Crafted in Switzerland

PC-12 NGX

PILOT'S INFORMATION MANUAL
PC-12/47E MSN 2001 AND UP

PILATUS

PILOT’S INFORMATION MANUAL

WARNING

- This PC-12 Pilot’s Information Manual is published for general and familiarization purposes only.
- This Pilot’s Information Manual does NOT meet FAA, FOCA or any other civil aviation authority regulations for operation of ANY Aircraft.
- This Pilot’s Information Manual is a reproduction of a PC-12 Airplane Flight Manual, however, it is NOT revised or updated.
- This Pilot’s Information Manual does NOT reflect the configuration or operating parameters of any actual aircraft.
- Only the Approved Airplane Flight Manual/Pilot’s Operating Handbook issued for a specific serial number aircraft may be used for actual operation of that serial number aircraft.

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This Approval may be extended or withdrawn in writing by Pilatus at any time

PC-12

PILOT'S OPERATING HANDBOOK
AND
EASA APPROVED AIRPLANE FLIGHT MANUAL

PC-12/47E - MSN 1720, 2001 and up - Report number 02406

EASA Type Certification No.: EASA.A.089
FAA Type Certification No.: A78EU

Manufacturer's Serial Number: __________ Registration Number: __________

APPROVED IN THE NORMAL CATEGORY BASED ON FAR 23 THROUGH AMENDMENT 42.
THIS DOCUMENT MUST BE CARRIED IN THE AIRPLANE AT ALL TIMES.
THIS HANDBOOK INCLUDES THE MATERIAL REQUIRED TO BE FURNISHED TO THE PILOT BY THE FEDERAL AVIATION REGULATIONS AND ADDITIONAL INFORMATION PROVIDED BY THE MANUFACTURER AND CONSTITUTES THE EASA APPROVED AIRPLANE FLIGHT MANUAL (AFM).

The AFM is EASA approved under Approval Number: 10071186.

This Handbook is also FAA approved for U.S. registered aircraft in accordance with FAR 21.29.

This Handbook meets General Aviation Manufacturer's Association (GAMA) Specification No. 1, Specification for Pilot's Operating Handbook, issued 15 February 1975, revised 1 September 1984.

Pilatus Aircraft Ltd, CH-6370 Stans, Switzerland

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Front Matter

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List of Effective Data Modules

All DMC are preceded with 12-C but for clarity this has been left out

C = Changed data module

N = New data module

	Data module code (DMC)	Document title	N/C	Issue date
	A15-00-0000-00A-002A-A	List of Effective Data Modules	C	18.12.2020
	A15-00-0000-00A-003A-A	Change Highlights	C	18.12.2020
	A15-00-0000-00A-003B-A	Log of Revisions	C	18.12.2020
	A15-00-0000-00A-002B-A	Log of Temporary Revisions		06.03.2020
	A00-00-0000-00A-930A-A	List of Service Bulletins		06.03.2020
	A15-00-0001-00A-030A-A	List of APEX Builds	C	18.12.2020
	A15-00-0010-00A-018A-A	Introduction	C	18.12.2020
	A15-00-0101-00A-010A-A	General		06.03.2020
	A15-00-0102-00A-018A-A	Introduction		06.03.2020
	A15-00-0103-00A-030A-A	Top Level Illustrations		06.03.2020
	A15-00-0104-00A-030A-A	Descriptive Data		06.03.2020
	A15-00-0105-00A-005A-A	Symbols, Abbreviations, and Terminology		06.03.2020
*	A15-10-0201-00A-010A-A	General		06.03.2020
*	A15-10-0202-00A-043A-A	Airspeed Limitations		06.03.2020
*	A15-10-0203-00A-043A-A	Airspeed Indication Markings		06.03.2020
*	A15-10-0204-00A-043A-A	Power Plant Limitations	C	18.12.2020
*	A15-10-0205-00A-043A-A	Power Plant Window Markings		06.03.2020
*	A15-10-0206-00A-043A-A	Miscellaneous Instrument Markings		06.03.2020
*	A15-10-0207-00A-043A-A	Weight Limits		06.03.2020
*	A15-10-0208-00A-043A-A	Center of Gravity Limits		06.03.2020
*	A15-10-0209-00A-043A-A	Maneuver Limits		06.03.2020
*	A15-10-0210-00A-043A-A	Flight Load Factor Limits		06.03.2020
*	A15-10-0211-00A-043A-A	Flight Crew Limits		06.03.2020
*	A15-10-0212-00A-043A-A	Kinds of Operation		06.03.2020
*	A15-10-0213-00A-043A-A	Pneumatic Deicing Boot System		06.03.2020
*	A15-10-0214-00A-043A-A	Icing Limitations		06.03.2020
*	A15-10-0215-00A-043A-A	Kinds of Operation Equipment List		06.03.2020
*	A15-10-0216-00A-043A-A	Fuel Limitations		06.03.2020
*	A15-10-0217-00A-043A-A	Maximum Operating Altitude Limits		06.03.2020
*	A15-10-0218-00A-043A-A	Outside Air Temperature Limits		06.03.2020
*	A15-10-0219-00A-043A-A	Cabin Pressurization Limits		06.03.2020
*	A15-10-0220-00A-043A-A	Maximum Passenger Seating Limits	C	18.12.2020
*	A15-10-0221-00A-043A-A	Systems and Equipment Limits	C	18.12.2020
*	A15-10-0222-00A-043A-A	Other Limitations	C	18.12.2020
*	A15-10-0223-00A-067A-A	Placards	C	18.12.2020
*	A15-40-0301-00A-010A-A	General	C	18.12.2020
*	A15-40-0302-00A-043U-A	Airspeeds for Emergency Operations		06.03.2020

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Data module code (DMC)	Document title	N/C	Issue date
* A15-40-0303-00A-141U-A	Rejected Takeoff (Not engine related)		06.03.2020
* A15-40-0304-00A-141U-A	Engine Failure	C	18.12.2020
* A15-40-0305-00A-141U-A	Air Start		06.03.2020
* A15-40-0306-00A-141A-A	Engine Emergencies		06.03.2020
* A15-40-0307-00A-141X-A	Fire, Smoke or Fumes		06.03.2020
* A15-40-0308-00A-141U-A	Emergency Descent		06.03.2020
* A15-40-0309-00A-141U-A	Emergency Landing		06.03.2020
* A15-40-0310-00A-141A-A	Landing Gear System Failure	C	18.12.2020
* A15-40-0311-00A-141A-A	Flaps Failure		06.03.2020
* A15-40-0312-00A-141A-A	Stick Pusher Failure		06.03.2020
* A15-40-0313-00A-141U-A	Inadvertent Pusher/Shaker Operation		06.03.2020
* A15-40-0314-00A-141A-A	Electrical Trim		06.03.2020
* A15-40-0315-00A-141A-A	Electrical System Failures		06.03.2020
* A15-40-0316-00A-141A-A	Fuel System		06.03.2020
* A15-40-0317-00A-141A-A	Cabin Environment Failures	C	18.12.2020
* A15-40-0318-00A-141A-A	Deice Systems		06.03.2020
* A15-40-0319-00A-141A-A	Passenger and Cargo Door		06.03.2020
* A15-40-0320-00A-141U-A	Cracked Window in Flight		06.03.2020
* A15-40-0321-00A-141U-A	Wheel Brake Failure		06.03.2020
* A15-40-0322-00A-141A-A	APEX Failures		06.03.2020
* A15-48-0301-00A-010A-A	General		06.03.2020
* A15-48-0302-00A-014A-A	CAS Advisories		06.03.2020
* A15-48-0303-00A-141A-A	CAS Status	C	18.12.2020
* A15-48-0304-00A-014U-A	Primary Altimeter Diverge by 200 ft or More		06.03.2020
* A15-48-0305-00A-141U-A	Loss of Autopilot Altitude Hold Function in RVSM Airspace		06.03.2020
* A15-48-0306-00A-141U-A	Flight Training		06.03.2020
* A15-48-0307-00A-141U-A	Smartview		06.03.2020
* A15-48-0308-00A-141U-A	LPV/LP Approach (Optional)		06.03.2020
* A15-48-0309-00A-141A-A	Engine Dry Motoring		06.03.2020
* A15-30-0401-00A-010A-A	General		06.03.2020
* A15-30-0402-00A-043A-A	Airspeeds for Normal Operations		06.03.2020
* A15-30-0403-00A-131A-A	Preflight Inspection		06.03.2020
* A15-30-0404-00A-131A-A	Before Starting Engine		06.03.2020
* A15-30-0405-00A-131A-A	Engine Starting		06.03.2020
* A15-30-0406-00A-131A-A	Before Taxiing		06.03.2020
* A15-30-0407-00A-131A-A	Taxiing		06.03.2020
* A15-30-0408-00A-131A-A	Before Takeoff		06.03.2020
* A15-30-0409-00A-131A-A	Takeoff		06.03.2020
* A15-30-0410-00A-131A-A	Flight into Known Icing Conditions	C	18.12.2020
* A15-30-0411-00A-131A-A	Climb		06.03.2020
* A15-30-0412-00A-131A-A	Cruise		06.03.2020
* A15-30-0413-00A-131A-A	Descent		06.03.2020
* A15-30-0414-00A-131A-A	Before Landing		06.03.2020

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	Data module code (DMC)	Document title	N/C	Issue date
*	A15-30-0415-00A-131A-A	Balked Landing (Go-Around)		06.03.2020
*	A15-30-0416-00A-131A-A	Landing		06.03.2020
*	A15-30-0417-00A-131A-A	After Landing		06.03.2020
*	A15-30-0418-00A-131A-A	Shutdown		06.03.2020
*	A15-30-0419-00A-131A-A	Parking		06.03.2020
*	A15-30-0420-00A-131A-A	Oxygen System		06.03.2020
*	A15-30-0421-00A-131A-A	Noise Level		06.03.2020
*	A15-30-0422-00A-131A-A	Automatic Flight Control System Operation		06.03.2020
*	A15-30-0423-00A-131A-A	Crosswind Operation		06.03.2020
*	A15-30-0424-00A-131A-A	Flight in Icing Conditions		06.03.2020
*	A15-30-0425-00A-131A-A	Severe Icing Conditions		06.03.2020
*	A15-30-0426-00A-131A-A	CPCS Low Cabin Mode Operation		06.03.2020
*	A15-30-0427-00A-131A-A	SV Selection and Brightness Control	C	18.12.2020
*	A15-30-0428-00A-131A-A	LPV/LP Detailed Operating Procedures		06.03.2020
*	A15-60-0501-00A-030A-A	Standard Tables		06.03.2020
*	A15-60-0503-01A-030A-A	Performance Data - Stall Speeds		06.03.2020
*	A15-60-0503-02A-030A-A	Performance Data - Takeoff Performance		06.03.2020
*	A15-60-0503-03A-030A-A	Performance Data - Climb Performance		06.03.2020
*	A15-60-0503-04A-030A-A	Performance Data - Cruise Performance		06.03.2020
*	A15-60-0503-05A-030A-A	Performance Data - Specific Air Range		06.03.2020
*	A15-60-0503-06A-030A-A	Performance Data - Holding Time and Fuel		06.03.2020
*	A15-60-0503-07A-030A-A	Performance Data - Descend Performance		06.03.2020
*	A15-60-0503-08A-030A-A	Performance Data - Power-off Glide Performance	C	18.12.2020
*	A15-60-0503-09A-030A-A	Performance Data - Balked Landing Performance		06.03.2020
*	A15-60-0503-10A-030A-A	Performance Data - Landing Performance		06.03.2020
*	A15-60-0504-01A-030A-A	Flight in Icing Conditions - General		06.03.2020
*	A15-60-0504-02A-030A-A	Flight in Icing Conditions - Flaps		06.03.2020
*	A15-60-0504-03A-030A-A	Flight in Icing Conditions - Stall Speeds		06.03.2020
*	A15-60-0504-04A-030A-A	Flight in Icing Conditions - Engine Torque		06.03.2020
*	A15-60-0504-05A-030A-A	Flight in Icing Conditions - Takeoff Performance	C	18.12.2020
*	A15-60-0504-06A-030A-A	Flight in Icing Conditions - Accelerate-Stop Performance		06.03.2020

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Data module code (DMC)	Document title	N/C	Issue date
* A15-60-0504-07A-030A-A	Flight in Icing Conditions - Maximum Rate of Climb		06.03.2020
* A15-60-0504-08A-030A-A	Flight in Icing Conditions - Holding Endurance		06.03.2020
* A15-60-0504-09A-030A-A	Flight in Icing Conditions - Balked Rate of Climb		06.03.2020
* A15-60-0504-10A-030A-A	Flight in Icing Conditions - Landing Performance		06.03.2020
* A15-60-0505-00A-043A-A	Flight Planning Example		06.03.2020
* A15-30-0601-00A-010A-A	General		06.03.2020
* A15-30-0602-00A-169A-A	Preparations for Airplane Weighing		06.03.2020
* A15-30-0603-00A-169A-A	Airplane Weighing with Load Plates		06.03.2020
* A15-30-0604-00A-169A-A	Airplane Weighing with Jacks and Load Cells		06.03.2020
* A15-30-0605-00A-169A-A	Weight and Balance Determination for Flight		06.03.2020
* A15-30-0606-00A-169A-A	Weight and Balance Records		06.03.2020
* A15-30-0607-00A-169A-A	General Loading Recommendations		06.03.2020
* A15-30-0608-00A-169A-A	Interior Configurations	C	18.12.2020
A15-00-0701-00A-010A-A	General		06.03.2020
A15-00-0702-00A-043A-A	Airframe		06.03.2020
A15-00-0703-00A-043A-A	Flight Controls		06.03.2020
A15-00-0704-00A-043A-A	Landing Gear		06.03.2020
A15-00-0705-00A-043A-A	Baggage Compartment		06.03.2020
A15-00-0706-00A-043A-A	Cargo Tie-Downs		06.03.2020
A15-00-0707-00A-043A-A	Seats / Restraint Systems		06.03.2020
A15-00-0708-00A-043A-A	Doors, Windows and Exits		06.03.2020
A15-00-0709-00A-043A-A	Control Locks		06.03.2020
A15-00-0710-00A-043A-A	Engine	C	18.12.2020
A15-00-0711-00A-043A-A	Propeller		06.03.2020
A15-00-0712-00A-043A-A	Fuel	C	18.12.2020
A15-00-0713-00A-043A-A	Electrical	C	18.12.2020
A15-00-0714-00A-043A-A	Lighting		06.03.2020
A15-00-0715-00A-043A-A	Environmental Control System		06.03.2020
A15-00-0716-00A-043A-A	Foot Warmer System (Optional)		06.03.2020
A15-00-0717-00A-043A-A	Cabin Pressure Control System		06.03.2020
A15-00-0718-00A-043A-A	Oxygen System		06.03.2020
A15-00-0719-00A-043A-A	Cockpit Arrangement		06.03.2020
A15-00-0720-00A-043A-A	Pitot Static Systems		06.03.2020
A15-00-0721-00A-043A-A	Stall Warning / Stick Pusher System		06.03.2020
A15-00-0722-00A-043A-A	Airfoil De-ice System		06.03.2020
A15-00-0723-00A-043A-A	Comfort Features		06.03.2020
A15-00-0724-00A-043A-A	Cabin Features		06.03.2020
A15-00-0725-00A-043A-A	Emergency Locator Transmitter		06.03.2020

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Data module code (DMC)	Document title	N/C	Issue date
A15-00-0726-00A-010A-A	Primus APEX - Avionics Installation General		06.03.2020
A15-00-0727-00A-043A-A	Primus APEX		06.03.2020
A15-00-0728-00A-043A-A	Primus APEX - Attitude and Heading		06.03.2020
A15-00-0729-00A-043A-A	Primus APEX - Communication and Navigation		06.03.2020
A15-00-0730-00A-043A-A	Primus APEX - Situation Awareness	C	18.12.2020
A15-00-0731-00A-043A-A	Primus APEX - Monitor Warning System (MWS)	C	18.12.2020
A15-00-0732-00A-043A-A	Primus APEX - Automatic Flight Control System		06.03.2020
A15-00-0733-00A-043A-A	Primus APEX - Flight Management System		06.03.2020
A15-00-0734-00A-043A-A	Primus APEX - Aircraft Condition Monitoring System (ACMS)		06.03.2020
A15-00-0735-00A-043A-A	Primus APEX - Aircraft Diagnostic and Maintenance System (ADMS)		06.03.2020
A15-00-0736-00A-043A-A	Primus APEX - Optional Electronic Charts		06.03.2020
A15-00-0737-00A-043A-A	Primus APEX - Optional Electronic Checklist		06.03.2020
A15-00-0738-00A-043A-A	Primus APEX - Coupled VNAV Approach	C	18.12.2020
A15-00-0739-00A-043A-A	Primus APEX - Optional LPV/LP Approach		06.03.2020
A15-00-0740-00A-043A-A	Lightweight Data Recorder (If Installed)		06.03.2020
A15-20-0801-00A-010A-A	General		06.03.2020
A15-20-0802-00A-043A-A	Ground Handling		06.03.2020
A15-20-0803-00A-173A-A	Mooring		06.03.2020
A15-20-0804-00A-172A-A	Jacking		06.03.2020
A15-20-0805-00A-043A-A	Passenger Seat Removal and Installation		06.03.2020
A15-20-0806-00A-200A-A	Servicing	C	18.12.2020
A15-20-0807-00A-200A-A	Cleaning and Care		06.03.2020
A15-20-0808-00A-800A-A	Extended Storage		06.03.2020
A15-20-0809-00A-280A-A	Corrosion Inspection		06.03.2020
A15-20-0810-00A-043A-A	Geographical Location and Environment		06.03.2020
A15-00-0901-00A-010A-A	General		06.03.2020
A15-20-1001-00A-010A-A	General		06.03.2020
A15-20-1002-00A-043A-A	Safety Tips		06.03.2020
A15-20-1003-00A-043A-A	Operational Tips		06.03.2020
A15-20-1004-00A-043A-A	Flammable Materials, Pressure Vessels and Equipment Locations		06.03.2020

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Data module code (DMC)	Document title	N/C	Issue date
A15-20-1005-00A-043A-A	Removal of Snow, Ice and Frost from the Aircraft		06.03.2020
A15-20-1006-00A-043A-A	Operations from Prepared Unpaved Surfaces		06.03.2020
A15-20-1007-00A-043A-A	Passenger Briefings		06.03.2020

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Change Highlights

This change highlights section shows all changes to PC-12 Pilot's Operating Handbook (POH) (No.02406), Issue 003 Revision 01, Dated 18 December 2020.

All DMC are preceded with 12-C but for clarity this has been left out

C = Changed data module. Replace the data module in the relevant section of the POH.

N = New data module. Insert this data module in the relevant section of the POH.

	Data module code Document title	Type	Reason for Update (RFU)
	A15-00-0000-00A-002A-A List of Effective Data Modules	C	21999 - Updated for Issue 003 - Revision 01.
	A15-00-0000-00A-003A-A Change Highlights	N	Incorporation of new data module
	A15-00-0000-00A-003B-A Log of Revisions	C	21999 - Updated for Issue 003 - Revision 01.
	A15-00-0001-00A-030A-A List of APEX Builds	C	21999 - Incorporated TR 11. Remove and destroy TR 11 and record the removal in the Log of Temporary Revisions.
	A15-00-0010-00A-018A-A Introduction	C	21766 - Added new para "Supplements".
*	A15-10-0204-00A-043A-A Power Plant Limitations	C	21999 - Incorporated TR 08. Remove and destroy TR 08 and record the removal in the Log of Temporary Revisions.
*	A15-10-0220-00A-043A-A Maximum Passenger Seating Limits	C	21999 - Incorporated TR 07. Remove and destroy TR 07 and record the removal in the Log of Temporary Revisions.
*	A15-10-0221-00A-043A-A Systems and Equipment Limits	C	21357 - Updated "Primus Apex - TCAS" limitation.
*	A15-10-0222-00A-043A-A Other Limitations	C	21709 - Updated front (passenger) and back (cargo) door terminology (editorial).
*	A15-10-0223-00A-067A-A Placards	C	21999 - Incorporated TR 07. Remove and destroy TR 07 and record the removal in the Log of Temporary Revisions.
*	A15-40-0301-00A-010A-A General	C	21263 - Added PPAA drill description.
*	A15-40-0304-00A-141U-A Engine Failure	C	21184 - Updated engine failure after rotation - LG up procedure.
*	A15-40-0310-00A-141A-A Landing Gear System Failure	C	21514 - Updated location of LDG CTL SEC circuit breaker.
*	A15-40-0317-00A-141A-A Cabin Environment Failures	C	21298 - Updated "ACS Low Inflow" procedure. 21495 - Updated ECS circuit breaker location.
*	A15-48-0303-00A-141A-A CAS Status	C	21372 - Removed CPCS Fault status message.
*	A15-30-0410-00A-131A-A Flight into Known Icing Conditions	C	21514 - Updated Note (editorial).

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	Data module code Document title	Type	Reason for Update (RFU)
*	A15-30-0427-00A-131A-A SV Selection and Brightness Control	C	21514 - Changed "SYS BRT" to "SVS BRT" (editorial).
*	A15-60-0503-08A-030A-A Performance Data - Power-off Glide Performance	C	21514 - Power-off Glide Distance graph X-axis updated (editorial).
*	A15-60-0504-05A-030A-A Flight in Icing Conditions - Takeoff Performance	C	21777 - Added Note.
*	A15-30-0608-00A-169A-A Interior Configurations	C	21999 - Incorporated TR 07. Remove and destroy TR 07 and record the removal in the Log of Temporary Revisions.
	A15-00-0710-00A-043A-A Engine	C	22164 - Added caution.
	A15-00-0712-00A-043A-A Fuel	C	21631 - Updated Fuel Filter Replace status message description.
	A15-00-0713-00A-043A-A Electrical	C	21513 - "PGDS Emergency Operation Condition" figures updated (removed Hydr Pwr from figures).
	A15-00-0730-00A-043A-A Primus APEX - Situation Awareness	C	21357 - Updated "TCAS II Operation" description.
	A15-00-0731-00A-043A-A Primus APEX - Monitor Warning System (MWS)	C	21372 - Removed CPCS Fault status message.
	A15-00-0738-00A-043A-A Primus APEX - Coupled VNAV Approach	C	21514 - Updated "VNAV - Example Indications" figure (editorial).
	A15-20-0806-00A-200A-A Servicing	C	21514 - Updated oil replenishment procedure i.a.w. AMM.

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Log of Revisions

1 Issue 002 - Revision 00 - Dated: 14 October 2019

Re-issue of the PC-12/47E Pilot's Operating Handbook to include technical changes and conversion of the manual to a new layout.

The Issue 002 Revision 00 of the AFM ref. 02406 is approved under EASA approval number 10071186.

Approval date: 11.10.2019

Table 1-1-1: Issue 002 - Revision 00 - List of changes

Section	PTS Number	Description of Change
All	19595	PC-12 Pilot's Operating Manual Issue 002 Revision 00.

2 Issue 003 - Revision 00 - Dated: 06 March 2020

Re-issue of the PC-12/47E Pilot's Operating Handbook to include technical changes for Entry-Into-Service.

The Issue 003 Revision 00 of the AFM ref. 02406 is approved under the authority of DOA ref. EASA.21J.357.

Approval date: 06.03.2020

Table 1-1-2: Issue 003 - Revision 00 - List of changes

Section	PTS Number	Description of Change
All	20936	PC-12 Pilot's Operating Manual Issue 003 Revision 00. TR 01 thru 06 are integrated in this Issue 003 Revision 00.

3 Issue 003 - Revision 01 - Dated: 18 December 2020

Revision of the PC-12/47E Pilot's Operating Handbook.

The Issue 003 Revision 01 of the AFM ref. 02406 is approved under the authority of DOA ref. EASA.21J.357.

Approval date: 18.12.2020

Table 1-1-3: Issue 003 - Revision 01 - List of changes

Section	PTS Number	Description of Change
List of Applicable Data Modules	21999	Updated for Issue 003 Revision 01.
Change Highlights	21999	Updated for Issue 003 Revision 01.
Log of Revisions	21999	Updated for Issue 003 Revision 01.

Table 1-1-3: Issue 003 - Revision 01 - List of changes (continued from previous page)

Section	PTS Number	Description of Change
List of APEX Builds	21999	Incorporated TR-11. Remove and destroy TR 11 and record the removal in the Log of Temporary Revisions.
Section 0		
0	21766	Added new para “Supplements”.
Section 2		
2-4	21999	Incorporated TR 08. Remove and destroy TR 08 and record the removal in the Log of Temporary Revisions.
2-20	21999	Incorporated TR 07. Remove and destroy TR 07 and record the removal in the Log of Temporary Revisions.
2-21	21357	Added “Primus Apex - TCAS II” limitation.
2-22	21709	Updated front (passenger) and back (cargo) door terminology (editorial).
2-23	21999	Incorporated TR 07. Remove and destroy TR 07 and record the removal in the Log of Temporary Revisions.
Section 3		
3-4	21184	Added “not below DSB (1.3 V_S)” for final approach speed.
3-10	21514	Updated location of LDG CTL SEC circuit breaker.
3-17	21298	Updated "ACS Low Inflow" procedure.
	21495	Updated ECS CB location to $_L$E2.
Section 4		
4-10	21514	Updated Note (editorial).
4-27	21514	Changed "SYS BRT" to "SVS BRT" (editorial).
Section 5		
5-3-8	21514	21514 - Power-off Glide Distance graph X-axis updated (editorial).
5-4-5	21777	Added Note.
Section 6		
6-8	21999	Incorporated TR 07. Remove and destroy TR 07 and record the removal in the Log of Temporary Revisions.
Section 7		
7-10	22164	Added caution.
7-12	21631	Updated “Fuel Filter Replace” description.
7-13	21514	"PGDS Emergency Operation Condition" figures updated (removed Hydr Pwr from figures).
7-30	21357	Updated “TCAS II Operation” description.
7-38	21514	Updated "VNAV - Example Indications" figure (editorial).
Section 8		
8-6	21514	Updated oil replenishment information.

Log of Temporary Revisions

No.	Temporary Revision Title	Date of Issue	Cancelled by
01	Fuel Anti-Icing Additive	28 Nov 2019	Issue 003 Revision 00
02	APEX Builds	10 Dec 2019	Issue 003 Revision 00
03	EX-6S-2 Placards	10 Dec 2019	Issue 003 Revision 00
04	Emergency Gear Extension	06 Dec 2019	Issue 003 Revision 00
05	EPECS Update	14 Feb 2020	Issue 003 Revision 00
06	Feather Inhibit (option)	10 Feb 2020	Issue 003 Revision 00

No.	Temporary Revision Title	Date of Issue	Cancelled by

List of Service Bulletins

This list of Service Bulletins provides the owner a means of recording the applicable SBs that are mentioned in the various Sections of the POH.
It is not a complete list of SBs. The purpose is to show the modification status of the aircraft to assist the pilot in the correct understanding of the procedures and the system description.

SB No.	SB Title

SB No.	SB Title

SB No.	SB Title

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SB No.	SB Title

List of APEX Builds

An overview of the various APEX builds, the corresponding Honeywell part number and the associated Electronic Checklist (ECL) version is given in the table below.

APEX Build	Honeywell part number	ECL version number	ECL software version
Build 12	EB60003299-0115	1212-00	PC1200101.ecl
Build 12.6.1	EB60003299-0116	1212-01	PC1200102.ecl
Build 12.6.1	EB60003299-0116	1212-02	PC1200103.ecl

APEX Build	Honeywell part number	ECL version number	ECL software version

SECTION 0

Introduction

Table of Contents

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Introduction

1 General

This Pilot's Operating Handbook (POH) is designed to provide the information required for the operation of the airplane. Each airplane is delivered with a POH that reflects the standard airplane with all of the approved options plus any special equipment installed on an individual basis.

2 Warnings, Cautions, and Notes

The following definitions apply to the warnings, cautions, and notes as used in this manual:

WARNING

ANY OPERATING PROCEDURE, PRACTICE, OR CONDITION WHICH, IF NOT STRICTLY COMPLIED WITH, MAY RESULT IN PERSONAL INJURY OR LOSS OF LIFE.

CAUTION

Any operating procedure, practice, or condition which, if not strictly complied with, may result in damage to the airplane or equipment.

Note

Any operating procedure, practice, or condition that requires emphasis.

3 Data Modules

To facilitate the most accurate and effective distribution of the latest information contained in this POH, Pilatus Aircraft Ltd. publishes the content of the POH from a collection of electronically stored publication components called Data Modules (DM). DMs contain various amounts of information depending on the subject they address. However, when any of the content inside a DM changes, the entire DM is up-issued and distributed as the sum total of, or as a portion of a POH revision.

Each DM is identified by a unique 22 character, hyphen de-limited Data Module Code (DMC). When a DM is published in printed form, each page is marked with the DMC oriented vertically along the outer margin of the bottom of each page.

4 Revision Markings

Additions, technical changes and revisions to existing POH material will be identified by a vertical revision bar (black line) in the outside margin of the applicable page, next to the change.

The revision bar will only indicate the current change on each page. Physical relocation of material or the correction of typographical or grammatical errors, outside of the material revised, will not be identified by a revision bar.

5 Revision / Issue Dates

At the title page, there will be the original issue date of the POH. At the bottom of each page, opposite the page number, there will be the issue date of the Data Module (DM).

6 Revision Procedure

To keep this POH current, revisions will be issued to the latest registered owner of airplane. Revisions to this POH will consist of:

- List of Applicable Data Modules (LOADM)
- Change Highlights
- Log of Revisions
- New or Revised DMs
- Temporary Revisions.

The Equipment List is not included in the Revision Procedure. The Equipment List is a separate report and was current at the time of license at the manufacturer and must be maintained by the airplane owner.

6.1 List of Applicable Data Modules

The List of Applicable Data Modules (LOADM) shows the revision number and date. All current POH DMs will be listed with the applicable issue date along with instructions which DM needs to be inserted in (new DM), replaced (changed DM) or deleted from the POH with the applicable revision.

6.2 Change Highlights

The Change Highlights provides a dedicated overview of the changed, added and/or removed DMs with each revision.

6.3 Log of Revisions

The Log of Revisions provides a brief description of each change that is introduced with a revision.

Note
The 5-digit Publication Task Sheet (PTS) number in the change column is for Pilatus internal use only.

6.4 New or Revised Data Modules

In accordance with the instructions of the LOADM, new or revised DMs must be incorporated into the POH and superseded DMs destroyed.

CAUTION

It is the responsibility of the owner or operator to maintain this Pilot's Operating Handbook in a current status and incorporate successive revisions.

6.6 Temporary Revisions

Temporary Revisions are issued when the POH must be revised between the regular formal revisions. They are issued on yellow paper and must be recorded on the Log of Temporary Revisions. Temporary Revisions should normally be put at the front of the POH, apart from Section 9 Temporary Revisions which should be put in front of the applicable Supplement. Temporary Revisions must only be removed from the POH when instructed to do so by the Change Highlights of the next issue of a formal revision, when superseded by another temporary revision and sometimes by the incorporation of a Service Bulletin. The Log of Temporary Revisions must be kept up to date by the owner or operator of the aircraft.

7 Supplements

Information required to operate the airplane when equipped with specific functions is given in Supplements. A Supplement supersedes or substitutes the basic information given in the POH in the areas listed, with all else functioning as per the POH. A Supplement is identified by its own report number. A list of available Supplements at the release date of the POH is given in Section 9 of the POH. All applicable Supplements are to be inserted in this Section 9 of the POH. Section 1 of the Supplement contains a list of POH to which the Supplement is applicable.

8 Copyright and Legal Statement

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SECTION 1

General

Table of Contents

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1-1 General

This section contains basic data and information of general interest to the pilot. It also contains definitions and explanations of symbols, abbreviations, and terminology that is used throughout this POH.

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1-2 Introduction

This POH includes the material required to be furnished by the Federal Aviation Regulations and additional information provided by the manufacturer and constitutes the:

- EASA Approved Airplane Flight Manual
- FAA Approved Airplane Flight Manual for operation in the U.S. in accordance with FAR 21.29.

This POH must be read, and thoroughly understood, by the owner and operator in order to achieve maximum utilization as an operating guide for the pilot.

This POH is divided into numbered sections which are separated by tabs. Section 3, Emergency Procedures, is further highlighted by the use of a red tab to facilitate quick recognition.

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1-3 Top Level Illustrations

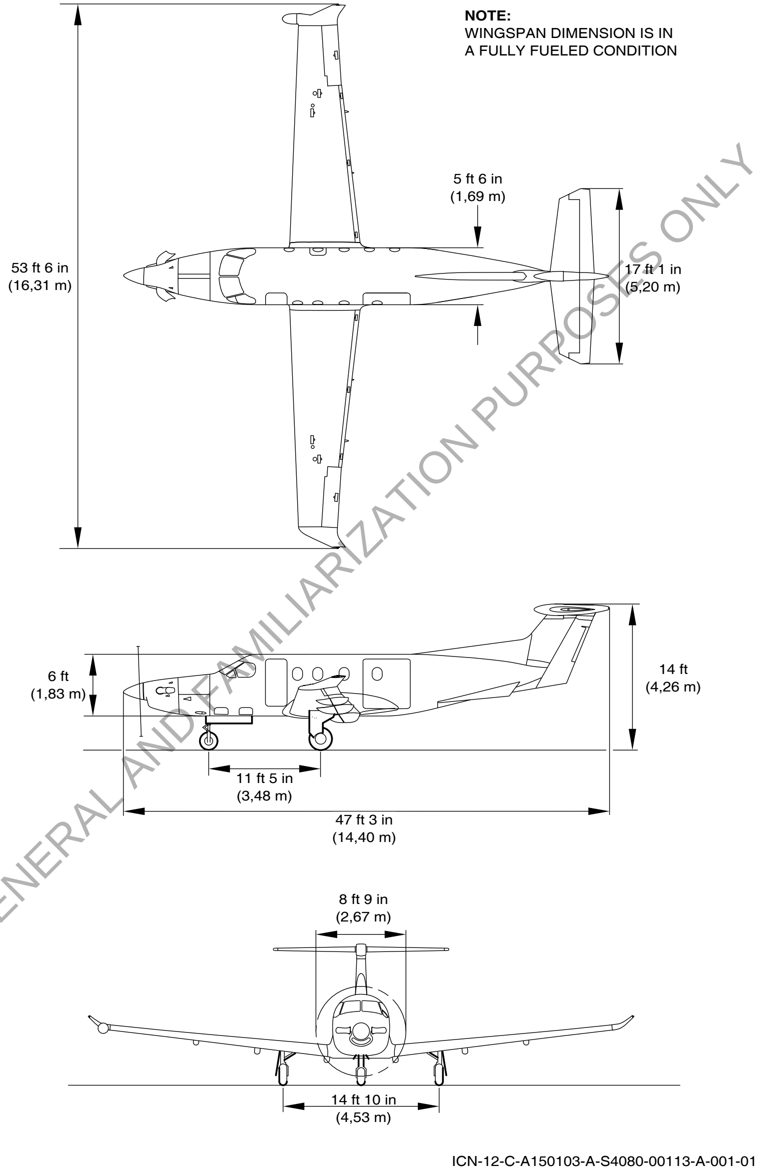

Figure 1-3-1: Airplane - Three-view Diagram and Dimensions

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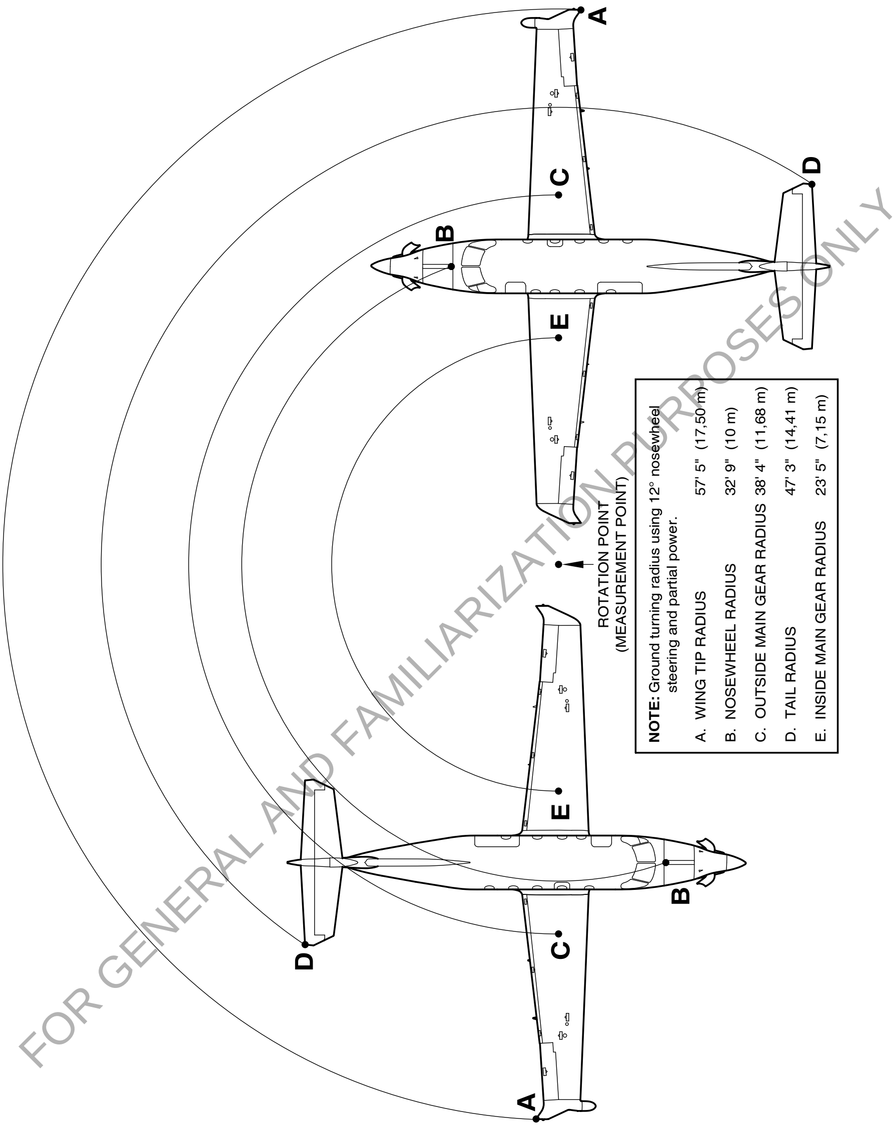

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Figure 1-3-2: Airplane - Ground Turning Clearance - NWS only (No Braking)

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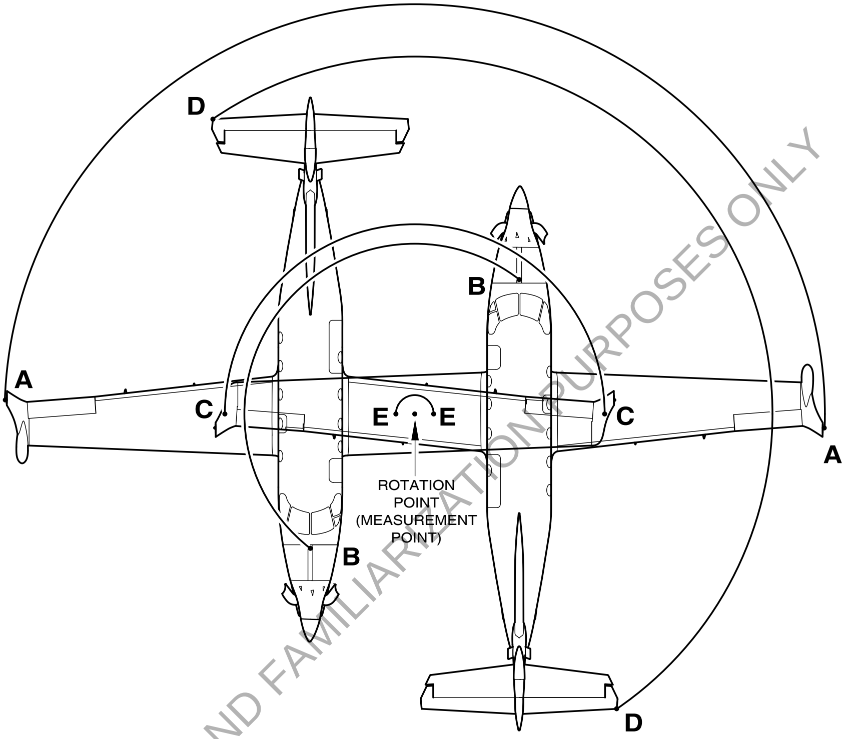

NOTE: Ground turning radius using nosewheel steering, inside brake and partial power.

A.	WING TIP RADIUS	35' 7"	10,864 m
B.	NOSEWHEEL RADIUS	14' 10"	4,513 m
C.	OUTSIDE MAIN GEAR RADIUS	16' 6"	5,03 m
D.	TAIL RADIUS	31' 1"	9,475 m
E.	INSIDE MAIN GEAR RADIUS	19.5"	0,5 m

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Figure 1-3-3: Airplane - Ground Turning Clearance - NWS and Braking

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1-4 Descriptive Data

1-4-1 Engine

Number of Engines	1
Engine Manufacturer	Pratt & Whitney Canada
Engine Model Number	PT6E-67XP
Engine Type	This airplane incorporates a twin shaft turboprop engine with 4 axial and 1 centrifugal compressor stages, an annular combustion chamber, and a 3 stage turbine where one stage drives the compressor and two stages power the propeller.
Horsepower Rating and Engine Speed:	
Takeoff Power	1,200 shp
Maximum Climb/Cruise Power	1,200 shp
Compressor Turbine (N_g) Speed (104%)	38,967 rpm
Propeller Speed (N_p)	1,700 rpm
Prop Low Speed Mode (optional)	1,550 rpm

1-4-2 5-Bladed Propeller

Number of Propellers	1
Propeller Manufacturer	Hartzell
Propeller Model Number	HC-E5A-31A/NC10245B
Number of Blades	5
Propeller Diameter	105" (2.67 m)
Propeller Type	The propeller assembly consists of a hub unit and five composite blades, and is a hydraulically actuated, constant speed, full feathering and reversible type.

1-4-3 Fuel

Approved Fuels

Any fuel which complies with Section 2, Limitations, Power Plant Limitations, of this POH.

Total Capacity

– 406.8 US gal, 2,736.5 lb (1,540 liters, 1,241.3 kg).

Usable Fuel

– 402 US gal, 2,703.6 lb (1,521.5 liters, 1,226.4 kg).

Anti-Icing Additive

If anti-icing additive is to be used, then use anti-icing additives in compliance with Section 2, Limitations, Power Plant Limitations, of this POH.

1-4-4 Oil

Oil Grade or Specification

- Any oil specified in Section 2, Limitations, Power Plant Limitations, of this POH.

Oil Quantity

- Total Oil Capacity 3.6 US gal (13.6 liters)
- Drain and Refill Quantity 2.0 US gal (7.6 liters)
- Oil Quantity Operating Range 1.0 US gal (3.8 liters).

1-4-5 Maximum Weights

Maximum Ramp Weight	10495 lb (4760 kg)
Maximum Takeoff Weight	10450 lb (4740 kg)
Maximum Landing Weight	9921 lb (4500 kg)
Maximum Zero Fuel Weight	9039 lb (4100 kg)
Maximum Cargo Weight:	
- Baggage Area	400 lb (180 kg)
- Cabin Area	3300 lb (1500 kg)

1-4-6 Typical Airplane Weights

Empty Weight (approx)	6173 lb (2800 kg) *
Useful Load	4277 lb (1940 kg)

**Empty weight of standard airplane with standard interior, 9 passenger seats and cabin floor covering.*

1-4-7 Cabin and Entry Dimensions

Maximum Cabin Width	5' 0" (1.52 m)
Cabin Floor Width	4' 3" (1.30 m)
Maximum Cabin Length	16' 11" (5.16 m)
Cabin Floor Length	15' 4" (4.68 m)
Maximum Cabin Height	4' 9" (1.45 m)
Passenger Door:	
- Width	2' 0" (0.61 m)
- Height	4' 5" (1.35 m)
Cargo Door:	
- Width	4' 5" (1.35 m)
- Height	4' 4" (1.32 m)
Overwing Emergency Exit:	
- Width	1' 6" (0.49 m)
- Height	2' 2" (0.68 m)
Compartment Volume:	
- Baggage	34.3 ft^3 (0.97 m^3)

- Cabin	326 ft^3 (9.23 m^3)

1-4-8 Specific Loadings

Wing Loading	37.6 lb/sq ft (183.7 kg/sq m)
Power Loading	8.71 lb/shp (3.95 kg/shp)

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1-5 Symbols, Abbreviations, and Terminology

1-5-1 General Airspeed Terminology and Symbols

CAS	Calibrated Airspeed means the indicated airspeed of an aircraft, corrected for position and instrument error. Calibrated Airspeed is equal to True Airspeed in standard atmosphere at sea level.
GS	Ground Speed is the speed of an airplane relative to the ground.
IAS	Indicated Airspeed means the speed of an aircraft as shown on its airspeed indicator.
KCAS	Calibrated Airspeed expressed in knots.
KIAS	Indicated Airspeed expressed in knots. In APEX KIAS is corrected for position error.
M	Means Mach number. Mach number is the ratio of true airspeed to the speed of sound.
M_{MO}	Maximum Operating Limit Speed is the speed limit that may not be deliberately exceeded in normal flight operations. M is expressed in Mach number.
TAS	True Airspeed means the airspeed of an airplane relative to undisturbed air which is the CAS corrected for altitude, temperature, and compressibility.
V_{FE}	Maximum Flap Extended Speed is the highest speed permissible with wing flaps in a prescribed extended position.
V_{LE}	Maximum Landing Gear Extended Speed is the maximum speed at which an airplane can be safely flown with the landing gear extended.
V_{LO}	Maximum Landing Gear Operating Speed is the maximum speed at which the landing gear can be safely extended or retracted.
V_{MO}	Maximum Operating Speed is the speed limit that may not be exceed at any time. V is expressed in knots.
V_O	Maximum Operating Maneuvering Airspeed is the maximum speed at which application of full available aerodynamic control will not overstress the airplane.

Note

V_O is defined in accordance with FAR 23 Amendment 45.

V_R	Rotation Speed used for takeoff.
V_S	Stalling Speed or the minimum steady flight speed at which the airplane is controllable.
V_{SO}	Stalling Speed or the minimum steady flight speed at which the airplane is controllable in the landing configuration at maximum gross weight.
V_{S1}	Stalling Speed or the Minimum Steady Flight Speed at which the airplane is controllable in the specified configuration at the specified weight.
V_X	Best Angle of Climb Speed is the airspeed which delivers the greatest gain of altitude in the shortest possible horizontal distance.

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V_Y	Best Rate of Climb Speed is the airspeed which delivers the greatest gain of altitude in the shortest possible time.

1-5-2 Meteorological Terminology

Indicated Altitude	The number actually read from an altimeter when the barometric subscale has been Pressure set to 29.92 in hg (1013.2 mbar).
ISA	International Standard Atmosphere in which: − the air is a dry, perfect gas − the temperature at sea level is 59 °F (15 °C) − the pressure at sea level is 29.92 in hg (1013.2 mbar) − the temperature gradient from sea level to the altitude at which the temperature is -69.7 °F (-56.5 °C) is -0.003564 °F (-0.00198 °C) per foot and zero above that altitude.
SAT	Static Air Temperature is the temperature of the air the aircraft is flying through. SAT indication on the ground may not be accurate.
Pressure Altitude	Pressure Altitude measured from standard sea level pressure. (29.92 in hg/1013.2 mbar) by a pressure or barometric altimeter. It is the indicated pressure altitude corrected for position and instrument error. In this AFM, altimeter instrument errors are assumed to be zero.
Station Pressure	Actual atmospheric pressure at field elevation.
Wind	The wind velocities recorded as variables on the charts of this AFM are to be understood as the headwind or tailwind components of the reported winds.
ELEV	Geographical altitude of landing field.
Icing Conditions	Can exist when the Outside Air Temperature (OAT) on the ground and for takeoff, or Total Air Temperature (TAT) in flight, is 10 °C or colder, and visible moisture in any form is present (such as clouds, fog or mist with visibility of one mile or less, rain, snow, sleet and ice crystals). Can exist when the OAT on the ground and for takeoff is 10 °C or colder when operating on ramps, taxiways or runways, where surface snow, ice, standing water, or slush may be ingested by the engine, or freeze on the engine, or the engine nacelle. Can exist when there are visible signs of ice accretion on the aircraft.
Severe Icing Conditions	Severe icing may result from environmental conditions during flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled liquid water and ice crystals) which 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.

1-5-3 Power Terminology

Cruise Climb Power	The power recommended to operate the airplane in a cruise climb (a continuous, gradual climb) profile.
Flight Idle Power	The power required to run an engine, in flight, at the lowest speed that will ensure satisfactory engine and systems operation and airplane handling characteristics. Power setting is achieved with the Power Control Lever at the Flight Idle Detent position.
Ground Idle Power	The power required to run an engine on the ground, as slowly as possible, yet sufficient to ensure satisfactory engine, engine accessory, and airplane operation with a minimum of thrust. Power setting is achieved with the Power Control Lever at or immediately aft of the Idle Detent position.
Maximum Climb Power	The maximum power approved for climb.
Maximum Cruise Power	The maximum power approved for cruise.
Reverse Thrust	The thrust of the propeller directed opposite the usual direction, thereby producing a braking action. Power setting is achieved with the Power Control Lever in the Reverse position.
Takeoff Power	The maximum power permissible for takeoff (limited to 5 minutes).
Zero Thrust	The absence of appreciable thrust, in either direction.

1-5-4 Engine Controls and Instruments Terminology

Beta Range	Range where the propeller blade angle is a function of Power Control Lever (PCL) input. The Engine Electronic Control (EEC) utilizes the Np/Beta sensor and beta ring position to calculate blade angle, which is controlled and commanded by the PCL. Below flight regime, i.e. aft of the idle detent, the Propeller Control Unit (PCU) limits the propeller speed to an underspeed condition and the PCL directly controls the propeller pitch.
Constant Speed Range	The engine operating range where the propeller is out of Beta range and operating at a constant rpm.
Engine and Propeller Electronic Control System (EPECS)	The system that controls the engine's output torque at a reference propeller speed by scheduling fuel flow.
ITT Gauge	A temperature measuring system that senses gas temperature in the turbine section of the engine.
Minimum Blade Angle	When in forward mode, the minimum blade angle is fixed in order to prevent the propeller from going into reverse. When reverse is commanded (throttle quadrant input to the EEC) the minimum blade angle will vary, allowing the propeller to go into reverse. Minimum blade angle protection is achieved by momentarily commanding the feather solenoid.
Power Control Lever	The lever used to control engine power, from reverse (see Beta Range) to maximum power (see Power Terminology).
Propeller Control Unit (PCU)	The PCU is an electro-hydro-mechanical device that modulates the blade angle of a single acting propeller over the entire flight regime of the engine.

