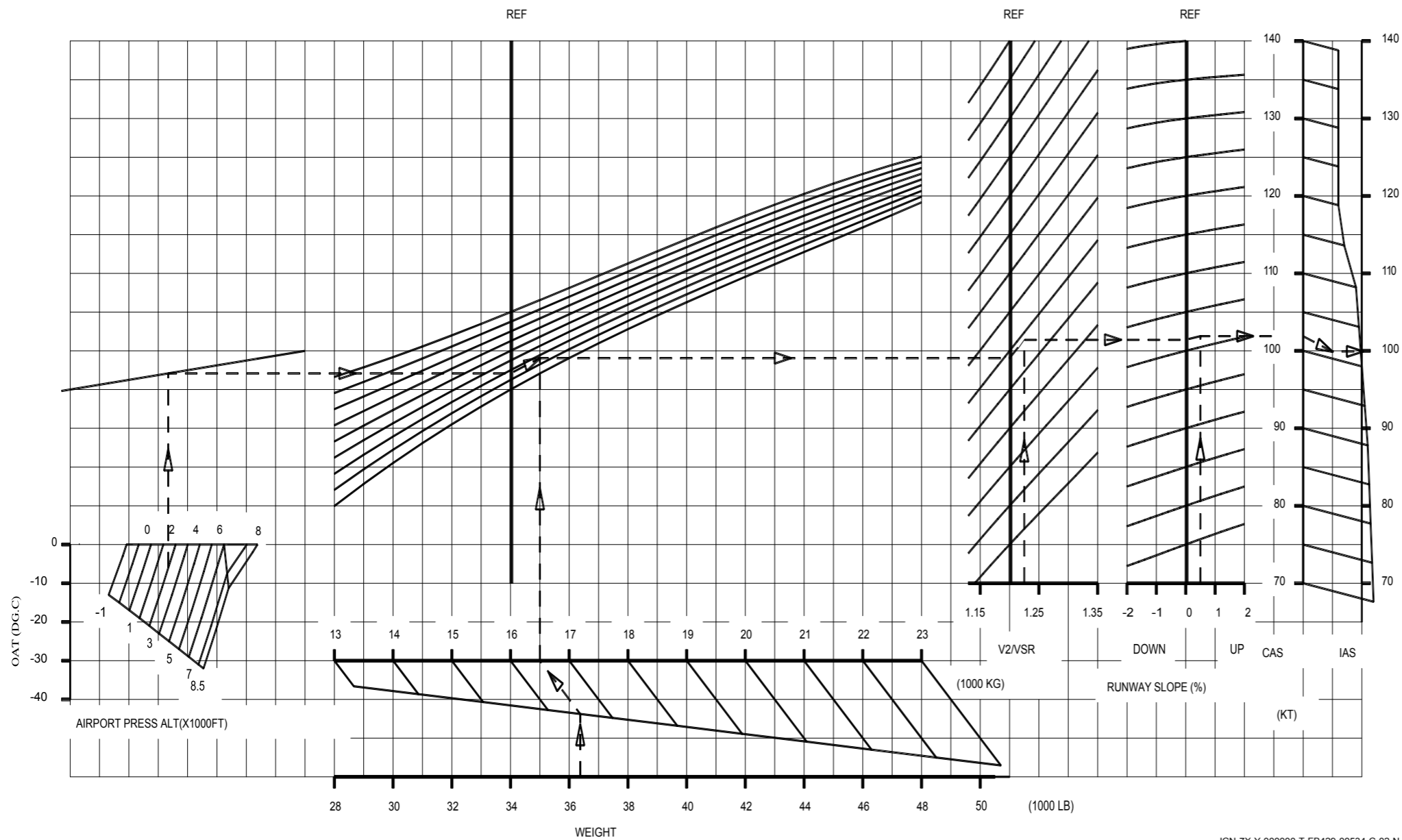
f1ba00c4-710f-49f5-9d74-f3b60bb8c4a5

1.1  
ALL  
APPROVED

PW127F / PW127M / PW127N - BOOST OFF  
ROTATION SPEED - VR (FLAPS 15)

COMPACT SNOW COVERED RUNWAY

ONE PROPELLER FEATHERED - ONE ENGINE AT RTO POWER  
AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°50 |
|---|--|--------------------------|

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### 13.4 ICED COVERED RUNWAY

#### 13.4.1 ACTUAL LANDING DISTANCE

##### 13.4.1.1 Actual Landing Distance

15250a6a-cb21-47f4-b98a-902fa9535c71

REV

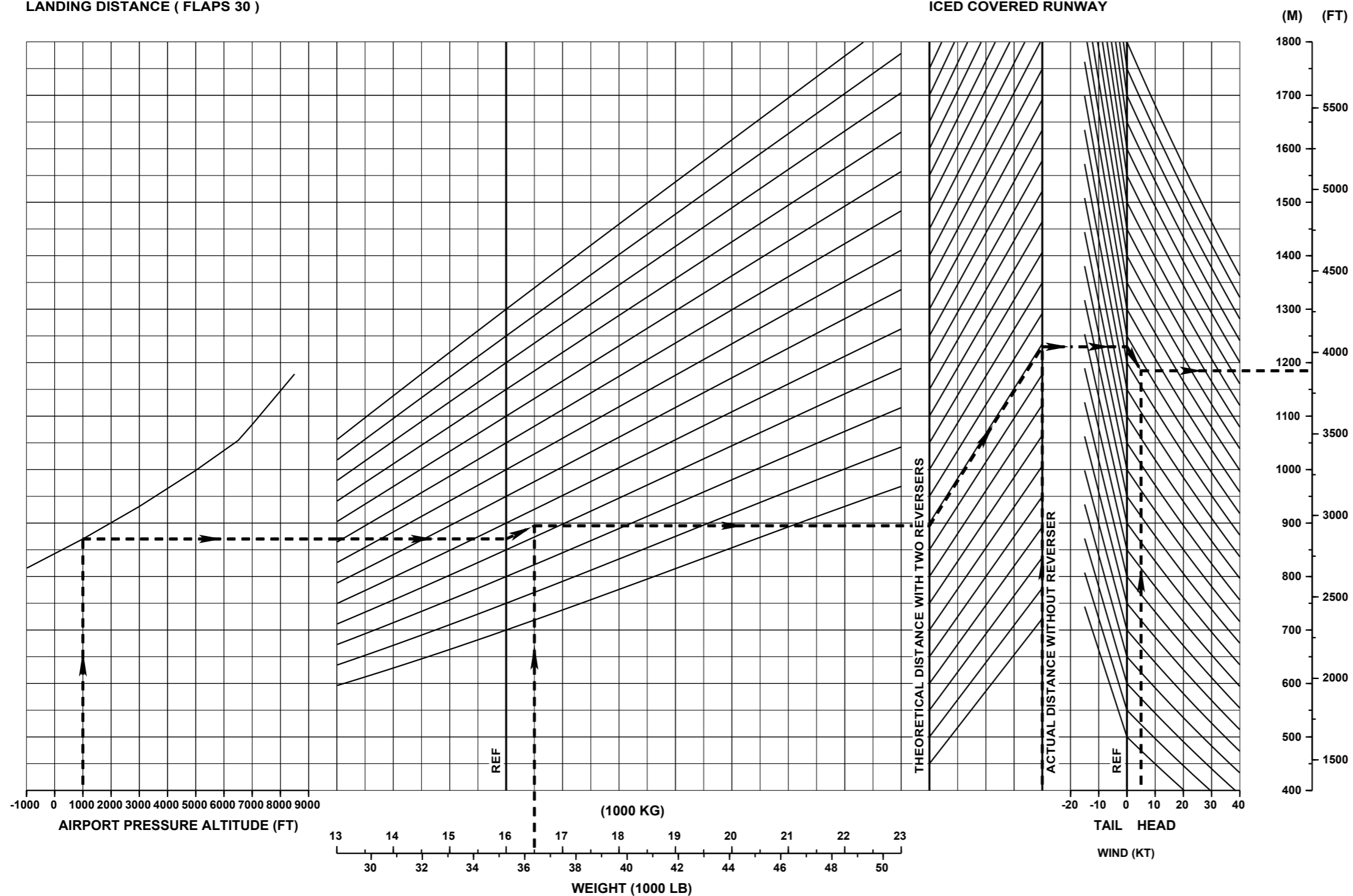
2.1

ALL

APPROVED

LANDING DISTANCE ( FLAPS 30 )

ICED COVERED RUNWAY



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°52 |
|---|--|--------------------------|

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## 13.4.2 ACTUAL LANDING DISTANCE CORRECTIONS

### 13.4.2.1 Actual Landing Distance Corrections

fdececb6b-68c7-454d-a2ce-93241d4b0f45

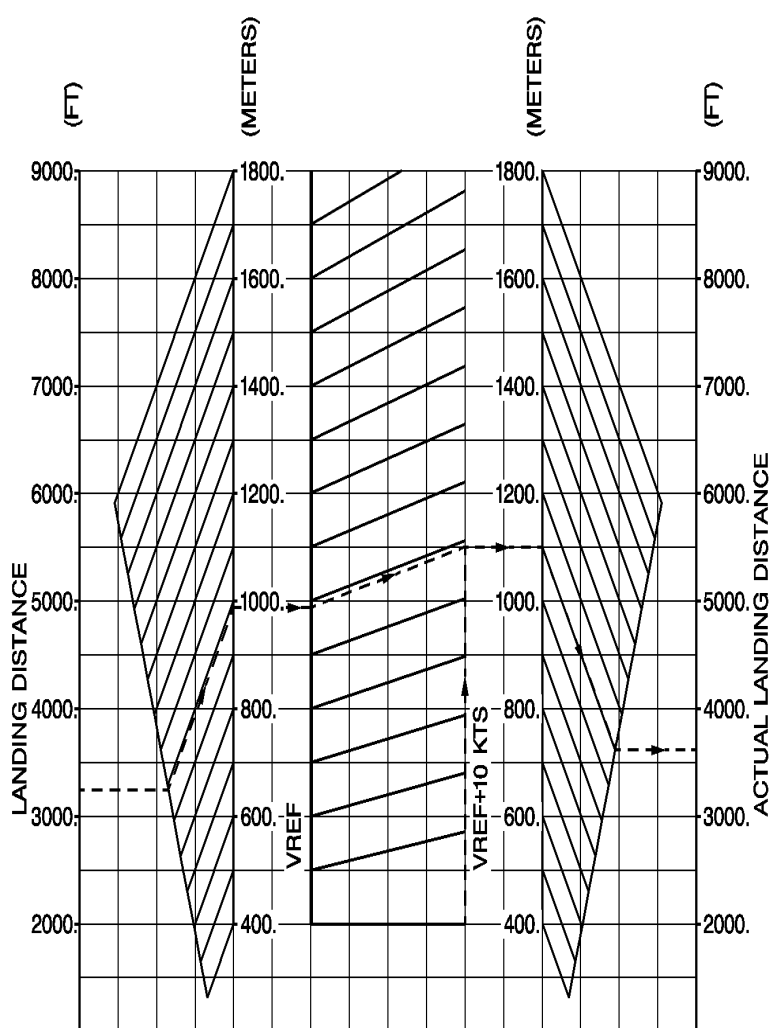
REV

2.1

ALL

APPROVED

#### OPERATION ON ICY RUNWAY LANDING DISTANCE CORRECTION



***ATR***

**BU / 75**

**AFM**

**PROCEDURES**

**SPECIAL OPERATIONS  
CONTAMINATED RUNWAY (ADVISORY  
MATERIAL)**

**PRO.SPO**

**Page n°54**

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### 13.4.3 TAKEOFF RUN

#### 1 Flaps 15

#### Flaps 15

b4bad262-2158-4fd5-86b7-c69cc456b9fb

1.1  
ALL  
APPROVED

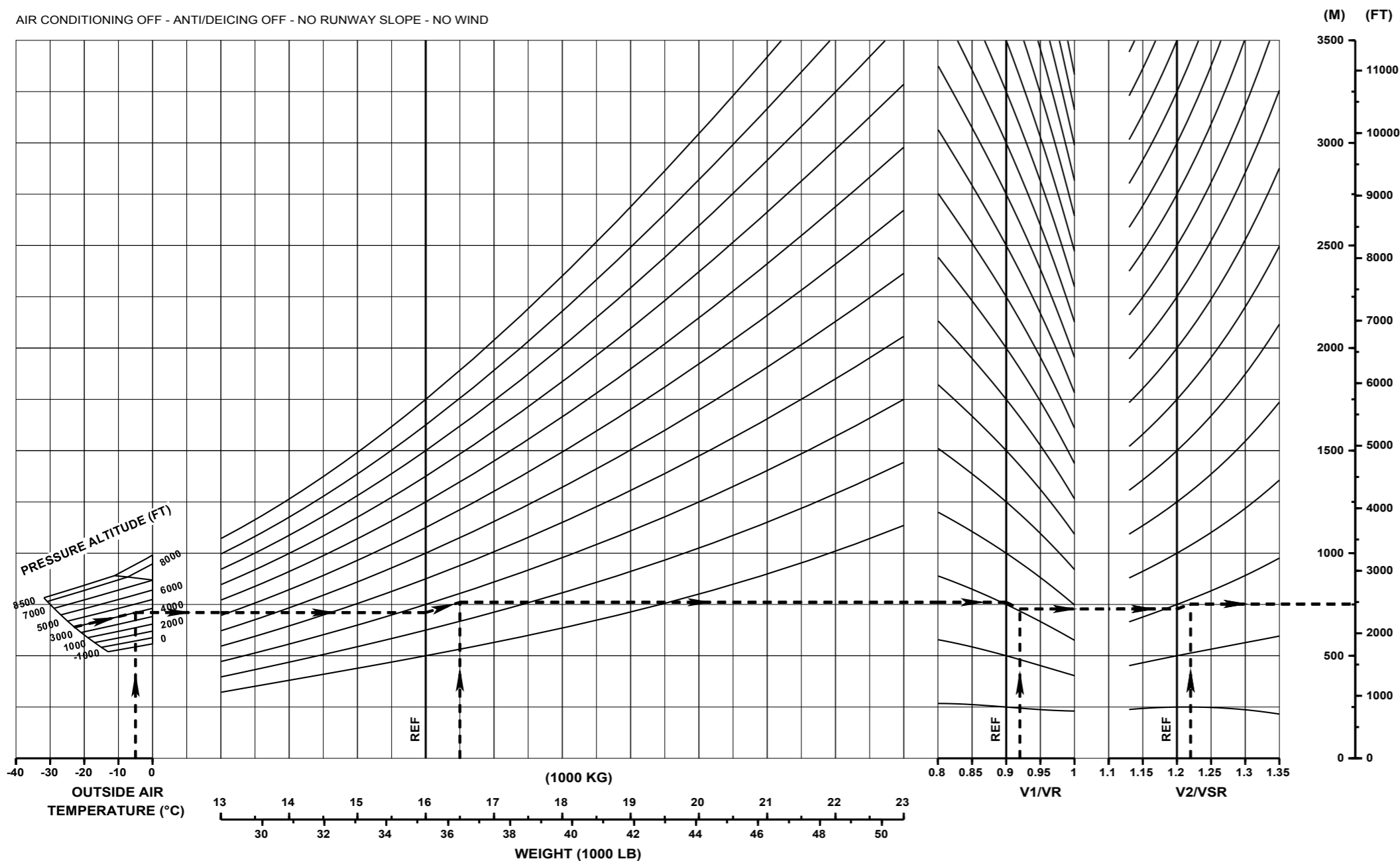
PW127F / PW127M / PW127N - BOOST OFF

ICE COVERED RUNWAY

TAKEOFF RUN (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O./RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°56 |
|---|--|--------------------------|

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### 13.4.4 TAKEOFF DISTANCE

#### 1 Flaps 15

#### Flaps 15

f0ad843f-9f02-4369-a260-c6a53ead90f3

1.1  
ALL  
APPROVED

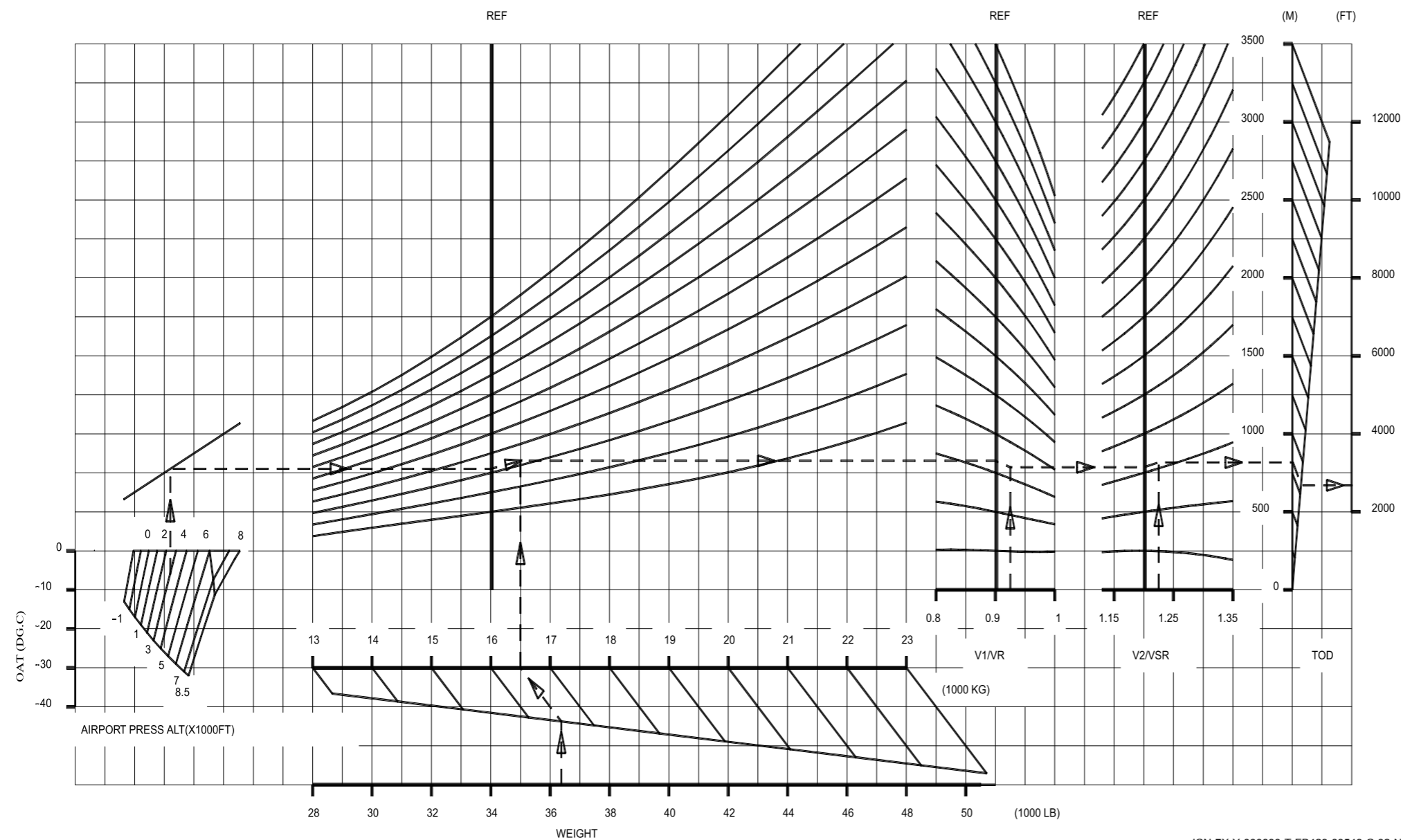
PW127F / PW127M / PW127N - BOOST OFF

ICE COVERED RUNWAY

TAKEOFF DISTANCE (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O/RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°58 |
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### 13.4.5 ACCELERATE STOP DISTANCE

#### 1 Flaps 15

#### Flaps 15

0a2fe537-aa4b-473f-b503-6dbefc01c768

1.3  
ALL  
APPROVED

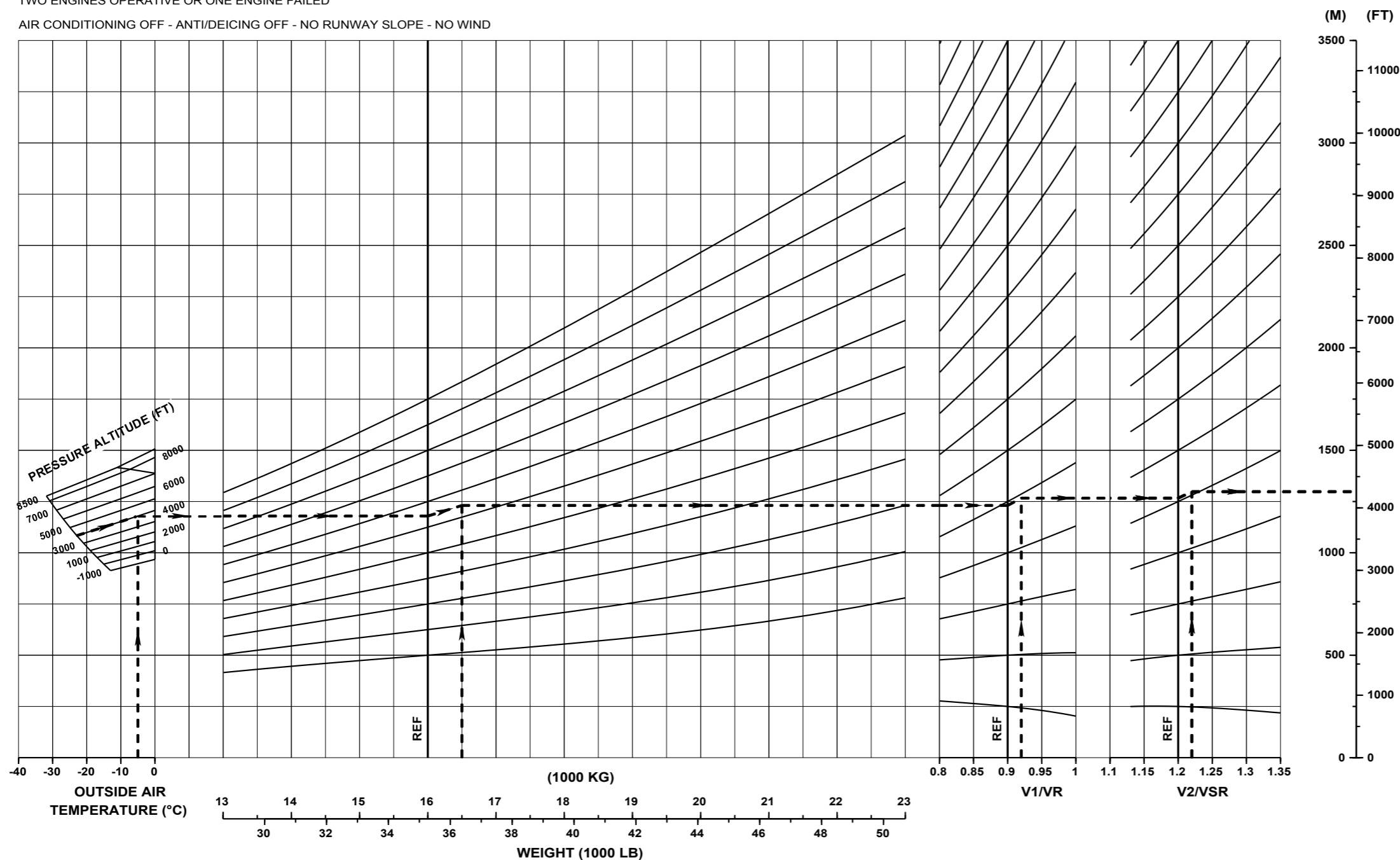
PW127F / PW127M / PW127N - BOOST OFF

ICE COVERED RUNWAY

ACCELERATE STOP DISTANCE (FLAPS 15)

TWO ENGINES OPERATIVE OR ONE ENGINE FAILED

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°60 |
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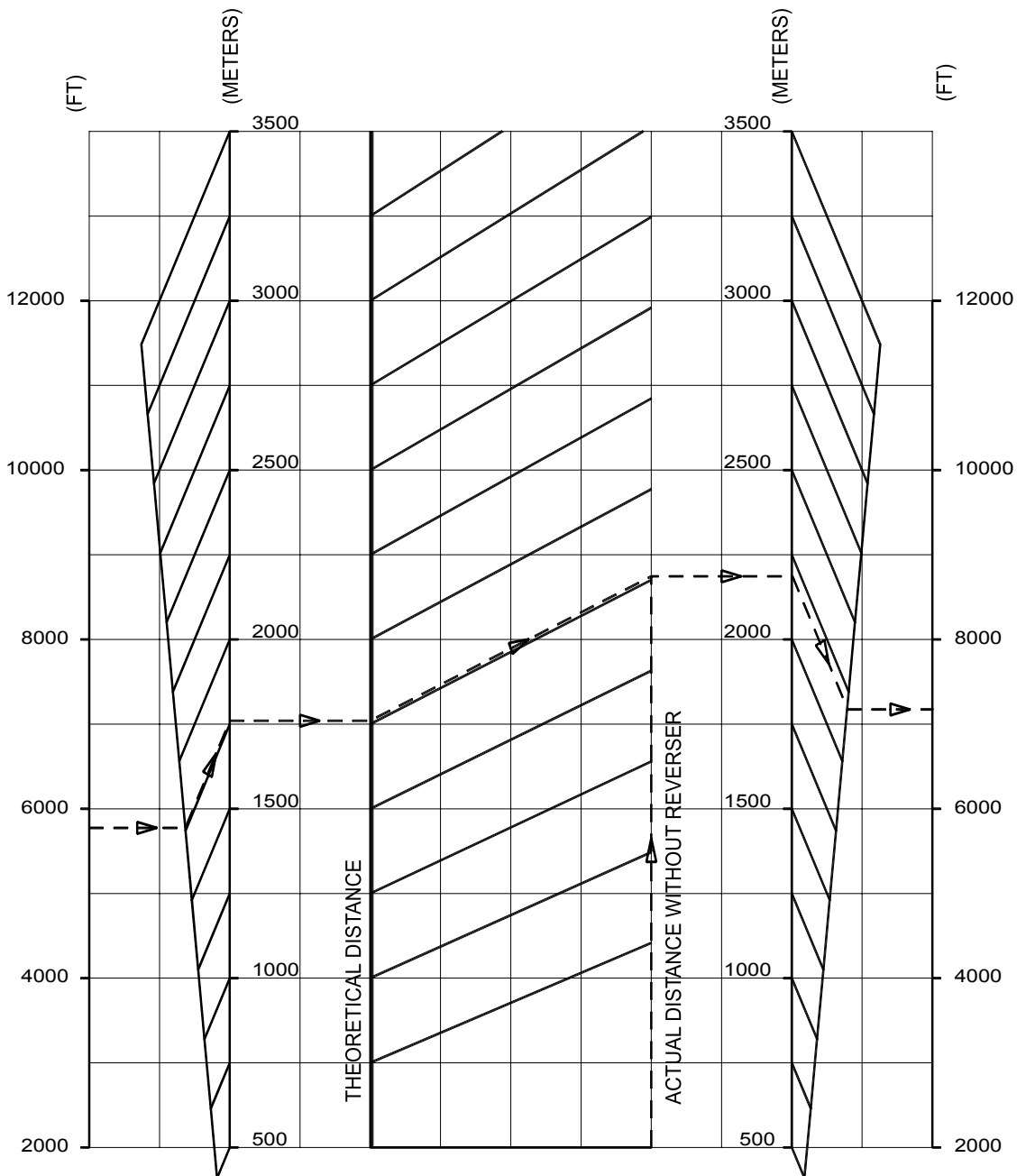
## 13.4.6 ACCELERATE STOP DISTANCE CORRECTIONS

### 13.4.6.1 Flaps 15

7060b65b-b122-4f4a-8acd-939564815c57 1.3  
ALL  
APPROVED

### ACCELERATE STOP DISTANCE CORRECTIONS (FLAPS 15)

#### ICE COVERED RUNWAY



***ATR***

**BU / 75**

**AFM**

**PROCEDURES**

**SPECIAL OPERATIONS  
CONTAMINATED RUNWAY (ADVISORY  
MATERIAL)**

**PRO.SPO**

**Page n°62**

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### 13.4.7 ROTATION SPEED VR

#### 1 Flaps 15

#### Flaps 15

08c9ad8e-dd3e-455f-95c0-53032d21633c

1.1  
ALL  
APPROVED

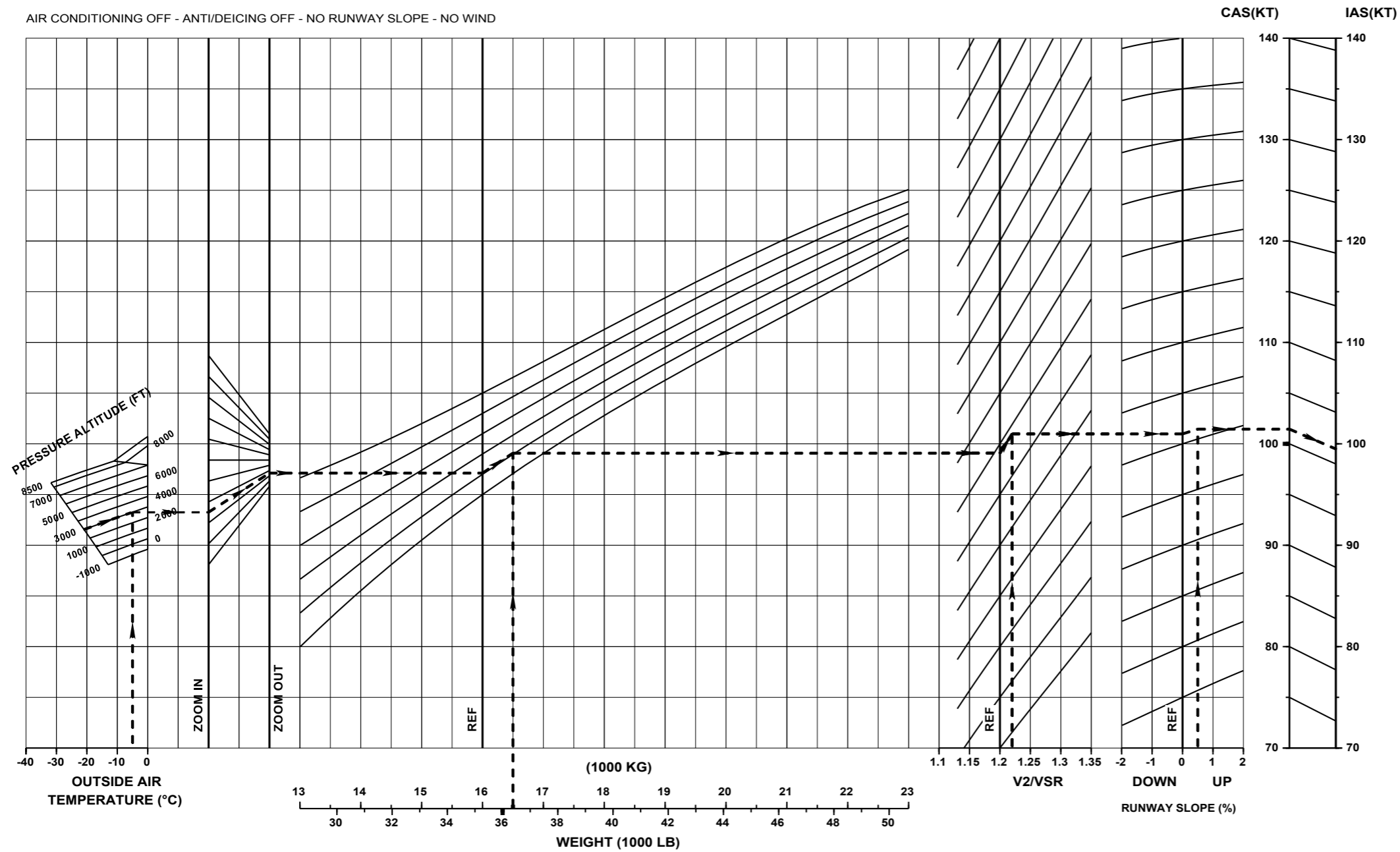
PW127F / PW127M / PW127N - BOOST OFF

ICE COVERED RUNWAY

ROTATION SPEED - VR (FLAPS 15)


ONE PROPELLER FEATHERED - ONE ENGINE AT RTO POWER

AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|   |  |                          |
|---|--|--------------------------|
| <b><i>ATR</i></b><br><br>BU / 75<br><br>AFM | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>CONTAMINATED RUNWAY (ADVISORY</b><br><b>MATERIAL)</b> | PRO.SPO<br><br>Page n°64 |
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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><b>OPERATION WITHOUT FORWARD LH</b><br><b>PARTITION</b> | <b>PRO.SPO</b><br><br><br>Page n°65 |
|---|---|-------------------------------------|

## 16 OPERATION WITHOUT FORWARD LH PARTITION

### 16.1 GENERAL LIMITATIONS

#### 16.1.1 General Limitations

|                                      |          |
|--------------------------------------|----------|
| 637ec490-3d15-4977-a464-22e660b7be45 | 1.0      |
|                                      | ALL      |
|                                      | APPROVED |

Not applicable

### 16.2 WEIGHT LIMITATIONS

#### 16.2.1 STRUCTURAL LIMITATIONS

##### 16.2.1.1 Structural Limitations

|                                     |          |
|-------------------------------------|----------|
| 45696f25-e522-40a7-bd90-0501d297fd1 | 0.1      |
|                                     | ALL      |
|                                     | APPROVED |

Not applicable

#### 16.2.2 PERFORMANCE LIMITATIONS

##### 16.2.2.1 Performance Limitations

|                                      |          |
|--------------------------------------|----------|
| bfcd28e2-f61a-4f87-a27c-443e44d13fda | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Not applicable

### 16.3 CENTER OF GRAVITY ENVELOP

#### 16.3.1 Center of Gravity Envelop

|                                      |          |
|--------------------------------------|----------|
| bcdfae6d-fa83-4c4c-abab-1af56c260dc4 | 2.0      |
|                                      | ALL      |
|                                      | APPROVED |


Not applicable

### 16.4 LOADING

#### 16.4.1 Loading

|                                      |          |
|--------------------------------------|----------|
| 7d39d4eb-000a-4e75-b3aa-4287ceb717b1 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Not applicable.

|   |   |   |
|---|---|---|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><br><b>CONTAINER TRANSPORTATION</b> | <b>PRO.SPO</b><br><br><br><br>Page n°66 |
|---|---|---|

## 20 CONTAINER TRANSPORTATION

### 20.1 APPLICABILITY

#### 20.1.1 Applicability

|                                      |  |                               |
|--------------------------------------|--|-------------------------------|
| 2d75f76d-8f7f-430b-9f20-7816d2cc1a98 |  | <b>0.1</b><br>ALL<br>APPROVED |
|--------------------------------------|--|-------------------------------|

Not applicable

## 21 CAT 2 APPROACH

### 21.1 LIMITATIONS

#### 21.1.01 Limitations

|                                      |  |                                     |
|--------------------------------------|--|-------------------------------------|
| 9c829c59-741b-4c29-81b8-c8e00b454fd6 |  | <b>1.0</b><br>0706-0775<br>APPROVED |
|--------------------------------------|--|-------------------------------------|

This content is designed to provide necessary information to authorise the use of the aircraft in Category II.

Limitations, procedures and performances included in this chapter replace or complete the corresponding information of the basic Flight Manual.


The Automatic Flight Control System (AFCS) with the associated equipment has been found to meet the airworthiness and performance criteria of :

- ACJ 25-1329 for AutoPilot
- Special Condition F2: AP engagement at takeoff
- JAR AWO subpart 2 for Category II.

#### Note

*Compliance with the standards noted above does not constitute approval to conduct Category II operations. Aircraft operators must apply to their Authority to get an approval to conduct Category II operations.*

|  |          |
|--|----------|
| Minimum height for use of AutoPilot in approach mode ..... | 50 ft    |
| Minimum decision height .....                              | 100 ft   |
| Certified configuration .....                              | FLAPS 30 |
| Maximum demonstrated wind:                                 |          |
| Headwind .....   | 30 kt    |
| Tailwind .....   | 10 kt    |
| Crosswind .....  | 15 kt    |

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><br><b>CAT 2 APPROACH</b> | <b>PRO.SPO</b><br><br><br>Page n°67 |
|---|---|-------------------------------------|

## 21.2 PROCEDURES

### 21.2.1 GENERAL INFORMATION

#### 21.2.1.1 Approved Configurations

|                                       |              |            |
|---------------------------------------|--------------|------------|
| _3d677fad-d67d-4cd0-b1b8-4b0cab10c96a | <b>MOVED</b> | <b>0.1</b> |
|                                       |              | 0706-0775  |
|                                       |              | APPROVED   |

- **Approach**

AP and FD are approved with use of approach mode for CAT II precision ILS approaches. The CAT II capability must be displayed on ADU.

- **Go-Around**

FD is approved with use of GA mode.

#### 21.2.1.2 Performance Envelope in Approach

|                                       |              |            |
|---------------------------------------|--------------|------------|
| _11d580f4-8397-4d34-b57a-8a3336dd4a82 | <b>MOVED</b> | <b>1.0</b> |
|                                       |              | 0706-0775  |
|                                       |              | APPROVED   |

- LOC capture: distance  $\geq 6$  Nm – Capture angle  $\leq 90^\circ$
- GLIDE capture:
  - o height  $\geq 1\ 500$  ft
  - o  $V_C \leq 180$  kt at 1 500 ft.
- Approach speed:

When the aircraft is stabilized on GLIDE slope the selected approach speed  $V_{APP}$  is  $1.23 V_{SR}$  (FLAPS 30) + wind correction and not less than  $V_{MCL}$ .

The wind correction is equal to the highest of 1/3 of the reported headwind or the gust in full, with a maximum correction of 15 kt.

### 21.2.1.3 Minimum Equipment Required

bcb8de47-0ebd-4776-81ac-67f18b473f53

MOVED


3.0

0706-0775

APPROVED

|                                  | Approach with AP   |
|----------------------------------|--|
| Autopilot                        | 1  |
| FD bars                          | 1 (PF side)  |
| AP quick disconnect              | 1 (PF side)  |
| AP OFF warning (light and aural) | 1  |
| ADU                              | 1  |
| ILS receiver                     | 2  |
| AHRS                             | 2  |
| Standby Horizon                  | 1  |
| CRT                              | 3 (2 PF side)  |
| SGU                              | 2  |
| Radio altimeter                  | 1 (with 2 displays)  |
| DH indicator                     | 2  |
| GA pb                            | 1 (PF side)  |
| Windshield wipers                | 1 (PF side)  |
| Yaw damper                       | 1  |
| Airspeed indicators              | 2: - F/O side must be operative <sup>a</sup><br>- If CAPT is PF, CAPT side must be operative           |
| Altimeters                       | 3  |
| Hydraulic system                 | Blue + Green   |
| Electrical system                | <b>DC:</b> BUS1 / BUS2 / EMER / STBY / ESS<br><b>AC:</b> BUS1 / BUS2 / STBY<br><b>ACW:</b> BUS1 / BUS2 |
| MFC modules                      | 3  |
| Probe Heating                    | 3 Pitots, 6 statics, 2 AOAs and 2 TATs   |

<sup>a</sup> The standby airspeed instrument can be easily monitored only from the CAPT position (Captain position).

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><br><b>CAT 2 APPROACH</b> | <b>PRO.SPO</b><br><br><br>Page n°69 |
|---|---|-------------------------------------|

## 21.2.2 NORMAL PROCEDURES

### 21.2.2.1 Approach and Landing Preparation

|                                      |           |
|--------------------------------------|-----------|
| 5d1e727e-7226-4cc4-bb8e-635ba1a8805e | 1.2       |
|                                      | 0706-0775 |
|                                      | APPROVED  |

#### Approach preparation

- ▶ DH ..... SET
- ▶ ILS Frequency..... SET
- ▶ RWY HDG..... SET
- ▶ APP Mode..... ENGAGE

*GS and LOC comes on, both on EADI and ADU. CAT II comes on white on ADU (if this capability available)*

The approach must be planned to capture the localizer before glide slope interception.


#### Note

*GLIDE capture is inhibited as long as localizer capture is not initiated (LOC\*).*

- ▶  $V_{APP}$  : 1.23  $V_{SR}$  (landing flaps) + wind correction and not less than  $V_{MCL}$
- ▶ Approach Configuration : Landing Flaps

#### Mode phases

|                |   |
|----------------|---|
| LOC*           | <p>At localizer capture the white LOC goes off and on both EADI and on ADU the LOC* comes on in green.</p> <p>LOC phase engages when the aircraft is stabilized on the LOC beam axis.</p> <p>Both on EADI and on ADU, LOC come on.</p>            |
| GS*            | <p>At glide slope capture the white GS light goes off and the GS* green light comes on both EADI and on ADU.</p> <p>GS phase engages when the aircraft is stabilized on the GLIDE SLOPE.</p> <p>GS green light comes on both EADI and on ADU.</p> |
| ZRA < 1 200 ft | <p>On both EADI and on ADU, dual coupling must come on (arrows) if correct capture conditions are achieved.</p>   |
| DH + 100 ft    | <p>A white box comes on, on the left of radio altimeter value.</p>  |
| DH             | <p>Amber DH symbol comes on in the white box.</p>   |

|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><br><b>CAT 2 APPROACH</b> | <b>PRO.SPO</b><br><br><br>Page n°70 |
|---|---|-------------------------------------|

## 21.2.2.2 Normal Approach Sequence

ee9ac74c-dadd-4b67-9498-fb806e96b552

NEW

3.4

0706-0775

APPROVED

- **Outer marker or equivalent position but not lower than 1 000 ft AAL**

- PM announces “Outer, altitude checked, stabilized”
- Both pilots check the altitude on the radio altimeter and altimeter
- PF evaluates if the aircraft is stabilized and announces “we continue”.

The aircraft must be stabilized:

- On the final approach segment flight path
- Landing flaps selected,  $V_{APP}$  reached
- Final checklist completed.

- **1 000 ft(radio altimeter)**

- PM announces “1000 ft, dual coupling, no star”
- PF checks dual coupling and LOC and G/S modes and announces “check”
- PM starts monitoring LOC and G/S deviation.

- **500 ft(radio altimeter)**

- PM announces “500”.

- **DH + 100 ft**

- PF looks outside for external visual references
- PM monitors the flight path.

- **DH**

- PM announces “Decision”.

- **If external visual references sufficient**

- PF announces “Landing”
- PM announces “80” (feet) and PF selects AP OFF(no lower than 80 ft)
- PM announces “50” (feet) and “20” (feet)
- PF performs the landing.

- **If external visual references insufficient**

- PF announces “Go around, set power, flaps one notch” and performs a Go around.

**Note**


***Any failure that’s not completely treated before 1000 ft AAL, or that occurs below 1000 ft AAL, shall always lead to a missed approach.***

**Note**

*A call out (indicating that a flight parameter is exceeded) must be done if:*

- *Speed becomes lower than  $V_{APP}-5$  kt or greater than  $V_{APP}+10$  kt ( $V_{APP}$  is the selected approach speed)*
- *Pitch attitude becomes lower than  $4^\circ$  nose down or greater than  $4^\circ$  nose up or bank angle becomes greater than  $10^\circ$*
- *Excessive LOC or G/S deviation occurs.*



|   |   |                                     |
|---|---|-------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PROCEDURES</b><br><br><b>SPECIAL OPERATIONS</b><br><br><b>CAT 2 APPROACH</b> | <b>PRO.SPO</b><br><br><br>Page n°71 |
|---|---|-------------------------------------|

### 21.2.2.3 Normal Landing Sequence

|                                      |            |            |
|--------------------------------------|------------|------------|
| d30319c7-1e4f-42a0-a9e9-f6632a439dbb | <b>NEW</b> | <b>0.4</b> |
|                                      |            | 0706-0775  |
|                                      |            | APPROVED   |

- **DH**
  - PM announces "Decision".
- **If external visual references sufficient**
  - PF announces "Landing"
  - PM announces "80" (feet)
  - PM announces "50" (feet) and PF selects AP OFF (no lower than 50 ft)
  - PM announces "20" (feet)
  - PF performs the landing.
- **If external visual references insufficient**
  - PF announces "Go around, set power, flaps one notch" and performs a Go around.

### 21.2.2.4 Go-Around Sequence

|                                     |  |            |
|-------------------------------------|--|------------|
| b806bd28-ae7-4005-a702-842a13448926 |  | <b>0.1</b> |
|                                     |  | 0706-0775  |
|                                     |  | APPROVED   |

No change.

## 21.2.3 EMERGENCY PROCEDURES

### 21.2.3.01 Emergency Procedures

|                                      |  |            |
|--------------------------------------|--|------------|
| afcd4aab-681b-4378-af23-ea652e7522ba |  | <b>0.1</b> |
|                                      |  | 0706-0775  |
|                                      |  | APPROVED   |

NO CHANGE.

## 21.2.4 ABNORMAL PROCEDURES

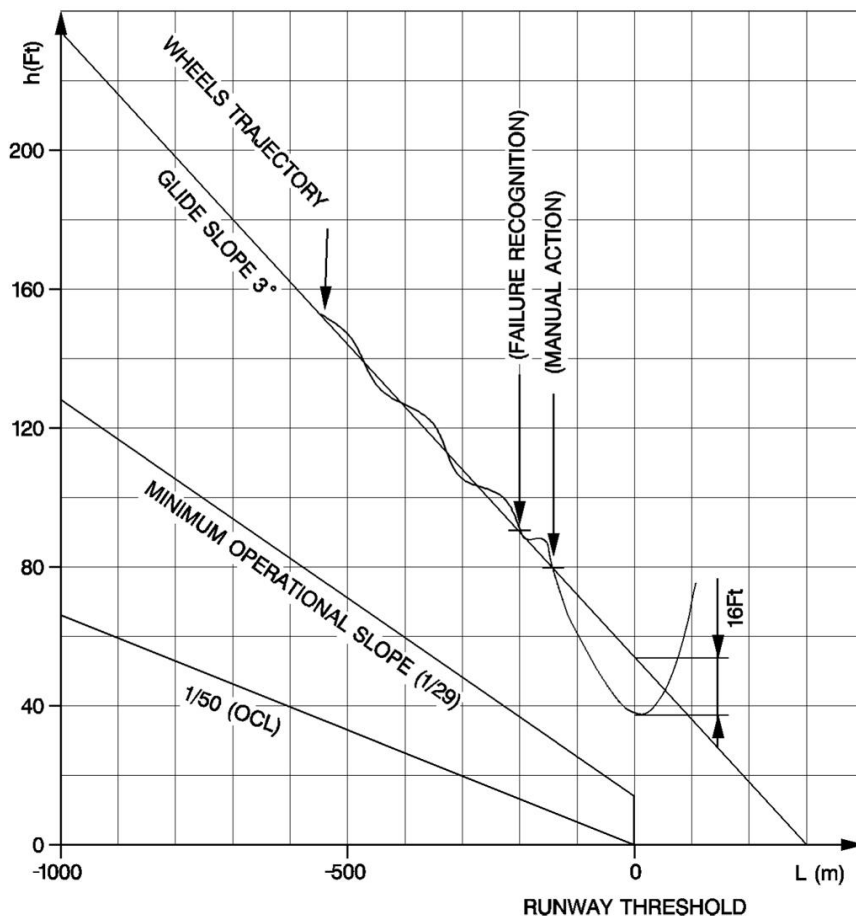
### 21.2.4.1 DEMONSTRATED ALT LOSS WITH AP-FD SYST MALFCTN

#### 21.2.4.1.01 Demonstrated Altitude Loss with AP System Malfunction

|                                      |  |            |
|--------------------------------------|--|------------|
| acd0974f-6283-47f6-a5c7-051f7b57a052 |  | <b>0.1</b> |
|                                      |  | 0706-0775  |
|                                      |  | APPROVED   |

Maximum path deviation with take over occurring 1 s after failure recognition : 16 ft.

cont'd... >>>



**- Fig. 1 : Deviation Profile - CAT II -**

## 21.2.4.2 FAILURES AND ASSOCIATED ACTIONS DURING APPROACH

### 21.2.4.2.01 General

bffe9729-dcb1-4d74-bf8c-8917e07be7e1

1.3

0706-0775

APPROVED

Any failure that is not completely treated before 1 000 ft AAL, or that occurs below 1 000 ft AAL, must always lead to a missed approach.

#### 1) ENGINE FAILURE

Provided lateral trimming is properly achieved before 1 000 ft, single engine approach may be performed with autopilot engaged, but must be restricted to CAT I.

#### 2) AFCS failure and trajectory deviation

In case of CAT II INVALID, excess deviations and AFCS failure, go around must be performed with STBY HORIZON : initial missed approach attitude : 10 °.

### 21.2.4.2.02 A-C Systems

2aab0789-2173-4fe6-987d-ebcfa2a54635

2.1

0706-0775

APPROVED

| Warnings  | Actions at the time of failure detection               |                          | Complementary actions                      |
|---|--|--------------------------|--|
|   | > 1000 ft  | < 1000 ft                |  |
| Flap failure, jammed between 0 and 15 positions | Revert to Cat I minima                                 | Not applicable           | Multiply landing distance flaps 30 by 1.15 |
| Flap failure, jammed above 15 position          | Continue increase V <sub>APP</sub> (flaps 30) by 10 kt |                          |  |
| Engine failure                                  | Revert to Cat I minima                                 | Discontinue the approach |  |
| Hydraulic failure (without fluid loss)          | Transfer No capability loss                            |                          |  |
| First MFC module failure                        | Apply associated procedure continue the approach       | Discontinue the approach |  |
| Second MFC module failure                       | Apply associated procedure Revert to CAT 1 minima      | Discontinue the approach |  |



BU / 75  
AFM

**PROCEDURES**  
**SPECIAL OPERATIONS**  
**CAT 2 APPROACH**

PRO.SPO

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**21.2.4.2.03 Flight Instruments**

7f4d7aa6-8816-4553-99e7-9310c3441587

2.1

0706-0775

APPROVED

| Warnings   | Actions at the time of failure detection   |                          | Complementary actions   |
|--|--|--------------------------|---|
|  | > 1000 ft  | < 1000 ft                |   |
| Standby horizon flag   | Revert to CAT I minima   | Discontinue the approach | First action before switching AHRS is to refer to standby horizon to determine the wrong AHRS |
| Radio altimeter warning on PM EFIS                           | Revert to CAT I minima   |                          |   |
| ATT/PIT/ROLL warning on any EFIS                             | Switch to valid AHRS<br>Reengage AP Revert to CAT I minima                                   |                          |   |
| HDG warning on any EFIS                                      | Switch to valid AHRS<br>Revert to CAT I minima   |                          |   |
| LOC/GS/ILS warning on any EFIS                               | Revert to CAT I minima   |                          |   |
| Loss of one CRT on CAPT side or loss of EHSI CRT on F/O side | Switch affected CRT OFF  |                          |   |
| Loss of EADI CRT on F/O side                                 | Switch affected CRT OFF Continue for an AP approach Revert to CAT I minima for a FD approach |                          |   |
| Loss of both CRT on one side                                 | Switch to valid SGU.<br>Revert to CAT I minima   |                          |   |
| Loss of F/O airspeed indicator and CAPT side if PF           | Revert to CAT I minima   |                          |   |
| Loss of F/O altimeter and CAPT side if PF                    | Revert to CAT I minima   |                          |   |

### 21.2.4.2.04 AFCS and ADU

|                                      |   |
|--------------------------------------|---|
| 16c1e462-f7ed-4993-99e7-151fbbf8ce4a | <b>2.1</b><br><b>0706-0775</b><br><b>APPROVED</b> |
|--------------------------------------|---|

| Warnings                                 | Actions at the time of failure detection                 |                          | Complementary actions |
|--|--|--------------------------|-----------------------|
|  | ZRA : 1000 FT  | 500FT                    |                       |
| AP disengage                             | Try to recover If impossible revert to Cat I FD approach | Discontinue the approach |                       |
| LOC or G/S excess deviation              | Not applicable   | Discontinue the approach |                       |
| Loss of ADU                              | Perform a Cat I minima manual approach                   | Discontinue the approach |                       |
| Loss of Cat II capability (Triple click) | Try to recover If impossible revert to Cat I minima      | Discontinue the approach |                       |

***ATR***

**BU / 75**

**AFM**

**PROCEDURES**


**SPECIAL OPERATIONS**

**CAT 2 APPROACH**

**PRO.SPO**

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| <br><br>BU / 75<br>AFM | PROCEDURES<br><br>SPECIAL OPERATIONS<br>CAT 2 APPROACH | PRO.SPO<br><br>Page n°77 |
|---|--|--------------------------|

## 21.3 PERFORMANCES

### 21.3.1 APPROACH CLIMB GRADIENT

#### 21.3.1.1 Normal Conditions

ec8fbd7e-6833-49bc-a239-9b9b7994ab87

0.1

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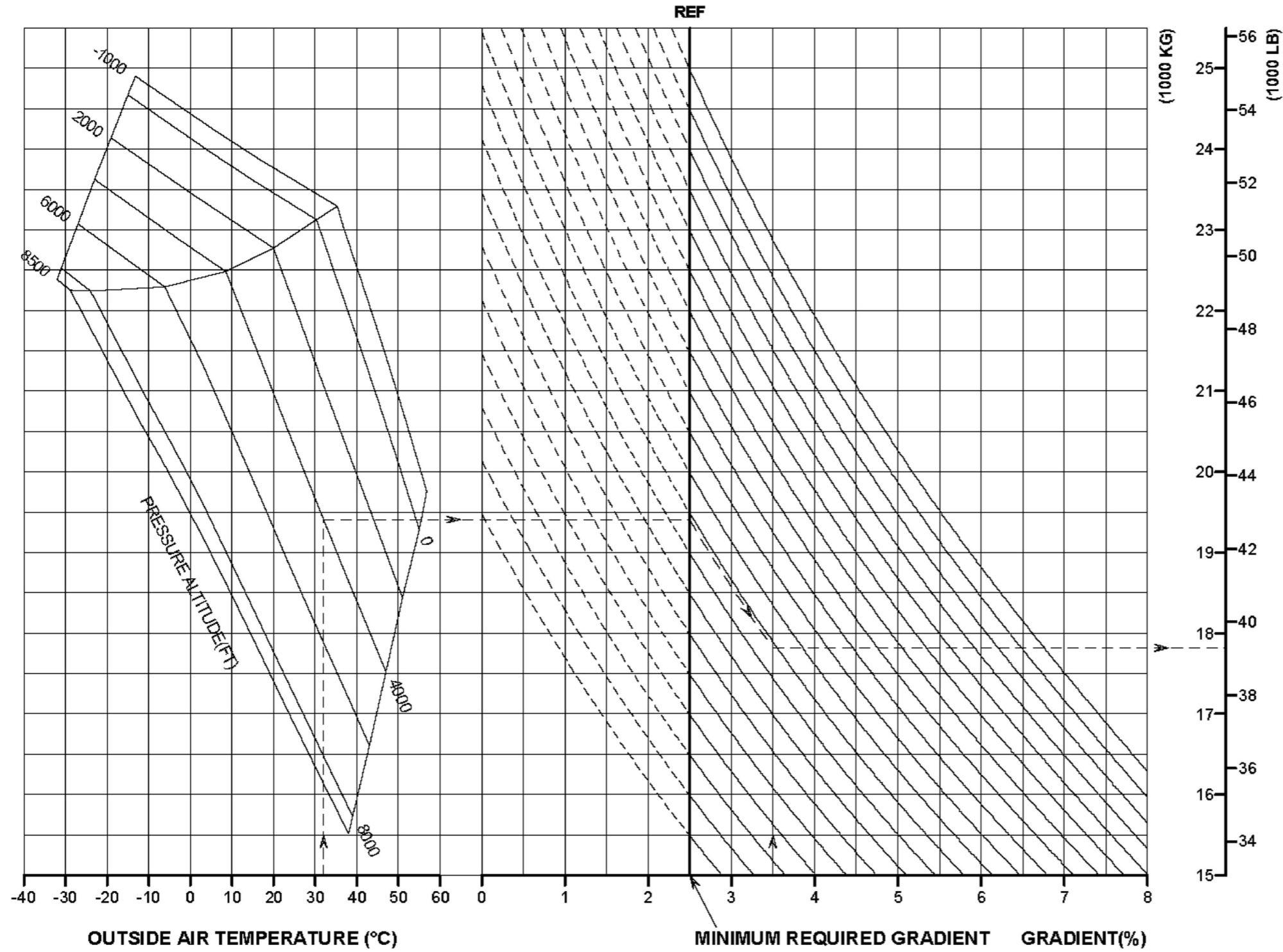
APPROVED

APPROACH CLIMB LIMITING WEIGHT (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE GO-AROUND POWER

AIR COND FLOW : NORM - ANTI/DE ICING : OFF - GEAR UP  $V=1.13 V_{SR}$

cont'd... >>>





### 21.3.1.2 Icing Conditions

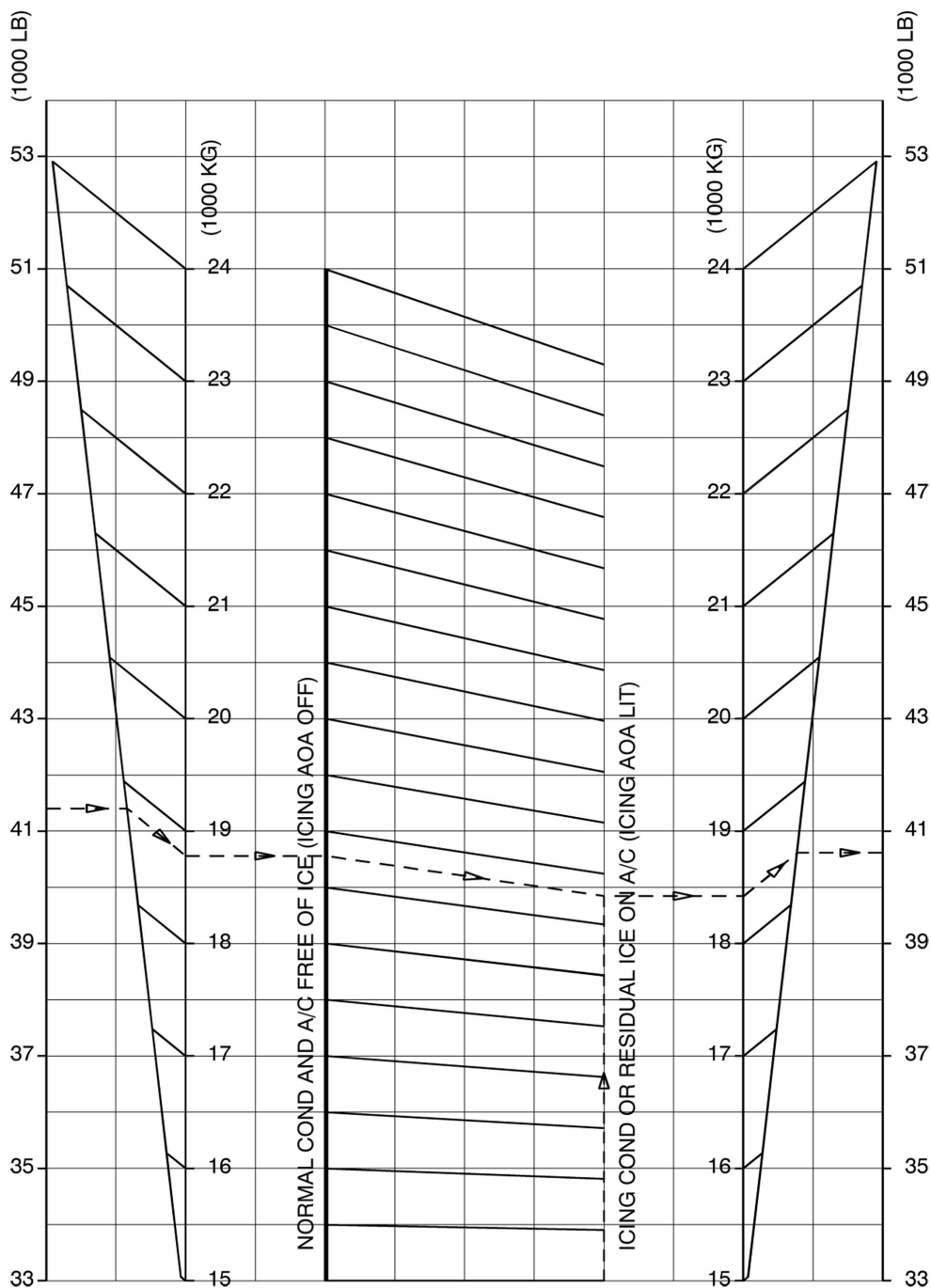
e2c262a2-2212-4033-8e37-889a380d4edb

0.1

0706-0775

APPROVED

#### APPROACH CLIMB LIMITING WEIGHT (FLAPS 15)



***ATR***

**BU / 75**

**AFM**

**PROCEDURES**

**SPECIAL OPERATIONS**

**CAT 2 APPROACH**

**PRO.SPO**

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| <b><i>ATR</i></b> | <b>AFM</b>              | PER.      |
| <b>BU / 75</b>    | <b>TOC</b>              |           |
| <b>AFM</b>        | <b>Table of Content</b> | Page n°01 |

## PERFORMANCE

### GENERAL PER.1

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2. AIRCRAFT CONFIGURATION..... [page 03](#)
3. AIRSPEED AND ALTITUDE CALIBRATION.....[page 04](#)

### ENGINE MANAGEMENT PER.2

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1. TORQUES TABLES..... [page 09](#)

### TAKEOFF PER.3

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2. TAKEOFF FLIGHT PATH IN CASE OF ENGINE FAILURE.....[page 16](#)
3. TOW DETERMINATION METHODOLOGY..... [page 18](#)
4. ALTITUDE SPEED-BANK ANGLE-TURN RADIUS..... [page 95](#)

### SINGLE ENGINE CRUISE PER.4

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2. EN ROUTE STRATEGY.....[page 99](#)

### LANDING PER.5

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1. PERFORMANCE DETERMINATION..... [page 103](#)
2. LANDING PERFORMANCE CHARTS.....[page 107](#)

***ATR***

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**AFM**

**AFM**


**TOC**

**Table of Content**

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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>GENERAL</b><br><br><b>INTRODUCTION</b> | <b>PER.1</b><br><br><br><br>Page n°03 |
|---|---|---------------------------------------|

# 1 INTRODUCTION

## 1.01 Introduction

|  |  |                 |
|--|--|-----------------|
| <small>26de97fb-3729-4ed9-9ca3-3d3c640fdb1</small> |  | <b>1.1</b>      |
|  |  | <b>ALL</b>      |
|  |  | <b>APPROVED</b> |

In compliance with Airworthiness regulations, an aircraft is cleared to take off from any airport if the weight permits it to achieve the takeoff, “en route” and landing performance included in this chapter.

The charts or tables approved by Airworthiness Authority must not be extrapolated.

Performance is related to  $V_{SR}$ .

Wind speed is measured at the height of 10 m .

All weight, altitude, temperature and speeds limits ([Refer to chapter LIMITATIONS](#)) must be respected for the use of the performance charts.

# 2 AIRCRAFT CONFIGURATION

## 2.01 Performance Configuration

|   |  |                 |
|---|--|-----------------|
| <small>22abb229-5f55-434c-bcef-620c58e727cf</small> |  | <b>0.1</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

The takeoff and landing performances have been established on a smooth, dry, hard surfaced runway.

The performances have been established in the following configuration.

Single engine operation is considered.

|               | FLAPS | AIR COND | ENG POWER            | REMARKS   |
|---------------|-------|----------|----------------------|---|
| TAKEOFF       | 15    | ON / OFF | TO / RTO             | ATPCS ON<br>Accelerate stop distance made using only wheel normal braking, antiskid ON, PL at GI. |
| FINAL TAKEOFF | 0     | OFF      | MCT                  |   |
| EN ROUTE      | 0     | OFF / ON | MCT                  |   |
| APPROACH      | 15    | OFF      | For go-around<br>RTO |   |
| LANDING       | 30    | OFF      |                      | Landing distances established with antiskid ON, PL at GI  |

**3 AIRSPEED AND ALTITUDE CALIBRATION**

**3.1 GROUND EFFECT SPEED CORRECTION**

**3.1.01 Ground Effect Speed Correction**

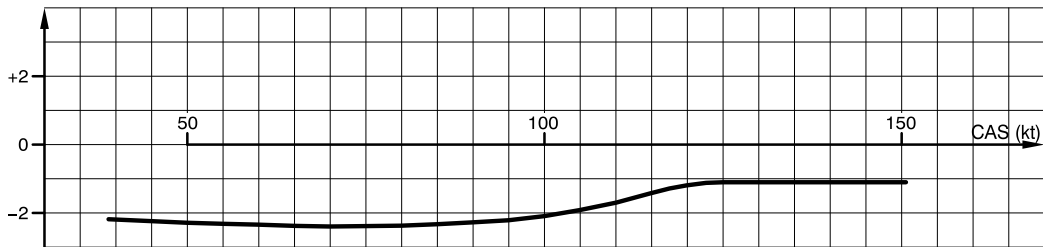
c86dfac7-26fb-472a-a1b5-b97f5a94da36

**3.1**

**ALL**

**APPROVED**

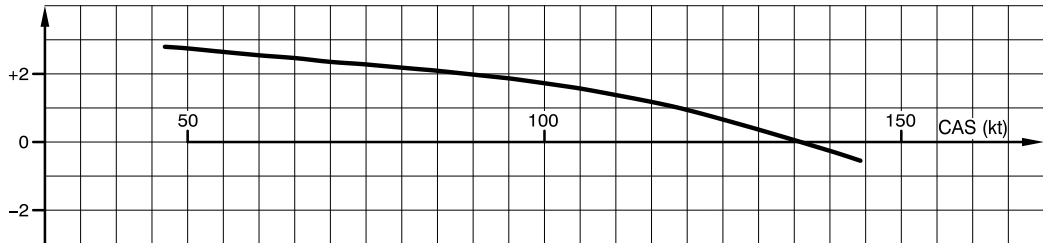
$\Delta V = IAS - CAS$  (kt)



ICN-7X-Y-000000-T-FB429-00034-A-03-N


**- Fig. 1 : ADC 1 and 2 Output Error -**

$\Delta V = IAS - CAS$  (kt)



ICN-7X-Y-000000-T-FB429-00034-B-03-N

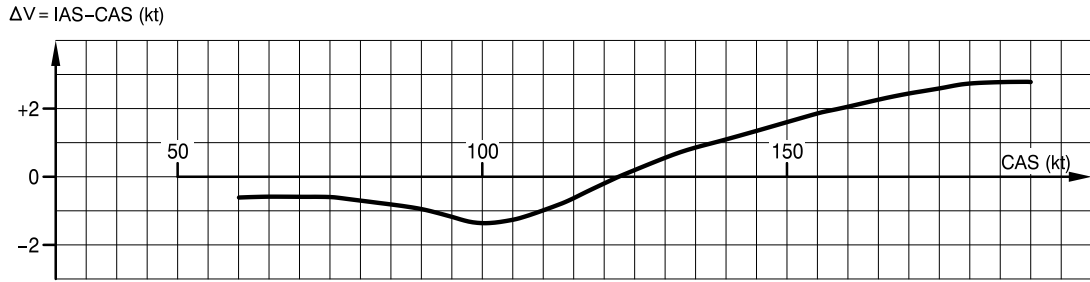
**- Fig. 2 : Standby Static Source Error -**

|   |  |                                   |
|---|--|-----------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>GENERAL</b><br><br><b>AIRSPEED AND ALTITUDE CALIBRATION</b> | <b>PER.1</b><br><br><br>Page n°05 |
|---|--|-----------------------------------|

## 3.2 TAKEOFF V2 - GO-AROUND

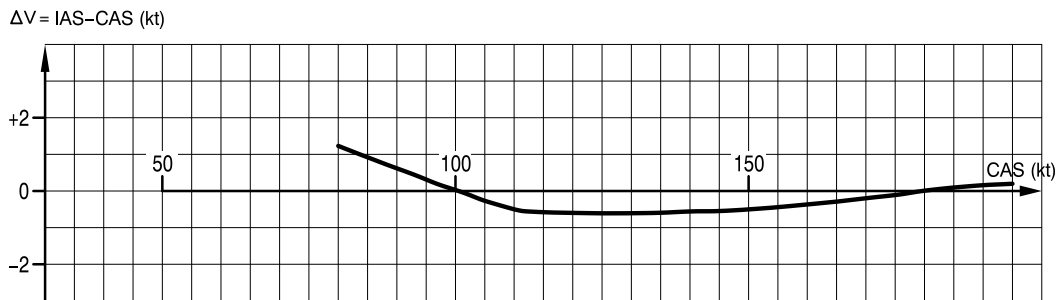
### 3.2.02 Speed Correction Flaps 15

|                                      |          |
|--------------------------------------|----------|
| 982341bb-5132-482c-a06c-f25205b65737 | 2.1      |
|                                      | ALL      |
|                                      | APPROVED |



ICN-7X-Y-000000-T-FB429-00030-A-04-N

- Fig. 1 : ADC 1 and 2 Output Error -



ICN-7X-Y-000000-T-FB429-00030-B-03-N

- Fig. 2 : Standby Static Source Error -

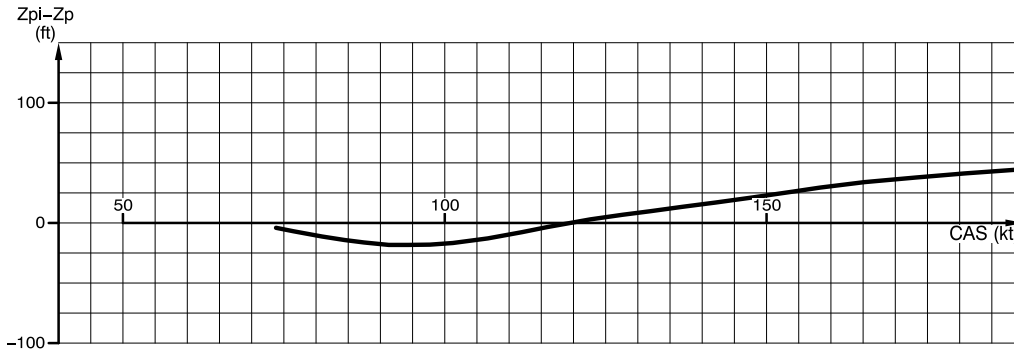
### 3.2.03 Altitude Correction Flaps 15

0febd34b-a7db-481c-ab7b-bef33c261d1e

2.1

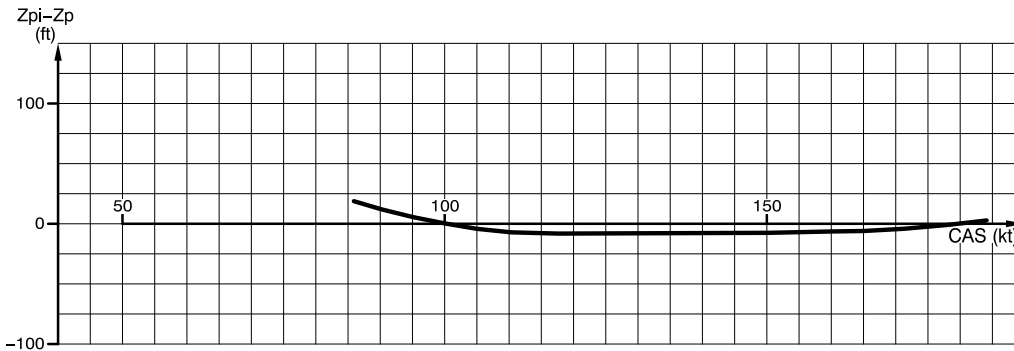
ALL

APPROVED



ICN-7X-Y-000000-T-FB429-00031-A-04-N

**- Fig. 1 : ADC 1 and 2 Output Error -**



ICN-7X-Y-000000-T-FB429-00031-B-04-N

**- Fig. 2 : Standby Static Source Error -**



### 3.3 CRUISE

#### 3.3.01 Cruise

|                                      |            |
|--------------------------------------|------------|
| 68938c64-f630-4b9a-857e-b0daaa713e6f | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

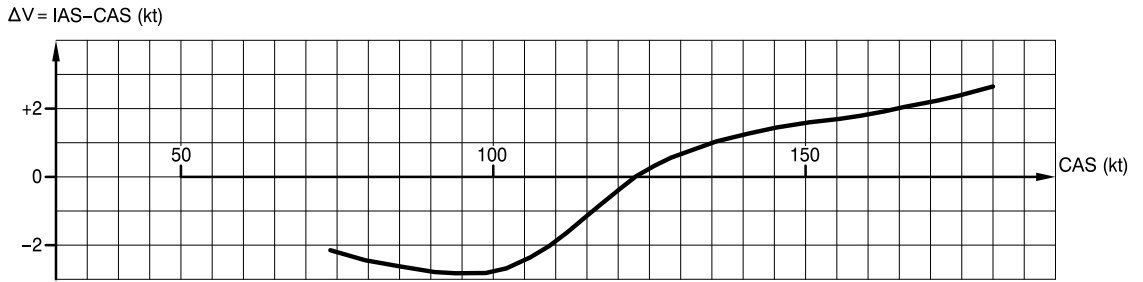
No correction to be applied on altitude.

Correction to be applied on speed:  $\Delta V = IAS - CAS = 2 \text{ kt}$ .

### 3.4 FINAL APPROACH AND LANDING

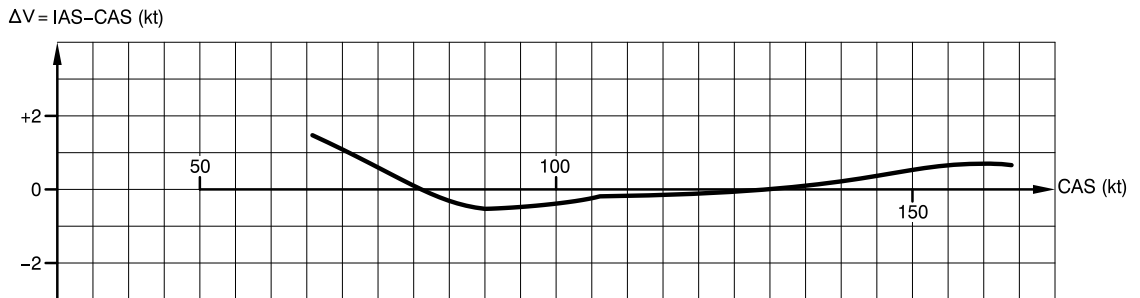
#### 3.4.01 Speed Correction Flaps 30

|                                      |            |
|--------------------------------------|------------|
| f07cb4e0-ac42-40bf-9a16-4052f2fba258 | <b>2.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |



ICN-7X-Y-000000-T-FB429-00037-A-04-N

- Fig. 1 : ADC 1 and 2 Output Error -



ICN-7X-Y-000000-T-FB429-00037-B-03-N

- Fig. 2 : Standby Static Source Error -

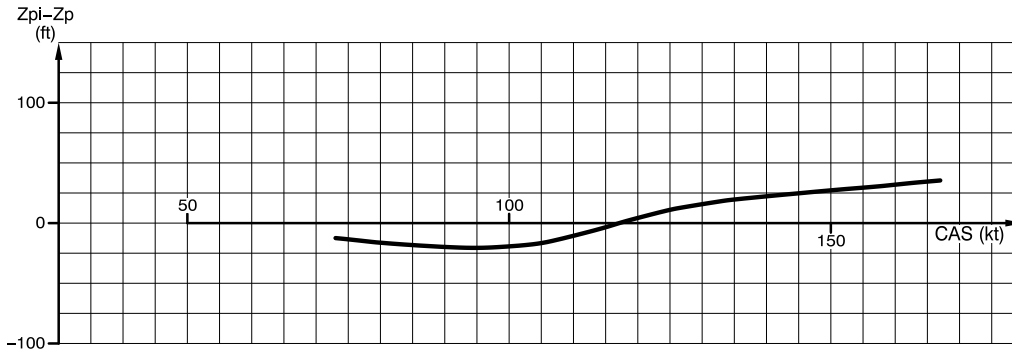
### 3.4.02 Altitude Correction Flaps 30

9d167722-0751-468c-9c61-d0c233bb4e36

2.2

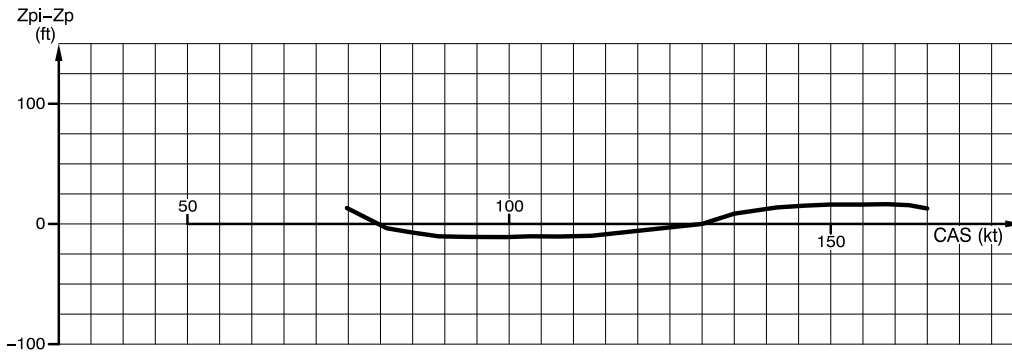
ALL

APPROVED




ICN-7X-Y-000000-T-FB429-00038-A-04-N

**- Fig. 1 : ADC 1 and 2 Output Error -**



ICN-7X-Y-000000-T-FB429-00038-B-04-N

**- Fig. 2 : Standby Static Source Error -**

|   |   |                                   |
|---|---|-----------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>ENGINE MANAGEMENT</b><br><br><b>TORQUES TABLES</b> | <b>PER.2</b><br><br><br>Page n°09 |
|---|---|-----------------------------------|

# 1      **TORQUES TABLES**

## 1.1      **Introduction**

|                                      |  |                                      |
|--------------------------------------|--|--------------------------------------|
| 2789eb4a-643b-49cb-8ab8-fd3e0da84dcb |  | <b>0.1</b><br>ALL<br><b>APPROVED</b> |
|--------------------------------------|--|--------------------------------------|

The following torque tables have a highlighted line.

The part above the line is the flat rated area: engine mechanical limit.

The part below the line is the area where the thermodynamical limit is reached first.



BU / 75  
AFM

**PERFORMANCE**  
**ENGINE MANAGEMENT**  
**TORQUES TABLES**

PER.2

Page n°10

## 2 Takeoff Torque

662c09a2-1db9-4819-a409-cd64bd1fd9ff

1.1  
ALL  
APPROVED

| PW127F / PW127M - BOOST OFF |                           |                         |      |       |       |       |       |       |       |       |       |       |
|-----------------------------|---------------------------|-------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SAT (°C)                    |                           | TAKE OFF TORQUE         |      |       |       |       |       |       |       |       |       |       |
| AIR<br>COND<br>OFF          | NORM<br>AIR<br>COND<br>ON | VC = 50 kt              |      |       |       |       |       |       |       |       |       |       |
|                             |                           | PROPELLER SPEED 100.0 % |      |       |       |       |       |       |       |       |       |       |
|                             |                           | PRESSURE ALTITUDE (FT)  |      |       |       |       |       |       |       |       |       |       |
|                             |                           | -1000.                  | 0.   | 1000. | 2000. | 3000. | 4000. | 5000. | 6000. | 7000. | 8000. | 8500. |
| -40.                        | -63.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  |
| -10.                        | -27.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 89,7  |
| -8.                         | -24.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 88,7  |
| -6.                         | -22.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 89,6  | 87,8  |
| -4.                         | -19.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 88,7  | 86,8  |
| -2.                         | -17.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 87,7  | 85,8  |
| 0.                          | -14.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 86,7  | 84,9  |
| 2.                          | -12.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 89,3  | 85,7  | 83,9  |
| 4.                          | -10.                      | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 88,3  | 84,7  | 82,9  |
| 6.                          | -7.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 87,2  | 83,6  | 81,9  |
| 8.                          | -5.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 89,9  | 86,2  | 82,6  | 80,9  |
| 10.                         | -2.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 88,8  | 85,2  | 81,7  | 79,9  |
| 12.                         | 0.                        | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 87,7  | 84,1  | 80,7  | 79,0  |
| 14.                         | 3.                        | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 90,0  | 86,5  | 83,0  | 79,5  | 77,9  |
| 16.                         | 5.                        | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 88,9  | 85,2  | 81,7  | 78,4  | 76,7  |
| 18.                         | 8.                        | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 90,0  | 87,5  | 83,9  | 80,5  | 77,1  | 75,5  |
| 20.                         | 10.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 89,6  | 86,0  | 82,5  | 79,1  | 75,8  | 74,2  |
| 22.                         | 13.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 88,1  | 84,5  | 81,0  | 77,7  | 74,5  | 72,9  |
| 24.                         | 15.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 90,0  | 86,5  | 83,0  | 79,6  | 76,3  | 73,2  | 71,7  |
| 26.                         | 18.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 88,5  | 85,0  | 81,5  | 78,2  | 75,0  | 71,9  | 70,4  |
| 28.                         | 20.                       | 90,0                    | 90,0 | 90,0  | 90,0  | 86,9  | 83,4  | 80,0  | 76,7  | 73,6  | 70,5  | 69,1  |
| 30.                         | 23.                       | 90,0                    | 90,0 | 90,0  | 88,8  | 85,2  | 81,8  | 78,5  | 75,3  | 72,2  | 69,2  | 67,7  |
| 32.                         | 25.                       | 90,0                    | 90,0 | 90,0  | 87,1  | 83,6  | 80,2  | 77,0  | 73,8  | 70,8  | 67,9  | 66,4  |
| 34.                         | 28.                       | 90,0                    | 90,0 | 88,9  | 85,4  | 81,9  | 78,6  | 75,4  | 72,4  | 69,4  | 66,5  | 65,1  |
| 36.                         | 30.                       | 90,0                    | 90,0 | 87,1  | 83,7  | 80,3  | 77,0  | 73,9  | 70,9  | 68,0  | 65,2  | 63,8  |
| 38.                         | 33.                       | 90,0                    | 88,9 | 85,4  | 82,0  | 78,7  | 75,5  | 72,4  | 69,5  | 66,6  | 63,8  | 62,5  |
| 40.                         | 36.                       | 90,0                    | 87,1 | 83,6  | 80,3  | 77,0  | 73,9  | 70,9  | 68,0  | 65,2  |       |       |
| 42.                         | 38.                       | 88,8                    | 85,3 | 81,9  | 78,6  | 75,4  | 72,4  | 69,4  | 66,6  |       |       |       |
| 44.                         | 41.                       | 86,9                    | 83,5 | 80,1  | 76,9  | 73,8  | 70,8  | 68,0  |       |       |       |       |
| 46.                         | 43.                       | 85,0                    | 81,6 | 78,4  | 75,2  | 72,2  | 69,3  |       |       |       |       |       |
| 48.                         | 46.                       | 83,1                    | 79,8 | 76,6  | 73,6  | 70,6  |       |       |       |       |       |       |
| 50.                         | 48.                       | 81,2                    | 78,0 | 74,9  | 71,9  |       |       |       |       |       |       |       |
| 52.                         | 51.                       | 79,3                    | 76,2 | 73,2  |       |       |       |       |       |       |       |       |
| 54.                         | 53.                       | 77,5                    | 74,4 |       |       |       |       |       |       |       |       |       |
| 55.                         | 54.                       | 76,5                    | 73,5 |       |       |       |       |       |       |       |       |       |

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**Note**

Applicable for  $0 \leq V_C \leq 60$  kt

### 3 Go-Around Torque

#### Go-Around Torque

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1.1

ALL

APPROVED

| PW127F / PW127M - BOOST OFF |                  |                  |                         |       |       |       |       |       |       |       |       |       |       |             |
|-----------------------------|------------------|------------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| TAT (°C)                    |                  |                  | GO AROUND TORQUE        |       |       |       |       |       |       |       |       |       |       | VC = 100 kt |
| AIR COND OFF                | NORM AIR COND ON | HIGH AIR COND ON | PROPELLER SPEED 100.0 % |       |       |       |       |       |       |       |       |       |       |             |
|                             |                  |                  | PRESSURE ALTITUDE (FT)  |       |       |       |       |       |       |       |       |       |       |             |
|                             |                  |                  | -1000.                  | 0.    | 1000. | 2000. | 3000. | 4000. | 5000. | 6000. | 7000. | 8000. | 8500. |             |
| -40.                        | -63.             | -71.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 |             |
| -10.                        | -27.             | -35.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 99,9  |             |
| -8.                         | -24.             | -32.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 98,8  |             |
| -6.                         | -22.             | -30.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 99,8  | 97,8  |             |
| -4.                         | -19.             | -27.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 98,7  | 96,7  |             |
| -2.                         | -17.             | -25.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 97,7  | 95,6  |             |
| 0.                          | -14.             | -22.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 96,5  | 94,5  |             |
| 2.                          | -12.             | -19.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 99,5  | 95,4  | 93,4  |             |
| 4.                          | -10.             | -17.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 98,3  | 94,3  | 92,3  |             |
| 6.                          | -7.              | -14.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 97,2  | 93,2  | 91,2  |             |
| 8.                          | -5.              | -12.             | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 96,0  | 92,1  | 90,2  |             |
| 10.                         | -2.              | -9.              | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 98,9  | 94,9  | 91,0  | 89,1  |             |
| 12.                         | 0.               | -7.              | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 97,7  | 93,7  | 89,9  | 88,0  |             |
| 14.                         | 3.               | -4.              | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 96,4  | 92,5  | 88,7  | 86,8  |             |
| 16.                         | 5.               | -1.              | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 99,0  | 95,0  | 91,1  | 87,4  | 85,5  |             |
| 18.                         | 8.               | 2.               | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 97,5  | 93,6  | 89,7  | 86,1  | 84,3  |             |
| 20.                         | 10.              | 4.               | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 99,9  | 95,9  | 92,0  | 88,2  | 84,6  | 82,8  |             |
| 22.                         | 13.              | 7.               | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 98,2  | 94,2  | 90,4  | 86,7  | 83,1  | 81,4  |             |
| 24.                         | 15.              | 10.              | 100,0                   | 100,0 | 100,0 | 100,0 | 100,0 | 96,5  | 92,6  | 88,8  | 85,2  | 81,7  | 80,0  |             |
| 26.                         | 18.              | 13.              | 100,0                   | 100,0 | 100,0 | 100,0 | 98,7  | 94,7  | 90,9  | 87,2  | 83,6  | 80,2  | 78,5  |             |
| 28.                         | 20.              | 16.              | 100,0                   | 100,0 | 100,0 | 100,0 | 96,9  | 93,0  | 89,2  | 85,6  | 82,1  | 78,7  | 77,1  |             |
| 30.                         | 23.              | 18.              | 100,0                   | 100,0 | 100,0 | 99,0  | 95,1  | 91,2  | 87,6  | 84,0  | 80,5  | 77,2  | 75,6  |             |
| 32.                         | 25.              | 21.              | 100,0                   | 100,0 | 100,0 | 97,1  | 93,2  | 89,5  | 85,9  | 82,4  | 79,0  | 75,7  | 74,2  |             |
| 34.                         | 28.              | 24.              | 100,0                   | 100,0 | 99,2  | 95,2  | 91,4  | 87,7  | 84,2  | 80,8  | 77,4  | 74,3  | 72,7  |             |
| 36.                         | 30.              | 27.              | 100,0                   | 100,0 | 97,2  | 93,3  | 89,6  | 86,0  | 82,5  | 79,1  | 75,9  | 72,8  | 71,3  |             |
| 38.                         | 33.              | 30.              | 100,0                   | 99,2  | 95,2  | 91,4  | 87,8  | 84,2  | 80,8  | 77,5  | 74,4  | 71,3  | 69,8  |             |
| 40.                         | 36.              | 32.              | 100,0                   | 97,1  | 93,3  | 89,6  | 86,0  | 82,5  | 79,2  | 75,9  | 72,8  | 69,8  | 68,4  |             |
| 42.                         | 38.              | 35.              | 99,0                    | 95,1  | 91,3  | 87,7  | 84,2  | 80,8  | 77,5  | 74,4  | 71,3  |       |       |             |
| 44.                         | 41.              | 38.              | 96,9                    | 93,1  | 89,4  | 85,8  | 82,4  | 79,1  | 75,9  | 72,8  |       |       |       |             |
| 46.                         | 43.              | 41.              | 94,8                    | 91,1  | 87,5  | 84,0  | 80,6  | 77,4  | 74,2  |       |       |       |       |             |
| 48.                         | 46.              | 43.              | 92,7                    | 89,1  | 85,5  | 82,1  | 78,8  | 75,7  |       |       |       |       |       |             |
| 50.                         | 48.              | 46.              | 90,6                    | 87,1  | 83,6  | 80,3  | 77,1  |       |       |       |       |       |       |             |
| 52.                         | 51.              | 49.              | 88,5                    | 85,0  | 81,7  | 78,4  |       |       |       |       |       |       |       |             |
| 54.                         | 53.              | 52.              | 86,5                    | 83,0  | 79,7  |       |       |       |       |       |       |       |       |             |
| 56.                         | 55.              | 54.              | 84,4                    | 81,0  |       |       |       |       |       |       |       |       |       |             |

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**Note**

Applicable for  $V_C \leq 125$  kt

Add 0.8 % for each 10 kt above 125 kt without exceed 100 % torque.

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**ENGINE MANAGEMENT**

**TORQUES TABLES**

**PER.2**

**Page n°12**

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#### 4 Maximum Continuous Torque

##### Maximum Continuous Torque

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1.1  
ALL  
APPROVED

| <b>PW127F / PW127M - BOOST OFF</b> |                           |                           |                           |       |       |       |       |        |        |        |        |        |        |        |        |        |             |
|------------------------------------|---------------------------|---------------------------|---------------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|
| TAT (°C)                           |                           |                           | MAXIMUM CONTINUOUS TORQUE |       |       |       |       |        |        |        |        |        |        |        |        |        | VC = 120 kt |
| AIR<br>COND<br>OFF                 | NORM<br>AIR<br>COND<br>ON | HIGH<br>AIR<br>COND<br>ON | PROPELLER SPEED 100.0 %   |       |       |       |       |        |        |        |        |        |        |        |        |        |             |
|                                    |                           |                           | PRESSURE ALTITUDE (FT)    |       |       |       |       |        |        |        |        |        |        |        |        |        |             |
|                                    |                           |                           | 0.                        | 2000. | 4000. | 6000. | 8000. | 10000. | 12000. | 14000. | 16000. | 18000. | 20000. | 22000. | 24000. | 25000. |             |
| -43.                               | -56.                      | -67.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 90,9   | 90,9   | 86,8   | 79,9   | 73,8   | 67,9   | 62,3   | 59,7        |
| -40.                               | -52.                      | -63.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 90,9   | 90,9   | 85,4   | 78,6   | 72,6   | 66,8   | 61,3   | 58,7        |
| -37.                               | -48.                      | -59.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 90,9   | 90,9   | 84,0   | 77,3   | 71,4   | 65,7   | 60,3   | 57,7        |
| -33.                               | -44.                      | -55.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 90,9   | 89,7   | 82,6   | 76,0   | 70,2   | 64,5   | 59,2   | 56,7        |
| -29.                               | -40.                      | -50.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 90,9   | 88,0   | 81,0   | 74,6   | 68,8   | 63,3   | 58,1   | 55,6        |
| -25.                               | -36.                      | -46.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 90,9   | 86,1   | 79,2   | 73,0   | 67,3   | 61,9   | 56,9   | 54,4        |
| -21.                               | -32.                      | -42.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 90,9   | 84,2   | 77,5   | 71,3   | 65,8   | 60,6   | 55,6   | 53,2        |
| -17.                               | -28.                      | -38.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 89,7   | 82,7   | 76,1   | 70,1   | 64,7   | 59,5   | 54,6   | 52,3        |
| -13.                               | -24.                      | -33.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 88,1   | 81,2   | 74,7   | 68,8   | 63,5   | 58,4   | 53,6   | 51,3        |
| -10.                               | -20.                      | -29.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 86,5   | 79,7   | 73,3   | 67,5   | 62,3   | 57,3   | 52,6   | 50,4        |
| -6.                                | -16.                      | -24.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,9   | 84,9   | 78,2   | 71,9   | 66,2   | 61,1   | 56,2   | 51,6   | 49,4        |
| -2.                                | -12.                      | -20.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 90,3   | 83,2   | 76,7   | 70,6   | 65,0   | 60,0   | 55,2   | 50,6   | 48,5        |
| 1.                                 | -8.                       | -16.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 88,7   | 81,8   | 75,3   | 69,3   | 63,8   | 58,9   | 54,2   | 49,7   | 47,6        |
| 4.                                 | -4.                       | -11.                      | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 86,9   | 80,1   | 73,8   | 67,9   | 62,5   | 57,7   | 53,1   | 48,7   | 46,7        |
| 8.                                 | 0.                        | -7.                       | 90,9                      | 90,9  | 90,9  | 90,9  | 90,9  | 90,9   | 84,5   | 77,9   | 71,8   | 66,1   | 60,8   | 56,2   | 51,7   | 47,4   | 45,4        |
| 11.                                | 4.                        | -2.                       | 90,9                      | 90,9  | 90,9  | 90,9  | 89,6  | 82,8   | 76,3   | 70,3   | 64,7   | 59,6   | 55,0   | 50,6   | 46,4   | 44,5   |             |
| 15.                                | 8.                        | 2.                        | 90,9                      | 90,9  | 90,9  | 90,9  | 87,9  | 81,2   | 74,8   | 69,0   | 63,4   | 58,4   | 53,9   | 49,6   | 45,5   | 43,6   |             |
| 18.                                | 12.                       | 7.                        | 90,9                      | 90,9  | 90,9  | 90,9  | 86,2  | 79,5   | 73,4   | 67,6   | 62,2   | 57,3   | 52,8   | 48,6   | 44,6   |        |             |
| 22.                                | 16.                       | 12.                       | 90,9                      | 90,9  | 90,9  | 90,9  | 84,4  | 77,9   | 71,9   | 66,2   | 60,9   | 56,1   | 51,8   |        |        |        |             |
| 25.                                | 20.                       | 16.                       | 90,9                      | 90,9  | 90,9  | 88,2  | 81,6  | 75,3   | 69,5   | 64,0   | 58,9   | 54,2   |        |        |        |        |             |
| 29.                                | 24.                       | 21.                       | 90,9                      | 90,9  | 90,9  | 84,9  | 78,6  | 72,5   | 66,9   | 61,6   | 56,7   |        |        |        |        |        |             |
| 33.                                | 28.                       | 25.                       | 90,9                      | 90,9  | 88,0  | 81,6  | 75,5  | 69,7   | 64,3   | 59,3   |        |        |        |        |        |        |             |
| 37.                                | 32.                       | 29.                       | 90,9                      | 90,9  | 84,7  | 78,6  | 72,7  | 67,1   | 61,9   |        |        |        |        |        |        |        |             |
| 41.                                | 36.                       | 33.                       | 90,9                      | 88,5  | 82,2  | 76,3  | 70,6  | 65,1   |        |        |        |        |        |        |        |        |             |
| 44.                                | 40.                       | 38.                       | 90,9                      | 85,9  | 79,7  | 74,0  | 68,4  |        |        |        |        |        |        |        |        |        |             |
| 48.                                | 44.                       | 42.                       | 89,5                      | 83,2  | 77,3  | 71,7  |       |        |        |        |        |        |        |        |        |        |             |
| 52.                                | 48.                       | 46.                       | 86,6                      | 80,5  | 74,8  |       |       |        |        |        |        |        |        |        |        |        |             |
| 56.                                | 52.                       | 50.                       | 83,7                      | 77,8  |       |       |       |        |        |        |        |        |        |        |        |        |             |
| 60.                                | 56.                       | 54.                       | 82,1                      |       |       |       |       |        |        |        |        |        |        |        |        |        |             |

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**Note**


Applicable for  $V_C \leq 125$  kt

Add 0.8 % for each 10 kt above 125 kt without exceed 90.9 % torque.

|                   |                          |           |
|-------------------|--------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>       | PER.2     |
| <b>BU / 75</b>    | <b>ENGINE MANAGEMENT</b> |           |
| <b>AFM</b>        | <b>TORQUES TABLES</b>    | Page n°14 |

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|---|--|---------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>TAKEOFF</b><br><br><b>DEFINITIONS</b> | <b>PER.3</b><br><br><br><br>Page n°15 |
|---|--|---------------------------------------|

# 1 DEFINITIONS

## 1.01 Distances

|                                      |          |
|--------------------------------------|----------|
| dc3331ab-28c5-49c7-8c21-1edaa9ec362f | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

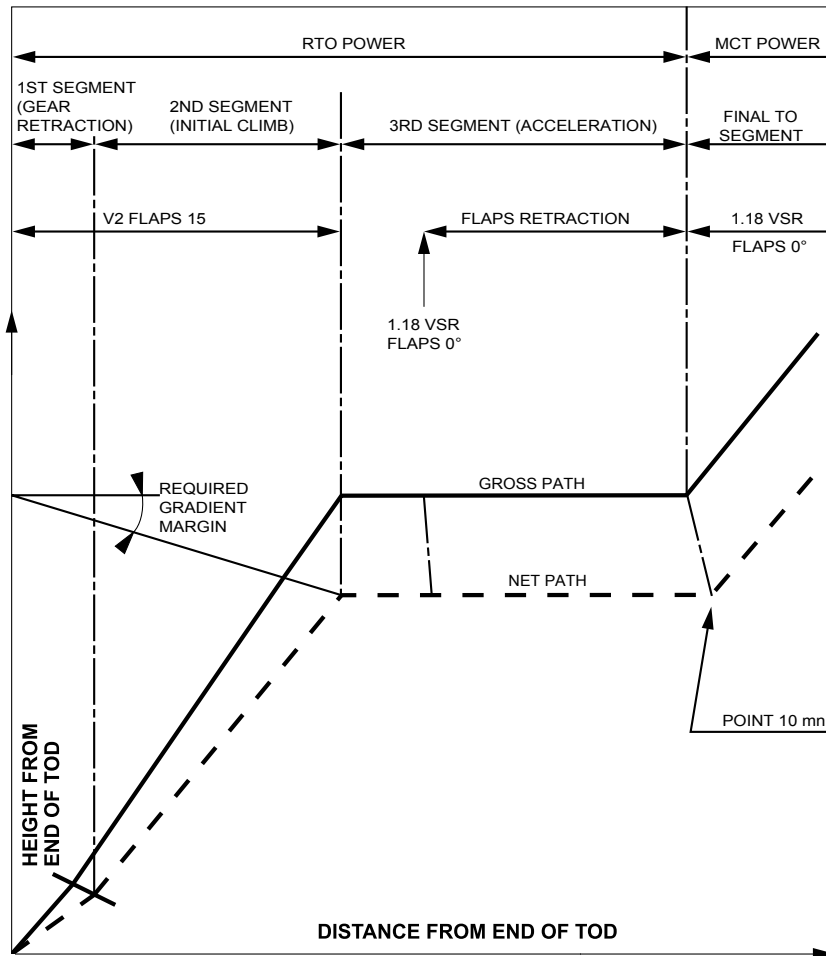
|   |  |
|---|--|
| <b>AVAILABLE RUNWAY LENGTH</b>            | Length of the paved runway surface, able to accept aircraft weight in all normal operating conditions.   |
| <b>STOPWAY</b>                            | Extension of runway, sometimes used for taxiing but adequate for deceleration of the aircraft in case of aborted takeoff.  |
| <b>CLEARWAY</b>                           | Clear area at the end of the runway which can be taken into account for takeoff distance calculation.  |
| <b>AVAILABLE ACCELERATION STOP LENGTH</b> | Sum of the available runway length and the stopway (if any).   |
| <b>TAKEOFF DISTANCE (TOD)</b>             | Distance between brakes release and 35 ft height. It has to be equal to or less than the sum of available runway length and authorized clearway (if any).  |
| <b>TAKEOFF RUN (TOR)</b>                  | Distance between brakes release point and half of the segment between $V_{LOF}$ and 35 ft height. It has to be equal to or less than the available runway length.<br><i>Note: Wind scales are not uniform on corrections curves associated to takeoff distances.</i> |

**2 TAKEOFF FLIGHT PATH IN CASE OF ENGINE FAILURE**

**2.1 NORMAL CONDITIONS**

**2.1.1 Flaps 15**


cde1366f-083e-4fc5-a318-f5515a15130b 2.1  
ALL  
APPROVED



ICN-7X-Y-000000-T-FB429-00239-B-04-N

**Note**

The takeoff flight path begins 35 ft above the takeoff surface at the end of the takeoff distance.

|   |  |                                       |
|---|--|---------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>TAKEOFF</b><br><b>TAKEOFF FLIGHT PATH IN CASE OF ENGINE FAILURE</b> | <b>PER.3</b><br><br><br><br>Page n°17 |
|---|--|---------------------------------------|

## 2.2 ICING CONDITIONS

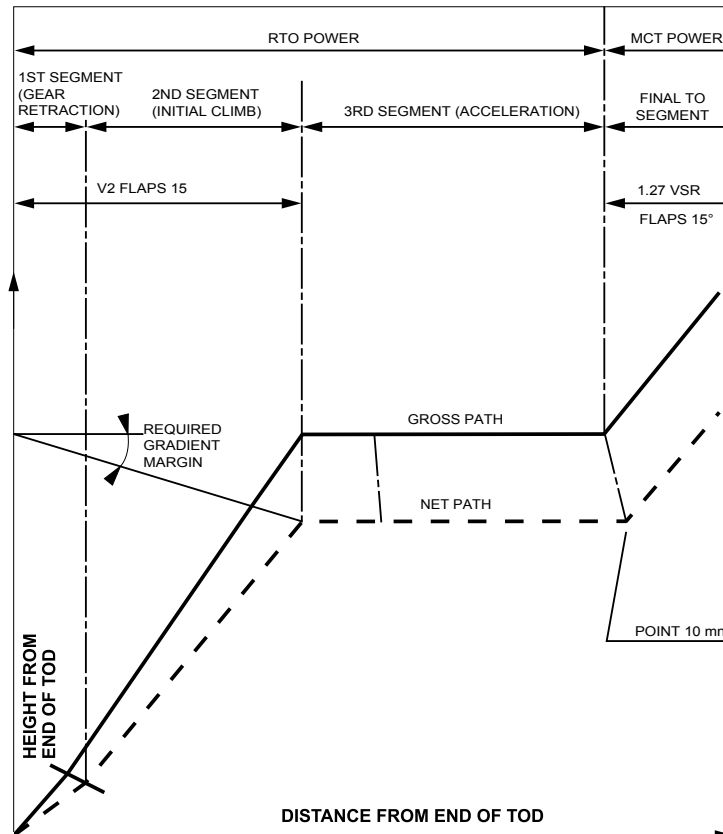
### 2.2.1 Flaps 15

b2e15f5a-0d5f-4383-915c-4c9cbc96ae57

2.1

ALL


APPROVED



ICN-7X-Y-000000-T-FB429-00240-C-02-N

#### Note

*The takeoff flight path begins 35 ft above the takeoff surface at the end of the takeoff distance.*

|   |  |                                       |
|---|--|---------------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>TAKEOFF</b><br><br><b>TOW DETERMINATION METHODOLOGY</b> | <b>PER.3</b><br><br><br><br>Page n°18 |
|---|--|---------------------------------------|

### 3 TOW DETERMINATION METHODOLOGY

#### 3.1 TOW DETERMINATION

##### 3.1.1 Performance Determination

|                                      |          |
|--------------------------------------|----------|
| 4c494ad5-8a58-4d75-9aaa-a6bc1133fa60 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

Maximum takeoff weight is subordinated to the following conditions:

- At takeoff:
  - o Maximum design weight
  - o First, second and final T.O segments limitations
  - o Runway limitation
  - o Tire speed limitation
  - o Brake energy limitation
  - o Obstacle clearance
- Single engine cruise:
  - o Obstacle clearance
- At landing:
  - o Approach climb limitation
  - o Runway limitation.

The following conditions are never limiting:

- First segment climb gradient
- Tire speed
- $V_{MU}$

The following table defines the meaning of the distances and length taken into account for takeoff.

Performance is related to  $T \geq \text{ISA} - 30 \text{ }^\circ\text{C}$ .

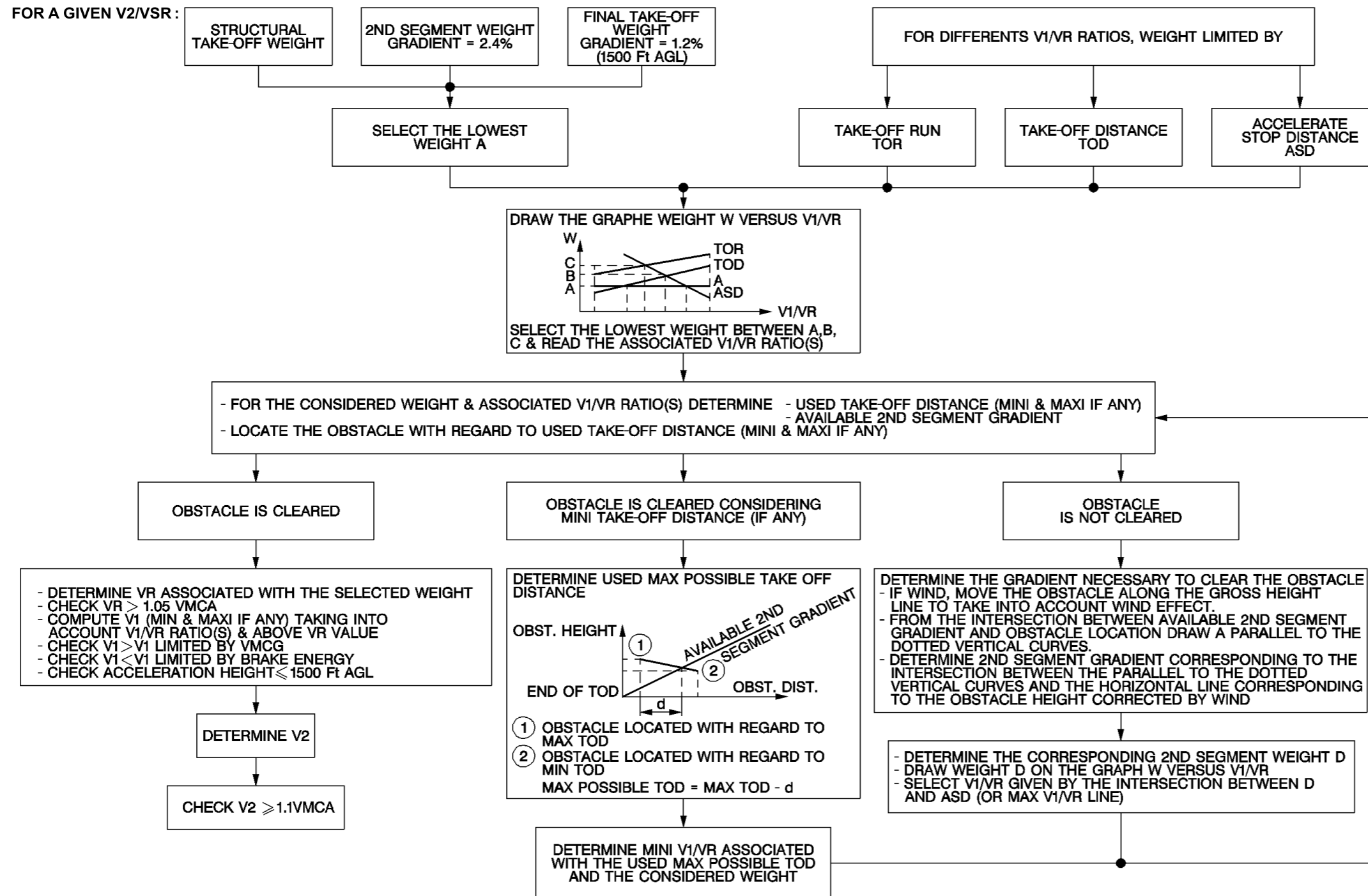
If  $T < \text{ISA} - 30 \text{ }^\circ\text{C}$ , calculate as follows:  $T = \text{ISA} - 30 \text{ }^\circ\text{C}$ .

|                                       |     | RUNWAY WITH THE FOLLOWING CHARACTERISTICS |                                  |                                  |                               |
|---------------------------------------|-----|---|----------------------------------|----------------------------------|-------------------------------|
|                                       |     | Without clearway<br>Without stopway       | Without clearway<br>With stopway | With clearway<br>Without stopway | With clearway<br>With stopway |
| Length to be used to enter the manual | TOR |   |                                  | Runway length                    | Runway length                 |
|                                       | TOD | Runway length                             | Runway length                    | Runway length + Clearway         | Runway length + Clearway      |
|                                       | ASD | Runway length                             | Runway length + Stopway          | Runway length                    | Runway length + Stopway       |

### 3.1.2 Determination of MTOW for a Given Runway

ac2300e1-8e44-4e36-a7d9-989a7cb8ce9e

1.2  
ALL  
APPROVED



|                                  |  |                        |
|----------------------------------|--|------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>TAKEOFF<br>TOW DETERMINATION METHODOLOGY | PER.3<br><br>Page n°20 |
|----------------------------------|--|------------------------|

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### 3.2 TAKEOFF PERFORMANCE CHARTS

#### 3.2.1 SECOND SEGMENT MAXIMUM WEIGHT AT BRAKE RELEASE

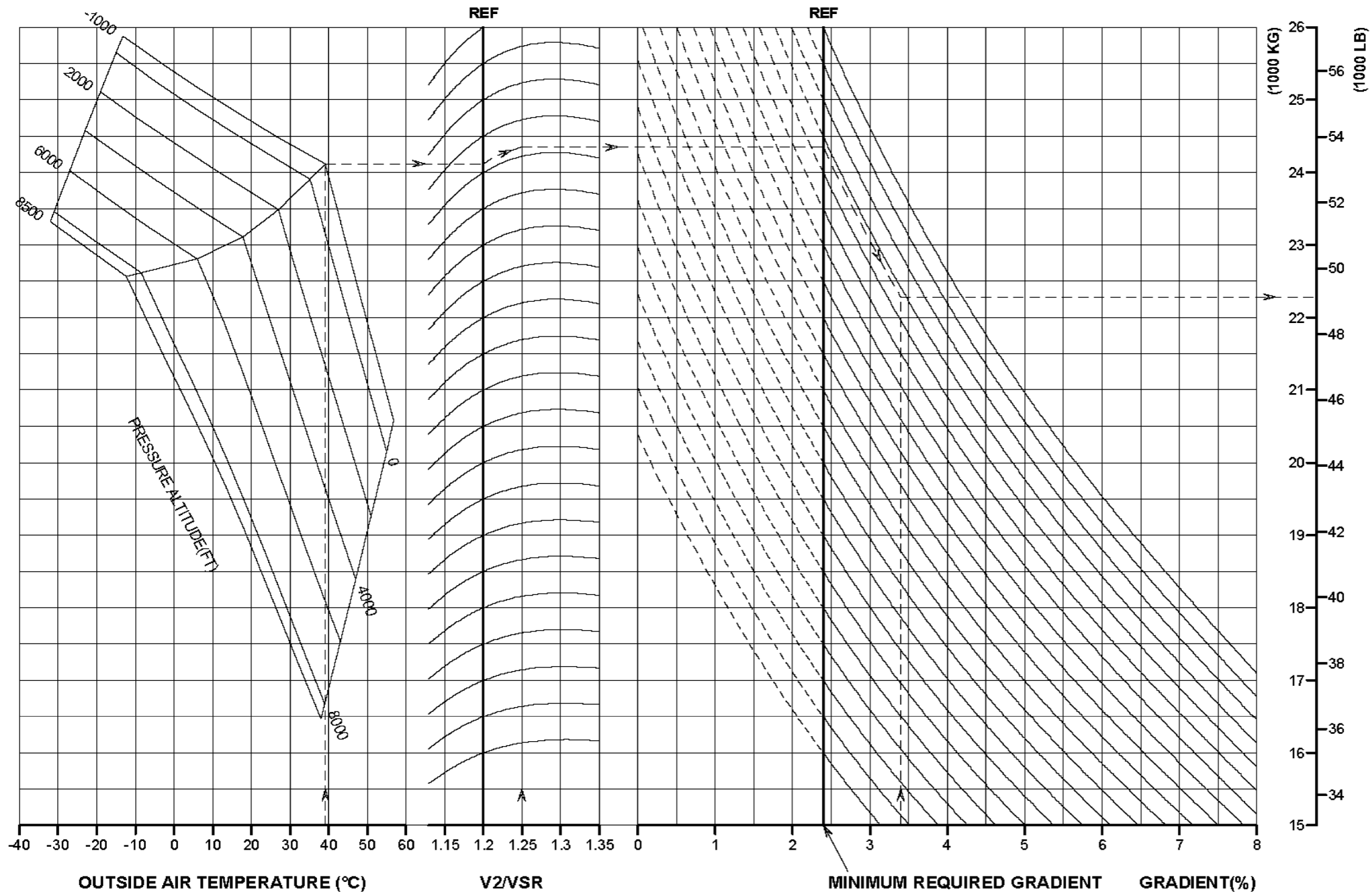
##### 3.2.1.1 NORMAL CONDITIONS

1 Flaps 15

Flaps 15

2fa2add4-4fe4-4f18-8704-954c5ad11ad6

0.1  
ALL  
APPROVED



|                                  |  |                        |
|----------------------------------|--|------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>TAKEOFF<br>TOW DETERMINATION METHODOLOGY | PER.3<br><br>Page n°22 |
|----------------------------------|--|------------------------|

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### 3.2.1.2 ICING CONDITIONS

#### 3.2.1.2.1 Flaps 15

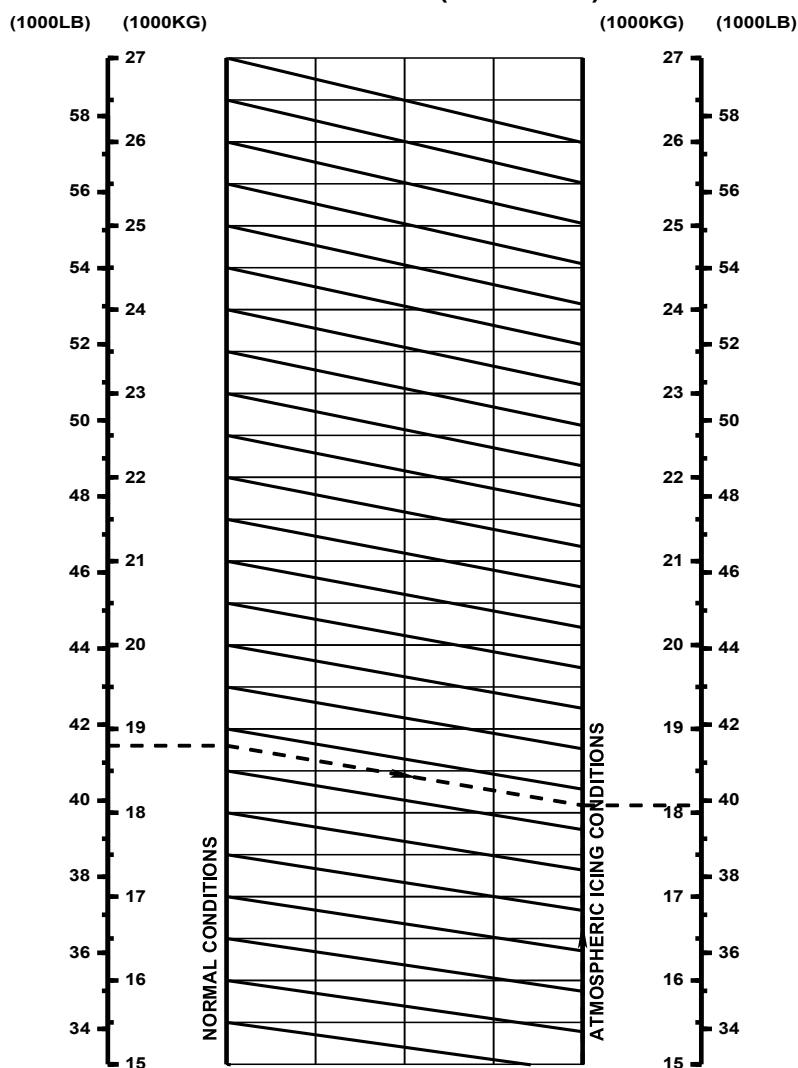
a7c2482f-c06f-43f2-83d7-471b581cbc02

1.2

ALL

APPROVED

**TAKE OFF**  
**EFFECT ON SECOND SEGMENT WEIGHT**  
**V<sub>2</sub> / V<sub>SR</sub> = 1.22 (FLAPS 15)**



ICN-7X-Y-000000-T-FB429-00246-C-03-N

**Note**

*Performance decrement applies to the maximum second segment weight computed in normal conditions with  $V_2 = 1.22 V_{SR}$  (FLAPS 15).*

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

Page n°24

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### 3.2.2 FINAL TAKEOFF EQUIVALENT WEIGHT AT BRAKES RELEASE

#### 1 Normal Conditions

#### Flaps 0

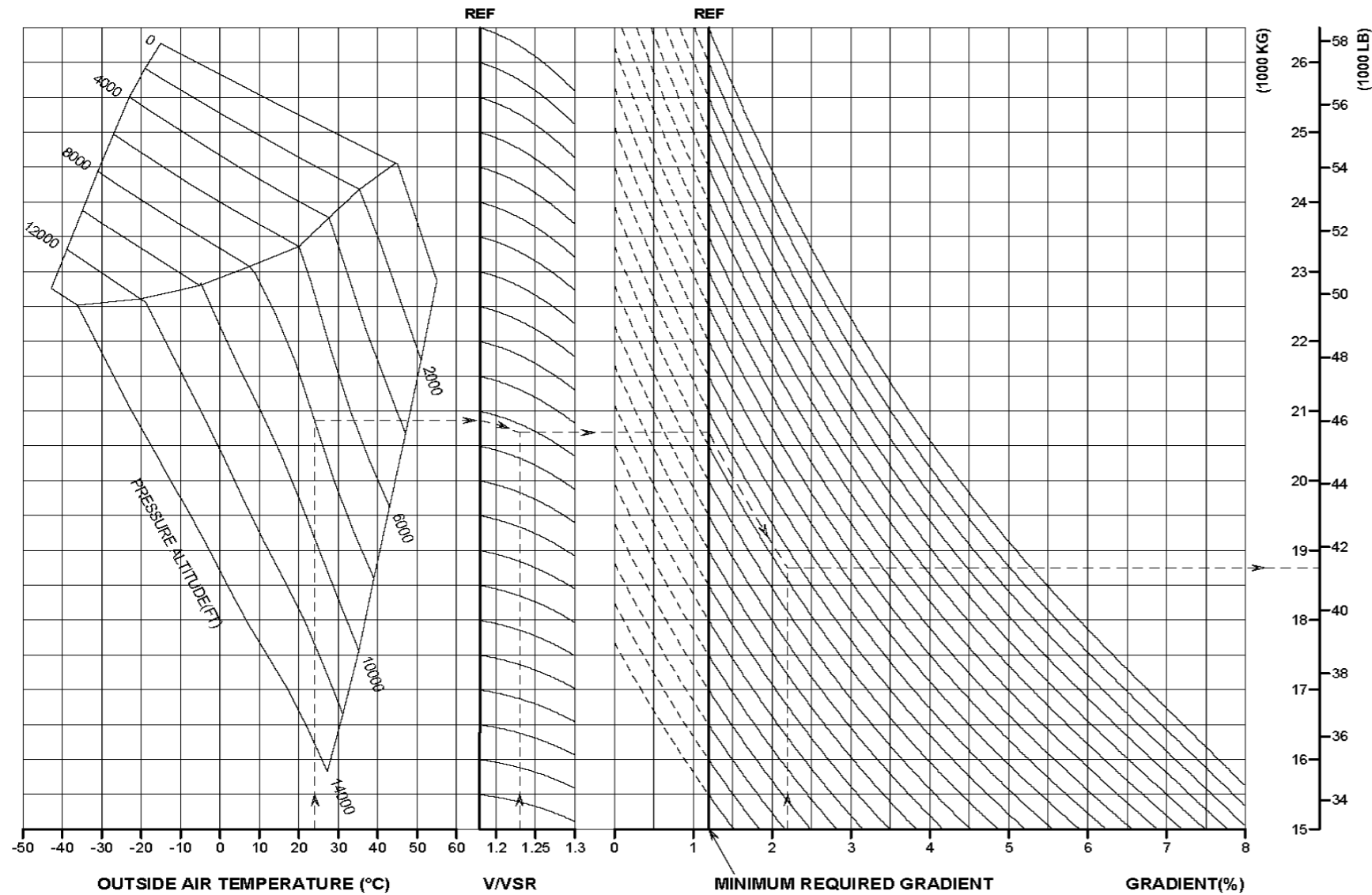
dc5b840a-b20c-458d-867e-e85788874b8a

1.2  
ALL  
APPROVED

FINAL TAKEOFF (FLAPS 0)

ONE ENGINE MCT – ONE PROPELLER FEATHERED

AIR CONDITIONING OFF – ANTI/DEICING OFF – GEAR UP



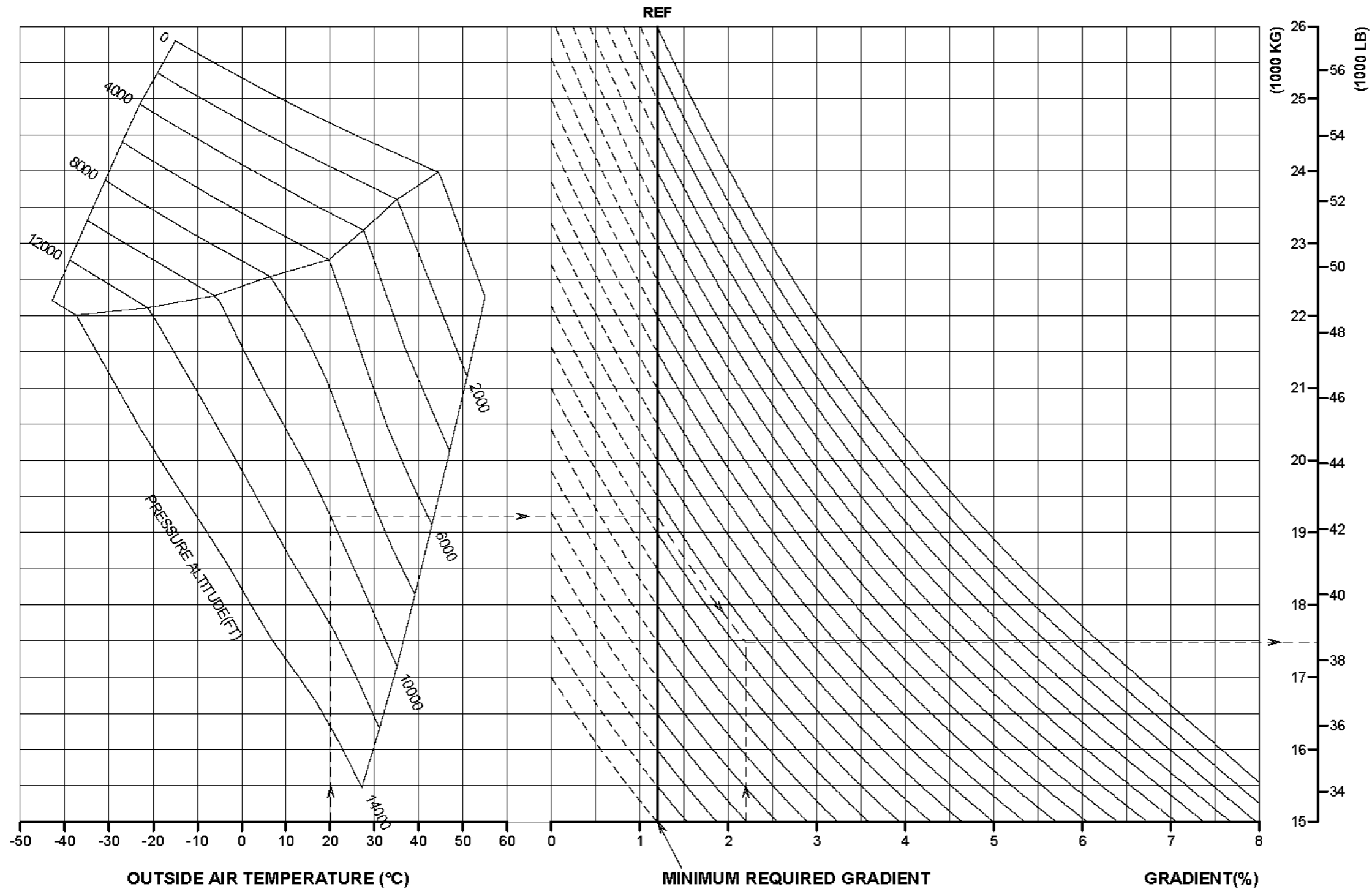
|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°26 |

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## 2 Icing Conditions Flaps 15

223a444a-dc6b-47bd-bff2-2e0968312288

0.1  
ALL  
APPROVED



|                                  |  |                        |
|----------------------------------|--|------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>TAKEOFF<br>TOW DETERMINATION METHODOLOGY | PER.3<br><br>Page n°28 |
|----------------------------------|--|------------------------|

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### 3.2.3 TAKEOFF RUN

#### 3.2.3.1 NORMAL CONDITIONS

##### 1 Dry Runway - Flaps 15

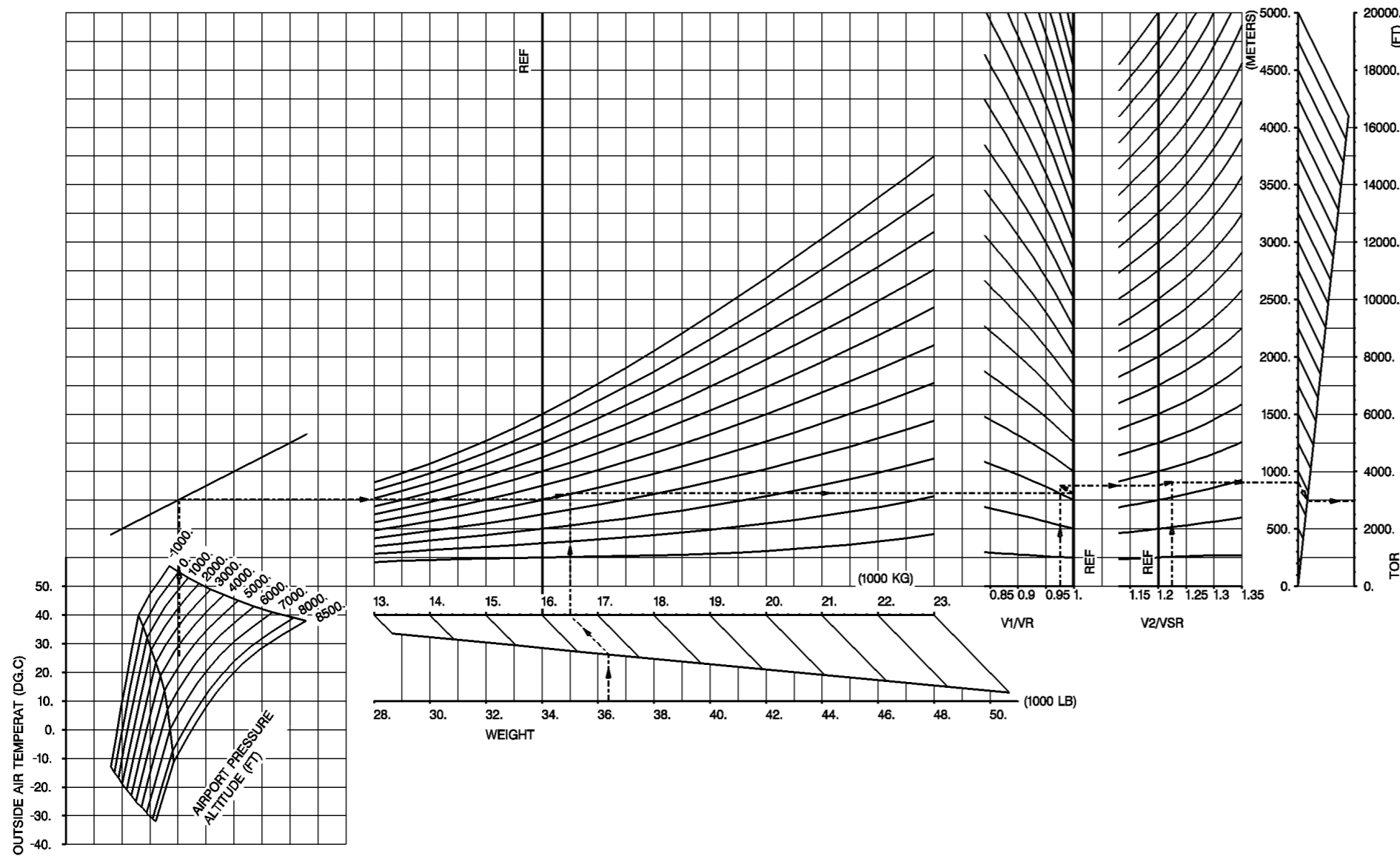
##### Flaps 15

5c607728-bb75-4955-b429-b1f03dd52523

1.1  
ALL  
APPROVED

#### TAKEOFF RUN (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT RTO POWER AFTER CRITICAL ENGINE FAILURE -  
AIR CONDITIONING OFF - ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°30 |

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### 3 Wet Runway - Flaps 15 Takeoff Run (Flaps 15)

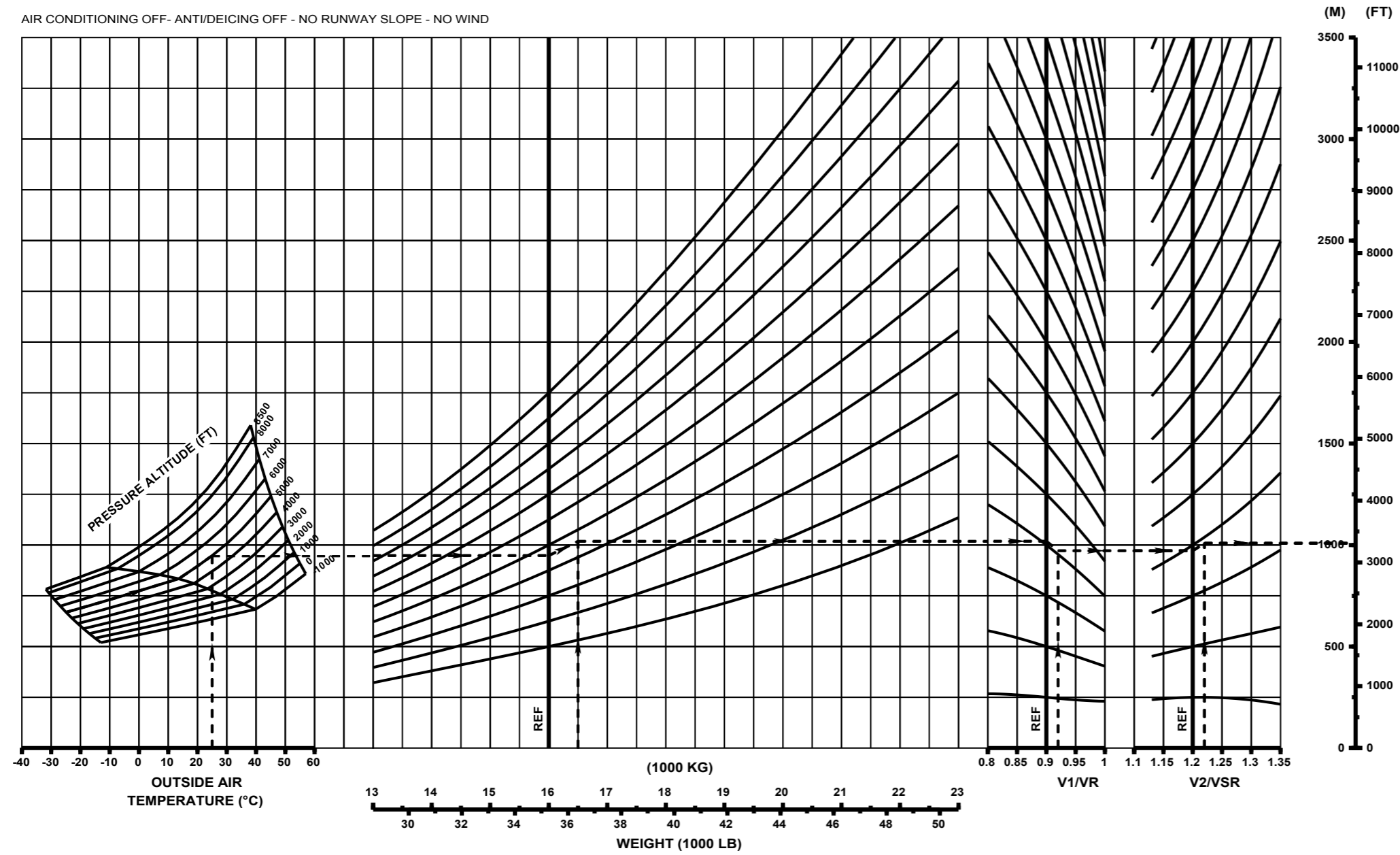
feef8419-1582-4e5e-ad66-a4eb57d81b08

1.1  
ALL  
APPROVED

#### TAKEOFF RUN (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O./R.T.O POWER -

AIR CONDITIONING OFF- ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



ICN-7X-Y-000000-T-FB429-00946-C-02-N

**Note**

Information for operation on wet runways has to be considered as special operations (Advisory Material).

|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°32 |

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### 3.2.3.2 ICING CONDITIONS