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Propeller Feather	This is a propeller pitch condition which produces minimum drag in a flight condition (engine shutdown).
Propeller Speed Control Mode	Propeller speed control is the principle operating mode of the propeller control system while the aircraft is operating in flight. The propeller control system modulates the propeller blade angle in order to govern on the selected propeller reference speed.
T1	Indicated T1 temperature is used to calculate the engine power. On ground and during initial takeoff/climb T1 is based on the engine inlet temperature sensor reading, corrected to represent ambient temperature. 400 ft above ground level T1 is based on average data from aircraft Outside Air Temperature (OAT) sensors.
Tachometer	An instrument that indicates rotational speed. Gas generator tachometers measure speed as a percentage of the nominal maximum speed of the turbine(s), while propeller tachometers measure actual propeller rpm.
Torquemeter	An indicating system that displays the output torque available on the propeller shaft. Torque is shown in reference terms, such as the oil pressure generated by the engine torquemeter piston.

1-5-5 Airplane Performance and Flight Planning Terminology

Climb Gradient	The demonstrated ratio of the change in height during a portion of a climb, to the horizontal distance traversed in the same time interval.
Demonstrated Crosswind Velocity	The demonstrated crosswind velocity is the velocity of the crosswind component for which adequate control of the airplane during takeoff and landing was actually demonstrated during certification tests. The value shown may or may not be limiting. Whether or not the value shown is limiting will be stated.
MEA	Minimum Enroute IFR Altitude.
Route Segment	A part of a route. Each end of that part is identified by: (1) a geographical location; or (2) a point at which a definite radio fix can be established.

1-5-6 Weight and Balance Terminology

A.O.D.	Aft of Datum
Arm	The horizontal distance from the reference datum to the center of gravity (C.G.) of an item.
Basic Empty Weight	Standard empty weight plus optional equipment.
Center of Gravity (C.G.)	The point at which an airplane would balance if suspended. Its distance from the reference datum is found by dividing the total moment by the total weight of the airplane.
C.G. Arm	The arm obtained by adding the airplane's individual moments and dividing the sum by the total weight.
C.G. Limits	The extreme center of gravity locations within which the airplane must be operated at a given weight.

Datum	An imaginary vertical plane from which all horizontal distances are measured for balance purposes.
Maximum Landing Weight (MLW)	Maximum weight approved for the landing touchdown.
Maximum Ramp Weight (MRW)	Maximum weight approved for ground maneuver. It includes weight of start, taxi, and run-up fuel.
Maximum Takeoff Weight (MTOW)	Maximum weight approved for the start of the takeoff run.
Maximum Zero Fuel Weight (MZFW)	Maximum weight exclusive of usable fuel.
Moment	The product of the weight of an item multiplied by its arm. Moment divided by a constant is used to simplify balance calculations by reducing the number of digits.
Payload	Weight of occupants, cargo, and baggage.
Standard Empty Weight	Weight of a standard airplane, standard interior, 9 passenger seats and cabin floor covering including unusable fuel, full operating fluids, and full oil.
Station	A location along the airplane fuselage usually given in terms of distance from the reference datum.
Tare Weight	The weight indicated by a scale before it is loaded.
Unusable Fuel	Fuel which may not be considered usable for flight planning.
Usable Fuel	Fuel available for flight planning.
Useful Load	Difference between takeoff weight, or ramp weight if applicable, and basic empty weight.

1-5-7 General Abbreviations and Symbols

C	Celsius
cu	Cubic
F	Fahrenheit
FAA	Federal Aviation Administration (U.S.A.)
FOCA	Federal Office for Civil Aviation (Switzerland)
fpm	Feet per Minute
ft	Feet
g	Unit of acceleration measured against the force of gravity
gal	Gallon (US)
hg	Mercury
IFR	Instrument Flight Rules
in	Inches
kg	Kilogram
KTAS	Knots True Airspeed
lb	Pound (mass)
m	Meter
MAC	Mean Aerodynamic Chord
max	Maximum
mbar	Millibar
mkg	Moment in meters/kilograms
min	Minimum
mm	Millimeters

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nm	Nautical Mile
N/A	Not Applicable
psi	Pounds per Square Inch
rpm	Revolutions Per Minute
sec	Second
shp	Shaft Horsepower
sm	Statute Mile
TBD	To Be Determined
TBO	Time Between Overhauls
VFR	Visual Flight Rules
°	Degrees
'	Feet
"	Inches

Note
Refer to Section 7, Airplane and Systems Descriptions, Primus APEX - Avionics Installation General for Avionic acronyms and abbreviations.

1-5-8 Conversion Information

All numerical data contained in this AFM is shown in standard format with the metric equivalent immediately following in parenthesis, eg. 7' 3" (2.1 m). The following formulas can be used to make required conversions.

1-5-8.1 General

Fahrenheit (°F) = (°C x 1.8) + 32

Celsius (°C) = (°F - 32) x 0.556

Statute Mile (sm) = Nautical Mile (nm) x 1.151

Nautical Mile (nm) = Statute Mile (sm) x 0.869

Jet Fuel (JET A) Standard Weights at 15 °C (Relative Density 0.806)

One (1) Liter = 1.777 lb

One (1) U.S. Gallon (US gal) = 6.73 lb

One (1) Imperial Gallon (IMP gal) = 8.078 lb

1-5-8.2 Standard to Metric

Millimeters (mm) = Inches (in) x 25.4

Centimeters (cm) = Inches (in) x 2.54

Meters (m) = Feet (ft) x 0.305

Meters (m) = Yards (yd) x 0.914

Kilometers (km) = Statute Miles (sm) x 1.61

Kilometers (km) = Nautical Miles (nm) x 1.852

Liters = US Gallons (US gal) x 3.785

Liters = Imperial Gallons (IMP gal) x 4.546

Kilograms (kg) = Pounds (lb) x 0.454

Bar = psi x 0.069

1-5-8.3 Metric to Standard

Inches (in) = Millimeters (mm) x 0.039

Inches (in) = Centimeters (cm) x 0.393

Feet (ft) = Meters (m) x 3.281

Yards (yd) = Meters (m) x 1.094

Statute Miles (sm) = Kilometers (km) x 0.621

Nautical Miles (nm) = Kilometers (km) x 0.54

US Gallons (US gal) = Liters x 0.264

Imperial Gallons (IMP gal) = Liters x 0.22

Pounds (lb) = Kilograms (kg) x 2.205

psi = Bar x 14.504

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SECTION 2

Limitations (EASA Approved)

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Subject		Page

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2-1 General

This section contains the EASA approved operating limitations, instrument markings, color coding, and basic placards necessary for the operation of the airplane, its engine, systems, and equipment. Compliance with approved limitations is mandatory.

Limitations associated with systems or equipment which require POH Supplements are included in Section 9, Supplements.

With the exception of circuit breakers on the Essential Bus, and if not detailed otherwise in procedures, all tripped open circuit breakers are not allowed to be reset in flight. Circuit breakers on the Essential Bus, if tripped, may be reset once only in flight providing:

1 At least one minute has elapsed from the time of the circuit breaker trip

2 There is no remaining smoke or burning smell.

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2-2 Airspeed Limitations

Table 2-2-1: Airspeed Limitations

AIRSPEED	KIAS	SIGNIFICANCE
Maximum operating speed V_{MO} M_{MO}	 240 0.49	Do not exceed this speed in any operations. Maximum speed at or below 16,300 ft. Refer to V_{MO} / M_{MO} schedule for maximum speed above 16,300 ft. (See Fig. 2-2-1, V_{MO} Schedule).
Maximum Operating Maneuvering Speed - V_O 10450 lb (4740 kg) 9921 lb (4500 kg) 9480 lb (4300 kg) 9039 lb (4100 kg) 8380 lb (3800 kg) 7940 lb (3600 kg) 7500 lb (3400 kg) 7060 lb (3200 kg) 6610 lb (3000 kg) 6170 lb (2800 kg) 5730 lb (2600 kg)	 166 161 158 154 148 144 140 136 132 127 123	Do not make full or abrupt control movements above this speed.
Maximum flap extended speed - V_{FE} ≤ 15° > 15°	 165 130	Do not exceed this speed with flaps extended.
Maximum landing gear operating speed - V_{LO}	180	Do not retract or extend landing gear above this speed.
Maximum landing gear extended speed - V_{LE}	240	Do not exceed this speed with landing gear extended.

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Figure 2-2-1: VMO / MMO Schedule

2-3 Airspeed Indication Markings

Table 2-3-1: Airspeed Indication Markings

INDICATION	KIAS VALUE OR RANGE	REMARKS
Red/White Barber Pole across and upwards on right side of tape	240 or 0.49 M whichever is lower	Maximum operating limit (V_{MO}/M_{MO})
Red (high speed) strip on right side of tape	180 V_{LO} 165 V_{FE} 15° 130 V_{FE} 30/40°	Extends downwards from V_{MO}/M_{MO} to the valid V_{LO} or V_{FE} as applicable. Not shown in clean config or with gear extended only
Labeled Placards on right side of tape	180 V_{LO} 165 V_{FE} 15° 130 V_{FE} 30/40°	Maximum flap operating and extended speed (V_{FE}: 15 /30/40°) and maximum landing gear operating speed (V_{LO})
Red low speed awareness tape overlaid on right side of tape	Shaker speed	Extends upwards from bottom of tape to the shaker speed in the current configuration. Not shown on ground.

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2-4 Power Plant Limitations

2-4-1 Engine

Number of Engines	1
Engine Manufacturer	Pratt & Whitney Canada
Engine Model Number	PT6E-67XP

2-4-2 Oil

Approved oils are:

- AeroShell Turbine Oil 500
- AeroShell Turbine Oil 560 (ASTO 560)
- Royco Turbine Oil 500
- Royco Turbine Oil 560
- Mobil Jet Oil II
- Eastman Turbo Oil 2380
- Turbonycoil 600.

CAUTION

Mixing oil of different viscosities is not permitted.

Note

The oils listed are approved to MIL-PRF-23699 Type II.

2-4-3 Oil Quantity

Total Oil Capacity	3.6 US gal (13,6 liters)
Drain and Refill Quantity	2.0 US gal (7,6 liters)
Oil Quantity Operating Range	1.0 US gal (3,8 liters)

An oil quantity check is required for takeoff. Takeoff is not approved with ENGINE OIL LEVEL illuminated.

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2-4-4 Engine Operating Limits

The limits presented in each column shall be observed. The limits presented do not necessarily occur simultaneously. Refer to the Pratt & Whitney Engine Maintenance Manual for specific action if limits are exceeded.

Table 2-4-1: Engine Operating Limits

OPERATING CONDITION (1)	SHP	TORQUE (PSI) (2) (3)	MAX ITT (°C)	Ng (%)	Np (RPM) (11) (12)	OIL PRESS (PSI) (4) (5)	OIL TEMP (°C) (9)
TAKEOFF (7) (10)	1200	44.84	850	104	1700	90 to 135	15 to 110
MAX. CLIMB (7)	1200	44.84	825	104	1700	90 to 135	15 to 105
CRUISE (7)	1100	40.63	820	104	1700	90 to 135	15 to 105
MIN. IDLE (8)			750	64.5		60 MIN	-40 to 110
STARTING (6)			1000			175 MAX	-40 MIN
TRANSIENT (10)		61.00	900	104.3	1870	40 to 175	0 to 110
MAX. REVERSE (7) (11)	900	34.26	820		1650	90 to 135	15 to 105

1 Engine inlet condition limits for the operation of the engine are:

- Altitude range: Sea level to 30,000 ft
- Temperature: 57.2 °C (135 °F) at the engine inlet connection.

2 The torque limit is in the propeller operation range of 1000 to 1700 RPM. At less than 1000 RPM the torque limit is 23.92 psi.

3 Maximum recommended torque at 1700 rpm is 44.34 psi. Torque limit of 44.84 psi is provided to allow operation at reduced NP speed at quoted power setting.

4 Usual oil pressure is between 90 and 135 psi at Ng speeds of more than 72%. If engine torque is less than 35.87 psi the minimum oil pressure is 85 psi with an oil temperature of between 60 and 70 °C.

5 Oil pressures of less than 90 psi are not recommended. A low oil pressure of 60 psi is permitted at torques of less than 23.92 psi. Oil pressures less than 60 psi are not safe and it will be necessary to stop the engine.

6 The time limit for maximum start engine Inter Turbine Temperature (ITT) is 5 seconds.

7 Engine oil temperature must be 15 °C or above prior to setting takeoff power on ground.

Engine oil temperature must be 10 °C or above when operating with anti-icing additives.

8 For the Np range of 900 RPM or more.

9 Takeoff power rating is limited to 5 minutes duration. The limit for oil temperatures between 105 and 110 °C is 10 minutes for all operations.

10 The time limit for transient torque, ITT, Np and oil pressure is 20 seconds.

11 The usual maximum ground reverse limit is an Np of 1615 RPM ± 20 RPM.

12 During steady state operation a variation of ± 30 rpm is permitted to account for power governing accuracy.

2-4-5 Fuel

Refer to Table 2-4-2 for approved fuels.

Table 2-4-2: Approved Fuels

APPROVED FUEL	SPECIFICATION
Unrestricted use	
JET A	ASTM-D1655 CAN/CGSB-3.23
JET A-1	ASTM-D1655 IATA JFSCL GOST R 52050 QAV-01 CAN/CGSB-3.23 DEF STAN 91-91
JP-5	MIL-DTL-5624 DEV STAN 91-86

Table 2-4-2: Approved Fuels (continued from previous page)

APPROVED FUEL	SPECIFICATION
JP-8 (F-34)	DEF STAN 91-87 MIL-DTL-83133
F-35 JP-8+100 (F-37)	MIL-DTL-83133
Jet A-50[1]	-
MSN 1720, 2001 - 2040 Post SB 28-013, and MSN 2041 and up	
RT	GOST 10227-86 GSTU 320.00149943.007-97
TS-1	GOST 10227-86 + Russian Decree #118
End of effectivity	
Restricted use[2]	
Diesel grades[3][4]: – No. 2-D S500 – No. 2-D S5000 – No. 1-D S500 – No. 1-D S5000	ASTM-D975
Automotive Diesel Fuel[3][5]: – Type B – Type A	CAN/CGSB-3.517

Note

1 This is a brand blend sold in Alaska. It is Jet A with a lower freezing point.

2 Unless otherwise specified, continued use of these fuels for more than 1000 hours is allowed provided periodic fuel nozzle inspections are found acceptable by P&WC.

3 Not allowed for use when cloud point is lower than +5 °C.

4 Shall not contain a biodiesel component.

5 Unless otherwise specified, intermittent or continued use of these fuels for up to 1000 hours is allowed provided satisfactory fuel nozzle inspection results are achieved at the approved intervals.

2-4-6 Anti-Icing Additive

The PC-12/47E fuel system design (MSN 1720, 2001 and up) is such that anti-icing additive is not required.

If anti-icing additive is to be used, then use anti-icing additive conforming to the specifications given in Table 2-4-3.

Table 2-4-3: Anti-Icing Additive

ADDITIVE	SPECIFICATION	MAXIMUM CONCENTRATION
Diethylene Glycol Monomethyl Ether (DieGME)	ATSM D4171 Type II MIL-DTL-85470	0.15% by volume
Liquid I	GOST 8313	0.30% by volume
Liquid I-M 50/50 blend of Liquid I with Methyl Alcohol	TU-6-10-1458	0.30% by volume

Additive concentration must be below the maximum as indicated in the table above. Additive concentration must be within additive supplier recommendations.

CAUTION

The correct mix of anti-icing addictive with the fuel is important. Concentrations of more than the maximum (see Table 2-4-3) will cause damage to the protective primer and sealants of the fuel tanks. Damage will occur in the fuel system and engine components.

Refer to Section 8, Handling, Servicing, and Maintenance, Fuel Anti-Ice Additive for blending instructions.

2-4-7 Propeller

Propeller Manufacturer	Hartzell
Propeller Model Number	HC-E5A-31A/NC10245B
Number of Propellers	1
Number of Propeller Blades	5
Propeller Diameter	
Minimum	104 in (2.642 m)
Maximum	105 in (2.667 m)
Propeller Operating Limits (Np)	
Maximum Normal Operation	1700 rpm ±30 rpm
Maximum transient (20 sec)	1870 rpm
Maximum reverse	1650 rpm

Stabilized operation on the ground between 350 and 900 rpm is not permitted.

Blade Angles at Station 42:

- Fine Pitch	14.7° -±0.2°
- Maximum Reverse Pitch	-17.5° ± 0.5°
- Feather	80.0° ± 0.5°
- Minimum pitch in flight	6°

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2-4-8 Starter

The engine starting cycle shall be limited to the following intervals:

- Sequence, 60 seconds OFF
- Sequence, 60 seconds OFF
- Sequence, 30 minutes OFF.

Note
A dry motoring cycle is to be counted as a sequence. In case of start abort and automatic dry motoring commanded by EPECS, wait for an additional 10 minutes before a new start is attempted.

2-4-9 Generator

Maximum generator load limits are given in Table 2-4-4.

Table 2-4-4: Maximum Generator Load Limit

GENERATOR	MAX CONTINUOUS LOAD	MAX LOAD FOR 2 MINUTES *
Generator 1	300 AMP	450 AMP
Starter/Generator 2	300 AMP	450 AMP
**Maximum load permitted for a 2 minute period per each one hour of operation.*		

2-4-10 Power Control Lever Operation

Power Control Lever operation aft of the idle detent is prohibited during flight. Such operation may lead to loss of airplane control and total power loss.

2-4-11 Chip Detector

Takeoff is not approved with ENGINE CHIP caution annunciator illuminated.

2-4-12 Feather Inhibit (optional)

After nine consecutive engine shutdowns using the propeller feather inhibit function, the next engine shutdown must be a normal shutdown.

2-5 Power Plant Window Markings

Table 2-5-1: Power Plant Window Markings

	RED MARK Min. Limit	AMBER MARK Caution	GREEN ARC Norm Ops.	AMBER ARC Caution	RED MARK Max. Limit Indication
Torque (psi)	N/A	N/A	0 to 40.63	40.63	44.84
ITT (°C)	N/A	N/A	400 to 820	820	850
Engine Speed Ng (%)	N/A	60	60 to 103.5	104	104.3
Oil Temperature (°C)	N/A	15	15 to 105	105	110
Oil Pressure (psi)	60	90	90 to 135	N/A	135

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2-6 Miscellaneous Instrument Markings

Table 2-6-1: Miscellaneous Instrument Markings

Instrument	RED RADIAL Min. Limit	YELLOW ARC Caution	GREEN ARC Norm Ops.	YELLOW ARC Caution	RED RAD/DIA Max. Limit
Oxygen Pressure (psi)	N/A	N/A	N/A	N/A	1850 to 2000

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2-7 Weight Limits

Maximum Ramp Weight	10,495 lb (4760 kg)
Maximum Takeoff Weight	10,450 lb (4740 kg)
Maximum Landing Weight	9921 lb (4500 kg)
Maximum Zero Fuel Weight	9039 lb (4100 kg)
Maximum Baggage Weight	400 lb (180 kg)
Maximum Floor Loading:	
- On Seat Rails	205 lb/ft^2 (1000 kg/m^2)
- On Cabin Floor	125 lb/ft^2 (600 kg/m^2)

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2-8 Center of Gravity Limits

Table 2-8-1: Center of Gravity Limits

Weight Pounds (kilograms)	Forward Limit A.O.D.: in (m)	Aft Limit A.O.D.: in (m)
10,450 (4740)	232.20 (5.898)	240.43 (6.107)
9921 (4500)	232.20 (5.898)	240.94 (6.120)
8158 (3700)	224.13 (5.693)	-
7938 (3600)	-	242.99 (6.172)
6615 (3000)	-	242.99 (6.172)
5733 (2600)	220.75 (5.607)	225.47 (5.727)

Note

Straight line variation between points given.
The datum is 118 in (3.0 m) forward of firewall.
It is the responsibility of the pilot to ensure that airplane is loaded properly.
See Section 6, Weight and Balance, Weight and Balance Determination for Flight for proper loading instructions.

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2-9 Maneuver Limits

This airplane is certificated in the Normal Category. The normal category is applicable to aircraft intended for non-aerobatic operations. These include any maneuvers incidental to normal flying, stalls (except whip stalls), lazy eights, chandelles, and turns in which the bank angle does not exceed 60°.

Aerobatic maneuvers, including spins, are not approved.

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2-10 Flight Load Factor Limits

Flight load limits with flaps up	+3.3 g	-1.32 g
Flight load limits with flaps down	+2.0 g	-0.0 g

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2-11 Flight Crew Limits

Minimum required flight crew is one pilot in the left hand seat.

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2-12 Kinds of Operation

The Pilatus PC-12 is approved for the following types of operation when the required equipment is installed and operational:

1. VFR Day.
2. VFR Night.
3. IFR Day incl. CAT 1 approaches, single pilot.
4. IFR Night incl. CAT 1 approaches, single pilot.
5. Flight into known icing conditions.

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2-13 Pneumatic Deicing Boot System

The pneumatic de-ice boot system is required to be installed for all flights.

Preflight function test required before takeoff and flight into known icing conditions.

The system is required to function properly for flight into known icing conditions.

Operation of the pneumatic de-ice boot system in ambient temperatures below -40 °C and above +40 °C may cause permanent damage to the boots.

The wing and tail leading edge pneumatic de-icing boot system must be activated at the first sign of ice formation anywhere on the aircraft.

The wing and tail leading edge pneumatic de-icing boot system may be deactivated only after leaving icing conditions and after the aircraft is determined to be clear of ice.

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2-14 Icing Limitations

2-14-1 Limitations

Flight in icing conditions is only approved with all ice protection systems, generator 1 and generator 2 serviceable.

Flight in icing conditions is prohibited when the Propeller De-ice caution is active.

During flight in icing conditions, if there is a failure of any of the aircraft ice protection systems exit icing conditions. Immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions.

During flight in icing conditions or flight with any visible ice accretion on the airframe, the following flap maximum extension limits apply:

With operational airframe pneumatic de-ice boots	15° FLAP
After failure of the airframe pneumatic de-ice boots	0° FLAP

In the event of a balked landing go-around with residual ice on the airframe, the flaps should not be retracted from the 15° position.

Flight in freezing rain, freezing fog, freezing drizzle and mixed conditions causing ice accretion beyond the protected areas of the pneumatic boots is not approved.

The aircraft must be clear of all deposits of snow, ice and frost adhering to the lifting and control surfaces immediately prior to takeoff.

In the event of a balked landing (go around) with residual ice on the airframe, the landing gear and flaps may not fully retract after selection.

The left wing inspection light must be operative prior to flight into forecast icing conditions at night.

2-14-2 Icing Conditions

Icing conditions can exist when:

- The Outside Air Temperature (OAT) on the ground and for takeoff, or Static Air Temperature (SAT) in flight, is 10 °C or colder, and visible moisture in any form is present (such as clouds, fog or mist with visibility of one mile or less, rain snow, sleet and ice crystals)
- The OAT on the ground and for takeoff is 10 °C or colder when operating on ramps, taxiways or runways, where surface snow, ice, standing water, or slush may be ingested by the engine, or freeze on the engine, or the engine nacelle
- There are visible signs of ice accretion on the aircraft.

2-14-3 Severe Icing Conditions

Severe icing may result from environmental conditions outside of those for which the airplane is certificated. Flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled 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 airplane.

During flight, severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues. If one or more of these visual cues exists, immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions:

- Unusually extensive ice accumulation on the airframe and windshield areas not normally observed to collect ice
- Acumulation of ice beyond the active portions of the wing pneumatic boots.

Care must be taken when using the autopilot that tactile cues, such as increased aileron forces, are not masked by the autopilot function. Periodically disengage the autopilot to check for abnormal forces.

2-15 Kinds of Operation Equipment List

This airplane is approved for operations under day and night VFR, day and night IFR and flight into known icing conditions when the required equipment is installed and operating properly. The following systems and equipment list does not include specific flight and radio/navigation equipment required by any particular country's operating regulations. The pilot in command is responsible for determining the airworthiness of the aircraft and assuring compliance with current operating regulations for each intended flight.

The zeros (0) used in the list below mean that the system and/or equipment was not required for type certification for that kind of operation. When (AR) appears for the number required it indicates As Required.

Deviations from this KOEL may be approved for the operation of a specific aircraft if a proper MEL (Minimum Equipment List) has been authorized by the appropriate regulatory agency.

Table 2-15-1: Kinds of Operation Equipment List

SYSTEM / EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING	RVSM
PRIMUS APEX:						
Pilot PFD	1	1	1	1	1	1
MFD	1	1	1	1	1	1
MAU (Channel A & B)	1	1	1	1	1	1
PFD Controller	2	2	2	2	2	2
Touch Screen Controller / MF Controller	0	0	1	1	1	1
Audio Marker Panel	1	1	1	1	1	1
ADAHRS (Channel A & B)	1	1	1	1	1	1
Magnetometer	0	0	1	1	1	1
MMDR (COM/NAV)	0	1	1	1	1	1
Mode S Transponder	0	0	1	1	1	1
GPS	0	0	1	1	1	1
DME	0	0	1	1	1	1
Miscellaneous:						
Electronic Standby Instrument (ESIS)	1	1	1	1	1	1
Engine:						
No.1 Generator	1	1	1	1	1	1
No. 2 Generator	1	1	1	1	1	1
Inertial Separator	1	1	1	1	1	1
Electric Wing Tank Fuel Boost Pump	2	2	2	2	2	2
Firewall Fuel Shutoff Valve	1	1	1	1	1	1
Fuel Ejector Pumps	1	1	1	1	1	1
Fuel Venting System	1	1	1	1	1	1
Ignition System	1	1	1	1	1	1

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Table 2-15-1: Kinds of Operation Equipment List (continued from previous page)

SYSTEM / EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING	RVSM
Fire Detect System	1	1	1	1	1	1
Engine and Propeller Electronic Control System	1	1	1	1	1	1
Electrical:						
No. 1 Battery	1	1	1	1	1	1
No. 2 Battery	1	1	1	1	1	1
Stall Warning/Stick Pusher System	1	1	1	1	1	1
AOA Probes	2	2	2	2	2	2
CAS	1	1	1	1	1	1
Primary Pitch Trim System	1	1	1	1	1	1
Alternate Stab Trim System	1	1	1	1	1	1
Aileron Trim System	1	1	1	1	1	1
Rudder Trim System	1	1	1	1	1	1
Trim Interrupt System	1	1	1	1	1	1
Windshield Heat	2*	2*	2*	2*	2*	2*
Navigation Lights	0	4	4	4	4	4
Strobe Lights	0	2	2	2	2	2
Landing Lights	0	2	2	2	2	2
Taxi Light	0	1	1	1	1	1
Instrument and Panel Lighting	0	AR	AR	AR	AR	AR
Audio System	1	1	1	1	1	1
Cockpit Speaker	1	1	1	1	1	1
Cabin Speaker	1	1	1	1	1	1
De-ice Boot Timer	0	0	0	0	1	0
AOA Heater LH	1	1	1	1	1	1
AOA Heater RH	1	1	1	1	1	1
Probe Current Monitor	1	1	1	1	1	1
Propeller De-ice Timer	0	0	0	0	1	0
Propeller De-ice Brush	0	0	0	0	1	0
Propeller De-ice MOV	0	0	0	0	1	0
Propeller De-ice Boots	0	0	0	0	**	0
Propeller De-ice OAT	0	0	0	0	2	0
Left Wing Inspection	0	0	0	0	1	0
Emergency Power Supply	0	1	1	1	1	0
Mechanical Systems:						
Landing Gear Actuating System	1	1	1	1	1	1
Emergency Gear Extension System	1	1	1	1	1	1
Flap Control	1	1	1	1	1	1

Table 2-15-1: Kinds of Operation Equipment List (continued from previous page)

SYSTEM / EQUIPMENT	VFR DAY	VFR NIGHT	IFR DAY	IFR NIGHT	ICING	RVSM
Seat Restraints (each occupant)	AR	AR	AR	AR	AR	AR
Firewall ACS Shutoff Valve	1	1	1	1	1	1
Emergency Ram Air Scoop	1	1	1	1	1	1
Negative Pressure Relief Valve	2	2	2	2	2	2
Oxygen System	1	1	1	1	1	1
De-ice Boot PRV	1	1	1	1	1	1
De-ice Boot EFCVs	1	1	1	1	5	1
De-ice Boot Pressure Switches	0	0	0	0	5	0
De-ice Boot, Inner Wing LH	1	1	1	1	1	1
De-ice Boot, Outer Wing LH	1	1	1	1	1	1
De-ice Boot, Inner Wing RH	1	1	1	1	1	1
De-ice Boot, Outer Wing RH	1	1	1	1	1	1
De-ice Boot, Tail LH	1	1	1	1	1	1
De-ice Boot, Tail RH	1	1	1	1	1	1
Fuel Control & Monitoring System	1	1	1	1	1	1
For Pressurized Flight:						
ACS	1	1	1	1	1	1
Cabin Pressure Control Unit	1	1	1	1	1	1
Outflow Valve	1	1	1	1	1	1
Safety valve	1	1	1	1	1	1

* Refer to Section 2, Limitations, Systems and Equipment Limits for the actual limitation.

** Flight into known icing conditions is prohibited if the Propeller De-ice Caution is active.

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2-16 Fuel Limitations

Total Fuel Capacity	406.8 US gal, 2,736.5 lb (1,540 liters, 1,241.3 kg)
Total Usable Fuel	402 US gal, 2,703.6 lb (1,521.5 liters, 1,226.4 kg)
Total Unusable Fuel	4.8 US gal, 32.9 lb (18.5 liters, 14.9 kg)
Maximum Fuel Imbalance	26.4 US gal, 178 lb (100 liters, 80.6 kg) (Maximum 3 segments on indicator)

Note
Usable fuel can be safely used during all Normal Category airplane maneuvers.

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2-17 Maximum Operating Altitude Limits

Maximum Operating Altitude	30,000 ft (9144 m)

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2-18 Outside Air Temperature Limits

Minimum Outside Air Temperature	-55 °C (-67 °F)
Maximum Outside Air Temperature	+50 °C (122 °F)

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2-19 Cabin Pressurization Limits

Maximum cabin pressure differential is 5.75 psi (400 mbar).
Pressurized landing is approved up to 0.7 psid.

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2-20 Maximum Passenger Seating Limits

Maximum number of occupants is 9 passengers plus pilot(s).

During single pilot operation, the pilot occupies the left hand cockpit seat and an additional passenger may occupy the right hand cockpit seat.

For aircraft with the optional No Cabin Interior configuration installed: No persons are allowed in the cabin during operation.

Refer to Section 6, Weight and Balance, Interior Configurations, for seat locations.

The PC-12 is certified with two basic cabin interior configurations, a Corporate Commuter and an Executive interior. Variations to the two basic interior configurations that have been approved together with general limitations are given below:

- Corporate Commuter Interior Code STD-9S nine standard seats
- Executive Interior Code EX-6S-2 six executive seats
- Executive Interior Code EX-8S eight executive seats
- Executive Interior Code EX-6S-STD-2S six executive seats and two standard seats
- Executive Interior Code EX-4S-STD-4S four executive seats and four standard seats
- For layouts EX-8S, EX-6S-STD-2S and EX-4S-STD-4S: Leave seats 5, 6, 7 and 8 vacant during takeoff and landing unless seat in front is occupied.

Pilatus must be contacted to determine the modification work required to the aircraft, before any change to an interior configuration is made.

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2-21 Systems and Equipment Limits

2-21-1 Stall Warning / Stick Pusher System

Preflight function test required before takeoff.

System is required to function properly in normal mode for all flights and in ice mode for flight into known icing conditions.

2-21-2 Brakes

To allow adequate cooling of the wheels and brakes the aircraft must remain on the ground for at least 45 min following the two events:

- Rejected takeoff with brake on speed greater than V_R -20 kts and heavy brake usage
- 0° flap full stop landing and heavy brake usage.

2-21-3 Trim Systems

Stabilizer normal and alternate, and rudder trim systems must function properly for all flights.

2-21-4 Heated Windshield

Left Hand and Right Hand Heated Windshields must function properly for all flights. Exception, for IFR flights conducted into no known or forecast icing conditions at least one heating zone of the windshield on the side of the pilot in command must function properly.

2-21-5 Fire Detection System

Preflight Function Test is required for takeoff.

System must function properly for all flights.

2-21-6 Engine Ice Protection

Preflight Function Test is required for takeoff.

2-21-7 Oxygen System

A minimum oxygen supply of 10 minutes duration for each occupant is required for dispatch for pressurized flight above FL250.

Note
Some National Operating Requirements may require that a larger quantity of oxygen be carried on the aircraft.

The oxygen system shutoff valve handle in the cockpit must be selected to ON prior to engine start and throughout the duration of flight.

The oxygen masks for the crew must be connected for all flights.

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For aircraft with the Corporate Commuter side wall paneling, oxygen masks must be connected and properly stowed for each passenger prior to takeoff when the aircraft is to be operated above 10,000 feet.

Note
In the executive interior configurations the oxygen masks are permanently connected.

2-21-8 Probe Heat

Preflight function test required before takeoff.

The system is required to function properly for IFR flight and flight into known icing condition.

2-21-9 Flap System Cycle Limits

A flap cycle is defined as movement from 0° to 15° to 0° and from 0° to 15° to 40° to 0°. Maximum number of cycles per hour:

Up to 25 °C OAT	10
25 °C to 50 °C OAT	8

2-21-10 Primus Apex

The Pilots Guide for the Advanced Cockpit Environment (ACE™) (powered by Honeywell) for the Pilatus PC-12/47E must always be carried on board the aircraft.

2-21-11 Primus Apex - Automatic Flight Control System

During autopilot operation, a pilot must be seated in a pilot position with seat belt fastened.

The Autopilot (AP) and Yaw Damper (YD) must be OFF during takeoff and landing.

The Autothrottle (AT) must be OFF during landing.

Minimum engagement height after takeoff is 400 ft Above Ground Level (AGL).

Do not engage autopilot while the Tactile Feedback (TF) system is active.

With the exception of the approaches defined below, the autopilot must be disengaged below 1000 ft AGL.

For non-precision and visual approaches (at airspeeds <150 KIAS and VS <1500 ft/min) the autopilot must be disengaged below 400 ft AGL.

For instrument approach procedures with vertical guidance (APV) and Instrument Landing System (ILS), the autopilot must be disengaged below 200 ft AGL.

The system is approved for Category 1 operation (Approach mode selected) and autopilot coupled go-arounds initiated at decision altitude or minimum descent altitude.

Maximum approved glideslope angle for all coupled approaches is 4°.

During normal operation:

- Do not override the autopilot and Yaw Damper in any axis
- Hold the throttle at the required position for at least 3 seconds if you intend to override the engaged AT system and confirm the AT disconnect by pressing the AT Quick-Disconnect button on the PCL
- ASEL is not overspeed protected. Avoid AFCS altitude capturing close to V_{MO}/M_{MO}

The autopilot servos may be temporarily disengaged without disengaging the autopilot to allow manual flight path control. The TCS switch on the control wheel must be pushed and held for the desired duration.

CAUTION

In accordance with FAA recommendation (AC 00- 24C), the use of "PITCH ATTITUDE HOLD" mode is recommended during operation in severe turbulence.

2-21-12 Primus Apex - Flight Management System

From an airworthiness perspective, the PC-12/47E with APEX-FMS is certified for:

Use of GNSS	AMC 20-5 Guidance Material on Airworthiness Approval and Operational Criteria for the use of the NAVSTAR Global Positioning System (GPS). AC 90-100A U.S. Terminal and En Route Area Navigation (RNAV) Operations.
B-RNAV	AMC 20-4 Guidance Material on Airworthiness Approval and Operational Criteria for the use of navigation Systems in European Airspace Designated for basic RNAV Operations. AC 90-96A Approval of U.S. Operators and Aircraft to operate under Instrument Flight Rules (IFR) in European Airspace designated for Basic Area Navigation (B-RNAV) and Precision Area Navigation (P-RNAV). **Note** B-RNAV is also termed ICAO RNAV 5.
P-RNAV	JAA TGL 10 Rev 1 Airworthiness and Operational Approval for Precision RNAV Operations in Designated European Airspace. AC 90-100A U.S. Terminal and En-route Area Navigation (RNAV) Operation. AC 90-96A Approval of U.S. Operators and Aircraft to operate under IFR in European Airspace designated for Basic Area Navigation (B-RNAV) and Precision Area Navigation (P-RNAV). **Note** Compliance with both P-NAV (TGL 10) and U.S. RNAV (AC 90-100A) assures compliance with ICAO RNAV 1 and RNAV 2.

BARO-VNAV	AMC 20-27 Airworthiness Approval and Operational Criteria for RNP Approach (RNP APCH) Operations including APV BARO-VNAV Operations. AC 90-105 Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System. AC 20-129 Airworthiness Approval of Vertical Navigation (VNAV) Systems for the use in the U.S. National Airspace System (NAS) and Alaska.
RNP 1	AC 90-105 Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System.
RNP APCH	AMC 20-27 Airworthiness Approval and Operational Criteria for RNP Approach (RNP APCH) Operations including APV BARO-VNAV Operations. AC 90-105 Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System.
MNPS	AC20-138A. The APEX FMS and KGS200 GNSSU as installed has been found to comply with the requirements for GPS oceanic and remote navigation (AC20-138A, Appendix 1), when used in conjunction with the onboard GPS RAIM and FDE. Full redundancy for the GPS navigation system is only provided if second Flight Management System (FMS), second GPS and Cursor Control Device (CCD) are installed. This does not constitute an operational approval.
RNP 4 & RNP 10	AC20-138D. The APEX FMS and KGS200 GNSSU complies with the requirements for GPS oceanic and remote navigation (AC20-138D), when used in conjunction with the onboard GPS RAIM and FDE. Full redundancy for the GPS navigation system is only provided if second FMS, second GPS and CCD are installed. This does not constitute an operational approval.

Note

Installation of relevant equipment and aircraft certification does not guarantee operational approval. It is the responsibility of the operator to apply for operational approval at the local authorities.

The PC-12/47E with APEX-FMS has satisfied only the airworthiness requirements, this does not constitute an operational approval.

The FMS data base must incorporate the current update cycle for IFR operation.

FMS instrument approaches must be accomplished in accordance with approved instrument approach procedures that are retrieved from the FMS data base.

1. Instrument approaches must be conducted in the FMS approach mode and GPS integrity monitoring must be available at the Final Approach Fix.
2. APP (approach active) mode indication must be displayed on the Primary Flight Display (PFD) at the Final Approach Fix (FAF).
3. Accomplishment of ILS, LOC, LOC-BC, LDA, SDF and MLS approaches using the FMS is prohibited.
4. RNAV approaches are prohibited in non-WGS-84 airspace. Radio based (VOR, NDB, etc.) approaches are authorized using GPS updating provided the underlying NAVAID is tuned and monitored to ensure aircraft position accuracy relative to the published procedure. If at any time during the approach the GPS position does not match the radio based data, the radio based data shall be used for navigation (Refer to AC 90-108 for additional information).

The use of the FMS to perform RNAV operations in the designated European airspace is limited as follows:

Given a GPS constellation of 23 satellites or less (22 or less when the FMS incorporates automatic pressure altitude aiding) is projected to be operational, the availability of RAIM must be confirmed for the intended flight (route and time). Dispatch for RNAV must not be made in the event of predicted continuous loss of RAIM of more than 5 minutes for any part of the intended flight. For RAIM prediction the Honeywell Program “Preflight” or equivalent approved software must be used.

Traditional approved navigation equipment (e.g. VOR, DME, ADF) adequate for the route to be flown must be installed and serviceable for use of the FMS in accordance with the operational approval.

Dead reckoning mode of navigation based on AHRS is not available in the high latitude regions (approximately north of 82° north latitude and south of 82° south latitude) since the ADAHRS magnetometers do not provide accurate information near the poles.

When using the VNAV system, the altimeter must be used as the primary altitude reference for all operations.

When using the VNAV path deviation indicator during approach the LNAV/VNAV minimums apply as published on the approach charts. Below the minimum the crew must fly the aircraft based on visual references. Due to the large tolerances of the VNAV system the deviation indicator must not be relied on below the minimum.

If flying on LNAV approach using the vertical guidance provided by the FMS, the crew must at no point allow the aircraft to descend below the published LNAV MDA, unless required visibility of the runway is provided.

Barometric VNAV guidance during approach including the approach transition, final approach segment, and the missed approach procedure can be temperature compensated and minimum IFR altitudes will provide terrain and obstacle clearance for temperatures below ISA. Temperature can be compensated by the pilot by: entering the destination airport Outside Air Temperature (OAT) into the Flight Management Window (FMW) Tab for temperature compensation, calculate and crosscheck the corrected altitudes on the Waypoints lists before activating the changes.

2-21-13 RVSM

This aircraft has been evaluated in accordance with JAA Administrative and Guidance Material, Section One, General Part 3, Temporary Guidance Leaflet No.6, Revision 1 and FAA document No. 91-RVSM, change 2 and is qualified for RVSM operations as a group aircraft.

Note
Airworthiness Approval alone does not authorize flight into airspace for which an RVSM Operational Approval is required by an ICAO regional navigation agreement. Operational Approval must be obtained in accordance with applicable operating rules.

The following equipment must be operational to enter RVSM airspace:

- Both ADC channels of ADAHRS KSG 7200 (channel 1 & 2)
- One (1) flight controller KMC 9200 with altitude preselector
- One (1) Automatic Flight Control System (AFCS) with altitude hold
- One (1) altitude reporting transponder KXP 2290.

The ESIS does not meet RVSM performance requirements and shall only be used for emergency procedures.

The RVSM option in the PRIMUS APEX option file has to be activated. Contact Pilatus customer support for further proceeding.

2-21-14 Primus Apex - TCAS

2-21-14.1 TCAS I

The flight crew must not use a TA on the PFD traffic display to initiate evasive maneuvering. ATC procedures and visual acquisition of the intruder prior to initiation of evasive maneuvers must continue to be the primary means of ensuring aircraft separation.

2-21-14.2 TCAS II (optional)

When an RA occurs, the pilot flying shall respond immediately to RA displays and aural alerts, manoeuvring as indicated, unless doing so would jeopardize the safe operation of the aircraft.

Note
Visually acquired traffic may not be the same traffic causing an RA. The visual perception of an encounter may be misleading, particularly at night.

2-21-15 Primus Apex - Transponder

The KXP 2290A ATC Transponder System with ADS-B Out (1090 MHz Extended Squitter ADS-B Out) supports the 1090ES equipment operating on the radio frequency of 1090MHz. The transponder system complies with the criteria of ICAO Doc 7030/4 Regional Supplementary Procedures for operations where enhanced surveillance is required.

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

- FAA TSO-C166b
- FAA AC 20-165A
- EASA ETSO-C166b
- CS-ACNS.ADS (1090 MHz Extended Squitter ADS-B Out)
- EASA AMC 20-24
- CASA AC 21-45(1).

The transponder FL ID should never be cleared by the pilot without entering a legal FL ID or recycling the power to the XPDR (if a Blank ID is desired). The XPDR reads the FL ID at power up and if the FL ID is invalid it will default to the TAIL No.

Note
It is the operator's responsibility to ensure that the aircraft configuration meets the local airworthiness requirements to obtain operational approval. Be aware that flight in ADS-B equipped airspace is only allowed with ADS-B Out functionality operational.

2-21-16 Primus Apex - ADAHRS

If CAS message "HSI IS MAG TRK" or "HSI IS TRU TRK" is displayed, then the system accuracy does not allow VOR, VOR/DME and NDB non-precision approaches. The flight crew must use (GPS) VOR/DME or (GPS) NDB overlay approaches, LNAV or LNAV/VNAV approaches, RNAV (GPS) approaches, RNAV (RNP) approaches or LPV and ILS precision approaches instead. CAS message "HSI IS MAG TRK" or "HSI IS TRU TRK" is displayed if operating north of approximately of 82° north latitude and south of 82° south latitude as well as in the following two regions:

- North of approximately 73° north latitude between longitude 80° west and 130° west (Northern Canadian Domestic Airspace).
- South of approximately 60° south latitude between longitude 120° east and 160° east (Region south of Australia and New Zealand).

2-21-17 Primus Apex - Use of SmartView

SmartView (SV) does not provide the accuracy or reliability upon which the flight crew can solely base decisions and/or plan maneuvers to avoid terrain or obstacles.

The use of SV alone for navigation is prohibited.

The use of SV alone for obstacle and/or terrain avoidance is prohibited.

The use of SV alone for aircraft control without reference to the APEX primary flight indications or Electronic Standby Instrument System (ESIS) is prohibited.

2-21-18 Yaw Damper

Above FL155 (15,500 ft), when the yaw damper is not operating, the aircraft must be flown only in balanced flight (slip-skid indicator +/- 1 trapezoid).

2-21-19 Primus Apex - Electrionic Checklist

The Electronic Checklist functionality allows implementation of a user defined Electronic Checklist database. With respect to airworthiness approval the AFM remains the primary reference for checklists.

Implementation of an Electronic Checklist Database is the responsibility of the aircraft owner/ operator, use and operational approval is dependent on the rules of operation.

Implementation of Electronic Checklist functionality does not constitute operational approval.

2-21-20 Primus Apex - Electrionic Charts

The APEX Electronic Charts provide supplemental situational awareness only and do not allow “blind taxi” procedures or flight navigation by use of these charts. At any time the pilot shall remain responsible for taxiing by external visual references and for flying by airborne navigation by the use of primary navigation instruments.

The position accuracy of the aircraft symbol on the charts can decrease in the case of insufficient GPS signal reception or GPS sensor failure. The aircraft symbol is not in-scale with the APEX Electronic Charts.

The APEX Electronic Charts do not replace approved published paper or approved electronic systems for aeronautical charts, which must remain available as a backup reference for chart data.

Note
It is the responsibility of the operator to apply for specific operational approval at the local authority for the use of external electronic charts (e.g. Electronic Flight Bags Class 1 and Class 2) instead of paper charts. Class 3 EFBs require a Supplemental Type Certificate (STC) or certification design approval as part of the aircraft equipment.

2-21-21 Primus Apex - Video Input

It is the responsibility of the operator to make sure that no interference with the installed avionics systems results from the connection of a camera device to the Video Input Module.

2-21-22 Primus Apex - XM Sat Weather

The XM Weather System does not work in PDC mode (STBY bus). Even though the layers can be selected, no data will be transmitted until the aircraft is powered by the batteries (or external power or the engine) and re-selection of the required XM layers is performed.

2-21-23 Primus Apex - Weather Radar

When the weather radar system is operated while the aircraft is on the ground, direct the nose of the aircraft so that the antenna scan sector is free of large metallic objects, such as hangars or other aircraft for a minimum distance of 15 feet (5 meters), and tilt the antenna fully upwards.

Do not operate the weather radar system during aircraft refueling or during refueling operations within 15 feet (5 meters).

Do not operate the weather radar system when personnel are standing within 15 feet (5 meters) of the 270° forward sector of the aircraft.

2-21-24 Primus Apex - INAV Map

The INAV topographical map shall not be used for navigation. The display of airspaces shall not be used as the sole means of reference.

2-21-25 Primus Apex - Vertical Situation Display

The Vertical Situation Display provides situational awareness only and shall not be used for navigation purposes.

2-21-26 Primus Apex - LPV Approach

A valid and compatible database must be installed and contain current data.

For autopilot coupled LPV/LP approaches the autopilot must be disengaged below 200 ft (61 m) AGL.

If NAV preview is selected, LPV/LP approach will not be available. Use of NAV preview functionality will cause an amber “LPV UNVL” or “LP UNVL” message to be displayed.

Additional limitations for operation within EGNOS coverage area:

- When an alternate airport is required by the applicable operational rules, it must be served by an approach based on other than GPS navigation.

2-21-27 Primus Apex - Terrain Database

Approval of the Honeywell Apex System is based on databases being provided from a database provider who has obtained a Type 2 Letter of Acceptance (LoA) (or an equivalent means of compliance as defined by airworthiness authorities) for the processing of the databases shown below. This approval also requires that the operator / end-user will comply with the requirements of FAA AC 20-153B, paragraph 13, for the databases listed. Databases which satisfy the same data quality requirements as the databases listed may be used as an alternative when these compliance requirements have been satisfied.

- EGPWF Threat Database, part number: DO69002412-xxxx
- EPIC/APEX Terrain Server Database, part number: 996-0146-xxx

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2-22 Other Limitations

2-22-1 All Passenger Seats

For takeoff and landing the seat lap and shoulder belts must be fastened, the lap belt tightened, and the seat headrest positioned to support the head.

2-22-2 Luggage Limitations

The luggage area maximum load is given in Table 2-22-1. The load is dependent on the aircraft interior configuration and the Part No. of the luggage net installed.

Table 2-22-1: Luggage Limitations

Interior Configuration	Maximum load with luggage net 525.25.12.043 installed
STD-9S	265 lb (120 kg)
EX-6S-STD-2S	265 lb (120 kg)
EX-4S-STD-4S	265 lb (120 kg)
EX-6S-2	400 lb (180 kg)
EX-8S	400 lb (180 kg)

A Luggage Net must be installed at frame 34 when luggage is stowed.

The luggage area maximum load is 500 lb (225 kg) with an extendable luggage net installed. The extendable luggage net Part No. 525.25.12.026 and/or any luggage may not extend in front of frame 32. If the extendable luggage net is used, there must be a clear area in front of the net as follows:

- At least 280 mm forward of frame 32, when the net floor attachments are placed at frame 32 (the most forward position of the net)
- At least 340 mm forward of frame 34, when the net floor attachments are placed at frame 34.

2-22-3 Cargo Limitations

Maximum Freight Load 3300 lbs (1500 kg).

Cargo must be arranged to permit free access to the passenger door and the right hand emergency overwing exit. No cargo must be placed on the seats.

All cargo must be secured by approved cargo restraints as described in Section 6, General Loading Recommendations. Tie Down Straps with a breaking strength of at least 1800 lb per strap must be used.

All Cargo/Containers must be located against a retaining bar secured laterally to the seat rails.

Items up to a total weight of 66 lb (30 kg) can be stowed in the cabin area without being strapped down providing a cargo net is installed in front of the items.

Cargo nets may only be installed on the attachments at Frames 24 and 27.

No passengers must be seated rearward of a cargo net.

If an extendable baggage net is used the tie down fittings and the cargo strap fittings must have a minimum space of 5 inches between the fittings.

2-22-4 Structural Limitations

Refer to Chapter 4 of the PC-12/47E Aircraft Maintenance Manual, Pilatus Report Number 02436.

2-22-5 Smoking

Smoking is not permitted in the cabin of aircraft equipped with a standard interior unless ashtrays are installed.

2-22-6 Portable Electronic Devices

The aircraft is Wi-Fi and Bluetooth frequency tolerant and tested according to RTCA/DO-307 - Aircraft design and Certification for Portable Electronic Device (PED) Tolerance.

Front door coupling susceptibility was tested in accordance with DO-307 (including Change 1), Section 4.

Back door coupling susceptibility was tested in accordance with DO-307 (including Change 1), Section 3.

There are no restrictions resulting from DO-307 testing therefore it is in the responsibility of the operator to define during which phases of flight PED usage is allowed.

No test has been performed to check if the aircraft is Global System Mobile (GSM) frequency tolerant.

Note
If electromagnetic interference is suspected, PED use should be discontinued or terminated.