#### 3.2.3.2.1 Flaps 15

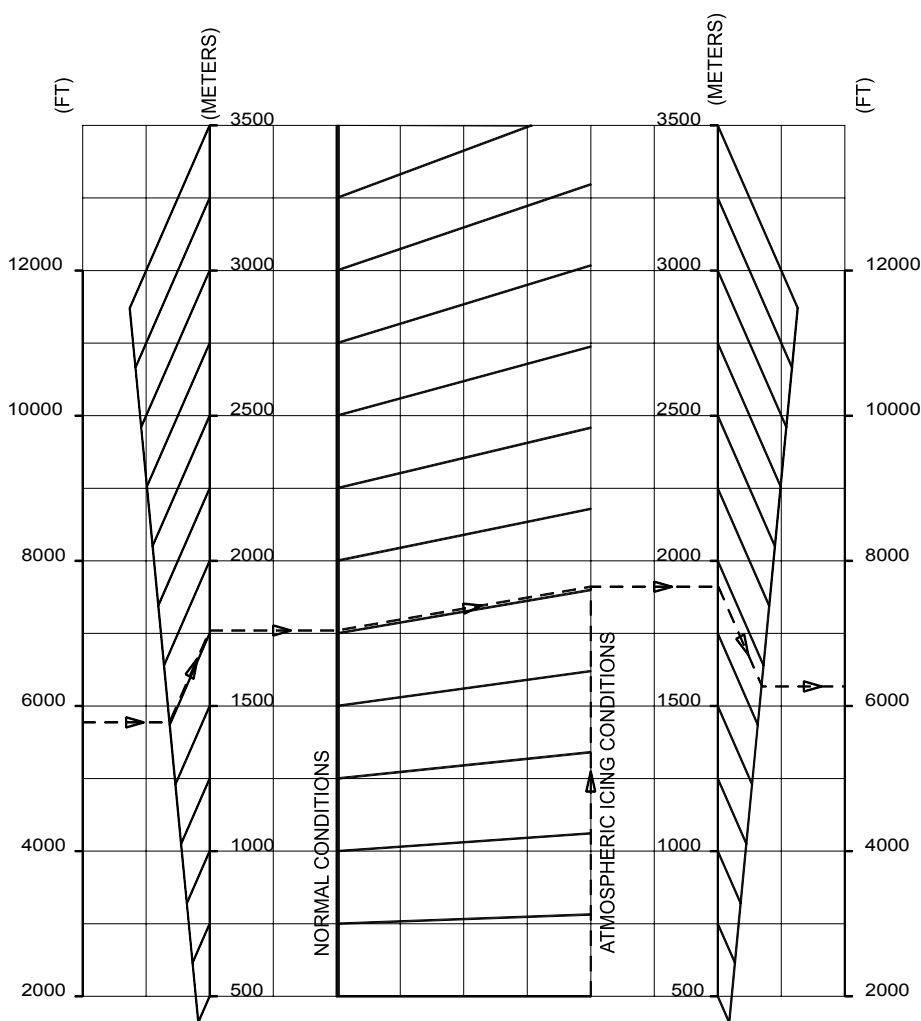
abb11d63-b5f8-4866-9a37-413af5465de6

0.9

ALL

APPROVED

**TAKE OFF  
EFFECT ON TAKE OFF RUN  
V<sub>2</sub> / V<sub>SR</sub> = 1.22 (FLAPS 15)**



ICN-7X-Y-000000-T-FB429-00458-C-02-N

**Note**

*Performance decrement applies to takeoff run length computed in normal conditions with  $V_2 = 1.22 V_{SR}$  (Flaps 15).*

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

Page n°34

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### 3.2.4 REQUIRED TAKEOFF RUN - All Engines Operating

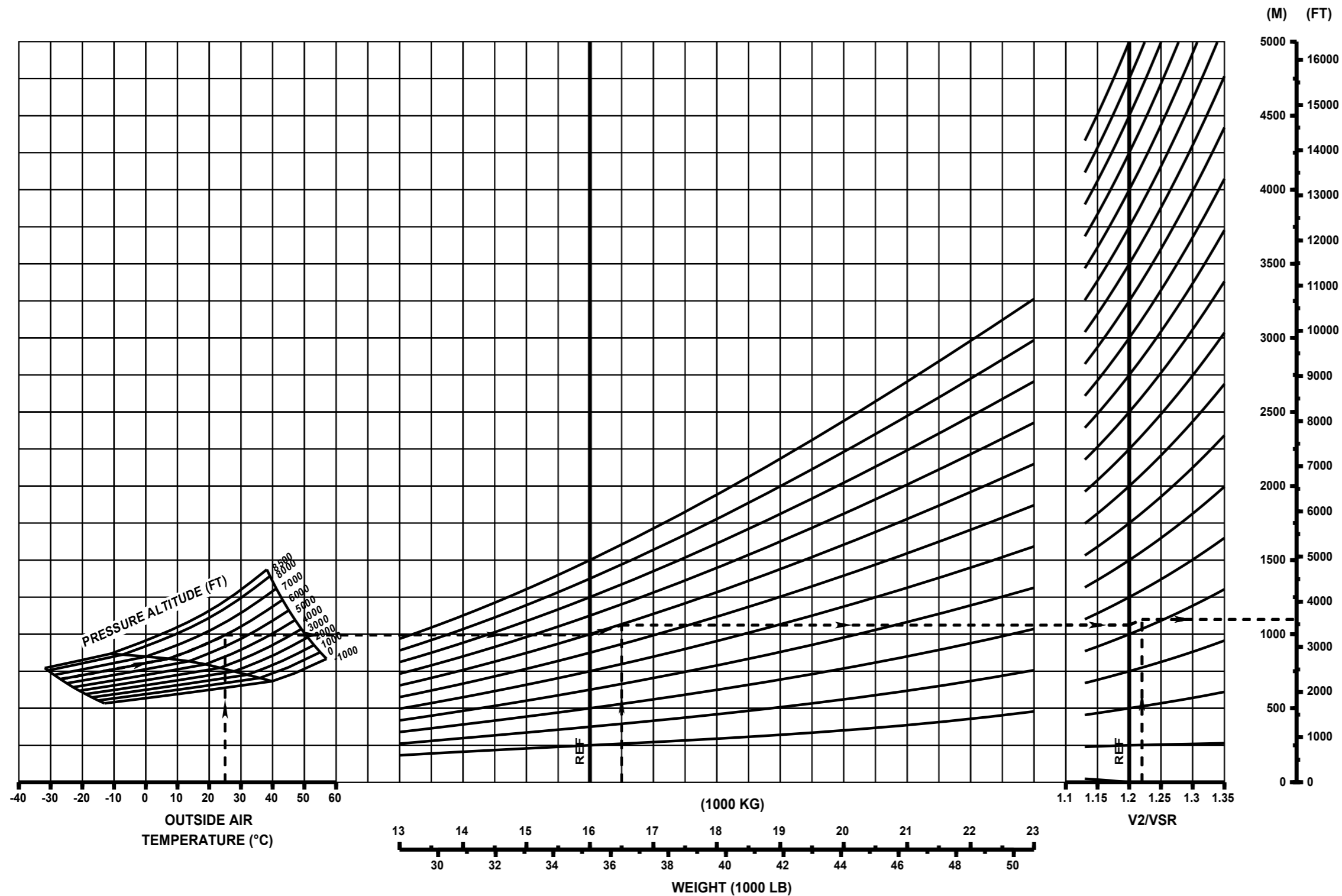
#### 3.2.4.1 NORMAL CONDITIONS

##### 1 Flaps 15

##### Flaps 15

64b97c23-c7f9-47ae-a905-88e37f031f09

0.1  
ALL  
APPROVED



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°36 |

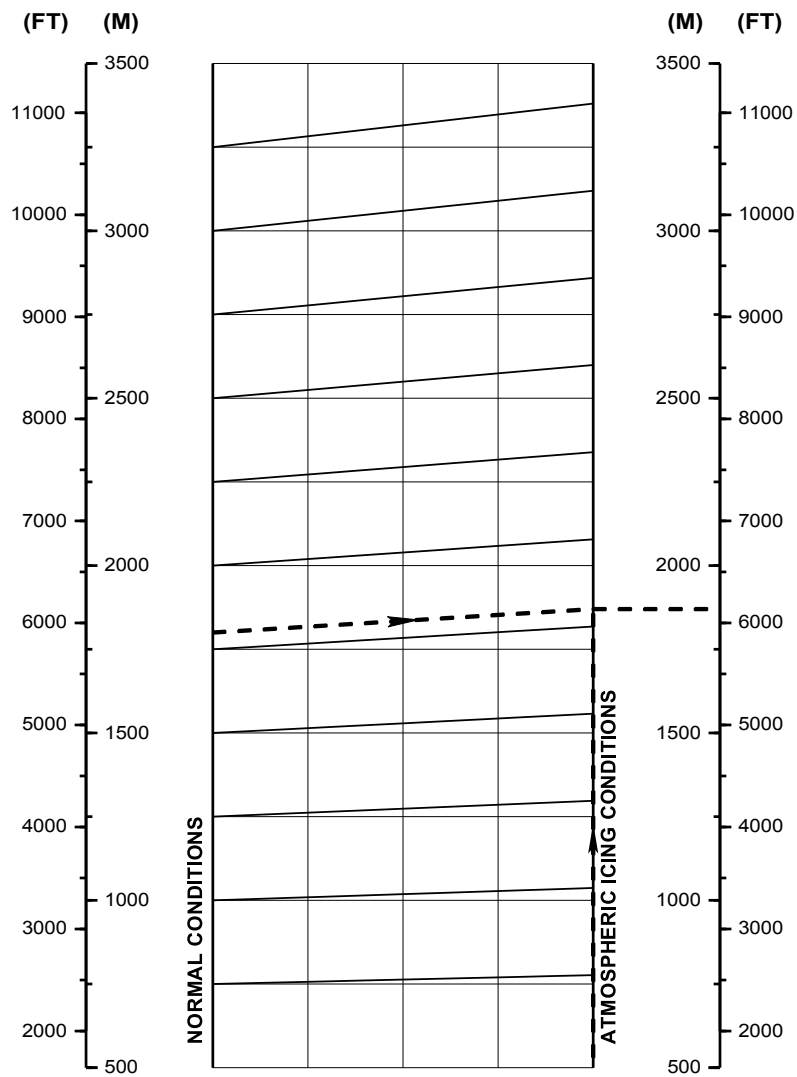
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### 3.2.4.2 ICING CONDITIONS

#### 3.2.4.2.1 Flaps 15

b1cb826e-6473-4f47-8844-26cb5bb11ce2 0.4  
ALL  
APPROVED

**ATMOSPHERIC ICING CONDITIONS**  
**EFFECT ON REQUIRED TAKE OFF RUN**  
**V<sub>2</sub> / V<sub>SR</sub> = 1.22 (FLAPS 15)**



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V3.44

ICN-7X-Y-000000-T-FB429-00651-A-01-N

**Note**

*Performance decrement applies to required takeoff run length computed in normal conditions with  $V_2 = 1.22 V_{SR}$  (Flaps 15).*

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

**Page n°38**

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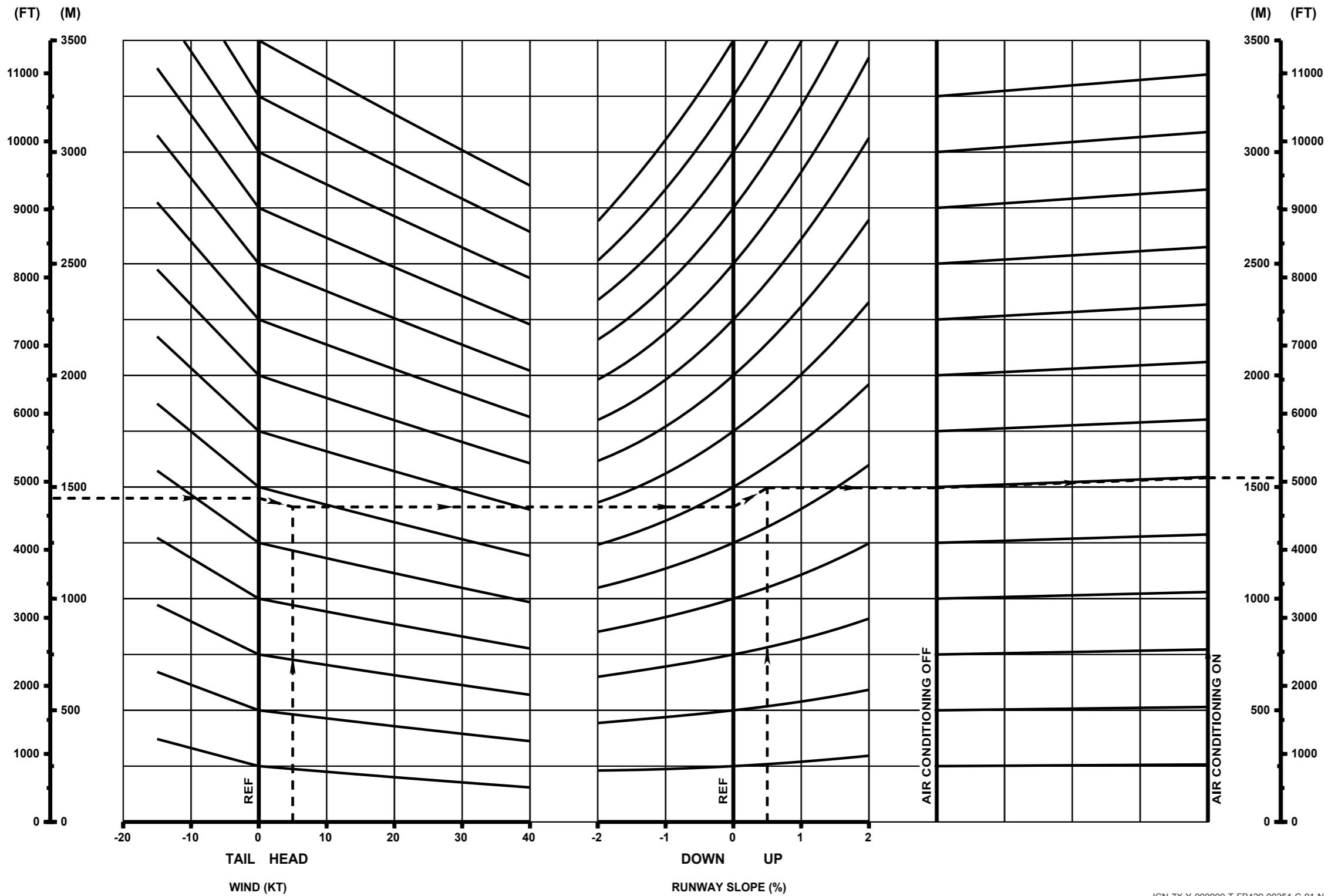
### 3.2.5 TAKEOFF RUN CORRECTION

#### 3.2.5.1 NORMAL CONDITIONS

##### 3.2.5.1.1 Flaps 15

858a397c-b480-4909-b169-4040a3317dd4

0.1  
ALL  
APPROVED



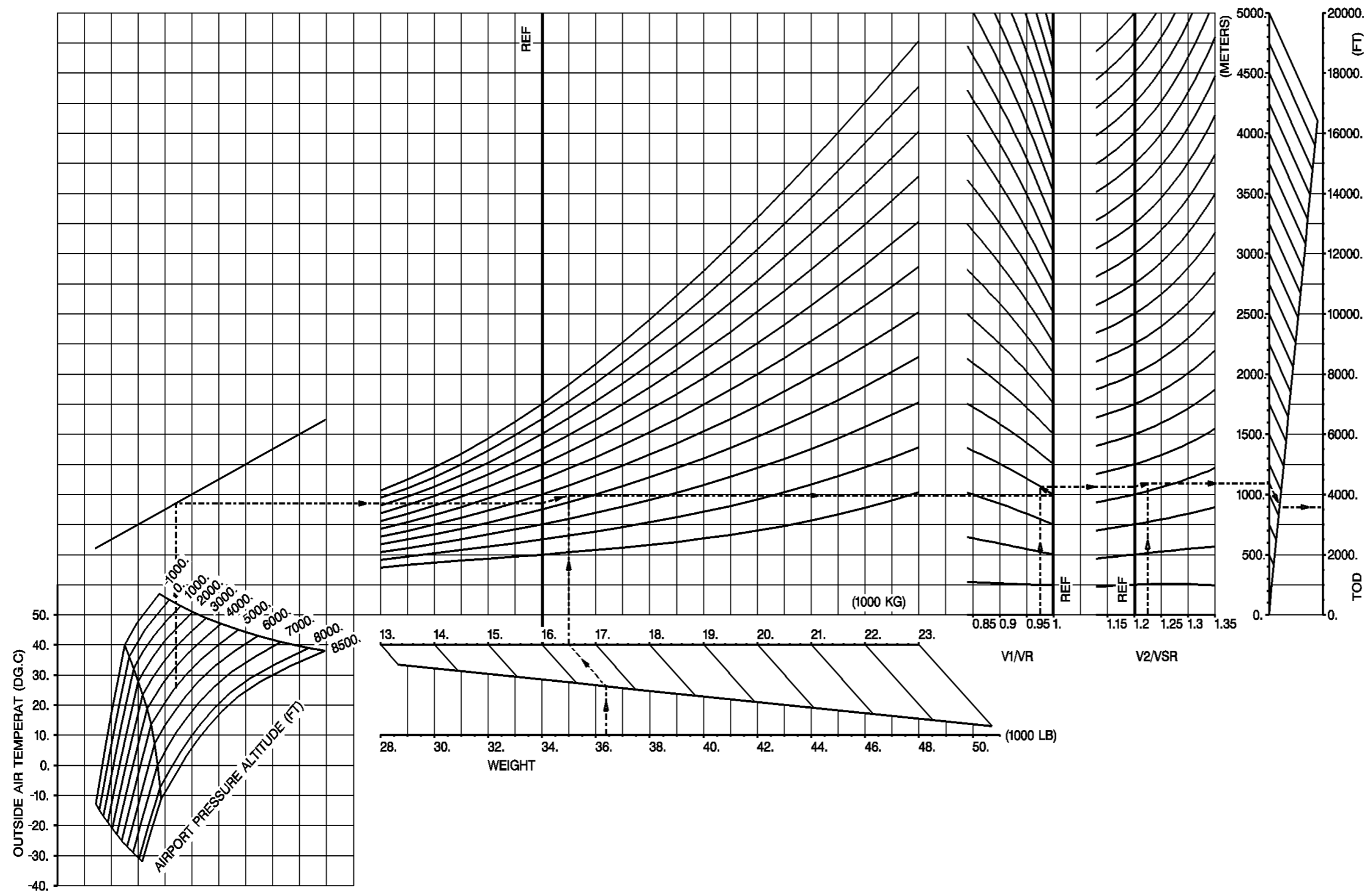
|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°40 |

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**3.2.6 TAKEOFF DISTANCE**  
**3.2.6.1 NORMAL CONDITIONS**  
**1 Dry Runway - Flaps 15**  
**Flaps 15**

a6a3c5b1-e463-45c0-9574-bcd4523ff51b

0.1  
 ALL  
 APPROVED



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°42 |

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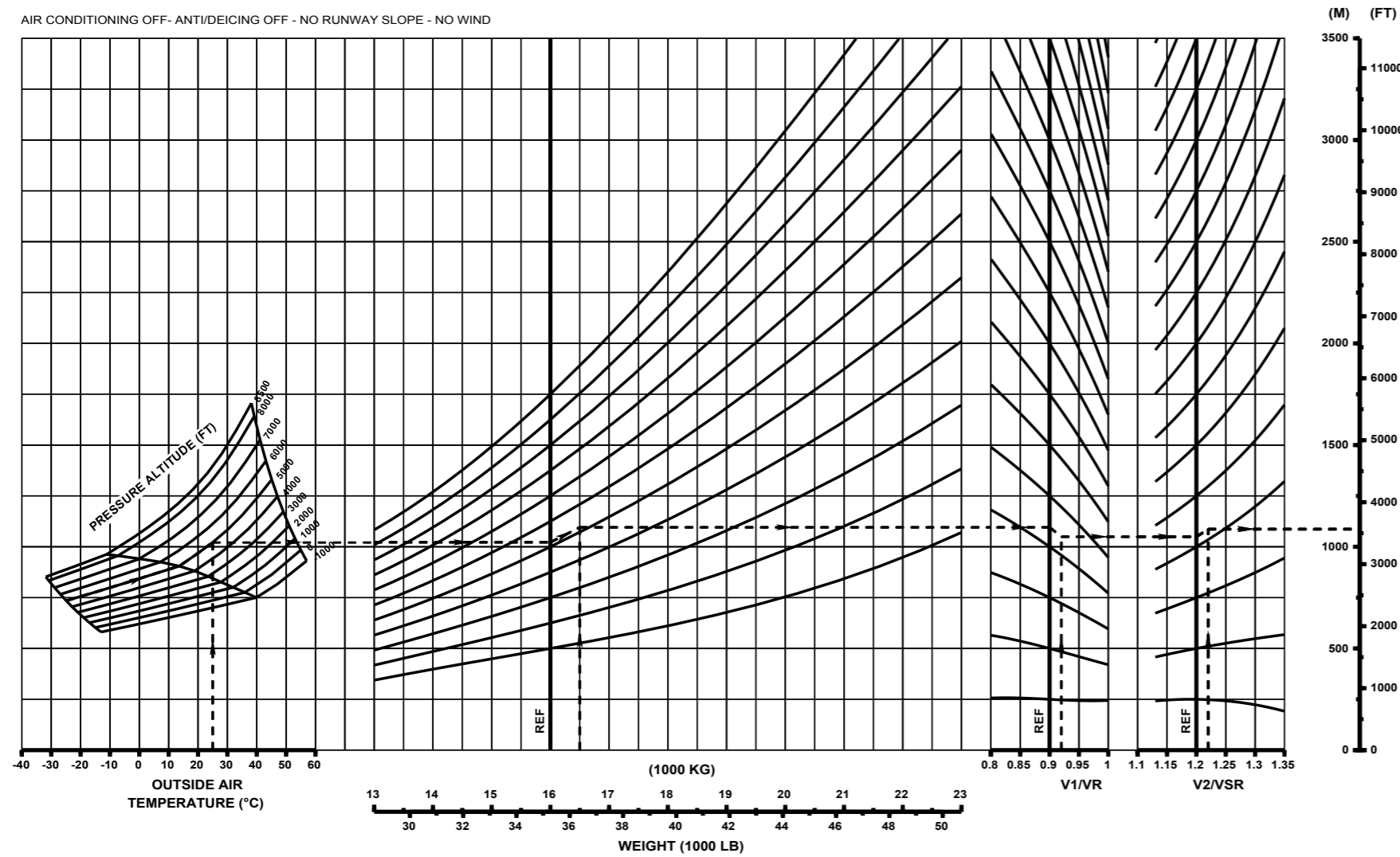
### 3 Wet Runway - Flaps 15 Takeoff Distance (Flaps 15)

a8aff85a-3405-4526-8ebc-be78089fad2d

1.2  
ALL  
APPROVED

#### TAKEOFF DISTANCE (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE AT T.O./R.T.O POWER -  
AIR CONDITIONING OFF- ANTI/DEICING OFF - NO RUNWAY SLOPE - NO WIND



ICN-7X-Y-000000-T-FB429-00948-C-02-N

#### Note

Information for operation on wet runways has to be considered as special operations (Advisory Material).

|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°44 |

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### 3.2.6.2 ICING CONDITIONS

#### 3.2.6.2.1 Flaps 15

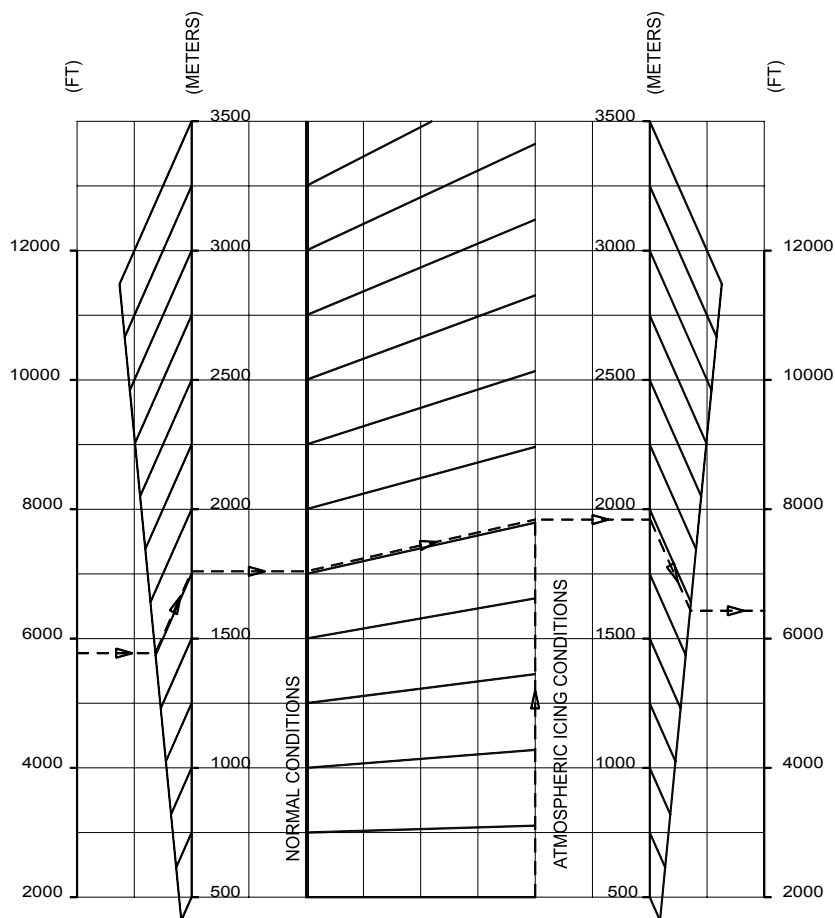
cf382b41-0342-4940-acf5-88baaa0ad114

1.7

ALL

APPROVED

**TAKEOFF  
EFFECT ON TAKEOFF DISTANCE  
V<sub>2</sub> / V<sub>SR</sub> = 1.22 (FLAPS 15)**



ICN-7X-Y-000000-T-FB429-00466-C-03-N

**Note**

*Performance decrement applies to takeoff distance length computed in normal conditions with  $V_2 = 1.22 V_{SR}$  (Flaps 15).*

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

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### 3.2.7 REQUIRED TAKEOFF DISTANCE - All Engines Operating

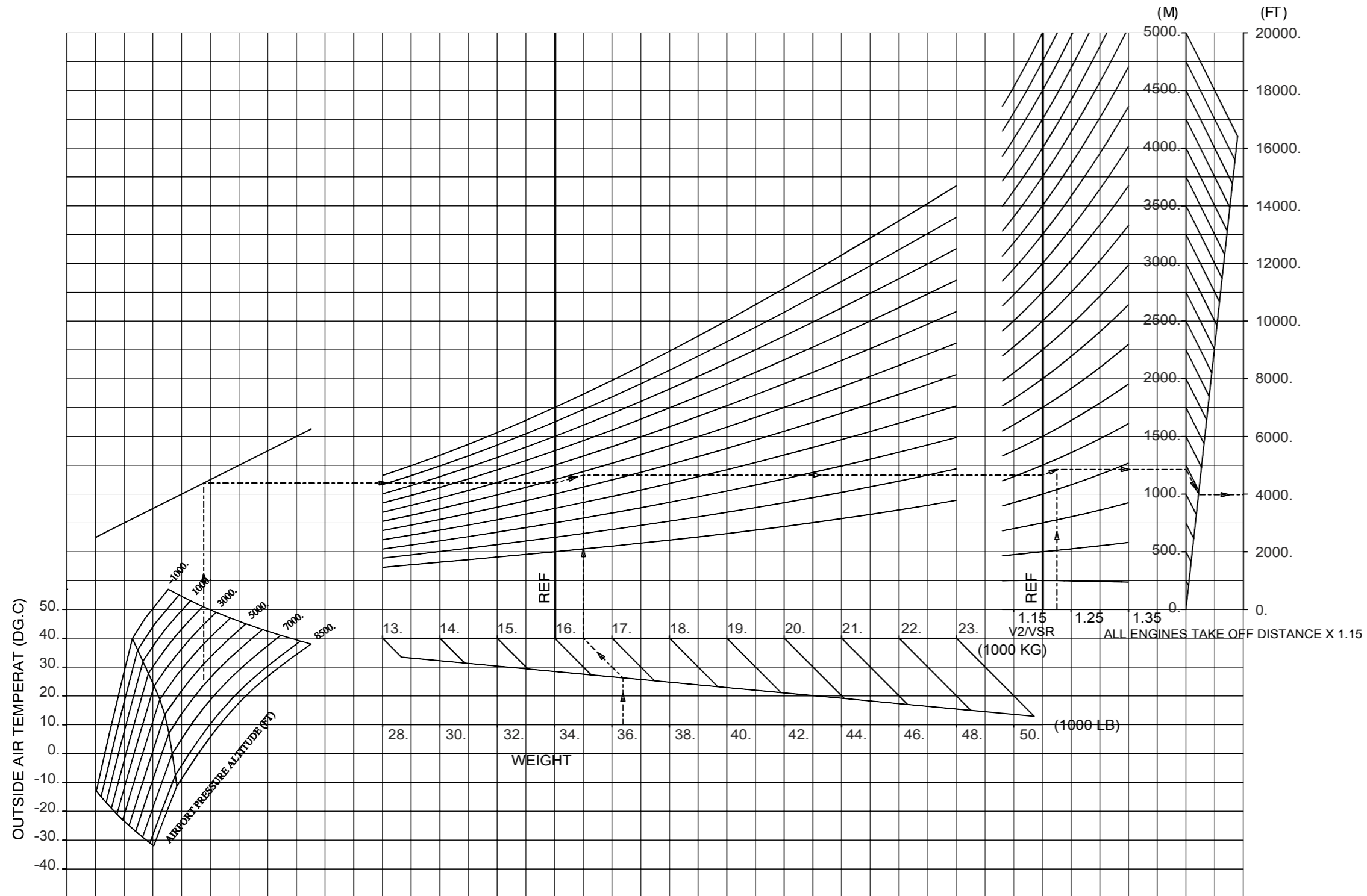
#### 3.2.7.1 NORMAL CONDITIONS

##### 1 Flaps 15

##### Flaps 15

cebd2c10-ae69-4333-8f10-ff7d9562b69b

0.1  
ALL  
APPROVED



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°48 |

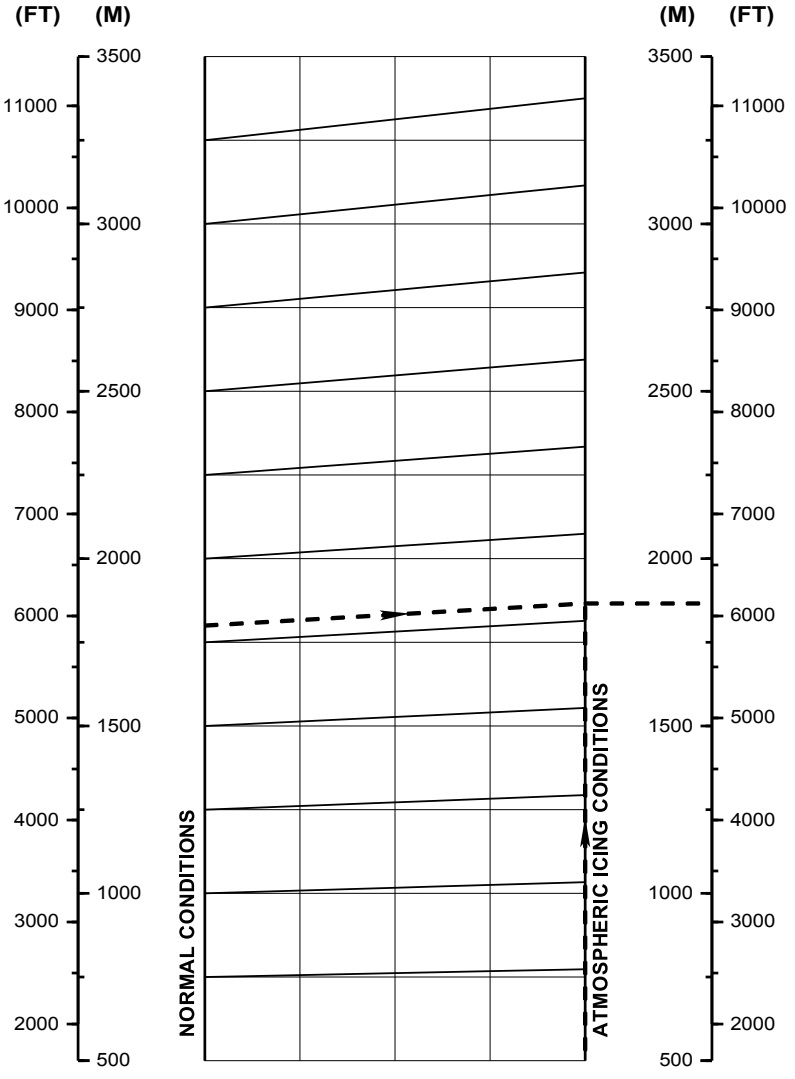
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### 3.2.7.2 ICING CONDITIONS

#### 3.2.7.2.1 Flaps 15

f298c0a4-de16-47b5-89c6-27f662ee3050 0.5  
ALL  
APPROVED

**ATMOSPHERIC ICING CONDITIONS**  
**EFFECT ON REQUIRED TAKE OFF DISTANCE**  
**V<sub>2</sub> / V<sub>SR</sub> = 1.22 (FLAPS 15)**



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ICN-7X-Y-000000-T-FB429-00650-A-01-N

**Note**  
*Performance decrement applies to required takeoff distance length computed in normal conditions with  $V_2 = 1.22 V_{SR}$  (Flaps 15).*

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

**Page n°50**

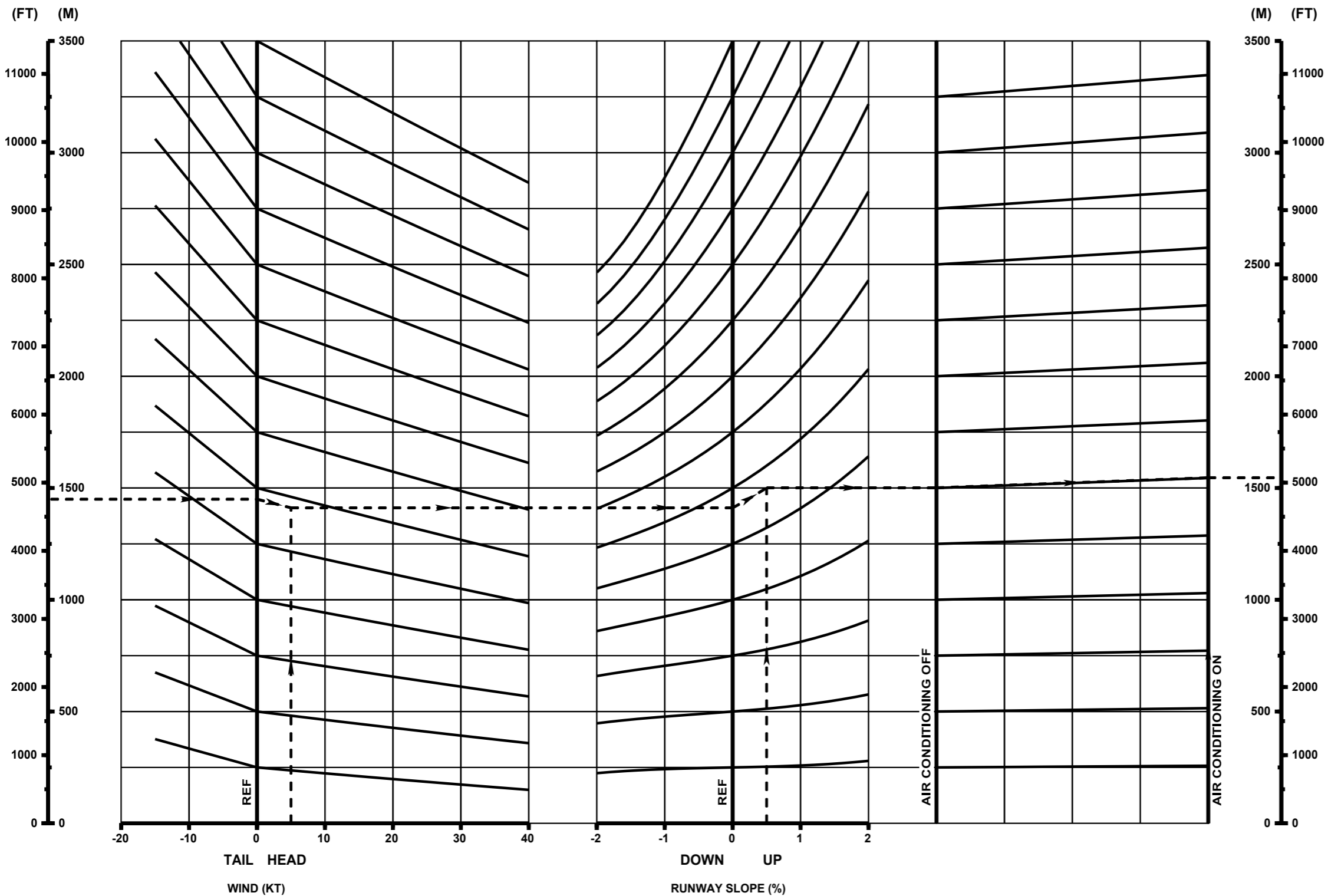
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### 3.2.8 TAKEOFF DISTANCE CORRECTION

#### 3.2.8.1 Flaps 15

7fdb6389-99b9-4999-a549-a5ae0f7ae087

0.1  
ALL  
APPROVED



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°52 |

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### 3.2.9 ACCELERATE STOP DISTANCE

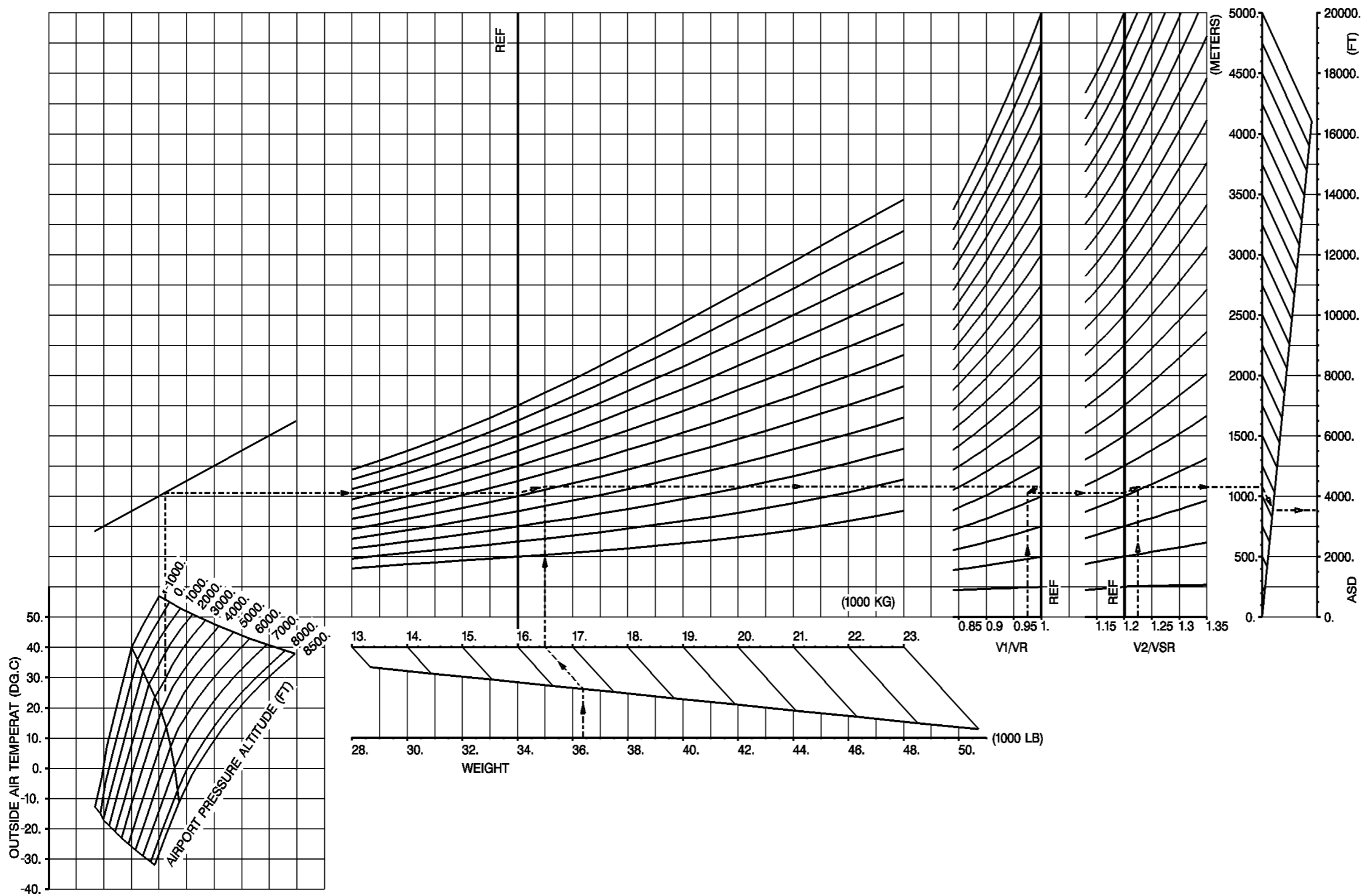
#### 3.2.9.1 NORMAL CONDITIONS

##### 1 Dry Runway - Flaps 15

##### Flaps 15

7882bc0a-aab0-4f71-908b-9edef6b4810c

0.1  
ALL  
APPROVED



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°54 |

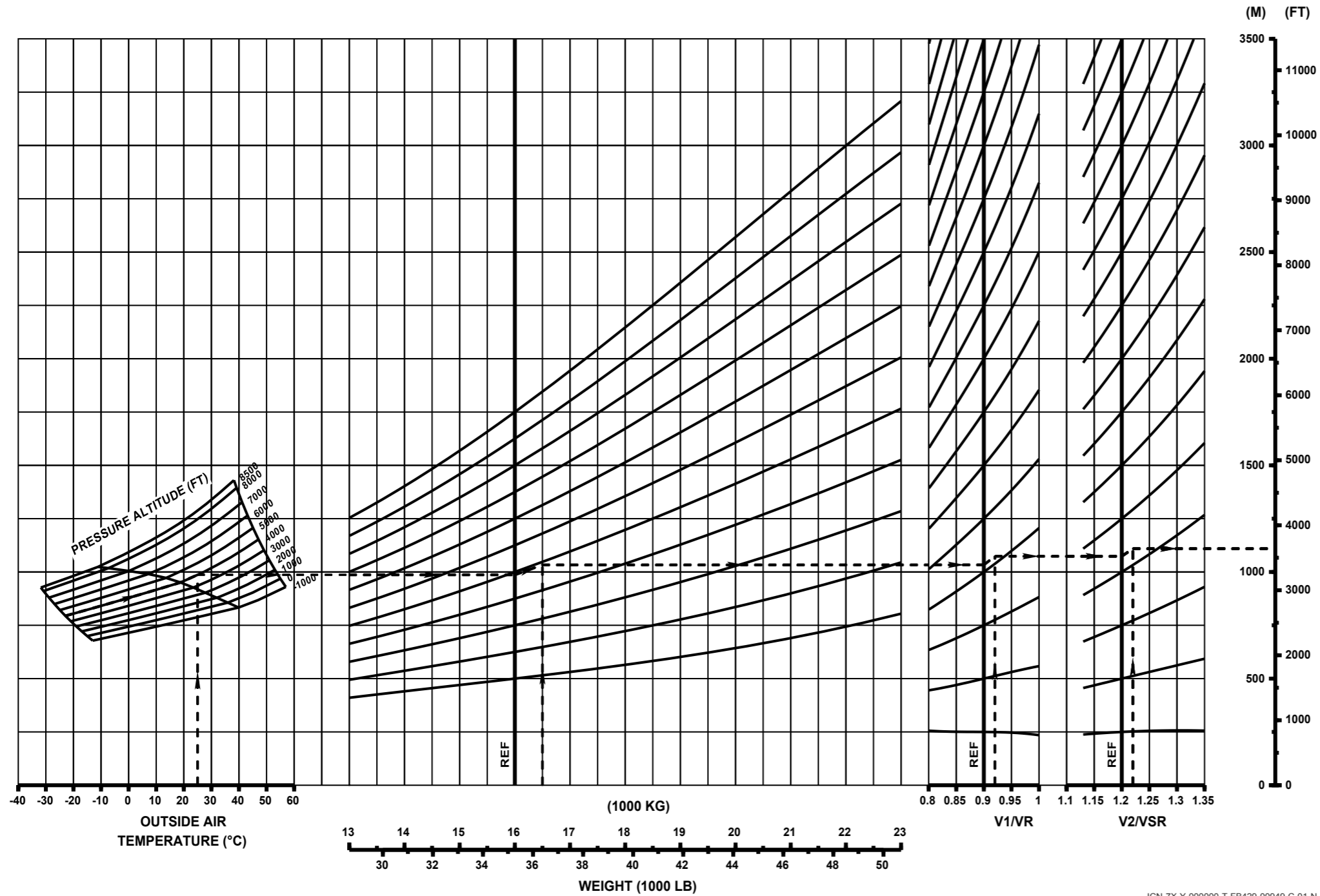
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### 3 Wet Runway - Flaps 15 Accelerate Stop Distance (Flaps 15)

08329b53-3b06-43af-acb5-80e1a895a80f

1.7  
ALL  
APPROVED



ICN-7X-Y-000000-T-FB429-00949-C-01-N

**Note**

Information for operation on wet runways has to be considered as special operations (Advisory Material).

|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°56 |

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### 3.2.9.2 ICING CONDITIONS

#### 3.2.9.2.1 Flaps 15

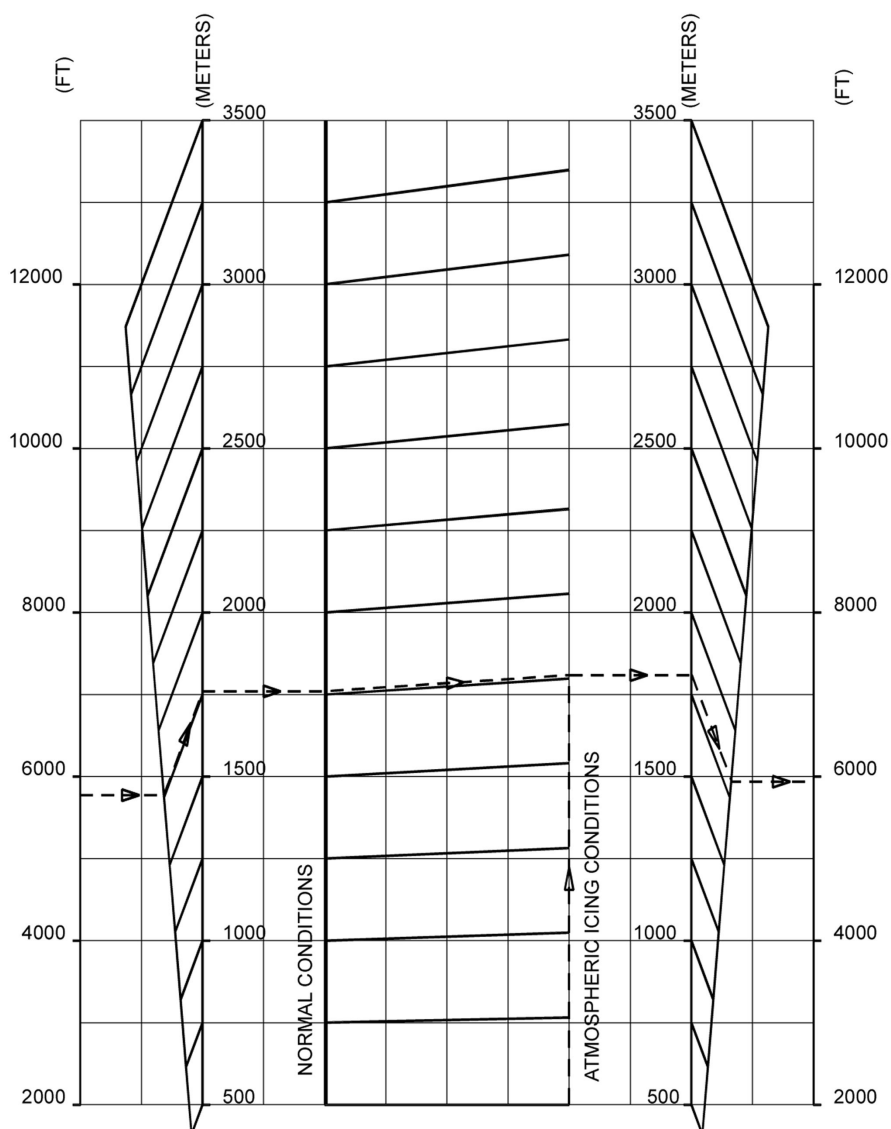
23baf3f3-3df6-4256-b0af-3cf2d158d9cd

0.1

ALL

APPROVED

$V_2 / V_{SR} = 1.22$  (FLAPS 15)



ICN-7X-Y-000000-T-FB429-00471-C-01-N

**Note**

*Performance decrement applies to the acceleration stop distance length computed in normal conditions with  $V_2 = 1.22 V_{SR}$  (FLAPS 15).*

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

**Page n°58**

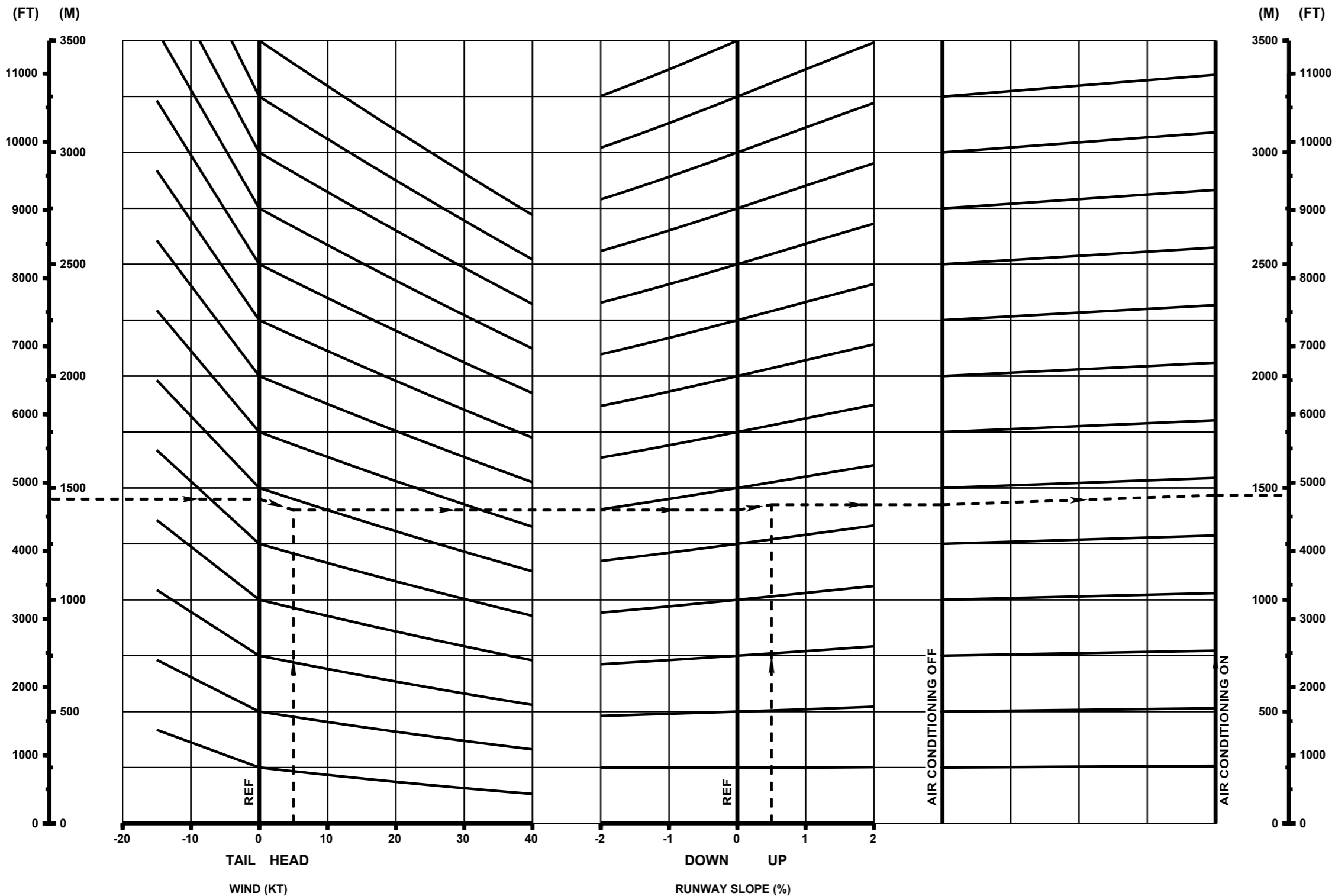
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### 3.2.10 ACCELERATE STOP DISTANCE CORRECTION

#### 3.2.10.1 Dry Runway - Flaps 15

5638eb80-9f90-4fb6-a5fb-145fa406f451

0.1  
ALL  
APPROVED



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°60 |

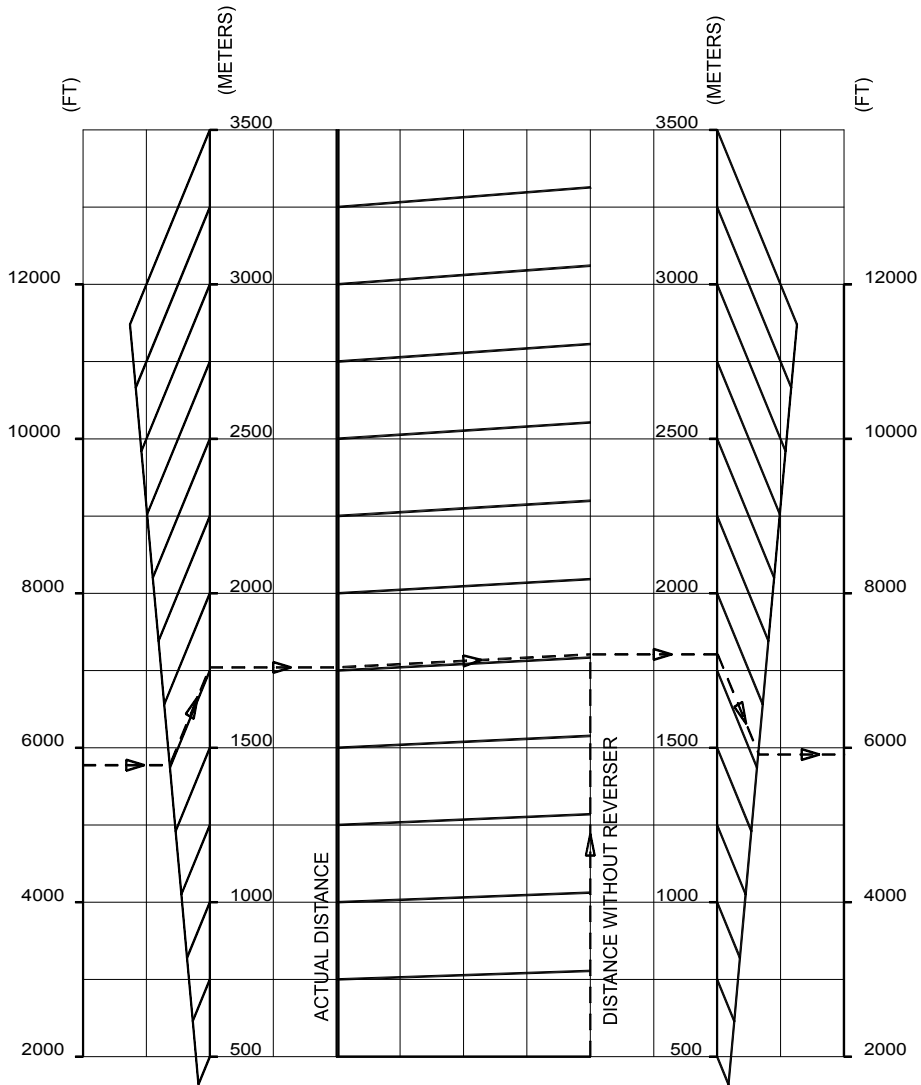
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### 3.2.10.2 Wet Runway - Flaps 15

#### Accelerate Stop Distance Corrections (Flaps 15)

5a637fb4-c915-4b4c-9e7f-8e3ce66c0a60 0.2  
ALL  
APPROVED

ACCELERATE STOP DISTANCE CORRECTIONS (FLAPS 15)



ICN-7X-Y-000000-T-FB429-00950-C-02-N

**Note**  
*Information for operation on wet runways has to be considered as special operations (Advisory Material).*

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

**Page n°62**

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### 3.2.11 DECISION SPEED LIMITED BY MAXIMUM BRAKE ENERGY

#### 1 Flaps 15

#### Flaps 15

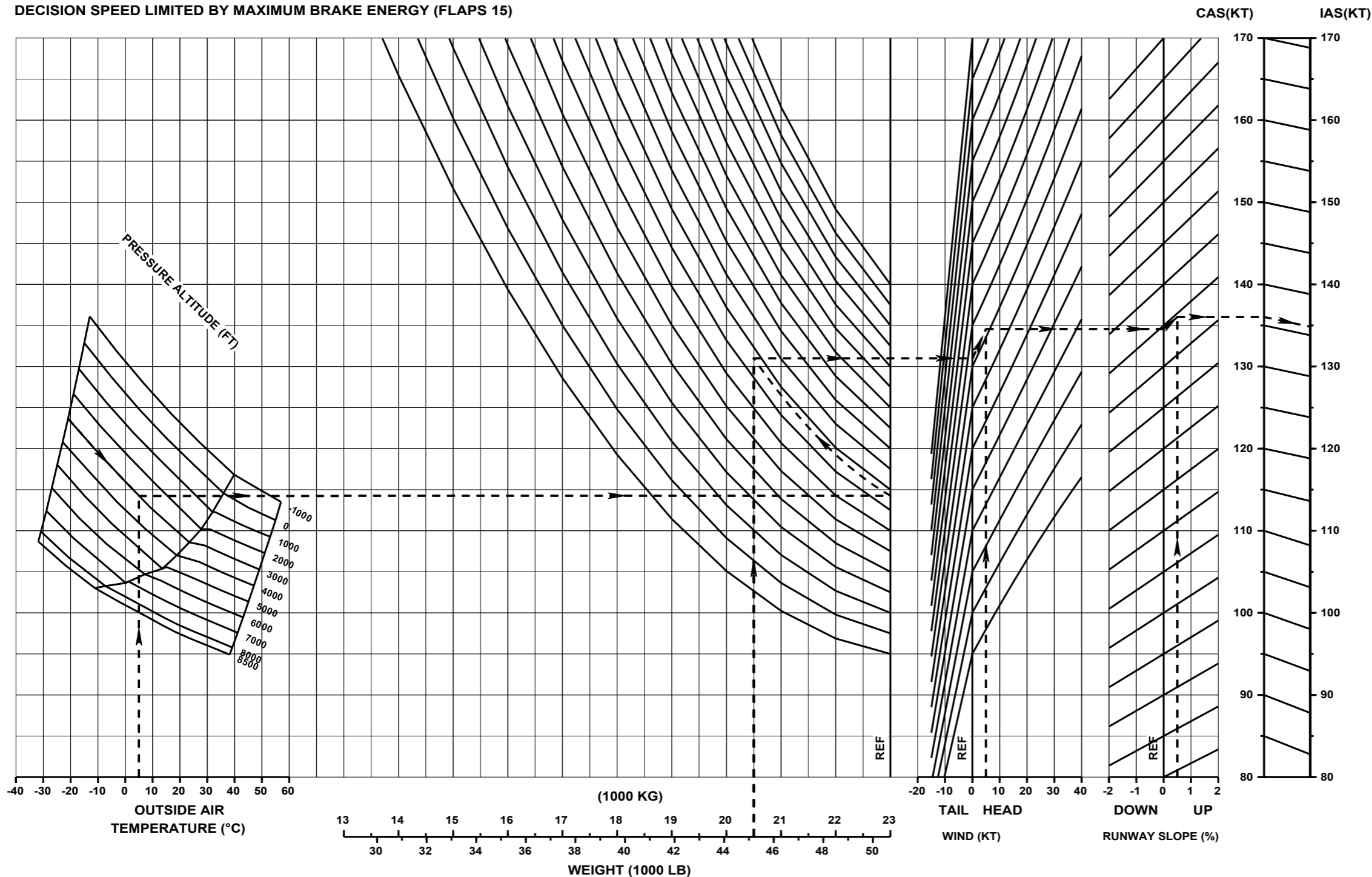
48443883-5149-4491-b5ca-84dbf15473e2

3.0

0685-0706  
APPROVED

PW127F / PW127M / PW127N - BOOST OFF

DECISION SPEED LIMITED BY MAXIMUM BRAKE ENERGY (FLAPS 15)



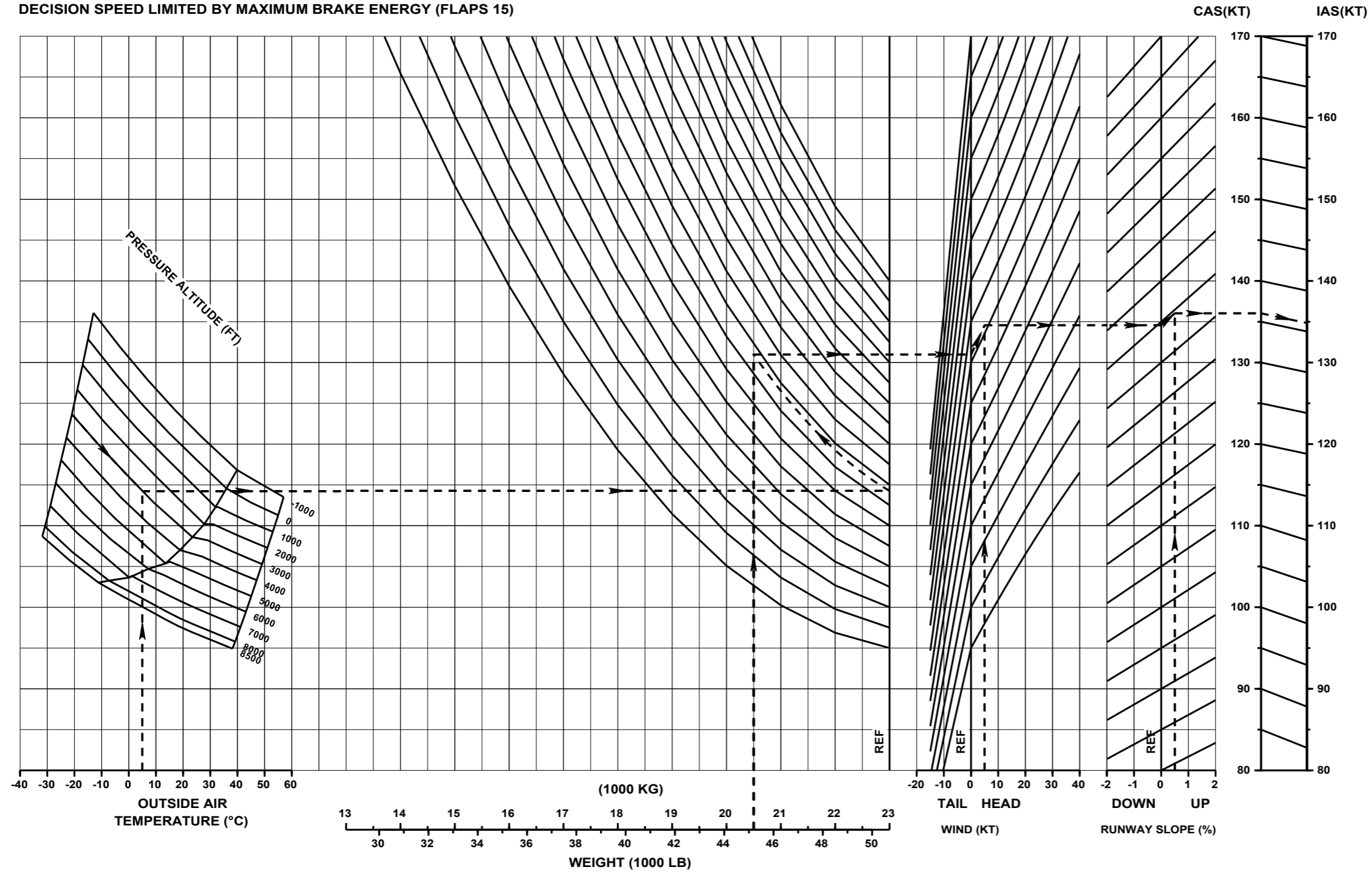
|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°64 |

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22f7eeb3-3957-4a2c-94cc-33931403465c

PW127F / PW127M / PW127N - BOOST OFF

DECISION SPEED LIMITED BY MAXIMUM BRAKE ENERGY (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°66 |

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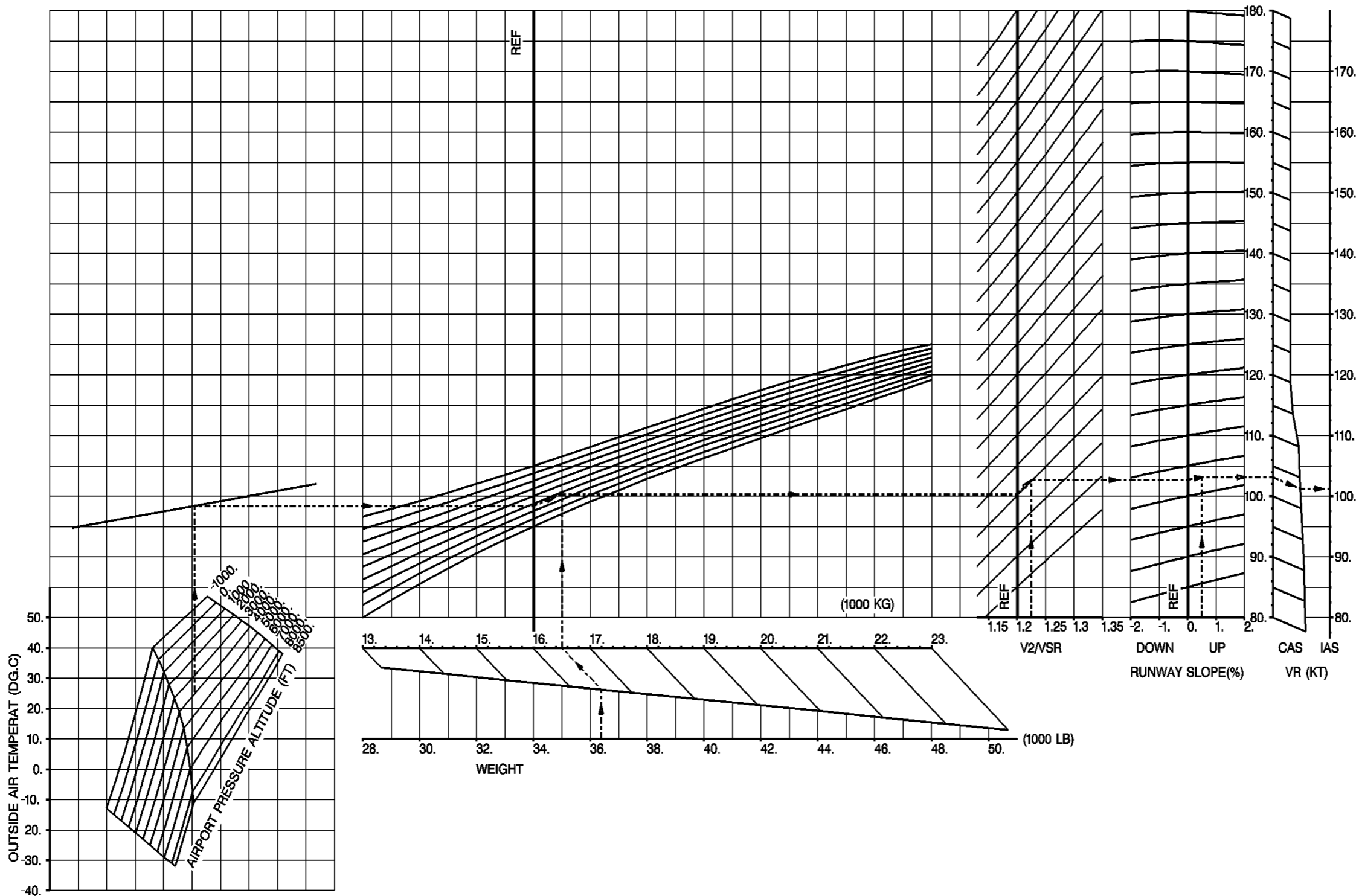
### 3.2.12 ROTATION SPEED-VR

#### 1 Flaps 15

#### Flaps 15

927d5beb-a42a-4a7d-b362-2c8134a439ea

0.1  
ALL  
APPROVED



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°68 |

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### 3.2.13 TAKEOFF SPEED-V2

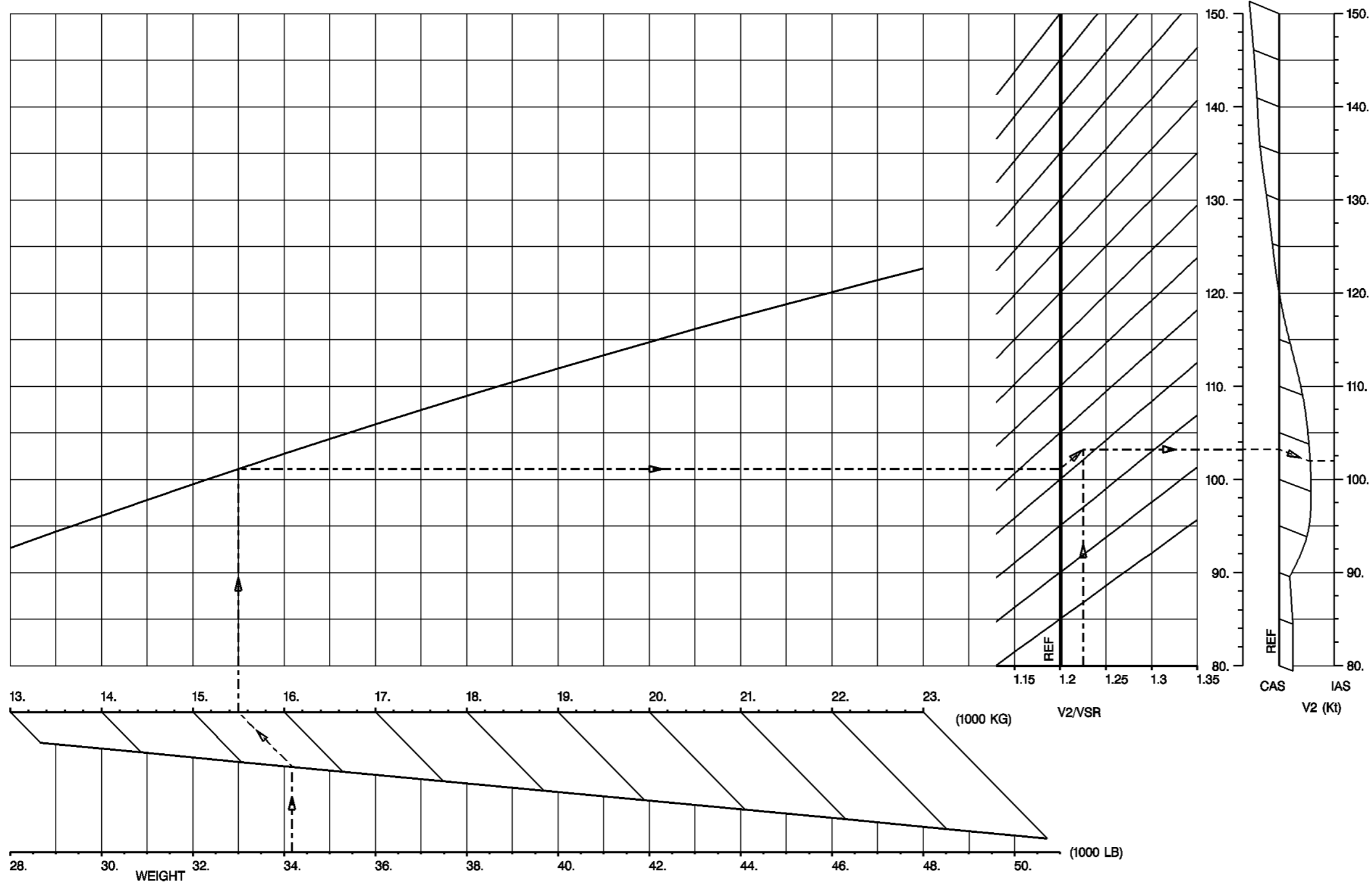
#### 3.2.13.1 Flaps 15

ef31f88b-6e19-4f2a-884c-0d775feefda9

0.2  
ALL  
APPROVED

#### TAKE OFF SPEED - V2 (FLAPS 15)


ONE PROPELLER FEATHERED - ONE ENGINE : R.T.O. POWER



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°70 |

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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>TAKEOFF</b><br><br><b>TOW DETERMINATION METHODOLOGY</b> | <b>PER.3</b><br><br>Page n°71 |
|---|--|-------------------------------|

## 3.2.14 OBSTACLE CLEARANCE ON TO

### 3.2.14.1 NORMAL CONDITIONS

#### 3.2.14.1.1 General

3a2ffcb5-f8e0-4715-bb9c-cb74a1540807

3.1

ALL

APPROVED

#### **OBSTACLE CLEARANCE ON T.O** (Example: [Refer to PER.3.3.2.14.1.5 V2=1.13VSR \(Remote Obstacle\)](#))

Initial gradient : 3 % (associated to the weight limited by the runway condition).