2-23 Placards

On exterior Passenger Door:

ICN-12-C-A150223-A-S4080-00117-A-001-01

Figure 2-23-1: Placards - Exterior (Sheet 1 of 7)

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On exterior Cargo Door:

PRESS HERE TO OPEN
PULL HANDLE AND
PULL DOOR OUT

DO NOT OPEN DOOR WHEN
ENGINE IS RUNNING
UNLESS IN EMERGENCY

PULL TO OPEN

ICN-12-C-A150223-A-S4080-00118-A-001-01

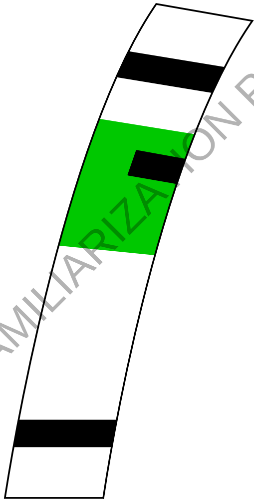
Figure 2-23-1: Placards - Exterior (Sheet 2 of 7)

12-C-A15-10-0223-00A-067A-A

Near Static Ports:

STATIC PRESSURE
KEEP CLEAR

On left side Vertical Tail forward of Horizontal Stabilizer:



On Rudder (each side):

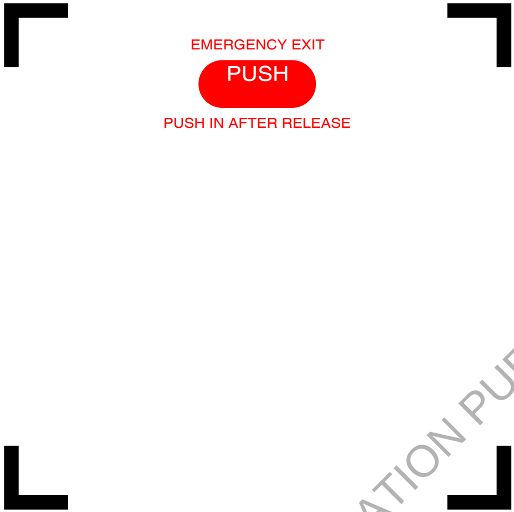
DO NOT PUSH

ICN-12-C-A150223-A-S4080-00119-A-001-01

Figure 2-23-1: Placards - Exterior (Sheet 3 of 7)

12-C-A15-10-0223-00A-067A-A

On exterior Emergency Exit:
(Not to Scale)



Inside left Engine Cowling:

TURBINE OIL

ACCEPTABLE OILS SEE PILOT'S OPERATING HANDBOOK

TOTAL SYSTEM CAPACITY

14,5 QRT 13,6 LTR

ENGINE OIL TYPE USED,

____

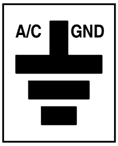
NOTE: The engine oil type used will be added to the placard prior to delivery of the aircraft.

ICN-12-C-A150223-A-S4080-00120-A-001-01

Figure 2-23-1: Placards - Exterior (Sheet 4 of 7)

12-C-A15-10-0223-00A-067A-A

On Nose Landing Gear (each side):



On Nose Landing Gear:

DO NOT TURN BEYOND RED MARKS

Near Fuel Filler:

JET-A-FUEL
TOTAL CAPACITY
770 LTR. 203 US. GAL.

SEE PILOT'S OPERATING HANDBOOK
FOR APPROVED FUELS AND QUANTITY

REFUELING BONDING POINT

Near Fuel Vent:

FUEL VENT

On top surface of each Aileron and three places on top surface of each flap:

DO NOT PUSH

On the main landing gear doors:

TYRE PRESSURE 60 psi (4,1 bar)

On the nose landing gear doors:

TYRE PRESSURE 60 psi (4,1 bar)

ICN-12-C-A150223-A-S4080-00121-A-002-01

Figure 2-23-1: Placards - Exterior (Sheet 5 of 7)

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On each side of Engine Lower Front Cowling:

VERY HOT AREA
DO NOT TOUCH

On Forward Fuselage RH side Access Door:

OXYGEN SERVICE POINT
USE NO LUBRICANTS

Note: When the optional larger oxygen bottle is installed, this placard is installed inside the battery compartment and outside on Rear Fuselage Bottom Access Door.

On Nose Landing Gear Doors:

NOSE LANDING GEAR SHOCK STRUT
N2 CHARGE PRESSURE

1st. STAGE 50 psi (3,5 bar)
2nd. STAGE 834 psi (57,5 bar)

ICN-12-C-A150223-A-S4080-00122-A-001-01

Figure 2-23-1: Placards - Exterior (Sheet 6 of 7)

12-C-A15-10-0223-00A-067A-A

On Main Landing Gear Doors:

MAIN LANDING GEAR SHOCK STRUT
N2 CHARGE PRESSURE

1st. STAGE	**141 psi (9,7 bar)**
2nd. STAGE	**1668 psi (115 bar)**

On Rear Fuselage Bottom Access Door:

BATTERY COMPARTMENT

ELT
INSTALLED INSIDE

On Rear Fuselage Bottom LH side:

28 VOLT DC
EXTERNAL POWER POINT

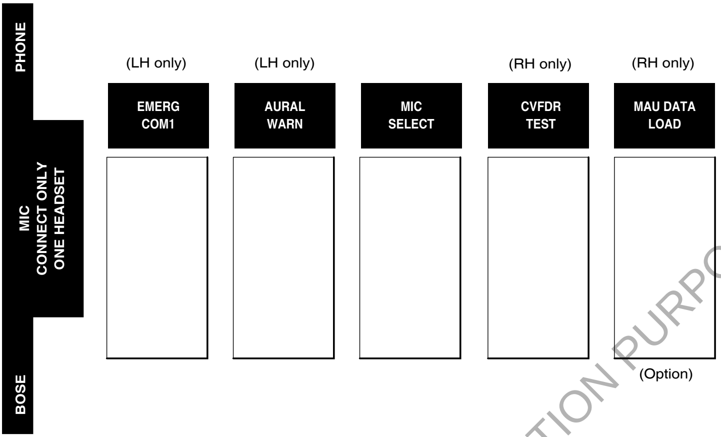
ICN-12-C-A150223-A-S4080-00123-A-001-01

Figure 2-23-1: Placards - Exterior (Sheet 7 of 7)

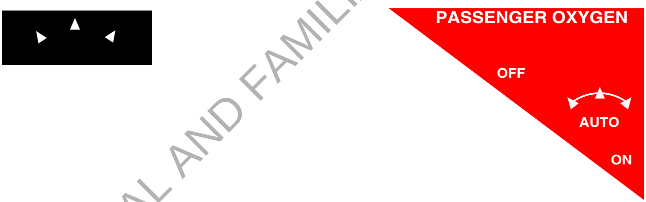
12-C-A15-10-0223-00A-067A-A

PLACARDS - COCKPIT

On Cockpit LH and RH Rear Panels:



On Cockpit LH Side Panels near oxygen system controls:



On Cockpit LH and RH Side Panels:

ICN-12-C-A150223-A-S4080-00124-A-001-01

Figure 2-23-2: Placards - Cockpit (Sheet 1 of 6)

12-C-A15-10-0223-00A-067A-A

On left Cockpit Side Panel and right Cockpit Side Panel
(LH Shown, RH Opposite):

OPERATIONAL LIMITATIONS

THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS AND MANUALS.

NO ACROBATIC MANEUVERS INCLUDING SPINS ARE APPROVED.

THIS AIRPLANE APPROVED FOR VFR, IFR, DAY & NIGHT OPERATION & ICING CONDITIONS

EMERGENCY GEAR EXTENSION
-AIRSPEED 120 KIAS
-ENSURE LANDING GEAR SELECTOR DOWN
IF 3 GREENS NOT ILLUMINATED AFTER 30 SECONDS
-EMERGENCY GEAR EXTENSION SYSTEM (AFT END OF CENTRE PEDESTAL)
-OPEN COVER
-PULL EMERGENCY GEAR EXTENSION LEVER FIRMLY TO HARD STOP
CHECK 3 GREENS ARE OBTAINED. IF 3 GREENS STILL NOT ILLUMINATED
-TO LOCK LH & RH GEAR: CONDUCT LEVEL TURNS LEFT AND RIGHT AT ANGLES OF BANK UP TO 30°. MAINTAIN CONSTANT SPEED
-TO LOCK NOSE GEAR: REDUCE AIRSPEED (POWER IDLE)
-KEEP EMERGENCY GEAR EXTENSION LEVER IN PULLED POSITION

WARNING: DURING FLIGHT IN ICING CONDITIONS OR FLIGHT WITH ANY VISIBLE ICE ACCRETION ON THE AIRFRAME THE FOLLOWING FLAP MAXIMUM EXTENSION LIMITS APPLY:
-WITH OPERATIONAL AIRFRAME PNEUMATIC DE-ICE BOOTS 15° FLAP.
-AFTER FAILURE OF THE AIRFRAME PNEUMATIC DE-ICE BOOTS 0° FLAP.

FIRE EXTINGUISHER LOCATED
BEHIND THE CO-PILOT SEAT

Near DV Window:

DV WINDOW
PRESS BUTTON
AND PULL INWARDS

On the front side of the right cockpit bulkhead:

ICN-12-C-A150223-A-S4080-00125-A-002-01

Figure 2-23-2: Placards - Cockpit (Sheet 2 of 6)

12-C-A15-10-0223-00A-067A-A

On the LH and RH Instrument Panel:

V_O (4740 KG)	166 KIAS
V_O (2600 KG)	123 KIAS
V_{MO}	240 KIAS
M_{MO}	0.49 M
V_{FE} (UP TO 15°)	165 KIAS
V_{FE} (ABOVE 15°)	130 KIAS

RADIO-CALL
. . . . .

Near Landing Gear Selector Handle:

V_{LO}	180 KIAS
V_{LE}	240 KIAS

Near TS/MF Controller:

TOTAL USABLE CAPACITY: 1521 LTR 402 US.GAL (2704 LBS JET-A1)

Near Pressurization Controls:

ENSURE CABIN △P MAX. 0.7PSI
BEFORE LANDING

MAXIMUM CABIN
DIFF. PRESS. = 5.75 PSID

On LH Crosspanel (optional):

COM 3

Near AFCS Control Panel (if AT not installed):

AT NOT INSTALLED

ICN-12-C-A150223-A-S4080-00126-A-001-01

Figure 2-23-2: Placards - Cockpit (Sheet 3 of 6)

On Cockpit LH Instrument Panel:

ELT

ON

Near optional Standby Magnetic Compass (if installed):

STANDBY COMPASS
FOR CORRECT READING SWITCH:
GENERATORS & BATTERIES ON
AVIONICS ON
NAV & INSTRUMENT LIGHTS AS REQUIRED
WINDSHIELD DE-ICE LH & RH OFF
PROBES DE-ICE OFF
ELECTRICAL HEAT/COOL SWITCH INHIBIT
FOOT WARMER OFF (IF INST.)

On Left and Right Control Wheel:

DN
LH ✦ RH
UP

TRIM ENGAGE

A/P DISC

PUSHER INTR

PTT

TCS

INOP

OR

CKLST

When optional electronic checklist installed

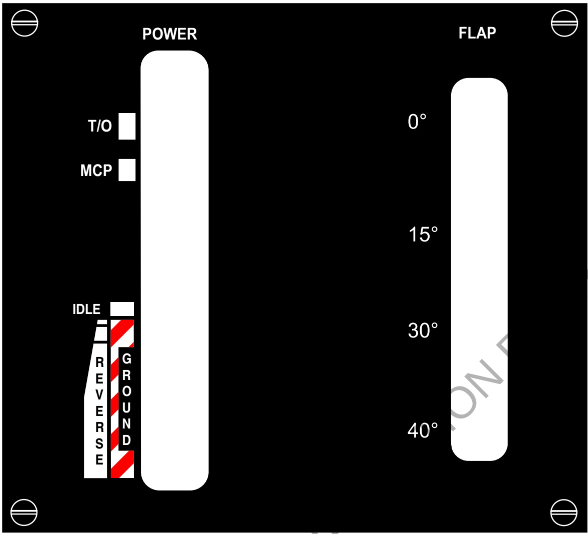
MAP LIGHT

ICN-12-C-A150223-A-S4080-00127-A-001-01

Figure 2-23-2: Placards - Cockpit (Sheet 4 of 6)

12-C-A15-10-0223-00A-067A-A

On Center Console:



STABILIZED PROPELLER OPERATION ON GROUND (NOT FEATHERED) BETWEEN 350 AND 950 rpm IS PROHIBITED

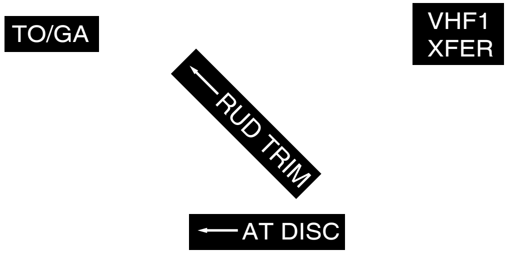
At aft end of Center Console:

CAUTION
PCL OPERATION AFT OF THE IDLE DETENT
IS PROHIBITED WHEN IN FLIGHT

ICN-12-C-A150223-A-S4080-00128-A-001-01

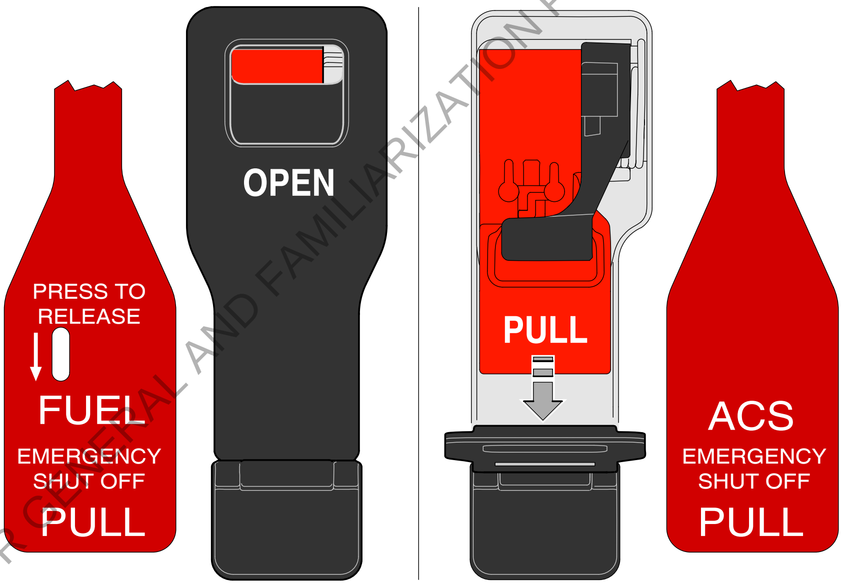
Figure 2-23-2: Placards - Cockpit (Sheet 5 of 6)

On the PCL:



At rear of Center Console:

On Fuel and ACS Firewall Shut off Valve and Emergency Gear Extension Handles:



Behind Crew Seats:

ICN-12-C-A150223-A-S4080-00129-A-001-01

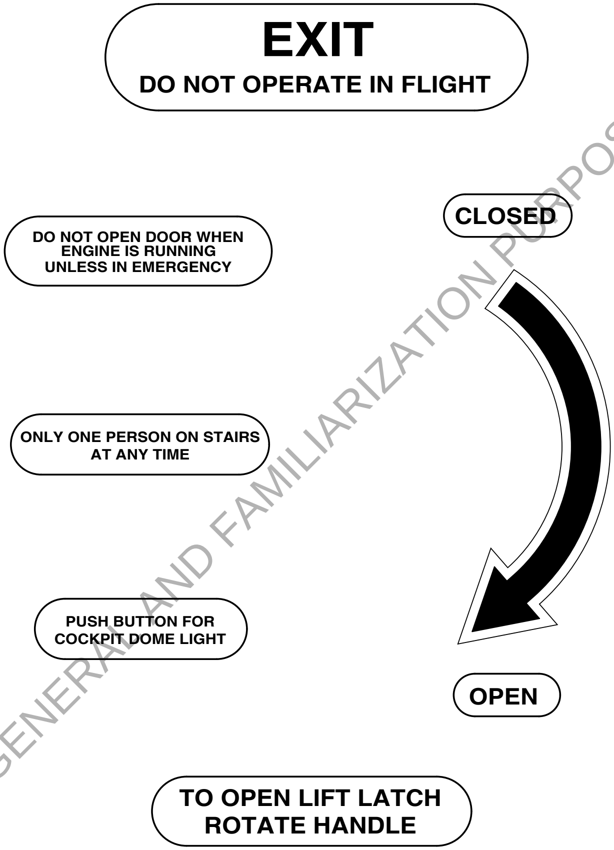
Figure 2-23-2: Placards - Cockpit (Sheet 6 of 6)

12-C-A15-10-0223-00A-067A-A

PLACARDS - CABIN

The following standard placards are installed in all aircraft.

On Interior Passenger Door:



ICN-12-C-A150223-A-S4080-00130-A-001-01

Figure 2-23-3: Placards - Cabin (Sheet 1 of 3)

12-C-A15-10-0223-00A-067A-A

On Interior Emergency Exit:

EXIT

On Interior Emergency Exit Handle:

PULL

On Interior Cargo Door Handle Cover:

DO NOT REMOVE COVER IN FLIGHT

On Interior Cargo Door Handle:

**LIFT LOCKING LEVER AND
PULL HANDLE PUSH DOOR OUT**

On Interior Cargo Door:

**DO NOT OPEN DOOR WHEN
ENGINE IS RUNNING
UNLESS IN EMERGENCY**

On Cabin to Baggage Area Step:

KEEP GRILL CLEAR

ICN-12-C-A150223-A-S4080-00131-A-001-01

Figure 2-23-3: Placards - Cabin (Sheet 2 of 3)

On forward and rear Cargo Door Frame:

MAX FREIGHT LOAD = 1500 kg / 3300 lb	
Max Load on Seat Rails	**Max Load on Floor Panels**
1000 kg/m^2 205 lb/ft^2	**600 kg/m^2 125 lb/ft^2**
CARGO MUST NOT OBSTRUCT ACCESS TO CABIN DOOR AND EMERGENCY EXIT	

On lower Cargo Door Frame:

INSTALL TAIL SUPPORT STAND BEFORE LOADING CARGO

Above Baggage Area:

MAX BAGGAGE LOAD = 120 kg / 265 lb

or

MAX BAGGAGE LOAD = 180 kg / 400 lb

At interior fuselage cargo net attachment points:

FR 24	**FR 27**	**FR 34**

ICN-12-C-A150223-A-S4080-00132-A-001-01

Figure 2-23-3: Placards - Cabin (Sheet 3 of 3)

PLACARDS - 9 SEAT CORPORATE COMMUTER (Interior Code STD-9S).

The cabin placards plus the following additional placards are those required for this interior.

On the rear of the left and right cockpit bulkheads, and on the rear of each seat:

FOR TAKEOFF AND LANDING
- SEAT BACK MUST BE FULLY UPRIGHT
- ADJUST HEADREST TO SUPPORT HEAD
- FASTEN SEAT LAP AND SHOULDER BELT

On the rear of each seat,
except seat No.5:

OXYGEN MASK LOCATED UNDER YOUR SEAT

On the rear of the seat No.5:

OXYGEN MASK LOCATED UNDER SEAT IN FRONT

On the rear of the left cockpit bulkhead:

FIRE EXTINGUISHER LOCATED
ON COCKPIT SIDE RH BULK-
HEAD BEHIND CO-PILOT SEAT

NO SMOKING

Near each Passenger Oxygen Outlet and Cover:

OXYGEN

On the forward Cargo Door Frame:

INTERIOR CODE:
STD-9S
(SEE AFM/POH SECTION 6)

ICN-12-C-A150223-A-S4080-00133-A-001-01

Figure 2-23-4: Placards - 9 Seat corporate commuter (Interior code STD-9S)

12-C-A15-10-0223-00A-067A-A

PLACARDS - 6 SEAT EXECUTIVE (Interior Code EX-6S-2).

The cabin placards plus the following additional placards are those required for this interior.

On the rear of the left bulkhead:

FIRE EXTINGUISHER LOCATED
ON COCKPIT SIDE RH BULK-
HEAD BEHIND CO-PILOT SEAT

On the inside of the lavatory doors:

NO SMOKING
IN LAVATORY

TO CLOSE
PULL HERE

OXYGEN MASK INSIDE

TOILET COMPARTMENT
NOT TO BE OCCUPIED
DURING TAKEOFF/LANDING
AND TURBULENCE

TO CLOSE
PULL HERE

PULL TAPE FOR
OXYGEN MASK

On the inside of the left and right cabinet drawers:

	Upper	Lower
Right cabinet	WEIGHT LIMIT 2,2 kg / 5 lb	WEIGHT LIMIT 3,2 kg / 7 lb
Left cabinet	WEIGHT LIMIT 4,5 kg / 10 lb	WEIGHT LIMIT 11,5 kg / 25 lb

Near each executive seat:

FOR TAKEOFF AND LANDING
- SEAT MUST BE FULLY UPRIGHT,
  FULLY TO THE BACK OF SEAT
  AND FULLY OUTBOARD
- ADJUST HEADREST TO SUPPORT HEAD
- FASTEN SEAT LAP AND SHOULDER BELT
- TABLE MUST BE STOWED

ICN-12-C-A150223-A-S4080-00134-A-002-01

Figure 2-23-5: Placards - 6 Seat executive (Interior code EX-6S-2) (Sheet 1 of 2)

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On each Passenger Oxygen Mask Cover:

OXYGEN MASK INSIDE

On the armrest near each Passenger Oxygen Mask:

PULL TAPE FOR OXYGEN MASK →

or

← **PULL TAPE FOR OXYGEN MASK**

Near the optional coat rail in the baggage compartment:

MAX COAT RAIL 5 kg / 11 lb

On the forward cargo door frame:

INTERIOR CODE:
EX - 6S-2
(SEE AFM/POH SECTION 6)

ICN-12-C-A150223-A-S4080-00135-A-001-01

Figure 2-23-5: Placards - 6 Seat executive (Interior code EX-6S-2) (Sheet 2 of 2)

12-C-A15-10-0223-00A-067A-A

PLACARDS - 8 SEAT EXECUTIVE (Interior Code EX-8S)
- 6 SEAT EXECUTIVE AND 2 SEAT CORPORATE COMMUTER (Interior Code EX-6S-STD-2S)
- 4 SEAT EXECUTIVE AND 4 SEAT CORPORATE COMMUTER (Interior Code EX-4S-STD-4S)

The cabin placards, the 6 seat executive placards and the following replacement/additional placards are required for this interior.

Near seats 5, 6, 7 and 8:

LEAVE THIS SEAT VACANT DURING TAKEOFF AND LANDING UNLESS SEAT IN FRONT IS OCCUPIED

On the forward cargo door frame:

INTERIOR CODE:
EX - 8S
(SEE AFM/POH SECTION 6)

or

INTERIOR CODE:
EX - 6S - STD - 2S
(SEE AFM/POH SECTION 6)

or

INTERIOR CODE:
EX - 4S - STD - 4S
(SEE AFM/POH SECTION 6)

On the armrest near Passenger Oxygen Mask for seats 7 and 8:

PULL TAPE FOR OXYGEN MASK ➡

or

⬅ **PULL TAPE FOR OXYGEN MASK**

ICN-12-C-A150223-A-S4080-00136-A-001-01

Figure 2-23-6: Placards - 8 Seat Executive (Interior Code EX-8S), 6 Seat Executive and 2 Seat Corporate Commuter (Interior Code EX-6S-STD-2S) and 4 Seat Executive and 4 Seat Corporate Commuter (Interior Code EX-4S-STD-4S)

12-C-A15-10-0223-00A-067A-A

PLACARDS - NO CABIN INTERIOR (OPTION)

The following cockpit and cabin placards are required for this interior.

On the overhead panel, covering the "NO SMOKING" and "SEAT BELTS" markings and on the instrument panel, covering the "CAB FLOOD" marking:

INOP

On the left rear side of the ferry flight compartment bulkhead:

LIMITATIONS:
- NO PERSON(S) ALLOWED IN CABIN
- BAGGAGE OR LUGGAGE IN THE CABIN MUST BE TIED DOWN AS DEFINED IN THE AFM/POH

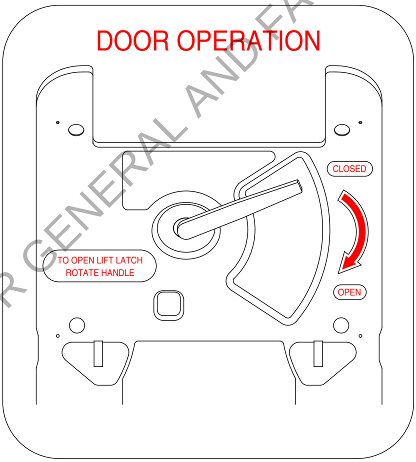
CAUTION:
- EXTREME CAUTION MUST BE APPLIED NOT TO CONTACT THE SIDEWALLS AS NO PROTECTIVE INTERIOR SHELLS ARE INSTALLED

PUSH BUTTON FOR COCKPIT DOME LIGHT

ONLY ONE PERSON ON STAIRS AT ANY TIME

DO NOT OPERATE ANY EXIT IN FLIGHT

FIRE EXTINGUISHER LOCATED ON COCKPIT SIDE RH BULK-HEAD BEHIND CO-PILOT SEAT



NO SMOKING

DO NOT OPEN ANY DOOR WHEN ENGINE IS RUNNING UNLESS IN EMERGENCY

FIRST AID KIT LOCATED ON COCKPIT SIDE L.H. BULKHEAD BEHIND PILOT SEAT

ICN-12-C-A150223-A-S4080-02037-A-001-01

Figure 2-23-7: Placards - No Cabin Interior (Option) (Sheet 1 of 2)

12-C-A15-10-0223-00A-067A-A

On the first aid kit holder cover (left forward side of the ferry flight compartment bulkhead):

On the right forward side of the ferry flight compartment bulkhead:

On the inside of the emergency exit:

PULL

On the cargo door frame:

MAX FREIGHT LOAD = 1500 kg / 3300 lb	
Max Load on Seat Rails	Max Load on Floor Panels
1000 kg / m^2 205 lb / ft^2	600 kg / m^2 125 lb / ft^2
CARGO MUST NOT OBSTRUCT ACCESS TO CABIN DOOR AND EMERGENCY EXIT	

INSTALL TAIL SUPPORT STAND
BEFORE
LOADING CARGO

On the cargo door handle:

LIFT LOCKING LEVER AND
PULL HANDLE PUSH DOOR OUT

On cabin to baggage area step:

KEEP GRILL CLEAR

On the ferry plate left side Frame 34:

MIC

PHONE

On the ferry plate right side Frame 34:

CARGO
DOOR
LIGHT

MAX BAGGAGE LOAD = 180 kg / 400 lb

MAX COAT RAIL LOAD 5 kg / 11 lb

ICN-12-C-A150223-A-S4080-02038-A-001-01

Figure 2-23-7: Placards - No Cabin Interior (Option) (Sheet 2 of 2)

12-C-A15-10-0223-00A-067A-A

SECTION 3

Emergency Procedures (EASA Approved)

Table of Contents

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3-1 General

3-1-1 General

The recommended action to be taken in case of failure or in emergency situations are contained in this section.

Emergency procedures alone cannot protect against all situations. Good airmanship be used in conjunction with the emergency procedures to manage the emergency. The general rule for priorities in normal and abnormal operations always applies: Aviate, navigate, communicate. Fly the aircraft first (power, attitude, speed), then navigate (flight path) and finally communicate.

Some situations require rapid action, leaving little time to consult the emergency procedures. Prior knowledge of these procedures and a good understanding of the aircraft system is a prerequisite for safe aircraft handling.

KNOW YOUR AIRCRAFT AND BE THOROUGHLY FAMILIAR WITH IMPORTANT EMERGENCY PROCEDURES.

Upon detection of an abnormal situation or any indication of malfunction, the drill procedure “PPAA” is highly recommended to initiate a structured working process:

P	Power	Check engine power setting versus actual power
P	Performance	Check speed, flight path and aircraft configuration
A	Analysis	Analyze the situation within the time available using all means of other indications to verify initial cue (e.g. cross reference CAS message with other system parameters or indications, check circuit breaker panel for CAS related CB status)
A	Action	Immediate and subsequent actions guided by airmanship and given checklist procedures

The emergency procedures use the terms “Land as soon as possible” and “Land as soon as practical”. For the purpose of these procedures the meanings are as follows:

- Land as soon as possible – Land without delay at the nearest airport where a safe approach and landing is reasonably assured.
- Land as soon as practical – Landing airport and duration of flight are at the discretion of the pilot. Extended flight beyond the nearest suitable airport is not recommended.

If not detailed otherwise in the procedures, circuit breakers on the Essential Bus which trip in flight, one attempt only is allowed to reset the circuit breaker if the pilot in command determines that the system/equipment is needed for safe completion of that flight. The open circuit breaker can be reset after at least one minute has elapsed since the circuit breaker trip and if there is no remaining smoke or burning smell.

If an emergency procedure requires a circuit breaker to be reset, this means to open (pull out) the circuit breaker, wait for approx. 2 seconds and then close (push in) the circuit breaker. If a circuit breaker is found open, reset means close the circuit breaker.

3-1-2 Crew Alerting System

The Crew Alerting System (CAS) gives:

- **RED Warning** messages which require immediate corrective action by the pilot.
- **AMBER Caution** messages which requires the pilots attention but not an immediate action.
- **CYAN Advisory** messages which indicate a system condition, which requires pilot awareness and may require action.
- **WHITE Status** messages which are only shown on the ground and indicate a maintenance action is required.

Whenever a red or amber message illuminates on the systems Multi Function Display (MFD), the MASTER WARNING or CAUTION lamp will illuminate. A triple chime will sound, a voice callout will be given with some red annunciations in place of the triple chime. A single chime will sound with all amber messages.

CAS warnings and cautions will remain illuminated as long as the initiating condition exists. The MASTER WARNING and CAUTION lamps should be pressed to reset them for further failures once the failure is identified.

3-1-3 Flight Alerting System

Flight Alerting System (FAS) messages are given when necessary on the pilot's PFD to warn of a condition that requires immediate action from the pilot. FAS messages are directly related to the operation of the aircraft. All the FAS messages are accompanied by a voice callout and can only be cancelled by correcting the aircraft condition.

3-1-4 FAS Messages and Actions

Table 3-1-1: FAS Messages and Actions

FAS MESSAGE TEXT	AURAL MESSAGE	REQUIRED ACTION
STALL	Stall	Reduce AOA
GEAR	Gear	Extend Landing Gear
CAB PRESS(on ground only)	Cabin	Check Systems MFD ENVIRONMENT window, if shows $\Delta P \geq 0.072$ psi: CPCS CABIN PRESSURE switch DUMP
NO TAKEOFF	No Takeoff	Check aircraft configuration is correct for Takeoff: – Flaps: Set 15° or 30° – Aileron, Rudder, Stabilizer Trim: Set green range
OVERSPEED	Speed	Reduce airspeed

3-2 Airspeeds for Emergency Operations

3-2-1 Airspeeds for Emergency Operations

All airspeeds shown are with airplane in clean configuration under ISA conditions.

Operating Maneuvering Speed (V_O):

Aircraft Mass	Airspeed
10450 lb (4740 kg)	166 KIAS
9921 lb (4500 kg)	161 KIAS
9480 lb (4300 kg)	158 KIAS
9039 lb (4100 kg)	154 KIAS
8380 lb (3800 kg)	148 KIAS
7940 lb (3600 kg)	144 KIAS
7500 lb (3400 kg)	140 KIAS
7060 lb (3200 kg)	136 KIAS
6610 lb (3000 kg)	132 KIAS
6170 lb (2800 kg)	127 KIAS
5730 lb (2600 kg)	123 KIAS

Best Glide (Propeller feathered):

Aircraft Mass	Airspeed
10450 lb (4740 kg)	119 KIAS
9920 lb (4500 kg)	116 KIAS
9040 lb (4100 kg)	110 KIAS
8160 lb (3700 kg)	105 KIAS
7280 lb (3300 kg)	99 KIAS
6400 lb (2900 kg)	93 KIAS

Landing Approach Speeds with ice accretion on the airframe:

After failure of:	Minimum Approach Speed
Pneumatic Deice Boots (flap position limit 0°)	130 KIAS
AOA Probe Deice and/or	105 KIAS
Pitot and Static Probe Deice and/or	105 KIAS
Pusher Ice Mode(flap position limit 15°)	105 KIAS

Balked Landing (Go Around):

After failure of:	Minimum Approach Speed
Pneumatic Deice Boots (flap position limit 0°) (TO/Pwr, flaps 0°, LG down,Pusher Ice Mode)	130 KIAS

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3-3 Rejected Takeoff (Not engine related)

Rejected Takeoff (Not engine related) 3-3-01

1.	PCL...	Idle
2.	Braking..	As required
3.	Reverse.......................................	As required

CAUTION

If any further taxiing is required soft brake pedals and/or wheel fusible plugs release may occur due to overheating.

If the aircraft cannot be stopped on the remaining runway:

4.	PCL...	Idle
5.	Engine switch..............................	OFF
6.	FUEL EMERG shut off................	Press latch down and pull lever up
7.	MASTER POWER switch...........	EMERG OFF

After the aircraft has stopped:

8.	Aircraft.......................................	Evacuate

CAUTION

A rejected takeoff may cause overheating of wheel and brake assembly components. The main wheels and brakes should be inspected for damage in accordance with the respective component manuals before the next flight.

---------- END -----------

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3-4 Engine Failure

Engine failure before rotation 3-4-01

1. PCL... Idle
2. Braking....................................... As required

If runway overrun or collision is likely, then:

3. Engine switch............................. OFF
4. FUEL EMERG shut off................ Press latch down and pull lever up
5. MASTER POWER switch............ EMERGENCY OFF

After the aircraft has stopped:

6. Aircraft.. Evacuate

---------- END -----------

Engine failure after rotation - Landing gear down 3-4-02

If total power loss:

If altitude is not sufficient to select a runway or field:

1. Aircraft.. Land straight ahead, turning only to avoid obstructions (maximum recommended bank angle 30° L/R)
2. Flaps... 40º
3. Final Approach Speed for 10450 lb (4740 kg)............................... 88 KIAS. Not below Dynamic Speed Bug (1.3 V_S)
4. PCL.. Idle
5. Engine switch............................. OFF
6. FUEL EMERG shut off................ Press latch down and pull lever up

After touch down:

7. MASTER POWER switch............ EMERGENCY OFF

After the aircraft has stopped:

8. Aircraft.. Evacuate

---------- END -----------

Engine failure after rotation - Landing gear up 3-4-03

If total power loss:

1.	Landing gear...............................	Down, if landing site allows, otherwise keep landing gear up
2.	Flaps...	40°
3.	Aircraft..	Final Approach Speed for 10450 lb (4740 kg), not below DSB (1.3 V_S):

Speed	Flap setting
101 KIAS	Flaps 15°
91 KIAS	Flaps 30°
88 KIAS	Flaps 40°

4.	PCL..	Idle
5.	Engine switch.............................	OFF
6.	FUEL EMERG shut off................	Press latch down and pull lever up

After touch down:

7.	MASTER POWER switch...........	EMERGENCY OFF

After the aircraft has stopped:

8.	Aircraft..	Evacuate

---------- END -----------

Engine Failure in Flight - Total Power Loss 3-4-04

1.	Autopilot.....................................	Use FLC (best glide speed) and HDG/T or NAV mode

Best glide (propeller feathered):

weight	speed
10,450 lb (4740 kg)	119 KIAS
9920 lb (4500 kg)	116 KIAS
9040 lb (4100 kg)	110 KIAS
8160 lb (3700 kg)	105 KIAS
7280 lb (3300 kg)	99 KIAS
6400 lb (2900 kg)	93 KIAS

2.	PCL..	Idle

Continued on next page

Engine Failure in Flight - Total Power Loss — 3-4-04

continued

3.	Aircraft..	Proceed to nearest airfield or landing site avoiding high terrain
4.	Remaining fuel............................	Check

If no mechanical damage suspected and time permits:

5.	Aircraft..	Carry out Air Start

If cabin altitude is above 10,000 ft:

6.	Aircraft..	Make an Emergency Descent

If no air start:

7.	Aircraft..	Make a Forced Landing - 3-9-02

---------- END -----------

Engine Surging — 3-4-05

1.	PCL..	Reduce to minimum to sustain flight

If engine surge persists:

2.	ACS Bleed Air switch..................	OFF for 5 seconds, reset to ON

If engine surge persists:

3.	Electrical HEAT/COOL switch.....	INHIBIT

If engine surge persists:

4.	PCL..	Set to IDLE and descent to denser air, if required to 15,000 ft

If engine surge persists and flight altitude cannot be maintained:

5.	ACS Bleed Air switch..................	OFF

If engine surge persists:

6.	Aircraft..	Land as soon as possible. If possible always retain glide capability, to the selected landing airfield, in case of total engine failure

Note

Water/ice ingestion can produce effects similar to an engine surge, potentially resulting in momentary surge.

---------- END -----------

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3-5 Air Start

Air Start Envelope 3-5-01

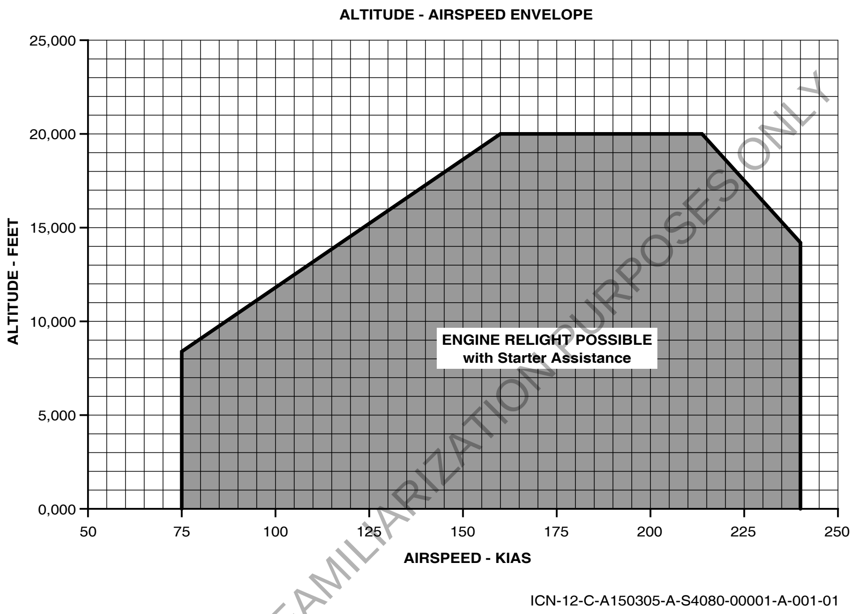

Figure 3-5-1: Engine Relight

---------- END -----------

Air Start - With starter 3-5-02

WARNING

IF THE ENGINE RUNS AT FLIGHT IDLE WITH THE PROPELLER FEATHERED ABOVE FL200 KEEP ENGINE RUNNING UNTIL WITHIN AIR START ENVELOPE TO MINIMIZE EXPOSURE TIME WITHOUT BLEED AIR AND GENERATOR SUPPORT.

1. Engine switch............................. OFF
2. Ignition switch............................ AUTO

If EPECS Fail *displayed:*

Continued on next page

Air Start - With starter — 3-5-02

continued

3.	NG..	Check NG < 5%
4.	EEC CH A (Essential Bus $_{L}$C3) circuit breaker...........................	PULL
5.	EEC CH B (Avionic 1 Bus $_{L}$R1) circuit breaker...........................	PULL
6.	EEC CH A (Essential Bus $_{L}$C3) circuit breaker...........................	PUSH, wait for 1 second
7.	EEC CH B (Avionic 1 Bus $_{L}$R1) circuit breaker...........................	PUSH

If **EPECS Fail** *persists:*

8.	Aircraft..	Make a Forced Landing - 3-9-02

WARNING

DO NOT ATTEMPT AN ENGINE START WITH EPECS FAIL DISPLAYED.

If no **EPECS Fail** *displayed:*

9.	PCL..	Idle
10.	PROP LOW SPEED switch........ (if installed)................................	PUSH (set to ON, if not active)
11.	Engine switch...............................	RUN
12.	FUEL EMERG shut off................	Full in
13.	BAT 1 and BAT 2 switches.........	ON
14.	Air start envelope........................	Check (Refer to Fig. 3-5-1)
15.	IGNITION switch........................	ON
16.	STARTER switch..........................	PUSH momentarily
17.	ITT and NG.................................	Monitor

When engine has relit NG >64.5%:

18.	IGNITION switch........................	AUTO
19.	FUEL PUMP switches................	AUTO
20.	GEN 1 and GEN 2......................	Check volts and amps
21.	Electrical equipment....................	As required

Continued on next page

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Air Start - With starter 3-5-02

continued

If no air start:

WARNING
DO NOT ATTEMPT MORE THAN ONE AIR START. REPEATED AIR START ATTEMPTS COULD DISCHARGE THE BATTERY TO A LEVEL THAT WOULD NOT BE ABLE TO SUPPORT ESSENTIAL ELECTRICAL SERVICES.

22. Aircraft.. Make a Forced Landing - 3-9-02

---------- END -----------

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3-6 Engine Emergencies

Propeller Low Pitch 3-6-01

Propeller Low Pitch warning and voice callout “Propeller Low Pitch”.

1. PCL... Ensure forward of idle detent

If it is not possible to maintain speed and height:

2. Engine switch............................ OFF
3. Aircraft....................................... Carry out Emergency Descent and Emergency Landing procedures

---------- END -----------

Engine Np Engine Np 3-6-02

On ground:

1. NP... Check PROP RPM

If propeller RPM is below 900 (steady state in reverse region):

2. PCL... Modulate power until Np is above 900 rpm

If propeller RPM is below 900 (steady state in forward region):

3. Engine....................................... Shutdown as soon as possible

If propeller RPM is above 1760 (steady state):

4. PCL... IDLE
5. Engine....................................... Shutdown

--- END ---

In flight:

1. NP... Check PROP RPM

If propeller RPM is below 1640 (steady state):

2. PCL... Increase power
3. Aircraft speed............................ Increase

If propeller RPM is above 1760 (steady state):

4. PCL... Reduce power
5. Aircraft speed............................ Reduce

If propeller RPM remains above 1760 (steady state):

6. Aircraft....................................... Continue flight, at low aircraft speed, using minimum possible power.

Continued on next page

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Engine Np — Engine Np — 3-6-02

continued

WARNING

THE ENGINE WILL BE COMMANDED TO FEATHER/IDLE IF NP EXCEEDS 1845 RPM.

---------- END -----------

Engine Ng — Engine Ng — 3-6-03

1. NG.. Check NG % indication

If NG is above 104%:

2. PCL.. Reduce power

If NG is above 104.3% or above 104% after 20 seconds:

3. PCL.. Reduce power
4. Aircraft speed............................ Reduce to 120 KIAS or below
5. Aircraft....................................... Land as soon as possible, using minimum power. If possible always retain glide capability, to the selected landing airfield, in case of total engine failure

--- END ---

If NG is below 64.5%:

On ground

1. PCL.. IDLE
   Engine...................................... Shutdown

--- END ---

In flight

1. PCL.. Increase power
2. Aircraft speed............................ Increase

If engine does not respond to PCL inputs:

3. Aircraft....................................... Carry out Engine Failure in Flight - Total Power Loss - 3-4-04

---------- END -----------

Engine Torque — Engine Torque — 3-6-04

1. TORQUE.................................. Check torque indication

Continued on next page

Engine Torque	Engine Torque	3-6-04
continued		

If torque above 44.3 psi:

2. PCL... Reduce power

If **Engine Torque** *or* **Engine Torque** *remains:*

3. Aircraft....................................... Land as soon as possible, using minimum power. If possible always retain glide capability, to the selected landing airfield, in case of total engine failure

---------- END -----------

Engine ITT	Engine ITT	3-6-05

1. ITT... Check ITT indication

If ITT above 850 °C:

Note
For hot/high environment ground operations, momentary ITT peak in the transient range may be expected during engine acceleration.

2. PCL... Reduce power

If **Engine ITT** *or* **Engine ITT** *remains:*

3. Aircraft....................................... Land as soon as possible, using minimum power. If possible always retain glide capability, to the selected landing airfield, in case of total engine failure

---------- END -----------

Engine Oil Press	Engine Oil Press	3-6-06

1. Oil... Check OIL P PSI indication

If **Engine Oil Press** *or* **Engine Oil Press** *is confirmed:*

2. NG... Check NG above 72%
3. Torque.. Reduce to below 24 PSI

If **Engine Oil Press** *or* **Engine Oil Press** *remains:*

4. Aircraft....................................... Land as soon as possible, using minimum power. If possible always retain glide capability, to the selected landing airfield, in case of total engine failure

---------- END -----------

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Engine Oil Temp | Engine Oil Temp | 3-6-07

On ground:

1. Oil.. Check OIL T °C indication

If oil temperature is high:

2. Aircraft.. Position into wind
3. PCL.. Increase power

If oil temperature does not return to normal:

4. ELECTRICAL HEAT/COOL switch.. INHIBIT

If **Engine Oil Temp** *or* **Engine Oil Temp** *remains:*

5. Engine.. Shut down engine. Maintenance required.

If oil temperature is low (below -40 °C):

6. Engine.. Do not start. Preheating is required.

If oil temperature is -40 °C or above:

7. PCL.. Use low power settings (maximum 72% NG steady state) until oil temperature is above 15°C.

--- END ---

In flight:

1. Oil.. Check OIL T °C indication

If oil temperature is high:

2. PCL.. Reduce power

If oil temperature does not return to normal:

3. Landing gear.................................. Extend

If **Engine Oil Temp** *or* **Engine Oil Temp** *remains:*

4. Aircraft.. Land as soon as practical

After landing:

5. Engine.. Shut down engine. Maintenance required

---------- END -----------

Starter Engaged | 3-6-08

On ground (during an engine start):

1. Engine switch.............................. OFF

Continued on next page

Starter Engaged 3-6-08

continued

2.	STARTER circuit breaker (Essential Bus $_{L}$L1)....................	PULL
3.	EXT PWR (if available)...............	OFF
4.	BAT 1 and BAT 2 switches..........	OFF
5.	Aircraft..	Maintenance action required

--- END ---

In flight (following an air start):

1.	BUS TIE circuit breaker (Electrical Power Management panel)..	Pull
2.	STARTER circuit breaker (Essential Bus $_{L}$L1)....................	Pull
3.	GEN 1 and GEN 2 switches........	OFF

If **Starter Engaged** *extinguised:*

4.	GEN 1 and GEN 2 switches........	RESET then ON
5.	BUS TIE circuit breaker (Electrical Power Management panel)..	Reset

If **Starter Engaged** *remains:*

6.	BAT 2 switch................................	OFF
7.	GEN 1 switch................................	RESET then ON
8.	BAT 1 switch................................	Check ON

Note

Starter Engaged will remain on.

---------- END -----------

Engine Oil Level 3-6-09

Low engine oil level on ground

1.	Engine..	Servicing required as per POH Section 4, Preflight Inspection, Nose Section - 4-3-04, Engine area, step 13

---------- END -----------

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Engine Chip 3-6-10

On ground: Before engine start:

1. Do not start engine...................... Maintenance required

--- END ---

On ground: After engine start or after landing:

1. Aircraft.. Return to parking area
2. Engine.. Shut down engine. Maintenance required

--- END ---

In flight:

1. Aircraft.. Check and monitor engine parameters
2. PCL.. Reduce power to minimum required for safe flight
3. Aircraft.. Land as soon as practical

After landing:

4. Engine.. Maintenance required.

---------- END -----------

EPECS Fail 3-6-11

On ground:

1. Engine.. Do not start engine, shut down engine
2. Engine.. Maintenance required

--- END ---

In flight with total or partial loss of engine control:

Note

In certain EPECS Fail conditions, the system commands flight idle and feathers the propeller. The engine continues to provide bleed air for cabin pressurization, airframe anti/de-icing and generator power.

If engine running in idle and propeller feathered or engine stopped:

1. Aircraft.. Carry out Engine Failure in Flight - Total Power Loss - 3-4-04 procedure

If engine running and propeller not feathered:

2. PCL.. Do not make fast PCL movements
3. Aircraft.. Land as soon as possible. Retain glide capability, to the selected landing airfield, in case of total engine failure

---------- END -----------

EPECS Degraded 3-6-12

On ground:

1.	Engine..	Do not start engine, shut down engine when possible
2.	Engine..	Do an aircraft power reset

If fault remains:

3.	Engine..	Maintenance required

--- END ---

In flight:

1.	Aircraft..	Check and monitor engine parameters. Possible degraded engine response. Prepare for uncommanded change in engine power.
2.	Autothrottle.................................	Disconnect (if active)
3.	PCL..	Do not make fast PCL movements
4.	Torque..	If indication is invalid, slowly reduce power to idle prior to further engine power changes (10 sec. rate from MCP to IDLE). If flight conditions permit, avoid high power settings
5.	Aircraft..	Land as soon as practical

----------- END -----------

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3-7 Fire, Smoke or Fumes

Fire Detector — 3-7-01

A fault in the Fire detection system has occurred.

On ground

1. Engine....................... Do not start engine, shut down engine
2. Engine....................... Maintenance action required

--- END ---

In flight

1. Engine....................... Check indications
2. Aircraft....................... Land as soon as practical

---------- END -----------

Engine Fire — 3-7-02

Engine Fire warning and voice callout “Fire”.
Possible smoke and/or fumes.

On ground

1. PCL......................... Idle
2. Engine switch............ OFF
3. ACS EMER shut off... PULL
4. FUEL EMER shut off. Press latch down and pull lever up
5. Radio......................... Emergency call
6. MASTER POWER switch....................... EMERGENCY OFF

Continued on next page

Engine Fire **3-7-02**

continued

7.	Parking brake............	OFF (if possible)
8.	Aircraft.......................	Evacuate
9.	Fire............................	Extinguish

--- END ---

In flight

1.	Engine power............	Reduce to minimum acceptable according to flight situation
2.	ACS EMER shut off...	PULL
3.	Main OXYGEN lever.	Confirm ON
4.	Crew oxygen masks and smoke goggles (if equipped)..............	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on.

3 Put the smoke goggles on.

4 Put the normal headset back on.

5 Set MIC SELECT switch on rear left panel to MASK.

5.	Crew Oxygen.............	EMGCY

Continued on next page

Engine Fire 3-7-02

continued

6.	Vent valve (if smoke goggles worn)............	Open
7.	PASSENGER OXYGEN selector.....	ON
8.	Systems MFD **PAX OXY** advisory...........	Confirm ON
9.	Passengers...............	Instruct to don masks
10.	Aircraft.......................	Check fire

If confirmed that fire exists:

11.	FUEL EMER shut off.	Press latch down and pull lever up
12.	Engine switch............	OFF

If smoke evacuation is required:

13.	CABIN PRESSURE switch.......................	DUMP

When cabin differential pressure is zero:

14.	DV window................	Open
15.	FANS VENT switch...	LOW
16.	Aircraft.......................	Carry out Emergency Descent and/or Emergency Landing procedures

---------- END -----------

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Cockpit/Cabin Fire, Smoke or Fumes, Smoke Evacuation — 3-7-03

1.	Main OXYGEN lever.	Confirm ON
2.	Crew oxygen masks and smoke goggles (if equipped).............	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on.