Obstacle : 4 000 ft at 21 km (68 897 ft) of the end of the runway. 10 kt nose wind.

##### **Note**

*The obstacle height and distance with respect to reference zero must be determined. In the flight manual charts reference zero is the point 35 ft below the end of the TOD and the flight paths shown include the 35 ft operational clearance. Where the TOD is greater (lower) than the runway length the obstacle distance from end of the runway must be decreased (increased) by the difference between TOD and runway length.*

- 1) Place the obstacle (point A). In this example the TOD is initially assumed equal to the runway length.
- 2) Replace the obstacle according to the wind (point C) drawing a parallel to the gross height lines. This replaced obstacle is 2 950 ft high at 25 km (82 000 ft).
- 3) From the intersection between available initial gradient and obstacle location according to wind (point B), draw a parallel to the dotted vertical curves.
- 4) Determine the gradient that enables the clearance taking into account the decrease in TOD associated to the decrease in weight.  
It is the intersection between the parallel to the dotted vertical curves and the obstacle line corresponding to the obstacle height corrected by the wind. This gives point D.
- 5) Follow the path up to the end of the second segment.
- 6) The point E gives the second segment gradient which determines maximum weight that enables clearance of the obstacle.
- 7) To be precise, the takeoff distance corresponding to this new maximum weight must be calculated.
- 8) Using this distance, replace the obstacle and check that it will be cleared, if not, restart the calculation.

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

**Page n°72**

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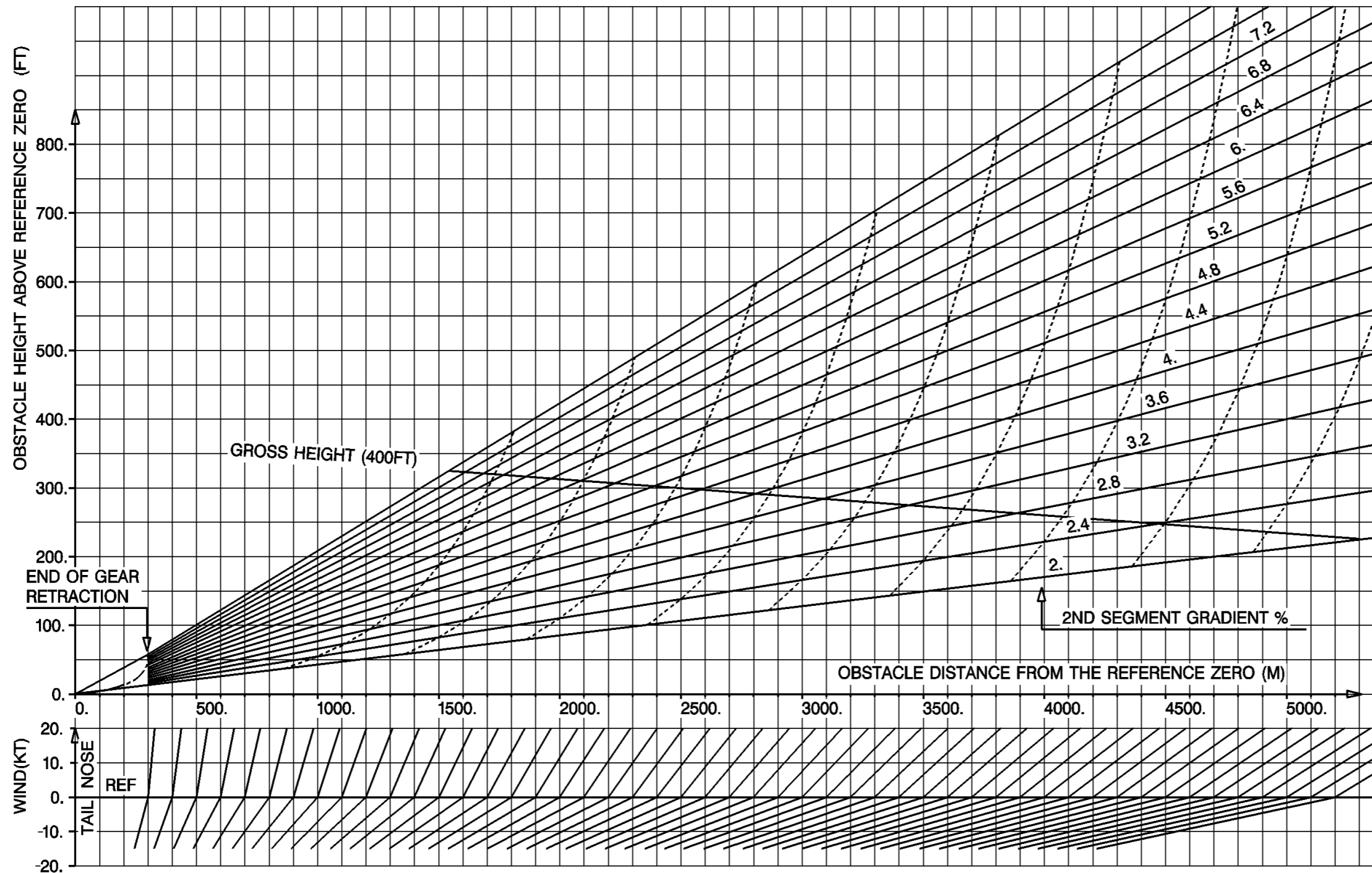
3.2.14.1.2 V2=1.13VSR (Close Obstacle)

93d385af-f302-4867-be7b-8b0e0e4157ba

0.2  
ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (CLOSE OBSTACLES)

V2 / VSR = 1.13 (FLAPS 15)



|                                  |  |                        |
|----------------------------------|--|------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>TAKEOFF<br>TOW DETERMINATION METHODOLOGY | PER.3<br><br>Page n°74 |
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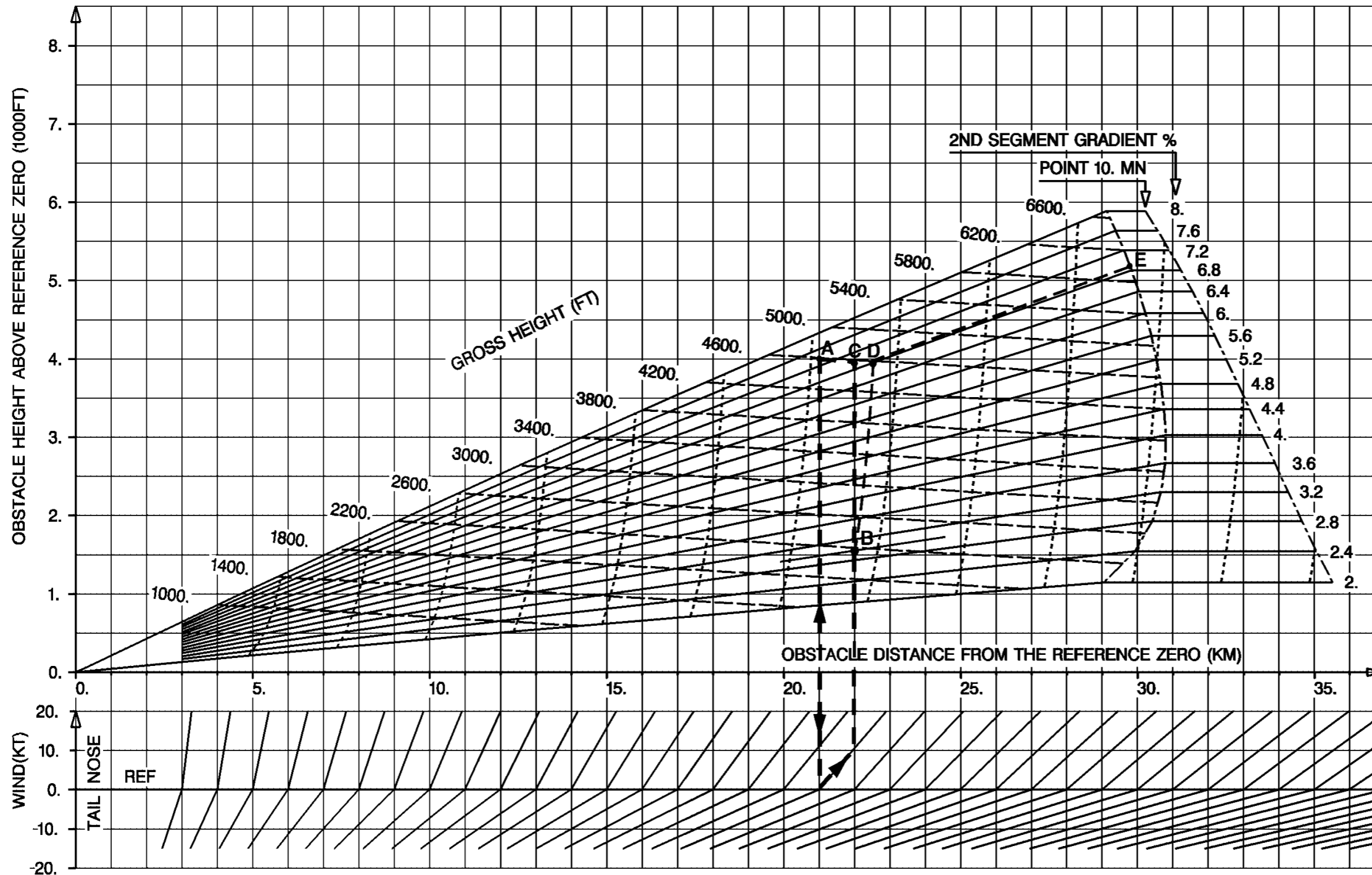
3.2.14.1.3 V2=1.13VSR (Remote Obstacle)

cc2ba8f9-86ea-4f7a-9b67-1f8377062cef

0.2  
ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (REMOTE OBSTACLES)

V2 / VSR = 1.13 (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°76 |

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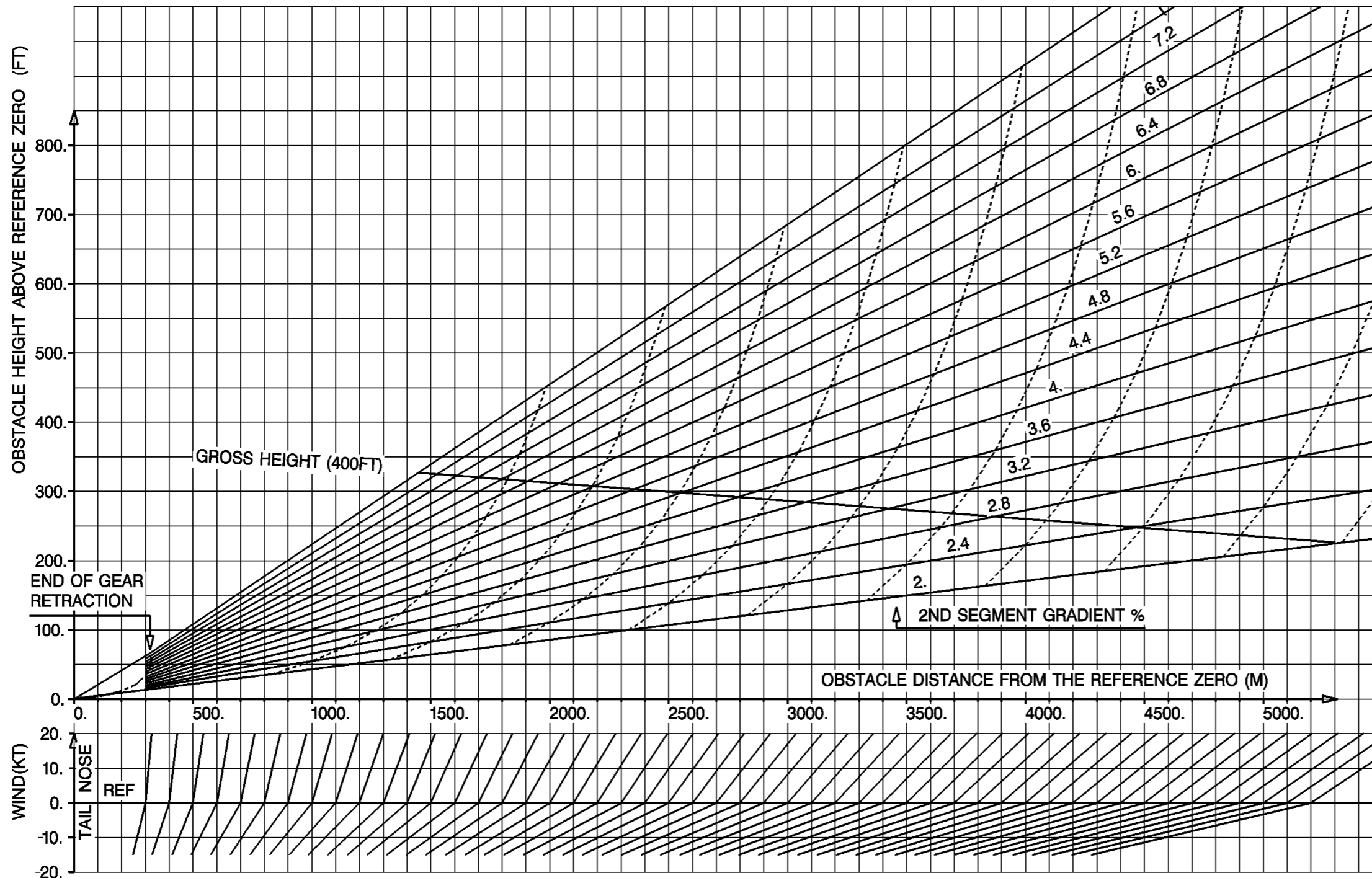
3.2.14.1.4 V2=1.20VSR (Close Obstacle)

f3bd5b13-7c9a-4f21-835a-6fc356667abe

0.2  
ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (CLOSE OBSTACLES)

V2 / VSR = 1.20 (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°78 |

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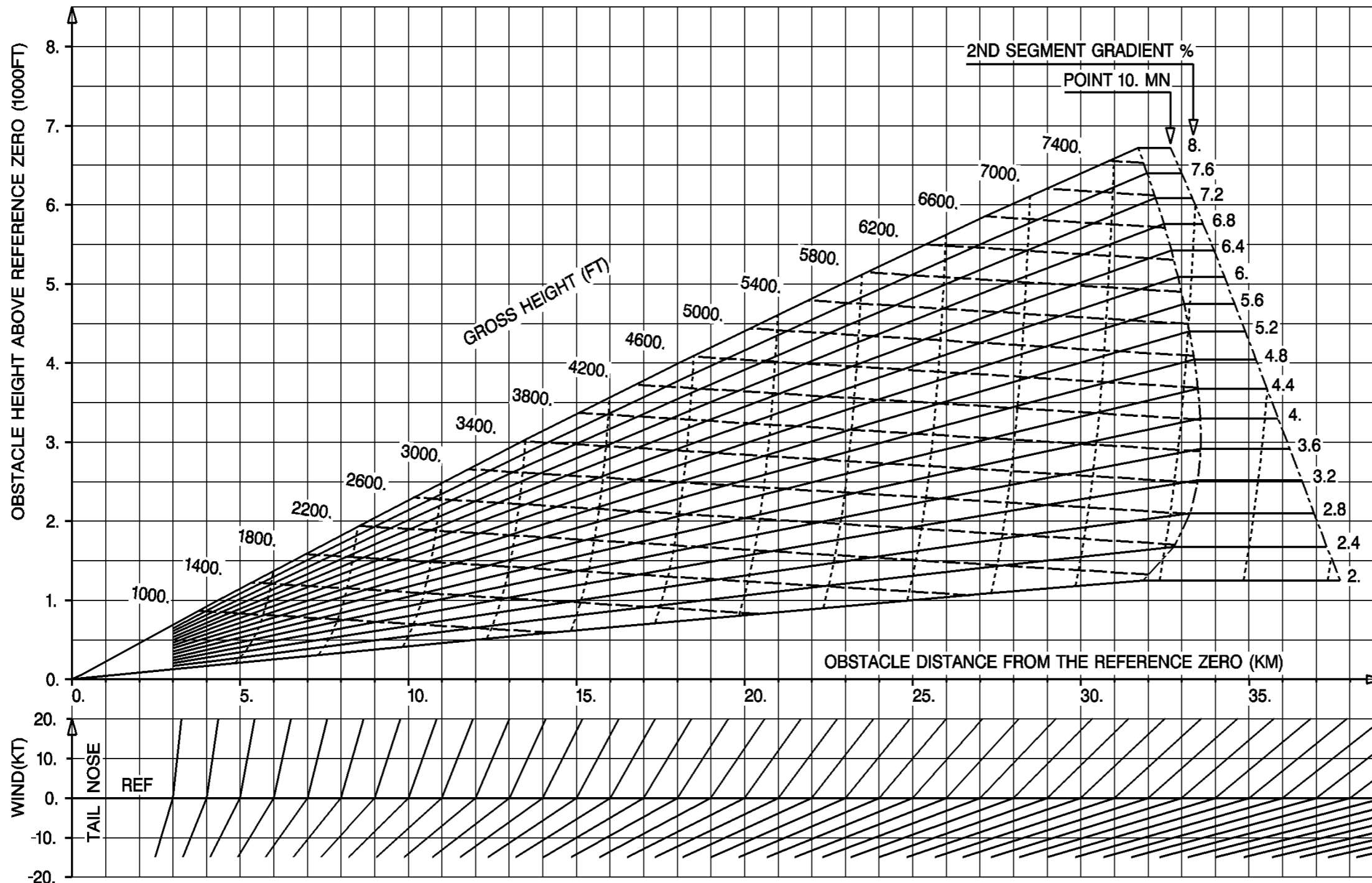
3.2.14.1.5 V2=1.20VSR (Remote Obstacle)

8b5bb1f0-74e1-4a58-8466-5e1531514e0b

0.2  
ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (REMOTE OBSTACLES)

V2 / VSR = 1.20 (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°80 |

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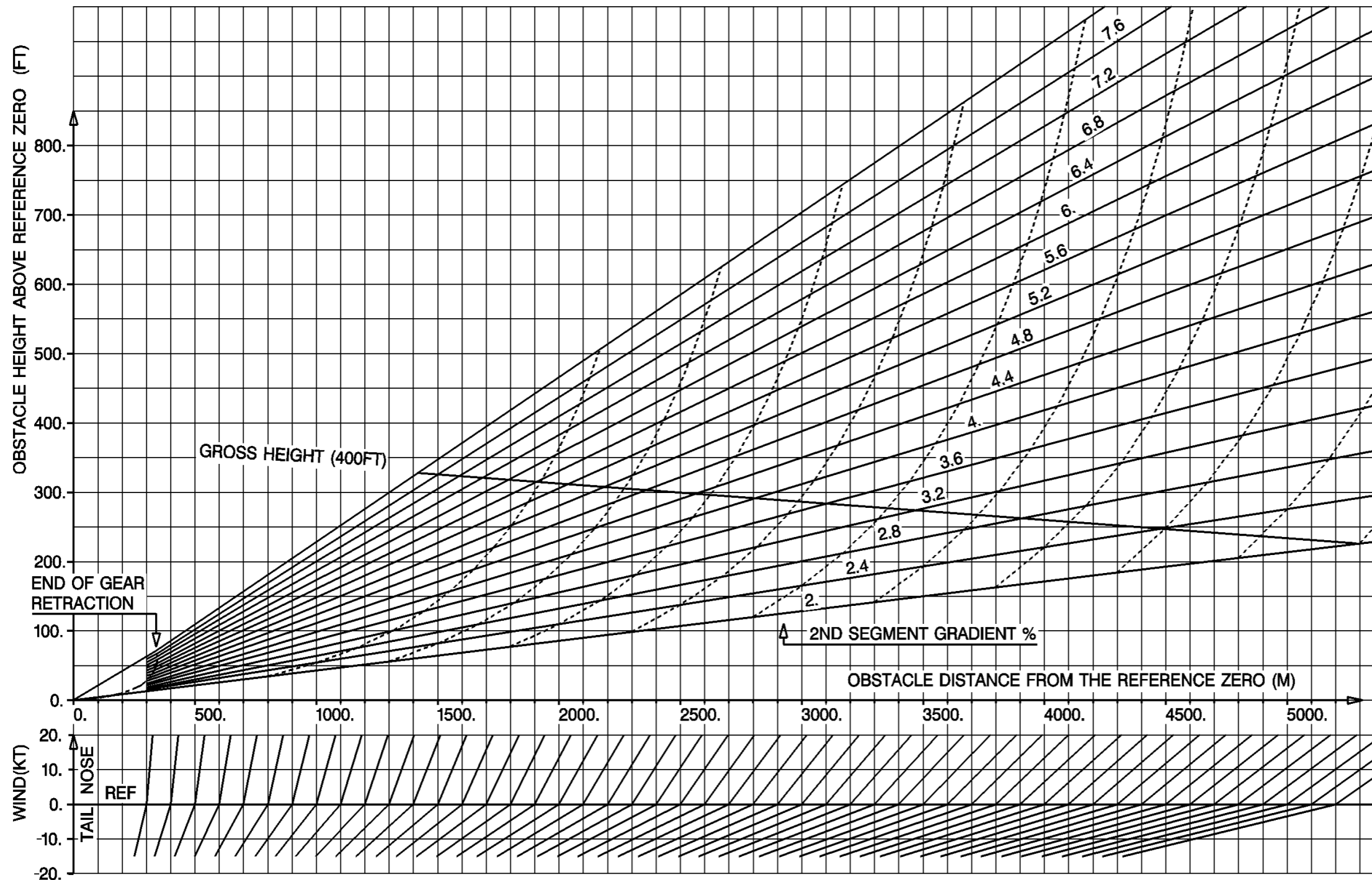
3.2.14.1.6 V2=1.27VSR (Close Obstacle)

29b59bee-e3c6-44ee-9618-edac7f70eedc

0.2  
ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (CLOSE OBSTACLES)

V2 / VSR = 1.27 (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°82 |

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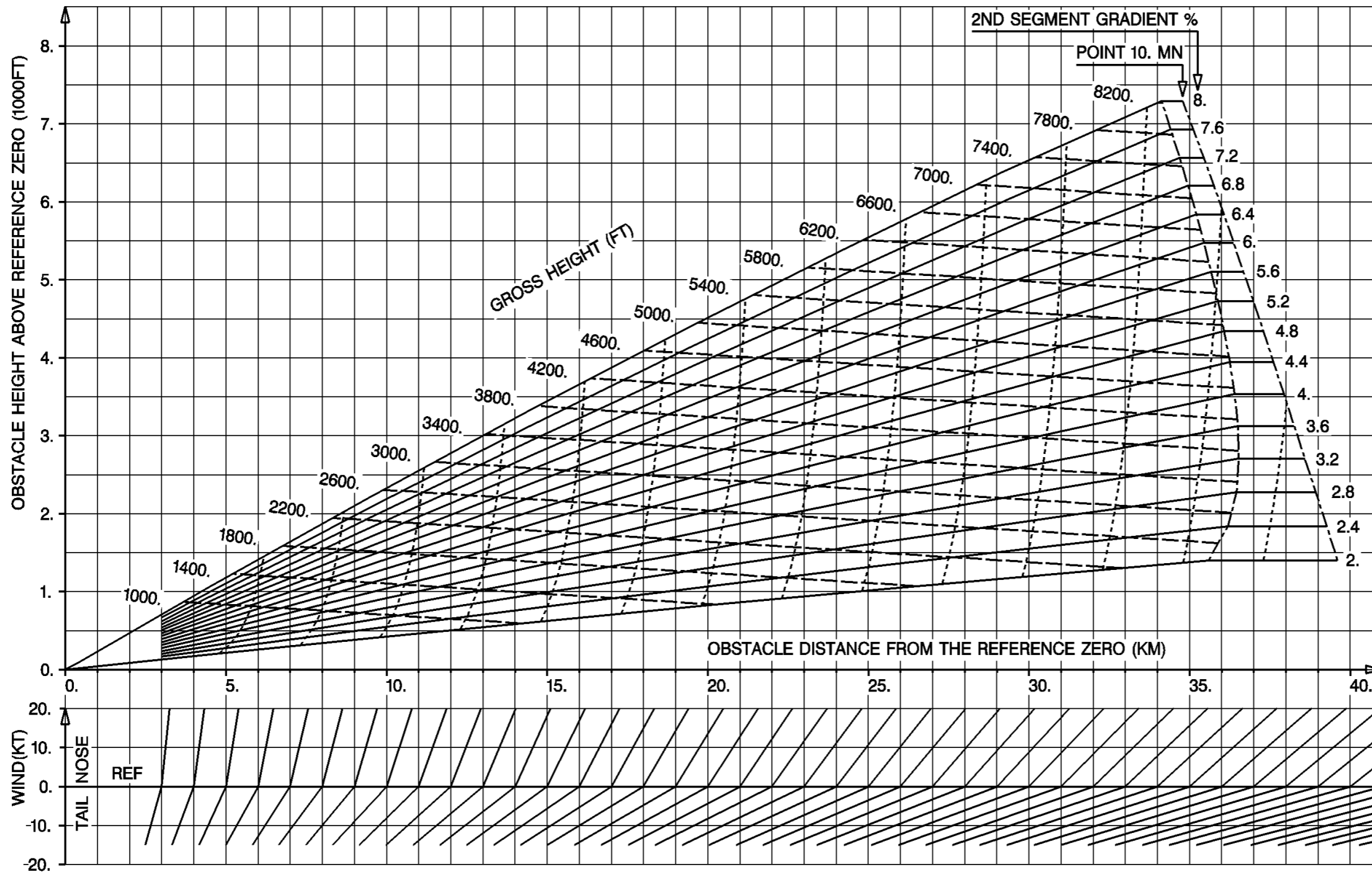
3.2.14.1.7 V2=1.27VSR (Remote Obstacle)

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ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (REMOTE OBSTACLES)

V2 / VSR = 1.27 (FLAPS 15)



|                                  |  |                        |
|----------------------------------|--|------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>TAKEOFF<br>TOW DETERMINATION METHODOLOGY | PER.3<br><br>Page n°84 |
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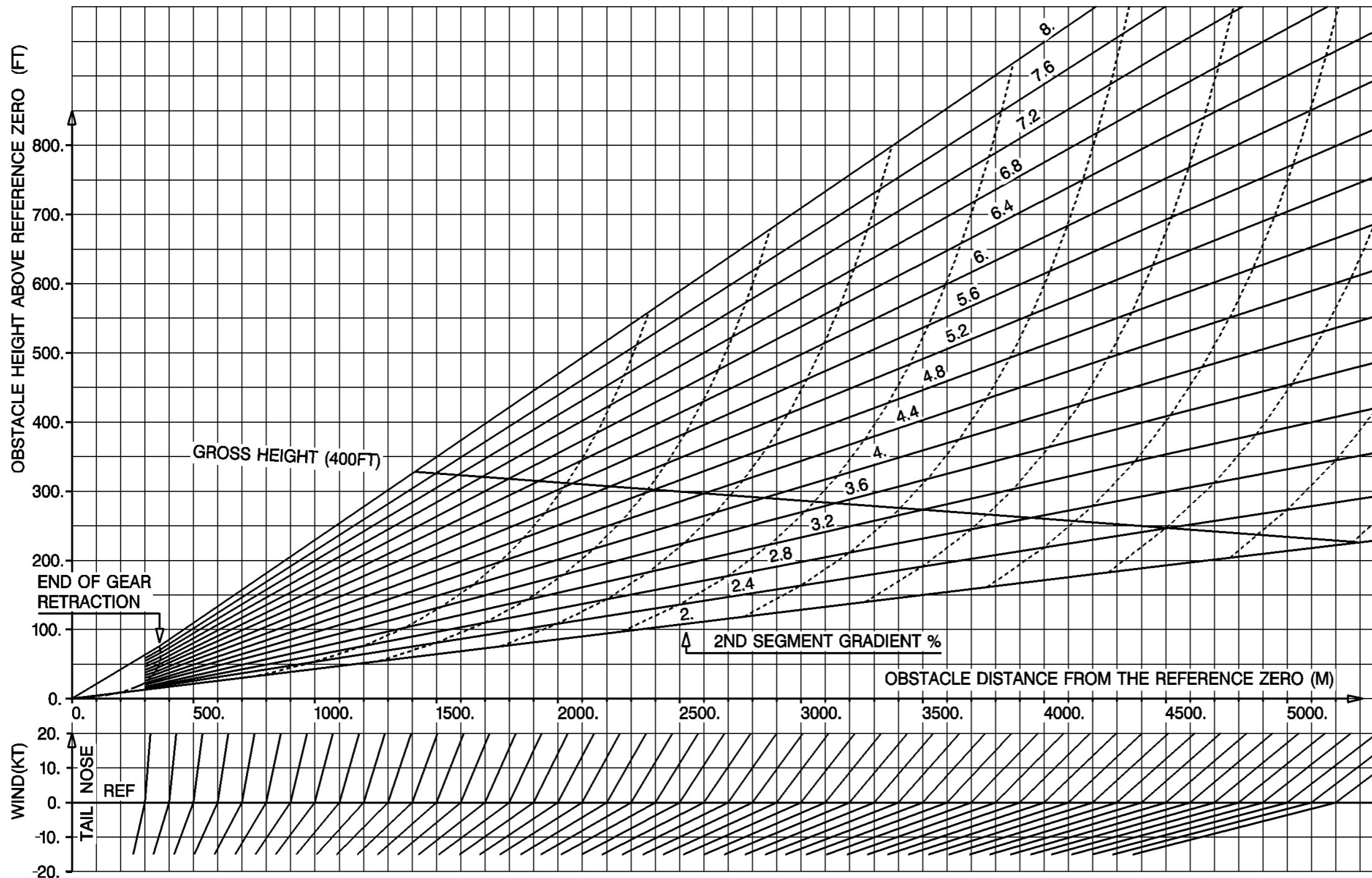
3.2.14.1.8 V2=1.35VSR (Close Obstacle)

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ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (CLOSE OBSTACLES)

V2 / VSR = 1.35 (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°86 |

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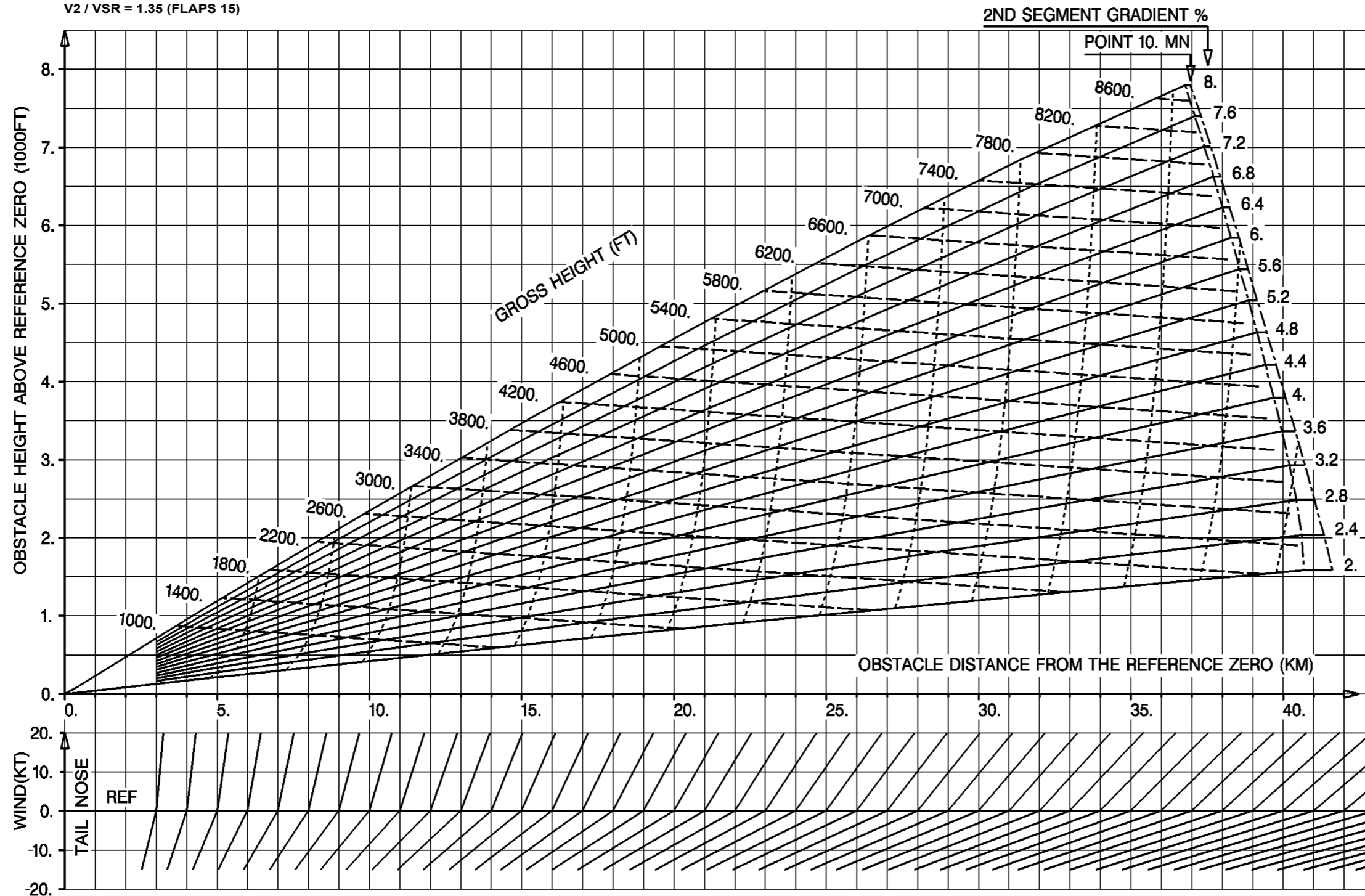
3.2.14.1.9 V2=1.35VSR (Remote Obstacle)

2b68981a-cb55-4595-9909-8c0e23ee94e3

0.2  
ALL  
APPROVED


OBSTACLE CLEARANCE T.O. FLIGHT PATH (REMOTE OBSTACLES)

V2 / VSR = 1.35 (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°88 |

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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>TAKEOFF</b><br><br><b>TOW DETERMINATION METHODOLOGY</b> | <b>PER.3</b><br><br>Page n°89 |
|---|--|-------------------------------|

## 3.2.14.2 ICING CONDITIONS

### 3.2.14.2.1 General

41050cdc-7dce-4eb0-ad64-564e6a79f7dd

2.2

ALL

APPROVED

#### RESEARCH OF WEIGHT LIMITED BY OBSTACLE CLEARANCE

**Remote Obstacle Example:** [Refer to PER.3.3.2.14.2.7 V2=1.22VSR \(Remote Obstacle\)](#)

Initial gradient: 3 % (associated to the weight limited by the runway condition).

Obstacle: 4 000 ft at 78 740 ft (24 km) of the end of the runway. 20 kt head wind.

#### Note

*The obstacle height and distance with respect to reference zero must be determined. In the flight manual charts reference zero is the point 35 ft below the end of the TOD and the flight paths shown include the 35 ft operational clearance. Where the TOD is greater (less) than the runway length the obstacle distance from end of the runway must be decreased (increased) by the difference between TOD and runway length.*

- 1) Place the obstacle (point A). In this example the TOD is initially assumed equal to runway length.
- 2) Replace the obstacle according to the wind (point B) drawing a parallel to the gross height lines.
- 3) The path intersects the obstacle in C.
- 4) Determine the gradient allowing the clearance taking into account the decrease in TOD associated to the decrease in weight. This gives point D.
- 5) Follow the path up to the end of the 2nd segment.
- 6) The point E gives the second segment gradient which determines maximum weight allowing clearance of the obstacle.
- 7) To be precise, the takeoff distance corresponding to this new maximum weight must be calculated.
- 8) Using this distance, replace the obstacle and check that it will be cleared, if not restart the calculation.

***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**TAKEOFF**

**TOW DETERMINATION METHODOLOGY**

**PER.3**

Page n°90

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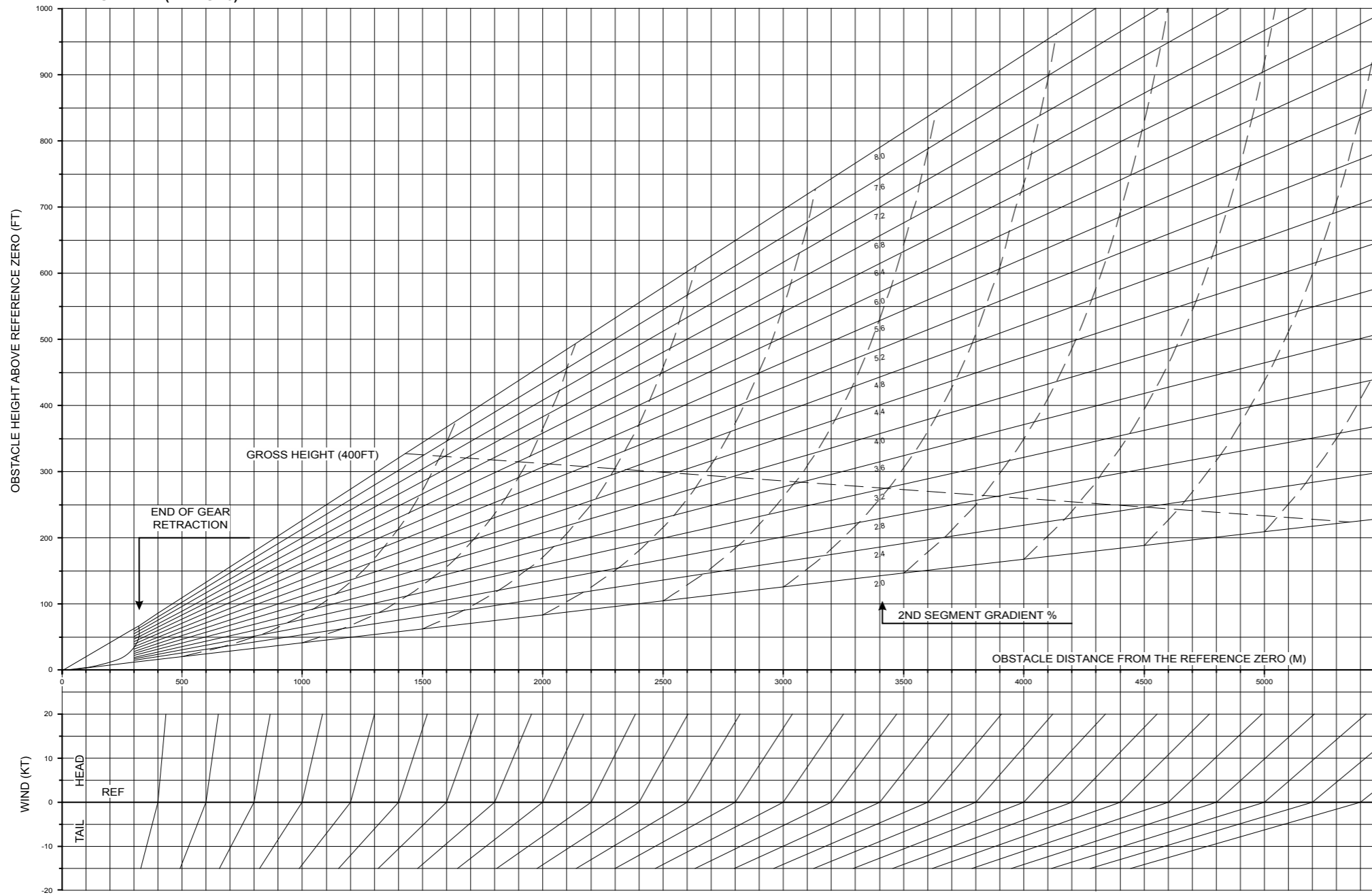
3.2.14.2.2 V2=1.22VSR (Close Obstacle)

51f20e59-fb5e-4e25-8133-47ce0792c8a2

1.3  
ALL  
APPROVED

OBSTACLE CLEARANCE T.O. FLIGHT PATH (CLOSE OBSTACLES)

V2 / VSR = 1.22 (FLAPS 15)



|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°92 |

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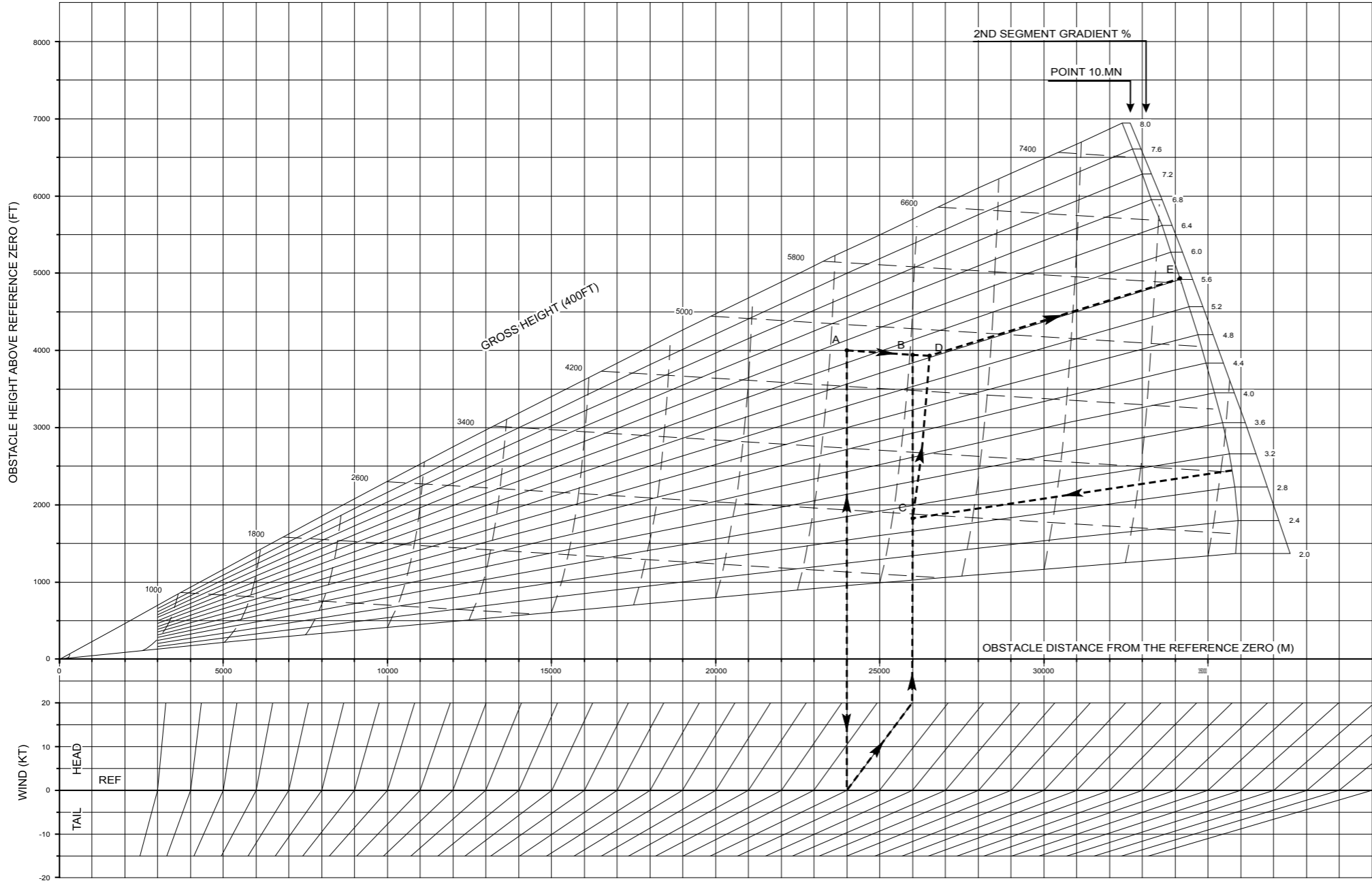
**3.2.14.2.3 V2=1.22VSR (Remote Obstacle)**

62a30ddc-dea4-40c1-a89f-d189897d8b17

1.2  
ALL  
APPROVED

**OBSTACLE CLEARANCE T.O. FLIGHT PATH (REMOTE OBSTACLES)**

**V2 / VSR = 1.22 (FLAPS 15)**



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|                   |                                      |           |
|-------------------|--------------------------------------|-----------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                   | PER.3     |
| <b>BU / 75</b>    | <b>TAKEOFF</b>                       |           |
| <b>AFM</b>        | <b>TOW DETERMINATION METHODOLOGY</b> | Page n°94 |

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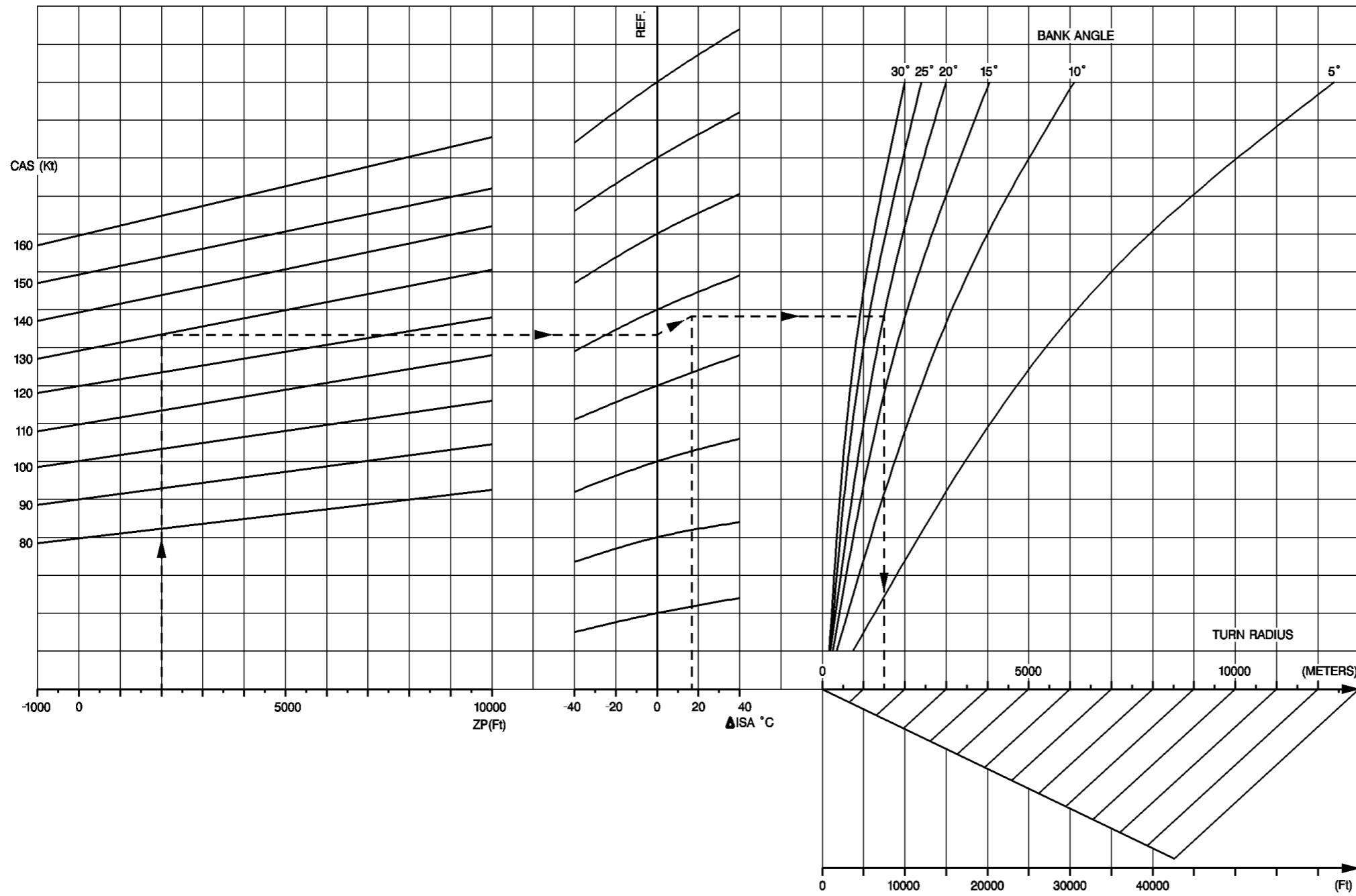
# 4 ALTITUDE SPEED-BANK ANGLE-TURN RADIUS

## 4.1 RELATIONSHIPS

### 4.1.01 Relationships

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ALL  
APPROVED



|                |  |           |
|----------------|--|-----------|
| <b>ATR</b>     | <b>PERFORMANCE</b>                           | PER.3     |
| <b>BU / 75</b> | <b>TAKEOFF</b>                               |           |
| <b>AFM</b>     | <b>ALTITUDE SPEED-BANK ANGLE-TURN RADIUS</b> | Page n°96 |

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## 4.2 BANK ANGLE EFFECT ON SINGLE ENGINE CLIMB GRADIENT

### 4.2.1 Flaps 15

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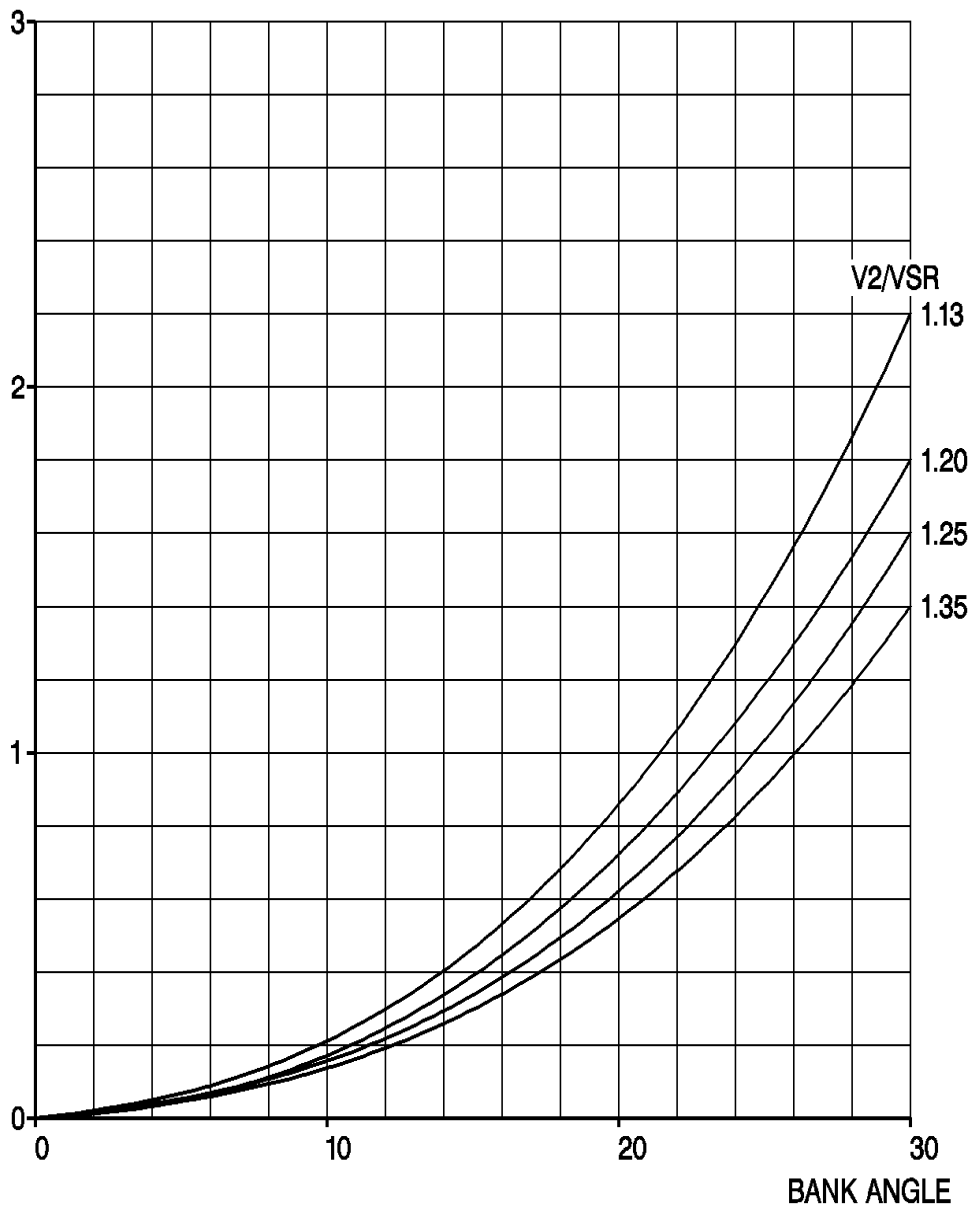
1.5


ALL

APPROVED

**BANK ANGLE EFFECT ON SINGLE ENGINE CLIMB GRADIENT  
(FLAPS 15)**

CLIMB GRADIENT  
DECREMENT (%)



|   |  |                                   |
|---|--|-----------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>SINGLE ENGINE CRUISE</b><br><br><b>INTRODUCTION</b> | <b>PER.4</b><br><br><br>Page n°98 |
|---|--|-----------------------------------|

# 1 INTRODUCTION

## 1.01 Introduction

|                                       |                               |
|---------------------------------------|-------------------------------|
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|---------------------------------------|-------------------------------|

The "En route" gradient given in this chapter are established by decreasing the available gradient at each point with a margin of 1.1 %.

The single engine cruise configuration is FLAPS 0.

The speed to be maintained is  $1.18 V_{SR}$ .

The operative engine is set at MCT power.

Air conditioning is ON when aircraft is above 10 000 ft.

Air conditioning is OFF when aircraft is below 10 000 ft.



PERFORMANCE

PER.4

BU / 75

SINGLE ENGINE CRUISE

AFM

EN ROUTE STRATEGY

Page n°99

2 EN ROUTE STRATEGY

2.2 EN ROUTE NET GRADIENT

1 Normal Conditions

Flaps 0

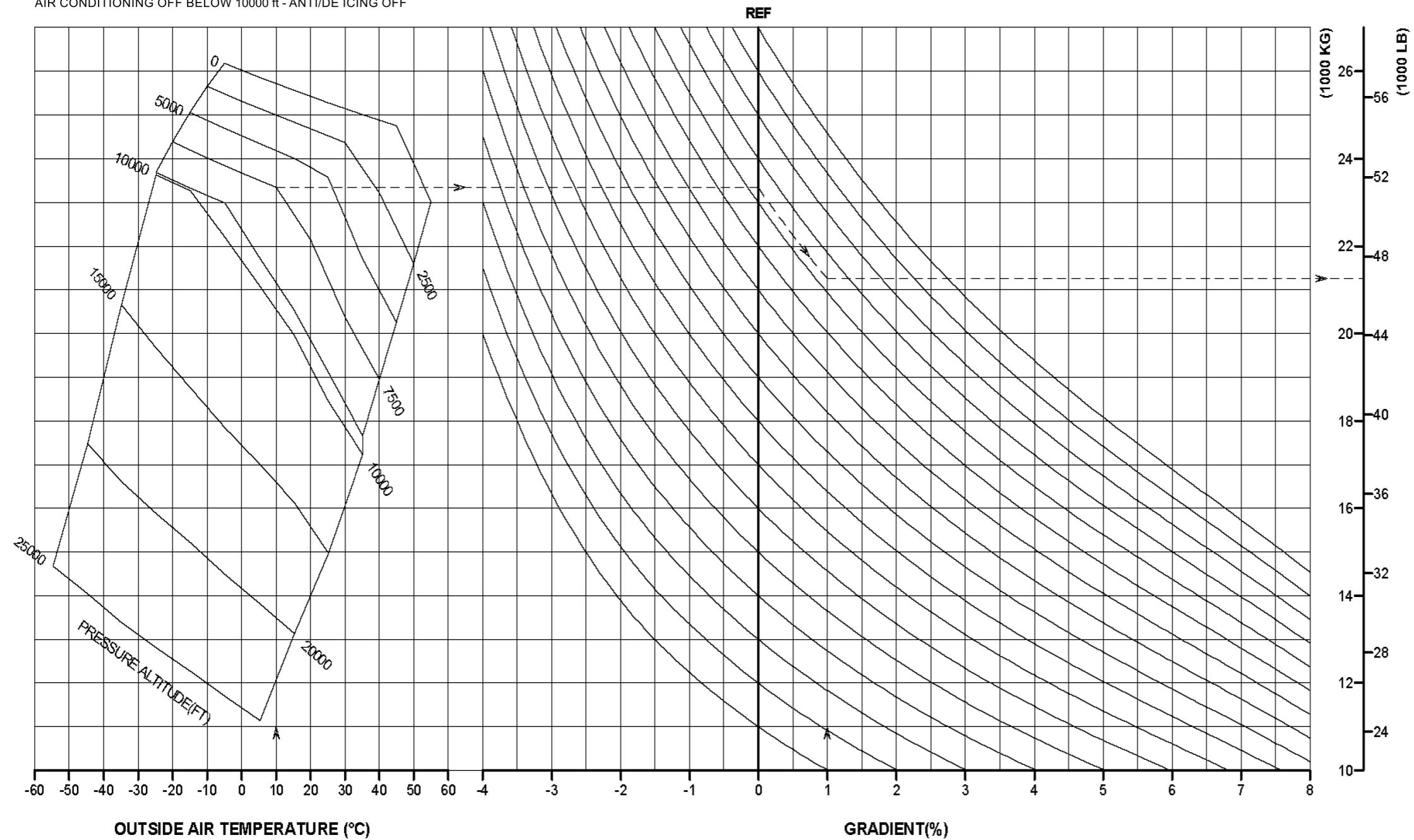
91b67c11-47fe-4135-8ffe-4b521114351a

0.2  
ALL  
APPROVED

PW127F / PW127M / PW127N - BOOST OFF

V / VSR = 1.18 (FLAPS 0)

ONE PROPELLER FEATHERED - ONE ENGINE : MCT POWER  
AIR CONDITIONING OFF BELOW 10000 ft - ANTI/DE ICING OFF



|                   |                             |            |
|-------------------|-----------------------------|------------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>          | PER.4      |
| <b>BU / 75</b>    | <b>SINGLE ENGINE CRUISE</b> |            |
| <b>AFM</b>        | <b>EN ROUTE STRATEGY</b>    | Page n°100 |

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## 2 Icing Conditions Flaps 15

1faa4c84-e55e-4a0c-b748-6e4ab47d3d02

0.1  
ALL  
APPROVED

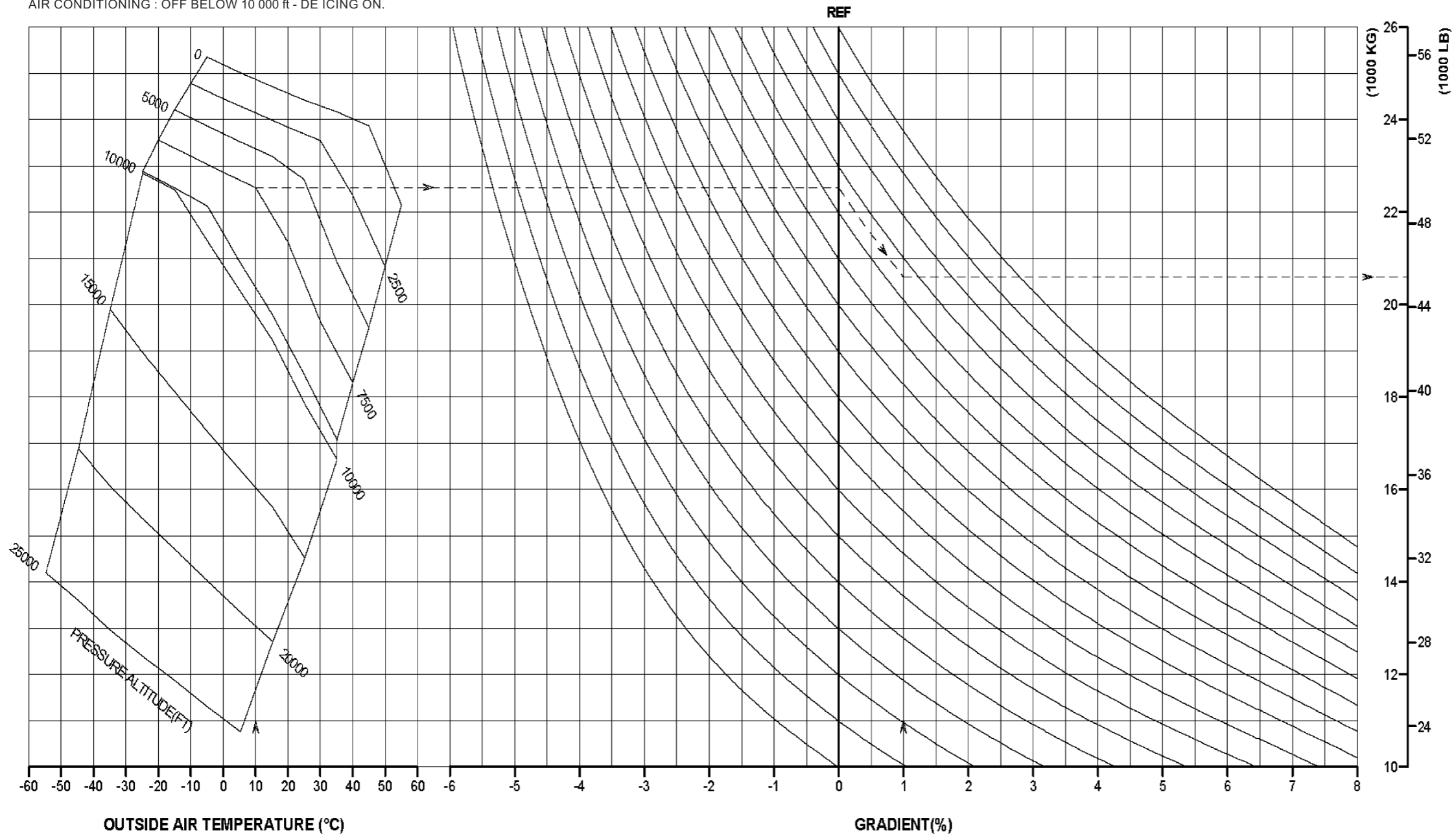
### EN ROUTE NET GRADIENT

PW127F / PW127M / PW127N - BOOST OFF

V/VSR = 1.30 (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE : MCT POWER


AIR CONDITIONING : OFF BELOW 10 000 ft - DE ICING ON.



|                   |                             |            |
|-------------------|-----------------------------|------------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>          | PER.4      |
| <b>BU / 75</b>    | <b>SINGLE ENGINE CRUISE</b> |            |
| <b>AFM</b>        | <b>EN ROUTE STRATEGY</b>    | Page n°102 |

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|---|--|--------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>LANDING</b><br><br><b>PERFORMANCE DETERMINATION</b> | <b>PER.5</b><br><br>Page n°103 |
|---|--|--------------------------------|

# 1 PERFORMANCE DETERMINATION

## 1.1 General

|                                      |     |           |
|--------------------------------------|-----|-----------|
| ccd08ea4-7426-4f2a-9298-2ca5adac8409 | REV | 6.1       |
|                                      |     | 0685-0706 |
|                                      |     | APPROVED  |

### 1) Climb Performance

Landing climb performance (two engines at GA power, landing flaps setting) is never limiting.

### 2) Landing Distance

The landing distance represents the distance from the 50 ft to complete stop on a level, smooth, dry, hard surfaced runway.

Antiskid is operative.

Engines are at Gl.

For flight preparation computation :

- Use Actual Landing Distance
- To determine the required runway length for landing, apply national operational regulations.
- On foreseen wet runway, increase the required landing distance on dry runway by 15 %

### 3) Brake Energy

The landing brake energy must be less than the **braking energy limitation**:

| LANDING CASE   | BRAKING ENERGY LIMITATION         |
|--|-----------------------------------|
| Normal landing operations or dispatch under MMEL             | 8.3 MJ (Fuse plug no melt energy) |
| Landing with in-flight failure that affects landing distance | 9.5 MJ (Maximum brake energy)     |

#### a) Normal Braking


Maximum braking is considered applied at main landing gear touch down.

#### b) Delayed Braking

#### CAUTION

Delayed braking is prohibited in case of the following dispatch cases:

- One wheel brake deactivated ([Refer to DEV.2.5.01.1 Dispatch with One Wheel Brake Deactivated or Removed](#))
- Flaps retracted ([Refer to DISPATCH WITH FLAPS RETRACTED](#))
- Ferry flight with pitch elevators disconnected ([Refer to DEV.2.16.01.1 Flight with Pitch Elevators Disconnected](#))
- Antiskid system inoperative ([Refer to DEV.2.6.01.1 Dispatch with Antiskid System Inoperative](#))

|   |  |                                |
|---|--|--------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>LANDING</b><br><br><b>PERFORMANCE DETERMINATION</b> | <b>PER.5</b><br><br>Page n°104 |
|---|--|--------------------------------|

cont'd... >>>

Maximum braking is applied at fixed speed depending on Flaps configuration:

| FLAPS | DELAYED BRAKING SPEED |
|-------|-----------------------|
| 30    | 80 kt IAS             |
| 15    | 90 kt IAS             |
| 0     | 100 kt IAS            |

**Note**

*For delayed braking, approach speed has no impact on landing brake energy.*

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| 59fa5617-ae47-4603-9c73-0df8c236e438 | <b>REV</b> | <b>5.1</b>      |
|                                      |            | <b>0775</b>     |
|                                      |            | <b>APPROVED</b> |

**1) Climb Performance**

Landing climb performance (two engines at GA power, landing flaps setting) is never limiting.

**2) Landing Distance**

The landing distance represents the distance from the 50 ft to complete stop on a level, smooth, dry, hard surfaced runway.

Antiskid is operative.

Engines are at GI.

For flight preparation computation :

- Use Actual Landing Distance
- To determine the required runway length for landing, apply national operational regulations.
- On foreseen wet runway, increase the required landing distance on dry runway by 15 %

**3) Brake Energy**


The landing brake energy must be less than the **braking energy limitation**:

| LANDING CASE   | BRAKING ENERGY LIMITATION         |
|--|-----------------------------------|
| Normal landing operations or dispatch under MMEL             | 8.9 MJ (Fuse plug no melt energy) |
| Landing with in-flight failure that affects landing distance | 9.5 MJ (Maximum brake energy)     |

**a) Normal Braking**

Maximum braking is considered applied at main landing gear touch down.

cont'd... >>>

|   |  |                                |
|---|--|--------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>LANDING</b><br><br><b>PERFORMANCE DETERMINATION</b> | <b>PER.5</b><br><br>Page n°105 |
|---|--|--------------------------------|

cont'd... >>>

## b) Delayed Braking

### CAUTION

Delayed braking is prohibited in case of the following dispatch cases:

- One wheel brake deactivated ([Refer to DEV.2.5.01.1 Dispatch with One Wheel Brake Deactivated or Removed](#))
- Flaps retracted ([Refer to DISPATCH WITH FLAPS RETRACTED](#))
- Ferry flight with pitch elevators disconnected ([Refer to DEV.2.16.01.1 Flight with Pitch Elevators Disconnected](#))
- Antiskid system inoperative ([Refer to DEV.2.6.01.1 Dispatch with Antiskid System Inoperative](#))

Maximum braking is applied at fixed speed depending on Flaps configuration:

| FLAPS | DELAYED BRAKING SPEED |
|-------|-----------------------|
| 30    | 80 kt IAS             |
| 15    | 90 kt IAS             |
| 0     | 100 kt IAS            |

### Note

*For delayed braking, approach speed has no impact on landing brake energy.*

## 1.2 Normal Conditions

49fdb991-2f14-40cc-913d-b3d1cfacc218

0.6

ALL

APPROVED


### 1) Normal Braking

- [Refer to PER.5.2.3.1.1.1 Flaps 30](#) and [Refer to PER.5.2.4.2.1.1 VREF +10kts](#) to determine Flaps 30 landing distance
- Determine the landing brake energy: [Refer to PER.5.2.4.1.2 Flaps 30](#) and [Refer to PER.5.2.4.2.1.1 VREF +10kts](#). In case of reduced flaps landing, [Refer to PER.5.2.4.2.2.3 Flaps 15](#) or [Refer to PER.5.2.4.2.2.1 Flaps 0](#) for landing brake energy corrections.

If the determined landing brake energy is greater than the maximum brake energy, use delayed braking (if runway length permits).

### 2) Delayed Braking

- [Refer to PER.5.2.3.1.1.4 Flaps 30 - Delayed Braking at 80kts IAS](#) and [Refer to PER.5.2.3.1.2.2 VREF +10kts - Delayed at 80kts IAS](#) to determine Flaps 30 landing distance
- Determine the landing brake energy: [Refer to PER.5.2.4.1.3 Flaps 30 - Delayed Braking at 80kts IAS](#). In case of reduced flaps landing, [Refer to PER.5.2.4.2.2.4 Flaps 15 - Delayed Braking at 90kts IAS](#) or [Refer to PER.5.2.4.2.2.2 Flaps 0 - Delayed Braking at 100kts IAS](#) for landing brake energy correction.

|   |  |                                |
|---|--|--------------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>PERFORMANCE</b><br><br><b>LANDING</b><br><br><b>PERFORMANCE DETERMINATION</b> | <b>PER.5</b><br><br>Page n°106 |
|---|--|--------------------------------|

## 1.3 Icing Conditions

|                                      |            |
|--------------------------------------|------------|
| d172b12f-c653-4d65-b61a-5a1a7a567417 | <b>0.5</b> |
|                                      | ALL        |
|                                      | APPROVED   |

### 1) Normal Braking

- Correct landing distance in normal conditions: [Refer to PER.5.2.3.2.1 Flaps 30](#)
- Correct landing brake energy normal conditions: [Refer to PER.5.2.4.2.3.1 Flaps 0](#), [Refer to PER.5.2.4.2.3.2 Flaps 15](#), or [Refer to PER.5.2.4.2.3.4 Flaps 30](#).

### 2) Delayed Braking

- Correct landing distance in normal conditions: [Refer to PER.5.2.3.2.4 Flaps 30 - Delayed Braking at 80kts IAS](#)
- In case of delayed braking, icing conditions have no impact on landing brake energy. Landing brake energy in normal conditions apply in icing conditions. Determine the landing brake energy: [Refer to PER.5.2.4.1.3 Flaps 30 - Delayed Braking at 80kts IAS](#). In case of reduced flaps landing, [Refer to PER.5.2.4.2.2.4 Flaps 15 - Delayed Braking at 90kts IAS](#) or [Refer to PER.5.2.4.2.2.2 Flaps 0 - Delayed Braking at 100kts IAS](#) for landing brake energy correction.

## 2 LANDING PERFORMANCE CHARTS

### 2.1 APPROACH CLIMB GRADIENT LIMITING WEIGHT CHART

#### 2.1.1 NORMAL CONDITIONS

#### 1 Flaps 15

#### Flaps 15

c92e78e2-7b51-4a14-8a06-122052926eae

1.1  
ALL  
APPROVED

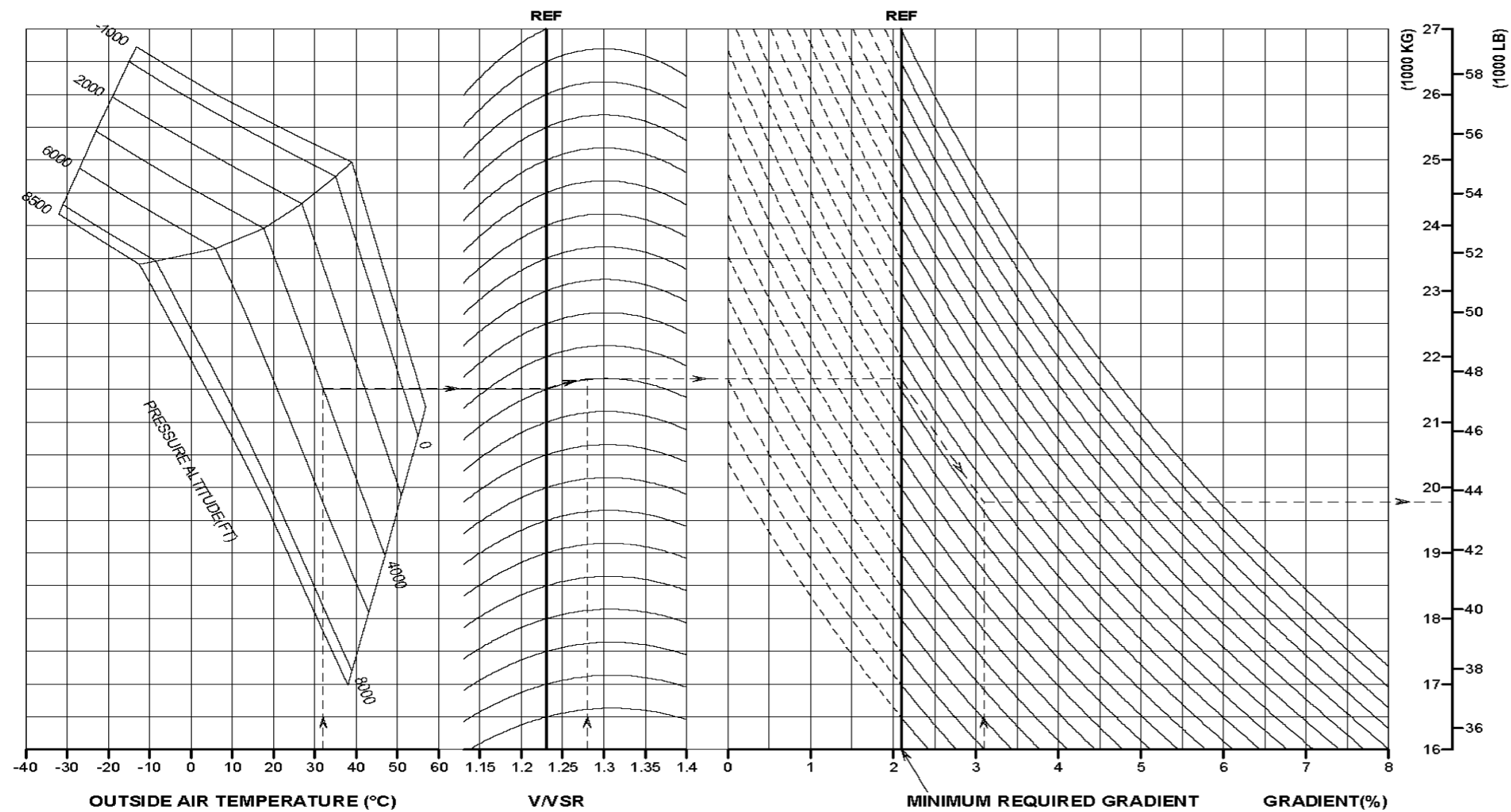
PW127F / PW127M / PW127N - BOOST OFF

APPROACH CLIMB GRADIENT

APPROACH CLIMB LIMITING WEIGHT (FLAPS 15)

ONE PROPELLER FEATHERED - ONE ENGINE : GO AROUND POWER

AIR CONDITIONING OFF - ANTI/DE ICING OFF - GEAR UP



|                   |                                   |            |
|-------------------|-----------------------------------|------------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                | PER.5      |
| <b>BU / 75</b>    | <b>LANDING</b>                    |            |
| <b>AFM</b>        | <b>LANDING PERFORMANCE CHARTS</b> | Page n°108 |

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## 2.1.2 ICING CONDITIONS

### 2.1.2.1 Flaps 15

2f04f9ea-d5f3-4346-ab99-0447b0c6bc31

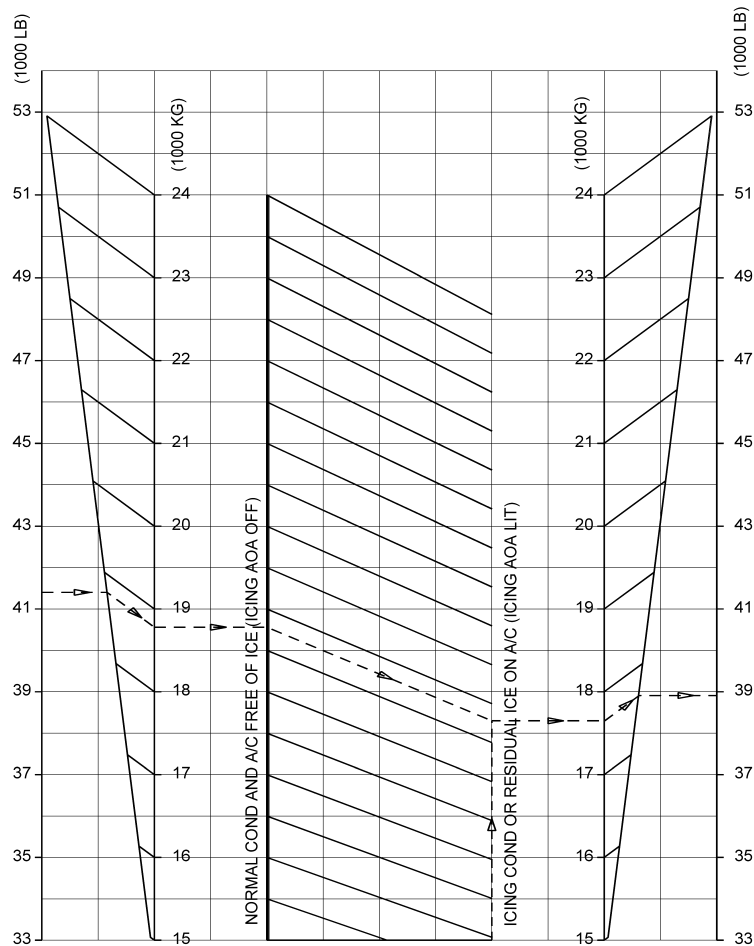
1.5

ALL

APPROVED

**AIRWORTHINESS DIRECTIVE: 70**

**EFFECT ON  
APPROACH CLIMB GRADIENT WEIGHT  
V / VSR = 1.24 (FLAPS 15)**



ICN-7X-Y-000000-T-FB429-00437-D-02-N

**Note**

*Performance decrement applies to the maximum approach climb gradient limiting weight computed in normal conditions with  $V = 1.24 V_{SR}$  (FLAPS 15).*

## 2.2 FINAL APPROACH SPEED CHART

### 2.2.01 Final Approach Speed Chart

55ce9223-6073-472e-9341-f62d69f296d6

1.2

ALL

APPROVED

The approach speed is at least  $1.23 V_{SR}$  in the configurations:

- FLAPS 15
- FLAPS 30

Or  $V_{MCL}$ , whichever is higher.

The regulation authorizes to take approach speed up to  $1.4 V_{SR}$ .

The minimum final approach speed is the speed at 50 ft height taken into account for landing distance computation.

It is equal to  $1.23 V_{SR}$  in the landing configuration or  $V_{MCL}$ , whichever is higher.





BU / 75

AFM

PERFORMANCE

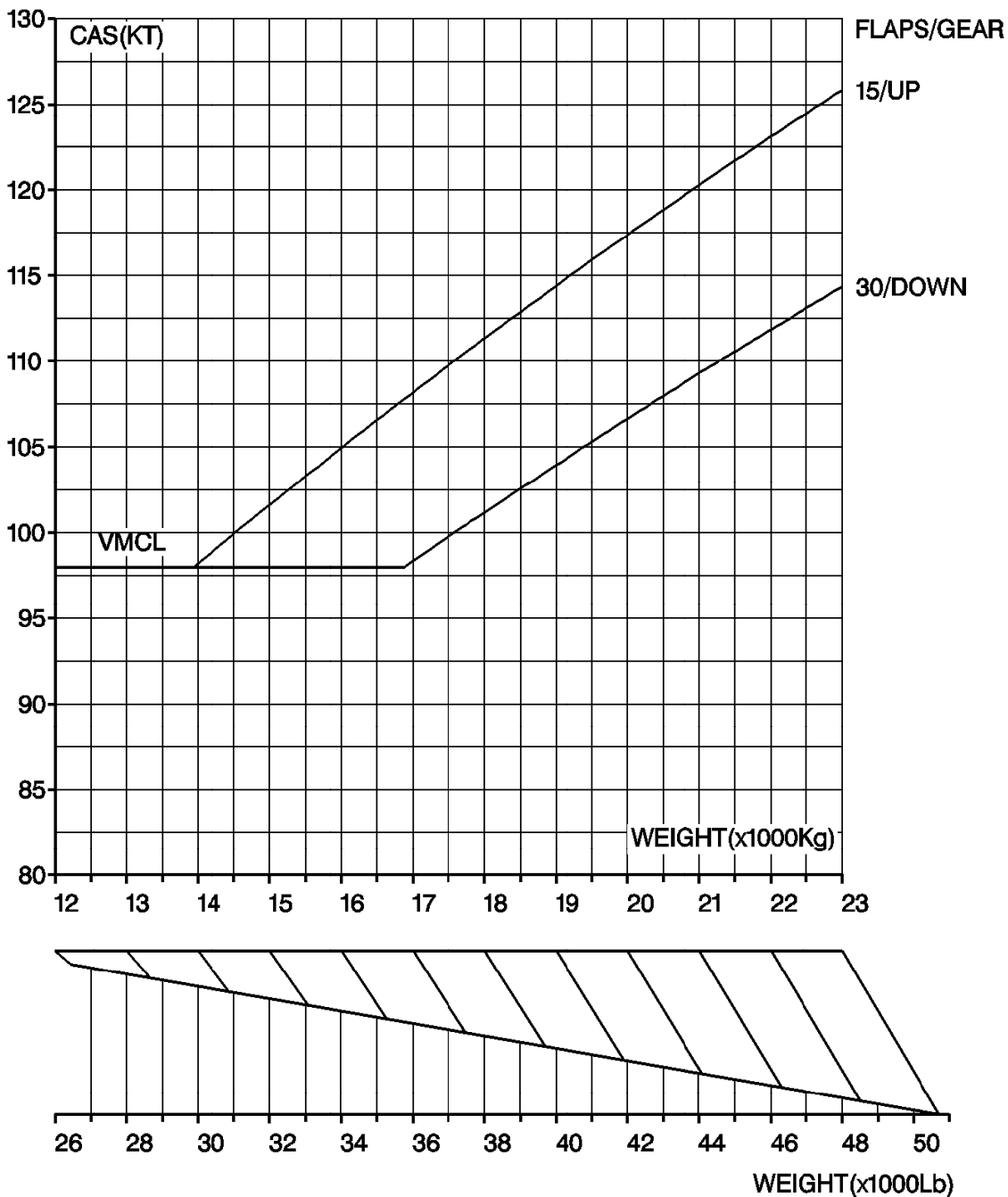
LANDING

LANDING PERFORMANCE CHARTS

PER.5

Page n°111

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***ATR***

**BU / 75**

**AFM**

**PERFORMANCE**

**LANDING**

**LANDING PERFORMANCE CHARTS**

**PER.5**

Page n°112

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### 2.3 LANDING DISTANCE CHART

#### 2.3.1 NORMAL CONDITIONS

#### 2.3.1.1 LANDING DISTANCE

#### 2.3.1.1.1 Flaps 30

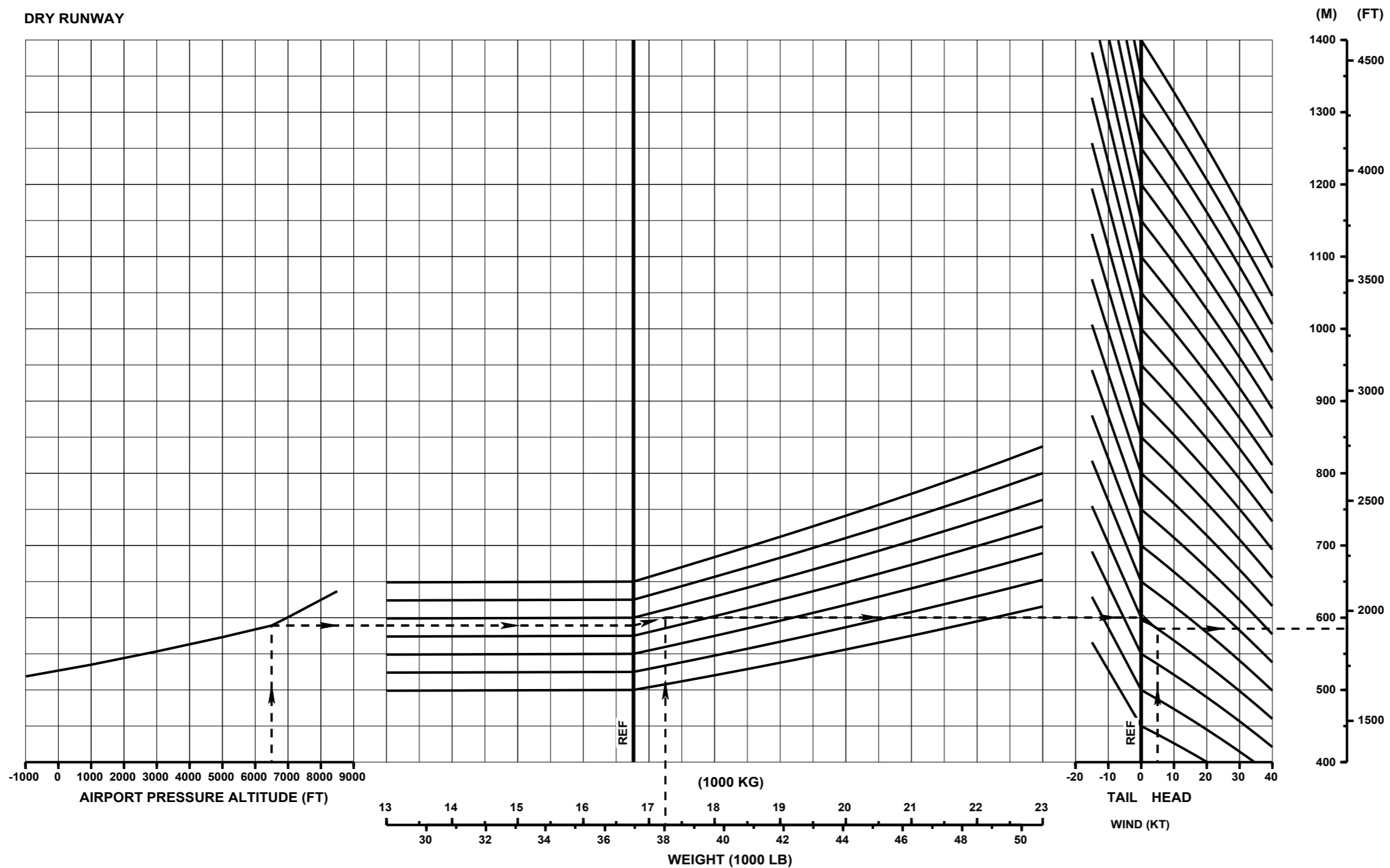
cb45ae97-8d7f-4870-866d-6747de8c2552

7.0  
0775  
APPROVED

LANDING DISTANCE (FLAPS 30)

NORMAL BRAKING

DRY RUNWAY



|                                  |   |                         |
|----------------------------------|---|-------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>LANDING<br>LANDING PERFORMANCE CHARTS | PER.5<br><br>Page n°114 |
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BU / 75

AFM

PERFORMANCE

LANDING  
LANDING PERFORMANCE CHARTS

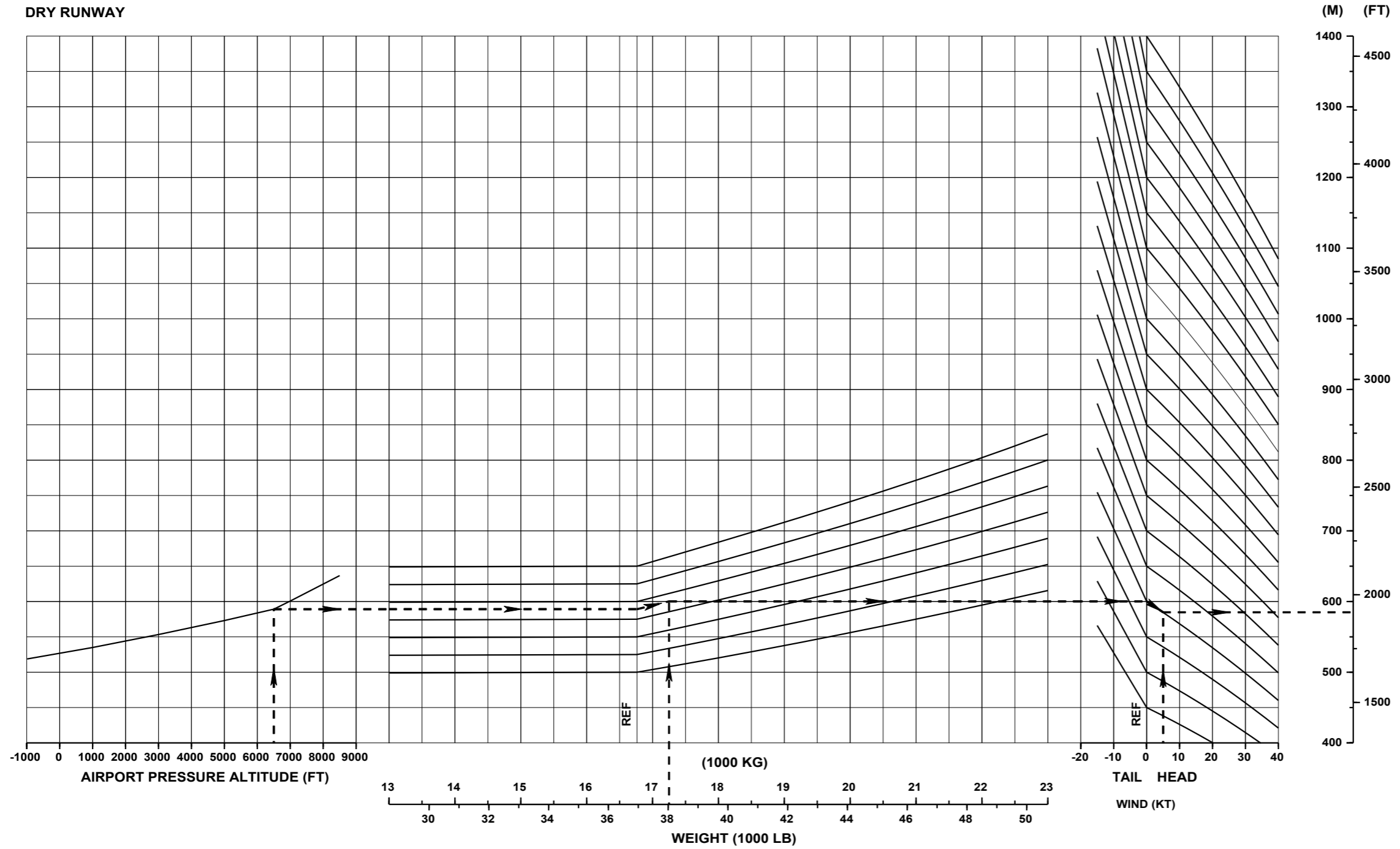
PER.5

Page n°115

f7ed2ac0-d1be-49ae-b413-a0e567803dfb

3.0  
0685-0706  
APPROVED

LANDING DISTANCE (FLAPS 30)  
NORMAL BRAKING  
DRY RUNWAY



|                                  |   |                         |
|----------------------------------|---|-------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>LANDING<br>LANDING PERFORMANCE CHARTS | PER.5<br><br>Page n°116 |
|----------------------------------|---|-------------------------|

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PERFORMANCE

PER.5

BU / 75

LANDING

AFM

LANDING PERFORMANCE CHARTS

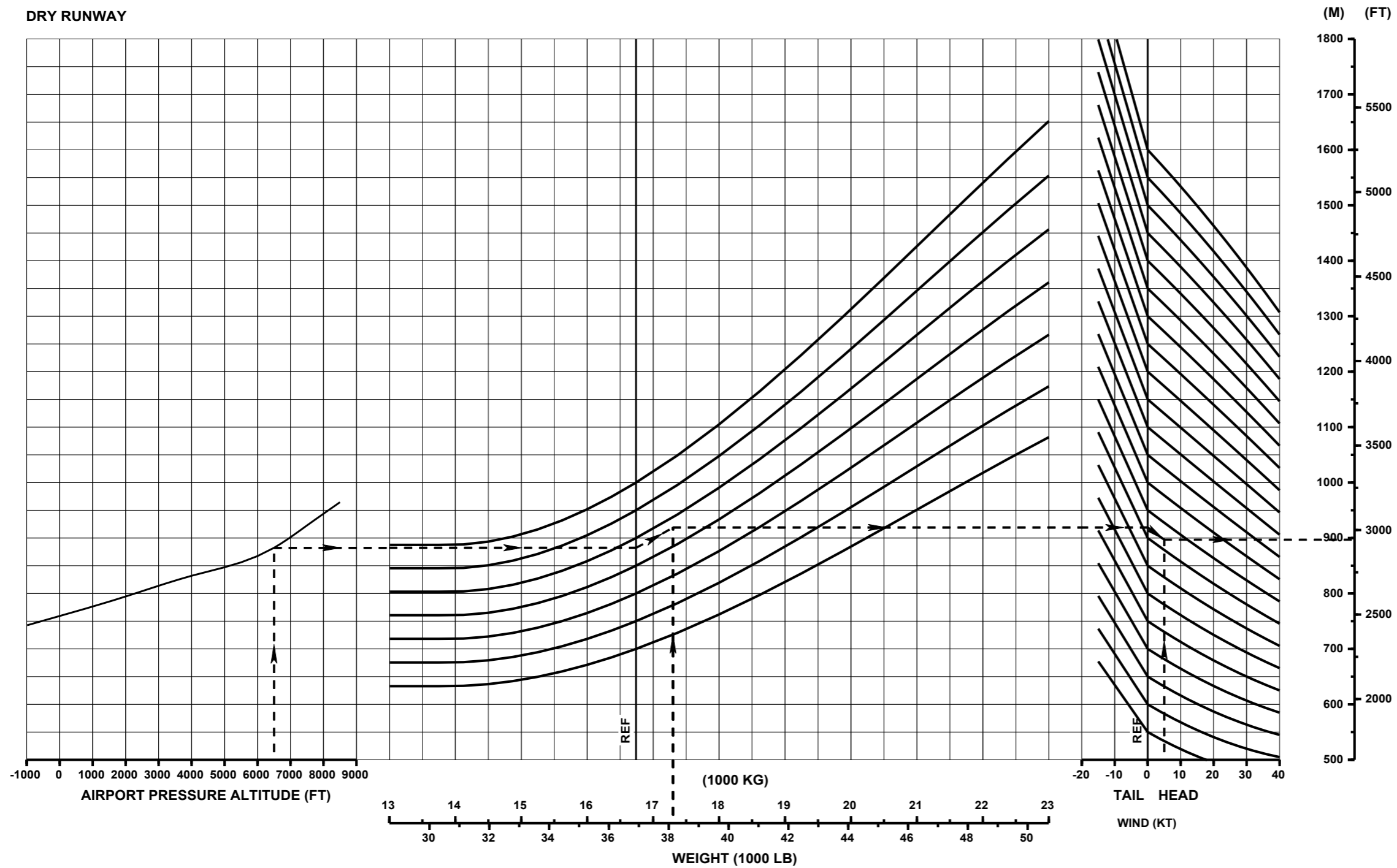
Page n°117

### 2.3.1.1.2 Flaps 30 - Delayed Braking at 80kts IAS

c867547f-16a1-413a-907c-ede8b222e073

2.0  
0685-0706  
APPROVED

LANDING DISTANCE (FLAPS 30)  
DELAYED BRAKING AT 80KT IAS  
DRY RUNWAY



|                   |                                   |            |
|-------------------|-----------------------------------|------------|
| <b><i>ATR</i></b> | <b>PERFORMANCE</b>                | PER.5      |
| <b>BU / 75</b>    | <b>LANDING</b>                    |            |
| <b>AFM</b>        | <b>LANDING PERFORMANCE CHARTS</b> | Page n°118 |

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PERFORMANCE

PER.5

BU / 75

LANDING

AFM

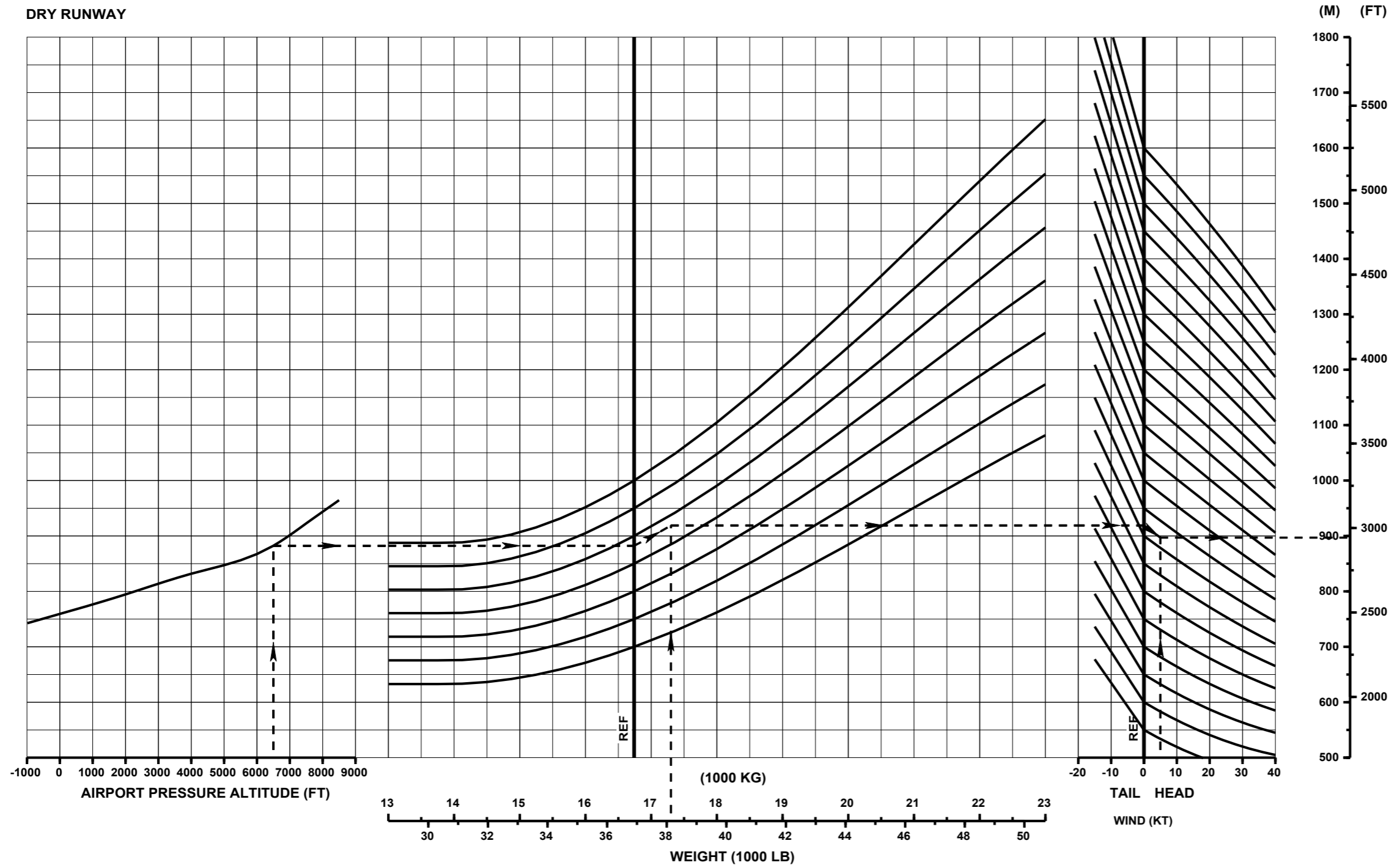
LANDING PERFORMANCE CHARTS

Page n°119

21e0cb03-6c0d-4d01-a461-fedffcd8d3a0

5.0  
0775  
APPROVED

LANDING DISTANCE (FLAPS 30)  
DELAYED BRAKING AT 80KT IAS  
DRY RUNWAY



|                                  |   |                         |
|----------------------------------|---|-------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>LANDING<br>LANDING PERFORMANCE CHARTS | PER.5<br><br>Page n°120 |
|----------------------------------|---|-------------------------|

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## 2.3.1.2 LANDING DISTANCE CORRECTIONS

### 2.3.1.2.1 VREF +10kts

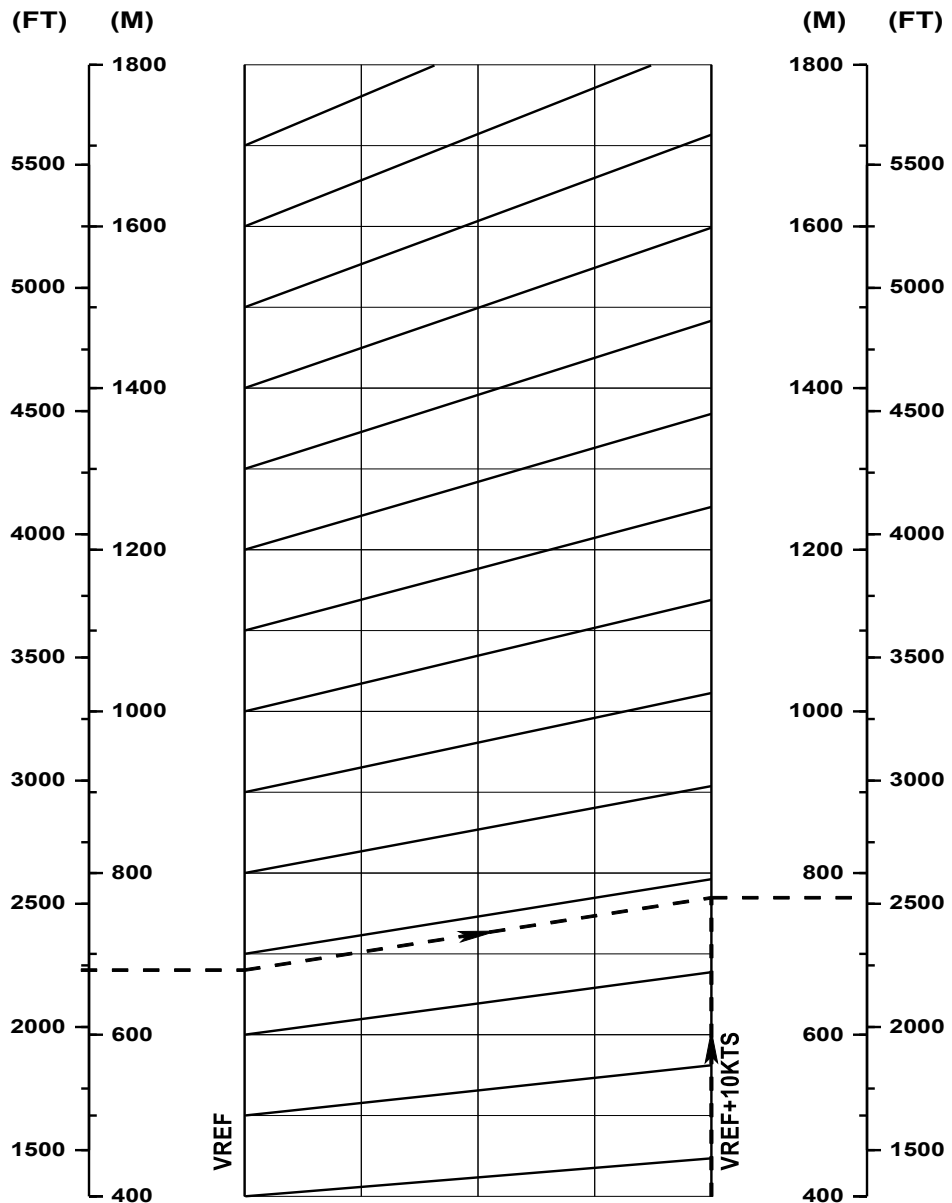
bb6e9eae-d408-4023-b15e-9db1805a0d6a 1.0  
ALL  
APPROVED

**OPERATION ON DRY OR WET RUNWAY**

**VREF+10KTS**

**LANDING DISTANCE CORRECTION**

**NORMAL BRAKING**



**2.3.1.2.2 VREF +10kts - Delayed at 80kts IAS**

81e8f351-7ed2-44bc-bbc8-254631cc9f39

0.3

ALL

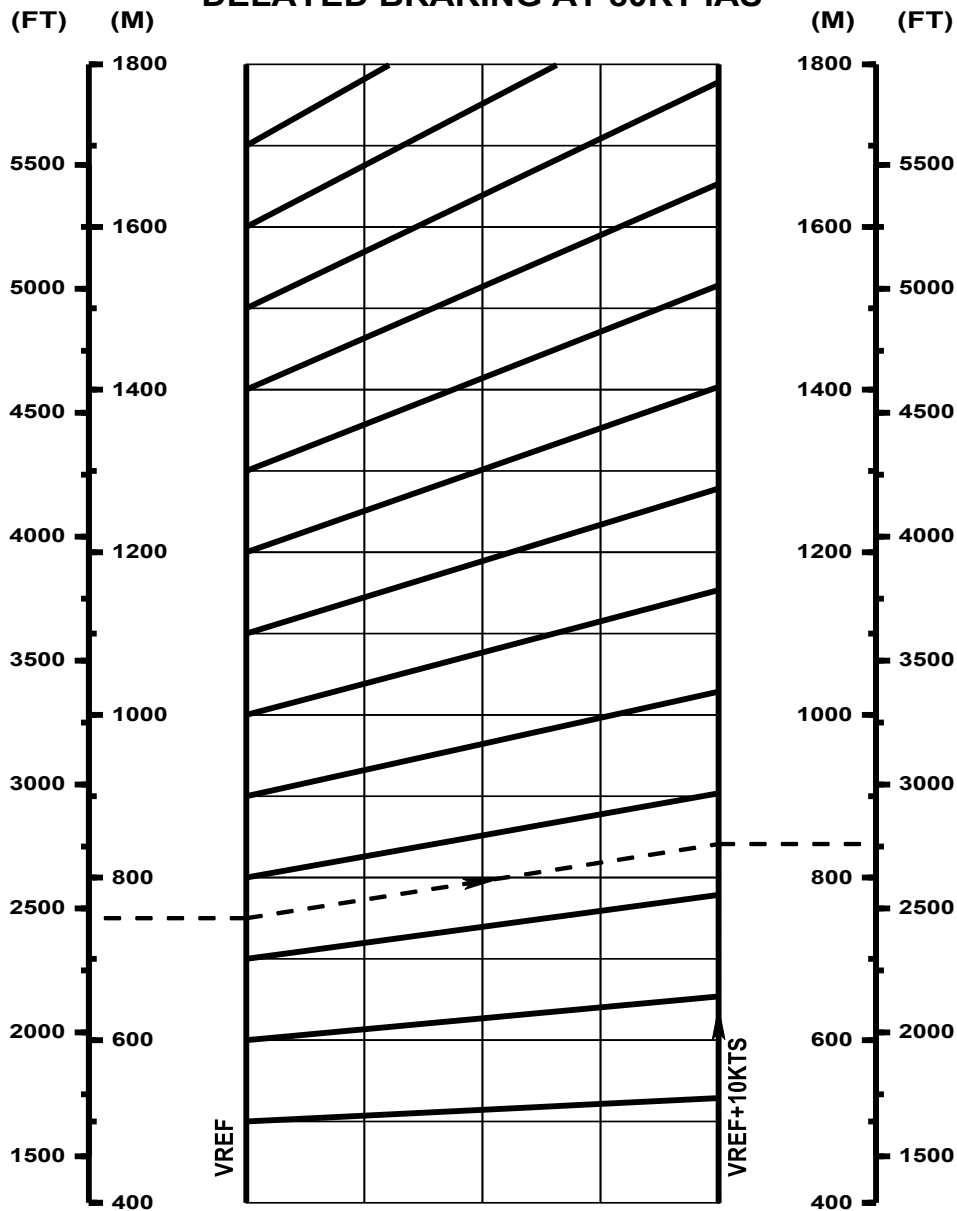
APPROVED

**OPERATION ON DRY OR WET RUNWAY**

**VREF+10KTS**

**LANDING DISTANCE CORRECTION**

**DELAYED BRAKING AT 80KT IAS**



## 2.3.2 ICING CONDITIONS

### 2.3.2.1 Flaps 30

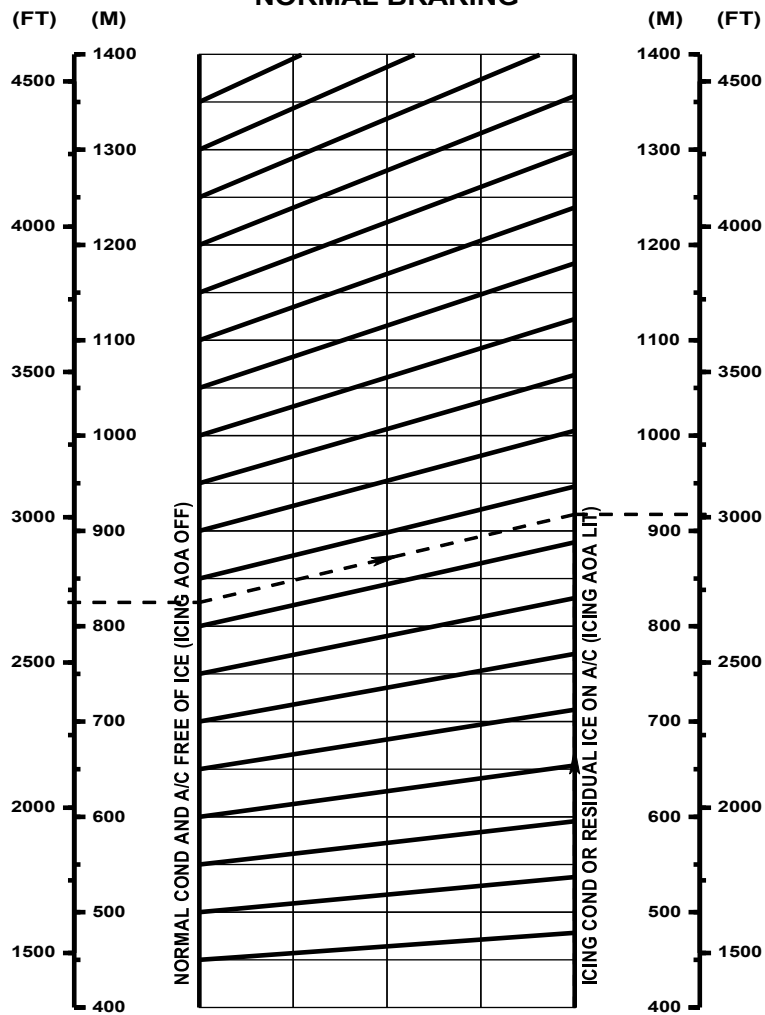
4cd72dc6-ceec-49f5-9e7e-fea961ab52f9

**1.1  
ALL  
APPROVED**

#### EFFECT ON LANDING DISTANCE

V/ VSR = 1.32 (FLAPS 30)

#### NORMAL BRAKING



ICN-7X-Y-000000-T-FB429-00443-D-03-N

**Note**

*Performance decrement applies to the landing distance computed in normal conditions.*

**2.3.2.2 Flaps 30 - Delayed Braking at 80kts IAS**

1b7615bf-81f1-4638-93e0-ebf7a463dcf6

0.8

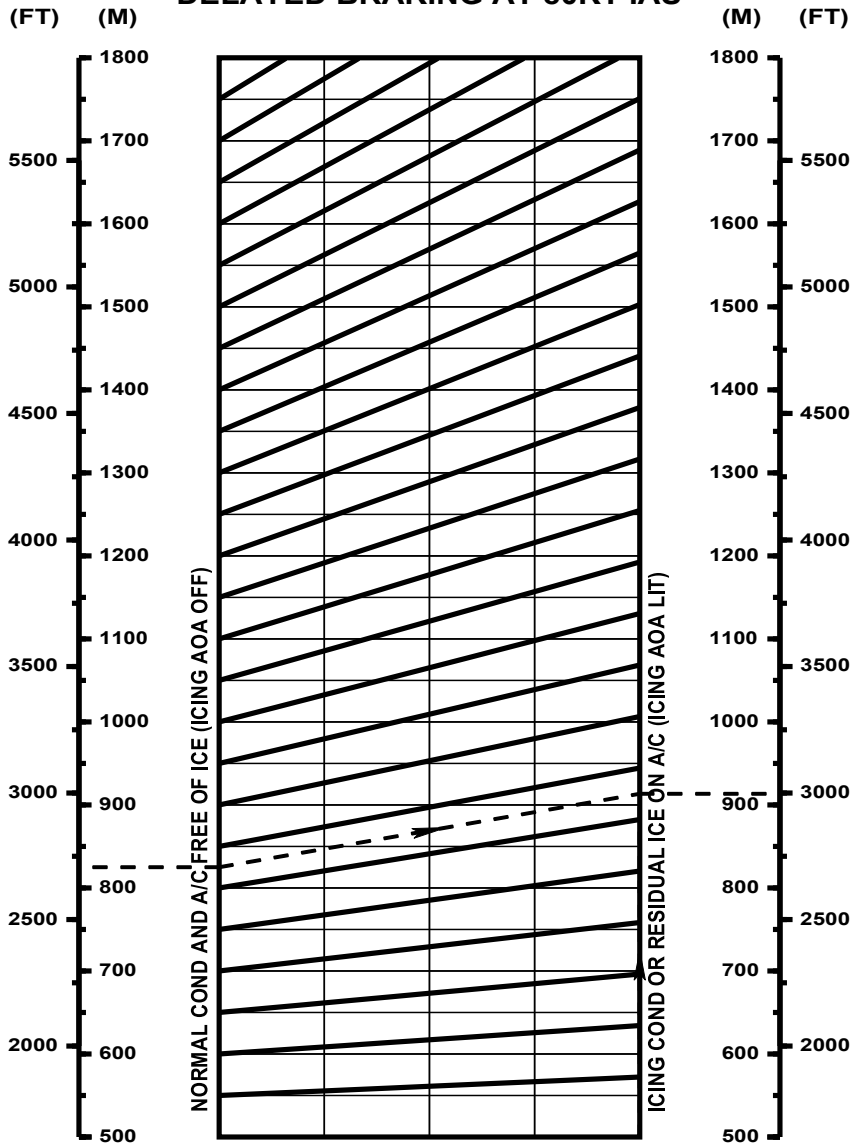
ALL

APPROVED

**EFFECT ON LANDING DISTANCE**

**V / VSR = 1.32 (FLAPS 30)**

**DELAYED BRAKING AT 80KT IAS**



ICN-75-Y-000000-T-FB429-00450-A-02-N

**Note**

*Performance decrement applies to the landing distance computed in normal conditions.*

### 2.4 LANDING BRAKE ENERGY

#### 2.4.1 LANDING BRAKE ENERGY CHARTS

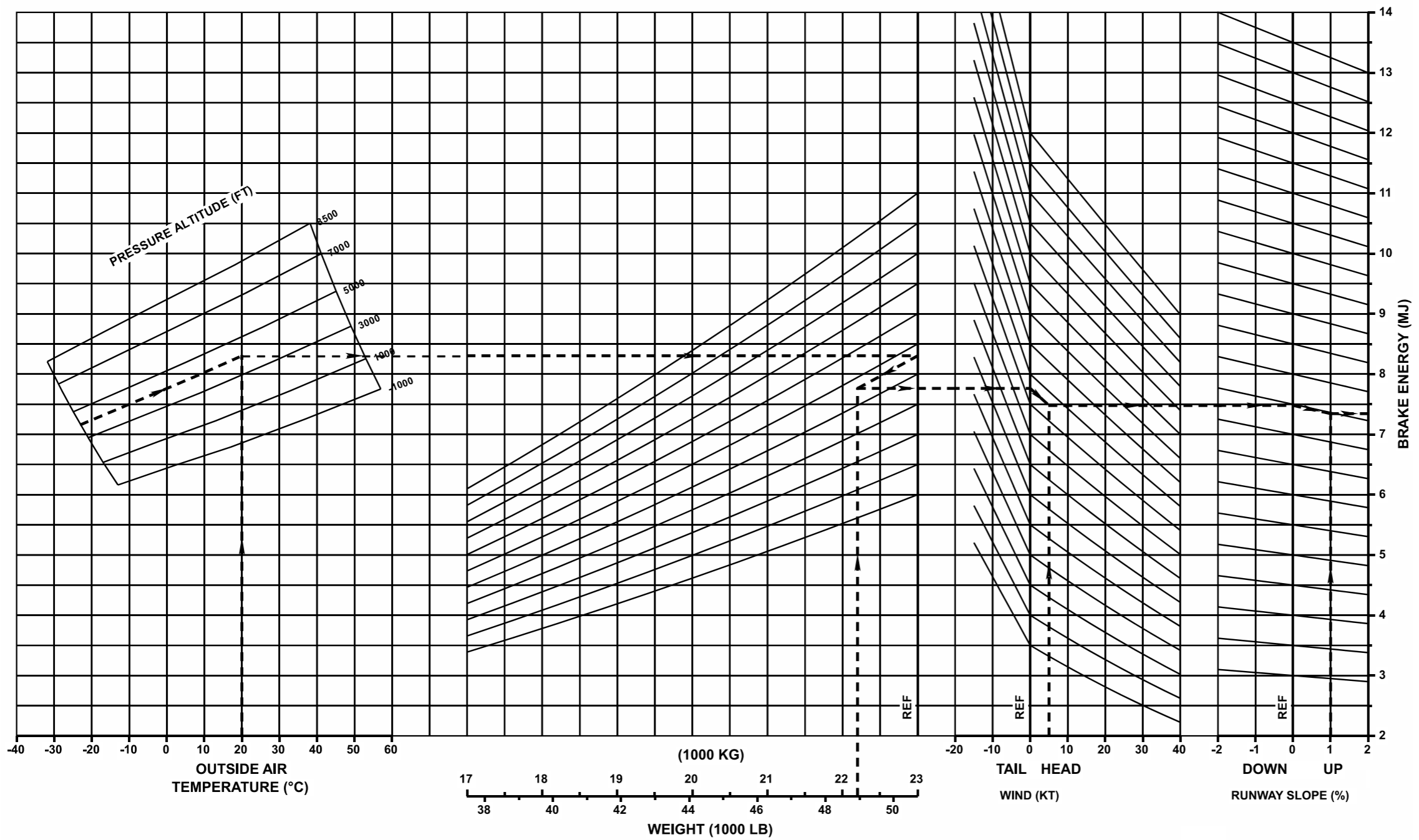
##### 2.4.1.1 Flaps 30

cd441c60-ebba-41d8-9dd0-ae3d3676f4bb

1.2  
ALL  
APPROVED

LANDING BRAKE ENERGY (FLAPS 30)  
NORMAL BRAKING

OPERATION ON DRY OR WET RUNWAY



|                                  |   |                         |
|----------------------------------|---|-------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>LANDING<br>LANDING PERFORMANCE CHARTS | PER.5<br><br>Page n°126 |
|----------------------------------|---|-------------------------|

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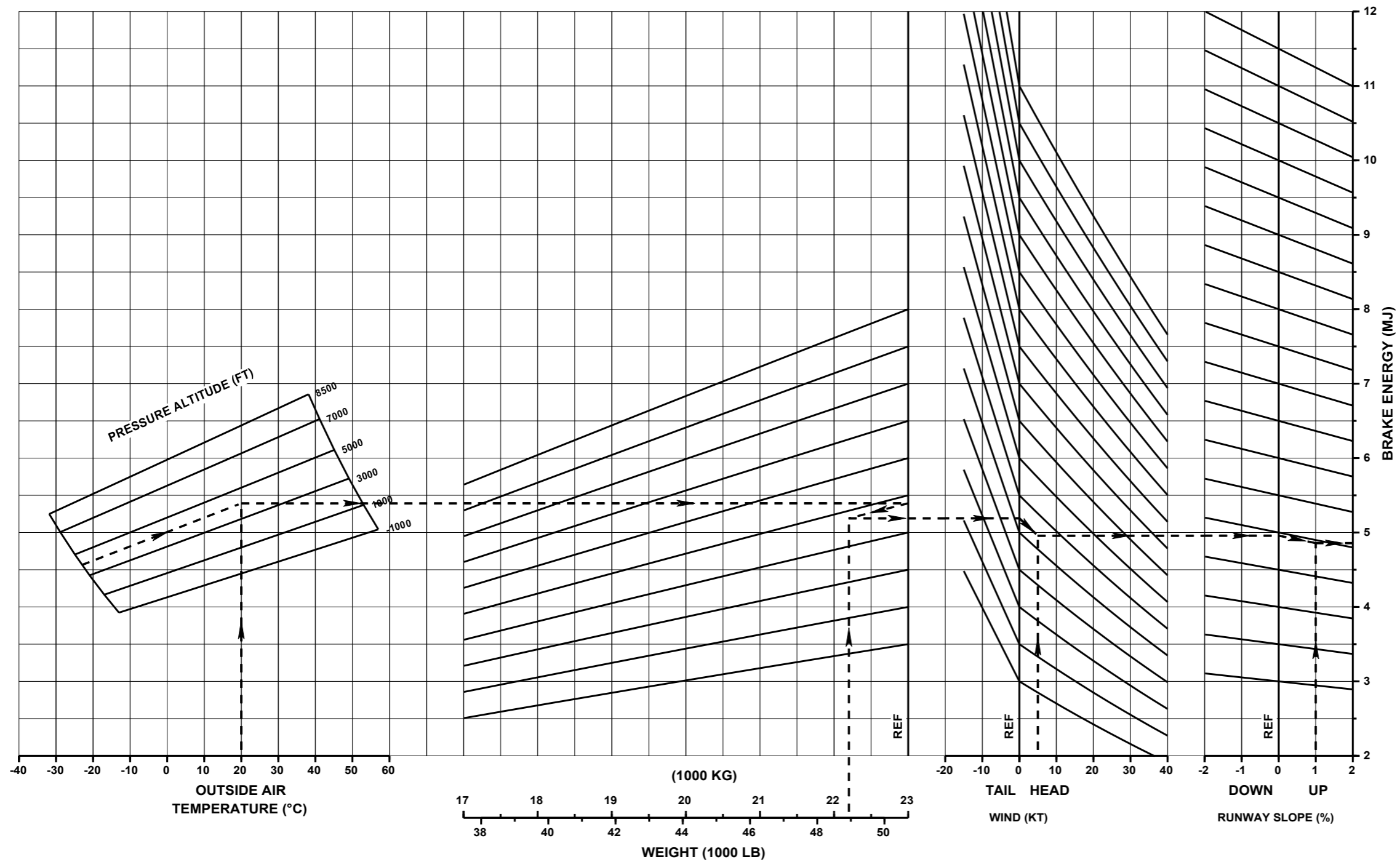
2.4.1.2 Flaps 30 - Delayed Braking at 80kts IAS

7cba5985-bcd8-4b89-97ea-b523c75d7a7a

0.2  
ALL  
APPROVED

LANDING BRAKE ENERGY (FLAPS 30)  
DELAYED BRAKING AT 80KT IAS

OPERATION ON DRY OR WET RUNWAY



|                                  |   |                         |
|----------------------------------|---|-------------------------|
| <b>ATR</b><br><br>BU / 75<br>AFM | <b>PERFORMANCE</b><br><br>LANDING<br>LANDING PERFORMANCE CHARTS | PER.5<br><br>Page n°128 |
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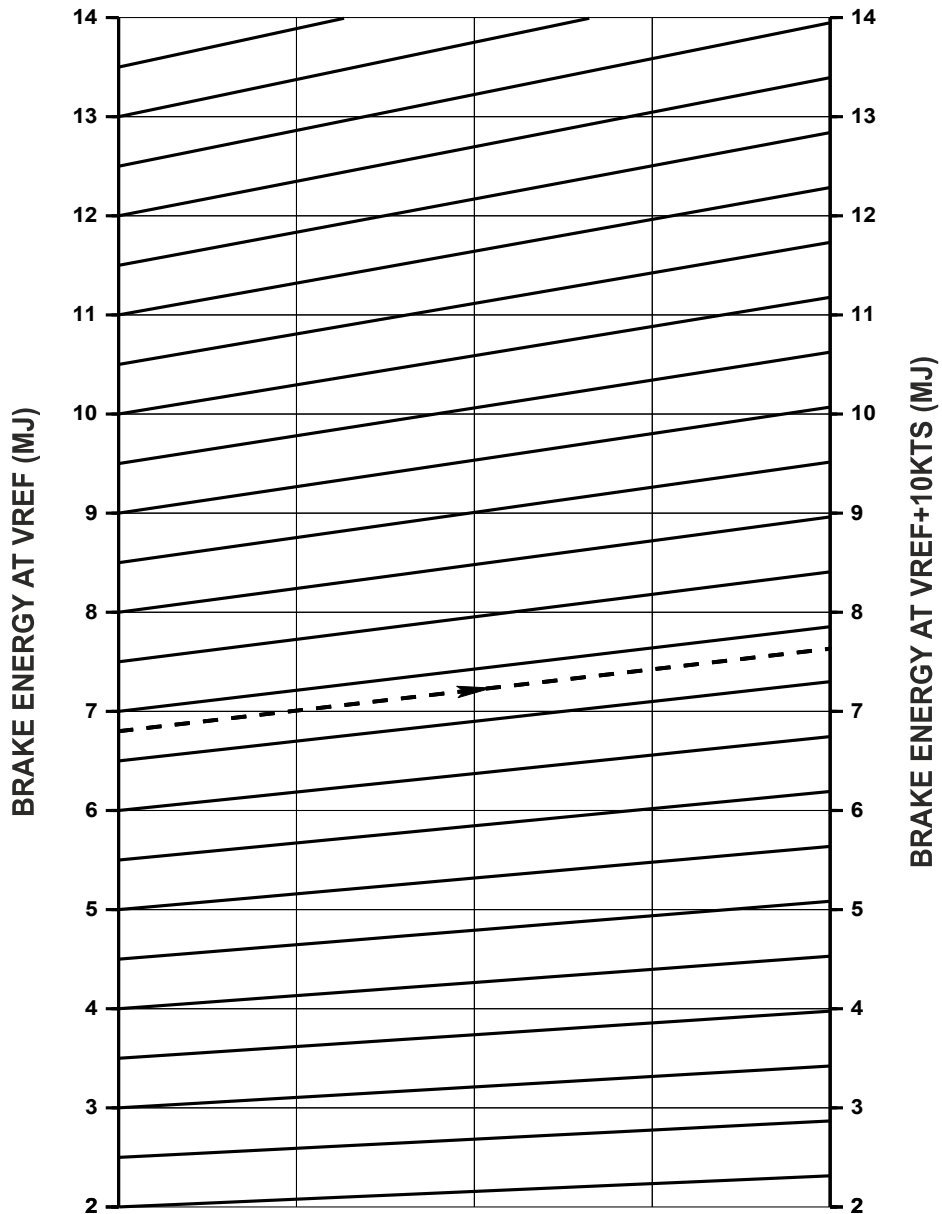
## 2.4.2 LANDING BRAKE ENERGY CORRECTION

### 2.4.2.1 VREF +10kts

#### 2.4.2.1.1 VREF +10kts

|                                      |  |          |
|--------------------------------------|--|----------|
| f47968e8-2d78-4f2d-ade3-f528bde87798 |  | 1.2      |
|                                      |  | ALL      |
|                                      |  | APPROVED |

OPERATION ON DRY OR WET RUNWAY  
 VREF+10KTS  
 LANDING BRAKE ENERGY CORRECTION  
 NORMAL BRAKING



ICN-7X-Y-000000-T-FB429-00444-C-01-N

cont'd... >>>



BU / 75

AFM

PERFORMANCE

LANDING

LANDING PERFORMANCE CHARTS

PER.5

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**Note**

*Approach speed has no impact on landing brake energy in case of delayed braking.*