3 Put the smoke goggles on.

4 Put the normal headset back on.

5 Set MIC SELECT switch on rear left panel to MASK.

3.	Crew Oxygen.............	EMGCY
4.	Vent valve (if smoke goggles worn)...........	OPEN
5.	PASSENGER OXYGEN selector.....	ON
6.	Systems MFD **PAX OXY** advisory...........	Confirm ON
7.	Passengers...............	Instruct to don masks
8.	Aircraft......................	Initiate descent to below 10,000 ft or to minimum safe altitude if higher

Continued on next page

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Cockpit/Cabin Fire, Smoke or Fumes, Smoke Evacuation **3-7-03**

continued

9.	Aircraft......................	Proceed to nearest Airfield

If smoke evacuation is required:

10.	ACS EMER shut off...	PULL
11.	CABIN PRESSURE switch......................	DUMP

When cabin pressure differential is zero:

12.	DV window................	Open
13.	VENT FANS.............	LOW
14.	Fire Extinguisher.......	Use if required

As soon as time permits and source is known electrical:

15.	Associated electrical equipment..................	Off (circuit breakers)

Continued on next page

Cockpit/Cabin Fire, Smoke or Fumes, Smoke Evacuation **3-7-03**

continued

WARNING

DO NOT PULL THE FOLLOWING CIRCUIT BREAKERS ASSOCIATED WITH THE AUXILIARY HEATING SYSTEM:

- **COND HTR CTL**
- **CABIN FAN**
- **U/F FAN**

If smoke/fumes still persist and source is suspected electrical:

16.	BUS TIE circuit breaker (overhead panel)........................	PULL
17.	GEN 2 switch.............	OFF
18.	BAT 2 switch..............	OFF
19.	CABIN HEATER, circuit breaker 1 (LHPJB)....................	PULL

If smoke/fumes still persist and source is suspected electrical:

20.	Aircraft.......................	Attempt to regain VMC conditions if possible
21.	EPS switch................	CHECK ARMED

Commence flying with reference to the ESIS

Continued on next page

Cockpit/Cabin Fire, Smoke or Fumes, Smoke Evacuation **3-7-03**

continued

22.	GEN 1 switch.............	OFF
23.	BAT 1 switch..............	OFF

If smoke/fumes still persist and source is suspected electrical:

24.	MASTER POWER switch........................	EMERGENCY OFF

Refer to Emergency Gear Extension - 3-10-02.

---------- END -----------

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3-8 Emergency Descent

General 3-8-01

The type of emergency descent will depend on the kind of failure and the aircraft situation. Two types of descent are considered:

1 Engine failure, aircraft flown for maximum range.

2 Engine running, maximum descent rate.

The factors to be considered are:

1 Cabin altitude and oxygen duration.

2 Electrical power endurance.

3 Distance to suitable landing area.

4 Flight conditions IMC, VMC, ICING.

5 Minimum safe altitude.

6 Fuel reserves.

The pilot must consider the situation and priorities and adjust his actions accordingly.

---------- END -----------

Maximum Range Descent - After Engine Fail 3-8-02

(Refer to Fig. 3-8-1)

1.	PCL..	IDLE
2.	Engine switch.............................	OFF (to feather propeller)
3.	Aircraft configuration..................	Landing gear up and flaps to 0°

Continued on next page

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Maximum Range Descent - After Engine Fail 3-8-02

continued

CAUTION

If landing gear and/or flaps are extended glide range will be severely reduced. Retracting landing gear and flaps will reduce battery endurance significantly and may prejudice subsequent flaps lowering. ADAHRS and APEX displays may fail during landing gear / flap operation.

4. Airspeed.................................... Best glide (propeller feathered):

Airspeed	Aircraft Mass
119 KIAS	10450 lb (4740 kg)
116 KIAS	9920 lb (4500 kg)
110 KIAS	9040 lb (4100 kg)
105 KIAS	8160 lb (3700 kg)
99 KIAS	7280 lb (3300 kg)
93 KIAS	6400 lb (2900 kg)
In icing conditions: 137 KIAS	

5. All occupants.............................. Check seat lap and shoulder belts are fastened and the lap belt tightened
6. Main OXYGEN lever.................. Confirm ON
7. Crew oxygen masks.................... Prepare. Put on before cabin altitude exceeds 10,000 ft

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the smoke goggles on.

4 Put the normal headset back on.

5 Set MIC SELECT switch on the rear left panel to MASK.

If cabin altitude exceeds 10,000 ft:

8. PASSENGER OXYGEN selector ON. Check contents. Calculate Oxygen duration
9. Systems MFD **PAX OXY** advisory..................................... Confirm ON
10. Passengers................................ Instruct to don masks
11. Electrical load............................. Monitor battery amps

Continued on next page

Maximum Range Descent - After Engine Fail 3-8-02

continued

CAUTION

Monitor BAT 1 and BAT 2 amps. If one indication is positive, switch OFF affected battery. After 5 minutes battery can be switched ON again. If indication still positive switch battery OFF.

Note

During extended glide period **Engine Oil Level** and/or **Engine Oil Temp** may appear - disregard for air start.

12. Engine.. Restart as soon as possible (if applicable) (refer to Air Start)

If engine restart was not successful or not applicable:

13. Rate of descent.......................... Adjust to achieve cabin altitude of 10,000 ft before oxygen supply exhausted

Below 10,000 ft:

14. ACS EMER shut off..................... PULL (cabin ventilation)
15. Aircraft... Carry out Forced Landing - 3-9-02

---------- END -----------

Maximum Rate Descent 3-8-03

(Refer to Fig. 3-8-1)

1. PCL.. IDLE
2. Landing gear.............................. Below 180 KIAS, down
3. Aircraft speed............................. M_{MO}/V_{MO}
4. All occupants.............................. Check seat lap and shoulder belts are fastened and the lap belt tightened.
5. Main OXYGEN lever................... Confirm ON

Continued on next page

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Maximum Rate Descent 3-8-03

continued

6.	Crew oxygen masks....................	Prepare. Put on before cabin altitude exceeds 10,000 ft

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the smoke goggles on.

4 Put the normal headset back on.

5 Set MIC SELECT switch on the rear left panel to MASK.

If cabin altitude exceeds 10,000 ft:

7.	PASSENGER OXYGEN selector	ON. Check contents. Calculate Oxygen duration
8.	Systems MFD **PAX OXY** advisory......................................	Confirm ON
9.	Passengers................................	Instruct to don masks

CAUTION

In turbulence reduce speed to 170 KIAS.

10.	Left windshield heat....................	As required

---------- END -----------

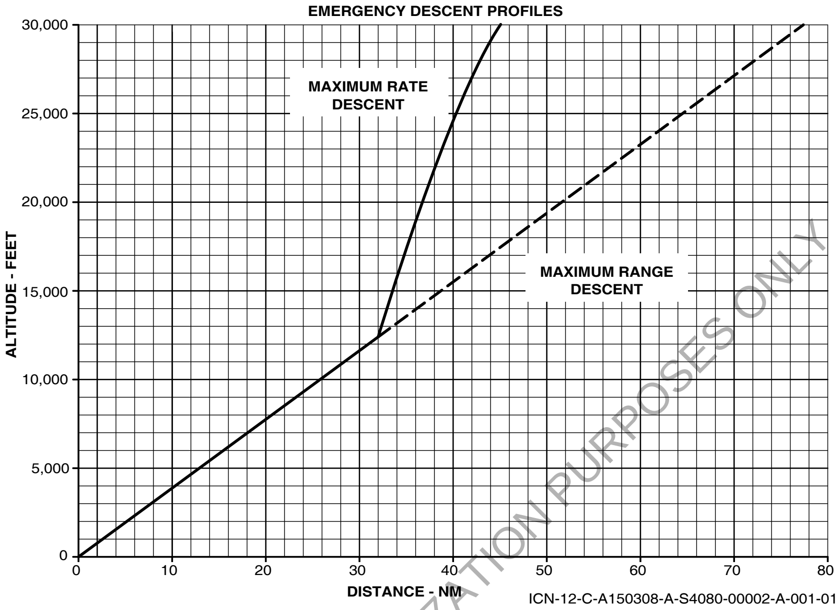

Figure 3-8-1: Emergency Descent Profiles

Emergency Descent 3-8-04

Emergency Descent and **Cabin Altitude** are indicated on the CAS window and **EDM** is displayed on the PFD.

If above FL200 (EDM armed) and if autopilot is engaged, the Emergency Descent Mode (EDM) will be triggered by a Cabin Altitude warning. Autopilot will command the aircraft to turn 90° to the left, descend at V_{MO} / M_{MO} to FL150, level off and maintain 160 KIAS. Descent will be initiated using FLC and HDG Hold Mode. If autothrottle is installed it will automatically move the PCL back to IDLE. If autothrottle is not installed the PCL will remain in the position last selected by the pilot, the descent will be slower and the speed target of 160 KIAS after level off will not be maintained.

If **Cabin Altitude** *displayed:*

1. Aircraft....................................... Carry out Cabin Altitude - 3-17-03 procedure

To cancel EDM for manually flown descent or if **Cabin Altitude** *is NOT displayed and cabin altitude/pressure is within normal limits:*

2. Autopilot and autothrottle............ DISCONNECT (use AP Quick Disconnect button and AT button on FGP)

Note

EDM can only be cancelled by pressing and holding the AP Quick Disconnect button or the TCS switch for 1 second. To cancel autothrottle during EDM the AT button on the FGP must be used.

CAUTION

While EDM is active, only the disengage selections for AP, YD and AT are available on the FGP.

---------- END -----------

3-9 Emergency Landing

Glide Distance and Speed 3-9-01

(Refer to Fig. 3-8-1)

Configuration:

1. Landing gear............................. UP
2. Flaps... 0°
3. Airspeed.................................... Best glide speed:

Airspeed	Aircraft Mass
119 KIAS	10450 lb (4740 kg)
116 KIAS	9920 lb (4500 kg)
110 KIAS	9040 lb (4100 kg)
105 KIAS	8160 lb (3700 kg)
99 KIAS	7280 lb (3300 kg)
93 KIAS	6400 lb (2900 kg)

Note

Two fully charged batteries will last for 33 minutes with the Automatic Load Shedding.

---------- END -----------

Forced Landing 3-9-02

1. PCL.. IDLE
2. Engine switch............................ OFF
3. FUEL EMERG shut off................ PULL
4. CABIN PRESSURE switch......... DUMP
5. Airspeed.................................... Best glide speed:

Airspeed	Aircraft Mass
119 KIAS	10450 lb (4740 kg)
116 KIAS	9920 lb (4500 kg)
110 KIAS	9040 lb (4100 kg)
105 KIAS	8160 lb (3700 kg)
99 KIAS	7280 lb (3300 kg)
93 KIAS	6400 lb (2900 kg)

Continued on next page

Forced Landing 3-9-02

continued

6.	Seat backs	Upright
7.	Seat belts	Fastened. Tighten lap straps
8.	Passengers	Brief. Instruct to sit upright
9.	ELT	Set to ON

If landing site allows:

10.	Landing gear	DOWN

If landing site not suitable for gear down landing:

11.	Landing gear	Keep UP
12.	Flaps	40°
13.	Final approach speed	88 KIAS for 10450 lb (4740 kg). Not below Dynamic Speed Bug (1.3 V_S)

After touchdown:

14.	MASTER POWER switch	EMERGENCY OFF

After the aircraft has stopped:

15.	Aircraft	Evacuate

---------- END ----------

Landing with Main Landing Gear Unlocked 3-9-03

1.	Aircraft	Confirm landing gear position by control tower or other aircraft

CAUTION

If one main landing gear is not down, it is recommended to land with gear up.

Note

It is possible to verify the down position of the right main landing gear from the rear right cabin window.

If failed landing gear is down but not locked:

2.	Fuel weight	Reduce
3.	Passengers	Brief
4.	Flaps	40°

Continued on next page

Landing with Main Landing Gear Unlocked 3-9-03

continued

5.	Final approach speed................	85 KIAS for 9921 lb (4500 kg). Not below Dynamic Speed Bug (1.3 V_S)
6.	Touchdown................................	Gently, avoid sideslip during touchdown
7.	Landing....................................	Lower nose wheel immediately to maintain lateral control
8.	Roll out.....................................	Use full aileron during rollout to lift the wing with the failed landing gear
9.	PCL..	IDLE
10.	Engine switch............................	OFF
11.	MASTER POWER switch...........	EMERGENCY OFF

After the aircraft has stopped:

12.	Aircraft......................................	Evacuate
13.	Aircraft......................................	Do not move the aircraft before deficiency is rectified

---------- END -----------

Landing with Nose Landing Gear Unlocked 3-9-04

1.	Fuel weight................................	Reduce
2.	Passengers................................	Brief
3.	Flaps...	40°
4.	Final approach speed................	85 KIAS for 9921 lb (4500 kg). Not below Dynamic Speed Bug (1.3 V_S)
5.	Landing....................................	Land on main wheels, keep nose high
6.	Engine switch............................	OFF
7.	MASTER POWER switch...........	EMERGENCY OFF
8.	Landing....................................	Lower nose wheel slowly
9.	Aircraft......................................	Avoid braking

After the aircraft has stopped:

10.	Aircraft......................................	Evacuate

---------- END -----------

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Landing with Gear Up — 3-9-05

1.	Fuel weight.................................	Reduce
2.	Passengers................................	Brief
3.	Approach...................................	Standard
4.	Flaps..	40°
5.	Final approach speed................	85 KIAS for 9921 lb (4500 kg). Not below Dynamic Speed Bug (1.3 V_S)
6.	CABIN PRESSURE switch.........	DUMP

When runway is assured:

7.	PCL...	IDLE
8.	Engine switch.............................	OFF
9.	FUEL EMERG shut off................	PULL
10.	Aircraft.......................................	Flare out

After touchdown:

11.	MASTER POWER switch...........	EMERGENCY OFF

After the aircraft has stopped:

12.	Aircraft.......................................	Evacuate

---------- END ----------

Landing without Elevator Control — 3-9-06

1.	Passengers................................	Brief
2.	Landing gear..............................	Down
3.	Flaps..	40°
4.	Final approach speed................	90 KIAS
5.	Power...	Set power as necessary to maintain speed and 300 to 500 ft/min rate of descent
6.	Aircraft.......................................	Use stab trim to adjust pitch

When closing to ground:

7.	Aircraft.......................................	Reduce Rate of Descent by increasing pitch and/or power
8.	Power...	Reduce power progressively

Continued on next page

Landing without Elevator Control 3-9-06

continued

WARNING

STALLS ARE NOT PROTECTED WITH THE STICK PUSHER INOPERATIVE.

STALLS MUST BE AVOIDED WHEN THE STICK PUSHER IS INOPERATIVE. EXCESSIVE WING DROP AND ALTITUDE LOSS MAY RESULT DURING STALL WITH FLAPS DOWN AND/OR WHEN POWER IS APPLIED.

---------- END -----------

Landing with Immobilized Horizontal Stabilizer 3-9-07

1.	Aircraft.......................................	Fly at indicated airspeed which reduces elevator forces to minimum
2.	Flaps..	At a safe altitude select flap required for landing
3.	Landing....................................	Land using normal procedures holding elevator forces

---------- END -----------

Landing without Flaps 3-9-08

1.	Aircraft.......................................	Proceed as for normal approach
2.	Landing gear...............................	DOWN
3.	Final approach speed................	120 KIAS for 9921 lb (4500 kg). Not below Dynamic Speed Bug (1.3 V_S)
4.	Landing....................................	Normal
5.	Reverse.....................................	As required
6.	Braking......................................	As required

CAUTION

Landing distance will increase by 80%.

In the case of heavy brake usage, soft brake pedals and/or wheel fusible plugs release may occur during a following taxi. Limitation in Section 2, Systems and Equipment Limits, Brakes applies.

---------- END -----------

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Ditching 3-9-09

1.	Landing gear..............................	UP

CAUTION

Heavy swell with light wind, ditch parallel to the swell. Strong wind, ditch into the wind.

2.	Passengers................................	Brief
3.	ELT..	Set to ON
4.	Flaps...	40°
5.	Final approach speed................	88 KIAS for 9921 lb (4500 kg). Not below Dynamic Speed Bug (1.3 V_S)
6.	CABIN PRESSURE switch.........	DUMP
7.	PCL..	IDLE
8.	Engine switch............................	OFF

If time permits: CPCS

9.	CABIN PRESSURE switch.........	AUTO
	CPCS SYSTEM MODE switch....	MANUAL
	MANUAL CONTROL switch........	Set and hold to DESCENT for 30 sec (to close OFV)
10.	FUEL EMERG shut off................	Press latch down and pull lever up
11.	Ditching......................................	Ditch with a low rate of descent
12.	MASTER POWER switch............	EMERGENCY OFF
13.	Aircraft......................................	Evacuate through the overwing emergency exit only

---------- END -----------

3-10 Landing Gear System Failure

Landing Gear Fails to Retract — 3-10-01

All Landing Gear Indicator Lights do not change to UP.

1. Airspeed.................................... Below 180 KIAS

Note

To cycle the landing gear for troubleshooting is not recommended. However, if during landing gear retraction moderate turbulence and/or considerable G-load was present, the pilot may consider cycling the landing gear once, at his own discretion.

2. Landing Gear Selector................ Select DN

If 3 green lights not illuminated within 30 sec:

3. Aircraft....................................... Carry out Emergency Gear Extension - 3-10-02

If 3 green lights illuminated:

4. Aircraft....................................... Land as soon as practical

---------- END ----------

Emergency Gear Extension — 3-10-02

Incorrect Indication on landing gear indicator lights.
Red unlocked lights on and/or green lights not illuminated.

1. Airspeed.................................... 120 KIAS
2. Landing Gear Selector................ Select DN

If 3 green lights not illuminated within 30 sec:

3. Emergency Gear Extension Lever Cover.............................. Open
4. Emergency Gear Extension Lever... PULL FIRMLY TO HARD STOP

If 3 green lights still not illuminated:

To lock the main landing gear:

5. Aircraft....................................... Conduct level turns left and right at angles of bank up to 30°, maintaining constant airspeed, until main landing gears indicate locked down

Continued on next page

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Emergency Gear Extension 3-10-02

continued

To lock the nose landing gear:

6.	Airspeed......................................	Reduce power to idle and airspeed to minimum safe airspeed

If 3 green lights illuminated:

7.	Aircraft...	Land as soon as practical
8.	Aircraft...	Maintenance required

If 3 green lights still not illuminated:

9.	Aircraft...	Carry out Landing with Main Landing Gear Unlocked - 3-9-03 and/or Landing with Nose Landing Gear Unlocked - 3-9-04 and/or Landing with Gear Up - 3-9-05.

---------- END -----------

Gear Actuator Cntl 3-10-03

On ground:

1.	Aircraft...	Do not take off
2.	Aircraft...	Maintenance required

--- END ---

In flight:

1.	Landing gear..................................	Do not cycle

Before landing:

2.	Airspeed......................................	Below 180 KIAS
3.	Landing Gear Selector...............	Select DN

If 3 green lights not illuminated within 30 sec:

4.	Aircraft...	Refer to Emergency Gear Extension - 3-10-02

---------- END -----------

Invalid Gear Config — 3-10-04

On ground:

1.	Aircraft..	Do not take off
2.	Aircraft..	Maintenance required

---------- END -----------

Gear Power Fail — 3-10-05

On ground:

1.	LDG CTL SEC circuit breaker (Essential Bus $_L$A2)....................	Check. Do not reset unless tripped
2.	LDG CTL PRI circuit breaker (Essential Bus $_L$B2)....................	Check. Do not reset unless tripped
3.	LDG GEAR PWR circuit breaker (RH PJB)..................................	Check. Do not reset unless tripped

If caution remains:

4.	Aircraft..	Do not takeoff. Maintenance requried

--- END ---

In flight:

1.	LDG CTL SEC circuit breaker (Essential Bus $_L$A2)....................	Check. Do not reset unless tripped
2.	LDG CTL PRI circuit breaker (Essential Bus $_L$B2)....................	Check. Do not reset unless tripped
3.	LDG GEAR PWR circuit breaker (RH PJB)..................................	Check. Do not reset unless tripped

If caution remains:

4.	Landing gear..............................	Do not cycle

Before landing:

5.	Airspeed....................................	Below 180 KIAS
6.	Landing Gear Selector................	Select DN

If 3 greens not illuminated within 30 sec:

7.	Aircraft..	Refer to Emergency Gear Extension - 3-10-02

---------- END -----------

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3-11 Flaps Failure

Flaps	**3-11-01**
On ground:	
1. FLAP circuit breaker (LH Rear $_L$P4)...	Check circuit breaker
If tripped:	
2. FLAP circuit breaker (LH Rear $_L$P4)...	Wait 5 minutes, reset circuit breaker (max. 2 attempts) and continue normal operation if **Flaps** goes off
If not tripped:	
3. FLAP RESET switch (on maintenance panel, right sidewall behind copilot seat).......	Push (max. 1 attempt)
If unsuccessful:	
4. Aircraft.......................................	No flight permitted.
5. Aircraft.......................................	Maintenance action required
--- END ---	
In flight:	
1. FLAP circuit breaker (LH Rear $_L$P4)...	Check circuit breaker
If tripped:	
2. FLAP circuit breaker (LH Rear $_L$P4)...	Wait 5 minutes, reset circuit breaker (max. 2 attempts) and continue normal operation if **Flaps** goes off
If unsuccessful:	
3. Aircraft.......................................	Land with flaps at the failed position
--- END ---	

Continued on next page

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Flaps 3-11-01

continued

In flight - With potential flap asymmetry:

Flaps shortly followed by **Pusher** and **Pusher Safe Mode** illuminating.

Flap system failed asymmetrically and stick pusher remains available in “safe” mode.

CAUTION

The approach speed must be increased for indicated flap position 12° or greater. No speed increase is needed if the flap position is less than 12°.

1.	Airspeed......................................	Reduce to below 121 KIAS for indicated flaps position 30° or greater
2.	Aircraft..	Land as soon as practical - with flaps at the failed position
3.	Approach....................................	For indicated flaps position 12° or greater: Approach at approximately 10 knots above AOA based Dynamic Speed Bug in PFD (1.3 V_{STALL})

CAUTION

Landing distance will increase.

Wheels and brakes may overheat. Limitations in Section 2, Systems and Equipment Limits, Brakes applies.

---------- END -----------

3-12 Stick Pusher Failure

Pusher 3-12-01

On ground:

1. Pusher Test................................ Carry out

If **Pusher** *caution persists:*

2. Aircraft.. No flight permitted. Maintenance required

--- END ---

In flight:

1. Pusher Test................................ Carry out

If Shaker 1 and 2 active and **Pusher** *caution extinguished:*

2. Aircraft.. No further action required

If Shaker 1 or 2 not active or **Pusher** *caution persists:*

WARNING

THE AIRCRAFT IS NOT STALL PROTECTED.

3. Airspeed.................................... Not below 1.3 V_S for 10450 lb (4740 kg):

Flap setting	Airspeed (KIAS)
0°	120
15°	101
30°	90
40°	88

WARNING

STALLS MUST BE AVOIDED WHEN THE STICK PUSHER IS INOPERATIVE. EXCESSIVE WING DROP AND ALTITUDE LOSS MAY RESULT DURING STALL WITH FLAPS DOWN AND/OR WHEN POWER IS APPLIED.

CAUTION

Stall speeds in turns are higher.

Dynamic speed bug may not be reliable.

If in icing conditions:

4. Aircraft.. Carry out the Pusher - 3-18-09 procedure

---------- END -----------

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3-13 Inadvertent Pusher/Shaker Operation

Pusher 3-13-01

Non-commanded pusher operation, rapid nose pitch-down motion.

Note

Control wheel force to stop pusher operation is 60 to 65 pounds.

1. Control wheel............................. Hold against pusher action
2. PUSHER INTR switch................. Press and hold
3. PUSHER SYS GND circuit breaker (RH Rear $_R$P3).............. PULL
4. PUSHER SYS circuit breaker (Essential Bus $_L$L3).................... PULL
5. If shaker continues to operate..... Carry out the Shaker - 3-13-02 procedure

WARNING

THE AIRCRAFT IS NOT STALL PROTECTED.

6. Airspeed.................................... Not below 1.3 V_S for 10450 lb (4740 kg)

Flap setting	Airspeed (KIAS)
0°	120
15°	101
30°	90
40°	88

WARNING

NATURAL STALLS ARE NOT PREVENTED WITH THE STICK PUSHER INOPERATIVE.

STALLS MUST BE AVOIDED WHEN THE STICK PUSHER IS INOPERATIVE. EXCESSIVE WING DROP AND ALTITUDE LOSS MAY RESULT DURING STALL WITH FLAPS DOWN AND/OR WHEN POWER IS APPLIED.

CAUTION

Stall speeds in turns are higher.

Dynamic speed bug may not be reliable.

7. Pusher test................................ Carry out to check shaker availability

If Shaker 1 or 2 not active:

Continued on next page

Pusher 3-13-01

continued

WARNING

APPROACHES TO STALLS ARE NOT WARNED AND NATURAL STALLS ARE NOT PREVENTED WITH THE STICK SHAKER INOPERATIVE.

---------- END -----------

Shaker 3-13-02

Non-commanded shaker operation.

1. AOA.. Decrease
2. IAS... Increase

If shaker continues to operate:

3. STALL WARN 1 circuit breaker (Essential Bus $_L$K3).................... PULL
4. STALL WARN 2 circuit breaker (Main Bus $_R$H3)......................... PULL

WARNING

THE AIRCRAFT IS NOT STALL PROTECTED.

5. Airspeed.................................... Not below 1.3 V_S for 10450 lb (4740 kg)

Flap setting	Airspeed (KIAS)
0°	120
15°	101
30°	90
40°	88

Continued on next page

Shaker 3-13-02

continued

WARNING

APPROACHES TO STALLS ARE NOT WARNED AND NATURAL STALLS ARE NOT PREVENTED WITH THE STICK SHAKER INOPERATIVE.

STALLS MUST BE AVOIDED WHEN THE STICK PUSHER IS INOPERATIVE. EXCESSIVE WING DROP AND ALTITUDE LOSS MAY RESULT DURING STALL WITH FLAPS DOWN AND/OR WHEN POWER IS APPLIED.

CAUTION

Stall speeds in turns are higher.

Dynamic speed bug may not be reliable.

---------- END -----------

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3-14 Electrical Trim

Pitch Trim Runaway 3-14-01

Pitch Trim Runaway warning and voice callout “Trim Runaway”.

1.	TRIM INTERRUPT switch...........	ON
2.	PITCH TRIM circuit breaker (Essential Bus $_L$A1).....................	PULL
3.	TRIM INTERRUPT switch...........	OFF

If trim runaway continues:

4.	TRIM INTERRUPT switch...........	ON
5.	PITCH TRIM ALTN circuit breaker (Main Bus $_R$A1)..............	PULL
6.	PITCH TRIM circuit breaker (Essential Bus $_L$A1).....................	CLOSE
7.	TRIM INTERRUPT switch...........	OFF

Note

Reduce speed if control forces are high. If the pitch trim has failed the autopilot is not operative.
The autopilot will disconnect when TRIM INTERRUPT is operated.

If main stabilizer trim has failed:

8.	Pitch trim....................................	Use ALTERNATE STAB TRIM

---------- END -----------

Yaw Trim Runaway 3-14-02

Yaw Trim Runaway warning and voice callout “Trim Runaway”.

1.	TRIM INTERRUPT switch...........	ON
2.	RUDDER TRIM circuit breaker (Essential Bus $_L$B1).....................	PULL
3.	TRIM INTERRUPT switch...........	OFF

Note

Reduce speed if control forces are high. If the rudder trim has failed the autopilot is not operative.
The autopilot will disconnect when TRIM INTERRUPT is operated.

---------- END -----------

Trim Runaway 3-14-03

Non-commanded trim operation, rapidly increasing out of trim forces.

1. TRIM INTERRUPT switch........... ON
2. Circuit breaker of failed trim:....... PULL

Circuit Breaker	Location
PITCH TRIM	Essential Bus $_L$A1
PITCH TRIM ALTN	Main Bus $_R$A1
AIL TRIM	Essential Bus $_L$C1
RUD TRIM	Essential Bus $_L$B1

3. TRIM INTERRUPT switch........... OFF

Note

Reduce speed if control forces are high. If the rudder trim has failed the autopilot is not operative.
The autopilot will disconnect when TRIM INTERRUPT is operated.

---------- END -----------

No Main Stabilizer Trim 3-14-04

1. TRIM INTERRUPT...................... Check OFF
2. ALTERNATE STAB TRIM............ Operate as required

---------- END -----------

No Stabilizer Trim, Main or Alternate 3-14-05

1. Aircraft... Carry out Landing with Immobilized Horizontal Stabilizer - 3-9-07

---------- END -----------

3-15 Electrical System Failures

Electrical Power Loss 3-15-01

1.	MASTER POWER switch............	Check ON and guarded
2.	BAT and GEN switches...............	Check ON

If indication remains:

3.	Aircraft...	Land as soon as possible

---------- END -----------

Essential Bus 3-15-02

Essential bus voltage is below 22 V.

1.	Overhead panel..........................	Confirm EPS switch is in ARMED position and EPS ON caption is on
2.	Pitch Trim....................................	Use ALTERNATE STAB TRIM
3.	Aircraft...	At pilots discretion, continue flight without services of failed bus or land as soon as possible. Do not fly in icing conditions

CAUTION

There will be no normal landing gear operation.

Refer to Emergency Gear Extension - 3-10-02

Note

It is possible to verify the down position of the right main landing gear from the rear right cabin window.

---------- END -----------

Avionics 1 Bus 3-15-03

Avionics 1 Bus voltage is below 22 V.

1.	AV 1 BUS switch.........................	Confirm set to ON
2.	AV 1 circuit breaker (LH Power Junction Box).............................	Confirm set

Continued on next page

Avionics 1 Bus — 3-15-03

continued

3. STBY BUS switch....................... Confirm set to ON

Note

The systems connected to the Standby bus on the left rear circuit breaker panel will be operative.

4. Aircraft.. At pilots discretion, continue flight without services of failed bus or land as soon as possible

CAUTION

The systems connected to the Avionic 1 Bus, on the left rear circuit breaker panel, are inoperative.

---------- END -----------

Avionics 2 Bus — 3-15-04

Avionics 2 Bus voltage is below 22 V.

1. AV 2 BUS switch........................ Confirm set to ON
2. AV 2 circuit breaker (RH Power Junction Box)............................ Confirm set
3. Aircraft.. At pilots discretion, continue flight without services of failed bus or land as soon as practical

CAUTION

The systems connected to the Avionic 2 Bus, on the right rear circuit breaker panel, are inoperative.

---------- END -----------

Main Bus — 3-15-05

Main Bus voltage is below 22 V.

1. MAIN circuit breaker (RH Power Junction Box)............................ Confirm set

Continued on next page

Main Bus 3-15-05

continued

2.	Aircraft..	At pilots discretion, continue flight without services of failed bus or land as soon as practical. Depart icing conditions to positive SAT atmosphere if possible. Do not fly in icing conditions.

CAUTION

The systems connected to the Main Bus, on the right forward circuit breaker panel, are inoperative.

---------- END -----------

Generator 1 Bus 3-15-06

Generator 1 Bus voltage is below 22 V.

1.	GEN 1 circuit breaker (LH Power Junction Box)..............................	Confirm set
2.	Aircraft..	At pilots discretion, continue flight without services of failed bus or land as soon as practical.

CAUTION

The systems connected to the Generator 1 Bus, on the left rear circuit breaker panel, are inoperative.

---------- END -----------

Generator 2 Bus 3-15-07

Generator 2 Bus voltage is below 22 V.

1.	GEN 2 circuit breaker (RH Power Junction Box)...................	Confirm set
2.	Aircraft..	At pilots discretion, continue flight without services of failed bus or land as soon as practical.

CAUTION

The systems connected to the Generator 2 Bus, on the right rear circuit breaker panel, are inoperative.

---------- END -----------

Standby Bus 3-15-08

Standby Bus voltage is below 22 V.

1.	AV 1 BUS and STBY BUS switches....................................	Confirm set to ON
2.	AV STBY PWR circuit breaker (LH Power Junction Box)...........	Confirm set
3.	Aircraft.......................................	At pilots discretion, continue flight without services of failed bus or land as soon as practical.

CAUTION

The systems connected to the STBY Bus, on the left rear circuit breaker panel, are inoperative.

---------- END -----------

Non Essential Bus 3-15-09

Non Essential Bus voltage is below 22 V.

1.	NON ESS circuit breaker (RH Power Junction Box)..................	Confirm set
2.	Aircraft.......................................	At pilots discretion, continue flight without services of failed bus or land as soon as practical.

CAUTION

The systems connected to the Non Essential Bus, on the right forward circuit breaker panel, are inoperative.

---------- END -----------

Bus Tie 3-15-10

BUS TIE in wrong state.

If GEN 1 and GEN 2 switches are ON and volts/amps normal:

1.	BUS TIE circuit breaker (overhead panel)........................	PULL

If a generator is off:

2.	BUS TIE circuit breaker (overhead panel)........................	Check if tripped

Continued on next page

Bus Tie 3-15-10

continued

3.	BUS TIE circuit breaker (overhead panel)........................	Reset (max 1 attempt only)
4.	Aircraft.......................................	Land as soon as possible

CAUTION

Buses are being powered only from a battery. Possible battery current caution.

---------- END -----------

Generators 3-15-11

GEN 1 and GEN 2 are off and engine running.

1.	Systems MFD - ELECTRICAL window......................................	Confirm the failures
2.	GEN 1 switch............................	RESET then ON
3.	GEN 2 switch............................	RESET then ON

If generators do not reset (**Generators** *remains on):*

4.	Systems MFD - ELECTRICAL window......................................	Monitor BAT 1 and BAT 2
5.	Aircraft.......................................	Land as soon as possible. Do not fly in icing conditions.

Note

Two fully charged batteries will last for 33 minutes with the automatic load shedding.

Continued on next page

Generators 3-15-11

continued

CAUTION

The following buses are automatically load shed (no additional Cautions will be shown) and the systems connected to them will be inoperative:

- **Generator 1 bus (Left rear CB panel)**
- **Main bus (Right forward CB panel)**
- **Avionic 2 bus (Right rear CB panel)**
- **Non Essential Bus (Right front CB panel)**
- **Cabin bus (Right rear CB panel)**
- **Generator 2 bus (Right rear CB panel)**

CAUTION

The following high current consumption systems are automatically load shed:

- **Cabin heater**
- **Under floor heater**
- **RH windshield de-ice**
- **Propeller de-ice**
- **LH AOA plate heater**
- **RH AOA plate heater**
- **VCCS compressor**
- **Footwarmer (optional system)**
- **Logo lights (optional system)**

Note

If further load reduction is desired to extend battery endurance beyond 33 minutes, consider manually switching off all exterior lights and if conditions allow all ice protection.

---------- END -----------

Generator 1 Off 3-15-12

Generator 1 is OFF line and engine running.

1. Systems MFD - ELECTRICAL window....................................... Confirm the failure

Continued on next page

Generator 1 Off — 3-15-12

continued

2.	GEN 1 switch.............................	RESET then ON

If GEN 1 does not reset:

3.	Aircraft.......................................	At pilots discretion, continue flight without the services of the load shed systems and buses

CAUTION

The following buses are automatically load shed (no additional Cautions will be shown) and the systems connected to them will be inoperative:

- **Generator 1 bus (Left rear CB panel)**
- **Non Essential Bus (Right front CB panel)**
- **Cabin bus (Right rear CB panel)**

CAUTION

The following high current consumption systems are automatically load shed:

- **Cabin heater**
- **Under floor heater**
- **VCCS compressor**
- **Footwarmer (optional system)**
- **Logo lights (optional system)**

---------- END -----------

Generator 2 Off — 3-15-13

Generator 2 is OFF line and engine running.

1.	Systems MFD - ELECTRICAL window......................................	Confirm the failure
2.	GEN 2 switch.............................	RESET then ON

If GEN 2 does not reset:

3.	Aircraft.......................................	At pilots discretion, continue flight without the services of the load shed systems and buses

Continued on next page

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Generator 2 Off 3-15-13

continued

CAUTION

The following buses are automatically load shed (no additional Cautions will be shown) and the systems connected to them will be inoperative:

- **Generator 2 bus (Right rear CB panel)**
- **Non Essential Bus (Right front CB panel)**
- **Cabin bus (Right rear CB panel)**

CAUTION

The following high current consumption systems are automatically load shed:

- **Cabin heater**
- **Under floor heater**
- **VCCS compressor**
- **Footwarmer (optional system)**
- **Logo lights (optional system)**

---------- END ----------

Generator 1 Volts 3-15-14

GEN 1 voltage is low or high.

1.	Systems MFD - ELECTRICAL window..	Confirm the failure
2.	GEN 1 switch..............................	RESET then ON

If **Generator 1 Volts** *remains:*

3.	GEN 1 switch..............................	OFF
4.	Aircraft..	At pilots discretion, continue flight without the services of the load shed systems and buses

Continued on next page

Generator 1 Volts 3-15-14

continued

CAUTION

The following buses are automatically load shed (no additional Cautions will be shown) and the systems connected to them will be inoperative:

- **Generator 1 bus (Left rear CB panel)**
- **Non Essential Bus (Right front CB panel)**
- **Cabin bus (Right rear CB panel)**

CAUTION

The following high current consumption systems are automatically load shed:

- **Cabin heater**
- **Under floor heater**
- **VCCS compressor**
- **Footwarmer (optional system)**
- **Logo lights (optional system)**

---------- END -----------

Generator 2 Volts 3-15-15

GEN 2 voltage is low or high.

1. Systems MFD - ELECTRICAL window.. Confirm the failure
2. GEN 2 switch.............................. RESET then ON

If **Generator 2 Volts** *remains:*

3. GEN 2 switch.............................. OFF
4. Aircraft.. At pilots discretion, continue flight without the services of the load shed systems and buses

Continued on next page

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Generator 2 Volts — 3-15-15

continued

CAUTION

The following buses are automatically load shed (no additional Cautions will be shown) and the systems connected to them will be inoperative:

- **Generator 2 bus (Right rear CB panel)**
- **Non Essential Bus (Right front CB panel)**
- **Cabin bus (Right rear CB panel)**

CAUTION

The following high current consumption systems are automatically load shed:

- **Cabin heater**
- **Under floor heater**
- **VCCS compressor**
- **Footwarmer (optional system)**
- **Logo lights (optional system)**

---------- END ----------

Battery 1 Hot — Battery 2 Hot — 3-15-16
Battery 1 + 2 Hot

Battery temperature is excessive.

1.	Systems MFD - ELECTRICAL window..	Check battery 1 and 2 charge current

If charge current high:

2.	BAT 1 or BAT 2 switch................	OFF (Do not select ON again)

If charge current normal:

3.	BAT 1 or BAT 2 switch................	OFF

If battery hot warning extinguishes, wait 5 minutes, then:

4.	BAT 1 or BAT 2 switch................	ON (Once only)

If Battery 1 and 2 hot:

5.	BAT 1 and BAT 2 switch.............	OFF

Continued on next page

Battery 1 Hot / Battery 2 Hot / Battery 1 + 2 Hot — 3-15-16

continued

6.	Aircraft.......................................	Land as soon as possible

Note

The **Battery 1 Hot** and **Battery 2 Hot** warnings are inoperative on aircraft with lead acid batteries installed.

---------- END -----------

Battery 1 / Battery 2 — 3-15-17

Battery discharge is above 60 Amps or battery voltage is below 22 V or above 30.1 V.

1.	Systems MFD - ELECTRICAL window......................................	Check GEN 1 or 2 and BAT 1 or 2 current and voltage

If indications are normal:

2.	BAT 1 or BAT 2 switch................	OFF

If indications are not normal:

3.	Aircraft.......................................	Carry out Generator 1 Volts - 3-15-14 or Generator 2 Volts - 3-15-15 procedure

---------- END -----------

Battery 1 Off / Battery 2 Off — 3-15-18

1.	BAT 1 or BAT 2 switch................	Check ON. Reset

---------- END -----------

External Power — 3-15-19

External power on with GEN 1 and GEN 2 and AV 1 BUS and AV 2 BUS on.

1.	External power unit....................	Disconnect

---------- END -----------

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3-16 Fuel System

Fuel Pressure Low 3-16-01

Fuel Pressure Low or both green PUMP indications on the MFD Fuel Window are cycling on and off every 10 seconds.

On ground:

1. Fuel filter faults........................... Check
2. Fuel temperature........................ Monitor

If indicated fuel temperature below 12 °C:

3. Engine oil temperature................ Monitor

If **Fuel Pressure Low** *persists:*

4. Aircraft...................................... Do not take off

--- END ---

In flight:

If **Fuel Pressure Low** *and* **Fuel TEMP** *are displayed and fuel temperature is low:*

1. RH FUEL PUMP switch............. ON
2. Fuel temperature........................ Monitor

Note
Consider to retract landing gear if extended. A retracted landing gear helps to reduce oil cooling.

3. Engine... Decrease power to increase fuel temperature
4. Aircraft.. Descend to warmer air
5. Engine oil temperature................ Monitor
6. Fuel state (imbalance)................ Monitor

Every 5 minutes:

7. FUEL PUMP switches................ AUTO
8. Fuel pump operation.................. Monitor

If fault persists:

9. FUEL PUMP switches................ ON
10. CAS window.............................. Check for fuel filter faults

If **Fuel Pressure Low** *is displayed and* **Fuel TEMP** *is not displayed:*

11. Power.. Reduce to minimum to sustain flight

Continued on next page

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Fuel Pressure Low — 3-16-01

continued

12. Fuel pumps................................ Monitor automatic switching

> **Note**
> When the system switches FUEL PUMPs automatically to ON at lower engine power, this is a result of degraded ejector pump performance.

If **Fuel Pressure Low** *persists:*

13. FUEL PUMP switches................ ON

If there are 2 segments or more difference between the left and right:

14. FUEL PUMP switch (emptier side)... AUTO
15. Fuel state.................................. Monitor

When fuel balanced:

16. FUEL PUMP switches................ ON

If **Fuel Pressure Low** *stays ON and the FUEL PUMP switches are set to ON:*

17. Aircraft....................................... Land as soon as possible. If possible always retain glide capability to the selected airfield in case of total engine failure

---------- END -----------

Fuel PRESS SENS Fail — 3-16-02

Fuel PRESS SENS Fail or both FUEL PUMPs on continuously

1. Aircraft....................................... Carry out Fuel Balance Fault and/or Fuel Imbalance - 3-16-04 procedure

---------- END -----------

LH Fuel Low — RH Fuel Low — LH + RH Fuel Low — 3-16-03

1. FUEL indications....................... Check

If fuel leak from one wing is suspected:

2. Aircraft....................................... Carry out Suspected Fuel Leak - 3-16-05 procedure

Continued on next page

LH Fuel Low / RH Fuel Low / LH + RH Fuel Low — 3-16-03

continued

If **LH Fuel Low** *or* **RH Fuel Low** *is on:*

3. FUEL PUMP switch (fuller side).. ON
4. Fuel state.................................... Monitor

If no fuel leak is suspected and both **LH Fuel Low** *and* **RH Fuel Low** *are on:*

5. FUEL PUMP switches................ ON
6. Power.. Reduce to minimum to sustain flight
7. Aircraft....................................... Land as soon as possible. If possible always retain glide to the selected landing airfield in case of total engine failure

---------- END -----------

Fuel Balance Fault / Fuel Imbalance — 3-16-04

On ground:

1. Fuel L and R indications............ Check for difference

WARNING

IF THERE ARE 4 SEGMENTS OR MORE DIFFERENCE BETWEEN LEFT AND RIGHT DO NOT TAKE OFF.

If fuel pump on fuller side is not running:

2. FUEL PUMP switch (fuller side).. ON
3. Fuel state.................................... Monitor

If difference cannot be balanced:

4. Aircraft....................................... Do not take off

When fuel balanced:

5. FUEL PUMP switch................... AUTO

--- END ---

In flight:

1. Fuel L and R indications............ Check for difference

Continued on next page

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Fuel Balance Fault — Fuel Imbalance — 3-16-04

continued

CAUTION

If there are 3 segments or more difference between left and right, possible aileron deflection required for wings level flight, especially at low speed.

If fuel leak from one wing is suspected:

2.	Aircraft..	Carry out Suspected Fuel Leak - 3-16-05 procedure

If no fuel leak is suspected:

3.	FUEL PUMP circuit breaker (on fuller side) (Essential Bus $_L$J1 or $_L$H1)..	Reset
4.	FUEL PUMP switch (fuller side)..	ON
5.	FUEL PUMP circuit breaker (on emptier side) (Essential Bus $_L$J1 or $_L$H1)..	PULL

Note

Do not pull the FUEL PUMP CB when **Fuel Pressure Low** was displayed with a large imbalance.

6.	Fuel state..................................	Monitor
7.	Engine parameters.....................	Monitor

If fuel is balanced:

8.	FUEL PUMP circuit breakers (Essential Bus $_L$J1 and $_L$H1)........	Reset
9.	FUEL PUMP switches................	AUTO

If difference cannot be balanced and fuel flow was above 400 LB/H with fuller side FUEL PUMP switch to ON:

10.	Power..	Reduce to approx. 300 LB/H fuel flow

If fault clears:

11.	Fuel flow....................................	Maintain below 400 LB/H
12.	Fuel temperature.........................	Monitor

Continued on next page

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Fuel Balance Fault — Fuel Imbalance — 3-16-04

continued

If difference cannot be balanced:

13. Aircraft.. Land as soon as possible

Note

If a prompt landing is not possible, keep high IAS to nearest airfield and consider burning off fuel until the fuel imbalance is not greater than 5 segments for landing. Use flaps up to keep approach speed high.

---------- END -----------

Suspected Fuel Leak — 3-16-05

If fuel imbalance is 3 segments or less:

1. FUEL PUMP switch (on leaking side).. ON
2. FUEL PUMP circuit breaker (on good side) (Essential Bus $_L$J1 or $_L$H1).. PULL
3. Fuel state.................................. Monitor

If fuel state is more than 3 segments

4. FUEL PUMP switch (on fuller side).. ON
5. FUEL PUMP switch (on leaking side).. AUTO
6. FUEL PUMP circuit breaker (on leaking side) (Essential Bus $_L$J1 or $_L$H1).. PULL

Note

Do not pull the FUEL PUMP CB when **Fuel Pressure Low** was displayed with a large imbalance.

7. Fuel state.................................. Monitor
8. Engine parameters..................... Monitor

Continued on next page

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Suspected Fuel Leak 3-16-05

continued

If fuel imbalance persists:

9. Aircraft.. Land as soon as practical

Note

If a prompt landing is not possible, keep high IAS to nearest airfield and consider burning off fuel until the fuel imbalance is not greater than 5 segments for landing. Use flaps up to keep approach speed high.

---------- END -----------

Fuel Quantity Fault 3-16-06

Fuel Quantity Fault and/or one or both MFD analogue displays go blank or indication amber crossed out

CAUTION

The automatic fuel balancing system will not be operative.

Fuel reset will not be operative.

Fuel Balance Fault and Fuel Imbalance will not be indicated.

1. Fuel Quantity.............................. Monitor digital Fuel Quantity indication

If fuel imbalance is suspected:

Note

To check fuel imbalance, disengage the autopilot regularly to check for roll trim changes.

2. Aircraft.. Land as soon as possible

---------- END -----------

Loss of Digital Fuel Quantity Indication 3-16-07

Digital fuel quantity digits replaced by amber dashes.

If Fuel Flow digital indication is available, attempt to perform a fuel reset:

1. Aircraft.. Make sure wings are level, pitch within ± 3°, with unaccelerated flight and no turbulence present

2. Fuel Reset soft key..................... Press

Note

The Fuel Used will be reset to zero with fuel reset.

Continued on next page

Loss of Digital Fuel Quantity Indication 3-16-07

continued

If Fuel Flow digital indication is invalid:

3.	Fuel state....................................	Monitor analogue Fuel Quantity on Fuel window or the digital fuel indication on Systems Summary window

Note

Continued flight is possible without digital Fuel Quantity (QTY) providing analogue fuel quantity is operating correctly.

---------- END -----------

LH Fuel Pump RH Fuel Pump 3-16-08

On ground:

1.	Aircraft..	Do not take off

--- END ---

In flight:

1.	FUEL PUMP switches.................	AUTO
2.	FUEL PUMP circuit breaker (on affected side) (Essential Bus $_L$J1 or Essential Bus $_L$H1).................	Reset
3.	FUEL PUMP switch (on affected side)..	ON

After 10 seconds:

4.	FUEL PUMP switch (on affected side)..	AUTO
5.	Fuel state....................................	Monitor

If fuel imbalance with affected pump failed ON and affected tank lower:

6.	Aircraft..	Carry out Fuel Balance Fault and/or Fuel Imbalance - 3-16-04 procedure

If fuel imbalance with affected pump failed OFF and affected tank lower:

7.	Aircraft..	Both automatic and manual fuel balancing available

Continued on next page

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LH Fuel Pump — RH Fuel Pump — 3-16-08

continued

If fuel imbalance with affected pump failed OFF and affected tank higher:

8. Aircraft.. Land as soon as possible. Fuel imbalance correction not possible

Note

If a prompt landing is not possible, keep high IAS to nearest airfield and consider burning off fuel until the fuel imbalance is not greater than 5 segments for landing. Use flaps up to keep approach speed high.

---------- END -----------

LH + RH Fuel Pump — 3-16-09

On ground:

1. Aircraft.. Do not take off

--- END ---

In flight:

1. Fuel state.................................. Monitor

If fuel pumps failed ON:

2. FUEL PUMP circuit breaker (Essential Bus $_L$J1 and Essential Bus $_L$H1).................................... PULL
3. Fuel state.................................. Monitor

If fuel pumps failed OFF:

4. Aircraft.. Land as soon as possible. Fuel imbalance correction not possible

Note

If a prompt landing is not possible, keep high IAS to nearest airfield and consider burning off fuel until the fuel imbalance is not greater than 5 segments for landing. Use flaps up to keep approach speed high.

---------- END -----------

Fuel Pump Failure (Unannunciated) — 3-16-10

– Fuel pump(s) on for more than 10 seconds with fuel balanced and no **Fuel Pressure Low** and no **Fuel PRESS SENS Fail**, or

Continued on next page

Fuel Pump Failure (Unannunciated) 3-16-10

continued

- Both fuel pumps on for more than 10 seconds with 2 or more segments difference between left and right and no **Fuel Pressure Low** and no **Fuel PRESS SENS Fail**, or
- Fuel pumps not running with green PUMP advisory on, or
- No **Fuel Pressure Low** and no **Fuel PRESS SENS Fail** and fuel pumps not running.

1.	FUEL PUMP(S)...........................	AUTO
2.	FUEL CTL circuit breaker (Essential Bus $_L$K1)....................	Reset
3.	LH FUEL PUMP circuit breaker (Essential Bus $_L$J1).....................	Reset
4.	RH FUEL PUMP circuit breaker (Essential Bus $_L$H1)....................	Reset

If failure is still present:

5.	Fuel state..................................	Monitor

If fuel imbalance:

6.	Aircraft..	Carry out Fuel Balance Fault and/or Fuel Imbalance - 3-16-04 procedure

---------- END -----------

Fuel IMP Bypass 3-16-11

On ground:

If engine started with cold fuel (below 0 °C):

1.	Oil temperature..........................	CHECK. Operate engine with oil temperature above 8 °C for at least 5 minutes prior to take-off

If engine started with warm fuel (0 °C or above) or if indication remains active:

2.	Engine.......................................	Shut down
3.	Aircraft......................................	Maintenance required

--- END ---

In flight:

1.	Fuel flow....................................	Monitor
2.	Fuel temperature........................	Monitor
3.	Oil temperature..........................	Monitor

Continued on next page

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Fuel IMP Bypass 3-16-11

continued

If fuel icing suspected:

4.	FUEL PUMP switches................	AUTO

Note

Consider to retract landing gear if extended. A retracted landing gear helps to reduce oil cooling.