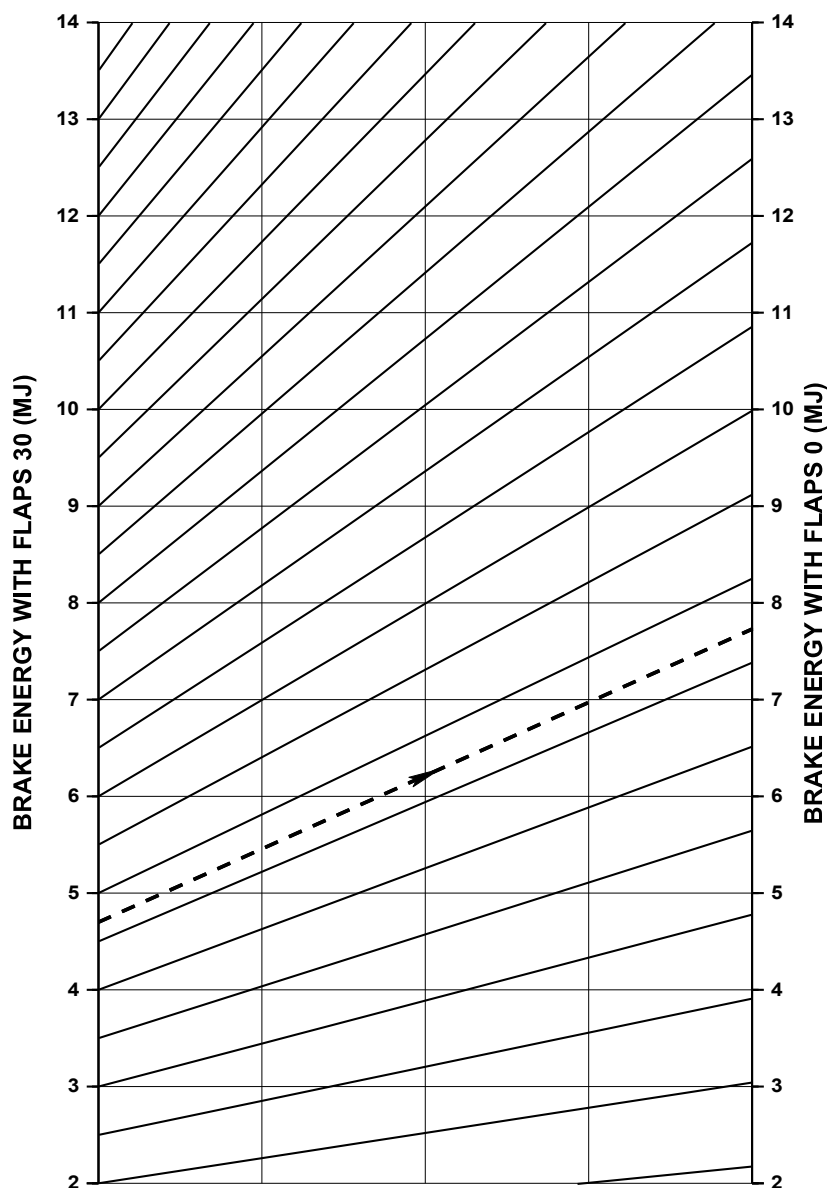
## 2.4.2.2 NORMAL CONDITIONS

### 2.4.2.2.1 Flaps 0

fcc02054-800b-4482-8017-290333a92e96

**0.4  
ALL  
APPROVED**

**OPERATION ON DRY OR WET RUNWAY  
FLAPS 0  
LANDING BRAKE ENERGY CORRECTION  
NORMAL BRAKING**



**2.4.2.2.2 Flaps 0 - Delayed Braking at 100kts IAS**

**Flaps 0 - Delayed Braking at 100kts IAS**

c25cc3ac-5034-4097-9d53-d2656baa0713

0.1

ALL

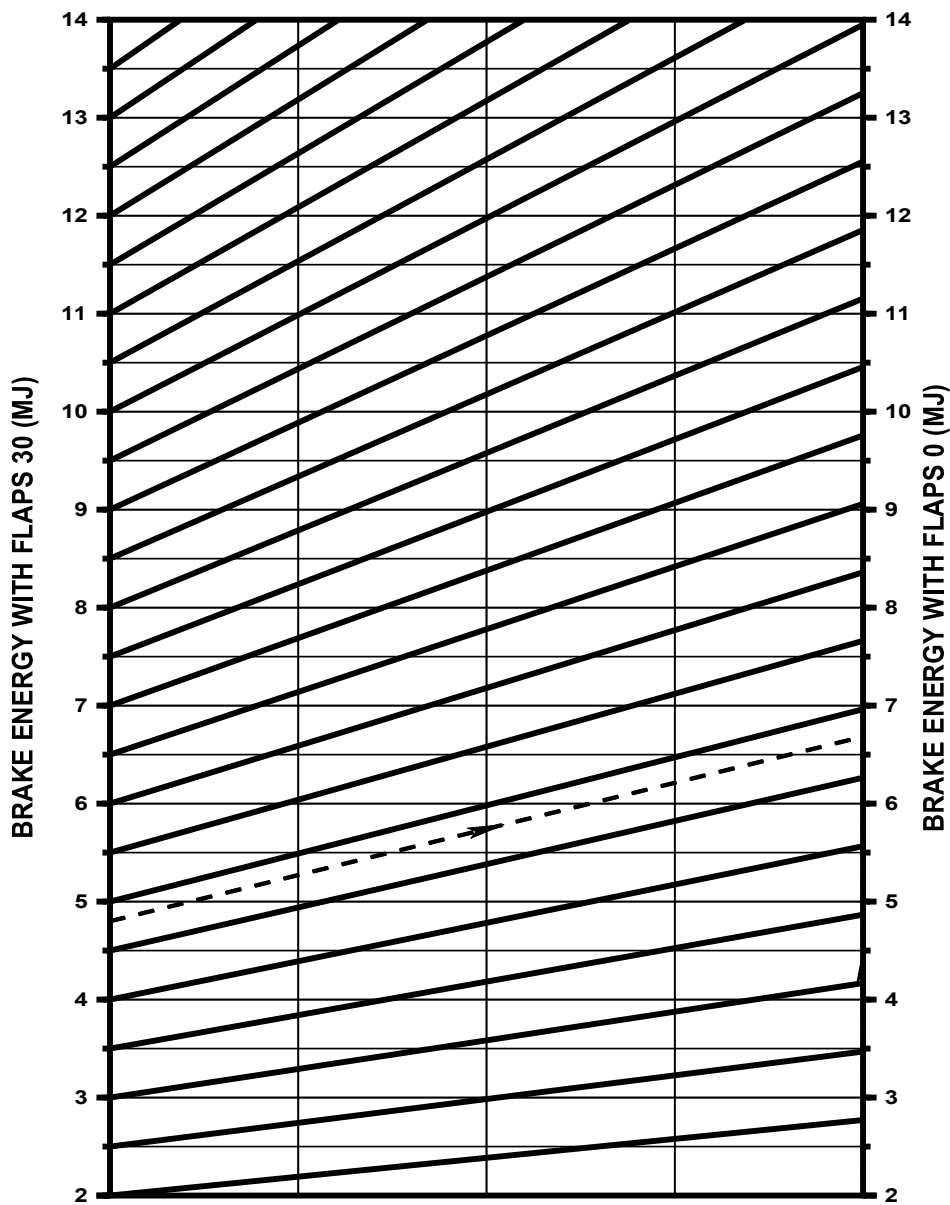
APPROVED

**OPERATION ON DRY OR WET RUNWAY**

**FLAPS 0**

**LANDING BRAKE ENERGY CORRECTION**

**DELAYED BRAKING AT 100KT IAS**



**2.4.2.2.3 Flaps 15**

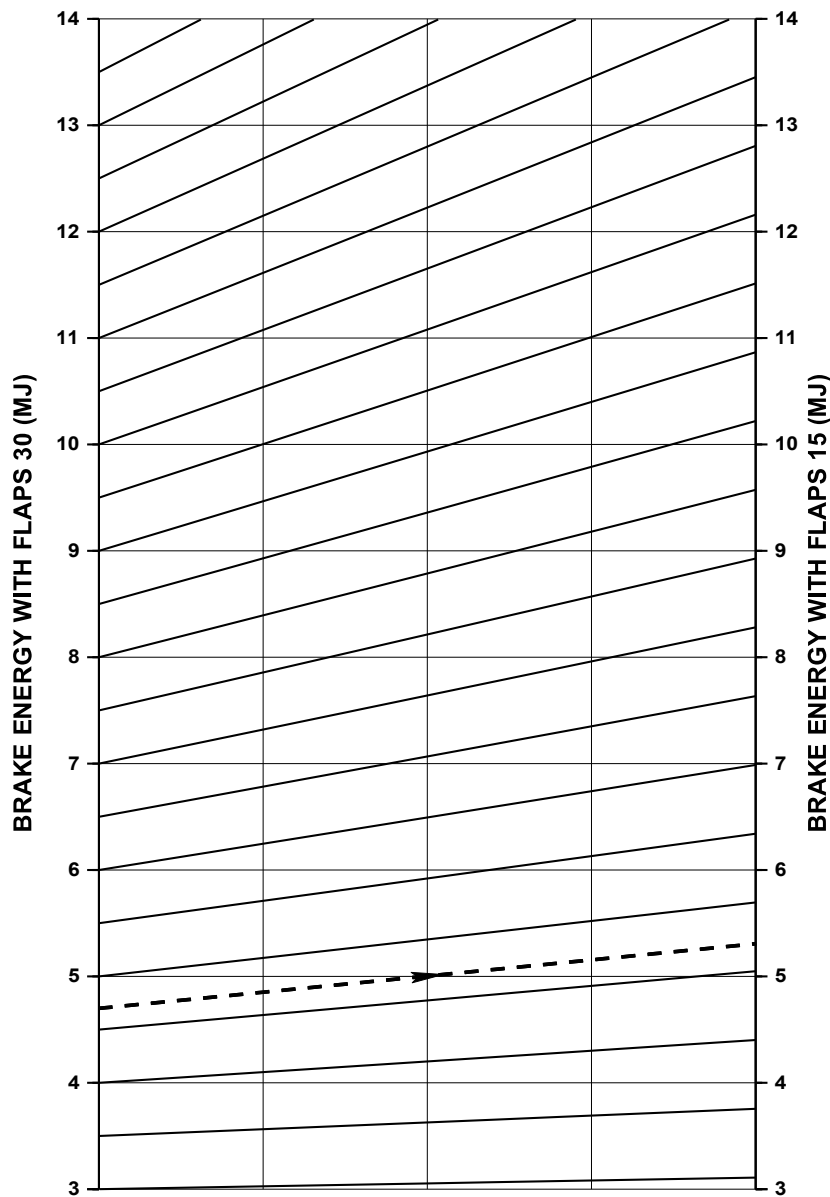
49d09cdc-a578-49d0-b53c-e2012bbd65d5

0.3

ALL

APPROVED

**OPERATION ON DRY OR WET RUNWAY  
FLAPS 15  
LANDING BRAKE ENERGY CORRECTION  
NORMAL BRAKING**



**2.4.2.2.4 Flaps 15 - Delayed Braking at 90kts IAS**

**Flaps 15 - Delayed Braking at 90kts IAS**

5286c3af-4dc2-4cce-a508-de3952adbcd4

0.1

ALL

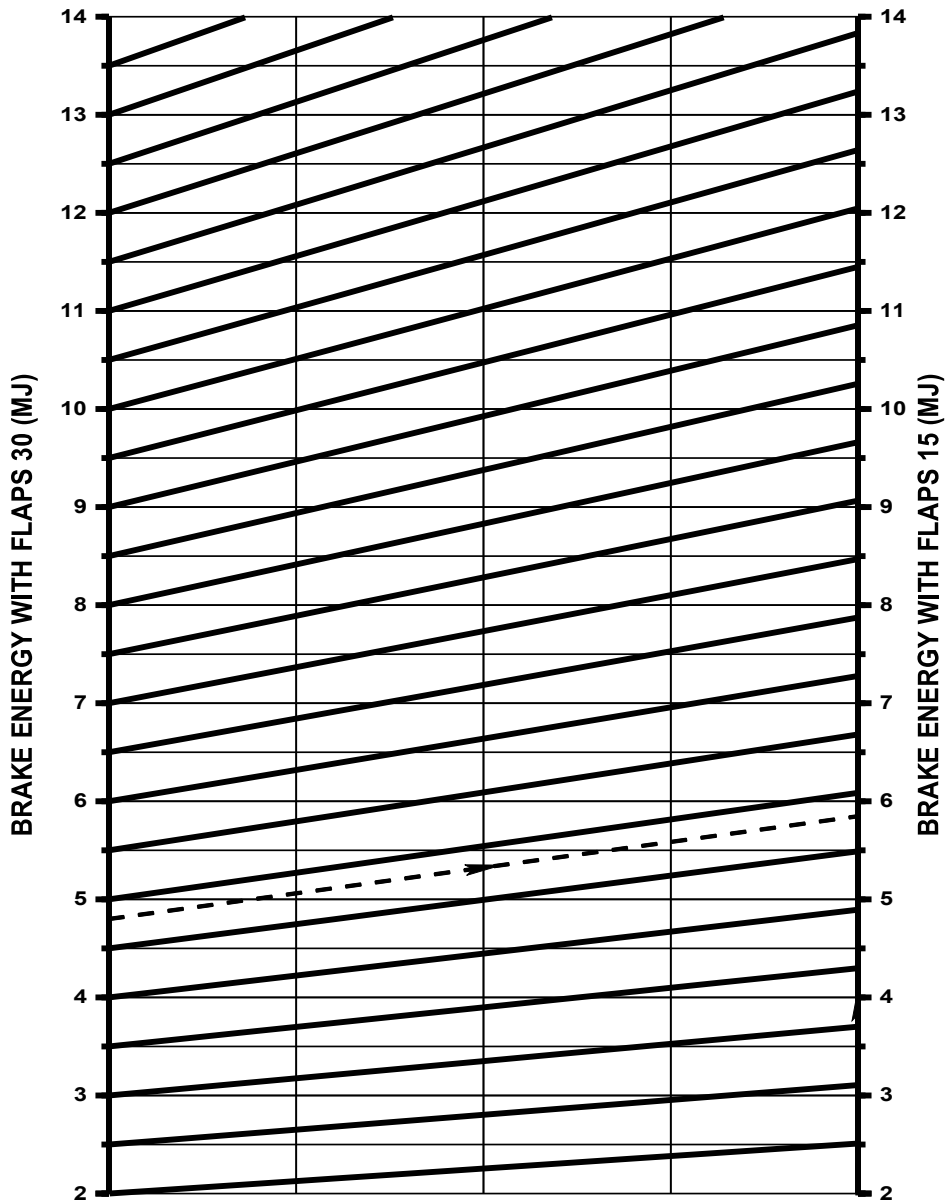
APPROVED

**OPERATION ON DRY OR WET RUNWAY**

**FLAPS 15**

**LANDING BRAKE ENERGY CORRECTION**

**DELAYED BRAKING AT 90KT IAS**





## 2.4.2.3 ICING CONDITIONS

### 2.4.2.3.1 Flaps 0

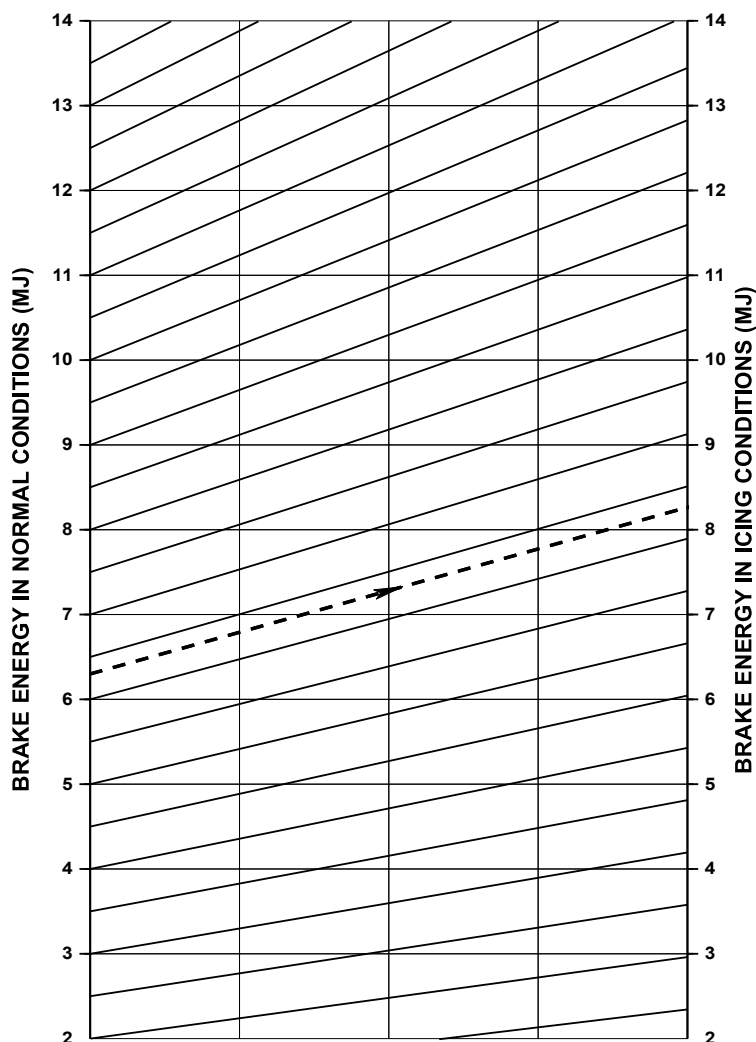
9ce00549-be8b-45f8-af37-e31b099baa0d

1.1

ALL

APPROVED

**OPERATION ON DRY OR WET RUNWAY  
ATMOSPHERIC ICING CONDITIONS - FLAPS 0  
EFFECT ON LANDING BRAKE ENERGY  
V / VSR = 1.46 (FLAPS 0) +5kt  
NORMAL BRAKING**



V3.0.9 - 170710 - PDFBQ\_ATR72212A\_NAO\_BE - P1LBWG30DA (0)

V3.48

ICN-75-Y-000000-T-FB429-00451-A-05-N

**Note**

*Performance decrement applies to the landing brake energy (FLAPS 0) computed in normal conditions.*



BU / 75

AFM

PERFORMANCE

LANDING

LANDING PERFORMANCE CHARTS

PER.5

Page n°136

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**Note**

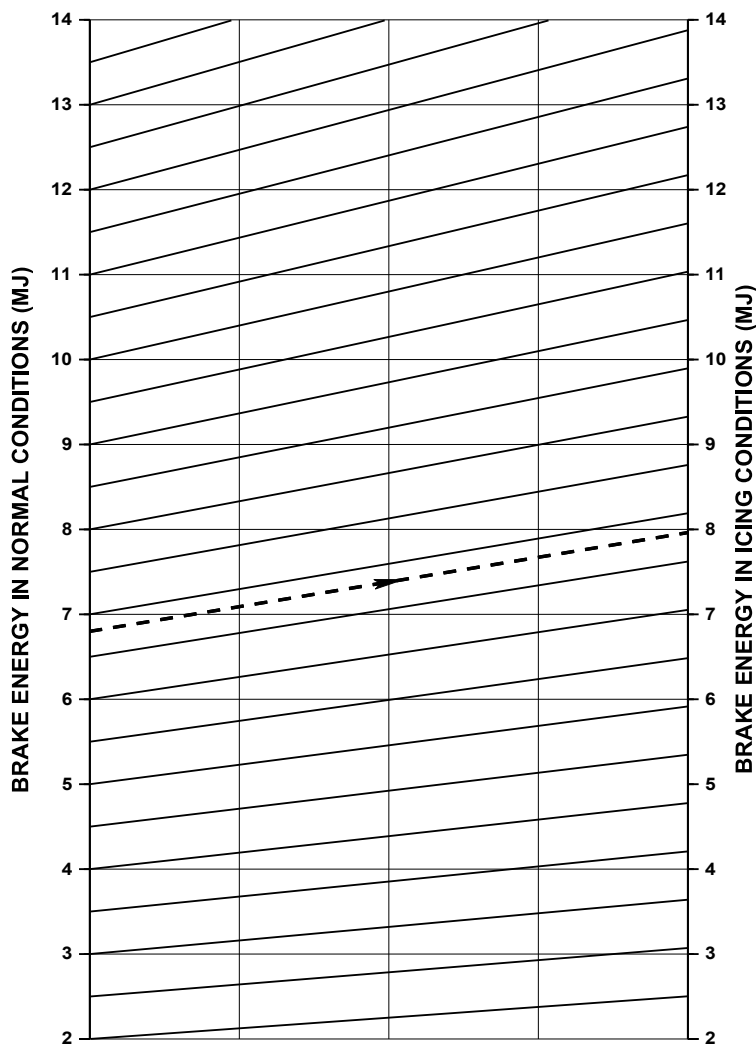
*Icing conditions have no impact on landing brake energy in case of delayed braking.*

**2.4.2.3.2 Flaps 15**

ef2310ef-1899-4b90-b4b9-f41c7b0be4ac

**0.4**  
**ALL**  
**APPROVED**

**OPERATION ON DRY OR WET RUNWAY  
ATMOSPHERIC ICING CONDITIONS - FLAPS 15  
EFFECT ON LANDING BRAKE ENERGY  
V / VSR = 1.35 (FLAPS 15)  
NORMAL BRAKING**



V3.0.9 - 170710 - PDFBQ\_ATR72212A\_NAO\_BE - P1LBWG32DA (0)

V3.45

ICN-7X-Y-000000-T-FB429-00445-C-02-N

**Note**

*Performance decrement applies to the landing brake energy (Flaps 15) computed in normal conditions.*

**Note**

*Icing conditions have no impact on landing brake energy in case of delayed braking.*

**2.4.2.3.3 Flaps 30**

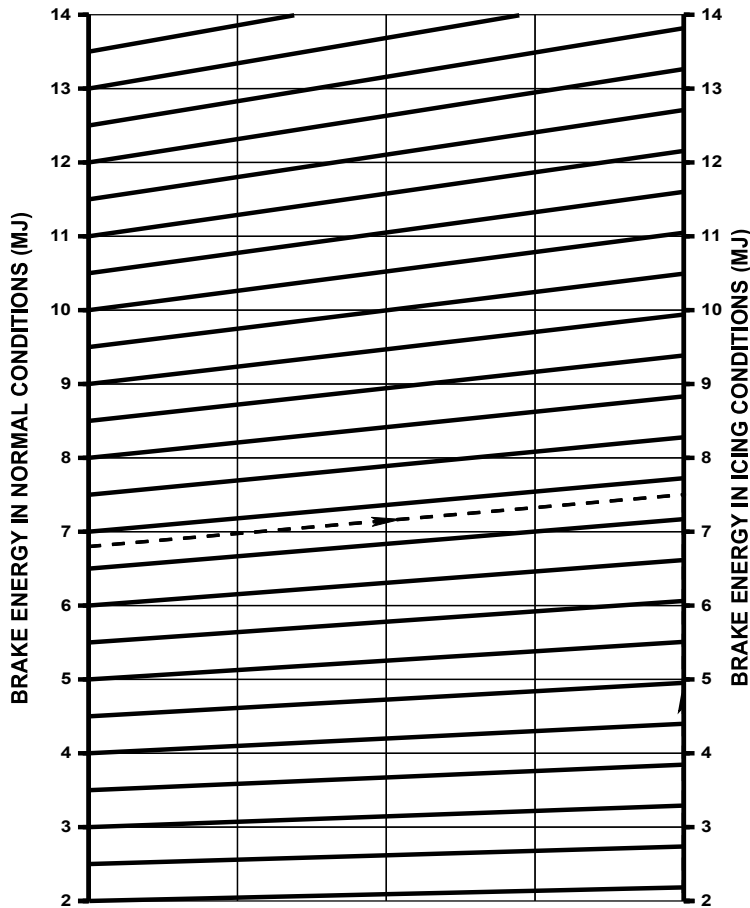
c1c56ce5-cfaa-4ce5-9d5a-46031fe5f1ee

0.7

ALL

APPROVED

**OPERATION ON DRY OR WET RUNWAY  
ATMOSPHERIC ICING CONDITIONS - FLAPS 30  
EFFECT ON LANDING BRAKE ENERGY  
V / VSR = 1.32 (FLAPS 30)  
NORMAL BRAKING**



ICN-75-Y-000000-T-FB429-00452-A-02-N

**Note**

*Performance decrement applies to the landing brake energy (FLAPS 30) computed in normal conditions.*

**Note**

*Icing conditions have no impact on landing brake energy in case of delayed braking.*

|                   |                         |           |
|-------------------|-------------------------|-----------|
| <b><i>ATR</i></b> | <b>AFM</b>              | DEV.      |
| <b>BU / 75</b>    | <b>TOC</b>              |           |
| <b>AFM</b>        | <b>Table of Content</b> | Page n°01 |

## DEVIATION GUIDE

**CDL**

**DEV.1**

---

|            |                             |                |
|------------|-----------------------------|----------------|
| <b>1.</b>  | <b>GENERAL.....</b>         | <b>page 03</b> |
| <b>2.</b>  | <b>LIMITATIONS.....</b>     | <b>page 03</b> |
| <b>3.</b>  | <b>PERFORMANCES.....</b>    | <b>page 04</b> |
| <b>23.</b> | <b>COMMUNICATIONS.....</b>  | <b>page 04</b> |
| <b>27.</b> | <b>FLIGHT CONTROLS.....</b> | <b>page 04</b> |
| <b>32.</b> | <b>LANDING GEAR.....</b>    | <b>page 05</b> |
| <b>52.</b> | <b>DOORS.....</b>           | <b>page 06</b> |
| <b>53.</b> | <b>FUSELAGE.....</b>        | <b>page 08</b> |
| <b>55.</b> | <b>STABILIZER.....</b>      | <b>page 08</b> |
| <b>61.</b> | <b>PROPELLER.....</b>       | <b>page 09</b> |
| <b>79.</b> | <b>OIL.....</b>             | <b>page 09</b> |

**DEVIATION GUIDE SUPPLEMENTS**

**DEV.2**

---

|            |  |                |
|------------|--|----------------|
| <b>1.</b>  | <b>INTRODUCTION.....</b>   | <b>page 09</b> |
| <b>2.</b>  | <b>DISPATCH WITH ONE ACW GENERATOR CHANNEL INOP.....</b>         | <b>page 10</b> |
| <b>3.</b>  | <b>DISPATCH WITH SPOILERS CONTROL SYSTEM INOPERATIVE.....</b>    | <b>page 14</b> |
| <b>4.</b>  | <b>DISPATCH WITH FLAPS RETRACTED.....</b>                        | <b>page 15</b> |
| <b>5.</b>  | <b>DISPATCH WITH ONE WHEEL BRAKE DEACTIVATED OR REMOVED.....</b> | <b>page 22</b> |
| <b>6.</b>  | <b>DISPATCH WITH ANTISKID SYSTEM INOPERATIVE.....</b>            | <b>page 25</b> |
| <b>7.</b>  | <b>DISPATCH WITH AUTOFEATHER SYSTEM INOPERATIVE.....</b>         | <b>page 29</b> |
| <b>8.</b>  | <b>DISPATCH WITH ONE EEC OFF.....</b>                            | <b>page 33</b> |
| <b>10.</b> | <b>DISPATCH WITH ONE TQ INDICATION INOPERATIVE.....</b>          | <b>page 39</b> |
| <b>11.</b> | <b>DISPATCH WITH UPTRIM FUNCTION INOPERATIVE.....</b>            | <b>page 51</b> |
| <b>12.</b> | <b>DISPATCH WITH ATPCS OFF.....</b>                              | <b>page 52</b> |
| <b>13.</b> | <b>DISPATCH WITH LANDING GEAR DOWN.....</b>                      | <b>page 56</b> |
| <b>16.</b> | <b>FLIGHT WITH PITCH ELEVATORS DISCONNECTED.....</b>             | <b>page 59</b> |

***ATR***

**BU / 75**

**AFM**

**AFM**


**TOC**

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**DEV.**

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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>CDL</b><br><br><b>GENERAL</b> | DEV.1<br><br>Page n°03 |
|---|--|------------------------|

## 1 GENERAL

### 1.01 General

|                                      |  |                               |
|--------------------------------------|--|-------------------------------|
| ef2d04fd-9a87-45a4-889c-21cb9e7ad667 |  | <b>4.3</b><br>ALL<br>APPROVED |
|--------------------------------------|--|-------------------------------|

Dispatch of the aircraft with some secondary airframe missing parts is possible as indicated in this Configuration Deviation List (CDL). Any part not included in this list must be considered as necessary.

Repairs or replacements must be done at the first available opportunity where they can reasonably be made. If the repairs or replacements are not carried out, additional malfunctions could be triggered, and it may require the aircraft to be taken out of service.

The value in the “NI” column indicates the number of installed parts. A Dash “-” symbol indicates a variable quantity installed on the aircraft.

The value in the “NR” column specifies the minimum quantity of parts that must be installed for a CDL dispatch, under the conditions listed in the dispatch conditions. A Dash “-” symbol indicates a variable quantity, minimal required for the dispatch of the aircraft.

A “YES” in the “M” column indicates that a maintenance procedure must be performed in order to enable the dispatch of the aircraft. *Refer to the related section of the Maintenance Manual for this information.*

Placard Column:

- YES: The Dispatch Condition may require that a missing part introduces additional limitation clearly placarded in the cockpit
- NO: No Placard is Required.

## 2 LIMITATIONS


### 2.01 Limitations

|                                      |  |                               |
|--------------------------------------|--|-------------------------------|
| f3d45008-f99d-4c3e-abe3-81e4e2a8771d |  | <b>2.1</b><br>ALL<br>APPROVED |
|--------------------------------------|--|-------------------------------|

Dispatch is prohibited with more than two (2) missing CDL items.

No more than one (1) item per ATA chapter in this CDL may be missing unless specific dedicated combinations are indicated (Except static dischargers that are not to be accounted for in both limitations).

When missing part introduces additional limitation, this limitation is indicated in the dispatch conditions. This limitation comes in addition to limitations of Flight Manual. It must be clearly indicated by a placard.

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>CDL</b><br><br><b>PERFORMANCES</b> | DEV.1<br><br>Page n°04 |
|---|---|------------------------|

### 3 PERFORMANCES

#### 3.01 Performances

|                                      |            |
|--------------------------------------|------------|
| 65bffa41-bb6b-46f2-a09a-b1b10442b64b | <b>2.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

Performance penalties, if any, are indicated in the dispatch conditions.

Performance penalties are cumulative unless specific penalties for particular combinations of missing parts are indicated.

These takeoff, en route, and landing penalties apply to the most limiting corresponding weight.

### 23 COMMUNICATIONS

#### 23.01 Static Dischargers

|                                      |            |
|--------------------------------------|------------|
| e8e93f6f-fda3-46aa-b123-0b8ef4e27e97 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 25 | 17 | NO      | NO |

Any in excess of 17 may be missing provided that:

- (a) Each aileron is equipped with at least 4 operative static dischargers, and
- (b) Rudder is equipped with at least 4 operative static dischargers, and
- (c) Each elevator is equipped with at least 2 operative static dischargers, and
- (d) Tail cone is equipped with at least 1 operative static discharger.

### 27 FLIGHT CONTROLS

#### 27.01 Flap Hinge Fairing


|                                      |            |
|--------------------------------------|------------|
| c3892664-58b4-4122-9029-22854238ec01 | <b>1.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 8  | 6  | YES     | NO |

One or two may be missing provided that:

- (a) Aircraft is not operated into known or forecast icing conditions, and
- (b) Only one fairing may be missing per half wing (left and right), and
- (c) In case of FWD part of the fairing missing, it is necessary to remove aft parts of the fairing at the same location.



|   |  |                            |
|---|--|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>CDL</b><br><br><b>FLIGHT CONTROLS</b> | DEV.1<br><br><br>Page n°05 |
|---|--|----------------------------|

## 27.02 Flap Lower Surface Trailing Edge

|                                      |          |
|--------------------------------------|----------|
| 235aa040-de56-45a1-851e-74fcc3472c37 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 10 | 9  | NO      | NO |

One may be missing.

## 32 LANDING GEAR

### 32.01 Main Gear Door

|                                      |          |
|--------------------------------------|----------|
| 29faae4c-bea0-483c-abd6-05ca05564a3f | 3.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 2  | 1  | YES     | NO |

One may be missing provided that:

- (a) Maximum speed is 200 kt, and
- (b) The aircraft is not operated into forecast or known icing conditions.

**Note**

- *The associated foldable doors must be removed*
- *In this situation, the main gear door and the foldable doors are considered as one item.*

### 32.02 Main Gear Foldable Doors

|                                      |          |
|--------------------------------------|----------|
| 5041f037-6715-4b0e-9de7-6f8780c86d5e | 3.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 4  | 2  | YES     | NO |


One or two may be missing provided that:

- (a) The missing parts are on the same side, and
- (b) Maximum speed is 200 kt, and
- (c) The aircraft is not operated into forecast or known icing conditions.

### 32.03 Nose Gear Forward Door

|                                      |          |
|--------------------------------------|----------|
| 1fb93af9-a439-45d2-b95f-5de836c0ce2a | 2.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 2  | 0  | YES     | NO |

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>CDL</b><br><br><b>LANDING GEAR</b> | DEV.1<br><br>Page n°06 |
|---|---|------------------------|

cont'd... >>>

One or both may be missing provided that the flight is done with gear down  
([Refer to DEV.2.13.01.1 Dispatch with Landing Gear Down](#)).

### 32.04 Nose Gear Aft Door

|                                      |            |
|--------------------------------------|------------|
| 55e40a4d-73ce-4e69-9e04-96000e90e4be | <b>2.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 2  | 0  | YES     | NO |

One or both may be missing provided that:  
(a) Maximum speed is 200 kt, and  
(b) The aircraft is not operated into forecast or known icing conditions.

### 32.05 Cover Wheels

|                                      |            |
|--------------------------------------|------------|
| 0b4dc4a8-21f0-4bcd-be00-ddfbb8763510 | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 2  | 0  | NO      | NO |

One or both may be missing.

### 32.06 Brake Wear Indicator Pin by Wheel

|                                      |            |
|--------------------------------------|------------|
| fa6e66ea-5781-498d-855a-8721a5b1ae38 | <b>0.2</b> |
|                                      | ALL        |
|                                      | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 2  | 1  | NO      | NO |

May be inoperative or missing provided that:  
(a) The remaining pin indicates a brake wear within the limits, and  
(b) The brake stators and rotors pack are in good condition.

## 52 DOORS

### 52.1 Access Door to GPU Connector (DC or ACW)

|                                      |            |
|--------------------------------------|------------|
| 35b50230-2386-4cf4-abd6-e5537291667d | <b>0.1</b> |
|                                      | ALL        |
|                                      | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 2  | 0  | NO      | NO |

One or both may be missing.

|                |                        |           |
|----------------|------------------------|-----------|
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## 52.2 Access Door to Refueling Panel

|                                      |          |
|--------------------------------------|----------|
| 6b40a133-1864-41c0-a2cc-033efb7aa3cc | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 1  | 0  | NO      | NO |

May be missing provided that C/B FUEL/ FUELING CTL & IND is pulled to prevent the discharge of the battery.  
Push C/B back for refueling only.

## 52.3 Access Door to Refueling Point

|                                      |          |
|--------------------------------------|----------|
| c68fd994-6835-4ad1-bedf-bdc86dad071d | 0.5      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 1  | 0  | NO      | NO |

May be missing provided after tank refueling, make sure that no fuel remains in the refuel pipe.

## 52.4 Access Door to Hydraulic Bay

|                                      |          |
|--------------------------------------|----------|
| 3a323b75-d88a-45bb-ad2b-08e622e0bef2 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 7  | 6  | NO      | NO |

One may be missing.

## 52.5 Access Door to Water Service Panel

|                                      |          |
|--------------------------------------|----------|
| f9d2243f-977b-48f8-aa29-02840a37ce79 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 1  | 0  | NO      | NO |

May be missing.

## 52.6 Access Door to Toilet Service Panel

|                                      |          |
|--------------------------------------|----------|
| 047f4dbc-3ad8-420a-8074-0ca84ec07bb0 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 1  | 0  | NO      | NO |

cont'd... >>>

|                |                        |           |
|----------------|------------------------|-----------|
| <b>ATR</b>     | <b>DEVIATION GUIDE</b> | DEV.1     |
| BU / 75<br>AFM | CDL<br>DOORS           | Page n°08 |

cont'd... >>>

May be missing.

## 52.7 Access Door to Tail Cone Bay

|                                      |          |
|--------------------------------------|----------|
| 045fa5f8-5bc6-4a3e-849b-2d0b770f7713 | 1.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 1  | 0  | YES     | NO |

May be missing provided that:

- (a) Maximum speed is 200 kt, and
- (b) The aircraft is not operated into forecast or known icing/rain conditions.

## 52.8 Jacking Point Covers

|                                      |          |
|--------------------------------------|----------|
| 216015dd-958d-409f-9a6d-df0a0bad58d8 | 0.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| -  | 0  | NO      | NO |

May be missing.

## 53 FUSELAGE

### 53.1 Wing-Fuselage Fairing (Karman) Brush

|                                      |          |
|--------------------------------------|----------|
| f31a4ce8-7a5f-4bdf-a01c-ccd0b0f48f9b | 0.2      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 4  | 0  | NO      | NO |

One or more may be missing.

**Note**

*A damaged brush must be removed.*

## 55 STABILIZER

### 55.1 Vertical Stabilizer Attach Fitting Rubber Plug

|                                      |          |
|--------------------------------------|----------|
| 603caba2-40f4-42ef-ba0d-a20e3cf4e12c | 2.1      |
|                                      | ALL      |
|                                      | APPROVED |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 4  | 3  | NO      | NO |

One may be missing provided that the hole is covered with high speed tape.

|                |                        |           |
|----------------|------------------------|-----------|
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## 61 PROPELLER

### 61.01 Propeller Spinner

|   |            |
|---|------------|
| <small>a2d39369-a312-435a-97e7-4dd7527e21f3</small> | <b>1.1</b> |
|   | ALL        |
|   | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 2  | 1  | YES     | NO |

One may be missing provided that the aircraft is not operated into forecast or known icing conditions.

## 79 OIL

### 79.01 Engine Oil Cooler Flap

|   |            |
|---|------------|
| <small>abdfb1ad-5b2a-4281-a253-f8838b154ede</small> | <b>1.3</b> |
|   | ALL        |
|   | APPROVED   |

| NI | NR | PLACARD | M  |
|----|----|---------|----|
| 4  | 3  | NO      | NO |

One may be missing provided Flap is removed and engine oil parameters are monitored throughout the flight.

## 1 INTRODUCTION

### 1.1 Introduction

|   |            |
|---|------------|
| <small>9f42e2b0-6bb4-4f59-b337-52e90dafdbbb</small> | <b>2.4</b> |
|   | ALL        |
|   | APPROVED   |

The following sections cover AFM amendments associated with MMEL dispatch.

The information is provided in three sections:

- Limitation
- Procedures
- Performances


Each section of the Deviation Guide (limitation, procedures, performance) provides information that must to be taken into account when dispatching under the corresponding MEL item. The information provided under this section contains only changes or additional limitation, procedures, or performance and must be considered in conjunction with the main section of the AFM (limitation, procedures, or performance).

### 1.2 Limitations

|   |            |
|---|------------|
| <small>09676338-65b8-466d-ab3a-aec8a8c53651</small> | <b>0.1</b> |
|   | ALL        |
|   | APPROVED   |

For items covered under this Deviation Guide combination of dispatch cases is not allowed unless otherwise specified within the relevant item.

*cont'd... >>>*

|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ONE ACW GENERATOR</b><br><b>CHANNEL INOP</b> | DEV.2<br><br>Page n°10 |
|---|---|------------------------|

*cont'd... >>>*

Some dispatch cases may redirect to an another dispatch supplement which needs to be considered.

**2 DISPATCH WITH ONE ACW GENERATOR CHANNEL INOP**

**Dispatch with One ACW Generator Channel Inoperative**

|   |  |            |
|---|--|------------|
| <small>0330742a-ddc8-46a3-99a7-08d4967e9db3</small> |  | <b>0.6</b> |
|   |  | ALL        |
|   |  | APPROVED   |

**LIMITATIONS**

- Operation on narrow runway (width < 30 m or 90 ft) is prohibited.
- Operations into forecast or known icing conditions are prohibited.
- Ground operation above 8 500 ft, including taxi, do not exceed 10 min (when authorized).

**PROCEDURES**

**Normal Procedures**

- ▶ TAXI : ON ENG 1+2

**Emergency Procedures**

No Change.

**Abnormal Procedures**

- **If takeoff is aborted (accelerate & stop)**
  - ▶ BRAKE HANDLE..... EMER
- **If engine failure after V<sub>1</sub> on the ENG with the operative ACW GEN side**  
LDG GEAR CANNOT BE RETRACTED.

**PERFORMANCES**

**Takeoff**

- Check EMER BRAKING effect on ASD
- Check GEAR DOWN effect on second segment climb and approach climb (valid for all configurations)
- Check GEAR DOWN effect on final takeoff climb.

**Single Engine Ceiling**

Apply a weight penalty.

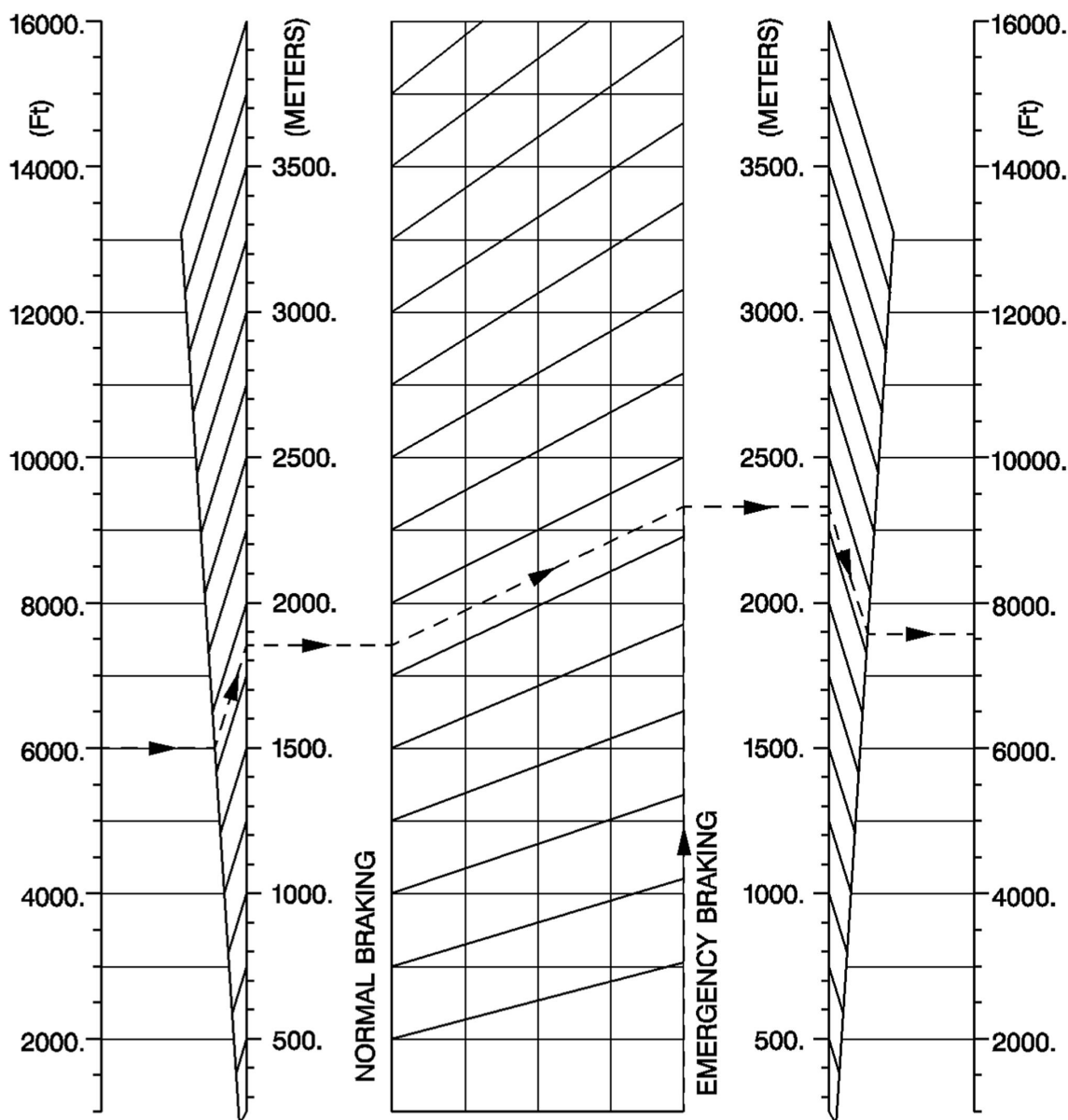
### Emergency Braking - Effect On Accelerate Stop Distance

bb717433-ce1e-45b4-8852-9e18b3017ec0

0.1

ALL

APPROVED



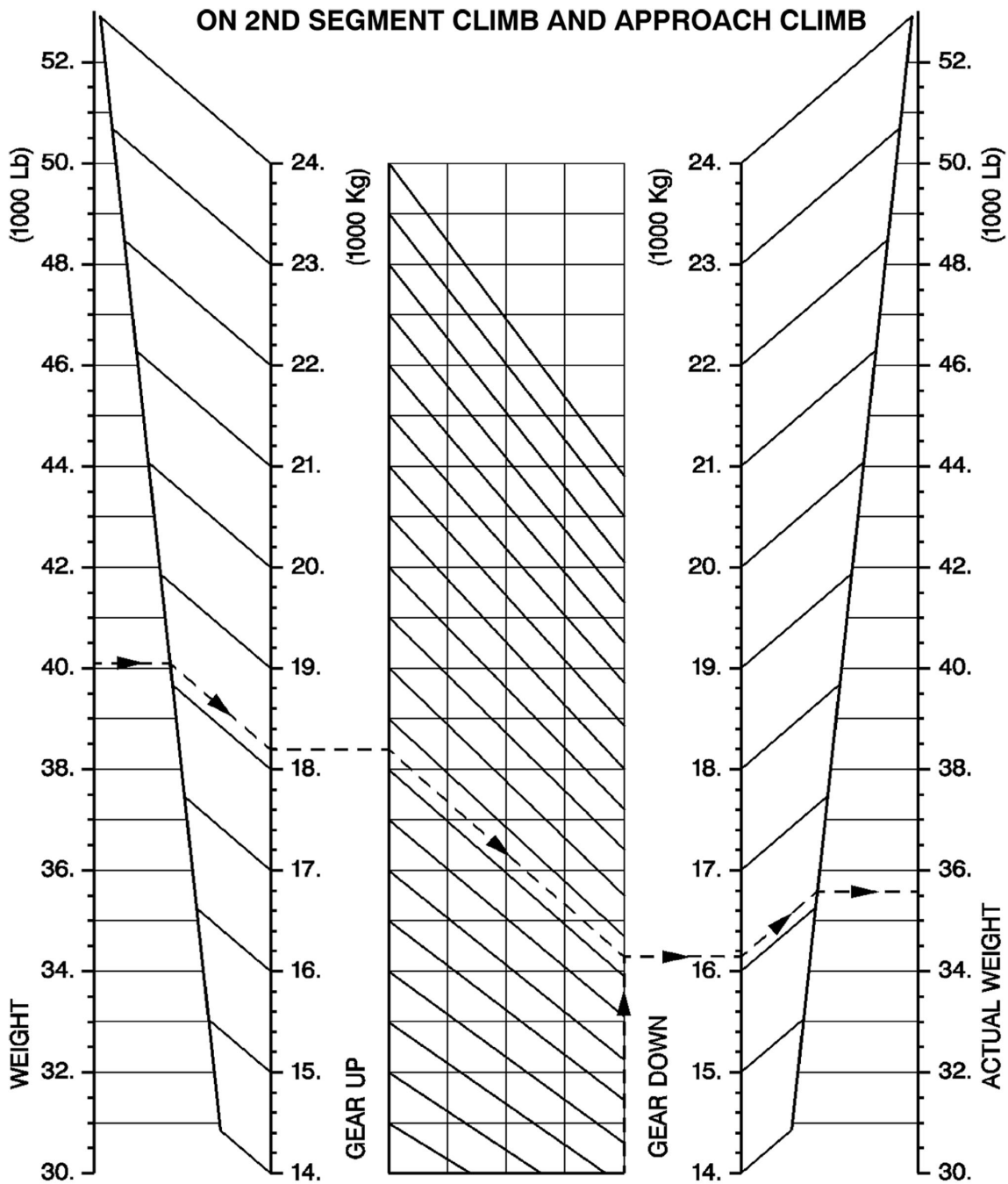
**Effect of Gear Down on Second Segment Climb And Approach Climb**

b09b179f-6bab-4e01-bfd7-3ba549966e58


0.1

ALL

APPROVED





|   |  |                            |
|---|--|----------------------------|
| <br><br>BU / 75<br><br>AFM | <p style="text-align: center;"><b>DEVIATION GUIDE</b></p> <p style="text-align: center;"><b>DEVIATION GUIDE SUPPLEMENTS</b></p> <p style="text-align: center;"><b>DISPATCH WITH ONE ACW GENERATOR</b></p> <p style="text-align: center;"><b>CHANNEL INOP</b></p> | DEV.2<br><br><br>Page n°13 |
|---|--|----------------------------|

## Effect of Gear Down on Final Takeoff and Weight Penalty on Single Engine Ceiling Computation

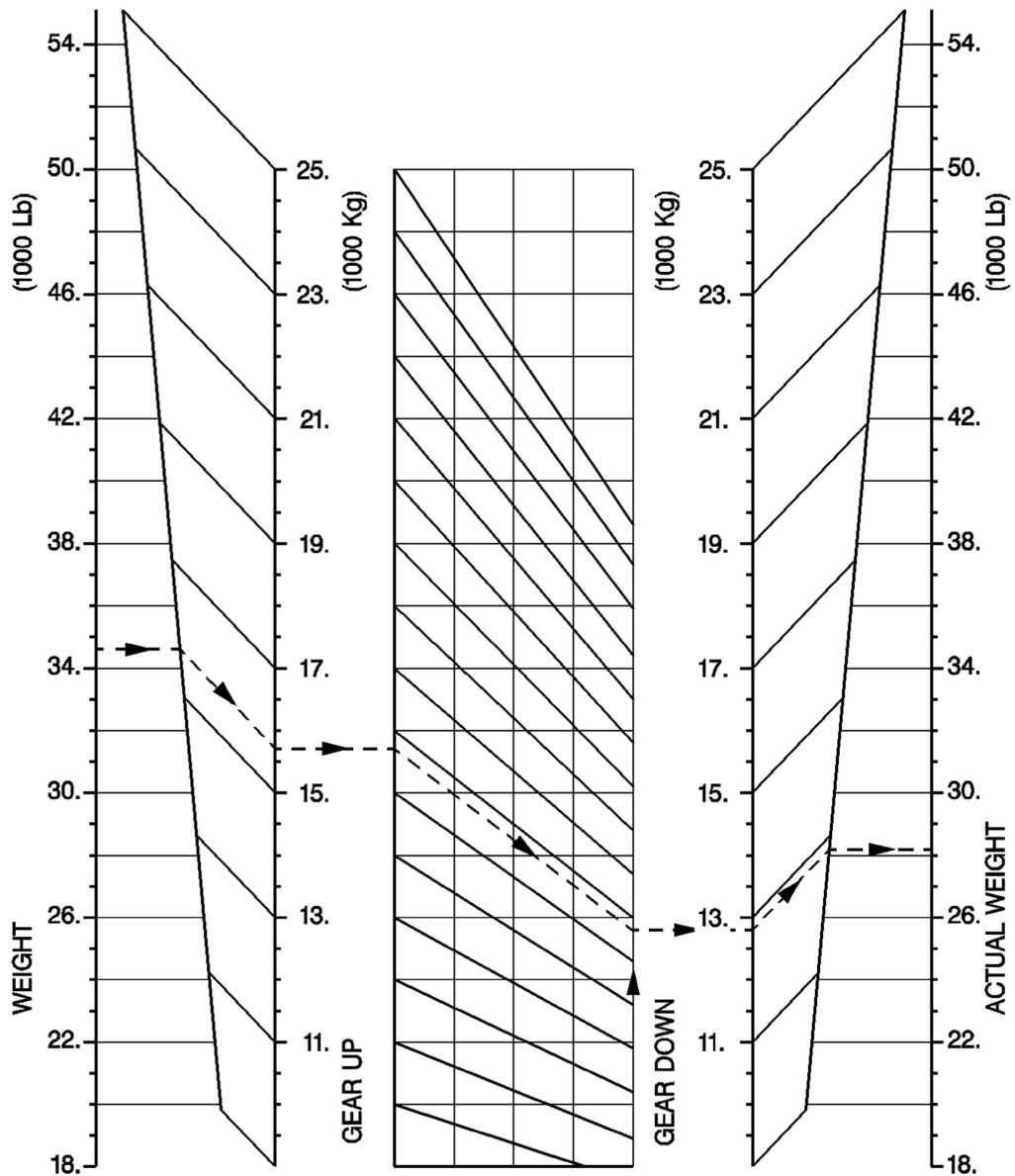
### Effect of Gear Down on Final Takeoff and Weight Penalty on Single Engine Ceiling Computation


abfc0394-4a40-4d05-acae-16788da22762

3.1

ALL

APPROVED



|   |  |                            |
|---|--|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH SPOILERS CONTROL SYSTEM</b><br><b>INOPERATIVE</b> | DEV.2<br><br><br>Page n°14 |
|---|--|----------------------------|

|          |  |
|----------|--|
| <b>3</b> | <b>DISPATCH WITH SPOILERS CONTROL SYSTEM<br/>INOPERATIVE</b> |
|----------|--|

**Dispatch with Spoiler Control System Inoperative**

|                                      |                 |
|--------------------------------------|-----------------|
| 20f378cd-86df-4a4f-96ce-84c0cec96eb1 | <b>4.0</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

**LIMITATIONS**

$V_{MCL}$  ..... 106 kt with FLAPS 30  
Maximum crosswind on dry runway ..... 20 kt

**PROCEDURES**

**Normal Procedures**

- **During flight preparation**
  - ▶ SPOILERS IN RETRACTED POSITION..... CHECK SECURED
- **For takeoff**
  - ▶ FUEL UNBALANCE : AVOID

**Emergency Procedures**


No change.

**Abnormal Procedures**

No change.

**PERFORMANCES**

Increase  $V_{MCA}$  by 1 kt.

|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH FLAPS RETRACTED</b> | DEV.2<br><br>Page n°15 |
|---|--|------------------------|

## 4 DISPATCH WITH FLAPS RETRACTED

### Dispatch with Flaps Retracted

|                                      |     |           |
|--------------------------------------|-----|-----------|
| d917ca44-8e31-447c-8ec8-2b758c972dcd | REV | 6.1       |
|                                      |     | 0685-0706 |
|                                      |     | APPROVED  |

#### LIMITATIONS

Operations into forecast or known icing conditions are prohibited.

Landing braking energy limitation..... 8.3 MJ

Delayed braking procedure is prohibited.

#### PROCEDURES

##### Normal Procedures

- **During flight preparation**

- ▶ FLAPS..... CHECK RETRACTED
- ▶ FLAPS CONTROL LEVER..... CHECK 0° POSITION

- **For takeoff**

- ▶ PITCH TRIM..... SET FOR FLAPS 0

**Note**

*When performing TO CONFIG test, verify that CONFIG and FLT CTL alerts are only due to FLAPS 0 position by checking that TLU is in LOW SPEED, GUST LOCK is OFF and pitch trim is in the range provided for FLAPS 0 configuration.*

- **Before takeoff**

- ▶ Set power while braking
- ▶ Cancel MW alarm by pressing MASTER WARN pb

**Note**

*CONFIG and FLT CTL lights remain displayed on the CAP.*

#### Emergency Procedures

No change.

#### Abnormal Procedures

No change.

#### PERFORMANCES

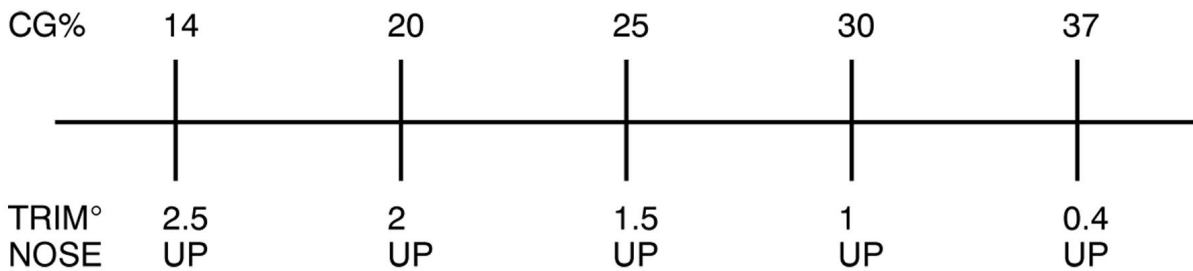
- Determine for  $V_2 = 1.2 V_{SR}$  ([Refer to PER.TAKEOFF](#)):
  - o Second segment climb requirement
  - o  $V_1$ , limited by MAX brake energy,  $V_R$  (assume  $V_1 = V_R$ ),  $V_2$  (CAS, FLAPS 15)
  - o TOR, TOD, and ASD with  $V_1/V_R = 1$
- $V_1$ ,  $V_R$ , and  $V_2$ , IAS FLAPS 0, are obtained by adding 18 kt to the previously determined CAS values
- Decrease  $V_1$  limited by MAX brake energy by 5 kt and check  $V_1 \leq V_1$  limited by MAX brake energy

*cont'd... >>>*

|                              |  |           |
|------------------------------|--|-----------|
| <b>ATR</b>                   | <b>DEVIATION GUIDE</b>   | DEV.2     |
| <b>BU / 75</b><br><b>AFM</b> | <b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH FLAPS RETRACTED</b> | Page n°16 |

cont'd... >>>

- Check effect on TOR, TOD, and ASD
- Decrease second segment and approach climb limiting weight by 200 kg (440 lb)
- Landing Distance: Multiply Actual Landing Distance FLAPS 30 by 2.2
- Landing speed:  $1.23 V_{SR} \text{ FLAPS } 0 + 5 \text{ kt}$
- Landing brake energy : apply landing brake energy correction FLAPS 0 on landing brake energy FLAPS 30, [Refer to LANDING BRAKE ENERGY CORRECTION FLAPS 0.](#)



ICN-7X-Y-000000-T-FB429-00081-A-01-N

- Fig. 1 : Pitch trim setting for FLAPS 0 takeoff -

|                |  |           |
|----------------|--|-----------|
| <b>ATR</b>     | <b>DEVIATION GUIDE</b>   | DEV.2     |
| BU / 75<br>AFM | <b>DEVIATION GUIDE SUPPLEMENTS<br/>DISPATCH WITH FLAPS RETRACTED</b> | Page n°17 |

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| 04619104-13de-4d14-ba89-baeffb22dc19 | <b>REV</b> | <b>4.1</b>      |
|                                      |            | <b>0775</b>     |
|                                      |            | <b>APPROVED</b> |

**LIMITATIONS**

Operations into forecast or known icing conditions are prohibited.

Landing braking energy limitation..... 8.9 MJ

Delayed braking procedure is prohibited.

**PROCEDURES**

**Normal Procedures**

● **During flight preparation**

- ▶ FLAPS..... CHECK RETRACTED
- ▶ FLAPS CONTROL LEVER..... CHECK 0° POSITION

● **For takeoff**

- ▶ PITCH TRIM..... SET FOR FLAPS 0

**Note**

*When performing TO CONFIG test, verify that CONFIG and FLT CTL alerts are only due to FLAPS 0 position by checking that TLU is in LOW SPEED, GUST LOCK is OFF and pitch trim is in the range provided for FLAPS 0 configuration.*

● **Before takeoff**

- ▶ Set power while braking
- ▶ Cancel MW alarm by pressing MASTER WARN pb

**Note**

*CONFIG and FLT CTL lights remain displayed on the CAP.*

**Emergency Procedures**


No change.

**Abnormal Procedures**

No change.

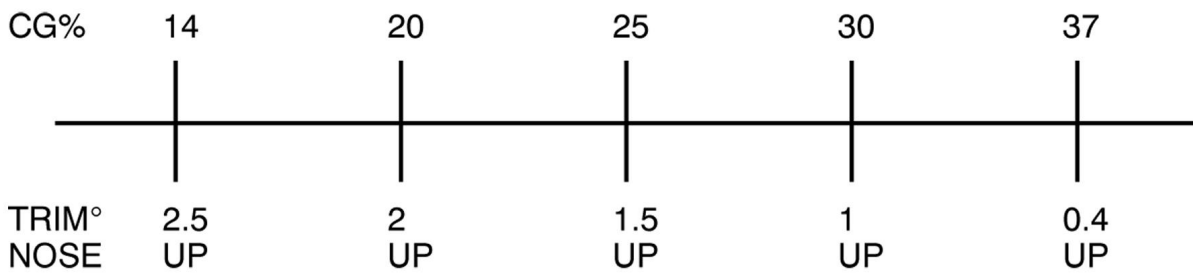
**PERFORMANCES**

- Determine for  $V_2 = 1.2 V_{SR}$  ([Refer to PER.TAKEOFF](#)):
  - o Second segment climb requirement
  - o  $V_1$ , limited by MAX brake energy,  $V_R$  (assume  $V_1 = V_R$ ),  $V_2$  (CAS, FLAPS 15)
  - o TOR, TOD, and ASD with  $V_1/V_R = 1$
- $V_1$ ,  $V_R$ , and  $V_2$ , IAS FLAPS 0, are obtained by adding 18 kt to the previously determined CAS values
- Decrease  $V_1$  limited by MAX brake energy by 5 kt and check  $V_1 \leq V_1$  limited by MAX brake energy
- Check effect on TOR, TOD, and ASD
- Decrease second segment and approach climb limiting weight by 200 kg (440 lb)

|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH FLAPS RETRACTED</b> | DEV.2<br><br>Page n°18 |
|---|--|------------------------|

cont'd... >>>

- Landing Distance: Multiply Actual Landing Distance FLAPS 30 by 2.2
- Landing speed: 1.23 V<sub>SR</sub> FLAPS 0 + 5 kt
- Landing brake energy : apply landing brake energy correction FLAPS 0 on landing brake energy FLAPS 30, [Refer to LANDING BRAKE ENERGY CORRECTION FLAPS 0.](#)



ICN-7X-Y-000000-T-FB429-00081-A-01-N

- Fig. 1 : Pitch trim setting for FLAPS 0 takeoff -

**Corrections**

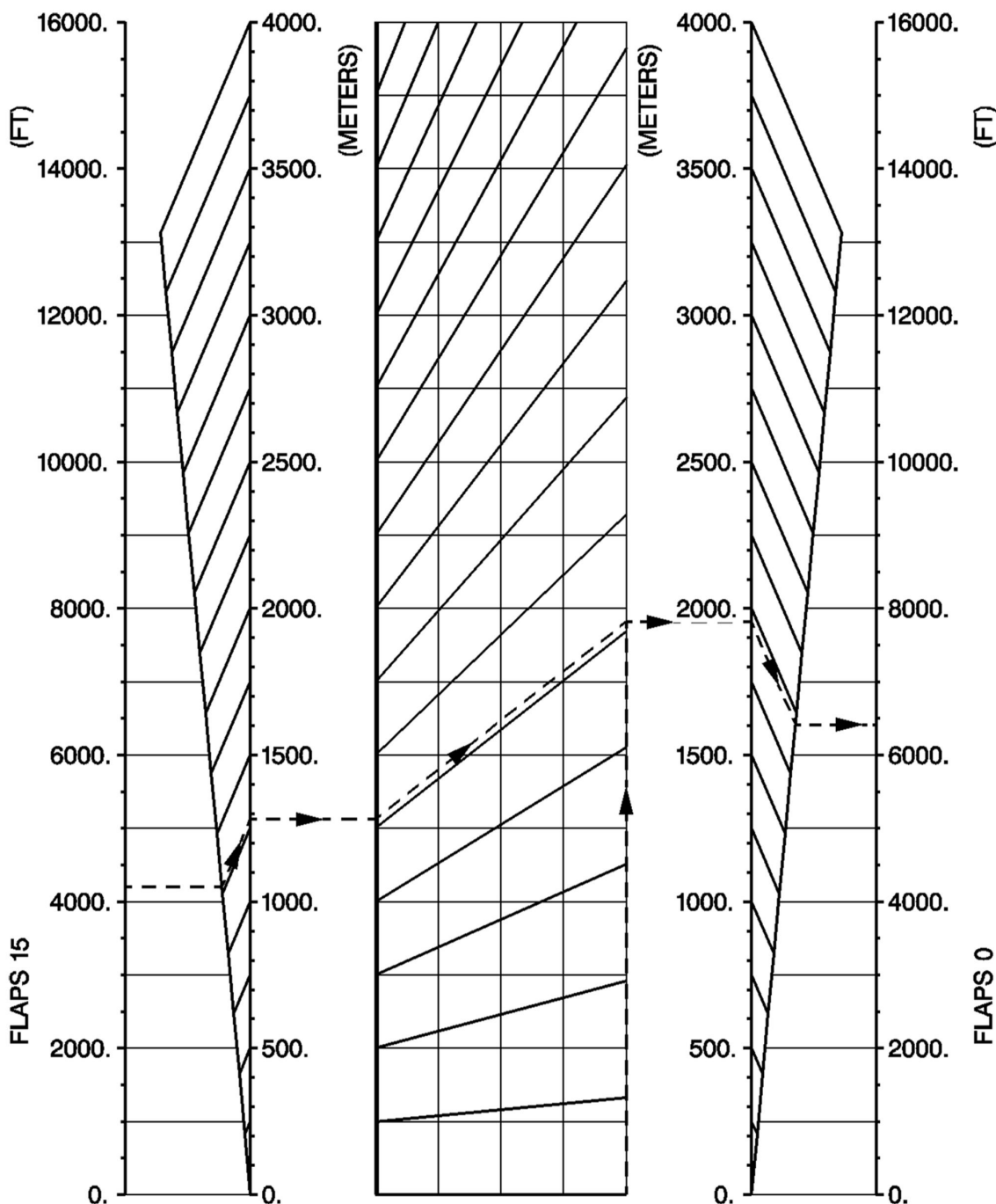
**Takeoff Run Corrections**

41426318-2577-4922-888e-d00eb66bf294

0.1

ALL

APPROVED



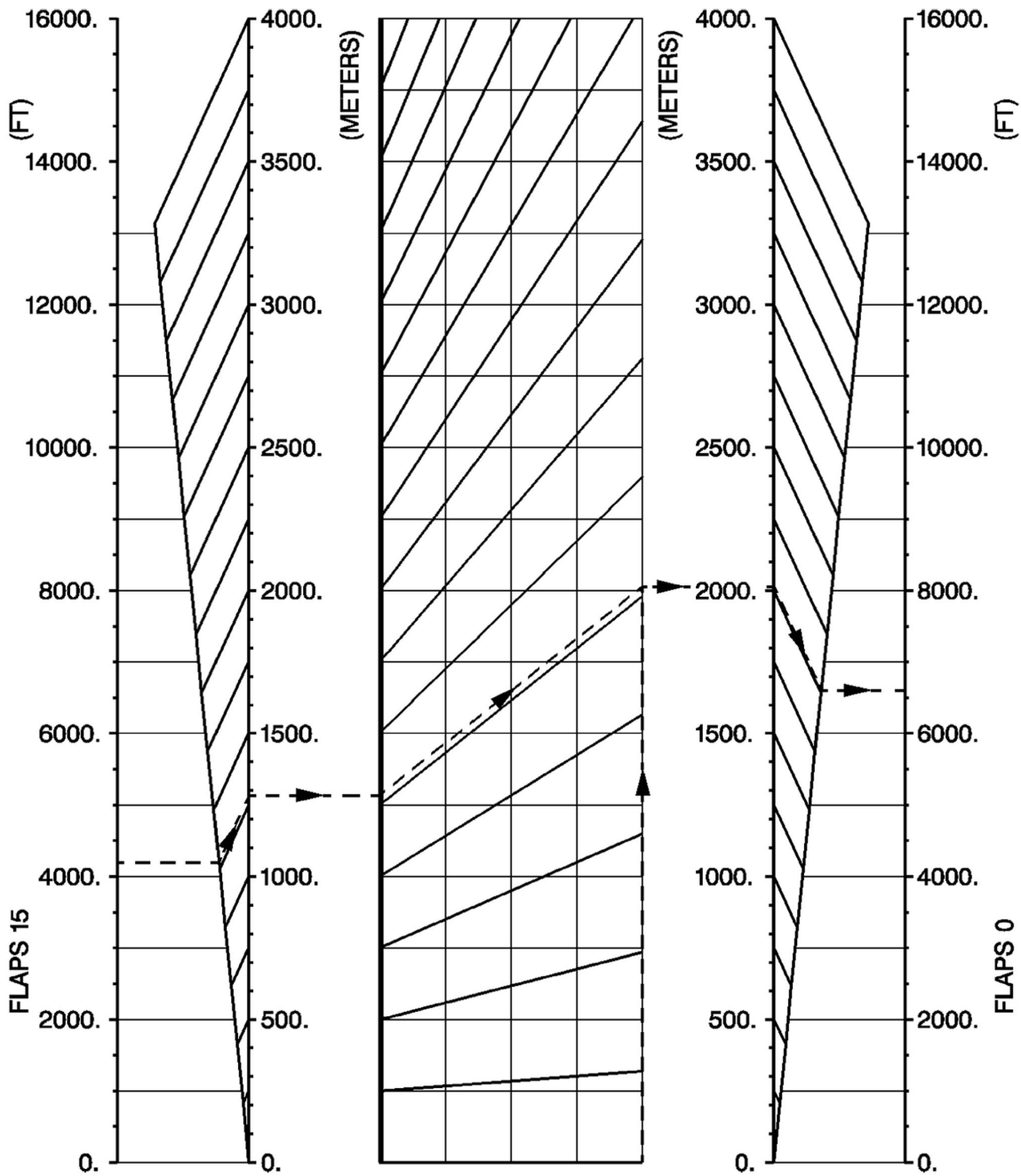
**Takeoff Distances Corrections**

147fae4c-2d65-4569-b2d2-7a86eb25e7ba

0.1

ALL

APPROVED





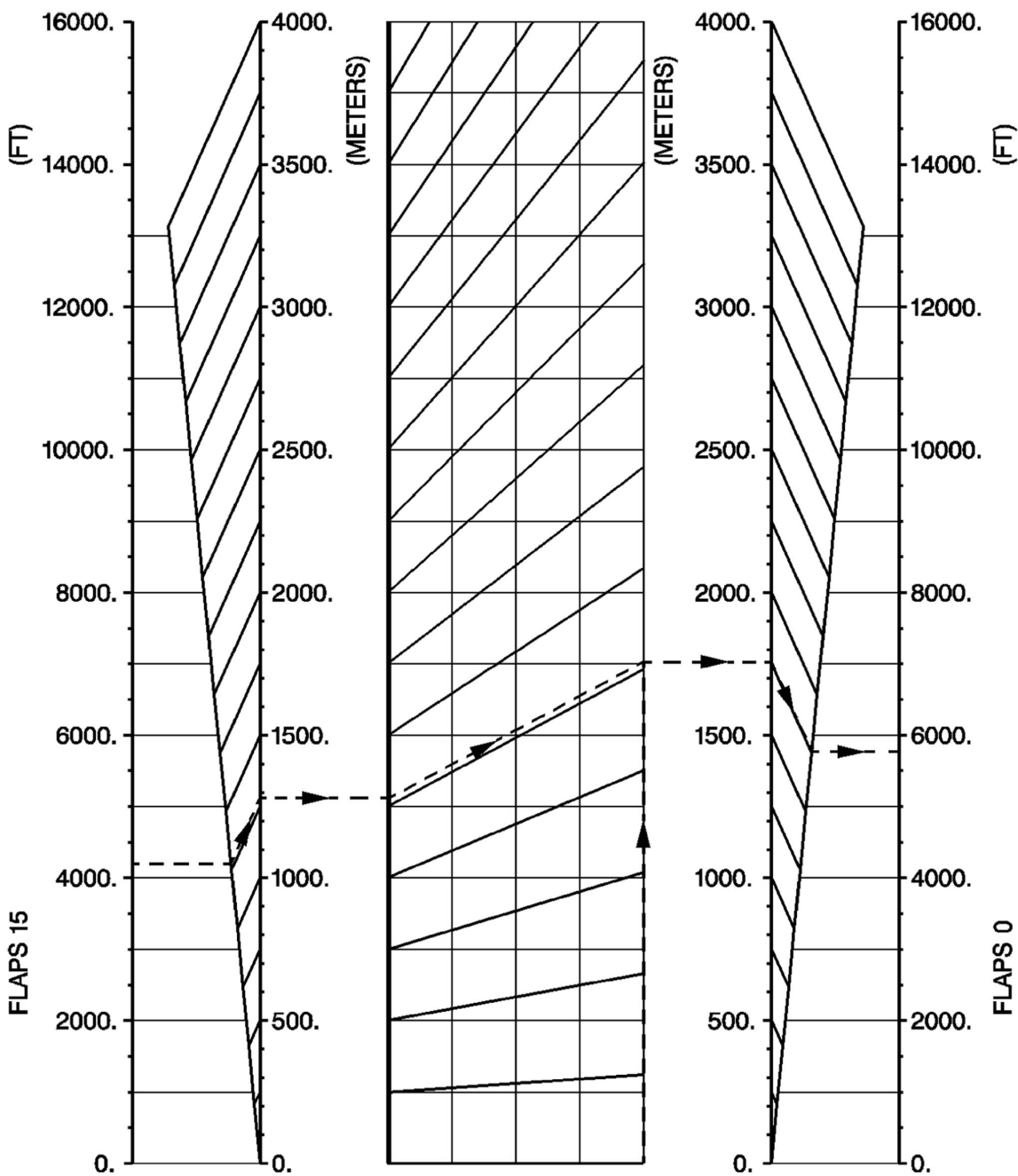
### Accelerate Stop Distance Corrections


df3d48a2-9fe4-4fb2-bc1f-772e6b215391

0.1

ALL

APPROVED



|   |   |                        |
|---|---|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ONE WHEEL BRAKE</b><br><b>DEACTIVATED OR REMOVED</b> | DEV.2<br><br>Page n°22 |
|---|---|------------------------|

|          |   |
|----------|---|
| <b>5</b> | <b>DISPATCH WITH ONE WHEEL BRAKE DEACTIVATED OR REMOVED</b> |
|----------|---|

**Dispatch with One Wheel Brake Deactivated or Removed**

|                                      |            |            |
|--------------------------------------|------------|------------|
| abb4bb11-4b41-4d3d-b461-fded9ebdd482 | <b>REV</b> | <b>6.1</b> |
|                                      |            | 0685-0706  |
|                                      |            | APPROVED   |

**LIMITATIONS**

- Operation on contaminated runways is prohibited.
- Landing braking energy limitation..... 8.3 MJ
- Delayed braking procedure is prohibited.

**PROCEDURES**

No change.


**PERFORMANCES**

**Takeoff**

- Multiply ASD by 1.1.
- Check  $V_1 < 0.8$  of  $V_1$  MAX brake energy.

**Landing**

- Multiply Actual Landing Distance by 1.1 (valid for all configurations).
- Landing brake energy: Apply landing dispatch with one wheel brake deactivated correction ([Refer to DEV.2.5.01.3 Operation on Dry or Wet Runway](#)) on landing brake energy (Flaps 30)

|   |   |                            |
|---|---|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ONE WHEEL BRAKE</b><br><b>DEACTIVATED OR REMOVED</b> | DEV.2<br><br><br>Page n°23 |
|---|---|----------------------------|

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| 9dc0a287-f5c6-494e-9daa-534b4131e357 | <b>REV</b> | <b>5.1</b>      |
|                                      |            | <b>0775</b>     |
|                                      |            | <b>APPROVED</b> |

**LIMITATIONS**

Operation on contaminated runways is prohibited.

Landing braking energy limitation..... 8.9 MJ

Delayed braking procedure is prohibited.

**PROCEDURES**

No change.

**PERFORMANCES**

**Takeoff**

- Multiply ASD by 1.1.
- Check  $V_1 < 0.8$  of  $V_1$  MAX brake energy.

**Landing**

- Multiply Actual Landing Distance by 1.1 (valid for all configurations).
- Landing brake energy: Apply landing dispatch with one wheel brake deactivated correction ([Refer to DEV.2.5.01.3 Operation on Dry or Wet Runway](#)) on landing brake energy (Flaps 30)

**Operation on Dry or Wet Runway**

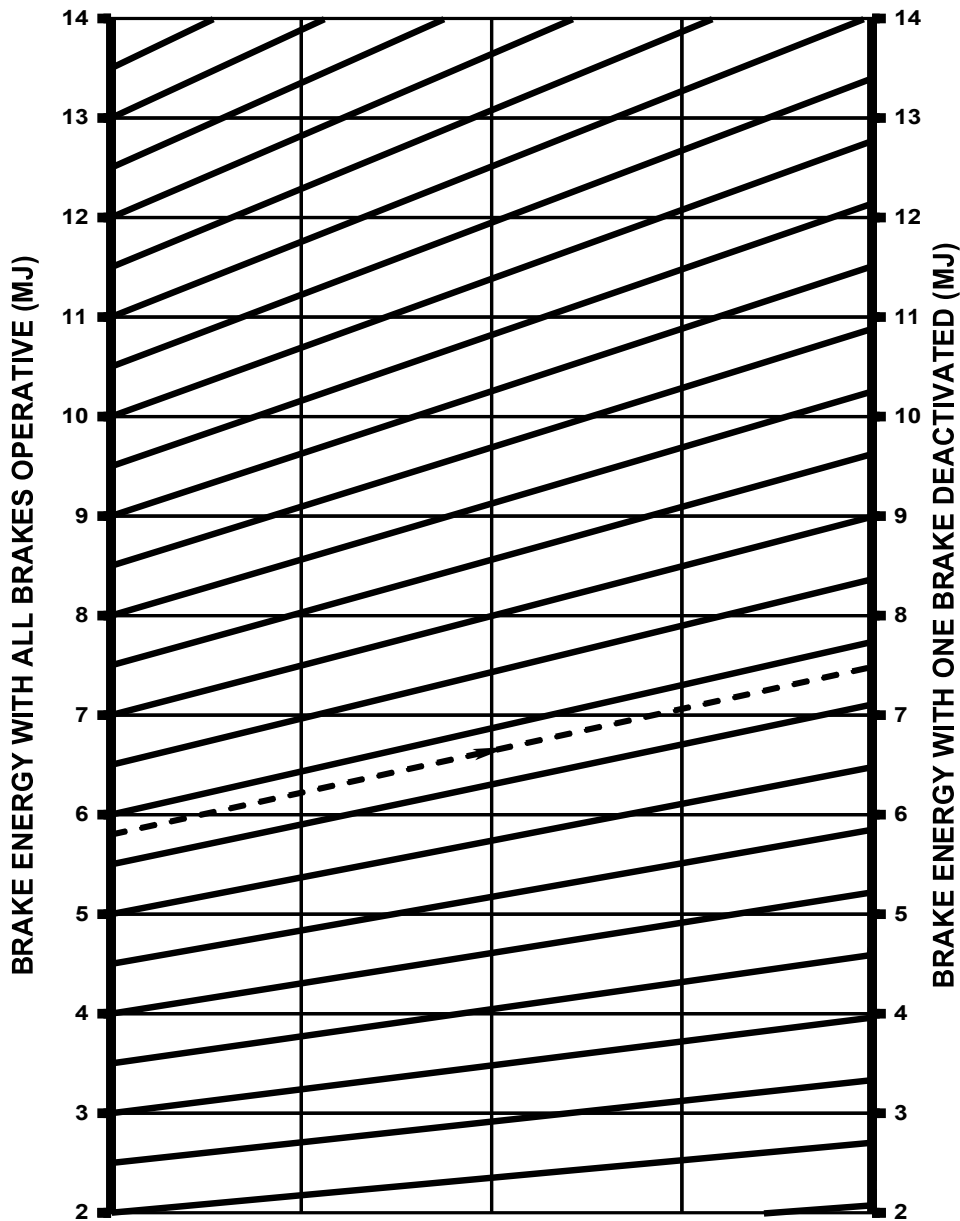
1fcd9552-ab7d-45de-a9fa-0d95e69888aa


1.3

ALL

APPROVED

**OPERATION ON DRY OR WET RUNWAY  
DISPATCH WITH ONE WHEEL BRAKE DEACTIVATED  
LANDING BRAKE ENERGY CORRECTION  
NORMAL BRAKING**



|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ANTISKID SYSTEM</b><br><b>INOPERATIVE</b> | DEV.2<br><br>Page n°25 |
|---|--|------------------------|

## 6 DISPATCH WITH ANTISKID SYSTEM INOPERATIVE

### Dispatch with Antiskid System Inoperative

|                                      |     |           |
|--------------------------------------|-----|-----------|
| 6ea1068d-ad57-4e72-a3e8-31613007b043 | REV | 3.1       |
|                                      |     | 0685-0706 |
|                                      |     | APPROVED  |

#### LIMITATIONS

Operation on contaminated runways is prohibited.

Landing braking energy limitation..... 8.3 MJ

Delayed braking procedure is prohibited.

#### PROCEDURES

▶ ANTISKID..... OFF

##### For Ground Deceleration

▶ REVERSE..... AS RQRD

▶ NORMAL BRAKE..... USE WITH CARE

▶ BRAKE HANDLE..... EMER/AS RQRD


#### PERFORMANCES

##### Takeoff

Check antiskid OFF effect on ASD.

##### Landing

- Multiply Actual Landing Distance by 1.4 (valid for all configurations).
- Landing brake energy: Apply landing dispatch with antiskid inoperative correction on landing brake energy (Flaps 30) ([Refer to Antiskid Off Effect on Landing Brake Energy](#)).

|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ANTISKID SYSTEM</b><br><b>INOPERATIVE</b> | DEV.2<br><br>Page n°26 |
|---|--|------------------------|

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| 987c116c-95d8-4837-8ae0-43852275f192 | <b>REV</b> | <b>4.1</b>      |
|                                      |            | <b>0775</b>     |
|                                      |            | <b>APPROVED</b> |

## LIMITATIONS

Operation on contaminated runways is prohibited.

Landing braking energy limitation..... 8.9 MJ

Delayed braking procedure is prohibited.

## PROCEDURES

▶ ANTISKID..... OFF

### For Ground Deceleration

▶ REVERSE..... AS RQRD

▶ NORMAL BRAKE..... USE WITH CARE

▶ BRAKE HANDLE..... EMER/AS RQRD

## PERFORMANCES

### Takeoff

Check antiskid OFF effect on ASD.

### Landing

- Multiply Actual Landing Distance by 1.4 (valid for all configurations).
- Landing brake energy: Apply landing dispatch with antiskid inoperative correction on landing brake energy (Flaps 30) ([Refer to Antiskid Off Effect on Landing Brake Energy](#)).

### Antiskid Off Effect on Accelerate Stop Distance

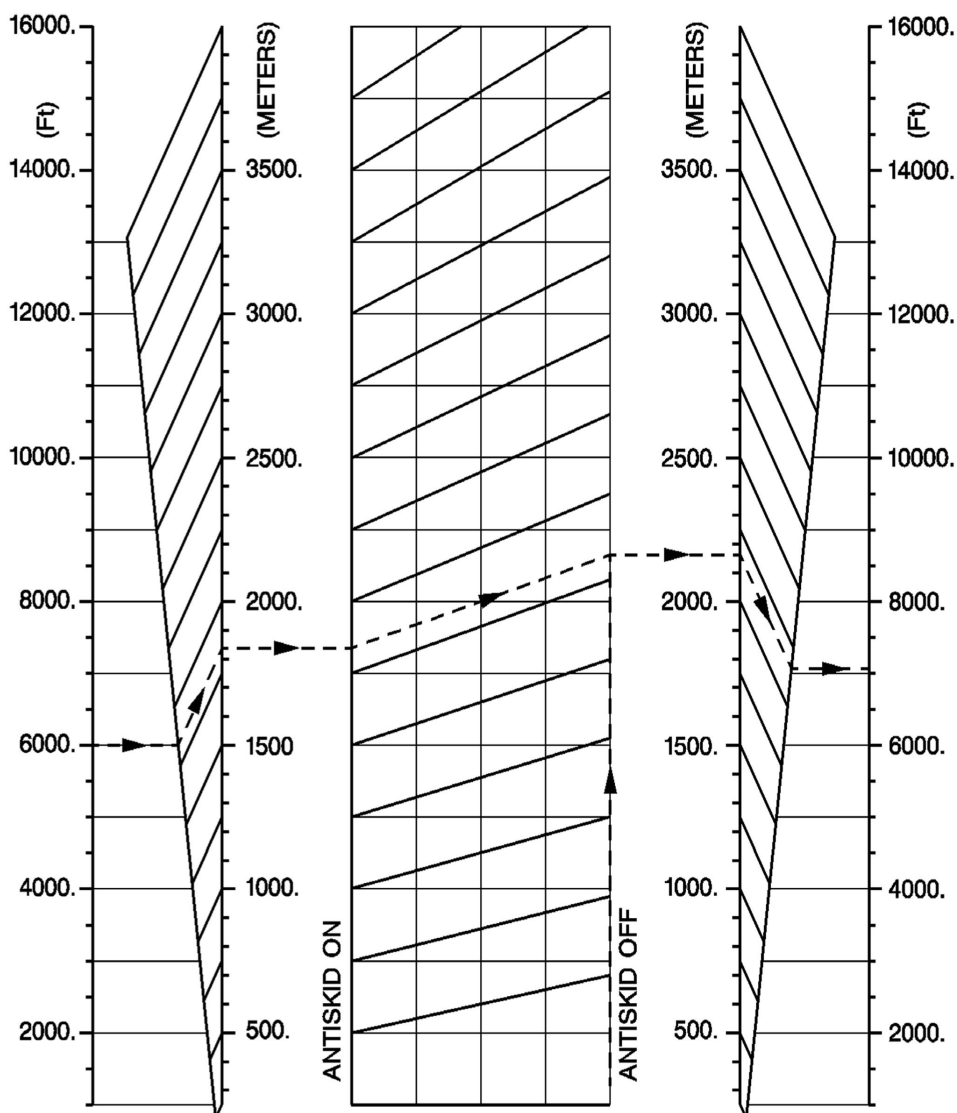
28f61f9a-cef8-4bbd-b306-9a94339a2220

1.1

ALL

APPROVED

FLAPS 15



### Antiskid Off Effect on Landing Brake Energy

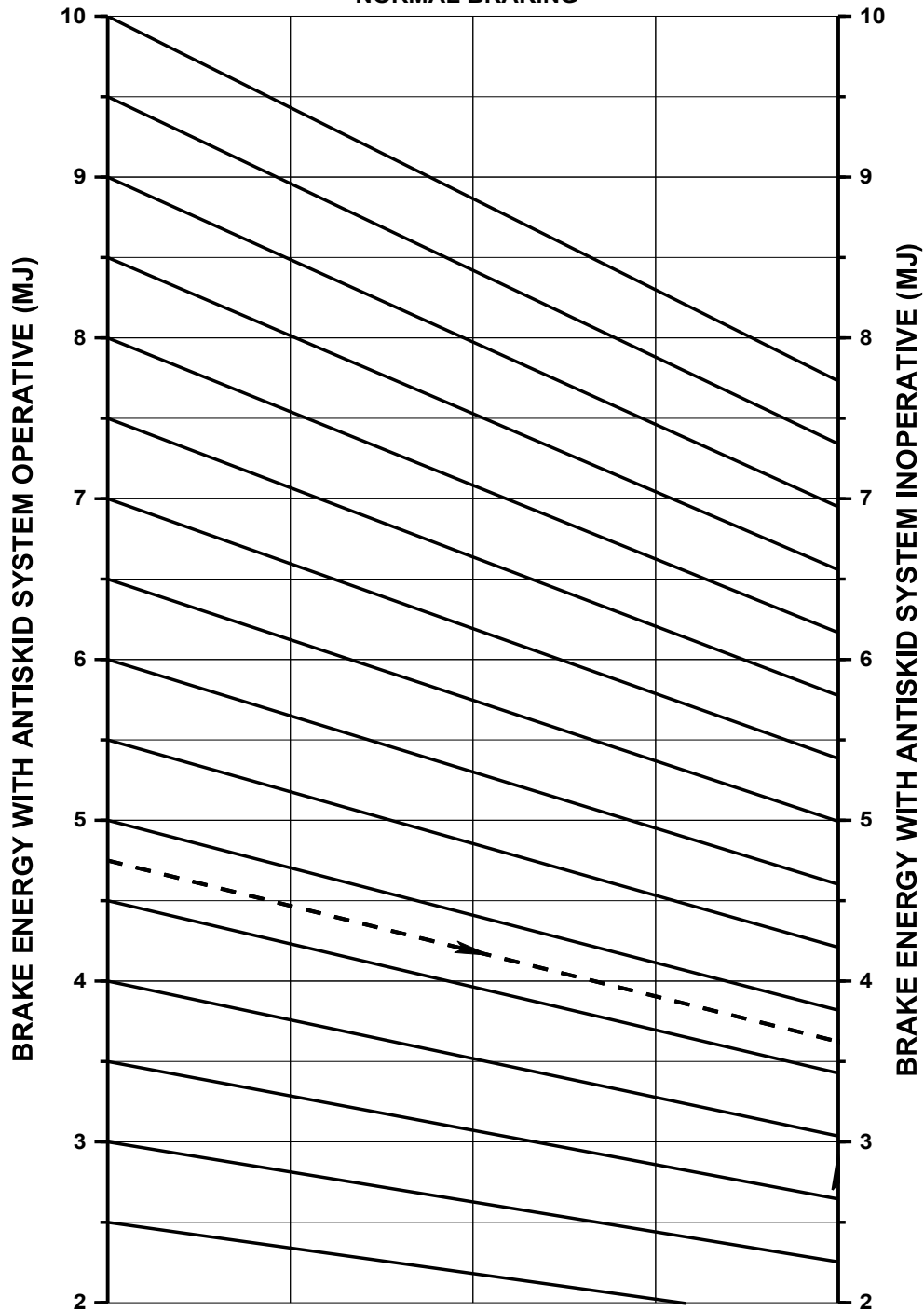
c05965d9-0757-4ec8-aa2b-f092287d4ba9

0.2


ALL

APPROVED

OPERATION ON DRY OR WET RUNWAY  
ANTISKID SYSTEM INOPERATIVE  
LANDING BRAKE ENERGY CORRECTION  
NORMAL BRAKING





|   |   |                            |
|---|---|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH AUTOFEATHER SYSTEM</b><br><b>INOPERATIVE</b> | DEV.2<br><br><br>Page n°29 |
|---|---|----------------------------|

|          |   |
|----------|---|
| <b>7</b> | <b>DISPATCH WITH AUTOFEATHER SYSTEM<br/>INOPERATIVE</b> |
|----------|---|

**Dispatch with Autofeather System Inoperative**

|   |  |                 |
|---|--|-----------------|
| <small>5e26ae4d-e1b8-4b6d-b810-955ec4a9ea79</small> |  | <b>2.2</b>      |
|   |  | <b>ALL</b>      |
|   |  | <b>APPROVED</b> |

**LIMITATIONS**

No change.

**PROCEDURES**

**Normal Procedures**

No change.

**Emergency Procedures**

No change.

**Abnormal Procedures**

■ **If engine fails after V<sub>1</sub>:**

- ▶ PL (affected ENG) : DO NOT REDUCE BELOW PLA 45 ° UNTIL FEATHERING

**PERFORMANCES**

**Takeoff**

- Increase V<sub>1</sub> limited by V<sub>MCG</sub> by 5 kt
- Increase V<sub>R</sub> by 2 kt
- Increase V<sub>MCA</sub> by 3 kt
- Check V<sub>R</sub> and V<sub>2</sub>
- Check effect on TOR, TOD, and second segment climb.

**Approach**

Increase V<sub>MCL</sub> by 7 kt.

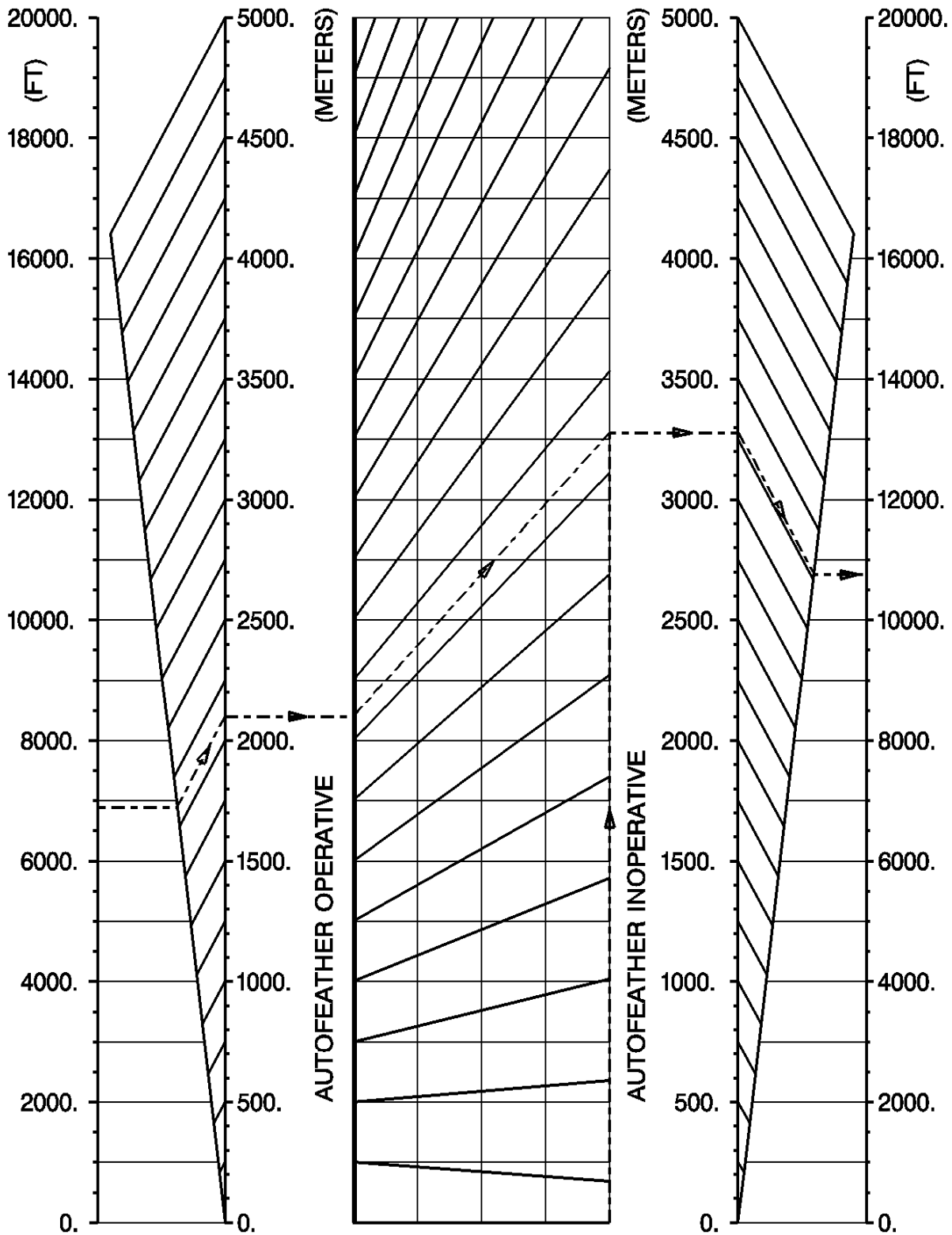
**Effect on Takeoff Run**

b15833fb-50f5-4826-aaba-f885804d90f0

0.1

ALL

APPROVED



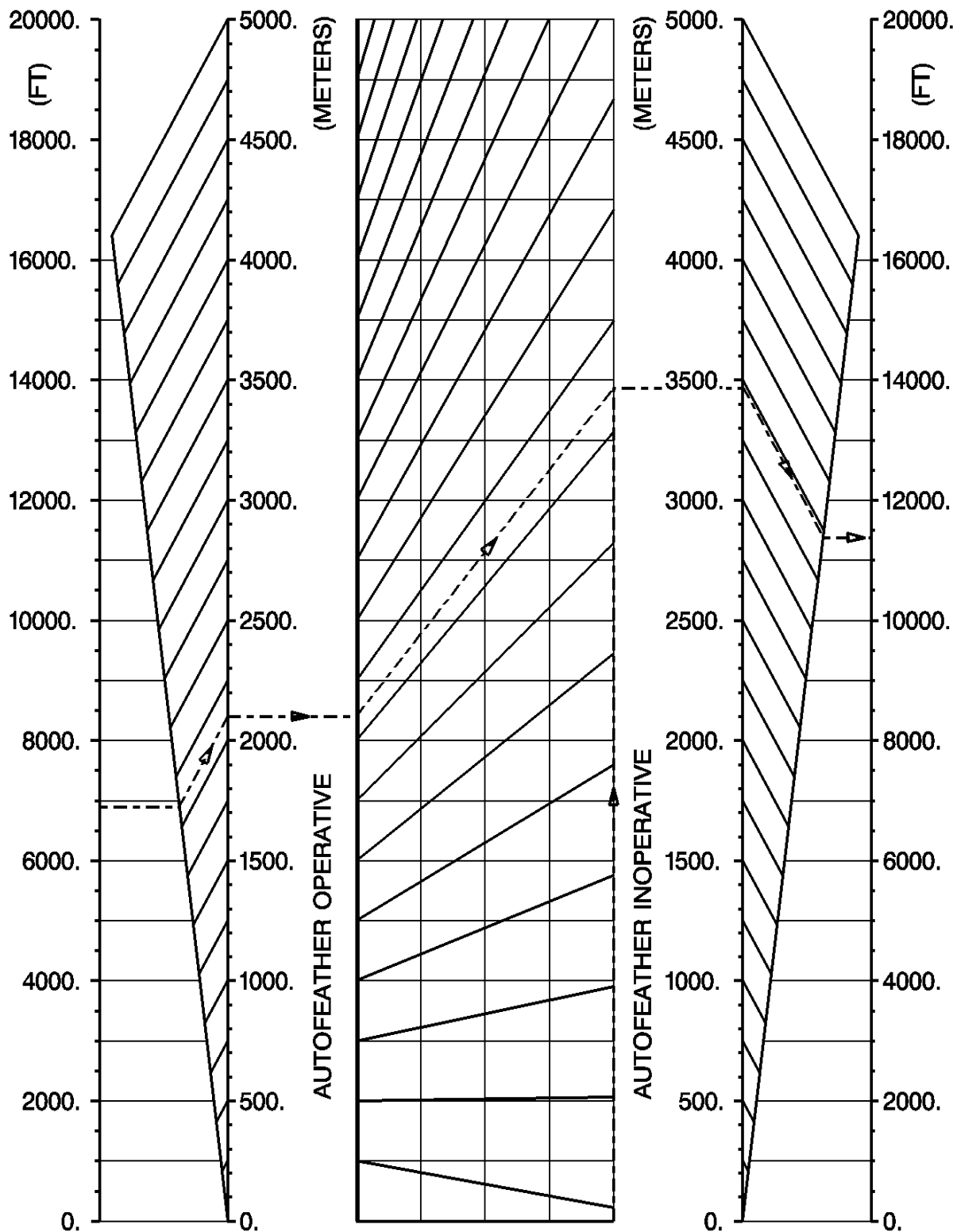
### Effect on Takeoff Distance

05eb6807-2c87-4470-b468-658c95bdab7f

0.1

ALL

APPROVED



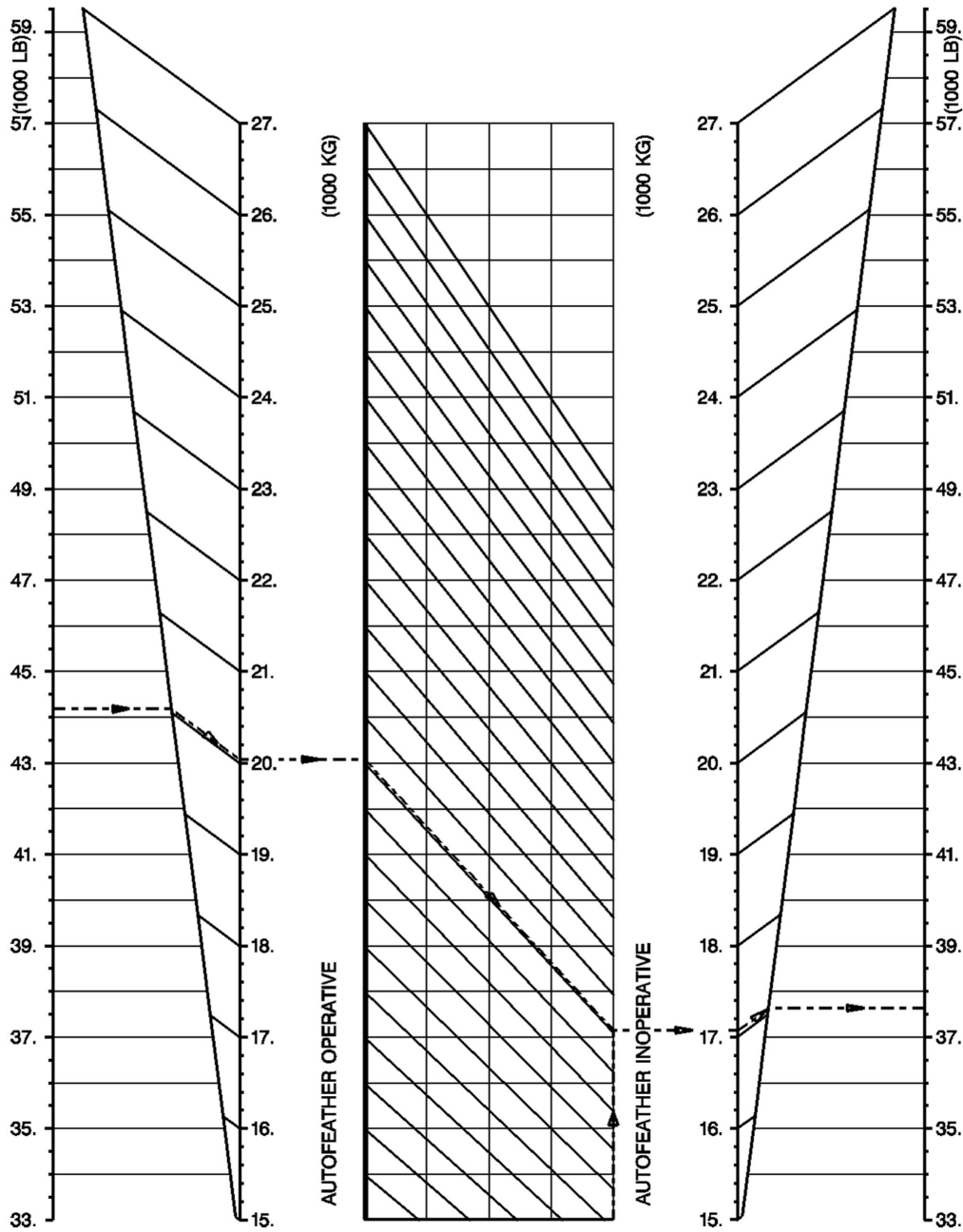
**Effect on Second Segment Weight**

5875949b-cbc4-4733-a2cb-c68cf862a669

1.1

ALL

APPROVED



|                |  |           |
|----------------|--|-----------|
| <b>ATR</b>     | <b>DEVIATION GUIDE</b>   | DEV.2     |
| BU / 75<br>AFM | <b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ONE EEC OFF</b> | Page n°33 |

## 8 DISPATCH WITH ONE EEC OFF

### Dispatch with One EEC OFF

|                                      |          |
|--------------------------------------|----------|
| e4c9197a-916d-4b8c-9292-443fdab1e23c | 0.7      |
|                                      | ALL      |
|                                      | APPROVED |

#### LIMITATIONS

No Change

#### PROCEDURES

##### Normal Procedures

- In the following cases: Atmospheric or ground icing conditions, engine(s) flame out, emergency descent, severe turbulence, heavy rain

- ▶ MAN IGN ..... ON

##### Note

*When taxiing with a significant tailwind component, affected ENG should be started at the end of taxi before takeoff.*

- During taxi or prolonged ground operations near idle power

- ▶ CL (affected ENG)..... FTR

*To avoid prolonged use within prohibited NP range.*

- ▶ TAXI : EEC (operative) SELECT ON

- For takeoff

- ▶ BLEEDS..... OFF

- ▶ ATPCS..... OFF

- ▶ BRAKES..... APPLY

- ▶ PL 1+2..... SET AT RTO

*Set PL 1+2 up to the ramp and adjust the PL on the inoperative EEC side (+/- 2 %) RTO power.*

- When TQ reaches 40 %

- ▶ BRAKES..... RELEASE

- Climb sequence

- ▶ PL 1+2..... REDUCE TQ BY 10 % AVERAGE

- ▶ PWR MGT..... CLIMB

- ▶ BLEED 1+2..... ON


- ▶ PL 1+2..... SET TO OBJECTIVE TQ BUG

- Final approach

- ▶ CL 1+2..... 100 % OVRD

##### Emergency Procedures

No Change.

|   |  |                            |
|---|--|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><br><b>DISPATCH WITH ONE EEC OFF</b> | DEV.2<br><br><br>Page n°34 |
|---|--|----------------------------|

cont'd... >>>

**Abnormal Procedures**

■ **If takeoff is aborted (accelerate & stop)**

- ▶ BRAKE HANDLE..... EMER
- ▶ PL 1+2.....FI THEN GI  
*Reduce power to FI for 1 s before setting below, as the asymmetric protection is lost.*

■ **If engine fails after V<sub>1</sub>**

- ▶ PL (affected ENG) : DO NOT REDUCE BELOW PLA 45 ° UNTIL FEATHERING

**PERFORMANCES**

**Takeoff**

- Increase V<sub>1</sub> limited by V<sub>MCG</sub> by 5 kt
- Increase V<sub>R</sub> by 2 kt
- Increase V<sub>MCA</sub> by 3 kt
- Check V<sub>R</sub> and V<sub>2</sub>
- Check EEC OFF and ATPCS OFF effect on performances.

**Approach**

Increase V<sub>MCL</sub> by 7 kt.

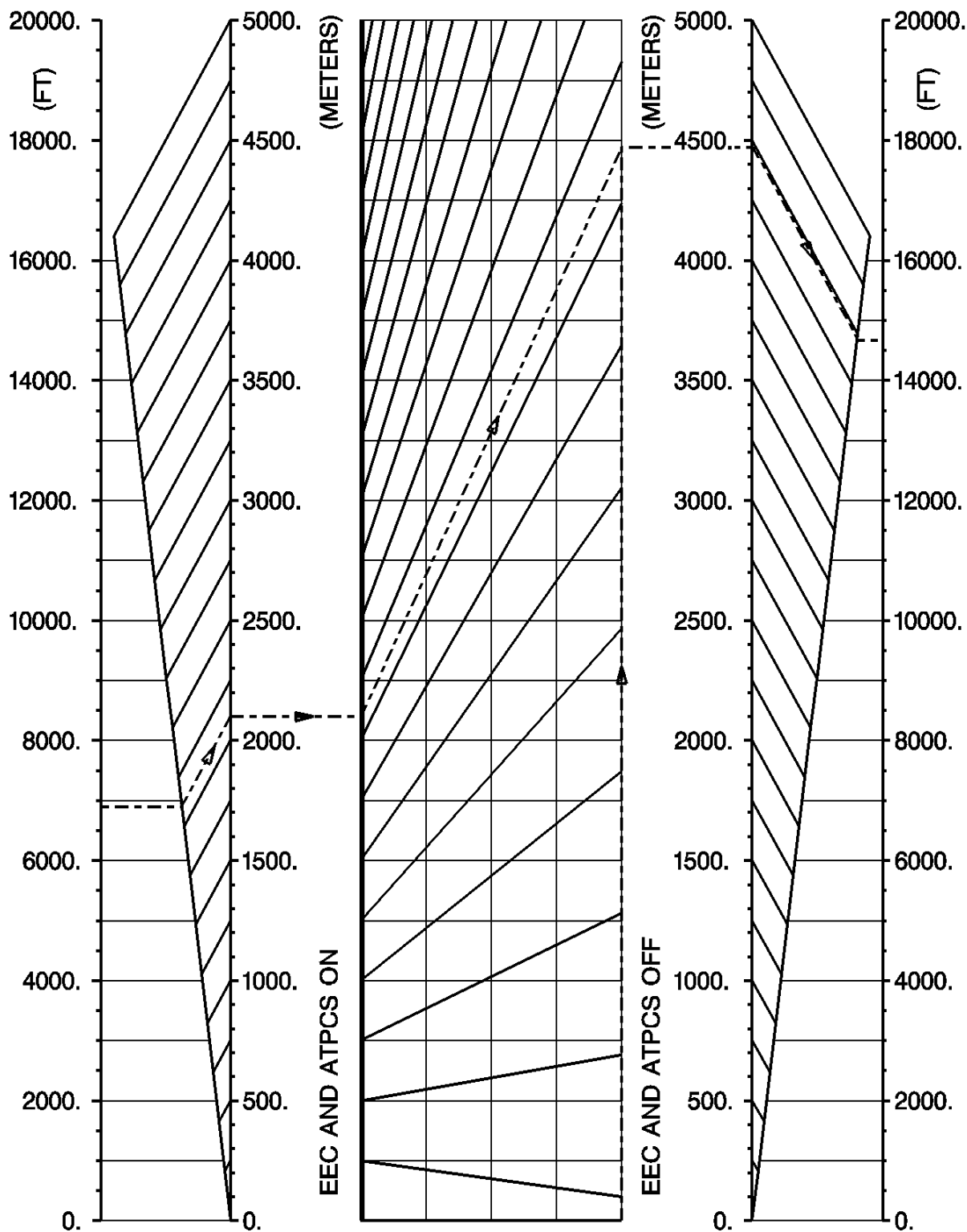
### Effect on Takeoff Run

3b12f428-aa2d-43a5-8c31-ea583f08f357

0.1

ALL

APPROVED



**Effect on Takeoff Distance**

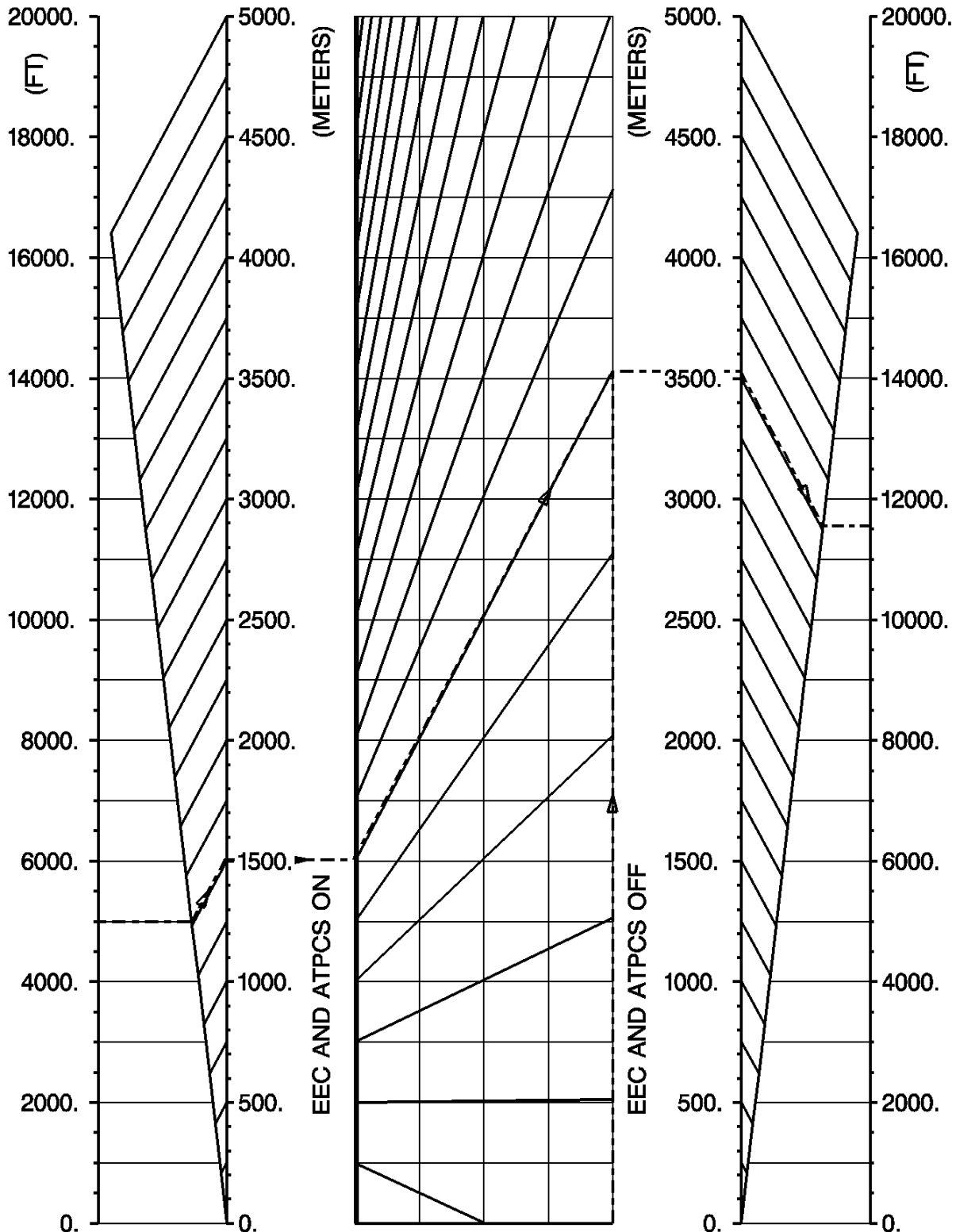
**Effect on Takeoff Distance**

7bc50e6b-d519-4b45-9516-952c211379c8

0.1

ALL

APPROVED





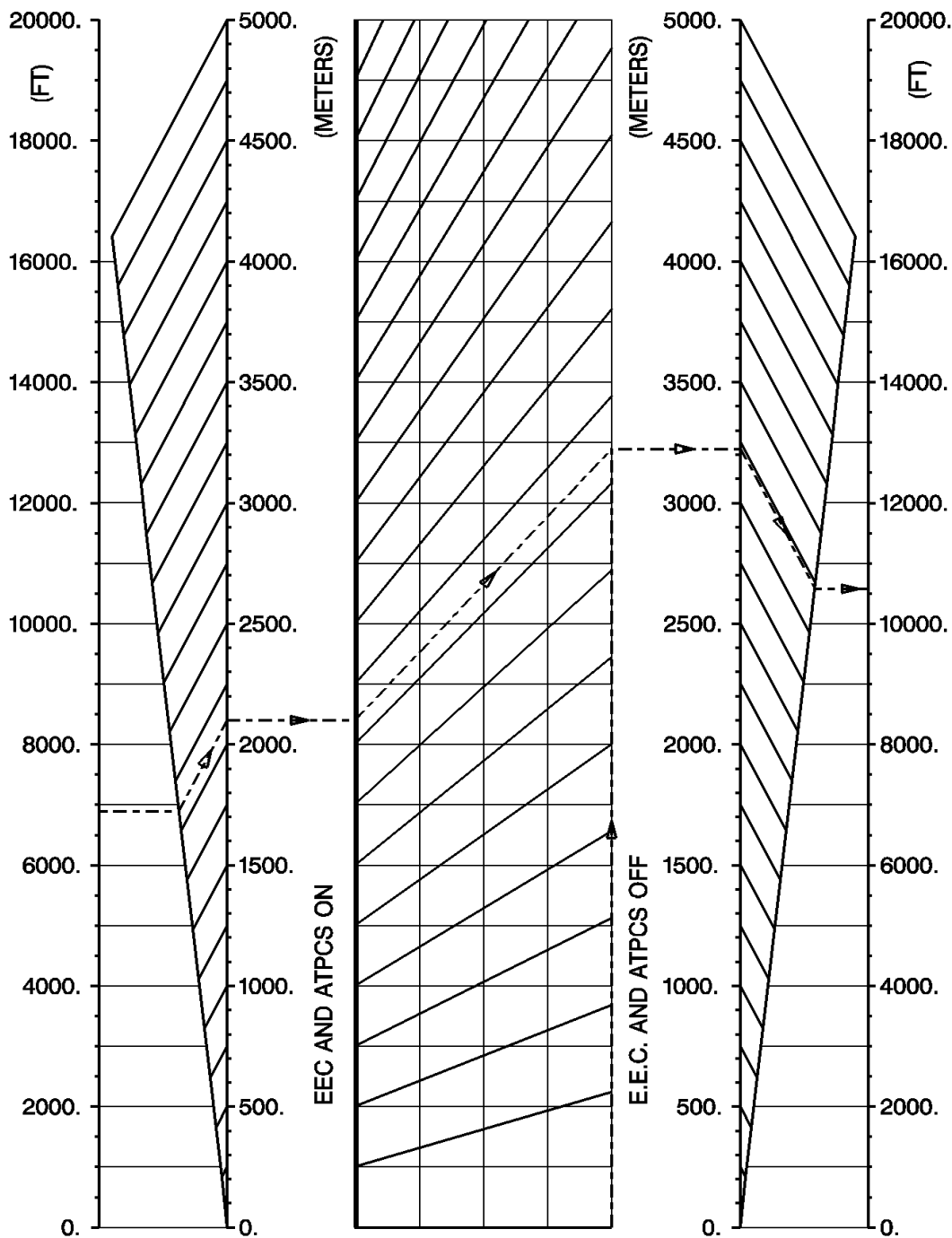
### Effect on Accelerate Stop Distance

a7df9312-9c09-472a-a3c5-74398bb7e572

0.1

ALL

APPROVED



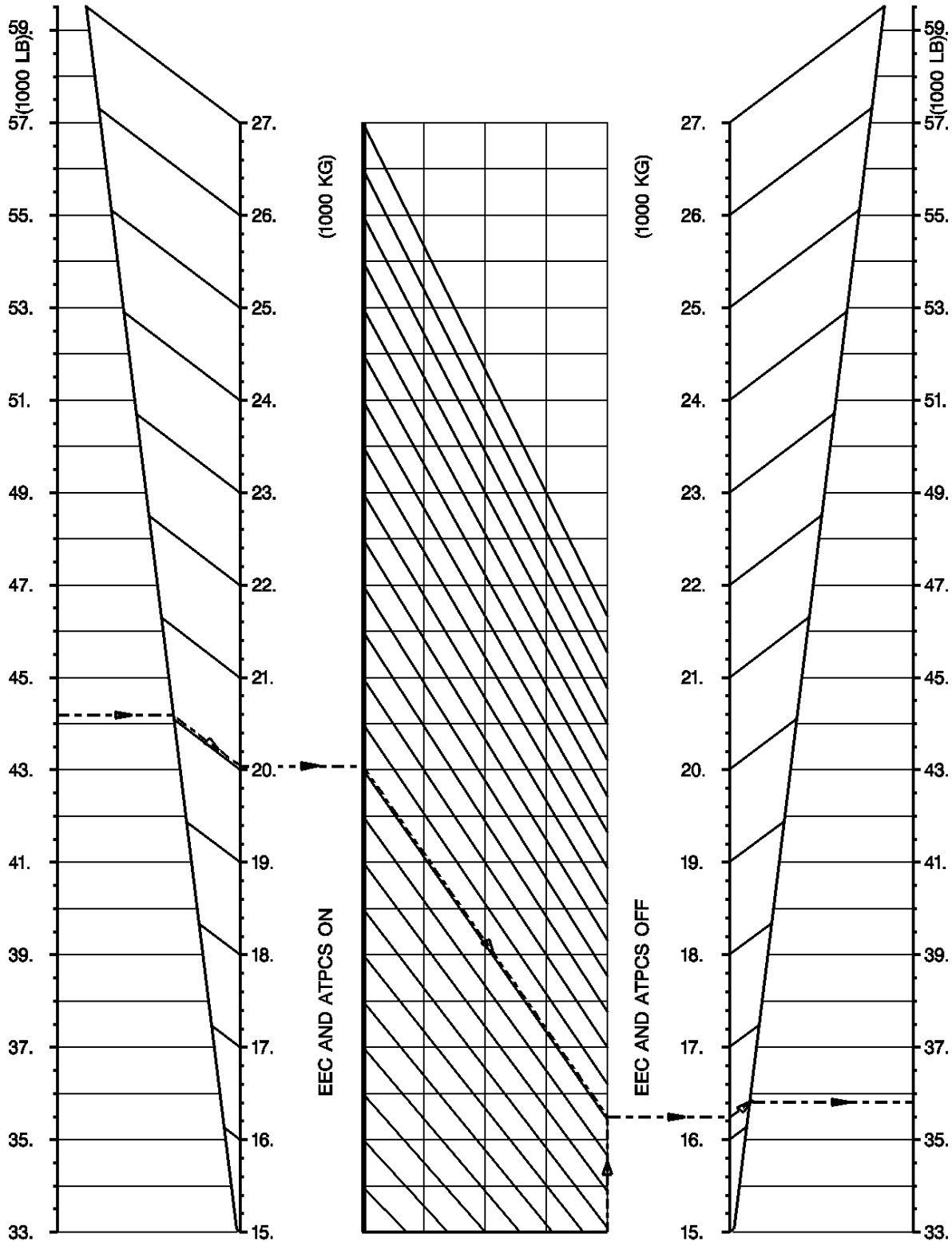
### Effect On Second Segment


245438b7-1078-4a09-83af-514772256551

0.1

ALL

APPROVED



|   |  |                        |
|---|--|------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ONE TQ INDICATION</b><br><b>INOPERATIVE</b> | DEV.2<br><br>Page n°39 |
|---|--|------------------------|

## 10                    DISPATCH WITH ONE TQ INDICATION INOPERATIVE

### Dispatch with TQ Indications Inoperative (Both Pointer Digital Counter on the Same ENG)

#### Dispatch with TQ Indications Inoperative (Both Pointer Digital Counter on the Same ENG)

5b149991-d2f8-4420-86ff-40333d8181e1

3.2

ALL

APPROVED

#### LIMITATIONS

No change.

#### PROCEDURES

##### Normal Procedures

- **During flight preparation**
  - ▶ ATPCS ..... TEST
- **For takeoff**
  - ▶ ATPCS ..... ARM
  - ▶ EEC 1+2..... ON
  - ▶ BLEED 1+2..... OFF
  - ▶ PL 1+2..... IN THE NOTCH
- **Before 50 kt**
  - ▶ FUEL FLOW .....CHECK & ADJUST  
*Adjust the affected side power to in accordance with takeoff fuel flow table.*
  - ▶ ITT LIMITATION : MONITOR
- **Climb / Cruise**
  - ▶ BLEED 1+2..... ON
  - ▶ FUEL FLOW .....CHECK & ADJUST  
*Maintain affected side fuel flow within +/- 5 % of opposite engine one.*
- **Go-around**
  - ▶ PL 1+2..... UP TO THE RAMP
  - ▶ FUEL FLOW .....CHECK & ADJUST  
*Adjust the affected side power to in accordance with go-around fuel flow table.*
  - ▶ ITT LIMITATION : MONITOR


##### Emergency Procedures

No change.

##### Abnormal Procedures

- **If engine fails after V<sub>1</sub>**
  - ▶ FUEL FLOW : USE TO SET ENG PWR

cont'd... >>>

|   |  |                            |
|---|--|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH ONE TQ INDICATION</b><br><b>INOPERATIVE</b> | DEV.2<br><br><br>Page n°40 |
|---|--|----------------------------|

*cont'd... >>>*

**PERFORMANCES**

- Increase  $V_R$  by 1 kt
- Check effect on TOR, TOD, and ASD
- Check effect on second segment climb
- Check fuel flow table.

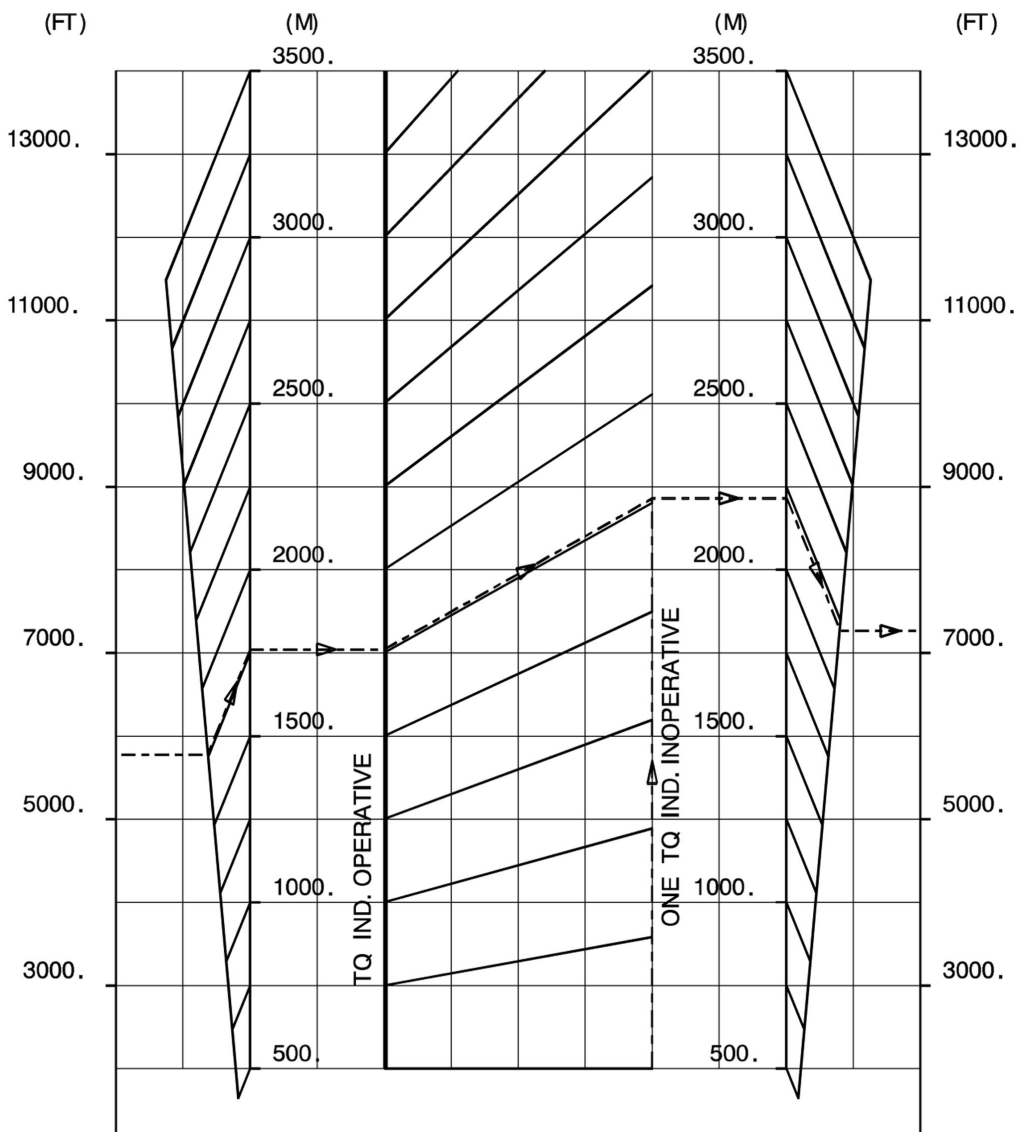
**Effect on Takeoff Run**

|                                      |                               |
|--------------------------------------|-------------------------------|
| 5b23aae3-5638-4113-98af-5400f75e226b | <b>0.1</b><br>ALL<br>APPROVED |
|--------------------------------------|-------------------------------|

FLAPS 15

*cont'd... >>>*

cont'd... >>>



**Effect on Takeoff Distance**

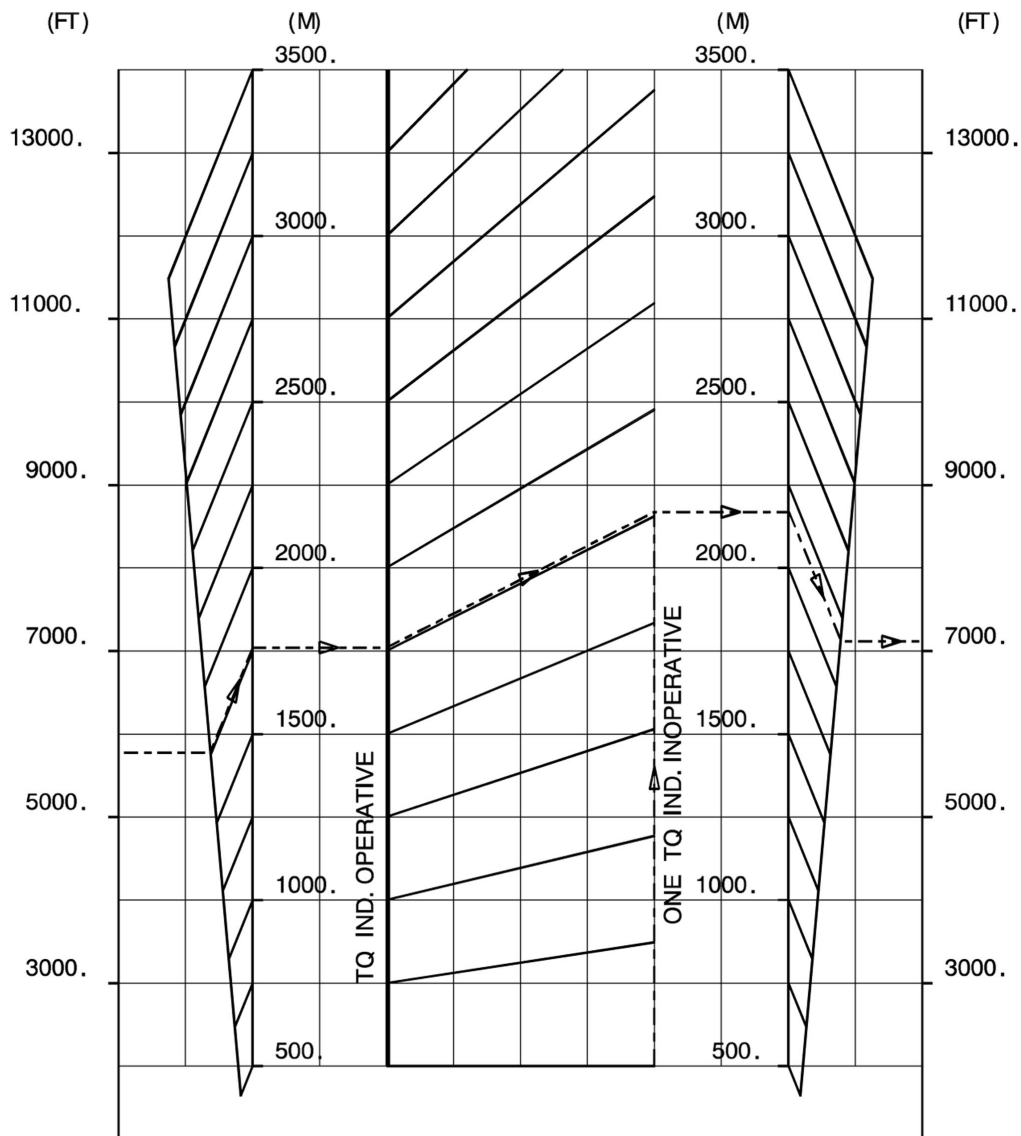
a52c471a-ddfa-4495-a4e4-075787f731d8

1.1

ALL

APPROVED

FLAPS 15



### Effect on Accelerate Stop Distance

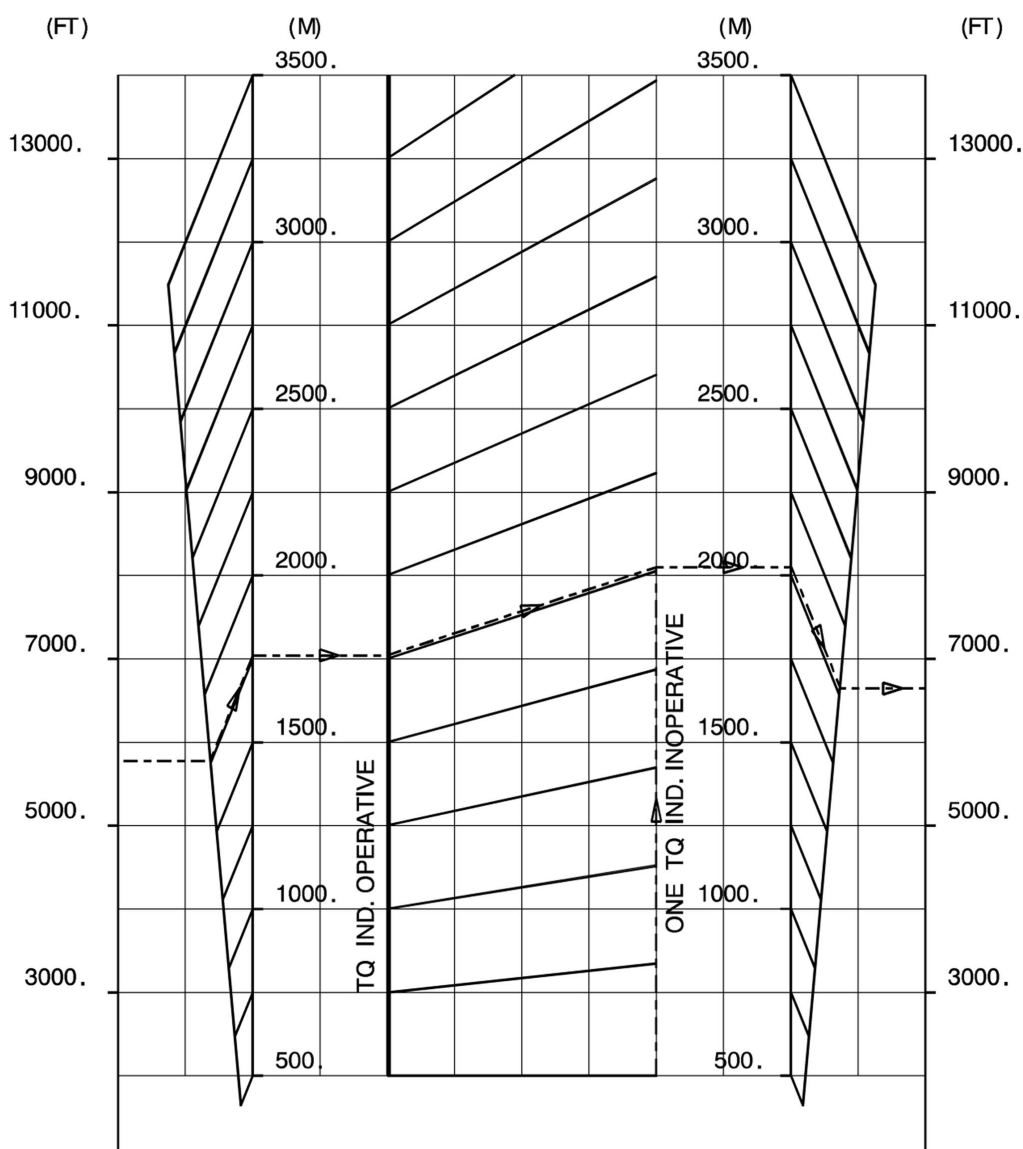
717d8f7c-62d8-4852-ab13-225f75c41128

0.1

ALL

APPROVED

FLAPS 15



### Effect on Second Segment Weight

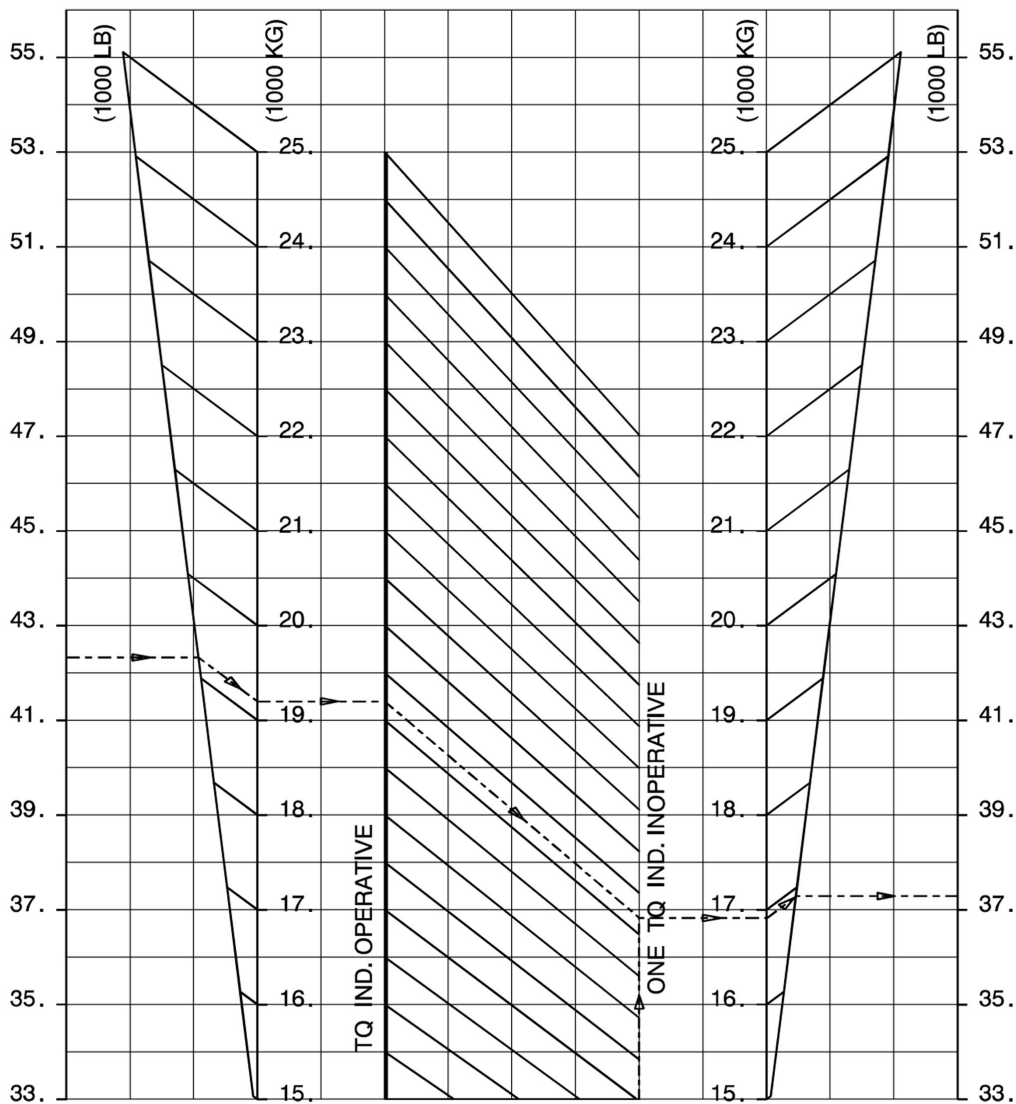
66f372f0-0eea-4b2e-9c62-5056cd2b43f9

1.1

ALL

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This graph is also valid for Final Takeoff, single engine ceiling and approach climb weights.