5.	Engine.......................................	Decrease power to increase fuel temperature

If failure is still present and fuel icing is suspected:

6.	CAS Window.............................	Check for fuel filter faults
7.	Aircraft.......................................	Plan for diversion

If fuel icing not suspected:

8.	Aircraft.......................................	Continue flight

If indicated fuel temperature below 12 °C or **Fuel Balance Fault** *:*

9.	Engine.......................................	Reduce power for balancing (approx. 300 LB/H fuel flow)

---------- END -----------

Fuel Filter Blocked 3-16-12

On ground:

1.	Engine.......................................	Shut down
2.	Aircraft.......................................	Maintenance required

--- END ---

In flight:

1.	Fuel flow.....................................	Monitor
2.	Fuel temperature........................	Monitor
3.	Oil Temperature........................	Monitor
4.	Aircraft.......................................	Land as soon as possible. If possible always retain glide, to the selected landing airfield, in case of total engine failure

---------- END -----------

Fuel TEMP 3-16-13

On ground:

If indicated fuel temperature low (less than 12 °C):

1.	Oil Temperature.........................	Monitor increasing
2.	Fuel temperature........................	Monitor increasing
3.	Engine..	Increase power slightly if necessary to increase oil heating

If indicated fuel temperature high (at or above 105 °C):

4.	Engine..	Shut down
5.	Aircraft..	Maintenance required

--- END ---

In flight:

1.	Fuel temperature........................	Monitor

If indicated fuel temperature low (less than 12 °C):

2.	FUEL PUMP switches................	AUTO

Note

Consider to retract landing gear if extended. A retracted landing gear helps to reduce oil cooling.

3.	Engine..	Decrease power to increase fuel temperature
4.	Aircraft..	Descend to warmer air if necessary

If indicated fuel temperature remains low (less than 12 °C):

5.	CAS Window..................................	Check for fuel filter faults

If indicated fuel temperature decreases and remains below 0 °C:

6.	Aircraft..	Land as soon as practical

If indicated fuel temperature high (at or above 105 °C):

7.	FUEL PUMP switches................	ON
8.	Fuel temperature........................	Monitor
9.	Aircraft..	Climb to cooler air if necessary

If fuel temperature normalizes:

10.	FUEL PUMP switches................	AUTO

If indicated fuel temperature high (at or above 105 °C):

11.	Aircraft..	Land as soon as practical

---------- END -----------

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3-17 Cabin Environment Failures

Cabin Pressure 3-17-01

Cabin pressure differential of less than -0.25 psi or greater than 6.35 psi is exceeded.

1.	Systems MFD ENVIRONMENT window......................................	Check ΔP psi indication

If ΔP less than -0.25 psi:

2.	Aircraft..	Reduce descent rate
3.	CABIN PRESSURE switch.........	DUMP

If ΔP more than 6.35 psi:

4.	CABIN PRESSURE switch.........	DUMP
5.	ACS EMERG shut off..................	PULL
6.	Main OXYGEN lever...................	Confirm ON
7.	Crew oxygen masks....................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

8.	PASSENGER OXYGEN selector	AUTO or ON
9.	Systems MFD PAX OXY advisory..	Confirm ON
10.	Passengers................................	Instruct to don masks
11.	Aircraft..	Carry out Maximum Rate Descent - 3-8-03 procedure

---------- END -----------

Cabin Pressure 3-17-02

Cabin pressure differential is greater than 6.0 psi.

1.	CPCS SYSTEM MODE switch....	MANUAL
2.	MANUAL CONTROL switch........	Push intermittently to CLIMB to reduce pressure differential to below 5.75 psi

Continued on next page

Cabin Pressure 3-17-02

continued

If unsuccessful:

3.	CABIN PRESSURE switch.........	DUMP
4.	ACS EMERG shut off..................	PULL
5.	Main OXYGEN lever..................	Confirm ON
6.	Crew oxygen masks....................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

7.	PASSENGER OXYGEN selector	AUTO or ON
8.	Systems MFD PAX OXY advisory......................................	Confirm ON
9.	Passengers................................	Instruct to don masks
10.	Aircraft.......................................	Carry out Maximum Rate Descent - 3-8-03 procedure

Prior to landing:

11.	CABIN PRESSURE switch.........	DUMP (if not selected earlier)

----------- END -----------

Cabin Altitude 3-17-03

Note

If above FL200 (EDM armed) and if autopilot is engaged, the Emergency Descent - 3-8-04 Mode (EDM) will be triggered by a Cabin Altitude warning.

1.	Main OXYGEN lever..................	Confirm ON

Continued on next page

Cabin Altitude — 3-17-03

continued

2.	Crew oxygen masks....................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

3.	PASSENGER OXYGEN selector	AUTO or ON
4.	Systems MFD **PAX OXY** advisory......................................	Confirm ON
5.	Passengers................................	Instruct to don masks
6.	CPCS MODE switch..................	MANUAL
7.	MANUAL CONTROL switch........	Push DESCENT intermittently to reduce cabin altitude to required level

If unsuccessful:

8.	Aircaft..	Limit flight altitude to maintain cabin altitude below 10,000 ft

If necessary:

9.	Aircraft..	Carry out Maximum Rate Descent - 3-8-03 procedure

Prior to landing:

10.	CABIN PRESSURE switch.........	DUMP

---------- END -----------

ACS Low Inflow — 3-17-04

1.	ACS BLEED AIR switch.............	INHIBIT
2.	ACS BLEED AIR switch.............	AUTO

If unsuccessful:

3.	Aircraft..	Limit Flight Altitude to maintain cabin altitude below 10,000 ft MSL or MSA

If cabin altitude climbs above 10,000 ft:

4.	ACS BLEED AIR switch.............	INHIBIT

Continued on next page

ACS Low Inflow — 3-17-04

continued

5.	ACS EMERG shut off..................	PULL
6.	Main OXYGEN lever..................	Confirm ON
7.	Crew oxygen masks....................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

8.	PASSENGER OXYGEN selector	AUTO or ON
9.	Systems MFD **PAX OXY** advisory......................................	Confirm ON
10.	Passengers................................	Instruct to don masks
11.	Aircraft..	Carry out Maximum Rate Descent - 3-8-03 procedure

When cabin altitude below 10,000 ft:

12.	CABIN PRESSURE switch.........	DUMP (cabin ventilation)

---------- END -----------

CPCS Fault — 3-17-05

On ground:

1.	CPCS MODE switch...................	MANUAL for at least 1 sec then AUTO
2.	CAS..	Check

If **CPCS Fault** *remains:*

3.	CPCS AUTO circuit breaker (ESS Bus $_L$E1) and CPCS MON circuit breaker (EPS Bus $_L$R2).....	Open for 4 secs, then close
4.	CAS..	Check
5.	CPCS MODE switch...................	MANUAL for at least 1 sec then AUTO
6.	CAS..	Check

--- END ---

Continued on next page

CPCS Fault 3-17-05

continued

In flight and if ΔP and CAB ALT indications are available:

1.	CPCS MODE switch..................	MANUAL for at least 1 sec then AUTO
2.	CAS...	Check

If **CPCS Fault** *remains:*

3.	CPCS MODE switch..................	MANUAL
4.	MANUAL CONTROL switch........	Push intermittently to increase or reduce cabin altitude to required level
5.	Aircraft.......................................	Land as soon as practical

Prior to landing:

6.	CABIN PRESSURE switch.........	DUMP

--- END ---

In flight and if ΔP not displayed (***ADC A+B Fail*** *):*

1.	CPCS MODE switch..................	MANUAL
2.	MANUAL CONTROL switch........	Push DESCENT for 30 seconds to close OFV

If **Cabin Altitude** *shows:*

3.	Main OXYGEN lever...................	Confirm ON
4.	Crew oxygen masks..................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

5.	PASSENGER OXYGEN selector	AUTO or ON
6.	Systems MFD **PAX OXY** advisory.......................................	Confirm ON
7.	Passengers................................	Instruct to don masks
8.	CPCS MODE switch..................	MANUAL
9.	MANUAL CONTROL switch........	Push intermittently to increase or reduce cabin altitude to required level
10.	Aircraft.......................................	Land as soon as practical

Continued on next page

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CPCS Fault — 3-17-05

continued

Prior to landing:

11. CABIN PRESSURE switch......... DUMP

--- END ---

In flight and if ΔP and **Cabin Altitude** *not displayed:*

1. Main OXYGEN lever.................. Confirm ON
2. Crew oxygen masks.................... ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

3. PASSENGER OXYGEN selector AUTO or ON
4. Systems MFD **PAX OXY** advisory...................................... Confirm ON
5. Passengers................................ Instruct to don masks
6. Aircraft.. Descend below 10,000 ft or to minimum safe altitude if higher
7. Aircraft.. Land as soon as practical

Prior to landing:

8. CABIN PRESSURE switch......... DUMP

---------- END -----------

ECS Fault — 3-17-06

1. ECS circuit breaker (Essential Bus $_L$E2).................................... Reset

If not successful:

2. ACS BLEED AIR switch............. INHIBIT if cabin temperature is unacceptable

Note

If ACS bleed air switch is set to inhibit, the aircraft will depressurize and **ACS Low Inflow** will come on.

Continued on next page

ECS Fault — 3-17-06

continued

If ACS BLEED AIR switch is inhibited and aircraft altitude is > 10,000 ft:

3.	ACS EMER shut off....................	PULL
4.	Aircraft..	Carry out Maximum Rate Descent - 3-8-03 procedure
5.	Aircraft..	Land as soon as practical (depending on cabin/cockpit environment)

---------- END -----------

Uncontrolled Cabin Pressure — 3-17-07

Uncontrolled fluctuations of cabin pressure.

1.	CPCS MODE switch..................	MANUAL
2.	CPCS MANUAL CONTROL switch..	Push intermittently to increase or reduce cabin altitude to required level

If unsuccessful:

3.	Main OXYGEN lever..................	Confirm ON
4.	Crew oxygen masks....................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

5.	PASSENGER OXYGEN selector	AUTO or ON
6.	Systems MFD **PAX OXY** advisory.....................................	Confirm ON
7.	Passengers...............................	Instruct to don masks
8.	CABIN PRESSURE switch.........	DUMP
9.	ACS EMERG shut off.................	PULL
10.	Aircraft..	Descend below 10,000 ft or to minimum safe altitude if higher
11.	Aircraft..	Land as soon as practical

Continued on next page

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Uncontrolled Cabin Pressure 3-17-07

continued

Prior to landing:

12. CABIN PRESSURE switch......... DUMP (if not selected earlier)

---------- END -----------

3-18 Deice Systems

Propeller De Ice 3-18-01

WARNING

THE LOSS OF PROPELLER DEICE IN ICING CONDITIONS CAN CAUSE SEVERE DEGRADATION IN AIRCRAFT SPEED AND CLIMB PERFORMANCE.

1.	PROP LOW SPEED switch........ (if installed)................................	Confirm OFF
2.	PROPELLER switch..................	Set to OFF and wait 10 seconds
3.	PROPELLER switch..................	Set to ON
4.	PROP DE ICE circuit breaker (LH PJB)..................................	Check. Do not reset unless tripped

If captions go off after 5 seconds:

5.	Aircraft......................................	Continue flight and monitor system

If captions remain on after 5 seconds:

6.	PROPELLER switch..................	Maintain ON (together with INERT SEP OPEN) to maintain PUSHER ICE MODE
7.	Aircraft......................................	DEPART ICING CONDITIONS to positive SAT atmosphere, if possible

If propeller vibration occurs:

8.	PCL..	Increase or decrease power as required to minimize vibration and sustain level flight
9.	Aircraft......................................	Avoid further icing conditions

If propeller vibrations continue or attained performance degrades:

10.	Aircraft......................................	Land as soon as possible

---------- END -----------

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De Ice Boots 3-18-02

De Ice Boots with **BOOTS** off

WARNING

A BOOT DEICE FAILURE IN ICING CONDITIONS CAN CAUSE DEGRADATION OF AIRCRAFT SPEED AND CLIMB PERFORMANCE AND A PREMATURE STALL. FLAP POSITION IS LIMITED TO 0° WITH THIS FAILURE.

1.	PCL..	Increase power
2.	BOOTS switch...........................	Set to OFF and wait until caution resets (1 min approx.)
3.	BOOTS switch...........................	Set ot 3 MIN or 1 MIN and let run for at least one full cycle
4.	BOOTS DE-ICE circuit breaker (Main Bus $_R$L2)...........................	Check. Do not reset unless tripped

If caption returns to normal operation:

5.	Aircraft.......................................	Continue flight and monitor system. Avoid low power settings if possible

If captions stay in failure status:

6.	Aircraft.......................................	DEPART ICING CONDITIONS to positive SAT atmosphere, if possible
7.	BOOTS switch...........................	Set to OFF
8.	Aircraft.......................................	Avoid large or sudden changes in aircraft directional, longitudinal and lateral control until airframe is judged to be free of residual ice
9.	Aircraft.......................................	Avoid further icing conditions

If airframe is free of ice accretion:

10.	Flap position................................	As required

If airframe is not free of ice accretion:

11.	Flap position................................	Limited to 0°
12.	Landing approach for 9921 lb (4500 kg) (MLW)........................	Keep minimum landing approach speed above 130 KIAS

Continued on next page

De Ice Boots 3-18-02

continued

CAUTION

On landing approach after boot failure (flaps 0°), the PFD dynamic speed bug will not be correct and should not be used as reference.

CAUTION

The total landing distance will be longer by up to 160%. Refer to Section 5, Performance, Flight in Icing Conditions, Flight in Icing Conditions - Landing Performance for the exact landing distance calculation.

CAUTION

In the case of heavy brake usage, soft brake pedals and/or wheel fusible plugs release may occur during a following taxi. Limitation in Section 2, Systems and Equipment Limits, Brakes applies.

---------- END -----------

Inertial Seperator 3-18-03

WARNING

AN INERTIAL SEPARATOR FAILURE IN ICING CONDITIONS CAN CAUSE DEGRADATION OF THE AIRCRAFT ENGINE PERFORMANCE (AN INCREASE IN ITT).

AN INERTIAL SEPARATOR FAILURE DURING OPERATIONS IN FOREIGN OBJECT DAMAGE (FOD) ENVIRONMENTS MAY CAUSE LONG TERM ENGINE DETERIORATION AND SHOULD BE REPORTED FOR POST FLIGHT MAINTENANCE.

1. INERT SEP switch...................... Set to CLOSED and wait 30 seconds
2. INERT SEP switch...................... Set to OPEN
3. INERT SEP circuit breaker (Essential Bus $_{L}$F2).................... Check. Do not reset unless tripped

If caption returns to normal operation after 45 seconds:

4. Aircraft.. Continue flight and monitor system

If caption stays in failure status after 45 seconds:

5. INERT SEP switch...................... Maintain OPEN (together with ICE PROP PROTECTION PROPELLER ON) to maintain PUSHER ICE MODE

Continued on next page

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Inertial Seperator 3-18-03

continued

6.	Aircraft..	DEPART ICING CONDITIONS to positive SAT atmosphere, if possible
7.	Aircraft..	Avoid further icing conditions

If any attained performance degradation continues:

8.	Aircraft..	Land as soon as possible

---------- END -----------

LH Windshield Heat RH Windshield Heat 3-18-04
LH + RH Windshield Heat

1.	LH W/SHLD circuit breaker (LH PJB)...	Check. Do not reset unless tripped
2.	LH WSHLD switch.....................	Set to OFF then to LIGHT or HEAVY
3.	RH W/SHLD circuit breaker (RH PJB)...	Check. Do not reset unless tripped
4.	RH WSHLD switch.....................	Set to OFF then to LIGHT or HEAVY

If caption returns to normal operation:

5.	Aircraft..	Continue flight and monitor system

If caption stays in failure status and forward visibility through LH windshield is lost:

6.	Windshield...................................	Use RH windshield

If total forward visibility is lost:

7.	Aircraft..	DEPART ICING CONDITIONS to positive SAT atmosphere, if possible. Interior fogging can be cleared by hand
8.	Aircraft..	Avoid further icing conditions

If windshield has not cleared by time of landing:

9.	Cabin pressure...........................	Make sure depressurized
10.	DV window.................................	Use, if required

---------- END -----------

Probes Off 3-18-05

Probes not on with static air temperature below 10 °C.

1.	PROBES switch.........................	Set to ON

---------- END -----------

AOA De Ice 3-18-06

WARNING

AN AOA PROBE DEICE FAILURE IN ICING CONDITIONS CAN CAUSE A FALSE ACTIVATION OF THE STALL PROTECTION SYSTEM.

1.	PROBES switch..........................	Set to OFF and wait 3 minutes
2.	PROBES switch..........................	Set to ON
3.	LH AOA SENS DE-ICE circuit breaker (Essential Bus $_{L}$L2)........	Check. Do not reset unless tripped
4.	LH AOA PLATE HEAT circuit breaker (Essential Bus $_{L}$K2)........	Check. Do not reset unless tripped
5.	RH AOA SENS DE-ICE circuit breaker (Main Bus $_{R}$C2)..............	Check. Do not reset unless tripped
6.	RH AOA PLATE HEAT circuit breaker (Main Bus $_{R}$D2)..............	Check. Do not reset unless tripped

If caption returns to normal operation:

7.	Aircraft..	Continue flight and monitor system

If caption stays in failure status:

8.	Aircraft..	DEPART ICING CONDITIONS to positive SAT atmosphere, if possible

CAUTION

Stick shaker may activate at higher speeds than normal. If this occurs, increase speed until shaker stops.

9.	Aircraft..	Avoid further icing conditions
10.	Flap position..................................	Limited to 15°
11.	Landing approach for 9921 lb (4500 kg) (MLW).........................	Keep minimum landing approach speed above 105 KIAS or shaker activation speed, whichever is highest

CAUTION

On landing approach after AOA deice failure, the PFD Dynamic Speed Bug will not be correct and should not be used as reference.

CAUTION

The total landing distance will be longer by up to 71%. Refer to Section 5, Performance, Flight in Icing Conditions, Flight in Icing Conditions - Landing Performance for the exact landing distance calculation.

---------- END -----------

Pitot 1 Heat Pitot 2 Heat 3-18-07

WARNING

A PITOT AND STATIC DEICE FAILURE IN ICING CONDITIONS CAN CAUSE AN INCORRECT INDICATION ON THE ASI AND/OR ALTIMETER AND VSI.

1. PROBES switch......................... Set to OFF then ON again
2. LH PITOT DE-ICE circuit breaker (Essential Bus $_L$J2)........ Check. Do not reset unless tripped
3. RH PITOT DE-ICE circuit breaker (Main Bus $_R$E2)............. Check. Do not reset unless tripped

If caption returns to normal operation:

4. Aircraft....................................... Continue flight and monitor system

If caption stays in failure status:

5. Autopilot.................................... Disconnect
6. Aircraft....................................... DEPART ICING CONDITIONS to positive SAT atmosphere, if possible
7. Aircraft....................................... Avoid further icing conditions
8. Aircraft....................................... Land as soon as possible
9. Landing approach...................... Keep speed as indicated by Dynamic Speed Bug (1.3 V_S) with PUSHER ICE MODE and flaps 15°

CAUTION

The total landing distance will be longer by up to 71%. Refer to Section 5, Performance, Flight in Icing Conditions, Flight in Icing Conditions - Landing Performance for the exact landing distance calculation.

---------- END -----------

Static Heat 3-18-08

WARNING

A PITOT AND STATIC DEICE FAILURE IN ICING CONDITIONS CAN CAUSE AN INCORRECT INDICATION ON THE ASI AND/OR ALTIMETER AND VSI.

1. PROBES switch......................... Set to OFF then ON again
2. LH STATIC DE-ICE circuit breaker (Essential Bus $_L$H2)........ Check. Do not reset unless tripped

Continued on next page

Static Heat 3-18-08

continued

3.	RH STATIC DE-ICE circuit breaker (Main Bus $_R$F2).............	Check. Do not reset unless tripped

If caption returns to normal operation:

4.	Aircraft.......................................	Continue flight and monitor system

If caption stays in failure status:

5.	Autopilot....................................	Disconnect
6.	Aircraft.......................................	DEPART ICING CONDITIONS to positive SAT atmosphere, if possible
7.	Aircraft.......................................	Avoid further icing conditions
8.	Aircraft.......................................	Land as soon as possible
9.	Landing approach......................	Keep speed as indicated by Dynamic Speed Bug (1.3 V_S) with PUSHER ICE MODE and flaps 15°. Maintain speed above shaker activation

CAUTION

The total landing distance will be longer by up to 71%. Refer to Section 5, Performance, Flight in Icing Conditions, Flight in Icing Conditions - Landing Performance for the exact landing distance calculation.

----------- END -----------

Pusher 3-18-09

WARNING

A FAILURE OF THE STALL WARNING/STICK PUSHER SYSTEM TO RE-DATUM TO ICE MODE WHEN IN ICING CONDITIONS CAN LEAVE THE AIRCRAFT UNPROTECTED AGAINST THE NATURAL STALL WITH RESIDUAL ICE ON THE AIRFRAME.

1.	STICK PUSHER test switch........	Press and hold for duration of Pusher test sequence (approx. 5 seconds) (this identifies Pusher ice mode computer or selection failure)

If failure stays during test go to Step 7.

If failure disappears during test but returns after completion of test:

2.	PROPELLER switch..................	Cycle from OFF to ON
3.	INERT SEP switch.....................	Cycle from CLOSED to OPEN

Continued on next page

Pusher — 3-18-09

continued

4.	PROP DE-ICE circuit breaker (LH PJB)...................................	Check. Do not reset unless tripped
5.	INERT SEP circuit breaker (Essential Bus $_L$F2)....................	Check. Do not reset unless tripped

If captions return to normal operation within 30 seconds:

6.	Aircraft..	Continue flight and monitor system

If caption stays in failure status:

7.	Aircraft..	DEPART ICING CONDITIONS to positive SAT atmosphere, if possible
8.	Aircraft..	Avoid further icing conditions
9.	Flap position...............................	Limited to 15°
10.	Landing approach for 9921 lb (4500 kg) (MLW)........................	Keep minimum landing approach speed above 105 KIAS

CAUTION

The total landing distance will be longer by up to 71%. Refer to Section 5, Performance, Flight in Icing Conditions, Flight in Icing Conditions - Landing Performance for the exact landing distance calculation.

CAUTION

On landing approach after Pusher Ice Mode failure, the PFD Dynamic Speed Bug will not be correct and should not be used as reference.

---------- END -----------

Boots TEMP Limit 3-18-10

De ice boots switch has been inadvertently left in the ON position during climb or descent through the boots temperature limit, or the boots switch has been inadvertently switched ON without observing the boots temperature limits.

CAUTION

Operation of the pneumatic de-ice boot system in ambient temperatures below -40 °C and above +40 °C may cause permanent damage to the boots.

1. BOOTS switch............................ Set to OFF

Note

Initial boot inflation sequence begins 20 seconds after deice boots activation, the deice timer/controller allows deactivation of the deice boots in this initial 20 seconds dwell timer before inflation sequence starts, this to prevent damage to the pneumatic de-ice boots due to inflation outside of their operating envelope (-40 °C - +40 °C).

---------- END -----------

Flaps EXT Limit 3-18-11

Flaps have been inadvertently extended more than 15° during de-ice boots operation or flaps have been inadvertently extended with failed boots.

1. FLAPS.. Retract to previous position

---------- END -----------

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3-19 Passenger and Cargo Door

Passenger Door Pax + Cargo Door	Cargo Door	3-19-01

On ground:

1.	Passenger and/or Cargo Door....	Visually check for the correct locking of the door latches (green indicators visible)
2.	Passenger Door.........................	Check the handle lock pin for freedom of movement

--- END ---

In flight:

CAUTION

Do not adjust the position of the door handles in flight.

1.	All occupants............................	Check seat lap and shoulder belts are fastened and the lap belt tightened
2.	Airspeed....................................	Reduce IAS to practical minimum
3.	Aircraft......................................	Start a slow descent to 10,000 ft, or minimum safe altitude if higher
4.	CPCS SYSTEM MODE..............	AUTO
5.	Aircraft......................................	Land as soon as possible

----------- END -----------

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3-20 Cracked Window in Flight

Cracked Window in Flight 3-20-01

1.	All occupants..............................	Check seat lap and shoulder belts are fastened and the lap belt tightened
2.	Airspeed....................................	Reduce IAS to practical minimum
3.	Aircraft......................................	Start a slow descent to 10,000 ft, or minimum safe altitude if higher
4.	CPCS SYSTEM MODE..............	AUTO
5.	Aircraft......................................	Land as soon as practical

Note

When left hand front winshield is cracked and the visibility impaired, use direct vision window for landing.

---------- END -----------

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3-21 Wheel Brake Failure

Wheel Brake Failure **3-21-01**

Wheel brakes ineffective and/or pedal excessively soft when pressed.

1. Landing + Taxi............................ Use reverse power, BETA and Nose Wheel steering

---------- END -----------

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3-22 APEX Failures

All APEX display units indicate a red X or blank: 3-22-01

1.	Primary flight information............	Use ESIS to control safe aircraft flight path continuation
2.	Autopilot....................................	Use the autopilot (if available) with mode annunciations on the flight controller

Note

Basic autopilot operation is independent of display unit availability.
If failure remains, wait 10 seconds before continuing with the procedure. This gives the system time to reconfigure.

If above 10,000 feet:

3.	Main OXYGEN lever..................	Confirm ON
4.	Crew oxygen masks...................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

5.	PASSENGER OXYGEN selector	AUTO or ON
6.	Systems MFD **PAX OXY**	Confirm ON
7.	Passengers................................	Instruct to don masks
8.	Aircraft......................................	Descend below 10,000 ft or to minimum safe altitude if higher. If required, inform ATC, ask for assistance to maintain safe aircraft flight path and traffic separation

If failure remains:

9.	MAU CH A1 circuit breaker (Essential Bus $_{L}$B3) and MAU CH B1 circuit breaker (Standby Bus $_{L}$Z3)....................................	Open, wait two seconds and close. Wait approximately 30 seconds for the system to reboot

If DU 1 and DU 2 remain blank or indicate red X, but DU 3 and/or DU 4 have recovered:

10.	Reversion Controller..................	Set PILOTS PFD control knob to AGM2
11.	Reversion Controller..................	Set UPPER MFD control knob to OFF/REV

Continued on next page

All APEX display units indicate a red X or blank: 3-22-01

continued

12. Aircraft....................................... Refer to CAS captions to cross check that all issues are addressed

If failure remains:

13. Aircraft....................................... Land as soon as practical using minimum engine power to avoid exceeding engine limits

Prior to landing:

14. CABIN PRESSURE switch......... DUMP

---------- END -----------

Check DU 1 Check DU 2 Check DU 3 Check DU 4 3-22-02

Note
Or any other combination of 2 or 3 Check DU failure indications.

1. Display....................................... Check relevant display

Note
If two or more DU have failed (blank or red X), wait 10 seconds to allow the system to reconfigure before switching off DUs for display reversionary formatting.

If display unit indicates red X or blank:

2. Reversion Controller.................... Set DU control knob to OFF/REV

Note
If the MFD swap button is used for DU 2 or 3, the optional single charts can only be accessed on DU 2 (not applicable if the Dual Charts option is installed).
Basic Autopilot operation is independent of DU availability. Use annunciations on the Flight Controller and attempt to continue using the Autopilot.

---------- END -----------

Check DU 1 AGM 1 Fail Check DU 4 AGM 2 Fail 3-22-03

Check DU 1 with **AGM 1 Fail** or **Check DU 4** with **AGM 2 Fail**

1. DU 1 or 4.................................. Check red X

Continued on next page

Check DU 1 / Check DU 4 — AGM 1 Fail / AGM 2 Fail — 3-22-03

continued

If red X on display:

2. Reversion Controller.................. For DU 1 set control knob to AGM 2

   For Du 4 set control knob to AGM 1

---------- END -----------

Check DU 1+2+3+4 — 3-22-04

Displays suspect.

1. Aircraft.. Use Electronic Standby Instrument System (ESIS)

If above 10,000 ft:

2. Main OXYGEN lever.................. Confirm ON
3. Crew oxygen masks................... ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

4. PASSENGER OXYGEN selector AUTO or ON
5. Systems MFD **PAX OXY**......... Confirm ON
6. Passengers............................... Instruct to don masks
7. Aircraft.. Descend below 10,000 ft or to minimum safe altitude if higher. If required, inform ATC, ask for assistance to maintain safe aircraft flight path and traffic separation
8. Aircraft.. Land as soon as practical using minimum engine power to avoid exceeding engine limits

Prior to landing:

9. CABIN PRESSURE switch......... DUMP

---------- END -----------

DU 1 Overheat DU 2 Overheat DU 3 Overheat DU 4 Overheat 3-22-05

Note
Or any other combination of 2 or 3 DU Overheat failure indications.

1.	Displays....................................	Check relevant display and treat as suspect
2.	Reversion Controller...................	Set DU control knob to OFF/REV
3.	Relevant PFD or MFD circuit breaker..	PULL
4.	Displayed data............................	Cross check PFD with Electronic Standby Instrument System (ESIS) Check Engine Instruments Check Environment Window

Note
If the MFD swap button is used for DU 2 or 3, the optional single charts can only be accessed on the upper DU 2 (not applicable if the Dual Charts option is installed).

5.	Displays....................................	Monitor for remainder of flight

---------- END ----------

DU 1+2+3+4 Overheat 3-22-06

Displays suspect

1.	Aircraft...	Use Electronic Standby Instrument System (ESIS)
2.	PFD and/or MFD circuit breakers.......................................	PULL

If above 10,000 ft:

3.	Main OXYGEN lever..................	Confirm ON

Continued on next page

DU 1+2+3+4 Overheat 3-22-06

continued

4.	Crew oxygen masks....................	On

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

5.	PASSENGER OXYGEN.............	AUTO or ON
6.	Systems MFD **PAX OXY**	Confirm ON
7.	Passengers................................	Instruct to don masks
8.	Aircraft......................................	Descend below 10,000 ft or to minimum safe altitude if higher
9.	Aircraft......................................	Land as soon as practical using minimum engine power to avoid exceeding engine limits

Prior to landing:

10.	CABIN PRESSURE switch..........	DUMP

---------- END -----------

LH PFD CTRL Fail 3-22-07

1.	RH PFD Controller.....................	Push PFD button to operate LH PFD

Note

X PFD CTRL ACTIVE annunciation will be displayed in amber along bottom right of the ADI on pilot PFD. PFD CTRL INACTIVE will be displayed on copilot PFD (if installed).

---------- END -----------

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RH PFD CTRL Fail 3-22-08

1. LH PFD Controller........................ Push PFD button to operate RH PFD

Note

X PFD CTRL ACTIVE annunciation will be displayed in amber along bottom right of the ADI on copilot PFD (if installed). PFD CTRL INACTIVE will be displayed on pilot PFD.

---------- END -----------

LH+RH PFD CTRL Fail 3-22-09

1. PFD Controller functions............. Cross check PFD data with Electronic Standby Instrument System (ESIS). Use Touch Screen Controller / MF Controller or CCD to operate PFD

---------- END -----------

Check Pilot PFD 3-22-10

Pilot PFD data suspect.

1. Display.. Cross check pilot PFD data with copilot PFD data, or with Electronic Standby Instrument System (ESIS)

If data confirmed to be suspect:

2. Reversion Controller.................... Set pilot PFD control knob to AGM2

---------- END -----------

Check Copilot PFD 3-22-11

Copilot PFD data suspect.

1. Display.. Cross check copilot PFD data with pilot PFD data

If data confirmed to be suspect:

2. Reversion Controller.................... Set copilot PFD control knob to AGM1

---------- END -----------

Check Engine Display 3-22-12

PFD engine data suspect.

1. Display...................................... Cross check pilot PFD data with copilot PFD data

If data confirmed to be suspect:

2. Reversion Controller.................. Set pilot PFD control knob to AGM2

If data remains suspect:

3. Aircraft....................................... Land as soon as practical using minimum engine power to avoid exceeding engine limits

---------- END -----------

ATT FAIL 3-22-13

1. PFD pitch and roll...................... Check

If shading is all blue and red crosses are shown, data has become invalid:

2. Pitch and Roll data..................... Use Electronic Standby Instrument System (ESIS)
3. ADHRS pushbutton on PFD Controller................................. Press to bring the other ADAHRS channel data onto PFD

---------- END -----------

RAD 3-22-14

Radar Altimeter data has become invalid.

Note
Autothrottle does not disconnect automatically when radar altimeter data is invalid and/or the radar altimeter system has failed.

1. Altitude data.............................. Use Altimeter Indicator

---------- END -----------

HDG FAIL 3-22-15

Heading data has become invalid.

1. Heading data.............................. Use Standby Magnetic Direction Indicator

Continued on next page

HDG FAIL — 3-22-15

continued

2.	ADHRS pushbutton on PFD Controller..................................	Press to bring the other ADAHRS channel Heading data onto PFD

---------- END -----------

Airspeed Display Replaced with Red X — 3-22-16

Airspeed Tape data has become invalid.

1.	Airspeed data............................	Use Electronic Standby Instrument System (ESIS)
2.	ADHRS pushbutton on PFD Controller..................................	Press to bring the other ADAHRS channel Airspeed data onto PFD

---------- END -----------

Altitude Display Replaced with Red X — 3-22-17

Altitude Tape data has become invalid.

1.	Altitude data..............................	Use Electronic Standby Instrument System (ESIS)
2.	ADHRS pushbutton on PFD Controller..................................	Press to bring the other ADAHRS channel Altitude data onto PFD

---------- END -----------

Vertical Speed Replaced with Red X — 3-22-18

Vertical Speed Tape data has become invalid.

1.	Vertical Speed............................	Monitor altitude
2.	ADHRS pushbutton on PFD Controller..................................	Press to bring the other ADAHRS channel Vertical Speed data onto PFD

---------- END -----------

IAS? ALT? 3-22-19

Airspeed and/or barometric Altitude miscompare between ADAHRS 1 and ADAHRS 2 by more than 10 KIAS / 200 feet.

Note

ADAHRS Channel A receives dynamic and static pressure information form the LH pitot static system, ADAHRS Channel B and the ESIS from he RH pitot static system.

Note

A failed pitot static system may cause erroneous Altitude and Airspeed indications.

1.	Baro setting................................	Check correct setting on Electronic Standby Instrument System (ESIS), Pilot PFD and Copilot PFD
2.	Airspeed and Altitude..................	Crosscheck with Electronic Standby Instrument System (ESIS) and Copilot PFD

If erroneous pitot / static system cannot be determined:

3.	Pilot..	Advise ATC that the aircraft could be somewhere between both altitudes and the transponder altitude may be wrong
4.	PCL..	Set maximum cruise power torque and cross check resulting IAS from Max cruise table (See Section 5-3-4, Performance Data - Cruise Performance) against cockpit indications
5.	ADAHRS pushbutton on PFD controller..................................	If determined which source is NOT correct press to bring the good ADAHRS channel Airspeed / Altitude data onto PFD
6.	L/R AFCS mode selector............	Check coupled arrow pointing towards the selected PFD
7.	Aircraft.......................................	Land as soon as practical

If erroneous system cannot be determined:

If Airspeed malfunctions:

8.	Cruise and descent....................	Use only known power settings and aircraft attitudes
9.	Approach....................................	Keep speed as indicated by Dynamic Speed Bug (1.3 V_S) with PUSHER ICE MODE and flaps 15°

Continued on next page

IAS? ALT? 3-22-19

continued

CAUTION

The total landing distance will be longer by up to 71%. Refer to Section 5, Performance, Flight in Icing Conditions, Flight in Icing Conditions - Landing Performance for the exact landing distance calculation.

10.	Aircraft..	Land as soon as practical

If Altimeter malfunctions:

Below 10,000 feet:

11.	Depressurize aircraft..................	Select CPCS System Mode switch to MANUAL and Manual Control switch to CLIMB

When cabin pressure differential approaches zero:

12.	CABIN PRESS switch.................	DUMP
13.	Cabin altimeter...........................	Use to give approximate aircraft altitude
14.	Aircraft..	Land as soon as practical

---------- END -----------

HDG? 3-22-20

Heading data between pilot and copilot PFD miscompares more than 6°.

1.	Heading...	Cross check with the magnetic heading indication on the Electronic Standby Instrument System (ESIS)
2.	ADHRS pushbutton on PFD Controller....................................	If required press to bring the other ADAHRS channel Heading data onto Pilot PFD and confirm a similar reading to the magnetic heading indication on the ESIS

If magnetic heading indication on the ESIS is not reliable:

3.	GPS Sensors page....................	Cross check magnetic heading on the ESIS with the GPS TRK heading on the GPS Sensors page. If required select the other ADAHRS channel for display on the Pilot PFD

Continued on next page

HDG? 3-22-20

continued

If flight condition and pilot workload permit, attempt to realign the ADAHRS channels:

4. Aircraft.. Fly straight and level for 2 minutes

Note

In regions where magnetic inclination (dip angle) exceeds 80°, erroneous magnetic heading indications may be experienced.

---------- END -----------

PITCH? 3-22-21

Pitch angle miscompares more than 5°.

1. Pitch.. Cross check with Electronic Standby Instrument System (ESIS), Copilot PFD and Pilot PFD
2. ADHRS pushbutton on PFD Controller.................................. If required press to bring the other ADAHRS channel Pitch data onto PFD

---------- END -----------

ROLL? 3-22-22

Roll angle miscompares more than 6°.

1. Roll.. Cross check with Electronic Standby Instrument System (ESIS), Copilot PFD and Pilot PFD
2. ADHRS pushbutton on PFD Controller.................................. If required press to bring the other ADAHRS channel Roll data onto PFD

---------- END -----------

BARO? 3-22-23

Pilot and Copilot PFD Altimeter settings are not synchronized.

1. Baro... Cross check with Electronic Standby Instrument System (ESIS), Copilot PFD and Pilot PFD
2. ADHRS pushbutton on PFD Controller.................................. If required press to bring the other ADAHRS channel Baro data onto PFD

---------- END -----------

APEX Miscellaneous - On Ground Only 3-22-24

Indication:

- **APM 1 Fail**, or
- **APM 2 Fail**, or
- **APM 1+2 Fail**, or
- **CMS 1+2 Fail**, or
- **System Config Fail**, or
- **Validate Config**, or
- **APM Miscompare**, or
- **Gear Actuator Cntl**, or

1.	Aircraft..	Terminate procedure for flight and inform maintenance

---------- END -----------

MAU A Fail 3-22-25

1.	MAU CH. A1 circuit breaker (Essential Bus $_L$B3)....................	Open, wait 2 seconds and close

If failure remains, to access serviceable FMS 1:

2.	Co-pilot PFD controller.................	Set NAV SEL to FMS 1

Note

For dual FMS installations, selecting NAV SEL to FMS 1 ensures that FMS 1 remains available on INAV after AGM2 reversion of the pilot PFD.
During LP approach, if either Flight Director (FD) fails, both the VNAV Pre-Approach Pointer and the Vertical Deviation Pointer will be removed from the Vertical Deviation Information (VDI) scale (scale remains). VDI will be unavailable.

3.	Display Reversion Control Panel	Set UPPER MFD control knob to OFF/REV
4.	Display Reversion Control Panel	Set PILOTS PFD control knob to AGM2
5.	PFD Radio window XPDR detail.	Select XPDR 2

Note

If MAU Channel A cannot be reset, Autopilot, Flight Director and XPDR 1 are not available for remainder of the flight.

Continued on next page

MAU A Fail — 3-22-25

continued

6.	Landing......................................	Engine power may remain at flight idle. Reverse operation is not affected by this fault.

---------- END -----------

MAU B Fail — 3-22-26

1.	MAU CH. B1 circuit breaker (Standby Bus $_L$Z3)......................	Open, Wait 2 seconds and close

If failure remains:

2.	Display Reversion Control Panel	Set LOWER MFD control knob to OFF/REV
3.	Display Reversion Control Panel	Set CO-PILOTS PFD control knob to AGM1

If dual FMS is installed and access to FMS is desired:

4.	Pilot PFD controller....................	Set NAV SEL to FMS 2

Note

If MAU Channel B cannot be reset, Autopilot, Flight Director, Yaw Damper and XPDR 2 are not available for remainder of the flight.
For single FMS installations: FMS is not available for the remainder of the flight.

5.	Landing......................................	Engine power may remain at flight idle. Reverse operation is not affected by this fault.

---------- END -----------

Air/Ground Fail — 3-22-27

On ground:

1.	Aircraft..	Do not fly, maintenance required

--- END ---

In flight:

1.	Aircraft..	All systems will default to “In Air”

---------- END -----------

Aural Warning Fail 3-22-28

Note

All aural warnings except TCAS and TAWS are inhibited, including FAS and CAS.

1. Aural Warning Inhibit switch (left rear panel).................................. Check in ON position

---------- END -----------

DME 1 Fail 3-22-29

1. PFD Controller........................... Press DME button

If DME HOLD is ON:

2. PFD DME window...................... Press soft key and set to OFF.

   Press DME PAIR soft key and change NAV association

If unsuccessful:

3. DME circuit breaker (Avionic 1 bus $_L$U1).................................... Reset

CAUTION

Autopilot performance on coupled approaches will be reduced. For autopilot limitations refer to Section 2, Primus Apex - Automatic Flight Control System.

---------- END -----------

Rad Alt 1 Fail 3-22-30

1. PFDs.. Confirm amber RAD annunciations are on

CAUTION

Rad Alt data has become invalid.

2. Altimeter.................................... Use Altimeter Indicator

---------- END -----------

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ADC A Fail 3-22-31

1.	Pilot PFD Controller....................	Press ADHRS button to select ADAHRS B
2.	Pilots PFD Window.....................	Confirm ADAHRS 2 flag which indicates attitude, heading and air data same source as copilot PFD. Compare with Electronic Standby Instrument System (ESIS)

CAUTION

The autopilot will disengage.

Do not use VNAV function of the FMS.

3.	Autopilot....................................	Re-engage, after PFD data displayed
4.	Altitude......................................	Determine using ADAHRS 2 source
5.	Altitude......................................	Cross-check aircraft altitude using ESIS. Record each altimeter reading. The differences between the operating ADAHRS 2 altimeter and the standby altimeter readings should be noted for use in additional contingency situations. Repeat procedure each hour
6.	Air Traffic Control.........................	Inform to facilitate a route or an altitude change to exit RVSM airspace.

Note

Pilots should be aware of any national RVSM contingency procedures for loss of redundancy of primary altimetry systems.

---------- END -----------

ADC B Fail 3-22-32

1.	Copilot PFD Controller................	Press ADHRS button to select ADAHRS A
2.	Copilots PFD Window.................	Confirm ADAHRS 1 flag which indicates attitude, heading and air data same source as pilot PFD. Compare with Electronic Standby Instrument System (ESIS)

Continued on next page

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ADC B Fail — 3-22-32

continued

CAUTION

The autopilot will disengage.

Do not use VNAV function of the FMS.

3. Autopilot.. Re-engage, after PFD data displayed
4. Altitude.. Determine using ADAHRS 2 source
5. Altitude.. Cross-check aircraft altitude using ESIS. Record each altimeter reading. The differences between the operating ADAHRS 2 altimeter and the standby altimeter readings should be noted for use in additional contingency situations. Repeat procedure each hour
6. Air Traffic Control........................ Inform to facilitate a route or an altitude change to exit RVSM airspace.

Note

Pilots should be aware of any national RVSM contingency procedures for loss of redundancy of primary altimetry systems.

---------- END ----------

ADC A+B Fail — 3-22-33

Loss of primary altitude and airspeed data:

1. Aircraft.. Use Electronic Standby Instrument System (ESIS)
2. Altitude.. Monitor and maintain assigned altitude by using ESIS
3. Air Traffic Control........................ Inform to facilitate a route or an altitude change to exit RVSM airspace.

Note

Pilots should be aware of any national RVSM contingency procedures for loss of redundancy of primary altimetry systems.

If loss of cabin pressure automatic control and ΔP display:

4. CPCS MODE switch.................. MANUAL
5. MANUAL CONTROL switch........ Press DESCENT for 30 seconds to close OFV

Continued on next page

ADC A+B Fail — 3-22-33

continued

CAUTION

The following services will be inoperative:

- **Autopilot (abnormal disengage)**
- **Overspeed warning**
- **Altitude Alert Monitor**
- **Air data to other systems**

Do not use VNAV functions of the FMS.

If Cabin Altitude *comes on:*

6.	Main OXYGEN lever..................	Confirm ON
7.	Crew oxygen masks....................	ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

8.	PASSENGER OXYGEN selector	AUTO or ON
9.	Systems MFD PAX OXY	Confirm ON
10.	Passengers..................................	Instruct to don masks
11.	CPCS MODE switch..................	Confirm MANUAL
12.	MANUAL CONTROL switch........	Push intermittently to DESCENT to reduce cabin altitude below 10,000 ft

If unsuccessful:

13.	Aircraft..	Limit flight altitude to maintain cabin altitude below 10,000 ft

If necessary:

14.	Aircraft..	Carry out emergency descent
15.	Aircraft..	Land as soon as practical

Prior to landing:

16.	CABIN PRESSURE switch.........	DUMP

---------- END -----------

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AHRS A Fail — 3-22-34

1.	Pilot PFD Controller....................	Press ADHRS button to select ADAHRS B
2.	Pilot PFD window........................	Confirm ADAHRS 2 flag which indicates attitude, heading and air data same source as copilot PFD. Compare with Standby Instrument System

CAUTION

The autopilot will revert to roll and pitch mode.

3.	Autopilot.....................................	Re-select as required after PFD data displayed

---------- END -----------

AHRS B Fail — 3-22-35

1.	Copilot PFD Controller................	Press ADHRS button to select ADAHRS A
2.	Copilot PFD window...................	Confirm ADAHRS 1 flag which indicates attitude, heading and air data same source as pilot PFD. Compare with Standby Instrument System

CAUTION

The autopilot will revert to roll and pitch mode.

3.	Autopilot.....................................	Re-select as required after PFD data displayed

---------- END -----------

AHRS A+B Fail — 3-22-36

Loss of primary attitude and heading data:

1.	Aircraft...	Use Standby Instrument System

Continued on next page

AHRS A+B Fail — 3-22-36

continued

CAUTION

The following services will be inoperative:

- **Autopilot (abnormal disengage)**
- **INAV map.**

Do not use VNAV function of the FMS.

If flight conditions and pilot workload permits, attempt to realign AHRS 1 and/or AHRS 2:

2.	ADHRS CH. A circuit breaker (Essential Bus $_{L}$D3)....................	Open, wait 5 seconds, then close

If unsuccessful:

3.	ADHRS CH. B circuit breaker (Main Bus $_{R}$M1)..........................	Open, wait 5 seconds, then close
4.	Aircraft......................................	Fly strictly wings level and do not change pitch attitude for 1 minute

If realignment is successful:

5.	PFD Controller...........................	Push ADHRS button to select required ADHRS

If realignment is not successful:

6.	Aircraft......................................	Land as soon as practical using Standby Instrument System

---------- END -----------

FLT CTRL Ch A Fail — FLT CTRL Ch B Fail — 3-22-37

Note

FLT CTRL CAS messages are amber on the ground, but cyan in the air.

Loss of Flight Controller channel redundancy.

Note

No loss of functionality. No pilot action.

---------- END -----------

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FLT CTRL Ch A+B Fail — 3-22-38

Note
FLT CTRL CAS messages are amber on the ground, but cyan in the air.

Loss of both Flight Controller channels.

CAUTION
Loss of Autopilot.
Loss of Flight Director.
Loss of Yaw Damper.
Loss of Minimums Selection/Reporting.
Loss of Heading/Track selection.

---------- END -----------

FMS1-GPS1 Pos Misc FMS1-GPS2 Pos Misc FMS2-GPS1 Pos Misc FMS2-GPS2 Pos Misc — 3-22-39

1. GPS vs FMS position.................. Check manually
2. GPS.. Confirm alternate GPS (if second GPS installed) is selected on SENSORS GPS page
3. Aircraft.. Inform ATC of any loss of RNAV capability

Note
For dual GPS with a single GPS failure - no loss of position will occur. With single GPS sensor failed system goes to DEGRADE and then Dead Reckoning (DR) mode. DEGRADE and DR modes will be annunciated on the PFD HSI.

---------- END -----------

FMS1-GPS1+2 Pos Misc FMS2-GPS1+2 Pos Misc — 3-22-40

FMS PPOS position invalid, GPS position valid:

1. Display....................................... Monitor position on Map and on SENSORS GPS page
2. Aircraft....................................... Inform ATC of any loss of RNAV capability

Continued on next page

FMS1-GPS1+2 Pos Misc FMS2-GPS1+2 Pos Misc 3-22-40

continued

CAUTION

Loss of GPS or FMS navigation

RAIM unavailable

Note
With dual FMS, if only one FMS shows a position miscompare, select the other FMS to avoid loss of navigation and RAIM functionality.

Note
With both GPS sensors failed system goes to DEGRADE and then Dead Reckoning (DR) mode. DEGRADE and DR modes will be annunciated on the PFD HSI.

---------- END -----------

Unable FMS-GPS Mon 3-22-41

Note
Monitor Warning System continuously compares the position between each FMS and each GPS and annunciates miscompares between any if the threshold is exceeded.

1. SENSORS GPS page................ Check GPS navigation mode
2. If FMS or GPS has failed........... Use other means of navigation

If aircraft is SBAS capable and the GPS shows problems with the GPS (GNSS) reception:

3. SBAS sensor page...................... Swap to systems. Select sensor pages on multipurpose window and select GPS. On drop-down menu, select SBAS tab and switch “Enroute SBAS” from Enable to Disable

Note
Disabling Enroute SBAS does not disable using SBAS for LPV approaches. If Enroute SBAS has been disabled due to SBAS problems, LPV approach capability may be affected. Plan an alternative IFR approach for the destination and alternate airports.

4. GPS 1 Circuit Breaker (Standby Bus $_{L}$V3).................................... Open, wait 2 seconds and close

Continued on next page

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Unable FMS-GPS Mon — 3-22-41

continued

If GPS 2 is installed:

5.	GPS 2 Circuit Breaker (Avionic 2 Bus $_R$X1)....................................	Open, wait 2 seconds and close

If **Unable FMS-GPS Mon** *remains and the DR flag is shown on the PFD:*

6.	Aircraft (If in flight).......................	Inform ATC of any loss of required navigation performance and use other means of navigation

CAUTION

RAIM unavailable.

Note

In the case of an FMS failure the CPCS will default to 10,000 ft Landing Field Elevation (LFE). Manually re-select the LFE to prevent over or under pressurization.