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DEVIATION GUIDE

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Takeoff Min Fuel Flow

25273bb6-6c2e-467c-b56f-40ea8db23315

1.0

ALL

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| PW127F / PW127M - BOOST OFF       |                   |     |      |      |      |      |      |      |      |      |            |
|-----------------------------------|-------------------|-----|------|------|------|------|------|------|------|------|------------|
| TAKE OFF MINIMUM FUEL FLOW (KG/H) |                   |     |      |      |      |      |      |      |      |      |            |
| PROPELLER SPEED 100.0 %           |                   |     |      |      |      |      |      |      |      |      | VC = 50 kt |
| SAT<br>(°C)                       | PRESSURE ALTITUDE |     |      |      |      |      |      |      |      |      |            |
|                                   | -1000             | 0   | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 8500       |
| -40                               | 502               | 497 | 494  | 490  | 487  | 485  | 483  | 481  | 481  | 481  | 481        |
| -30                               | 509               | 505 | 501  | 498  | 494  | 492  | 490  | 488  | 488  | 488  | 488        |
| -20                               | 516               | 512 | 508  | 504  | 501  | 498  | 497  | 495  | 494  | 494  | 494        |
| -16                               | 519               | 515 | 510  | 507  | 504  | 501  | 499  | 498  | 497  | 497  | 497        |
| -14                               | 520               | 516 | 512  | 508  | 505  | 503  | 501  | 499  | 498  | 498  | 498        |
| -12                               | 521               | 517 | 513  | 509  | 507  | 504  | 502  | 500  | 499  | 499  | 499        |
| -10                               | 523               | 518 | 514  | 511  | 508  | 505  | 503  | 502  | 500  | 500  | 499        |
| -8                                | 524               | 520 | 516  | 512  | 509  | 506  | 504  | 503  | 502  | 502  | 495        |
| -6                                | 525               | 521 | 517  | 513  | 510  | 508  | 505  | 504  | 503  | 501  | 491        |
| -4                                | 526               | 522 | 518  | 514  | 512  | 509  | 507  | 505  | 504  | 497  | 487        |
| -2                                | 528               | 523 | 519  | 516  | 513  | 510  | 508  | 507  | 505  | 493  | 483        |
| 0                                 | 529               | 525 | 521  | 517  | 514  | 511  | 509  | 508  | 507  | 489  | 479        |
| 2                                 | 530               | 526 | 522  | 518  | 515  | 513  | 510  | 509  | 505  | 485  | 475        |
| 4                                 | 531               | 527 | 523  | 519  | 516  | 514  | 512  | 510  | 500  | 481  | 471        |
| 6                                 | 532               | 528 | 524  | 521  | 517  | 515  | 513  | 511  | 496  | 477  | 468        |
| 8                                 | 533               | 529 | 525  | 522  | 519  | 516  | 514  | 512  | 492  | 473  | 463        |
| 10                                | 534               | 530 | 527  | 523  | 520  | 517  | 515  | 507  | 488  | 469  | 460        |
| 12                                | 535               | 531 | 528  | 524  | 521  | 518  | 516  | 503  | 484  | 465  | 456        |
| 14                                | 536               | 533 | 529  | 525  | 522  | 520  | 517  | 498  | 479  | 461  | 452        |
| 16                                | 537               | 534 | 530  | 526  | 523  | 521  | 513  | 493  | 474  | 456  | 447        |
| 18                                | 538               | 535 | 531  | 527  | 524  | 522  | 507  | 488  | 469  | 451  | 442        |
| 20                                | 540               | 536 | 532  | 529  | 525  | 521  | 501  | 482  | 463  | 445  | 437        |
| 22                                | 541               | 537 | 533  | 530  | 526  | 515  | 495  | 476  | 458  | 440  | 431        |
| 24                                | 542               | 538 | 534  | 531  | 527  | 508  | 489  | 470  | 452  | 435  | 426        |
| 26                                | 542               | 539 | 535  | 532  | 522  | 502  | 483  | 465  | 447  | 430  | 421        |
| 28                                | 543               | 540 | 536  | 533  | 515  | 496  | 477  | 459  | 441  | 424  | 416        |
| 30                                | 544               | 541 | 537  | 528  | 509  | 489  | 471  | 453  | 435  | 419  | 410        |
| 32                                | 545               | 542 | 538  | 521  | 502  | 483  | 465  | 447  | 430  | 413  | 405        |
| 34                                | 546               | 543 | 534  | 514  | 495  | 476  | 458  | 441  | 424  | 407  | 399        |
| 36                                | 547               | 544 | 527  | 507  | 488  | 470  | 452  | 435  | 418  | 402  | 394        |
| 38                                | 548               | 539 | 519  | 500  | 481  | 463  | 445  | 428  | 412  | 396  | 388        |
| 40                                | 549               | 532 | 512  | 493  | 474  | 456  | 439  | 422  | 406  |      |            |
| 42                                | 544               | 524 | 505  | 486  | 468  | 450  | 433  | 416  |      |      |            |
| 44                                | 536               | 516 | 497  | 479  | 461  | 443  | 426  |      |      |      |            |
| 46                                | 528               | 509 | 490  | 471  | 454  | 437  |      |      |      |      |            |
| 48                                | 520               | 501 | 482  | 464  | 447  |      |      |      |      |      |            |
| 50                                | 512               | 493 | 475  | 457  |      |      |      |      |      |      |            |
| 52                                | 504               | 486 | 468  |      |      |      |      |      |      |      |            |
| 54                                | 496               | 478 |      |      |      |      |      |      |      |      |            |
| 55                                | 492               | 474 |      |      |      |      |      |      |      |      |            |

**Reserve Takeoff Minimum Fuel Flow**

e27b2820-9fe1-476a-a576-3c18c0f03a08

1.0

ALL

APPROVED

| PW127F / PW127M - BOOST OFF   |                   |     |      |      |      |      |      |      |      |      |      |
|---|-------------------|-----|------|------|------|------|------|------|------|------|------|
| RESERVE TAKE OFF MINIMUM FUEL FLOW (KG/H)                             |                   |     |      |      |      |      |      |      |      |      |      |
| PROPELLER SPEED 100.0 % <span style="float: right;">VC = 50 kt</span> |                   |     |      |      |      |      |      |      |      |      |      |
| SAT<br>(°C)   | PRESSURE ALTITUDE |     |      |      |      |      |      |      |      |      |      |
|   | -1000             | 0   | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 8500 |
| -40   | 542               | 538 | 536  | 534  | 532  | 531  | 532  | 532  | 533  | 534  | 534  |
| -30   | 550               | 547 | 544  | 542  | 540  | 539  | 539  | 539  | 540  | 541  | 542  |
| -20   | 558               | 554 | 551  | 549  | 547  | 546  | 546  | 546  | 547  | 548  | 548  |
| -16   | 560               | 557 | 554  | 552  | 550  | 549  | 549  | 549  | 550  | 551  | 551  |
| -14   | 562               | 559 | 556  | 553  | 552  | 550  | 550  | 550  | 551  | 552  | 553  |
| -12   | 563               | 560 | 557  | 555  | 553  | 552  | 551  | 552  | 553  | 553  | 554  |
| -10   | 565               | 561 | 558  | 556  | 555  | 553  | 553  | 553  | 554  | 555  | 553  |
| -8  | 566               | 563 | 560  | 557  | 556  | 555  | 554  | 554  | 555  | 556  | 549  |
| -6  | 567               | 564 | 561  | 559  | 557  | 556  | 555  | 556  | 557  | 555  | 544  |
| -4  | 569               | 566 | 563  | 560  | 559  | 557  | 557  | 557  | 558  | 551  | 540  |
| -2  | 570               | 567 | 564  | 561  | 560  | 559  | 558  | 558  | 559  | 546  | 535  |
| 0   | 571               | 568 | 565  | 563  | 561  | 560  | 559  | 560  | 560  | 541  | 530  |
| 2   | 573               | 570 | 567  | 564  | 563  | 561  | 561  | 561  | 558  | 536  | 525  |
| 4   | 574               | 571 | 568  | 566  | 564  | 563  | 562  | 562  | 553  | 531  | 520  |
| 6   | 576               | 572 | 569  | 567  | 565  | 564  | 563  | 564  | 547  | 526  | 515  |
| 8   | 577               | 573 | 571  | 568  | 566  | 565  | 564  | 564  | 542  | 521  | 510  |
| 10  | 578               | 575 | 572  | 569  | 568  | 567  | 566  | 559  | 537  | 516  | 505  |
| 12  | 579               | 576 | 573  | 571  | 569  | 568  | 567  | 553  | 532  | 511  | 501  |
| 14  | 581               | 577 | 574  | 572  | 570  | 569  | 568  | 547  | 526  | 506  | 496  |
| 16  | 582               | 578 | 576  | 573  | 571  | 570  | 563  | 541  | 520  | 500  | 490  |
| 18  | 583               | 580 | 577  | 575  | 572  | 572  | 556  | 535  | 514  | 494  | 484  |
| 20  | 584               | 581 | 578  | 576  | 574  | 571  | 549  | 528  | 507  | 487  | 478  |
| 22  | 586               | 582 | 579  | 577  | 575  | 563  | 541  | 520  | 500  | 481  | 471  |
| 24  | 587               | 583 | 580  | 578  | 576  | 555  | 534  | 513  | 494  | 475  | 465  |
| 26  | 588               | 584 | 582  | 579  | 569  | 548  | 527  | 507  | 487  | 468  | 459  |
| 28  | 589               | 586 | 583  | 581  | 562  | 540  | 520  | 500  | 480  | 462  | 453  |
| 30  | 590               | 587 | 584  | 575  | 554  | 532  | 512  | 492  | 473  | 455  | 446  |
| 32  | 592               | 588 | 585  | 567  | 545  | 525  | 505  | 486  | 467  | 449  | 440  |
| 34  | 593               | 589 | 580  | 559  | 538  | 517  | 498  | 479  | 460  | 443  | 434  |
| 36  | 594               | 590 | 572  | 551  | 530  | 510  | 491  | 472  | 454  | 436  | 428  |
| 38  | 595               | 586 | 564  | 543  | 523  | 503  | 484  | 465  | 447  | 430  | 422  |
| 40  | 596               | 577 | 556  | 535  | 515  | 496  | 477  | 459  | 441  |      |      |
| 42  | 591               | 569 | 548  | 527  | 507  | 488  | 470  | 452  |      |      |      |
| 44  | 582               | 560 | 539  | 519  | 500  | 481  | 463  |      |      |      |      |
| 46  | 573               | 552 | 531  | 511  | 492  | 473  |      |      |      |      |      |
| 48  | 564               | 543 | 523  | 503  | 484  |      |      |      |      |      |      |
| 50  | 555               | 534 | 514  | 495  |      |      |      |      |      |      |      |
| 52  | 545               | 525 | 506  |      |      |      |      |      |      |      |      |
| 54  | 536               | 516 |      |      |      |      |      |      |      |      |      |
| 55  | 532               | 512 |      |      |      |      |      |      |      |      |      |



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DEVIATION GUIDE SUPPLEMENTS  
DISPATCH WITH ONE TQ INDICATION  
INOPERATIVE

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Go-Around Minimum Fuel Flow

Go-Around Minimum Fuel Flow

9cbf4158-6609-46cb-8c85-046dd95e6e4e

1.0

ALL

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| PW127F / PW127M - BOOST OFF        |                   |     |      |      |      |      |      |      |      |      |             |
|------------------------------------|-------------------|-----|------|------|------|------|------|------|------|------|-------------|
| GO AROUND MINIMUM FUEL FLOW (KG/H) |                   |     |      |      |      |      |      |      |      |      |             |
| PROPELLER SPEED 100.0 %            |                   |     |      |      |      |      |      |      |      |      | VC = 100 kt |
| TAT<br>(°C)                        | PRESSURE ALTITUDE |     |      |      |      |      |      |      |      |      |             |
|                                    | -1000             | 0   | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | 8500        |
| -40                                | 542               | 538 | 534  | 531  | 529  | 528  | 527  | 528  | 528  | 529  | 529         |
| -30                                | 550               | 546 | 542  | 539  | 537  | 535  | 534  | 535  | 535  | 536  | 536         |
| -20                                | 558               | 554 | 550  | 547  | 545  | 542  | 542  | 541  | 542  | 542  | 543         |
| -16                                | 560               | 557 | 553  | 550  | 548  | 545  | 544  | 544  | 545  | 545  | 545         |
| -14                                | 562               | 558 | 555  | 551  | 549  | 547  | 546  | 545  | 546  | 546  | 547         |
| -12                                | 563               | 560 | 556  | 552  | 550  | 548  | 547  | 547  | 547  | 548  | 548         |
| -10                                | 565               | 561 | 557  | 554  | 552  | 550  | 548  | 548  | 549  | 549  | 549         |
| -8                                 | 566               | 562 | 559  | 555  | 553  | 551  | 550  | 549  | 550  | 550  | 544         |
| -6                                 | 568               | 564 | 560  | 557  | 555  | 553  | 551  | 551  | 551  | 551  | 540         |
| -4                                 | 569               | 565 | 562  | 558  | 556  | 554  | 552  | 552  | 552  | 546  | 535         |
| -2                                 | 570               | 567 | 563  | 560  | 557  | 555  | 553  | 553  | 554  | 541  | 530         |
| 0                                  | 572               | 568 | 564  | 561  | 558  | 557  | 555  | 555  | 555  | 536  | 525         |
| 2                                  | 573               | 569 | 566  | 563  | 560  | 558  | 556  | 556  | 553  | 531  | 521         |
| 4                                  | 574               | 570 | 567  | 564  | 561  | 559  | 558  | 557  | 548  | 526  | 516         |
| 6                                  | 576               | 572 | 568  | 565  | 562  | 561  | 559  | 558  | 543  | 522  | 511         |
| 8                                  | 577               | 573 | 570  | 567  | 564  | 562  | 560  | 560  | 538  | 516  | 506         |
| 10                                 | 578               | 574 | 571  | 568  | 565  | 563  | 562  | 555  | 533  | 512  | 502         |
| 12                                 | 580               | 576 | 572  | 569  | 566  | 564  | 563  | 550  | 528  | 507  | 497         |
| 14                                 | 581               | 577 | 574  | 571  | 568  | 566  | 564  | 545  | 523  | 502  | 492         |
| 16                                 | 582               | 578 | 575  | 572  | 569  | 567  | 561  | 539  | 517  | 497  | 487         |
| 18                                 | 583               | 579 | 576  | 573  | 570  | 568  | 554  | 533  | 512  | 491  | 481         |
| 20                                 | 585               | 581 | 577  | 574  | 571  | 569  | 547  | 525  | 505  | 485  | 475         |
| 22                                 | 586               | 582 | 578  | 576  | 573  | 561  | 540  | 519  | 499  | 479  | 469         |
| 24                                 | 587               | 583 | 580  | 577  | 574  | 554  | 533  | 512  | 492  | 473  | 464         |
| 26                                 | 588               | 584 | 581  | 578  | 569  | 547  | 526  | 506  | 486  | 467  | 458         |
| 28                                 | 589               | 586 | 582  | 579  | 562  | 540  | 519  | 499  | 480  | 461  | 452         |
| 30                                 | 590               | 587 | 583  | 576  | 554  | 533  | 512  | 492  | 473  | 455  | 446         |
| 32                                 | 592               | 588 | 584  | 568  | 546  | 525  | 505  | 486  | 467  | 449  | 440         |
| 34                                 | 593               | 589 | 582  | 560  | 539  | 518  | 498  | 479  | 460  | 442  | 434         |
| 36                                 | 594               | 590 | 574  | 552  | 531  | 511  | 491  | 472  | 454  | 436  | 428         |
| 38                                 | 595               | 587 | 565  | 544  | 523  | 504  | 484  | 466  | 448  | 430  | 422         |
| 40                                 | 596               | 579 | 557  | 536  | 516  | 496  | 477  | 459  | 441  | 424  | 415         |
| 42                                 | 592               | 570 | 549  | 528  | 508  | 489  | 470  | 452  | 435  |      |             |
| 44                                 | 584               | 562 | 541  | 520  | 501  | 482  | 463  | 445  |      |      |             |
| 46                                 | 575               | 553 | 533  | 512  | 493  | 474  | 456  |      |      |      |             |
| 48                                 | 565               | 545 | 524  | 504  | 485  | 467  |      |      |      |      |             |
| 50                                 | 556               | 536 | 516  | 496  | 477  |      |      |      |      |      |             |
| 52                                 | 547               | 527 | 507  | 488  |      |      |      |      |      |      |             |
| 54                                 | 538               | 518 | 499  |      |      |      |      |      |      |      |             |
| 55                                 | 533               | 514 |      |      |      |      |      |      |      |      |             |

**Max Continuous Minimum Fuel Flow-VC 120 kt**

cd8cacdd-4dfd-435d-b048-c0a34a4abc50

**1.0**
**ALL**
**APPROVED**

| <b>PW127F / PW127M - BOOST OFF</b>              |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
|---|-------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>MAXI CONTINUOUS MINIMUM FUEL FLOW (KG/H)</b> |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| PROPELLER SPEED 100.0 %                         |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| VC = 120 kt                                     |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| TAT<br>(°C)                                     | PRESSURE ALTITUDE |      |      |      |      |       |       |       |       |       |       |       |       |       |
|   | 0                 | 2000 | 4000 | 6000 | 8000 | 10000 | 12000 | 14000 | 16000 | 18000 | 20000 | 22000 | 24000 | 25000 |
| -56   | 487               | 477  | 471  | 466  | 466  | 467   | 467   | 468   | 467   | 429   | 393   | 360   | 329   | 315   |
| -52   | 490               | 481  | 474  | 470  | 469  | 470   | 470   | 471   | 469   | 431   | 396   | 362   | 331   | 317   |
| -48   | 493               | 484  | 477  | 472  | 471  | 472   | 473   | 473   | 463   | 425   | 391   | 358   | 328   | 313   |
| -44   | 497               | 487  | 480  | 475  | 474  | 475   | 475   | 476   | 457   | 420   | 386   | 354   | 324   | 310   |
| -40   | 500               | 491  | 483  | 478  | 477  | 477   | 478   | 478   | 450   | 414   | 381   | 349   | 320   | 306   |
| -36   | 503               | 494  | 486  | 481  | 479  | 480   | 480   | 481   | 444   | 408   | 376   | 345   | 316   | 303   |
| -32   | 506               | 497  | 489  | 484  | 482  | 482   | 483   | 476   | 438   | 403   | 372   | 341   | 313   | 300   |
| -28   | 509               | 500  | 492  | 487  | 484  | 485   | 485   | 468   | 431   | 397   | 366   | 337   | 309   | 296   |
| -24   | 511               | 503  | 494  | 490  | 487  | 487   | 488   | 460   | 424   | 390   | 360   | 331   | 304   | 291   |
| -20   | 514               | 505  | 497  | 492  | 490  | 490   | 490   | 452   | 417   | 384   | 354   | 326   | 299   | 287   |
| -16   | 517               | 508  | 500  | 495  | 492  | 492   | 484   | 446   | 411   | 379   | 350   | 322   | 296   | 283   |
| -12   | 519               | 511  | 503  | 498  | 494  | 494   | 477   | 440   | 405   | 373   | 345   | 318   | 292   | 279   |
| -8  | 522               | 513  | 506  | 500  | 497  | 497   | 470   | 433   | 399   | 368   | 340   | 313   | 288   | 276   |
| -4  | 524               | 516  | 508  | 503  | 499  | 499   | 462   | 426   | 393   | 362   | 335   | 308   | 283   | 271   |
| 0   | 527               | 518  | 511  | 505  | 501  | 492   | 454   | 419   | 386   | 356   | 329   | 303   | 279   | 267   |
| 4   | 529               | 521  | 514  | 507  | 504  | 483   | 446   | 412   | 379   | 350   | 324   | 298   | 274   | 263   |
| 8   | 531               | 523  | 516  | 510  | 506  | 471   | 435   | 402   | 371   | 342   | 317   | 292   | 268   | 257   |
| 12  | 534               | 526  | 518  | 512  | 501  | 464   | 429   | 396   | 365   | 337   | 312   | 288   | 264   |       |
| 16  | 536               | 528  | 521  | 514  | 493  | 456   | 422   | 390   | 360   | 332   | 307   |       |       |       |
| 20  | 538               | 530  | 523  | 517  | 485  | 449   | 416   | 384   | 355   | 327   |       |       |       |       |
| 24  | 540               | 532  | 525  | 512  | 475  | 440   | 407   | 376   | 347   |       |       |       |       |       |
| 28  | 542               | 534  | 527  | 498  | 462  | 428   | 396   | 366   |       |       |       |       |       |       |
| 32  | 544               | 537  | 520  | 484  | 449  | 416   | 385   |       |       |       |       |       |       |       |
| 36  | 546               | 539  | 506  | 470  | 436  | 404   |       |       |       |       |       |       |       |       |
| 40  | 548               | 531  | 495  | 460  | 427  |       |       |       |       |       |       |       |       |       |
| 44  | 550               | 520  | 484  | 450  |      |       |       |       |       |       |       |       |       |       |
| 48  | 545               | 508  | 473  |      |      |       |       |       |       |       |       |       |       |       |
| 52  | 532               | 496  |      |      |      |       |       |       |       |       |       |       |       |       |
| 56  | 520               |      |      |      |      |       |       |       |       |       |       |       |       |       |

### Max Continuous Minimum Fuel Flow-VC 140 kt

6b318f5c-1ee8-4b5a-9fb1-17dfe36cdec6

1.0

ALL

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| PW127F / PW127M - BOOST OFF              |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
|--|-------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MAXI CONTINUOUS MINIMUM FUEL FLOW (KG/H) |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| PROPELLER SPEED 100.0 %                  |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| VC = 140 kt                              |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| TAT<br>(°C)                              | PRESSURE ALTITUDE |      |      |      |      |       |       |       |       |       |       |       |       |       |
|  | 0                 | 2000 | 4000 | 6000 | 8000 | 10000 | 12000 | 14000 | 16000 | 18000 | 20000 | 22000 | 24000 | 25000 |
| -56                                      | 485               | 475  | 468  | 462  | 461  | 462   | 461   | 458   | 454   | 423   | 394   | 368   | 342   | 330   |
| -52                                      | 489               | 479  | 471  | 465  | 464  | 464   | 464   | 461   | 457   | 426   | 397   | 370   | 344   | 331   |
| -48                                      | 492               | 482  | 474  | 468  | 467  | 467   | 466   | 464   | 458   | 421   | 392   | 366   | 340   | 327   |
| -44                                      | 495               | 486  | 478  | 471  | 469  | 470   | 469   | 467   | 453   | 417   | 388   | 361   | 335   | 323   |
| -40                                      | 498               | 489  | 481  | 474  | 472  | 472   | 472   | 470   | 448   | 412   | 383   | 357   | 331   | 318   |
| -36                                      | 501               | 492  | 483  | 477  | 474  | 475   | 474   | 472   | 443   | 407   | 379   | 352   | 326   | 314   |
| -32                                      | 504               | 495  | 486  | 480  | 477  | 477   | 477   | 475   | 438   | 403   | 375   | 348   | 322   | 310   |
| -28                                      | 507               | 498  | 489  | 483  | 480  | 480   | 480   | 469   | 432   | 398   | 369   | 343   | 317   | 305   |
| -24                                      | 510               | 501  | 492  | 486  | 482  | 482   | 482   | 462   | 425   | 392   | 364   | 337   | 311   | 299   |
| -20                                      | 513               | 504  | 495  | 489  | 485  | 485   | 485   | 454   | 419   | 386   | 358   | 331   | 306   | 293   |
| -16                                      | 515               | 506  | 498  | 492  | 487  | 487   | 486   | 449   | 414   | 381   | 353   | 326   | 301   | 289   |
| -12                                      | 518               | 509  | 501  | 494  | 490  | 489   | 479   | 443   | 408   | 376   | 348   | 322   | 296   | 284   |
| -8                                       | 520               | 512  | 504  | 497  | 492  | 492   | 473   | 437   | 403   | 371   | 343   | 317   | 291   | 279   |
| -4                                       | 523               | 514  | 506  | 500  | 494  | 494   | 465   | 430   | 396   | 365   | 338   | 311   | 286   | 275   |
| 0  | 525               | 517  | 509  | 502  | 497  | 494   | 457   | 423   | 390   | 360   | 332   | 306   | 282   | 270   |
| 4  | 527               | 519  | 511  | 505  | 500  | 486   | 450   | 416   | 384   | 353   | 327   | 301   | 277   | 265   |
| 8  | 530               | 521  | 514  | 507  | 502  | 474   | 439   | 406   | 375   | 346   | 319   | 295   | 271   | 260   |
| 12                                       | 532               | 524  | 516  | 510  | 503  | 467   | 432   | 400   | 369   | 340   | 314   | 290   | 267   | 256   |
| 16                                       | 534               | 526  | 519  | 512  | 496  | 460   | 426   | 394   | 364   | 335   | 310   | 286   |       |       |
| 20                                       | 536               | 528  | 521  | 514  | 488  | 453   | 420   | 388   | 358   | 330   | 305   |       |       |       |
| 24                                       | 538               | 530  | 523  | 515  | 478  | 444   | 411   | 380   | 351   | 324   |       |       |       |       |
| 28                                       | 540               | 532  | 525  | 501  | 465  | 432   | 400   | 370   | 342   |       |       |       |       |       |
| 32                                       | 542               | 535  | 523  | 487  | 452  | 420   | 389   |       |       |       |       |       |       |       |
| 36                                       | 544               | 537  | 508  | 473  | 439  | 408   |       |       |       |       |       |       |       |       |
| 40                                       | 546               | 534  | 497  | 463  | 430  |       |       |       |       |       |       |       |       |       |
| 44                                       | 547               | 522  | 487  | 453  |      |       |       |       |       |       |       |       |       |       |
| 48                                       | 548               | 510  | 476  |      |      |       |       |       |       |       |       |       |       |       |
| 52                                       | 535               | 498  |      |      |      |       |       |       |       |       |       |       |       |       |
| 56                                       | 522               |      |      |      |      |       |       |       |       |       |       |       |       |       |



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DEVIATION GUIDE

DEVIATION GUIDE SUPPLEMENTS  
DISPATCH WITH ONE TQ INDICATION  
INOPERATIVE

DEV.2

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Max Continuous Minimum Fuel Flow-VC 160 kt


6ea4f011-7a6a-4b08-8e07-8e00cf8f4c3c

1.0

ALL

APPROVED

| PW127F / PW127M - BOOST OFF              |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
|--|-------------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MAXI CONTINUOUS MINIMUM FUEL FLOW (KG/H) |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| PROPELLER SPEED 100.0 % VC = 160 kt      |                   |      |      |      |      |       |       |       |       |       |       |       |       |       |
| TAT<br>(°C)                              | PRESSURE ALTITUDE |      |      |      |      |       |       |       |       |       |       |       |       |       |
|  | 0                 | 2000 | 4000 | 6000 | 8000 | 10000 | 12000 | 14000 | 16000 | 18000 | 20000 | 22000 | 24000 | 25000 |
| -56                                      | 484               | 474  | 466  | 460  | 457  | 456   | 454   | 455   | 457   | 445   | 416   | 387   | 360   | 346   |
| -52                                      | 487               | 478  | 469  | 463  | 460  | 459   | 457   | 458   | 459   | 447   | 418   | 389   | 361   | 348   |
| -48                                      | 491               | 481  | 473  | 465  | 463  | 462   | 460   | 461   | 462   | 442   | 413   | 384   | 356   | 343   |
| -44                                      | 494               | 484  | 476  | 469  | 465  | 464   | 463   | 463   | 465   | 436   | 407   | 379   | 351   | 338   |
| -40                                      | 497               | 487  | 479  | 472  | 468  | 467   | 466   | 466   | 462   | 430   | 401   | 373   | 346   | 333   |
| -36                                      | 500               | 491  | 482  | 475  | 471  | 470   | 468   | 469   | 456   | 424   | 396   | 368   | 340   | 328   |
| -32                                      | 503               | 494  | 485  | 478  | 474  | 472   | 471   | 471   | 451   | 419   | 390   | 363   | 336   | 323   |
| -28                                      | 506               | 496  | 488  | 481  | 477  | 475   | 474   | 474   | 444   | 412   | 384   | 356   | 330   | 317   |
| -24                                      | 508               | 499  | 491  | 484  | 479  | 478   | 476   | 470   | 436   | 405   | 377   | 349   | 323   | 310   |
| -20                                      | 511               | 502  | 494  | 487  | 482  | 480   | 479   | 462   | 429   | 397   | 369   | 343   | 316   | 304   |
| -16                                      | 514               | 505  | 497  | 490  | 484  | 483   | 481   | 456   | 423   | 391   | 364   | 337   | 311   | 299   |
| -12                                      | 516               | 507  | 500  | 493  | 487  | 485   | 484   | 450   | 417   | 385   | 357   | 331   | 305   | 293   |
| -8                                       | 519               | 510  | 502  | 495  | 489  | 487   | 479   | 444   | 410   | 379   | 351   | 325   | 300   | 288   |
| -4                                       | 521               | 513  | 505  | 498  | 492  | 490   | 471   | 436   | 403   | 372   | 344   | 319   | 294   | 282   |
| 0  | 523               | 515  | 508  | 500  | 495  | 492   | 464   | 429   | 396   | 366   | 339   | 313   | 289   | 277   |
| 4  | 526               | 517  | 510  | 503  | 497  | 493   | 456   | 422   | 389   | 359   | 333   | 308   | 283   | 272   |
| 8  | 528               | 520  | 513  | 506  | 500  | 480   | 445   | 411   | 380   | 351   | 324   | 300   | 277   | 265   |
| 12                                       | 530               | 522  | 515  | 508  | 502  | 473   | 438   | 405   | 374   | 345   | 320   | 296   | 273   | 262   |
| 16                                       | 532               | 524  | 517  | 511  | 503  | 466   | 431   | 399   | 369   | 340   | 315   | 292   |       |       |
| 20                                       | 534               | 526  | 520  | 513  | 495  | 459   | 424   | 393   | 363   | 335   | 311   |       |       |       |
| 24                                       | 536               | 528  | 522  | 515  | 485  | 450   | 416   | 385   | 356   | 329   |       |       |       |       |
| 28                                       | 538               | 531  | 524  | 508  | 472  | 438   | 405   | 375   | 347   |       |       |       |       |       |
| 32                                       | 540               | 533  | 526  | 493  | 459  | 426   | 394   | 365   |       |       |       |       |       |       |
| 36                                       | 542               | 535  | 514  | 479  | 446  | 414   | 383   |       |       |       |       |       |       |       |
| 40                                       | 544               | 536  | 503  | 469  | 436  | 405   |       |       |       |       |       |       |       |       |
| 44                                       | 545               | 527  | 492  | 459  | 427  |       |       |       |       |       |       |       |       |       |
| 48                                       | 547               | 515  | 481  |      |      |       |       |       |       |       |       |       |       |       |
| 52                                       | 539               | 503  |      |      |      |       |       |       |       |       |       |       |       |       |
| 56                                       | 527               |      |      |      |      |       |       |       |       |       |       |       |       |       |

|   |  |                            |
|---|--|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>DISPATCH WITH UPTRIM FUNCTION</b><br><b>INOPERATIVE</b> | DEV.2<br><br><br>Page n°51 |
|---|--|----------------------------|

# 11                    **DISPATCH WITH UPTRIM FUNCTION INOPERATIVE**

## **DISPATCH WITH UPTRIM FUNCTION INOPERATIVE**

|                                      |  |                               |
|--------------------------------------|--|-------------------------------|
| 426b5cdf-04e3-494c-90fe-b363973f7a6d |  | <b>2.1</b><br>ALL<br>APPROVED |
|--------------------------------------|--|-------------------------------|

### **LIMITATIONS**

No change.

### **PROCEDURES**

#### **Normal Procedures**

- **During flight preparation, before each takeoff**
  - ▶ ATPCS (dynamic test)..... TEST  
*In order to protect the feathering pumps from damage, 10 min delays between test and takeoff, or between static/dynamic tests must be respected.*
- **For takeoff**
  - ▶ BLEEDS.....OFF
  - ▶ PL 1+2.....SET AT RTO  
*Set PL 1+2 up to the ramp and adjust the PL on the inoperative EEC side (+/- 2 %) RTO power.*
- **After takeoff**
  - ▶ PL 1+2..... NOTCH
  - ▶ BLEEDS..... ON

### **PERFORMANCES**

- Increase V<sub>1</sub> limited by VMCG by 3 kt

**12 DISPATCH WITH ATPCS OFF****Dispatch with ATPCS Off**

8f338b22-616a-492e-b687-11f3d4a98575

1.4

ALL

APPROVED

**LIMITATIONS**

No change.

**PROCEDURES****Normal Procedures**● **For takeoff**

- ▶ BLEEDS.....OFF
- ▶ ATPCS ..... OFF
- ▶ FLAPS..... 15
- ▶ PL 1+2.....ADVANCE TO RAMP

● **Climb sequence**

- ▶ PL 1+2.....RETARD TO NOTCH
- ▶ BLEED 1+2..... ON

**Emergency Procedures**

No change.

**Abnormal Procedures**■ **If engine fails after V<sub>1</sub>**

- ▶ PL (affected ENG) : DO NOT REDUCE BELOW PLA 45 ° UNTIL FEATHERING

**PERFORMANCES**

- Increase V<sub>1</sub> limited by V<sub>MCG</sub> by 5 kt
- Increase V<sub>R</sub> by 2 kt
- Increase V<sub>MCA</sub> by 3 kt
- Check V<sub>R</sub> and V<sub>2</sub>
- Increase V<sub>MCL</sub> by 7 kt
- Check ATPCS inoperative effect on TOR, TOD and second segment.



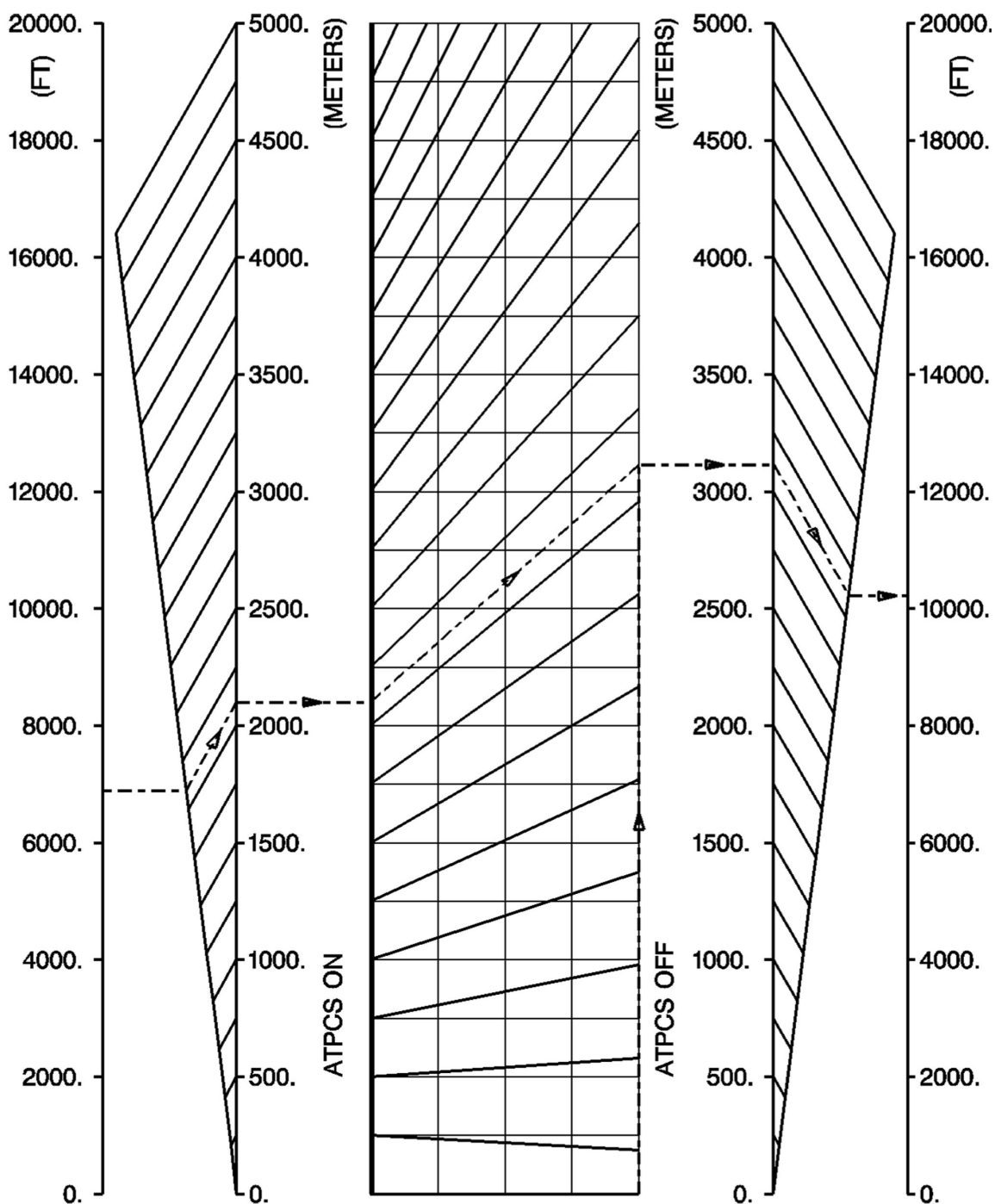
### Effect on Takeoff Run

70d3f4de-9988-45c0-b780-98a0dda190d3

0.1

ALL

APPROVED



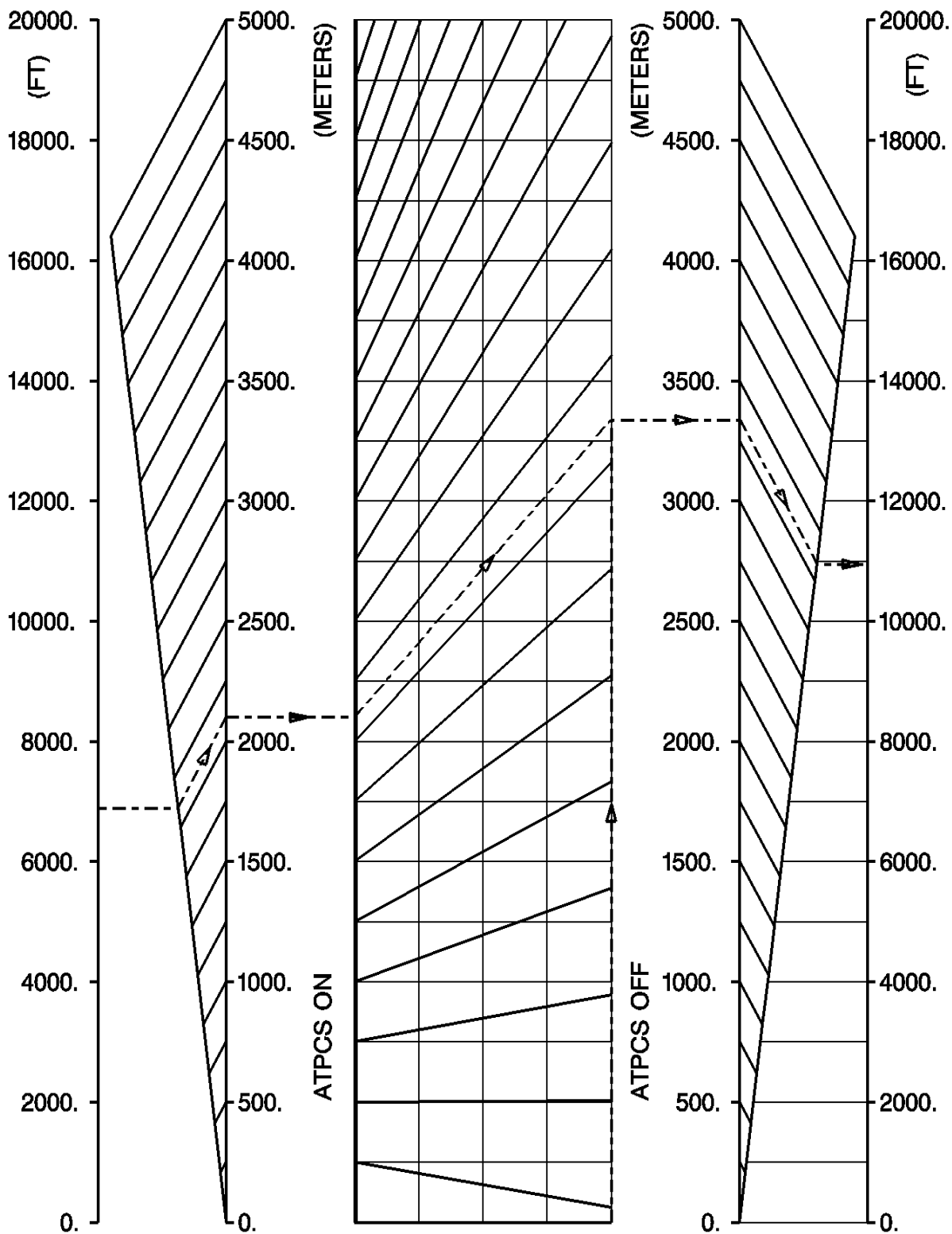
### Effect on Takeoff Distance

a5f2fa7e-13c1-416b-a596-fbeefa7807bb

0.1

ALL

APPROVED



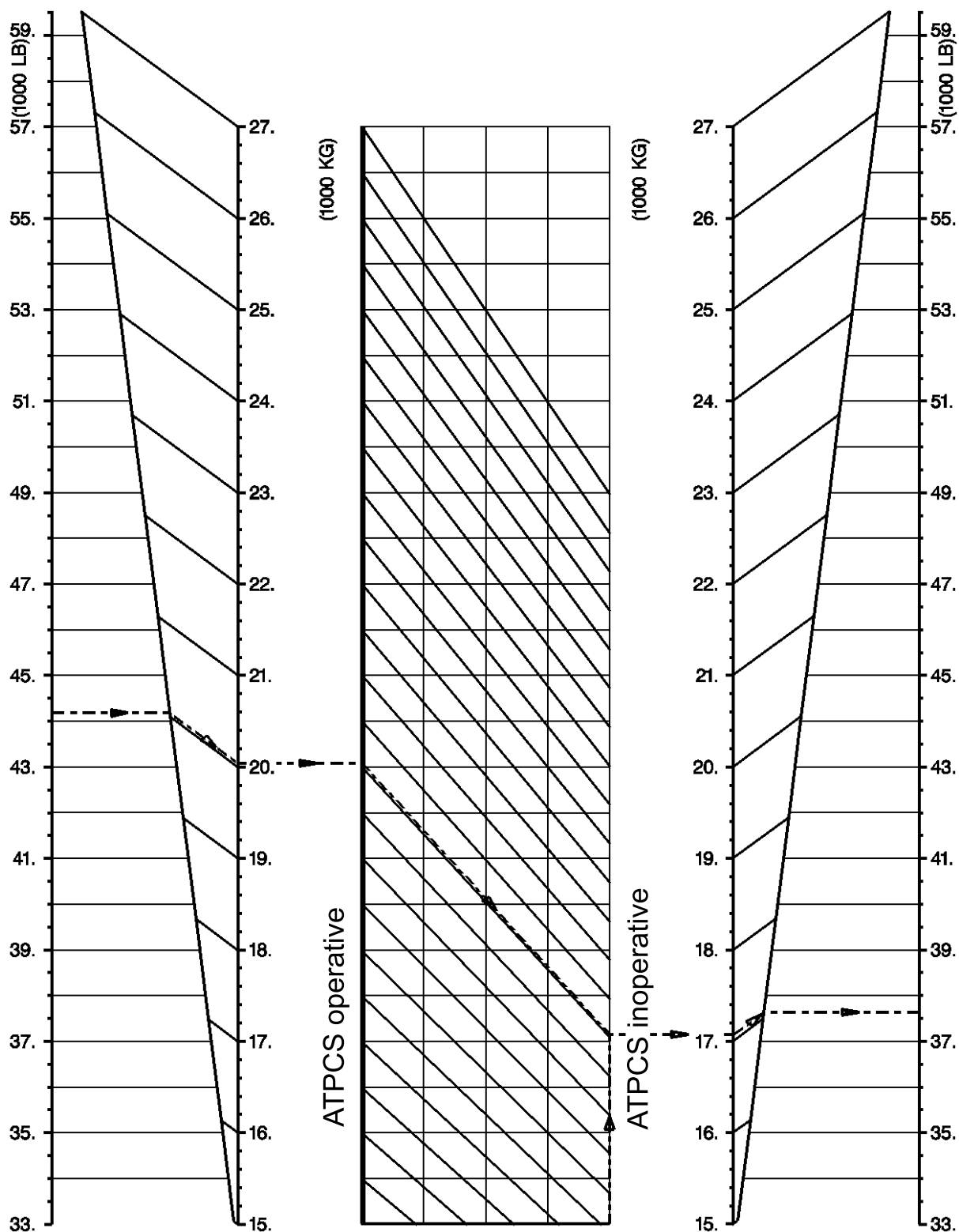
### Effect on Second Segment

290b4ede-fb3f-4cbc-92a1-bd281b606b7d

1.1

ALL

APPROVED





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DEVIATION GUIDE

DEVIATION GUIDE SUPPLEMENTS  
DISPATCH WITH LANDING GEAR DOWN

DEV.2

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**13 DISPATCH WITH LANDING GEAR DOWN**

**Dispatch with Landing Gear Down**

|                                      |  |          |
|--------------------------------------|--|----------|
| 980159a9-b0b6-430d-81d7-918e7ce031a3 |  | 3.1      |
|                                      |  | ALL      |
|                                      |  | APPROVED |

**LIMITATIONS**

Operations into forecast or known icing conditions are prohibited.

Maximum speed..... 160 kt

**PROCEDURES**

**Normal Procedures**

• **Before takeoff**

▶ TCAS..... TA ONLY

• **During the climb sequence**

▶ CCAS ..... Recall  
*To turn off TO INHIB light.*

**Emergency Procedures**

No change.

**Abnormal Procedures**

No change.

**PERFORMANCES**

**Takeoff**

- Check GEAR DOWN effect on second segment climb and approach climb (valid for all configurations)
- Check GEAR DOWN effect on final takeoff climb.

**Single Engine Ceiling**

Apply a weight penalty on single engine ceiling computation.

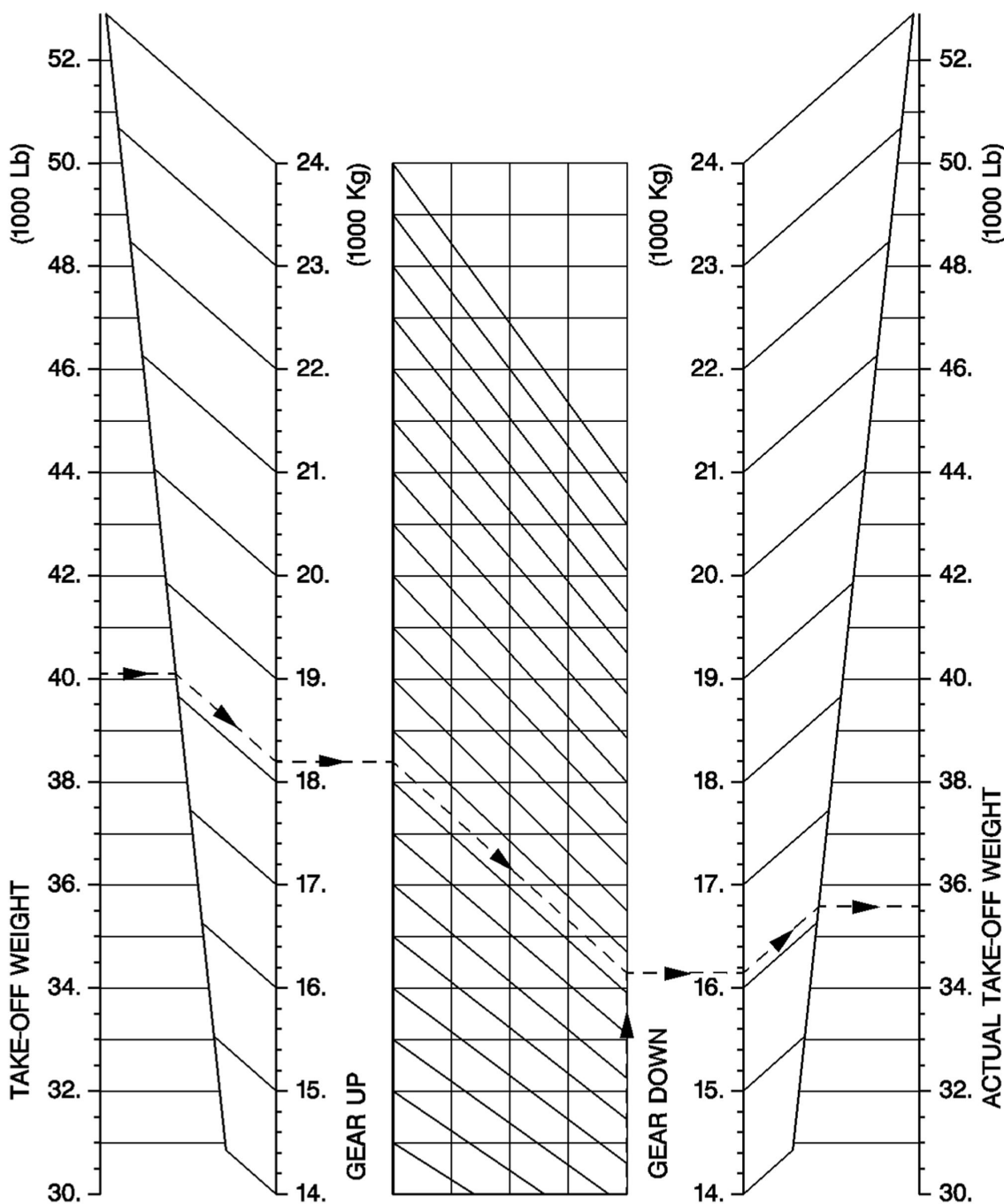
### Effect on Second Segment Climb and Approach Climb

40e498f5-fa1d-45d3-b03c-74a6b485506a

0.1

ALL

APPROVED



### Effect on Climb and Final Takeoff Weight

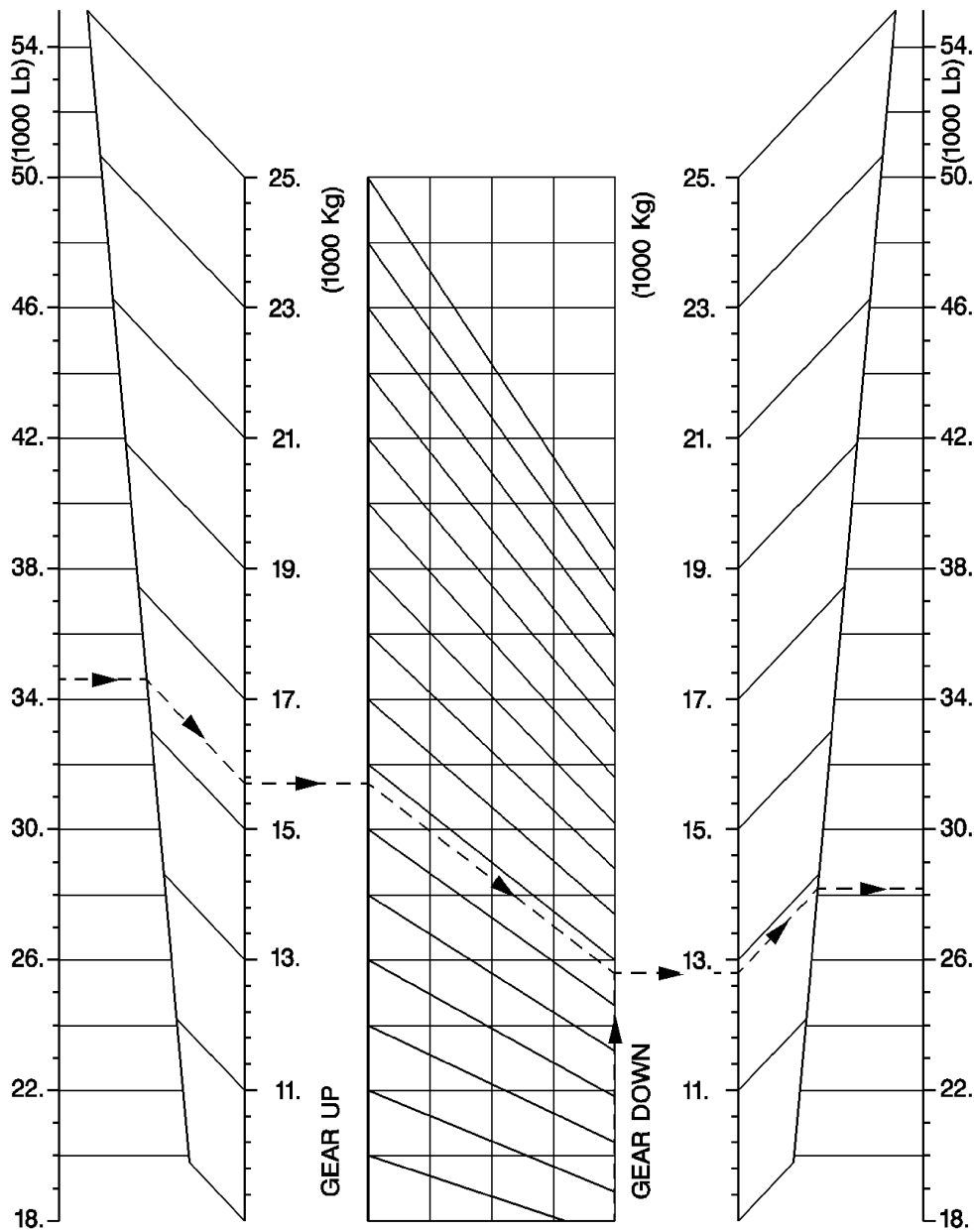
0f4e20bf-2c87-4b09-ad8a-11a1a476b42c


1.2

ALL

APPROVED

**EFFECT ON GEAR DOWN ON FINAL TAKE OFF CLIMB AND  
WEIGHT PENALTY ON SINGLE ENGINE CEILING COMPUTATION**



|   |   |                            |
|---|---|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>FLIGHT WITH PITCH ELEVATORS</b><br><b>DISCONNECTED</b> | DEV.2<br><br><br>Page n°59 |
|---|---|----------------------------|

## 16 FLIGHT WITH PITCH ELEVATORS DISCONNECTED

### Flight with Pitch Elevators Disconnected

|                                      |           |
|--------------------------------------|-----------|
| 50166868-9f79-4bca-b202-f7dde15c6b8a | 5.0       |
|                                      | 0685-0706 |
|                                      | APPROVED  |

#### LIMITATIONS

Operations into forecast or known icing conditions are prohibited.

MAINTENANCE ACTION IS REQUIRED WHEN PITCH DISCONNECTION OCCURRED IN FLIGHT

|   |                       |
|---|-----------------------|
| Maximum crosswind at landing .....      | 15 kt                 |
| Maximum load factor .....               | 2 g                   |
| Maximum speed .....                     | 180 kt                |
| Maximum takeoff weight .....            | 18 T (39 600 lb)      |
| Landing braking energy limitation ..... | 8.3 MJ                |
| CG .....                                | between 25 % and 32 % |

Delayed braking procedure is prohibited.

STEEP SLOPE APPROACH >4.5° : PROHIBITED.

#### PROCEDURES

##### Normal Procedures

- **During flight preparation**

- ▶ BOTH CONTROL COLUMNS.....CHECK FREE

##### CAUTION

When elevators are uncoupled, dual opposite inputs from left and right control columns are strictly forbidden as it may result in structural damage to the horizontal stabilizer.

- ▶ For approach and landing, [Refer to FCOM.PRO.NOR.NSU.Flight Controls](#) and [Refer to PRO.NNO.ABN.FLIGHT CONTROLS.PITCH.PITCH DISCONNECT](#)

##### Emergency Procedures


No change.

##### Abnormal Procedures

No change.

#### PERFORMANCES

Performance computed with  $V_2 = 1.21 V_{SR}$ .

|   |   |                            |
|---|---|----------------------------|
| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>DEVIATION GUIDE</b><br><br><b>DEVIATION GUIDE SUPPLEMENTS</b><br><b>FLIGHT WITH PITCH ELEVATORS</b><br><b>DISCONNECTED</b> | DEV.2<br><br><br>Page n°60 |
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|   |  |                 |
|---|--|-----------------|
| <small>304f0b09-994d-4642-af83-0ade83a268ab</small> |  | <b>4.0</b>      |
|   |  | <b>0775</b>     |
|   |  | <b>APPROVED</b> |

**LIMITATIONS**

Operations into forecast or known icing conditions are prohibited.

MAINTENANCE ACTION IS REQUIRED WHEN PITCH DISCONNECTION OCCURRED IN FLIGHT

- Maximum crosswind at landing ..... 15 kt
- Maximum load factor ..... 2 g
- Maximum speed ..... 180 kt
- Maximum takeoff weight ..... 18 T (39 600 lb)
- Landing braking energy limitation ..... 8.9 MJ
- Delayed braking procedure is prohibited.

CG .....between 25 % and 32 %

STEEP SLOPE APPROACH >4.5° : PROHIBITED.

**PROCEDURES**

**Normal Procedures**

- **During flight preparation**
  - ▶ BOTH CONTROL COLUMNS.....CHECK FREE

**CAUTION**

When elevators are uncoupled, dual opposite inputs from left and right control columns are strictly forbidden as it may result in structural damage to the horizontal stabilizer.

- ▶ For approach and landing, [Refer to FCOM.PRO.NOR.NSU.Flight Controls](#) and [Refer to PRO.NNO.ABN.FLIGHT CONTROLS.PITCH.PITCH DISCONNECT](#)

**Emergency Procedures**

No change.


**Abnormal Procedures**

No change.

**PERFORMANCES**

Performance computed with  $V_2 = 1.21 V_{SR}$ .



|   |   |                              |
|---|---|------------------------------|
| <br><b>BU / 75</b><br><b>AFM</b> | <b>AFM</b><br><b>TOC</b><br><b>Table of Content</b> | <b>APP.</b><br><br>Page n°01 |
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## APPENDICES

### EXTERNAL NOISE

**APP.1**

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|---|-------------------------------------|-------------------------|
| . | Noise Characteristics.....          | <a href="#">page 03</a> |
| . | Noise Levels.....                   | <a href="#">page 03</a> |
| . | Noise Certification Procedures..... | <a href="#">page 03</a> |
| . | Configuration.....                  | <a href="#">page 03</a> |
| . | Certification Noise Levels.....     | <a href="#">page 03</a> |

***ATR***

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**TOC**

**Table of Content**

**APP.**

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| <br><br><b>BU / 75</b><br><br><b>AFM</b> | <b>APPENDICES</b><br><br><b>EXTERNAL NOISE</b> | APP.1<br><br>Page n°03 |
|---|--|------------------------|

## 01 Noise Characteristics

|                                      |                 |
|--------------------------------------|-----------------|
| 5c6cebb4-acdc-49cc-b2db-e24dd25cdb5d | <b>1.2</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

No determination has been made by the EASA that the noise levels of this aircraft are or should be acceptable or unacceptable for operation at, into, or out of any airport.

## 02 Noise Levels

|                                      |            |                 |
|--------------------------------------|------------|-----------------|
| 77a550ca-62b7-4e36-b88d-1c15bcc34613 | <b>REV</b> | <b>3.2</b>      |
|                                      |            | <b>ALL</b>      |
|                                      |            | <b>APPROVED</b> |

Noise levels shown here after comply with ICAO annex 16, Volume 1, Chapter 14, noise requirements and were obtained by analysis of approved data from approved noise tests.

[Refer to LIM.WEIGHT AND LOADING](#) chapter for identification of the maximum takeoff and landing weights applicable to a particular aircraft.

## 03 Noise Certification Procedures

|                                      |                 |
|--------------------------------------|-----------------|
| d52dcf36-9903-4b7b-8cf5-fba36e338acb | <b>0.2</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

Compliance with ICAO annex 16 included the following procedures:

- An all-engine takeoff at FLAPS 15 configuration was used with a constant climb speed greater than  $V_2 + 10$  kt but less than  $V_2 + 20$  kt, with a cutback procedure initiated prior to overflight of the takeoff noise measuring station, with air conditioning OFF, mid center of gravity, and gear retracted.
- Landing approach at FLAPS 30 configuration on a  $3^\circ$  glide slope, at a speed of  $1.23 V_{SR} + 10$  kt was used with air conditioning ON, forward center of gravity and gear extended.

## 04 Configuration

|                                      |                 |
|--------------------------------------|-----------------|
| 53e6c5c0-f06a-4130-9db7-f1ca38e377a9 | <b>1.0</b>      |
|                                      | <b>ALL</b>      |
|                                      | <b>APPROVED</b> |

Engines: Pratt & Whitney of Canada Ltd PW127F or PW127M or PW127N

Propeller: Hamilton Standard HS 568F-1

## 05 Certification Noise Levels

|                                      |                  |
|--------------------------------------|------------------|
| e442c6c4-5c82-4bc8-bdfe-8d495cf774d7 | <b>2.0</b>       |
|                                      | <b>0685;0775</b> |
|                                      | <b>APPROVED</b>  |

Takeoff: 79.8 EPNdB

Side line: 82.5 EPNdB

Approach: 92.2 EPNdB



**BU / 75**

**AFM**

**APPENDICES**

**EXTERNAL NOISE**

APP.1

Page n°04

\_aec4b0b8-95cc-49ac-b068-70ecafbb887f

**1.0**

**0706**

**APPROVED**

Takeoff: 80.2 EPNdB

Side line: 82.5 EPNdB

Approach: 92.2 EPNdB