In flight (while conducting an FMS based approach):

7.	Aircraft..	Terminate approach and execute a missed approach if required

In flight (during RNP operation):

8.	Aircraft..	Terminate and revert to other means of navigation

In flight (during RNAV operation):

9.	FMS information..........................	Cross check with VOR, DME and/or NDB information

If FMS shows an acceptable level of navigation performance:

10.	Aircraft..	Navigation may continue using the FMS

If FMS does not show an acceptable level of navigation performance:

11.	Aircraft..	Revert to alternative navigation as required

---------- END -----------

MMDR 1 Fail — 3-22-42

1.	MMDR 1 Circuit Breaker (Avionic 1 Bus $_L$P1)....................	Reset

Continued on next page

MMDR 1 Fail — 3-22-42

continued

If COM 1, NAV 1 and ADF remain not available:

2. COM and NAV............................ Use COM 2 and NAV 2

---------- END -----------

MMDR 2 Fail — 3-22-43

1. MMDR 2 PRI Circuit Breaker (Main Bus $_{R}$H1).......................... Reset

If COM 2 and NAV 2 remain not available:

2. COM and NAV............................ Use COM 1 and NAV 1

---------- END -----------

MMDR 1+2 Fail — 3-22-44

1. MMDR 1 Circuit Breaker (Avionic 1 Bus $_{L}$P1).................... Reset
2. MMDR 2 PRI Circuit Breaker (Main Bus $_{R}$H1).......................... Reset

If all COM, NAV and ADF radios are not available, attempt communication with:

3. EMERG COM 1 switch................ Set to 121.5 MHz

If communication not successful:

4. XPDR.. Set to 7600 and follow national communication loss procedures

If all VHF and ADF navigation capabilities are lost:

5. Aircraft.. Continue flight with FMS/GPS

---------- END -----------

MMDR 1 Overheat — 3-22-45

Note

MMDR 1 transmit capability is reduced because internal temperature of unit is too high. MMDR 1 may become operative again after a period of time.

1. COM and NAV............................ Use COM 2 and NAV 2

---------- END -----------

MMDR 2 Overheat 3-22-46

Note

MMDR 2 transmit capability is reduced because internal temperature of unit is too high. MMDR 2 may become operative again after a period of time.

1. COM and NAV............................. Use COM 1, NAV 1 and ADF

---------- END -----------

MMDR 1+2 Overheat 3-22-47

Note

MMDR 1 and 2 transmit capabilities are reduced because internal temperature of units is too high. MMDR 1 and 2 may become operative again after a period of time.

If communication is lost, attempt communication with:

1. EMERG COM 1 switch................ Set to 121.5 MHz

If communication not successful:

2. XPDR... Set to 7600 and follow national communication loss procedures

If all VHF and ADF navigation capabilities are lost:

3. Aircraft.. Continue flight with FMS/GPS

---------- END -----------

ADS-B Out 3-22-48

ADS-B Out or removed ADS-B Out annunciation

Single Transponder Installation (or single ADS-B Out)

If **XPDR Fail** *is on:*

1. XPDR 1 Circuit Breaker (Avionic 1 Bus $_L$V1)................................. Reset

If ***XPDR Fail*** *remains:*

2. Aircraft.. Proceed according to ATC instructions, expect descent below controlled airspace or diversion to next suitable airfield

--- END ---

Continued on next page

ADS-B Out 3-22-48

continued

Dual Transponder installation

If **XPDR 1 Fail** *is on:*

1.	PFD radio window	Press bezel button adjacent to XPDR 1 window
2.	PFD Controller	Press DETAIL button
3.	XPDR detail page	Press XPDR SEL bezel button to change to XPDR 2

If **XPDR 2 Fail** *is on:*

4.	PFD radio window	Press bezel button adjacent to XPDR 2 window
5.	PFD Controller	Press DETAIL button
6.	XPDR detail page	Press XPDR SEL bezel button to change to XPDR 1

If **XPDR 1+2 Fail** *is on:*

7.	XPDR 1 Circuit Breaker (Avionic 1 Bus $_L$V1)	Reset
8.	XPDR 2 Circuit Breaker (Avionic 2 Bus $_R$U1)	Reset

If **XPDR 1+2 Fail** *remains:*

9.	Aircraft	Proceed according to ATC instructions, expect descent below controlled airspace or diversion to next suitable airfield

---------- END -----------

ASCB Fail 3-22-49

Note

By checking available data the crew can determine if the caution is for a single or dual ASCB bus failure.

Single ASCB Failure

1.	Cockpit data	Continues to be displayed (Flight data looks normal)
2.	Displayed data	Cross check PFD with Electronic Standby Instrument System (ESIS)
		Check Engine Instruments
		Check Environment Window

Continued on next page

ASCB Fail — 3-22-49

continued

3. Displays.................................... Monitor for remainder of flight

--- END ---

Dual ASCB Failure

1. Displays suspect (Loss of displayed data)........................... Use Electronic Standby Instrument System (ESIS)

If above 10,000 ft and ΔP and CAB ALT indications are suspect or lost:

2. Main OXYGEN lever.................. Confirm ON
3. Crew oxygen masks................... ON

Note

Procedure to don the crew oxygen masks:

1 Remove the normal headset.

2 Put the oxygen mask on. Check 100%.

3 Put the normal headset back on.

4 Set MIC SELECT switch on the rear left panel to MASK.

4. PASSENGER OXYGEN selector AUTO or ON
5. Systems MFD **PAX OXY**......... Confirm ON
6. Passengers............................... Instruct to don masks
7. Aircraft.. Descend below 10,000 ft or to minimum safe altitude if higher
8. Aircraft.. Land as soon as practical using minimum engine power to avoid exceeding engine limits

Prior to landing:

9. CABIN PRESSURE switch......... DUMP

---------- END -----------

Automatic Flight Control System Failures 3-22-50

AFCS uncommanded deviation from flight path

Abrupt control and/or airplane motion

Accomplish steps 1 and 2 simultaneously.

1.	Airplane Control Wheel...............	GRASP FIRMLY and regain aircraft control
2.	Autopilot Disengage switch.........	PRESS to disengage the autopilot (pilot or copilot yoke)
3.	Aircraft.......................................	RETRIM manually as necessary
4.	A/P SERVO circuit breaker (Avionic 1 Bus $_{L}$Z2)....................	PULL

WARNING

DO NOT ATTEMPT TO RE-ENGAGE THE AUTOPILOT FOLLOWING AN AUTOPILOT OR AUTOTRIM MALFUNCTION.

Abnormal disconnect

Flashing red AP on PFD and continuous “Cavalry Charge” aural warning

1.	Airplane Control Wheel...............	GRASP FIRMLY and regain aircraft control
2.	Autopilot Disengage switch.........	PRESS to disengage the autopilot (pilot or copilot yoke)
3.	Aircraft.......................................	RETRIM manually as necessary
4.	Aircraft.......................................	If no AFCS associated CAS messages attempt to re-engage autopilot once

--- END ---

CAS Caution messages

AP HOLD LH (RH) WING DN, or **AP HOLD NOSE UP (DN)**, or **YD HOLD NOSE LEFT (RIGHT)**

1.	Airplane Control Wheel and rudder pedals.............................	Grasp and position feet to gain aircraft control
2.	Autopilot Disengage switch.........	PRESS to disengage the autopilot (pilot or copilot yoke)
3.	Aircraft.......................................	RETRIM manually as necessary

Note

When the AFCS is manually disengaged, an aural warning is given and the PFD AP flashes red for 2.5 seconds.

Continued on next page

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Automatic Flight Control System Failures 3-22-50

continued

If no AFCS associated CAS messages:

4. Aircraft.. Attempt to re-engage autopilot once

Maximum Altitude losses due to autopilot malfunction:

Configuration	Altitude Loss
Cruise, Climb, Descent	480 ft
APR 3°	90 ft

--- END ---

Yaw damper has failed above 15,500 ft:

YD Fail shows on the CAS window.

Note

The two step procedure that follows should be among the basic aircraft emergency procedures that are committed to memory. It is important that the pilot be proficient in accomplishing the two steps without reference to the POH or the QRH.

1. Airplane control wheel and rudder pedals............................. Grasp and position feet to gain aircraft control
2. Aircraft...................................... Minimize side slip, do not make abrupt or large rudder or aileron control deflections. Keep the slip-skid indicator centered to +/- 1 trapezoid.

CAUTION

Above 15,500 ft: Fly smoothly and as soon as practical increase speed above 140 KIAS and make only gentle control deflections and small power changes.

Reset the AFCS as follows:

3. A/P SERVO circuit breaker (Avionic 1 Bus $_{L}$Z2) and A/P SERVO ENABLE circuit breaker (Avionic 1 Bus $_{L}$Y2).................... Open, wait 2 seconds, and close (max. 1 attempt per flight only)
4. CAS window............................... Check for AFCS faults

If no AFCS related CAS messages:

5. Aircraft.. Attempt to re-engage Yaw Damper and Autopilot (max. 1 attempt)

Continued on next page

Automatic Flight Control System Failures 3-22-50

continued

If failure persists:

6.	Aircraft..	At pilot's discretion continue flight without the yaw damper or land as soon as practical

--- END ---

Yaw damper is OFF above 15,500 ft:

YD Off shows on the CAS window.

Note

The two step procedure that follows should be among the basic aircraft emergency procedures that are committed to memory. It is important that the pilot be proficient in accomplishing the two steps without reference to the POH or the QRH.

1.	Airplane control wheel and rudder pedals.............................	Grasp and position feet to gain aircraft control
2.	Aircraft......................................	Minimize side slip, do not make abrupt or large rudder or aileron control deflections. Keep the slip-skid indicator centered to +/- 1 trapezoid.

CAUTION

Above 15,500 ft: Fly smoothly and as soon as practical increase speed above 140 KIAS and make only gentle control deflections and small power changes.

3.	Yaw Damper switch.....................	Press to engage Yaw Damper

---------- END -----------

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HSI1 is MAG TRK / HSI2 is MAG TRK / HSI1+2 is MAG TRK — 3-22-51

The Primus APEX system has switched the long term reference source for the HSI heading from a gyro based magnetically corrected heading output to a magnetically compensated Track based display.

Note

The main difference is that the drift angle, i.e. difference between aircraft heading and track is not shown. The card shows actual track (related to Magnetic North) being made.

1. Flight Guidance Control Panel Heading/Track selector............... Switch to Track

---------- END -----------

HSI1 is TRU TRK / HSI2 is TRU TRK / HSI1+2 is TRU TRK — 3-22-52

The Primus APEX system has switched the long term reference source for the HSI heading from a gyro based magnetically corrected heading output to a Track based display.

Note

The main difference is that the drift angle, i.e. difference between aircraft heading and track is not shown. The card shows actual track (related to True North) being made.
The autopilot will switch to ROL/PIT modes when the system switches to TRUE automatically. Other AFCS modes can be re-engaged as required.

1. Flight Guidance Control Panel Heading/Track selector............... Switch to Track

---------- END -----------

CAS Miscompare — 3-22-53

MW shows on left side of CAS window.

Monitor Warning Function Channels A and B miscompare.

1. CAS Window.............................. Toggle MW soft key to see alternatively Channel A or B of the MWF to find out which message is triggering the MW miscompare condition

Continued on next page

CAS Miscompare 3-22-53

continued

2.	Aircraft..	Ascertain the reason for the miscompare flag and take appropriate action, using the affected CAS message and Abnormal Procedures

---------- END -----------

Stuck Mic 3-22-54

Continuous transmit indication on one of the MMDRs and/or a “Stuck Mic” indication on the Radio Window.

If “Stuck Mic” is annunciated on the radio window:

1.	Affected MMDR...........................	Check “T” is removed by the “Stuck Mic” detection

If “T” is not removed and affected MMDR continues to transmit:

2.	Affected audio panel...................	Select PA to disconnect PTT to MMDR
3.	Other audio panel......................	Use 2nd audio panel, 2nd headset and 2nd PTT to re-establish ATC communication

---------- END -----------

ATC Datalink Fail 3-22-55

PM-CPDLC datalink with ATC failed

1.	Aircraft..	Use voice to communicate with ATC

---------- END -----------

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SECTION 3A

Abnormal Procedures (EASA Approved)

Table of Contents

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3A-1 General

3A-1-1 General

This section provides a description and any actions that can be taken for the Crew Alerting System (CAS) cyan advisory and white status messages. There are failures of system module or element parts that are not of an emergency nature.

The information is given in the form of a list of all the cyan CAS Advisories and the white CAS Status messages and their meaning, any effect on flight and where possible any actions that can be taken, they are not readily adaptable to a checklist format.

In addition, abnormal procedures are given for the following:

- Primary Altimeter Diverge by 200 ft or More
- Loss of Autopilot Altitude Hold Function in RVSM Airspace
- Flight Training
- Smartview
- LPV/LP Approach (Optional)
- Engine Dry Motoring.

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3A-2 CAS Advisories

3A-2-1 CAS Advisories

This section provides a description and any actions that can be taken for the Crew Alerting system (CAS) cyan advisory messages.

* These cyan advisory messages require maintenance action if they cannot be cleared before flight, or dispatch the aircraft under the provisos of an approved and permissible PC-12 aircraft MEL.
During flight, continue with remaining operational equipment and report on landing.

CAS Advisory Message	Meaning, Effects and Possible Actions
* **MWF A Fail** * **MWF B Fail**	A failure has been detected in either Monitor Warning Function A or B. No effect on flight. An amber “MW” miscompare annunciation will be displayed on the left of the CAS window, in the event of the MWF determining a miscompare of MW lists in the two MWF Channels. Pressing the MW bezel button allows toggle between the MWF source. The displayed source is shown below the CAS annunciation in larger white font. The pilot should select the source determined to be correct.
* **AIOP A Module Fail** * **AIOP B Module Fail**	Actuator I/O Processor module A or B has failed. The AFCS monitoring function between modules is inoperative. Effect on flight, loss of AFCS, FD and YD. Loss of corresponding MWF Channel.
* **CSIO A Fail** * **CSIO B Fail** * **CSIO A+B Fail**	Custom I/O module A or B or A and B failed. A single A or B failure will have no effect on flight, an A and B failure will result in some invalid data on PFD/MFD windows.
* **MAU A Overheat** * **MAU B Overheat** * **MAU A+B Overheat**	An overheat condition has been detected for MAU CH A and/or B. Auto-shutdown of the MAU is possible if temperature continues to rise. When temperature returns to a safe level, the MAU will reset automatically. Effect on flight, loss of MAU CH A or B.
MAU Fan Fail	No flight crew action required. Corresponding MAU Overheat advisory may occur.
* **GIO A Fail** * **GIO B Fail** * **GIO A+B Fail**	Generic I/O module A or B or A and B failed. A single A or B failure will have no effect on flight, an A and B failure will result in some invalid data on PFD/MFD windows.
* **AGM 1 Fail** * **AGM 2 Fail**	Advanced Graphics Module 1 or 2 failed. AGM 1 (MAU Ch. A) drives the Pilot PFD and upper MFD. AGM 2 (MAU Ch. B) drives the Copilot (when installed) and lower MFD. Refer to Section 3, APEX Failures for more information.
CMS 1 Fail **CMS 2 Fail**	Configuration Management System has detected a failure in the monitoring software of CMS 1 or 2. No effect on flight.

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CAS Advisory Message	Meaning, Effects and Possible Actions
YD Fail	Yaw Damper has failed below 15,500 ft PA. Minimize sideslip by using rudder pedals and manual rudder trim. Above 15,500 ft PA, refer to the Automatic Flight Control System Failures - 3-22-50 procedure. Reset the AFCS as follows: Open the A/P SERVO (Avionic 1 Bus $_{L}$Z2) and A/P SERVO ENABLE (Avionic 1 Bus $_{L}$Y2) circuit breakers for 2 secs, then close. Check CAS. Only one reset attempt per flight.
AP Fail	Autopilot is not available. Reset the AFCS as follows: Open the A/P SERVO (Avionic 1 Bus $_{L}$Z2) and A/P SERVO ENABLE (Avionic 1 Bus $_{L}$Y2) circuit breakers for 2 secs, then close. Check CAS. Only one reset attempt per flight.
FD Fail	Flight Director is not available Reset the AFCS as follows: Open the A/P SERVO (Avionic 1 Bus $_{L}$Z2) and A/P SERVO ENABLE (Avionic 1 Bus $_{L}$Y2) circuit breakers for 2 secs, then close. Check CAS. Only one reset attempt per flight.
AFCS Fault	Fault detected in the AFCS system. Reset the AFCS as follows: Open the A/P SERVO (Avionic 1 Bus $_{L}$Z2) and A/P SERVO ENABLE (Avionic 1 Bus $_{L}$Y2) circuit breakers for 2 secs, then close. Check CAS. Only one reset attempt per flight.
All on together: **FD Fail** **AP Fail** **YD Fail**	Reset the AFCS as follows: Trim the aircraft straight and level. Wait two minutes. If the CAS messages go off, re-engage autopilot. ADAHRS reset can only be achieved in stable pitch and no bank condition, also only light turbulence. Only one reset attempt per flight. If the CAS messages stay on or recur, trim the aircraft straight and level with autopilot and yaw damper disengaged. Open the ADAHRS CH B circuit breaker (Main Bus $_{R}$M1), wait 5 seconds then close the circuit breaker. Wait two minutes. If the CAS messages go off, engage the autopilot. If the CAS messages reoccur, and autopilot is required for continued safe flight, open the ADAHRS CH B circuit breaker (Main Bus $_{R}$M1) and leave open for the rest of the flight.
* **FMS Fail**, or * **FMS1+2 Fail** (if dual FMS installed)	Flight management System is not available, use remaining operational navigation equipment as required. The CPCS will use the default Landing Field Elevation (LFE) of 10,000 ft to determine the target cabin altitude. Therefore, the flight crew must manually re-select the LFE early enough to prevent over or under pressurization. Alternatively, the CPCS SYSTEM MODE switch may be selected to MANUAL for manual control of the cabin altitude.
FMS1 Fail, or **FMS2 Fail**	If required use the NAV source select button on the PFD Controller to select the cross-side FMS for navigation.

CAS Advisory Message	Meaning, Effects and Possible Actions
FMS Synch Error	FMS1 and FMS2 are operating independently (not synchronized). Non-coupled FMS will not receive any changes made to the flight plan. See Section 7-33, FMS Synchronization, for a description of how to synchronize FMS1 and FMS2.
* Gear Control Fault	Indicates loss of redundancy in landing gear control system, such as a stuck landing gear selector position switch. Gear will still function normally with a single fault.
Takeoff Config	Takeoff configuration incorrect. Correct prior to takeoff.
* Pusher Safe Mode	Stick pusher computer has gone into pusher safe mode. Stall warning trigger thresholds operate at the 0° flap position settings irrespective of the flap position.
* LH OAT Fail * RH OAT Fail * LH+RH OAT Fail	Loss of total and static air temperature from ADAHRS Channel A or B or A and B. Refer to Section 3, APEX Failures for more information.
* LH PFD CTRL Fail * RH PFD CTRL Fail * LH+RH PFD CTRL Fail	Cross check PFD data with Electronic Standby Instrument System (ESIS). Use Touch Screen Controller / MF Controller to operate Radio window. Use PFD knob on serviceable PFD Controller to set up both Pilot and Copilot PFD.
(In Flight Only) FLT CTRL Ch A Fail FLT CTRL Ch B Fail FLT CTRL Ch A+B Fail	Single channel failure has no effect. Dual channel failure results in loss of AP/FD/YD.
* GPS 1 Fail * GPS 2 Fail * GPS 1+2 Fail	GPS has no satellite signal reception or GPS unit failed. If CAS message does not clear after approx. 2 mins: For Single GPS installation: Use remaining operational navigation equipment as required. For Dual GPS installation: If single GPS fail, the FMS will automatically select the alternate GPS. If needed, select alternate GPS on Sensors page. For Dual GPS installation: If dual GPS fail: Use remaining operational navigation equipment as required. Open the circuit breaker of the failed GPS (GPS 1 Standby Bus $_{L}$V3 and/or GPS 2 Avionic 2 Bus $_{R}$X1), wait 5 seconds then close the circuit breaker. **Note** The FMS will use ADAHRS data to dead reckon, based on the previously known GPS position prior to the failure.
Traffic Fail	Loss of TCAS.
TAWS Fail	Loss of TAWS.
Terr Inhib Active	Terrain alerting Inhibit selected.
Terr Inhib not Avail	Terrain alerting visual and aural inhibit is not available.
No Altitude Reporting	XPDR not transmitting altitude. Select TA on Radio window or ALT if no TCAS system is installed.
Flameout	Indicates an uncommanded engine flameout has been detected.

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CAS Advisory Message	Meaning, Effects and Possible Actions
* EPECS Fault	*On ground:* Engine data from one EEC channel is not available for display. *In flight:* Monitor engine parameters. Consider diversion to an airfield with appropriate maintenance capability. Dispatch in subsequent flight is prohibited.
Prop Reverse Fail	A failure has been detected in the propeller system. Propeller reverse is not available. Plan landing with reverse not available.
AT Fail	Auto throttle not available. Control PCL manually.
TF Fail	Tactile feedback not available.
CIO 1 Fail	Internal hardware/software failures leading to loss of Datalink, CPDLC and ADS-B IN.
PROC 1 Fail	Internal hardware/software failures leading to loss of Datalink, CPDLC and EGPWS.
TCAS Fail	TCAS hardware/software fault leading to loss of Traffic Collision Avoidance System (TCAS) and Cockpit Display of Traffic Information (CDTI).
ADS-B In Fail	TCAS hardware/software fault leading to loss of CDTI.
VSA Unavailable	Required parameter levels not available leading to loss of Vertical Separation Approach (VSA).
SURF Traffic UNAVAIL	Required parameter levels not available leading to loss of Surface Traffic function.
TERR INHIB Active	Terrain Inhibit selected by pilot.
G/S INHIB Active	Glide slope inhibited for EGPWF while flying backcourse approach.
FLAP OVRD Active	Flap Override selected for EGPWF.
STEEP APR Active	Steep Approach Active.
Terrain Fail	Terrain Awareness inoperative leading to loss of display.
RAAS Fail	Internal hardware / software or input failures leading to loss of Runway Awareness and Advisory System (RAAS) function.
RAAS Inhibit	RAAS inhibit selected by pilot.
RAAS Not Available	Missing RAAS Parameter (e.g. Airport not in Database) leading to loss of RAAS function.
AOC Uplink	Datalink Airline Operational Control incoming message. Accept/acknowledge message to delete PFD amber message box.
ATS Uplink	Datalink Air Traffic Services incoming message. Accept/acknowledge message to delete PFD amber message box.
ATC Uplink	Datalink Air Traffic Control incoming message. Accept/acknowledge message to delete PFD amber message box.

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CAS Advisory Message	Meaning, Effects and Possible Actions
TSC Fail	The Touch Screen Controller is turned off or has failed. 1 Make sure that the TSC is turned on using the TSC dimming knob on the display reversionary control panel. 2 If the TSC has been turned on for at least 1 minute and TSC Fail remains, reset the TSC as follows: – Open and close the TSC circuit breaker (Standby Bus $_L$R3). – If reset unsuccessful, use remaining operational navigation equipment as required.
TSC Fan Fail	One or both of the two internal TSC fans have failed. Unless TSC Fail is shown, no flight crew action is required. Touch screen may be hot. If TSC not required it can be turned off temporarily using the TSC dimming knob on the display reversionary control panel.

On Ground CAS Advisory Message	Meaning, Effects and Possible Actions
Maintenance Fail	The Aircraft Diagnostic and Maintenance System (ADMS) has failed. Does not prevent the aircraft from dispatching, may impact mechanic's ability to diagnose and repair the aircraft in a timely manner.
ACMF Logs Full	One or more of the Aircraft Condition Monitoring Function - Aircraft, Navigation or Engine data logs are full. Data will be lost if not transferred.
ACMF Logs >80% Full	One or more of the Aircraft Condition Monitoring Function - Aircraft, Navigation or Engine data logs are more than 80% full. Data may be lost if not transferred.
Engine Log Full	The Engine Trend Recording Stable Cruise data log is full. Data will be lost if not transferred.
Engine Log >80% Full	Engine Trend Recording Stable Cruise data log is more than 80% full. Data may be lost if not transferred.
* Aural Warning Fault	One of the two aural drivers is inhibited or has failed. There is a loss of redundancy in the aural warning system. No effect on flight.

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3A-3 CAS Status

3A-3-1 CAS Status

This section provides a description and any actions that can be taken for the Crew Alerting system (CAS) white status messages.

* These white status messages require maintenance action if they cannot be cleared before flight, or dispatch the aircraft under the provisos of an approved and permissible PC-12 aircraft MEL.
During flight, continue with remaining operational equipment and report on landing.

Airborne CAS Status Message	Meaning, Effects and Possible Actions
Event	A 5 second airborne indication, to show that a crew initiated event, by pressing the EVENT button on the Touch Screen Controller (TSC) / MF Controller, has been recorded.
Function Unavailable	Indicates that an unavailable function has been selected by the crew.

On Ground CAS Status Message	Meaning, Effects and Possible Actions
* FCMU Fault	The Fuel Control and Monitoring computer has a fault condition. Automatic fuel balancing, analog fuel quantity and low level indication may be suspect.
* Low Lvl Sense Fault	The fuel low level sensing part of the Fuel Control and Monitoring computer has a fault condition. Fuel low level CAS cautions may be inoperative.
* Fuel Filter Replace	The fuel filter is contaminated and should be serviced/ replaced within 150 flying hours.
Maint Memory Full	The Fault History Database for the aircraft member systems has become full. Fault History will be lost if not transferred.
No Engine Trend Store	Indicates that a Stable Cruise flight data store condition was not achieved. Will remain on until a Stable Cruise flight data store is successful.

On Ground CAS Status Message	Meaning, Effects and Possible Actions
Engine Exceedance	Reminds on the ground that during flight a WARNING was displayed for an exceedance of one or more of the following engine parameters: − Oil Pressure − Oil Temperature − ITT − TORQUE − NG − NP − Fuel Temperature High The message is cleared by the next power cycle. The exceedance is permanently recorded on the ACMS file for periodic maintenance analysis.
Aircraft Exceedance	Reminds on the ground that during flight an Airspeed WARNING was displayed or, an acceleration parameter (g limit) was exceeded. If no exceedances were noted by the pilot, continue flight and report to maintenance personnel. If an exceedance was noted, maintenance action may be required before continued flight, depending on the extent of the exceeded parameter. The CAS message will always be displayed on the ground as a reminder. The message is cleared by the next power cycle. The exceedance is permanently recorded on the ACMS file for periodic maintenance analysis.
Crew Event Store	Indicates that a crew initiated event has been recorded.
* LH WOW Fault * RH WOW Fault * LH+RH WOW Fault	Indicates that the Modular Avionics Unit (MAU) has determined that either of the main landing gear proximity switches is in disagreement with the aircraft Air/Ground determination.
* AGM 2/FMS1 GFP inop	Indicates graphical Flight Planning function failed in Aircraft Graphics Module.
* AGM 1 DB Error * AGM 2 DB Error * AGM 1+2 DB Error	Indicates an error has been detected in the navigation or charts database on one or both Advanced Graphics Module (AGM).
* AGM 1 DB Old * AGM 2 DB Old * AGM 1+2 DB Old	Indicates the navigation or charts database in one or both Advanced Graphics Module (AGM) is out of date.
EPECS MAINT Mode	Indicates the EPECS is in maintenance mode. In maintenance mode the following functions are available: − Dry motoring − Wet motoring − EPECS fault clearing − ITT trim update.

On Ground CAS Status Message	Meaning, Effects and Possible Actions
* EPECS TLD	The engine is cleared for Time Limited Dispatch (TLD), follow the applicable time limits.
Dry Motoring	Indicates that a dry motoring run is in progress.
Maintenance Feather	Indicates the propeller is feathered for maintenance purposes.
Wet Motoring	Indicates that a wet motoring run is in progress.
Prop Feather Inhibit	Indicates propeller feathering is inhibited during engine shutdown.

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3A-4 Primary Altimeter Diverge by 200 ft or More

If able to identify defective altimetry system[(1)]:

1 Determine aircraft altitude using operating ADAHRS channel.

2 Disengage autopilot and flight director.

3 Select operating ADAHRS channel, using the flight director couple select switch (L/R).

4 Re-engage autopilot and flight director.

5 Perform appropriate national RVSM contingency procedures for loss of redundancy of primary altimeters.

If unable to determine accuracy of either altimetry system, perform appropriate national RVSM contingency procedures for loss of all primary altimetry systems.

Note
[(1)]The copilot’s and ESIS share a common static source. Therefore the ESIS should not be used in determining which altimetry system is defective.

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3A-5 Loss of Autopilot Altitude Hold Function in RVSM Airspace

3A-5-1 Procedure: Loss of Autopilot Altitude Hold Function in RVSM Airspace

Loss of Autopilot Altitude Hold Function in RVSM Airspace **3A-5-01**

1.	Autopilot....................................	Make sure altitude hold function is disengaged
2.	Altitude.......................................	Maintain assigned altitude manually
3.	Appropriate national RVSM contingency procedure for loss of altitude hold capability.............	Perform

---------- END -----------

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3A-6 Flight Training

Emergency Gear Extension Lever Reset 3A-6-01

If Emergency Gear Extension Lever has been pulled in flight:

1.	Landing Gear Selector................	DN
2.	Emergency Gear Extension Lever..	Press black release latch and push red lever down
3.	Emergency Gear Extension Lever cover................................	Close

---------- END -----------

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3A-7 Smartview

3A-7-1 Smartview Procedures

Smartview abnormal procedures 3A-7-01

If Smartview information is inconsistent with APEX primary flight indications:

1.	PFD..	Select OVRLY menu
2.	SV...	OFF

Note

SV can be set to OFF by deselecting the checkmark "SVS ON".

3.	PFD..	Verify SV is removed
4.	Aircraft.......................................	Use APEX primary flight indications

--- END ---

If APEX operation in reversionary mode is required due to a DU 1 failure:

Note

If APEX operation in reversionary mode (due to DU 1 or AGM failure), the PFD format reverts to SV off (blue over brown) and to the default flight director cross pointer (X-Ptr). After approximately 2.5 minutes the SV is displayed automatically and the pilot can reselect the preferred flight director mode on the FCS tab.

Example:

- Indication: **Check DU 1**
- Condition: Pilot PFD is blank or suspect

1.	Reversion Controller..................	Set DU 1 control knob to OFF/REV
2.	Aircraft.......................................	PPFD is shown on upper MFD in SV off format (blue over brown) and pitch based X Ptr default flight director is active

After 2.5 minutes:

3.	Aircraft.......................................	SV is automatically re-displayed
4.	Pilot...	Re-select preferred flight director mode on FCS Tab

---------- END -----------

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3A-7-2 Smartview status and failure indications

Smartview related status and failure indications on the SV Status / Failure field:

SV Indication	Description
SV	Position and altitude used to position the synthetic scenery meets the integrity requirements. SV is selected ON and displayed.
SV OFF	Position and altitude used to position the synthetic scenery meets the integrity requirements, but SV is not selected ON.
SV RATE	SV is selected but not being displayed due to a too low refresh rate.
SV POS	SV is selected but not being displayed due to position/altitude failure, or SV is being displayed but a position integrity error was detected.
SV FPS	SV is selected but not being displayed due to the Flight Path Symbol (FPS) being invalid.
SV TER	SV is selected but not being displayed due to a terrain rendering failure.
SV TRK	SV is selected but not being displayed because APEX has been switched to track mode (e.g. at high latitudes).
SV REV	SV is selected but not being displayed due to the PFD being switched to composite mode.

Note

The SV related status and failure indications are for information only. No pilot action is required.

3A-8 LPV/LP Approach (Optional)

1 If PRIMUS APEX avionics suite GPS navigation information is not available or invalid, utilize remaining operational navigation equipment as appropriate.

2 Degradation of Approach Capability (**LPV UNVL** or **LP UNVL**) in the terminal or initial approach phase of flight (prior to FAF). Descent to LPV/LP minima is not allowed

LPV Approach:

- On STAR/Landing page (RNAV tab) select LNAV/(VNAV) minima
- Brief new LNAV or LNAV/VNAV approach (or different approach type), as applicable
- Set minimum accordingly.

LP Approach:

- Choose different navigation type/source, or initiate a Go-Around

3 Degradation of Approach Capability (**LPV UNVL** or **LP UNVL**) on the final approach segment (after FAF). Descent to LPV/LP minima is not allowed. Vertical guidance information is not provided.

- If runway threshold is visible continue approach by using visual references
- If runway threshold is not visible proceed as follows:

  LPV Approach:

  - Descent to LNAV minimum is allowed if “DGRD” message is not displayed
  - If below LNAV minimum, initiate a Go-Around and follow published standard missed approach procedure as long as “DGRD” message is not displayed. If “DGRD” message is displayed, avoid obstacles with remaining operational navigation equipment as applicable.

  LP Approach:

  - Initiate a Go-Around and follow published standard missed approach procedure as long as “DGRD” message is not displayed. If “DGRD” message is displayed, avoid obstacles with remaining operational navigation equipment as applicable.

4 Predicted Degradation of Approach capability (“PREDICT LPV UNAVAIL” or “PREDICT LP UNAVAIL” message on the INAV). The predicted performance of the navigation system is not sufficient to conduct approach to LPV/LP minimum.

- Select other approach or continue with LPV/LP approach
- If LPV/LP approach is continued then monitor the LPV/LP status indication. Revert to applicable procedures in case the **LPV UNVL** or **LP UNVL** message is displayed.

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3A-9 Engine Dry Motoring

Dry Motoring Run — 3A-9-01

Note

This procedure is used to remove internally trapped smoke, fuel and vapor within the engine gas path. Do a dry motoring cycle once the ITT has stabilized.

Note

A dry motoring run can always be aborted by setting the Master Power switch to EMERGENCY OFF.

Allow min 30 sec draining period, then:

1.	Engine switch............................	OFF
2.	POWER CONTROL LEVER.......	IDLE DETENT
3.	EPECS MAINTENANCE MODE switch.. (on maintenance panel, right sidewall behind co-pilot seat)......	ON
4.	CAS window..............................	CHECK **EPECS MAINT Mode** is on
5.	BAT 1 and BAT 2 indicators........	CHECK 24 VDC min
6.	EXT PWR switch.........................	ON (if available)
7.	STARTER switch.........................	PUSH momentarily (less than 2 seconds) To crank for a pilot determined amount of time, hold the push button for longer than 2 seconds
8.	CAS window..............................	CHECK **Dry Motoring** comes on
9.	Engine..	CHECK dry motoring run is performed for 30 seconds
10.	EPECS MAINTENANCE MODE switch.. (on maintenance panel, right sidewall behind co-pilot seat)......	OFF
11.	Engine..	If required, do an Engine Start (With or Without External Power) - 4-5-01

CAUTION

Observe engine starting cycle limits. Refer to Section 2, Limitations, Power Plant Limitations, Starter.

Continued on next page

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Dry Motoring Run 3A-9-01

continued

12. EXT PWR switch........................ OFF

For shutdown, refer to Section 4-18, Shutdown.

---------- END -----------

SECTION 4

Normal Procedures (EASA Approved)

Table of Contents

4-1 General

This section provides the normal operating procedures. All of the procedures required by regulation as well as those procedures which have been determined as necessary for the operation of this airplane are provided.

Normal operating procedures associated with optional systems or equipment which require supplements are contained in Section 9, Supplements, General.

Pilots must familiarize themselves with these procedures to become proficient in the normal operation of the airplane.

It is recommended that these procedures be followed for the normal operation of the aircraft. When the aircraft has been in extended storage, had recent major maintenance or been operated from prepared unpaved surfaces the full preflight inspection procedure given in this section is recommended.

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4-2 Airspeeds for Normal Operations

Airspeeds for normal operations are listed below. Unless otherwise noted, all airspeeds are based on a maximum takeoff weight of 10,450 lb (4740 kg) at sea level under ISA standard day conditions.

Takeoff (V_R):	
Flaps 15°	82 KIAS
Flaps 30º	76 KIAS
Maximum Climb:	
Best Angle (V_X)	120 KIAS
Best Rate (V_Y) Flaps 0º:	
Sea level	130 KIAS
5000 ft	125 KIAS
10,000 ft	125 KIAS
15,000 ft	125 KIAS
20,000 ft and above	120 KIAS
Recommended Climb Speed with Flaps retracted and Pusher Ice Mode	135 KIAS
Maximum Operating Maneuvering Speed (V_O) (10,450 lb/ 4740 kg)	166 KIAS
Maximum Flaps Extended (V_{FE}):	
Flaps 15°	(≤ 15º) 165 KIAS
Flaps 30º / 40º	(> 15º) 130 KIAS
Maximum Landing Gear:	
Extension (V_{LO})	180 KIAS
Retraction (V_{LO})	180 KIAS
Extended (V_{LE})	240 KIAS
Landing Approach Speed (based on Maximum Landing Weight of 9921 lb / 4500 kg):	
Flaps 0º	120 KIAS
Flaps 15º	99 KIAS
Flaps 30º	89 KIAS
Flaps 40º	85 KIAS
with residual ice on the airframe	
Flaps 15º, Pusher Ice Mode	105 KIAS

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Balked Landing (Go-Around):

TO/Pwr, Flaps 15º, LG down	98 KIAS
TO/Pwr, Flaps 30º, LG down	89 KIAS
TO/Pwr, Flaps 40º, LG down	85 KIAS
TO/Pwr, Flaps 15º, LG down, Pusher Ice Mode	105 KIAS

Maximum Demonstrated Crosswind for Takeoff and Landing (not a limitation):

Flaps 0º	30 kts
Flaps 15º	25 kts
Flaps 30º	20 kts
Flaps 40º (landing only)	15 kts

4-3 Preflight Inspection

Empennage 4-3-01

1.	Luggage....................................	CHECKED and SECURED
2.	Cargo (Combi Interior)...............	CHECK that cargo is located against retainer angles installed on seat rails
3.	Tie Down Straps (Combi Interior)	CHECK fittings properly inserted into seat rails and that the straps are tight
4.	Cargo Door................................	After cargo loading / unloading: CHECK lower attachment lugs for condition
5.	Cargo Door................................	CLOSED and LOCKED (check for green flags)
6.	Static ports and skin inspection..	CHECKED

Note

Visually inspect the static port plates and an area 18" fwd, 6" aft, 8" above, 6" below the plates (static port RVSM critical area). No paint ridges or flanking shall be allowed near the static port plate. Verify that there is no corrosion, elongation, deformation of the static port areas and ensure that no foreign matter is found within the static port orifice.

7.	Tail tie-down................................	DISCONNECTED
8.	External Power Door..................	CLOSED / AS REQUIRED
9.	Oxygen rupture disc....................	INTACT (if a larger capacity oxygen system is installed in the rear fuselage)
10.	Rudder and trim tab..................	CHECK VISUALLY
11.	Vertical stabilizer.......................	CHECK VISUALLY
12.	Elevator assembly......................	CHECK VISUALLY
13.	Horizontal stabilizer....................	CHECK VISUALLY, Stabilizer Trim Mark within green range
14.	Deicing boots.............................	CHECK VISUALLY
15.	Static discharge wicks................	CHECK
16.	Dorsal and ventral fairings..........	CHECK
17.	General condition.......................	CHECK

Battery compartment:

18.	LDR Circuit Breaker...................	CHECK IN
19.	ELT..	CHECK CONDITION
20.	Autopilot servos and cables........	CHECK CONDITION

Continued on next page

Empennage 4-3-01

continued

21.	Power junction box circuit breakers....................................	CHECK IN
22.	Steering bar...............................	STOWED and SECURED
23.	Battery..	CONNECTED
24.	Battery compartment..................	CHECK CLOSED

---------- END -----------

Right Wing Trailing Edge 4-3-02

1.	Flaps...	CHECK CONDITION
2.	Aileron and flettner tab................	CHECK CONDITION
3.	Fuel tank vents (three)................	CLEAR of OBSTRUCTIONS
4.	Static discharge wicks.................	CHECK SECURITY and CONDITION
5.	General condition........................	CHECK

---------- END -----------

Right Wing Leading Edge 4-3-03

1.	Nav/Strobe light..........................	CHECK CONDITION
2.	Fuel quantity and filler cap.........	CHECK and SECURE
3.	Pitot probe..................................	COVER REMOVED and CHECKED
4.	AOA probe..................................	COVER REMOVED and CHECK FREE MOVEMENT
5.	Wing tie-down / wheel chocks.....	DISCONNECTED and REMOVED
6.	De-icing boot..............................	CHECK GENERAL CONDITION
7.	Right main lading gear................	CHECK
8.	Right brake assembly.................	CHECK
9.	Two fuel drains...........................	SAMPLE and SECURE
10.	General condition........................	CHECK

---------- END -----------

Nose Section 4-3-04

Service Bay (right) (If a standard oxygen system is installed):

1.	Oxygen Press............................	CHECK
2.	Oxygen and ECS Doors.............	CLOSED
3.	Oxygen rupture disc...................	INTACT

--- END ---

Engine Area:

1.	Cowling RH................................	CHECK and SECURE
2.	Propeller - Blade Anchor............	REMOVED and STOWED
3.	Propeller - Blade........................	CHECK

Note

It is recommended to keep a copy of Hartzell Service Letter 61-360 (latest issue) in the aircraft for reference and damage assessment recording during the blade check.

4.	Propeller - De-icing Boots...........	CHECK GENERAL CONDITION
5.	Propeller - Spinner.....................	CHECK
6.	Air Inlet and Exhaust Covers......	REMOVED and STOWED
7.	Air Inlets....................................	CHECK ENGINE AIR INTAKE, OIL COOLER, ECS and GENERATOR for OBSTRUCTIONS
8.	Exhaust system...........................	CHECK
9.	Nose Gear and Doors.................	CHECK
10.	Wheel Chocks.............................	REMOVED
11.	Engine drain mast (LH)...............	CHECK. No leaks permitted
12.	Engine drain (LH)........................	SAMPLE and SECURE

Continued on next page

Nose Section 4-3-04

continued

WARNING

DO NOT TOUCH OUTPUT CONNECTORS OR COUPLING NUTS OF IGNITION EXCITER WITH BARE HANDS.

13. Oil Quantity................................ CHECK SIGHT GLASS AND DIPSTICK FOR SECURITY (green markings aligned)

    Check oil level in green range of sight glass within 10 to 20 minutes after engine shut down. If engine has been shut down for more than 30 minutes, check dipstick indication and if it indicates that oil is needed, check for oil leaks in the engine bay, start the engine and run at ground idle for 5 minutes. Recheck oil level using dipstick and refill if necessary. For a better view, the check of the dipstick security may be conducted from the RH cowling.

14. General Condition...................... CHECK
15. Cowling LH................................ CHECK and SECURE
16. Windshield................................ CHECK CLEAN

--- END ---

Service Bay (left)

1. Service Bay Doors...................... CLOSED

---------- END -----------

Left Wing Leading Edge 4-3-05

1. Two fuel drains........................... SAMPLE and SECURE
2. Left main lading gear................. CHECK
3. Left brake assembly................... CHECK
4. De-icing boot............................. CHECK GENERAL CONDITION
5. Pitot probe.................................. COVER REMOVED and CHECKED
6. AOA probe................................... COVER REMOVED and CHECK FREE MOVEMENT
7. Wing tie-down / wheel chocks..... DISCONNECTED and REMOVED
8. Fuel quantity and filler cap.......... CHECK and SECURE

Continued on next page

Left Wing Leading Edge — 4-3-05

continued

9.	Nav/Strobe light..........................	CHECK CONDITION
10.	General condition........................	CHECK

---------- END -----------

Left Wing Trailing Edge — 4-3-06

1.	Static discharge wicks.................	CHECK SECURITY and CONDITION
2.	Fuel tank vents (three)................	CLEAR of OBSTRUCTIONS
3.	Aileron and trim tab.....................	CHECK CONDITION
4.	Flaps..	CHECK CONDITION
5.	General condition........................	CHECK

---------- END -----------

Cabin — 4-3-07

1.	Passenger Door..........................	CLOSED and LOCKED (check for 6 green flags)
2.	Hand luggage.............................	SECURED / STOWED
3.	Passenger Seat...........................	CHECK backrests in upright position (for takeoff and landing)
4.	Passenger Seat Belts.................	FASTENED
5.	Overwing Emergency Exit...........	LOCK PIN REMOVED, EXIT CHECKED and LOCKED
6.	Fire Extinguisher........................	CHECK ATTACHMENT and PRESSURE

For flights above 10,000 ft altitude:

7.	Passenger Oxygen Masks..........	CONNECTED and STOWED (for each passenger)

---------- END -----------

Cockpit 4-3-08

Note

Items marked thus: * only necessary on first flight of day.

1.	Flight Control Lock......................	REMOVED and placed in STOWAGE POINT
2.	EMERG COM 1 switch................	NORM
3.	Aural Warning Inhibit Switch.......	ON
4.	* LH MASK/MIC switch...............	CHECK MIC
5.	ELT..	ARMED / GUARDED
6.	LH Circuit Breakers....................	CHECK IN
7.	Parking Brake Handle.................	SET / PUSH BRAKE PEDALS
8.	ICE PROTECTION switches.......	OFF
	INERT SEP switch......................	AS REQUIRED
9.	Landing Gear Selector................	DN
10.	Main OXYGEN lever...................	ON
11.	* Crew Oxygen Masks................	CHECK 100%
12.	Environmental (ACS, ELECTRICAL, FANS) and CPCS switches..........................	AUTO
13.	* RH MASK/MIC switch...............	CHECK MIC
14.	RH Circuit Breakers....................	CHECK IN
15.	TRIM INTERRUPT switch...........	Check OFF
16.	FLAP INTERRUPT switch...........	Check NORM/GUARDED
17.	POWER CONTROL LEVER.......	IDLE DETENT
18.	Flap Lever....................................	0°
19.	Cockpit / Instrument / Cabin Light switches............................	OFF
20.	Fuel Firewall Shut-off lever.........	FULLY IN
21.	Emergency Gear Extension lever..	STOWED
22.	ACS Firewall Shut-off lever.........	FULLY IN
23.	FUEL PUMPS switches.............	AUTO
24.	Engine switch............................	OFF
25.	IGNITION switch........................	AUTO
26.	EXTERNAL LIGHTS switches....	OFF

Continued on next page

Cockpit 4-3-08

continued

27.	PASSENGER WARNING switches.....................................	OFF
28.	EPS switch.................................	OFF
29.	MASTER POWER switch...........	ON and GUARDED. Check condition of guard
30.	BAT 1, BAT 2, STBY BUS..........	CHECK OFF
31.	EXT PWR...................................	CHECK CENTER
32.	AV 2 BUS, CABIN BUS, AV 1 BUS, GEN 1, GEN 2..................	CHECK ON

---------- END -----------

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4-4 Before Starting Engine

Before Starting Engine — 4-4-01

1.	Preflight inspection......................	COMPLETE
2.	STBY BUS switch.......................	ON wait until MFD powers up (30 secs) prior to switching batteries on
3.	Display reversion control panel...	PILOTS PFD NORM, CO-PILOTS PFD NORM (if installed) Adjust lower MFD brightness and set other DU's brightness control similarly
4.	ATIS and start up clearance........	RECEIVED
5.	FMS programming......................	COMPLETED
6.	Seats..	ADJUSTED and LOCKED
7.	Seat belts..................................	FASTENED
8.	EPS switch.................................	TEST (minimum 5 seconds)
9.	EPS - Green TEST indicator.......	ON during test
10.	EPS - EPS switch.......................	ARMED
11.	EPS - Red EPS ON indicator......	ON
12.	EPS - ESIS................................	ALIGNING
13.	BAT 1 and BAT 2 switches..........	ON
14.	Red EPS ON indicator.................	Check OFF
15.	BAT 1 and BAT 2 indicators........	CHECK 24 VDC min

External power (if available):

16.	External power unit.....................	ON. Check 28 VDC
17.	External power unit.....................	CONNECT. Check OHP AVAIL is on
18.	EXT PWR switch.........................	ON
19.	BAT 1 and BAT 2 indicators........	CHECK 28 VDC

Note

The external power control unit on the aircraft will disconnect the EPU if the output voltage is above 29.5 or below 22 VDC.

20.	Landing Gear 3 greens...............	CHECK
21.	FUEL quantity............................	SUFFICIENT for flight, balanced within 3 segments for departure

Continued on next page

Before Starting Engine 4-4-01

continued

22.	FIRE WARN test switch..............	PUSH. (CAS Engine Fire and Fire Detector annunciations ON while switch is pushed, callout heard if powered from GPU)
23.	LAMP test switch........................	PUSH. (Master Warning and Caution and Trim Interrupt)
24.	Oxygen pressure gage................	CHECK 1,850 psi MAX
25.	PASSENGER OXYGEN selector	AUTO. SET switch to OFF if no passengers on board
26.	Direct Vision Window..................	CLOSED and LOCKED
27.	Radios / Avionics.........................	SET as required, ESIS aligned

---------- END -----------

4-5 Engine Starting

Engine Start (With or Without External Power) 4-5-01

1. External lights............................ AS REQUIRED

Note

Avoid prolonged use of the beacon and logo lights (if installed), as this can cause a decrease in battery power and affect the engine starting.

2. Propeller area............................ CLEAR. Confirm CLEAR of obstructions
3. CAS window............................... CHECK no door warnings, no oil temperature warning and no cyan autopilot messages

Note

It is essential that the autopilot pre-start servo calibration is not affected by any control inputs or an engine start before the CAS cyan autopilot messages are extinguished. Failure to follow this procedure will possibly affect the autopilot system availability in the air.

Note

The EPECS will automatically abort an engine start if any of the following cases occur:

- ITT exceedance
- Hung start
- No light-off
- The starter switch is pushed during the starting sequence.

In this event the EPECS will immediately command a 30 second dry motor run, the green STARTER annunciator in the PFD engine window comes on.

Note

The engine starting sequence or an automatic dry motoring run can always be aborted by setting the engine switch to OFF.
A Dry Motoring Run - 3A-9-01 is required prior to a subsequent start attempt.

4. Engine switch............................. RUN
5. Fuel window............................... CHECK two green PUMP indications
6. STARTER switch........................ PUSH momentarily
7. Oil pressure............................... CHECK rising
8. Ng approx. 16%......................... CHECK light up

Continued on next page

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Engine Start (With or Without External Power) 4-5-01

continued

9. ITT... MONITOR
   - MAXIMUM 1000 °C
   - 900 - 1000 °C for max 5 sec.
   - 850 - 900 °C for max 20 sec.

If there is a rapid increase in ITT towards 1000 °C and the start is not automatically aborted, then:

10. STARTER switch......................... PUSH momentarily

If ITT stays within limits:

11. Ng.. STABLE at 64.5%

If Ng stays below 50% and the start is not automatically aborted:

12. STARTER switch......................... PUSH momentarily

If NG stable:

13. Starter sequence......................... COMPLETED
14. Engine instruments..................... STABLE in green range
15. GEN 1 and GEN 2...................... Check volts and amps
16. FUEL RESET soft key................ Push to reset
17. External Power Unit (if used)...... Disconnect

---------- END -----------

4-6 Before Taxiing

Before Taxiing — 4-6-01

1.	Flaps Lever	15°

If icing conditions expected or first flight of the day:

2.	ICE PROTECTION switches	Set all on for 1 minute (windshield heavy)
3.	CAS window	No cautions. Check **PROPELLER**, **INERT SEP** and **BOOTS** are on
4.	ICE PROTECTION switches	Set as required
5.	Inertial Separator	OPEN, if operating on unprepared surface or for bird strike protection

Stick Pusher test:

6.	PCL	SET 5 - 10 psi
7.	STICK PUSHER test switch (Overhead Panel)	PUSH and HOLD
8.	PCL	SET to idle
9.	Elevator Control	PULL
10.	Shaker for 2 sec Break for 1 sec Shaker for 2 sec Break for 1 sec Pusher, Shaker	CHECK correct operation
11.	ICE PROTECTION PUSHER ICE MODE advisory	CHECK ON

When pusher operates:

12.	PUSHER INTR switch (control wheel)	PRESS and HOLD, check pusher interrupts
13.	STICK PUSHER test switch	RELEASE
14.	**Pusher**	CHECK OFF
15.	**Pusher**	CHECK ON (visual and aural) after 3 seconds
16.	PUSHER INTR switch	RELEASE
17.	**Pusher**	CHECK OFF (visual and aural)
18.	Elevator control	CHECK FULL and FREE movement
19.	PFD, MFD, CAS, ESIS	No flags or red warning captions, all aligned

Continued on next page

Before Taxiing **4-6-01**

continued

20. PFD Engine Window.................. Check T1

Note

Engine takeoff power is calculated based on displayed T1.

---------- END -----------

4-7 Taxiing

Taxiing 4-7-01

1.	EXTERNAL LIGHTS switches....	AS REQUIRED
2.	PASSENGER WARNING switches (if installed)..................	ON
3.	Parking Brake............................	RELEASE
4.	Brakes.......................................	CHECK
5.	PCL...	CHECK beta is available, return to IDLE
6.	Display units...............................	Compare ADIs, speeds, Altitude, Heading and check no flags

CAUTION

To avoid possible propeller damage, do not allow stabilized propeller operation between 350 and 900 RPM (propeller not feathered).

CAUTION

Do not leave the PCL stationary for more than 30 seconds in the beta range (aft of idle detent) to avoid an EPECS Degraded message on the CAS window.

Note

If operating conditions allow, use the beta range (aft of the idle detent) to control taxi speed and reduce wear on brakes.
For the periodical brake conditioning procedure, refer to the Brake Care Paragraph in Section 8.

---------- END -----------

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4-8 Before Takeoff

Before Departure 4-8-01

1.	Takeoff power setting..................	CALCULATED
2.	Engine instruments.....................	CHECK
3.	Flaps...	15° (for reduced takeoff distance flap 30° may be used)
4.	Trim...	SET GREEN range
	If CG is 236 inches (6 meters) or further aft of datum......................	SET GREEN DIAMOND
5.	Fuel quantity..............................	CHECK
6.	CPCS..	Check FMS identifier and ELEV, if no FMS ELEV adjust landing ELEV, check mode. Check no CPCS faults. If identifier and ELEV miscompare, select and deselect DEST ELEV
7.	DC Amps Batteries.....................	CHECK both BAT 1 and BAT 2 indicate less than 30 amps. If greater than 30 amps is indicated, delay takeoff until indications are at or below 30 amps
8.	Flight controls..............................	FULL, FREE and CORRECT
9.	Radios / Navigation / FD / clearance..................................	SET and checked
10.	Departure and emergency briefing...	COMPLETED

---------- END -----------

Line Up Check 4-8-02

1.	PROBES switch.........................	ON
2.	Windshield Heat.........................	AS REQUIRED
3.	INERT SEP................................	AS REQUIRED
4.	External light switches................	AS REQUIRED
5.	Transponder...............................	AS REQUIRED
6.	Runway......................................	IDENTIFIED. Heading verified and Heading Bug synchronized
7.	CAS window...............................	CHECK

---------- END -----------

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4-9 Takeoff

Takeoff 4-9-01

1. ACS BLEED AIR switch.............. INHIBIT

   (If static takeoff torque is below flat rating and additional torque should be achieved.)

2. POWER CONTROL LEVER....... SET to T/O

   (EPECS sets power to ambient conditions)

CAUTION

Monitor for exceedances. EPECS will not protect against all possibilities of exceedance.

3. Engine instruments.................... MONITOR:
   - Torque
   - ITT
   - Ng
   - Oil Temp / Pressure
4. Aircraft.. Rotate at V_R, initial climb at V_X or V_Y as required

After lift-off and positive rate of climb:

5. Brakes.. PRESS to stop wheel rotation
6. Landing Gear Selector................ UP
7. Yaw Damper................................ ON
8. Flaps.. 0° above 100 KIAS
9. Taxi and Landing Lights.............. OFF

---------- END -----------

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4-10 Flight into Known Icing Conditions

Flight into Known Icing Conditions 4-10-01

WARNING

FLIGHT IN ICING CONDITIONS IS PROHIBITED IF THERE IS A KNOWN FAILURE OF ANY OF THE ICE PROTECTION SYSTEMS.

WARNING

DURING FLIGHT IN ICING CONDITIONS OR FLIGHT WITH ANY VISIBLE ICE ACCRETION ON THE AIRFRAME, THE FOLLOWING FLAP EXTENSION LIMITS APPLY:

- **WITH OPERATIONAL AIRFRAME PNEUMATIC DEICE BOOTS = 15° FLAP.**
- **AFTER FAILURE OF THE AIRFRAME PNEUMATIC DEICE BOOTS = 0° FLAP.**

Note

Flight in icing conditions is only permitted with full operational status of all aircraft deicing systems. The deicing systems may be activated before takeoff.

Note

Icing conditions are defined in Symbols, Abbreviations, and Terminology.

Before entering icing conditions set the deicing switches as follows:

1. PROP.. ON
2. INERT SEP.................................... OPEN
3. BOOTS... ON and 3 MIN or 1 MIN as required

Note

A deice boots failure indication can occur at low power settings while in high pressure altitudes. Refer to De Ice Boots - 3-18-02 Emergency Procedure for system reset.

4. LH and RH WHSLD switches..... ON and LIGHT or HEAVY as required

Note

When DE ICING switch PROP is set to ON and INERT SEP is set to OPEN, the stick shaker/pusher system is automatically reset to provide stall protection at lower angles of attack. The ICE PROTECTION advisory caption PUSHER ICE MODE comes on to inform the aircrew of this mode change. In this mode the shaker and pusher are activated at higher airspeeds.

During icing conditions:

5. Wing leading edge...................... MONITOR for continual shedding of ice

Continued on next page

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Flight into Known Icing Conditions **4-10-01**

continued

6.	MFD ICE PROTECTION window	MONITOR for correct function of ice protection systems

WARNING

IF ANY OF THE AIRCRAFT ICE PROTECTION SYSTEMS FAIL DURING FLIGHT IN ICING CONDITIONS, EXIT ICING CONDITIONS. CONTACT ATC FOR PRIORITY ASSISTANCE IF REQUIRED.

WARNING

IF SEVERE ICING CONDITIONS ARE ENCOUNTERED, REQUEST PRIORITY HANDLING FROM AIR TRAFFIC CONTROL TO FACILITATE A ROUTE OR AN ALTITUDE CHANGE TO EXIT THE ICING CONDITIONS.

After departure of icing conditions with residual airframe ice:

7.	PROP..	Maintain ON
8.	INERT SEP................................	Maintain OPEN

Note

This ensures that the stick shaker/pusher system is maintained in PUSHER ICE MODE.

9.	BOOTS.....................................	ON and 3 MIN or 1 MIN as required
10.	LH and RH WHSLD....................	ON and LIGHT or HEAVY as required
11.	Flaps...	Do not extend beyond 15° or if extended do not retract to 0°

After removal of residual airframe ice:

12.	PROP..	OFF
13.	INERT SEP................................	CLOSED
14.	BOOTS.....................................	OFF
15.	LH or RH WHSLD.......................	LIGHT or HEAVY as required
16.	FLAPS.......................................	AS REQUIRED

---------- END -----------

4-11 Climb

Climb 4-11-01

1.	Ice Protection System................	AS REQUIRED
2.	Autopilot....................................	AS REQUIRED
3.	FMS Auto speed (if selected)......	Verify and confirm correct
4.	POWER CONTROL LEVER.......	SET to MCP (EPECS sets power to ambient conditions)

CAUTION

Monitor for exceedances. EPECS will not protect against all possibilities of exceedance.

5.	ACS BLEED AIR switch.............	AUTO (if selected INHIBIT for takeoff)
6.	Cabin pressure..........................	Monitor

Engine instruments:

7.	Torque.......................................	MONITOR (max. 44.8)
8.	ITT...	MONITOR (max. 825)
9.	Ng...	MONITOR (max. 104)

When passing transition altitude:

10.	Baro..	SET STD and cross check

CAUTION

If autothrottle is installed and engaged and FD/AP is set to OFF, monitor for engine torque exceedances.

If the aircraft is levelled off below 18,000 ft with autothrottle engaged and FD/AP set to OFF, the autothrottle can command the engine torque to exceed the max cruise limitation of the engine.

---------- END -----------

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4-12 Cruise

Cruise 4-12-01

1. Cabin Pressurization.................. Monitor
2. POWER CONTROL LEVER....... SET as required
3. Engine instruments.................... MONITOR
4. Fuel state.................................. MONITOR

Note

On longer flights the digital fuel quantity value can be updated to the actual fuel content by pressing the FUEL RESET soft key, on Systems MFD FUEL window. Reset only when wings are level, pitch within ±3°, with unaccelerated flight and no turbulence present.

5. FMS Auto speed (if selected)...... Verify and confirm correct
6. Ice Protection System................ AS REQUIRED

---------- END -----------

Cruise within RVSM Airspace 4-12-02

1. Cross check altimeters................. Maximum differences 200 feet (1)
2. Altimeters.................................. Record indicated altitudes (2)
3. Autopilot / Altitude Hold.............. Verify altitude hold within ±65 feet (3)

Note

(1) Ensure matched altimeter baro-settings (STD).
(2) Record pilot, co-pilot and ESIS readings in the flight plan master log upon entering RVSM airspace and each hour thereafter while in RVSM airspace for contingency situations.
(3) The flight director couple select switch (L/R) ensures that the autopilot and transponder are coupled to the same ADAHRS channel.

---------- END -----------

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4-13 Descent

Descent		**4-13-01**
1.	ATIS / Briefing............................	RECEIVED / PERFORMED
2.	Ice Protection System.................	AS REQUIRED
3.	POWER CONTROL LEVER.......	SET to desired torque
4.	FMS Auto speed (if selected)......	Verify and confirm correct
5.	CPCS system window.................	CHECK landing field elevation set
6.	Passengers................................	Brief
7.	Passenger Warning Switches (if installed).....................................	ON

---------- END -----------

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4-14 Before Landing

Approach Check — 4-14-01

1.	Altimeter......................................	SET
2.	Ice Protection system..................	AS REQUIRED
3.	Inertial Separator........................	OPEN, if operating on unprepared surface or for birdstrike protection
4.	Fuel Quantity................................	CHECK
5.	Landing Gear...............................	DOWN (below 180 KIAS)
6.	Taxi and Landing Lights..............	(AS REQUIRED)
7.	Flaps...	AS REQUIRED
	With residual airframe ice...........	SET maximum 15°
	Boot failure..................................	Maintain at 0°

Note
For flap settings for crosswind operation, icing conditions and associated landing performance refer to Airspeeds for Normal Operations and Section 5 - Performance.

Note
If the optional TAWS Class A or RAAS are installed, activate FLAP OVRD for approaches and landing where flap settings are intentionally at less than 40° to avoid an aural flaps annunciation during final approach.

8.	Speed...	As indicated by Dynamic Speed Bug (1.3 V_S)
9.	FMS Auto speed (if selected)......	Verify and confirm correct

---------- END -----------

Final Check — 4-14-02

1.	Landing Gear...............................	3 Green Lights
2.	Flaps...	40° or AS REQUIRED
	With residual airframe ice...........	SET maximum 15°
	Boot failure..................................	Maintain at 0°

Continued on next page

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Final Check 4-14-02

continued

3.	Speed...	REDUCE to Dynamic Speed Bug (1.3 V_S) and STABILIZED
	Boot failure.................................	130 KIAS
	AOA Deice or PUSHER ICE MODE failure.............................	105 KIAS
4.	Cabin Pressurization..................	Diff Pressure below 0.7 psi decreasing
5.	AP, AT (if installed), YD (prior to landing)......................................	DISENGAGED (use red AP QD button on the yoke)

Note

For minimum Autopilot heights, refer to Systems and Equipment Limits.
For crosswind information, refer to Airspeeds for Normal Operations and Section 5 - Performance.

---------- END -----------

4-15 Balked Landing (Go-Around)

Balked Landing (Go-Around) 4-15-01

1.	Go Around switch (if Autopilot engaged)....................................	PRESS
2.	POWER CONTROL LEVER.......	SET to T/O (EPECS sets power to ambient conditions)

CAUTION

Monitor for exceedances. EPECS will not protect against all possibilities of exceedance.

3.	Climb airspeed...........................	85 KIAS
4.	Flaps - Normal...........................	SET 15° (max 165 KIAS)
	Flaps - With residual airframe ice...	Maintain at 15°
	Flaps - Boot failure.....................	Maintain at 0°
5.	Climb airspeed - Pusher Normal Mode...	95 KIAS
	Climb airspeed - Pusher Ice Mode...	105 KIAS
	Climb airspeed - Boot failure.......	130 KIAS
6.	Landing Gear Selector..............	Up with positive rate-of-climb
7.	Yaw Damper................................	ON
8.	Flaps - Normal...........................	AS REQUIRED
	Flaps - With residual airframe ice...	Maintain at 15°
	Flaps - Boot failure.....................	Maintain at 0°
9.	Ice Protection System................	AS REQUIRED

CAUTION

In the event of a balked landing (go-around) with residual ice on the airframe, the flaps should not be retracted. The landing gear may not fully retract after selection (remaining red/white hatched indication).

---------- END -----------

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4-16 Landing

Normal 4-16-01

1. Aircraft.. Touch down main wheels first
2. Aircraft.. Do not flare with high pitch angle
3. Power Control Lever.................. IDLE DETENT
4. Braking....................................... AS REQUIRED

---------- END -----------

Short Field 4-16-02

1. Aircraft.. Touch down main wheels first
2. Aircraft.. Do not flare with high pitch angle
3. Power Control Lever.................. REVERSE
4. Braking....................................... FIRM
5. Power Control Lever.................. IDLE

---------- END -----------

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4-17 After Landing

After Landing	4-17-01

When runway vacated:

1.	Flaps..	UP
2.	Trims..	SET GREEN RANGE
3.	External Lights...........................	AS REQUIRED
4.	Ice Protections switches.............	OFF or as required
5.	Transponder.................................	STBY or check GND
6.	WX Radar...................................	STBY

---------- END -----------

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4-18 Shutdown

Shutdown 4-18-01

WARNING

IN CASE OF ENGINE FIRE, DO THE ENGINE FIRE - 3-7-02 PROCEDURE.

Note

- Allow ITT to stabilize at least two minutes at ground idle
- Monitor compressor deceleration after shutdown for possible engine damage
- In case of an unusual amount of smoke from the engine exhaust after shutdown, allow ITT to stabilize and then conduct a Dry Motoring Run - 3A-9-01.

Note

If a shutdown is commanded with indicated T1 temperature at or above approximately 23 °C, the EPECS will command a momentary (15 second) dry motoring cycle during the shutdown sequence, indicated by **STARTER** on the PFD engine window and **DRY MOTORING** on the CAS window.
A dry motoring run at shutdown can always be aborted by setting the Master Power switch to EMERGENCY OFF.

1.	Power Control Lever....................	IDLE DETENT
2.	Parking Brake..............................	SET / PEDALS PUSH
3.	ICE PROTECTION switches.......	OFF
4.	Inertial Separator.........................	OPEN, if operating on unprepared surface
5.	Feather Inhibit switch (if installed).....................................	PUSH and HOLD (if desired, refer to note)

Note

After 9 consecutive engine shutdowns using the propeller feather inhibit function, a normal engine shutdown must be performed (refer to Section 2, Limitations, Power Plant Limitations, Feather Inhibit (optional)).

6.	Engine switch..............................	OFF

Note

The optional Feather Inhibit function activates when the Feather Inhibit switch is pushed and held while at the same time the Engine switch is set to OFF. Once the Feather Inhibit status message shows on the CAS, the pilot can release the Feather Inhibit switch and the function will continue to execute automatically.

Continued on next page

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Shutdown 4-18-01

continued

7.	CAS Feather Inhibit status.......... (if installed and activated)...........	CHECK
8.	Feather Inhibit switch.................. (if installed and activated)...........	Release
9.	External Lights switches.............	OFF
10.	PASS-Warning switches (if installed).....................................	OFF
11.	Main OXYGEN lever...................	OFF
12.	**Engine Oil Level** (60 sec. minimum after shutdown)............	CHECK. Refill engine with an approved oil
13.	CPCS..	CHECK cabin depressurized
14.	STBY BUS switch.......................	OFF
15.	EPS switch.................................	OFF
16.	Battery 1 and 2 switches.............	OFF
17.	Crew oxygen masks....................	CHECK 100% (if oxygen system is used)

---------- END ----------

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4-19 Parking

Parking	4-19-01

1. Flight Control Lock..................... INSTALLED
2. Wheel Chocks............................ AS REQUIRED
3. Tail Stand.................................. AS REQUIRED

Note

Install the tail stand when the aircraft is parked outside and wet snow fall is expected.

4. Tie Downs................................. AS REQUIRED

CAUTION

Make sure the propeller anchor is properly installed to prevent possible engine damage due to windmilling with zero oil pressure.

Note

Make sure that the rudder/nose wheel is centered.

5. Propeller Anchor........................ INSTALLED
6. External Covers......................... INSTALLED

----------- END -----------

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4-20 Oxygen System

Oxygen System 4-20-01

1. Oxygen Pressure Gauge............ NOTE READING
2. Outside Air Temperature............. NOTE READING
3. Percentage of Full Bottle............. DETERMINE (refer to Fig. 4-20-1)
4. COMPUTE................................. Oxygen Duration in minutes
   - Determine the Oxygen Duration in minutes for a full bottle for the number of connected passenger oxygen masks and pilots from the "Oxygen Duration with Full Bottle" graph (Fig. 4-20-1).
   - Multiply the Full Bottle Duration by the percent of Usable Capacity to obtain the available oxygen duration in minutes.

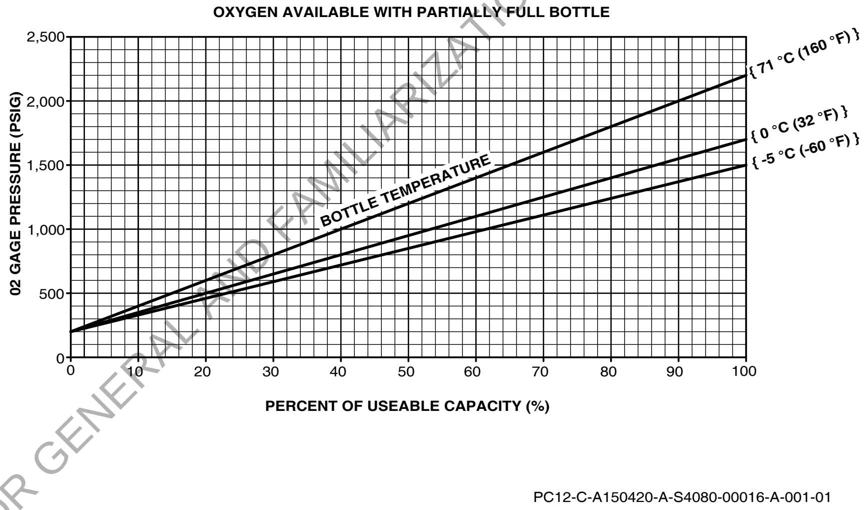

Figure 4-20-1: Oxygen Available with Partially Full Bottle

5. OXYGEN SHUT-OFF lever......... ON

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Oxygen System 4-20-01

continued

6. Passenger Oxygen control valve ON

Insert the connector of each mask into an outlet and verify proper oxygen flow to the mask. For flights above 10,000 feet leave the masks connected to the outlets and turn the Oxygen Control Valve to AUTO.

Table 4-20-1: Oxygen Duration with Full Bottle (Standard Oxygen System)

No. of Pax Oxygen Masks Connected	**Oxygen Duration Pax plus 1 Crew Mask on**		**Oxygen Duration Pax plus 2 Crew Mask on**	
	Diluter / Demand (min)	**100% (min)**	**Diluter / Demand (min)**	**100% (min)**
0	141	59	71	29
1	70	42	47	24
2	47	32	35	21
3	35	26	28	18
4	28	22	23	16
5	23	19	20	14
6	20	17	17	13
7	17	15	16	12
8	16	13	14	11
9	14	12	13	10

Table 4-20-2: Oxygen Duration with Full Bottle (Large Capacity Oxygen System)

No. of Pax Oxygen Masks Connected	**Oxygen Duration Pax plus 1 Crew Mask on**		**Oxygen Duration Pax plus 2 Crew Mask on**	
	Diluter / Demand (min)	**100% (min)**	**Diluter / Demand (min)**	**100% (min)**
0	477	200	240	98
1	237	142	159	81
2	159	108	118	71
3	118	88	95	61
4	95	74	78	54
5	78	64	68	47

Continued on next page

Oxygen System **4-20-01**

continued

Table 4-20-2: Oxygen Duration with Full Bottle (Large Capacity Oxygen System) (continued from previous page)

No. of Pax Oxygen Masks Connected	**Oxygen Duration Pax plus 1 Crew Mask on**		**Oxygen Duration Pax plus 2 Crew Mask on**	
	Diluter / Demand (min)	**100% (min)**	**Diluter / Demand (min)**	**100% (min)**
6	68	57	57	44
7	57	51	54	41
8	54	44	47	37
9	47	41	44	34

---------- END -----------

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4-21 Noise Level

The noise levels stated below have been verified and approved by FOCA in noise level test flights conducted on the PC-12/47E. The PC-12/47E model is in compliance with all ICAO Annex 16 and Swiss VEL noise standards applicable to this type.

No determination has been made by EASA (FOCA) for the FAA that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into, or out of, any airport.

ICAO Annex 16, Chapter 10	77.0 dB(A)
Swiss VEL	77.0 dB(A)
FAR Part 36 Appendix G	77.0 dB(A).

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4-22 Automatic Flight Control System Operation

The flight director uses the data displayed on either PFD for calculation of the guidance commands. The pilot may toggle his selection by pressing the L/R button on the flight controller. The AFCS transmits the pilots selection to the display. The display will indicate the PFD data selected for use, by displaying the couple arrow pointing toward the selected PFD (left/right). At power up, the default setting is L pilot side PFD.

A brief description of the AFCS is given in Section 7 of this POH. Refer to the Pilot's Guide for the Advanced Cockpit Environment (ACE^{TM}) (powered by Honeywell) for the Pilatus PC-12/47E for complete information on the description and operation of the AFCS.

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4-23 Crosswind Operation

CAUTION

On runways with pools of standing water and/or poor braking action it may not be possible to maintain centerline and/or the correct alignment of the aircraft on the runway in conditions of strong crosswind.

The maximum demonstrated crosswind for takeoff and landing for all flap configurations is shown in Section 4-2 - Airspeeds for Normal Operations.

For further information on crosswind operation refer to Section 10-3 - Operational Tips.

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4-24 Flight in Icing Conditions

Icing conditions can exist when:

- The Outside Air Temperature (OAT) on the ground and for takeoff, or Static Air Temperature (SAT) in flight, is 10°C or colder, and visible moisture in any form is present (such as clouds, fog or mist with visibility of one mile or less, rain snow, sleet and ice crystals).
- The OAT on the ground and for takeoff is 10°C or colder when operating on ramps, taxiways or runways, where surface snow, ice, standing water, or slush may be ingested by the engine, or freeze on the engine, or the engine nacelle.
- There are visible signs of ice accretion on the aircraft.

Severe icing may result from environmental conditions during flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled liquid water and ice crystals) which 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.

Information on the removal of snow, ice and frost from the aircraft is provided in Section 10, Safety and Operational Tips, Removal of Snow, Ice and Frost from the Aircraft.

Freezing rain, freezing fog, freezing drizzle and mixed conditions and descent into icing clouds from above freezing temperatures can result in excessive accretion of ice on the protected surfaces. They may also result in runback ice forming beyond the protected surfaces over a large percentage of the chordwise extent of the lifting surfaces. This ice cannot be shed and it may seriously degrade performance and control of the aircraft.

Flight in severe icing conditions should be avoided, as this may exceed the capabilities of the aircraft ice protection systems. Severe icing conditions can be identified by excessive ice accretion on the visible parts of the airframe including the protected surfaces. This might affect the aircraft performance and handling qualities, and cause significant loss in powerplant performance. If this occurs request priority assistance from ATC to facilitate a route or an altitude change to exit the icing conditions.

Operation on deep slush or snow covered runways greater than 1 inch (2.5 cm) may result in contamination of the flap drive mechanism resulting in failure to retract. If possible operation on deep slush and snow compacted runways should be avoided.

CAUTION

For flight in heavy precipitation the inertial separator must be open.

For takeoff and landing on runways covered with surface snow, ice, standing water, or slush, the inertial separator must be open.

Detection of icing conditions and ice accretion on the aircraft is by pilot visual identification on the left hand wing leading edge. A wing inspection light is provided for night time operations.

Prior to entering icing conditions, activate all ice protection systems as required. If not already activated, select all systems as required, immediately icing conditions are identified.

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The procedures for selection of the ice protection systems are provided in Section 4, Normal Procedures, Flight into Known Icing Conditions.

During all icing encounters or times with visible ice accretion on any part of the airframe the flaps must not be extended beyond certain limits. These limits eliminate the possibility of tailplane stall which results in an uncontrolled aircraft pitch down moment.

- With operational airframe pneumatic deice boots 15° flap
- After failure of the airframe pneumatic deice boots 0° flap.

For the minimum recommended speeds for icing encounters and with residual ice on the airframe, refer to Table 4-24-1.

Table 4-24-1: Minimum Recommended Speeds for Icing Encounters and with Residual Ice on the Airframe

Configuration	Minimum recommended speed (KIAS)
Climb, Flaps 0°, Pusher Ice Mode	135
Holding Pattern, Flaps 0°	145 to 175
Landing Approach, Flaps 15°, Pusher Ice Mode	105
Landing Approach, Flaps 0°, Boot Failure, Pusher Ice Mode	130
Balked Landing (Go-Around) Flaps 15°, LG down, Pusher Ice Mode	105
Balked Landing (Go-Around) Boot failure, Flaps 0°, LG down, Pusher Ice Mode	130

Flight in icing conditions is only permitted with full operational status of all aircraft de-icing systems. This includes:

- Propeller Deice
- Wing and Horizontal Tail Deice Boots
- Inertial Separator
- Windshield Deice
- Probes Deice
- Stick Pusher Ice Mode

The propeller de-ice is activated from the ICE PROTECTION switch panel by the switch labeled PROPELLER being pushed to ON. In this mode the propeller de-ice system will be automatically selected to the correct cycle with reference to outside air temperature. No further aircrew input is required. The green ICE PROTECTION caption PROPELLER will be continuously illuminated. If a system failure occurs when activated, the green PROPELLER caption will go off and the CAS caption **Propeller De Ice** will be illuminated and an aural gong will sound.

The wing and horizontal tail de-ice boots are activated from the ICE PROTECTION switch panel by the switch labeled BOOTS being pushed to either 3MIN or 1MIN. 3MIN is to be selected in icing conditions with moderate ice accretion rates as judged by the aircrew. 1MIN is to be selected in icing conditions with high ice accretion rates. When activated in either 1MIN or 3MIN mode and operating correctly, the green ICE PROTECTION caption BOOTS will be continuously illuminated. If a system failure occurs when activated, the green BOOTS caption will go off and the CAS **De Ice Boots** caption will be illuminated and an aural gong will sound.

The engine inertial separator is activated to its open (icing encounter) position from the ICE PROTECTION switch panel by the switch labeled INERT SEP being pushed to OPEN. Once activated the inertial separator door will reach its fully open position in approximately 30 seconds and the green ICE PROTECTION caption INERT SEP will be continuously illuminated. If the door does not reach its fully open position or moves away from its fully open position when still selected, the green INERT SEP caption will go off and the CAS caption **Inertial Separator** will be illuminated and an aural gong will sound.

The LH side and RH side windshield deice is activated from the ICE PROTECTION switch panel by two switches labeled LH WSHLD and RH WSHLD respectively, being pushed to either LIGHT or HEAVY depending on the severity of the icing encounter.

Deicing of all probes, AOA (vane and mounting plate), pitot and static, is activated from the ICE PROTECTION switch panel by a switch labeled PROBES being pushed to ON. If deicing of the left pitot or right pitot probes fails when selected, then either the CAS caption **Pitot 1 Heat** or **Pitot 2 Heat** will be illuminated and an aural gong will sound. If the static ports fail a CAS **Static Heat** caption will be illuminated and an aural gong will sound. If deicing of the AOA probes fails when selected, then the CAS caption **AOA De Ice** will be illuminated and an aural gong will sound.

When the propeller de-ice is selected to ON and the inertial separator selected to OPEN, the stall protection system, stick pusher/shaker system is re-datumed to provide both shake and push functions at lower angles of attack and higher speeds. This is to protect against the natural stall through the effects of residual ice on the protected surfaces of the airfoil leading edges. When the system is in the re-datum mode, the aircrew are alerted by illumination of the green ICE PROTECTION caption PUSHER ICE MODE. Failure of the system in ice mode will result in the caption being extinguished and the CAS caption **Pusher** will be illuminated and an aural gong will sound.

Night time flight in icing conditions is only authorized with full operational status of all the aircraft de-icing systems above, plus the wing inspection light.

The wing inspection light is activated from the overhead EXTERNAL LIGHTS switch panel by the switch labeled WING being moved to on. No functional or failure indications are provided.

A full description of all of the de-ice systems, their switch terminology and caution and warning logic is provided in Section 7, Airplane and Systems Description, Airfoil De-ice System.

The probes de-ice should be selected to on, prior to, and during all flights.

During the icing encounter the pneumatic de-ice boots will operate continuously in either 3min or 1min cycle mode as selected by the aircrew. During this time the aircrew should frequently monitor the continual shedding of ice from the wing leading edge and the airframe for ice accretion on all visible surfaces that could affect aircraft controllability. It should be noted that some residual ice will be maintained on the wing leading edge during cycling of the boots.

During the icing encounter continue to monitor the ICE PROTECTION window and the CAS for correct function of the ice protection systems.

During flight in icing conditions the aircraft may be subject to a slight degradation in aircraft performance and engine performance. This may be recognized by a required increase in engine power to maintain a constant indicated airspeed and an increased engine ITT to maintain a constant power respectively. If failure of any of the ice protection systems occurs this degradation may become more severe. After such failure the pilot should make immediate arrangements for departure of icing conditions as soon as practicable. If required ATC priority assistance should be requested.

The emergency procedures, concerning failure of the ice protection systems during flight in icing conditions, are provided in Section 3, Emergency Procedures, Deice Systems.

On departure from icing conditions the inertial separator (INERT SEP) and the propeller deice system (PROPELLER) should be kept OPEN and ON respectively until all visible and unprotected areas of the aircraft are observed as being free of ice. This protects the engine from possible ice ingestion and maintains the stick shaker/pusher computer in PUSHER ICE MODE therefore protecting the aircraft against the onset of natural stall. The flaps are not to be extended beyond 15° or in the case of deice boot failure, left at 0°. If the flaps are in an extended position, do not retract them until the airframe is clear of ice.

If flaps are extended to positions that are not allowed, the CAS caption **Flaps EXT Limit** will be displayed and an aural gong will sound.

On departure of icing conditions the deice boots are to be selected OFF and the windshield heat is to be selected as required for good visibility, irrespective of the presence of residual ice.

Once all visible protected and unprotected areas are observed as being free of ice then the inertial separator and the propeller deice system can be selected CLOSED and OFF respectively. This will return the stick shaker/pusher computer to its normal mode. The flaps can be extended or retracted to any required position.

When performing a landing approach after an icing encounter and with residual ice on the airframe the minimum landing speeds defined above should be observed. This will prevent stick shaker activation in PUSHER ICE MODE.

When performing a landing approach after an icing encounter and with residual ice on the airframe the flap limitations defined above must be observed.

Of note, the tailplane may have residual ice that is not visible to the pilot. The speeds listed as minimum recommended speeds for icing encounters should be adhered to and recognized as MINIMUM recommended speeds following any icing encounter where there is even the slightest suspicion that the airframe may have residual ice. As additional operational guidance and, if possible, the pilot should maintain a minimum airspeed of 150 KIAS, in the clean configuration, throughout the IFR approach procedures, including initial and intermediate segments. It is also recommended to fly the approach segment clean as well as to establish the landing configuration with gear down and flaps 15° (pusher ice mode DSB centered) not later than passing through 1000 ft. AGL.

After you have encountered, or suspect you have encountered, severe icing, you should apply the procedures as given in Section 4, Normal Procedures, Severe Icing Conditions.

In case of a balked landing go around after an icing encounter, the climb speeds defined above should be maintained. This will prevent stick shaker activation in PUSHER ICE MODE. In case of a balked landing go around after an icing encounter, the flap position should not be changed and should be maintained at the approach position.
The landing gear can be retracted but a locked indication may not be achieved due to ice contamination of the up position switch striker.

Use of ICE X (B.F. Goodrich Brand Name) improves the shedding capability of the pneumatic de-ice boots. Its use (see Aircraft Maintenance Manual) is recommended but not mandatory.

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4-25 Severe Icing Conditions

Severe icing may result from environmental conditions outside of those for which the airplane is certificated. Flight in freezing rain, freezing drizzle, or mixed icing conditions (supercooled 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 airplane.
The following weather conditions may be conductive to severe in-flight icing:

- Visible rain at temperatures below 0 degrees Celsius ambient air temperature
- Droplets that splash or splatter on impact at temperatures below 0 degrees Celsius ambient air temperature

The following procedures are for exiting the severe icing environment and are applicable to all flight phases from takeoff to landing. Monitor the ambient air temperature. While severe icing may form at temperatures as cold as -18 degrees Celsius, increased vigilance is warranted at temperatures around freezing with visible moisture present. If the visual cues specified in Section 2, Limitations, Icing Limitations for identifying severe icing conditions are observed, accomplish the following:

- Report the weather conditions to Air Traffic Control
- Immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the severe icing conditions in order to avoid extended exposure to flight conditions more severe than those for which the airplane has been certificated.

It should be recalled that flight in severe icing conditions may exceed the capabilities of the aircraft ice protection systems. If severe icing has been encountered or suspected, even after having exited icing conditions, the pilot should consider maintaining speeds higher than the minimum recommended speeds to account for the possibility of degraded flying qualities due to excessive residual ice.

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4-26 CPCS Low Cabin Mode Operation

A semi-automatic mode called ‘Low Cabin’ is available, whereby the pilot can use Landing Field Elevation (LFE) as the target cabin altitude. The targeted cabin altitude can be the automatic LFE value from the FMS or the manually entered LFE. Low Cabin mode can be selected on the ENVIRONMENT window of the systems MFD. As soon as the LOW CAB annunciator comes on, the cabin altitude is controlled to maintain the LFE selected value, limited only by the maximum pressure differential of 5.75 psi (depending on cruise altitude). From this cruise altitude upwards, the cabin altitude will increase to maintain max Dp.

The following Table gives the aircraft altitude for a selected LFE from which upwards the maximum pressure differential of 5.75 psid will be reached and maintained.

Selected LFE (ft)	**Aircraft altitude with max Dp 5.75 psid**
-2000	10000
-1500	10700
-1000	11400
-500	12100
SL	12900
500	13600
1000	14400
1500	15200
2000	16000
2500	16800
3000	17600
3500	18400
4000	19250
4500	20100
5000	20900
5500	21800
6000	22600
6500	23500
7000	24400
7500	25300
8000	26200
8500	27100
9000	28100
9500	29000
10000	30000

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4-27 SV Selection and Brightness Control

If installed, SV is automatically activated at start-up.

SV can be turned ON/OFF by selecting or deselecting the “SVS ON” checkbox from the OVRLY menu, which is located just above the HSI on the outboard side of either PFD (Refer to Fig. 4-27-1).

The SV brightness control “SVS BRT” is available if SV is selected ON. With “SVS BRT” the terrain and sky dimming can be controlled by placing the cursor over SVS BRT and using the Cursor Control Device (CCD) or Touch Screen Controller (TSC) rotary knobs / MF Controller scroll wheel to set the brightness.

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Figure 4-27-1: PFD OVRLY Menu

Note
When pointing directly towards the sun, or with the sun shining directly onto the PFD and during night operations, it is important to adjust the SV dimming to achieve a good level of contrast and readability on the PFD.

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4-28 LPV/LP Detailed Operating Procedures

4-28-1 Introduction

Normal operating procedures for LPV/LP Approach are described in the Pilot's Guide for the Advanced Cockpit Environment (ACE[TM]) (powered by Honeywell) for the Pilatus PC-12/47E.

4-28-2 Operating Procedures for Approach to LPV Minimum

- Retrieve approach chart for the RNAV approach
- Select RNAV approach on the STAR/Landing FMW page
- Verify LPV/LP minimum is selected in the RNAV minimum field
- Compare FMS Flightplan to approach charts (Approach name, Waypoints, Altitudes, Missed Approach)

Note
If INAV message "FMS-LPV miscompare" or "FMS-LP miscompare" is displayed reloading of the approach is required.

- Set Minimums for the selected approach
- Verify FMS is selected as Primary NAV source
- Verify NAV preview is deselected
- If terminal area is entered, a white LPV or LP status indicator will appear on PFD
- If the FAF is the active waypoint or the present position is within 5 nm from the FAF, the vertical deviation pointer (right hand side of the vertical deviation scale) will be displayed as hollow or a solid pointer (Refer to Section 7 for System Description)
- Arm the approach mode by pressing the APR button on the Flight Guidance Panel as required

Note
The autopilot lateral approach mode (NAV) must be captured before the vertical approach mode (VGP).

- Intercept Final Approach Course
- Capture LPV/LP approach using the lateral and vertical deviation pointers. The LPV/LP status indicator will flash for 5 seconds and turn green.

Note
LPV/LP can be captured within 2 nm miles from the FAF. Green APP indication will be displayed on the HSI.

- Verify NAV and VGP are the active autopilot modes (if required)
- LPV Approach:

  Continue approach to LPV minimum by using lateral and vertical deviation pointers
- LP Approach:

  Continue approach to LP minimum by using lateral deviation pointer and baro altitude to comply with published approach procedure (vertical deviation pointer is advisory only)
- Monitor the LPV/LP status indicator
- Disengage autopilot below 200ft

4-28-3 Flight Director/Autopilot Coupled Operation

The LPV/LP approach mode can be armed via the APR button on the Flight Guidance Panel as soon as the vertical deviation pointer “LPV” or “LP” is displayed on the PFD. The autopilot approach modes are displayed as NAV (lateral) and VGP (vertical).

SECTION 5
Performance (EASA Approved)
Table of Contents

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5-1 Standard Tables

5-1-1 General

This section contains all of the required and complementary performance data for airplane operation. Aircraft performance associated with optional equipment and systems which require supplements is provided in Section 9, Supplements.

The performance information presented in this section is derived from actual flight test data corrected to standard day conditions and analytically expanded for the different parameters such as weight, altitude, and temperature, etc. This information does not account for many factors that the pilot must evaluate before each takeoff such as pilot proficiency, aircraft condition, runway surface and slope other than that specified, or the effect of winds aloft. When necessary, a performance chart (table) will specify the aircraft configuration and the procedure to achieve the published performance.

Note
The takeoff, accelerate-stop and landing distance performance chart data is based on a **DRY TARMAC RUNWAY** surface. Runways that are wet, or contaminated with slush or snow will adversely affect the runway coefficient of friction and subsequently increase the takeoff, accelerate-stop and landing distance.

A Flight Planning Example is provided to assist the pilot in the preflight performance calculations as required by the operating regulations. Each performance chart (table) has an example plotted to indicate the proper sequence in which to use the chart and determine accurate performance data.

All performance data is limited to between the -55 °C (-67 °F) and +50 °C (122 °F) outside air temperature limits. Some tables presented in this section show data for temperatures below -55 °C (-67 °F) which is purely for ease of interpolation between data points. These temperature areas in the tables are shaded.

Performance data regarding takeoff, landing and accelerate-stop distances is presented up to 14,000 ft. This does not, however, imply an operational limitation of the aircraft. Field performance data at higher altitudes can be supplied under special request.

The stall speeds shown in the performance charts are achieved at an entry rate of 1 knot/second. Maximum altitude loss observed during the stall was 300 feet. During an accelerated stall, a rapid pitch-down in excess of 30° may result with an altitude loss of up to 500 feet.

When landing with flaps set to less than 40°, the total landing distances will be increased by the following factors:

Flap Setting	Factor
0°	1.83
15°	1.31
30°	1.22

The ADAHRS removes most of the error due to static pressure source measurements. A small residual error exists; this error is typically no more than 1 knot on airspeed or 30 ft on altimeter readings for retracted flaps at all airspeeds and for extended flaps below 100 KIAS.

The ADAHRS SAT indication in the air may be treated as OAT for reading the performance graphs and/or table entries. SAT indication on the ground may not be accurate.

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The formulas for the conversion of standard format to metric equivalent and vice versa are given in Section 1, Conversion Information.

5-1-2 Standard Tables

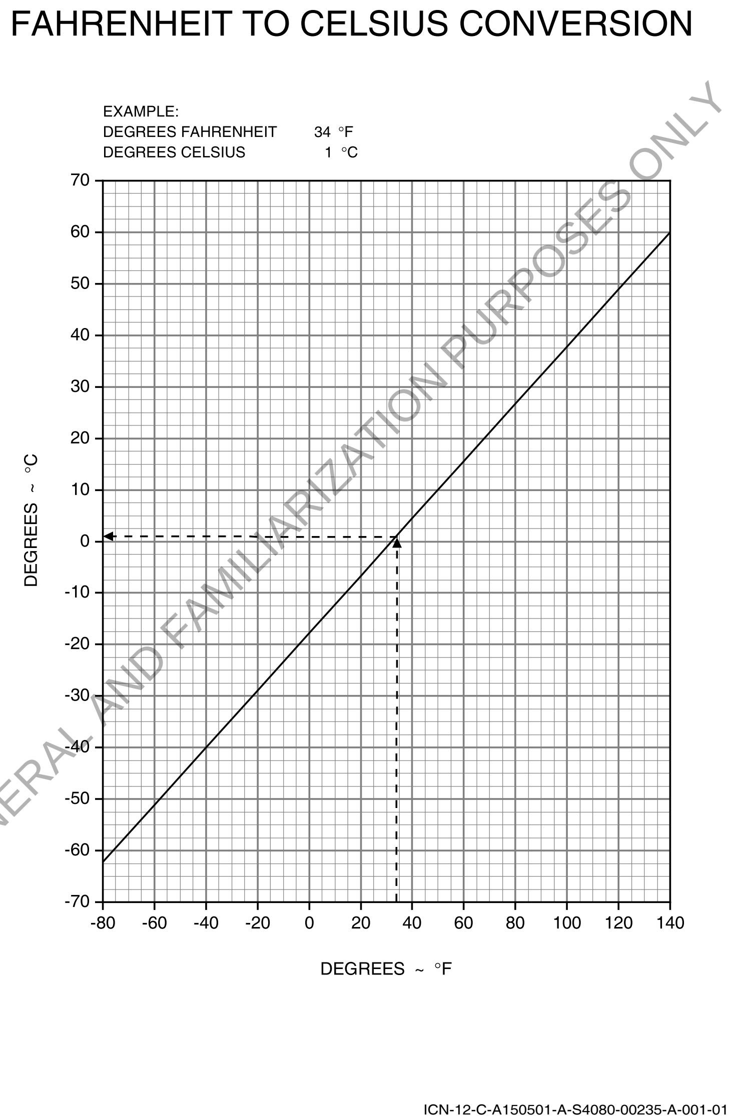

Figure 5-1-1: Performance - Fahrenheit to Celsius Conversion

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ISA TEMPERATURE CONVERSION

EXAMPLE:

OUTSIDE AIR TEMPERATURE	-12	°C
PRESSURE ALTITUDE	25000	FT
DIFFERENCE FROM ISA	23	°C

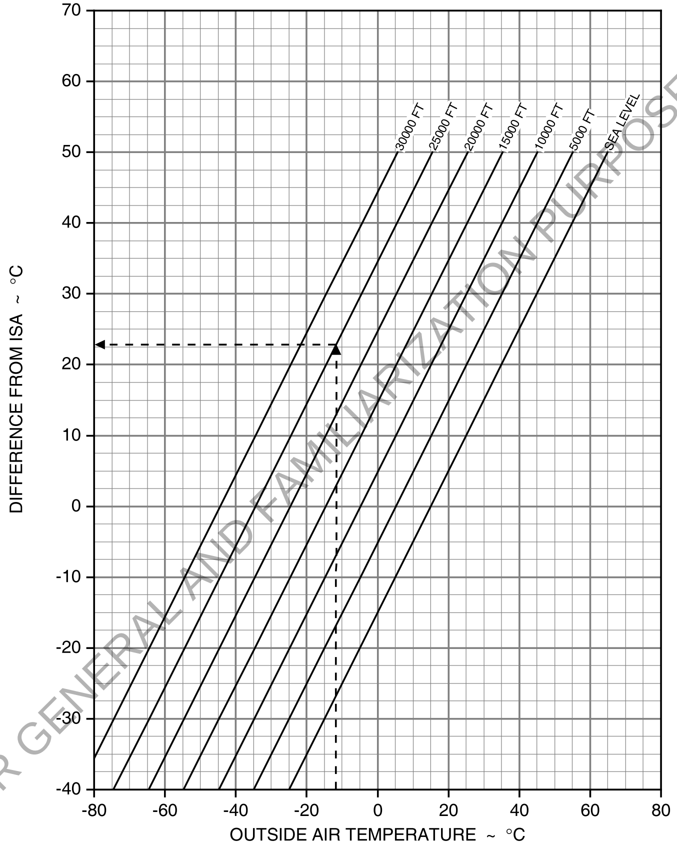

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Figure 5-1-2: Performance - ISA Conversion

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US GALLONS TO LITERS CONVERSION

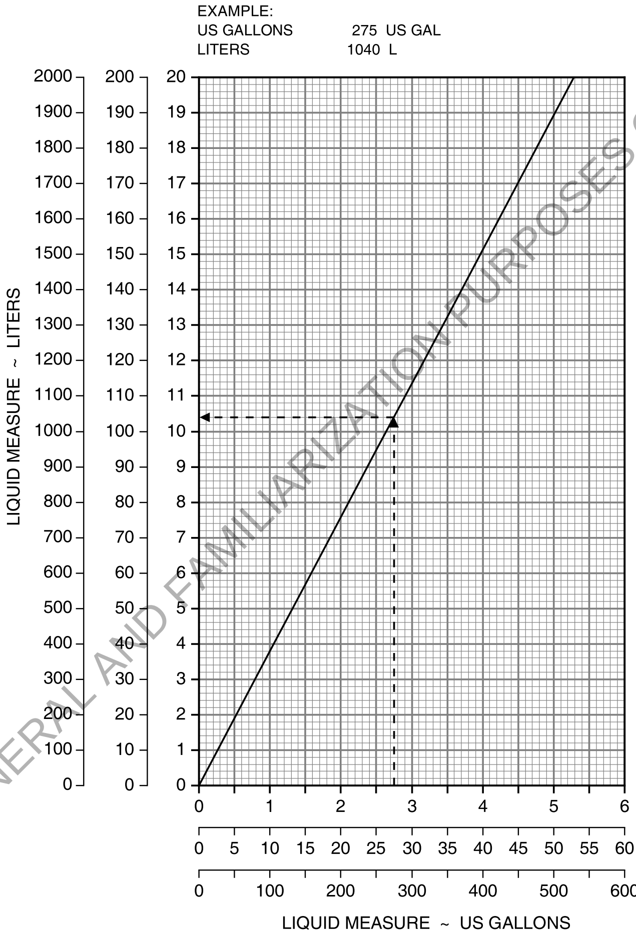

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Figure 5-1-3: Performance - U.S. Gallons to Liters Conversion

12-C-A15-60-0501-00A-030A-A

FEET TO METERS CONVERSION

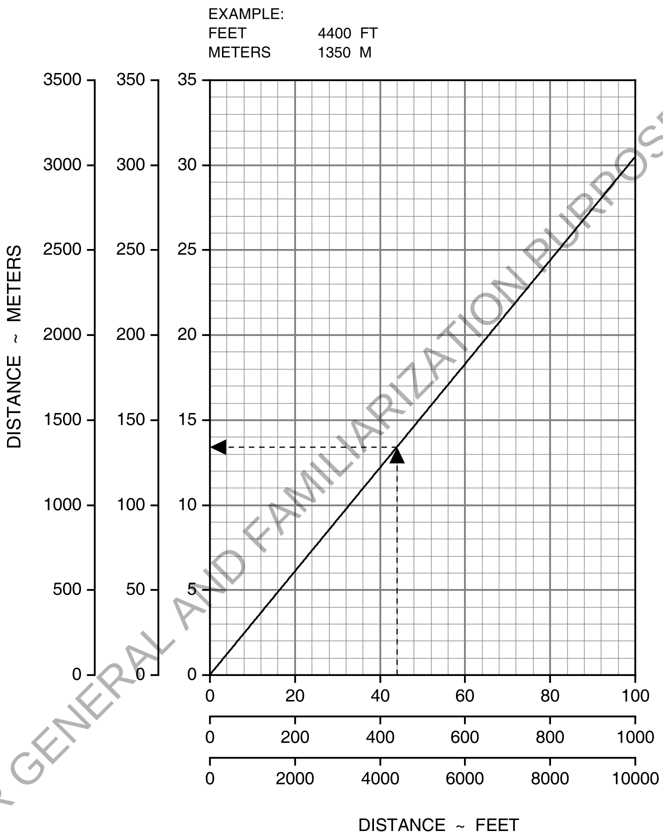

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Figure 5-1-4: Performance - Feet to Meters Converion

POUNDS TO KILOGRAMS CONVERSION

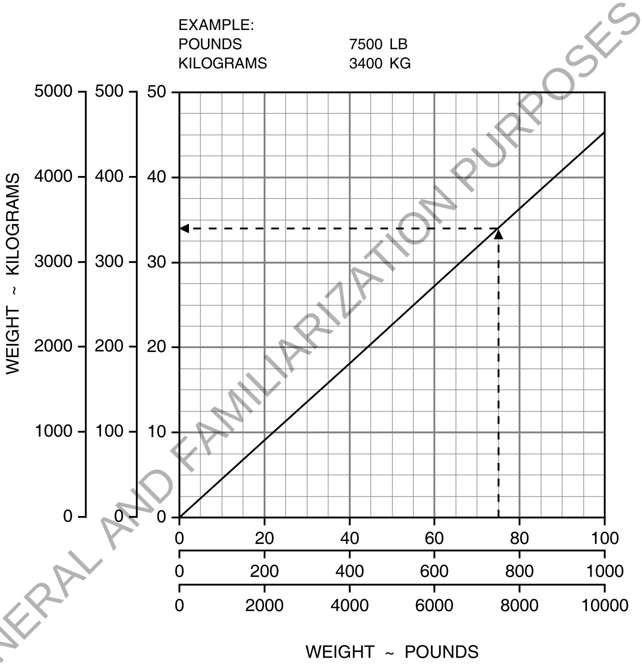

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Figure 5-1-5: Performance - Pounds to Kilograms Conversion

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INCHES TO MILLIMETERS CONVERSION

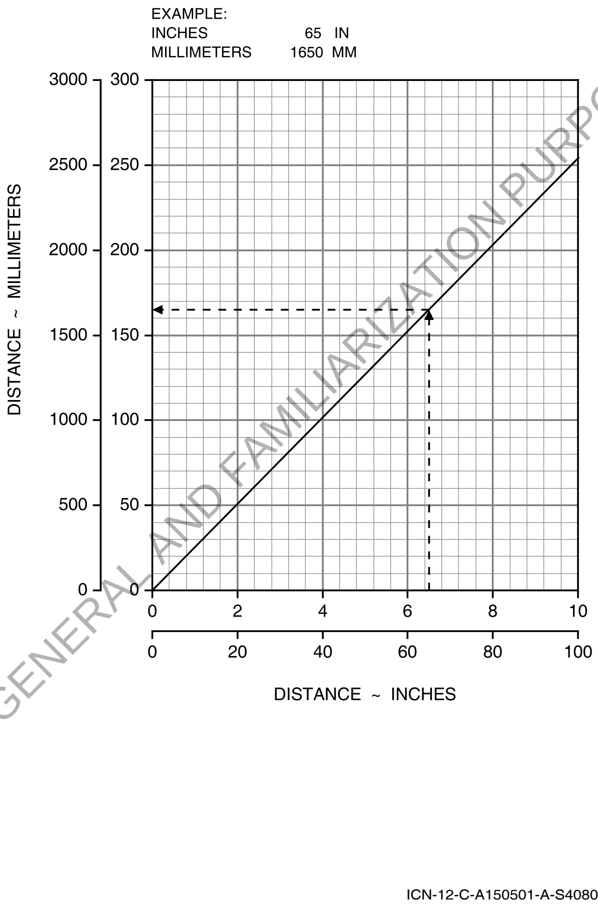

Figure 5-1-6: Performance - Inches to Millimeters Conversion

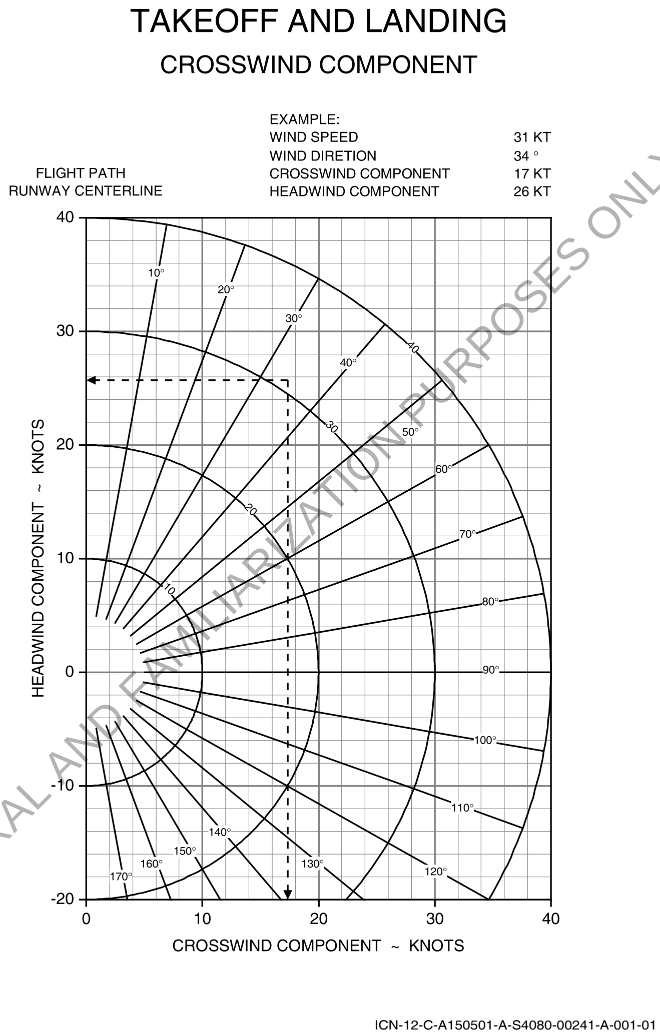

Figure 5-1-7: Performance - Wind Components

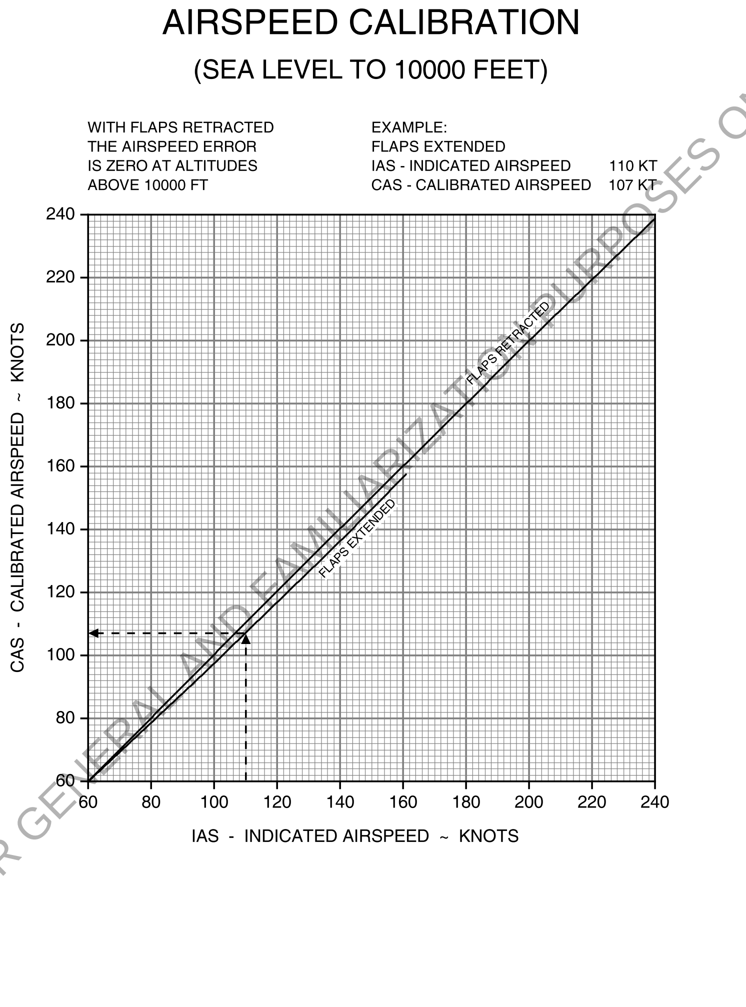

Figure 5-1-8: Performance - Airspeed Calibration

ALTIMETER CALIBRATION

ADD ALTIMETER CORRECTION
TO INDICATED ALTITUDE
TO OBTAIN CORRECTED ALTITUDE

EXAMPLE:
FLAPS UP
IAS - INDICATED AIRSPEED 178 KT
ALTIMETER CORRECTION -7 FT

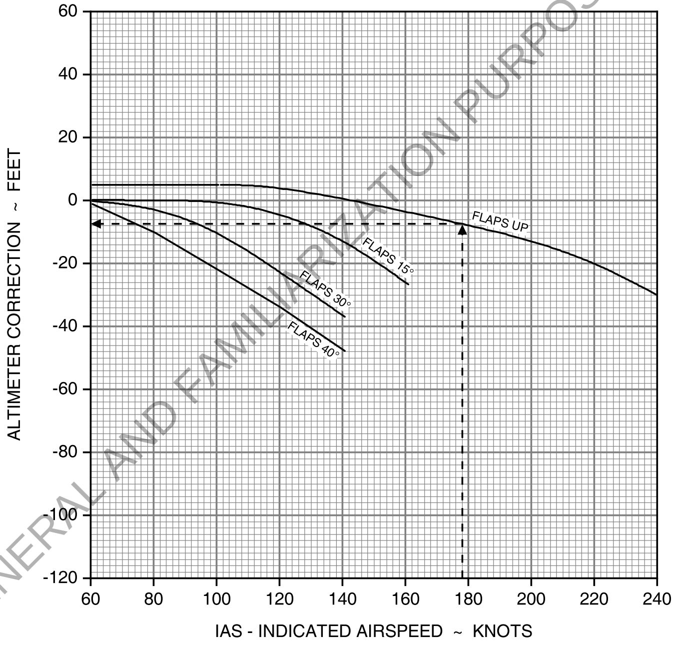

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Figure 5-1-9: Performance - Altimeter Correction

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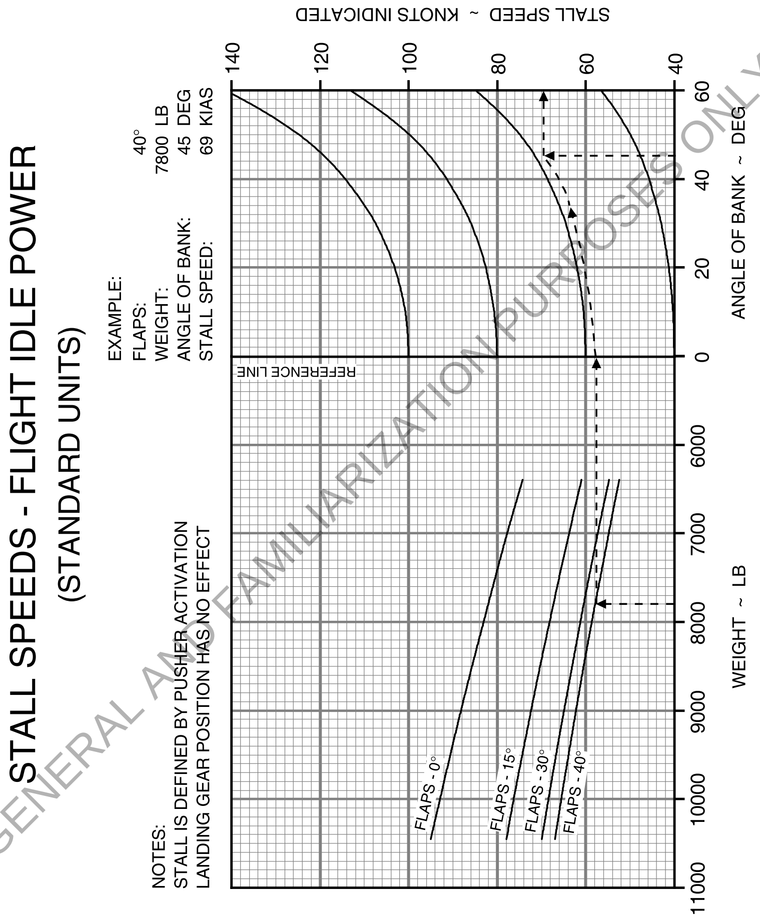
5-3-1 Performance Data - Stall Speeds

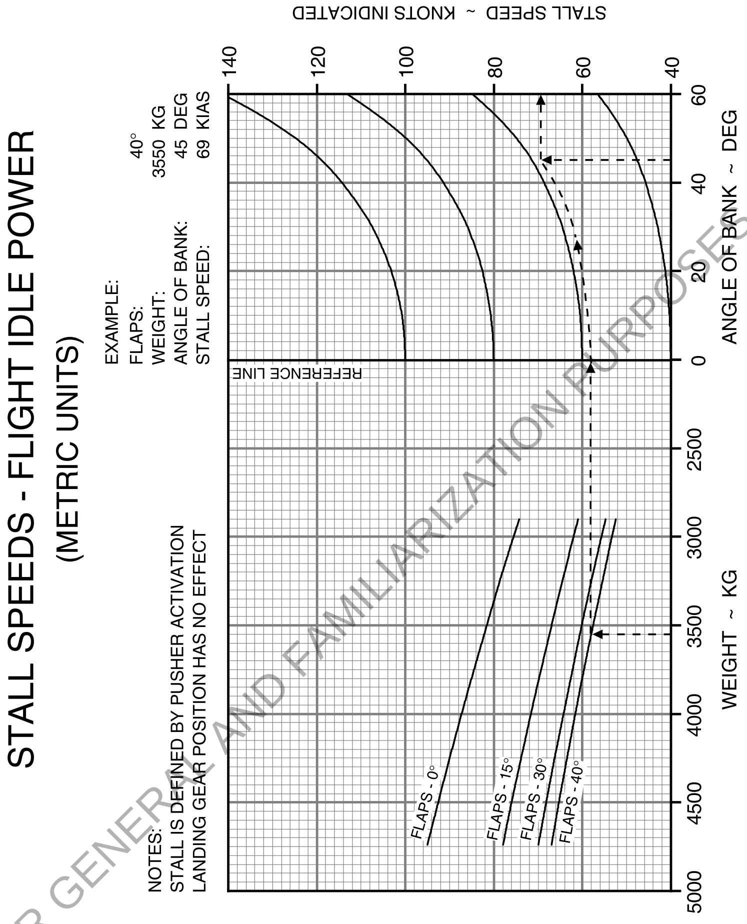


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00245-A-001-01

Figure 5-3-1-1: Performance - Stall Speeds KIAS - Flight Idle Power (standard units)

12-C-A15-60-0503-01A-030A-A



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00246-A-001-01

Figure 5-3-1-2: Performance - Stall Speeds KIAS - Flight Idle Power (metric units)

12-C-A15-60-0503-01A-030A-A

5-3-2 Performance Data - Takeoff Performance

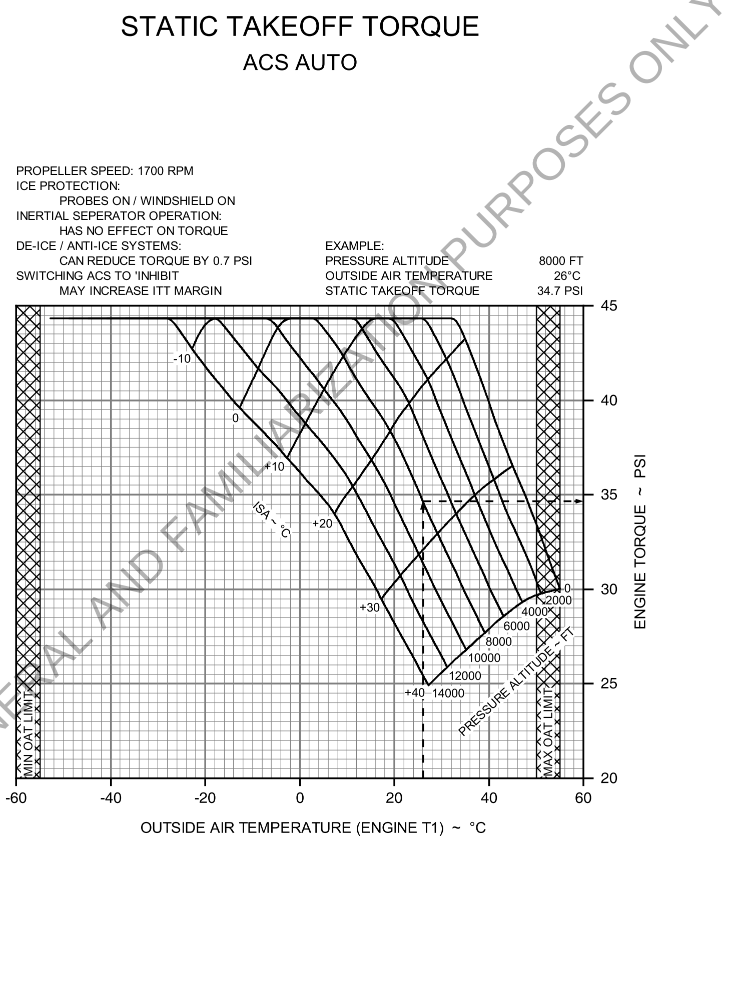
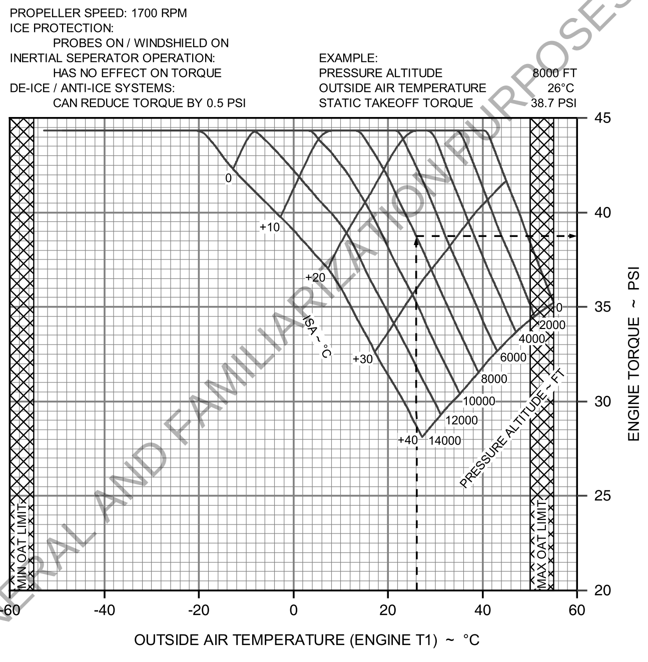


Figure 5-3-2-1: Performance - Static Takeoff Torque

12-C-A15-60-0503-02A-030A-A

STATIC TAKEOFF TORQUE

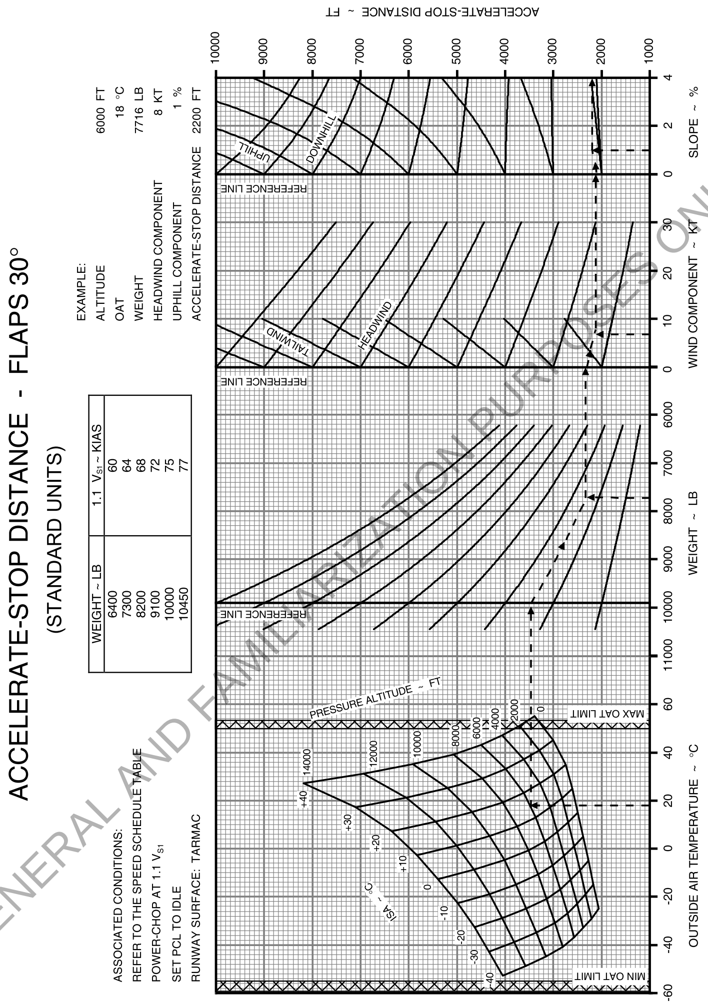
ACS INHIBIT



ICN-12-C-A150503-A-S4080-00248-A-001-01

Figure 5-3-2-2: Performance - Static Takeoff Torque - ACS OFF

12-C-A15-60-0503-02A-030A-A

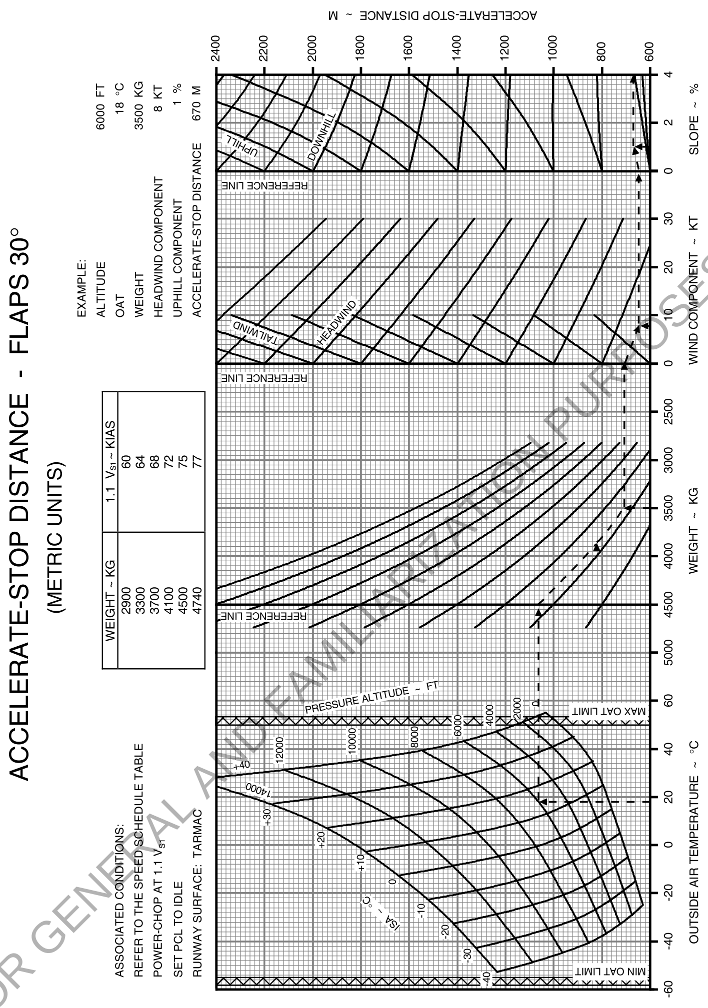


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00249-A-001-01

Figure 5-3-2-3: Performance - Accelerate-Stop Distance - Flaps 30° (standard units)

12-C-A15-60-0503-02A-030A-A

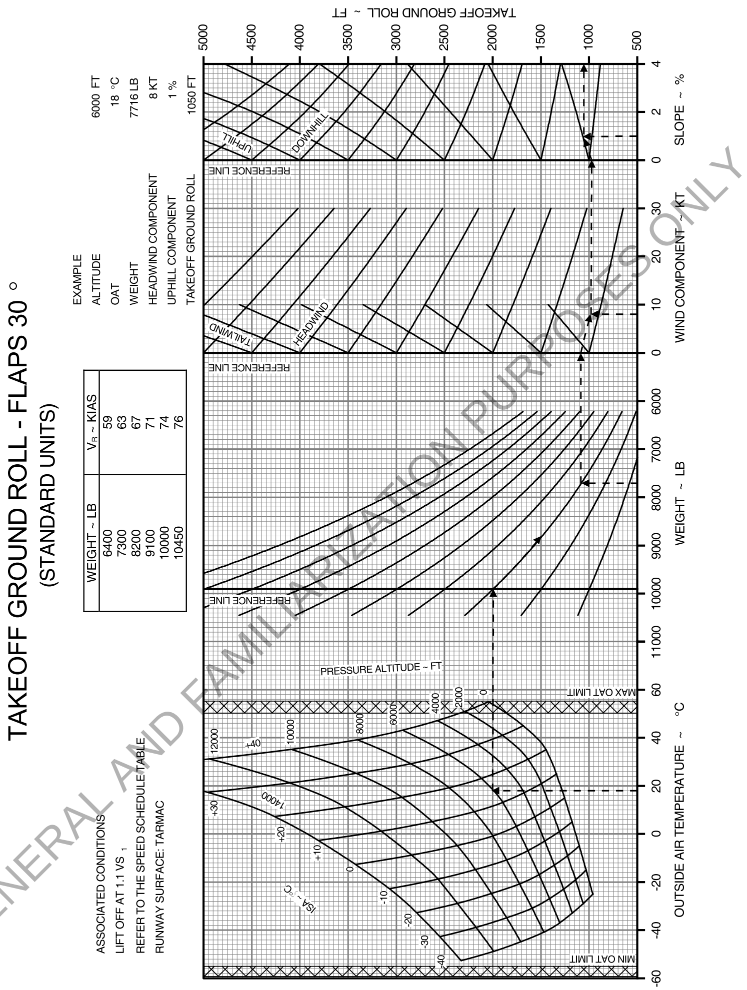


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00250-A-001-01

Figure 5-3-2-4: Performance - Accelerate-Stop Distance - Flaps 30° (metric units)

12-C-A15-60-0503-02A-030A-A

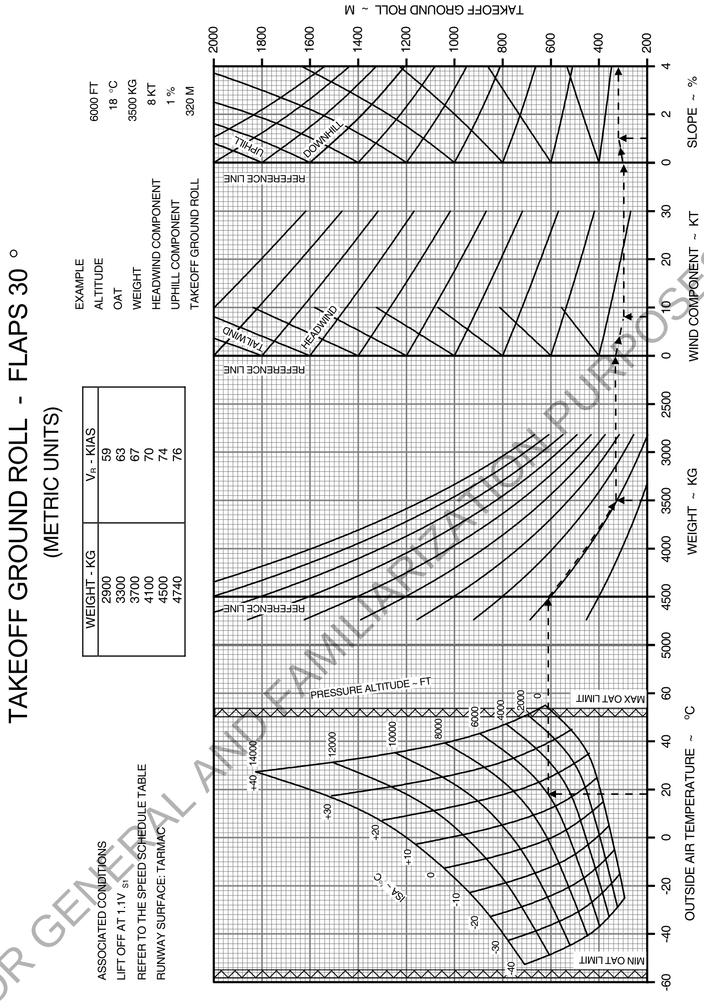


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00253-A-001-01

Figure 5-3-2-5: Performance - Takeoff Ground Roll - Flaps 30° (standard units)

12-C-A15-60-0503-02A-030A-A



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

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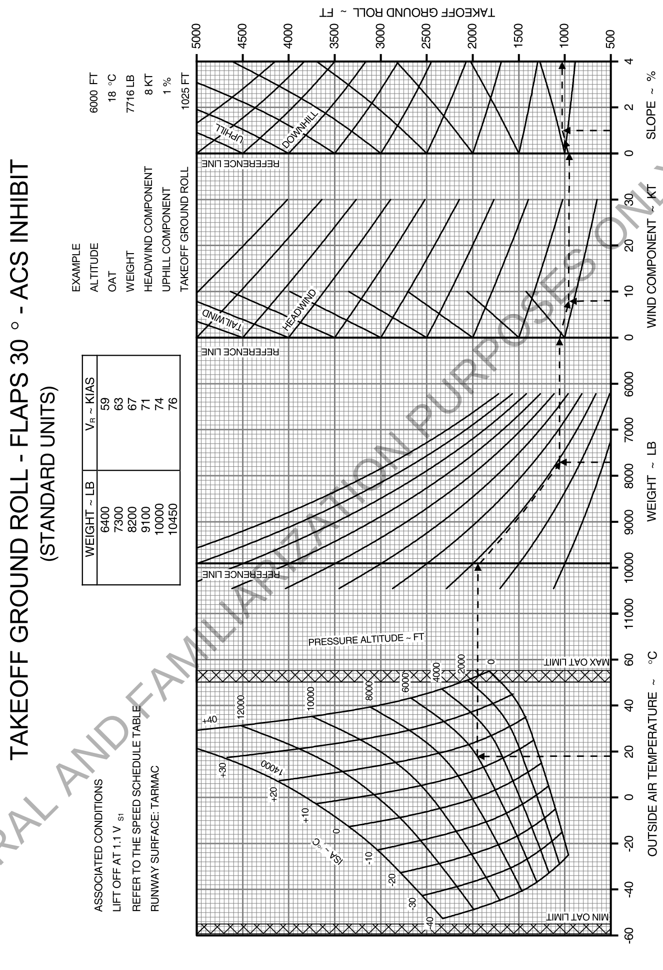
Figure 5-3-2-6: Performance - Takeoff Ground Roll - Flaps 30° (metric units)

12-C-A15-60-0503-02A-030A-A



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

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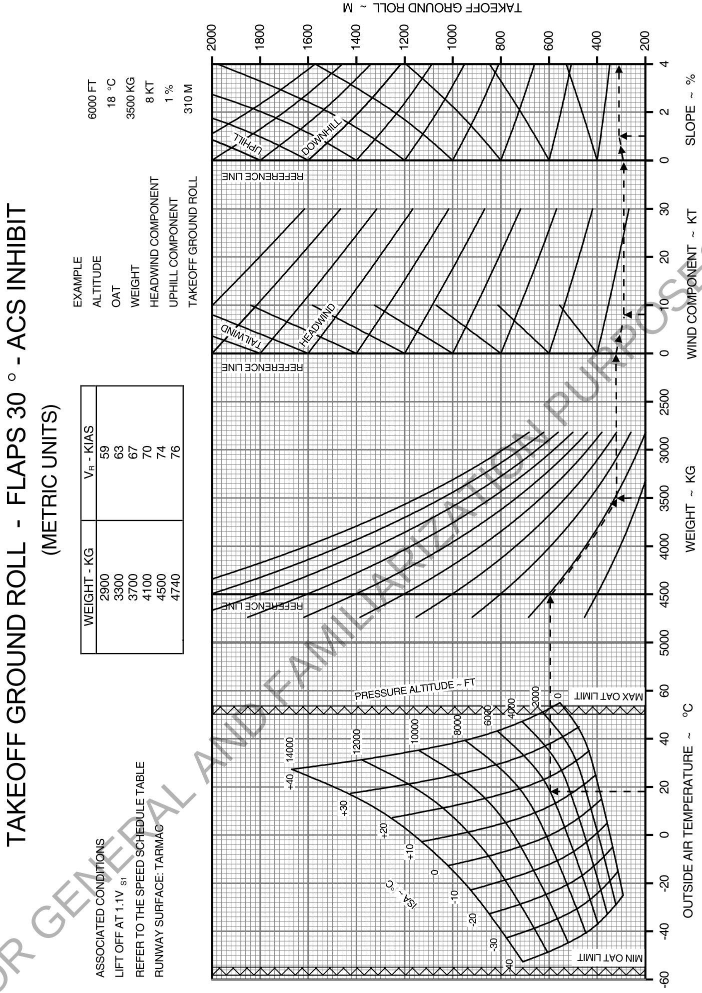
Figure 5-3-2-7: Performance - Takeoff Ground Roll - Flaps 30° - ACS OFF (standard units)

12-C-A15-60-0503-02A-030A-A



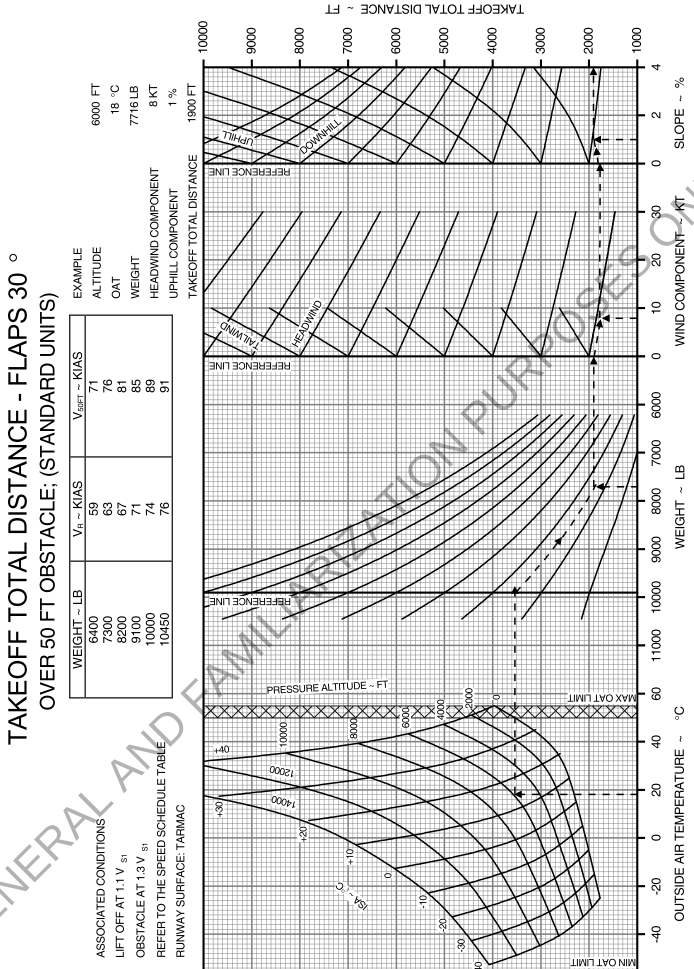
WEIGHT - KG	V_R - KIAS
2900	59
3300	63
3700	67
4100	70
4500	74
4740	76

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00256-A-001-01

Figure 5-3-2-8: Performance - Takeoff Ground Roll - Flaps 30° - ACS OFF (metric units)

12-C-A15-60-0503-02A-030A-A



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

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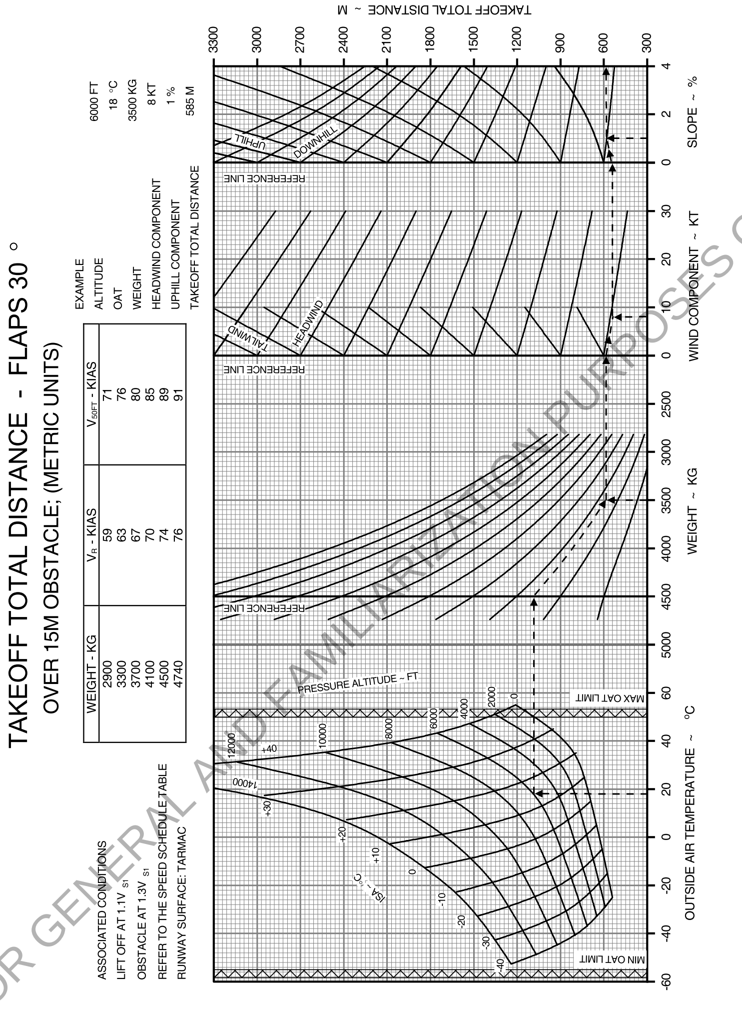
Figure 5-3-2-9: Performance - Takeoff Total Distance - Flaps 30° (standard units)

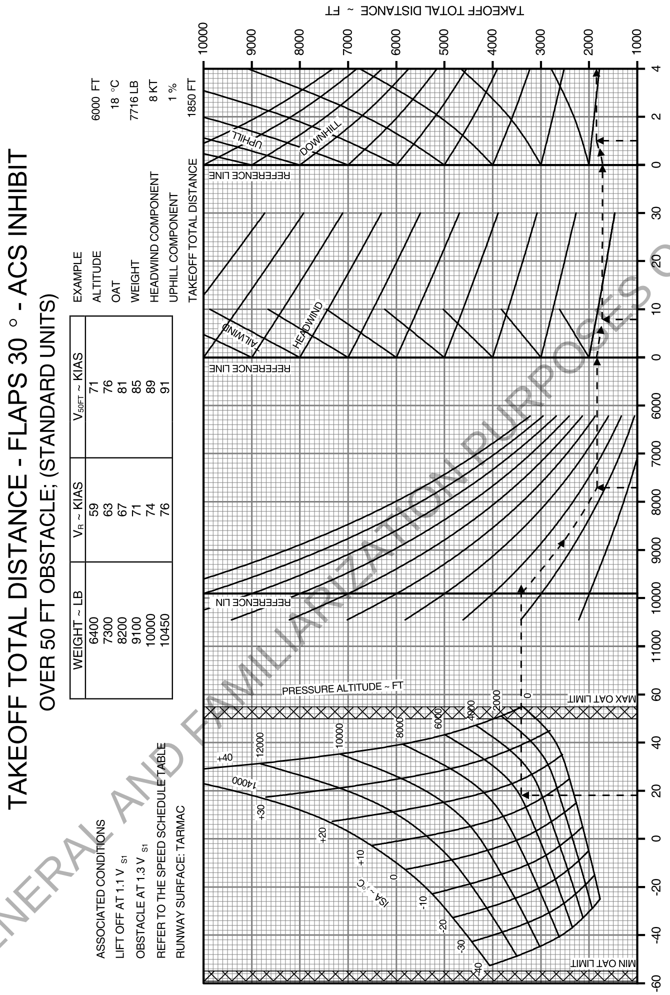
12-C-A15-60-0503-02A-030A-A



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00258-A-001-01

Figure 5-3-2-10: Performance - Takeoff Total Distance - Flaps 30° (metric units)

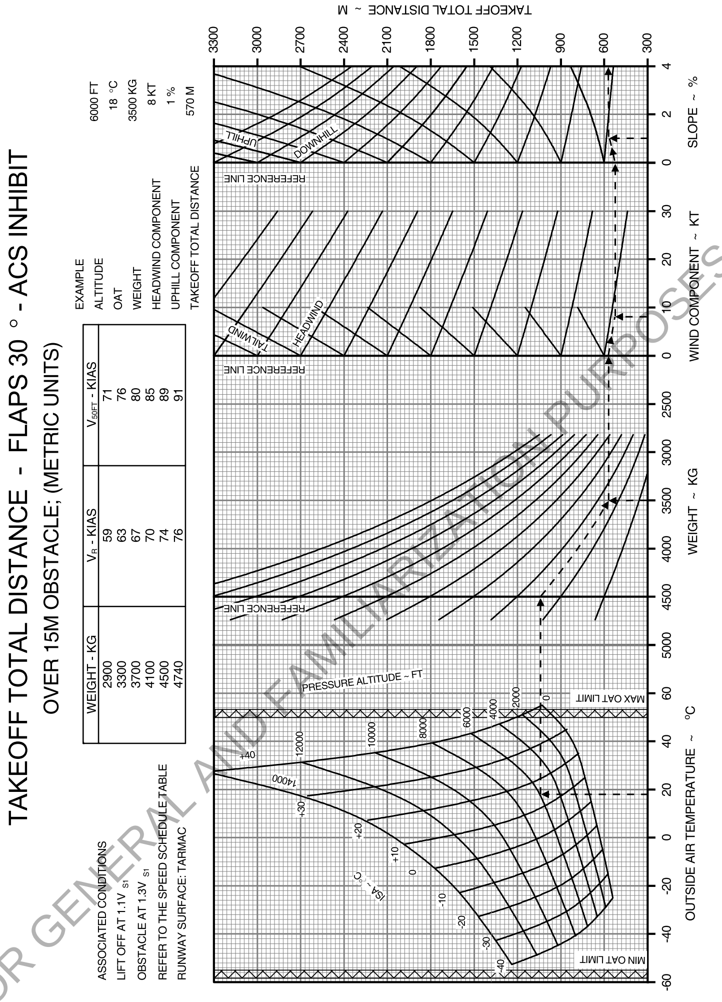


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00259-A-001-01

Figure 5-3-2-11: Performance - Takeoff Total Distance - Flaps 30° - ACS OFF (standard units)

12-C-A15-60-0503-02A-030A-A

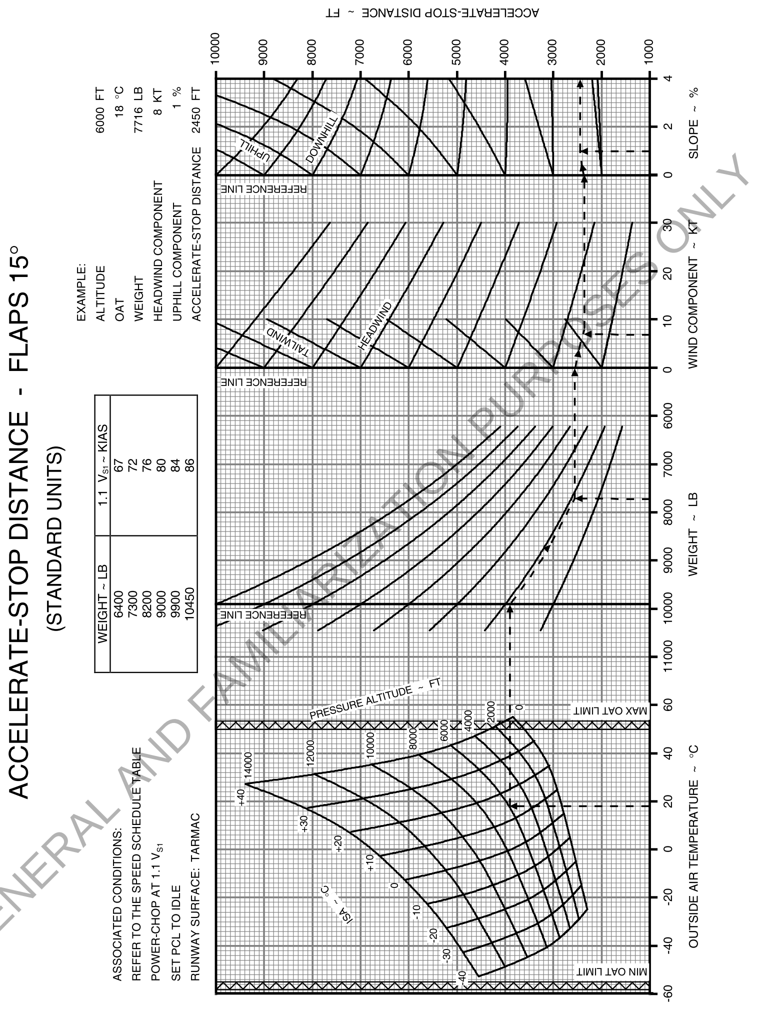


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00260-A-001-01

Figure 5-3-2-12: Performance - Takeoff Total Distance - Flaps 30° - ACS OFF (metric units)

12-C-A15-60-0503-02A-030A-A



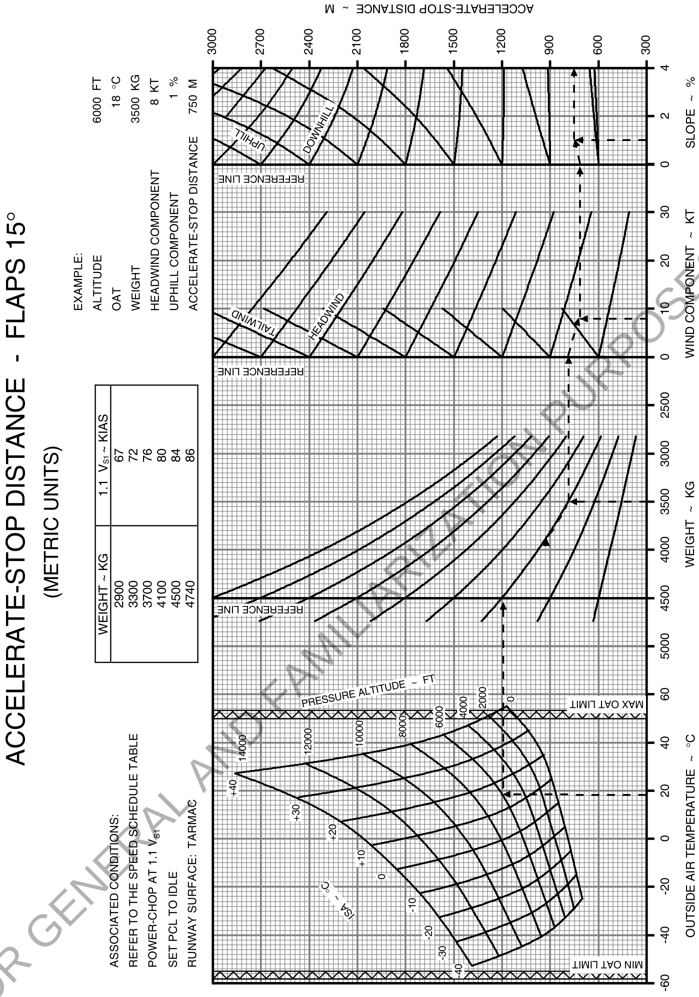
WEIGHT ~ LB	1.1 V_{S1} ~ KIAS
6400	67
7300	72
8200	76
9000	80
9900	84
10450	86

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00261-A-001-01

Figure 5-3-2-13: Performance - Accelerate-Stop Distance - Flaps 15° (standard units)

12-C-A15-60-0503-02A-030A-A

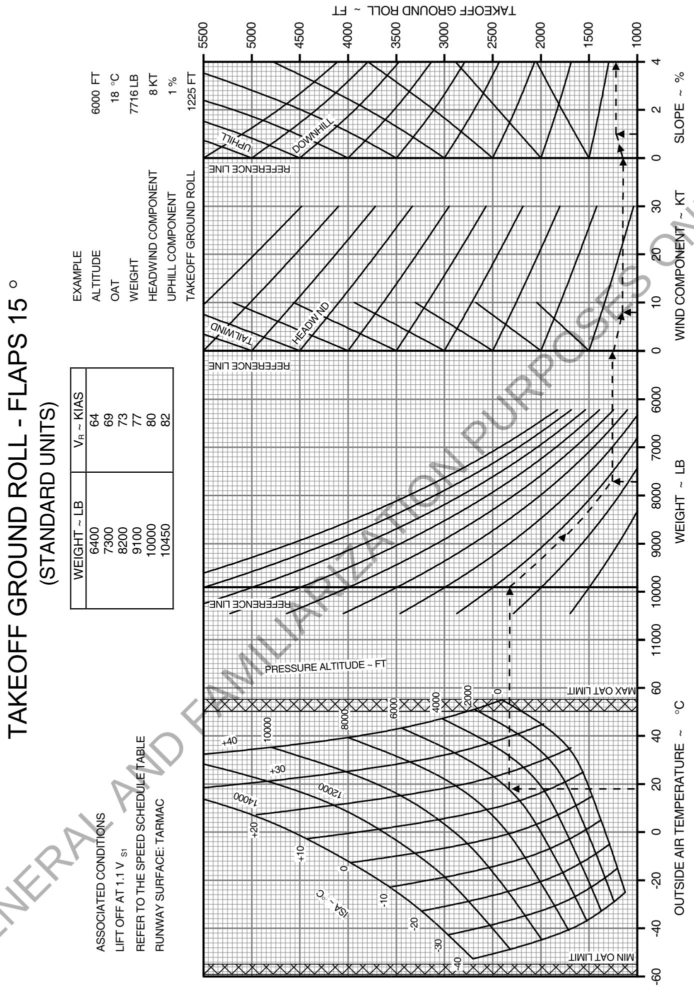


12-C-A15-60-0503-02A-030A-A

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00262-A-001-01

Figure 5-3-2-14: Performance - Accelerate-Stop Distance - Flaps 15° (metric units)

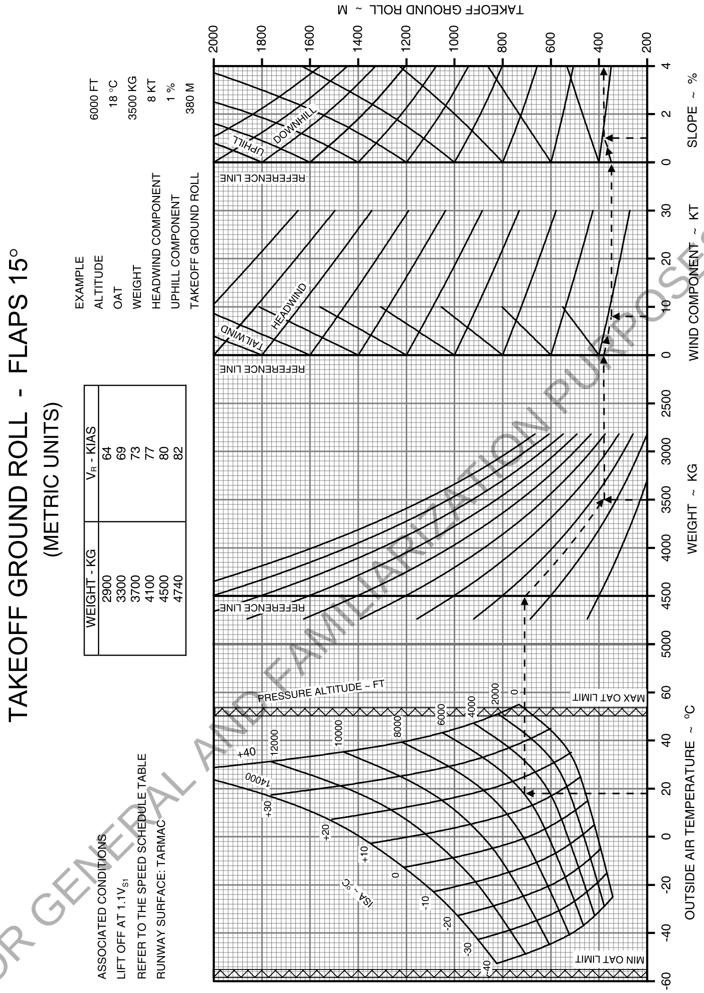


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00265-A-001-01

Figure 5-3-2-15: Performance - Takeoff Ground Roll - Flaps 15° (standard units)

12-C-A15-60-0503-02A-030A-A



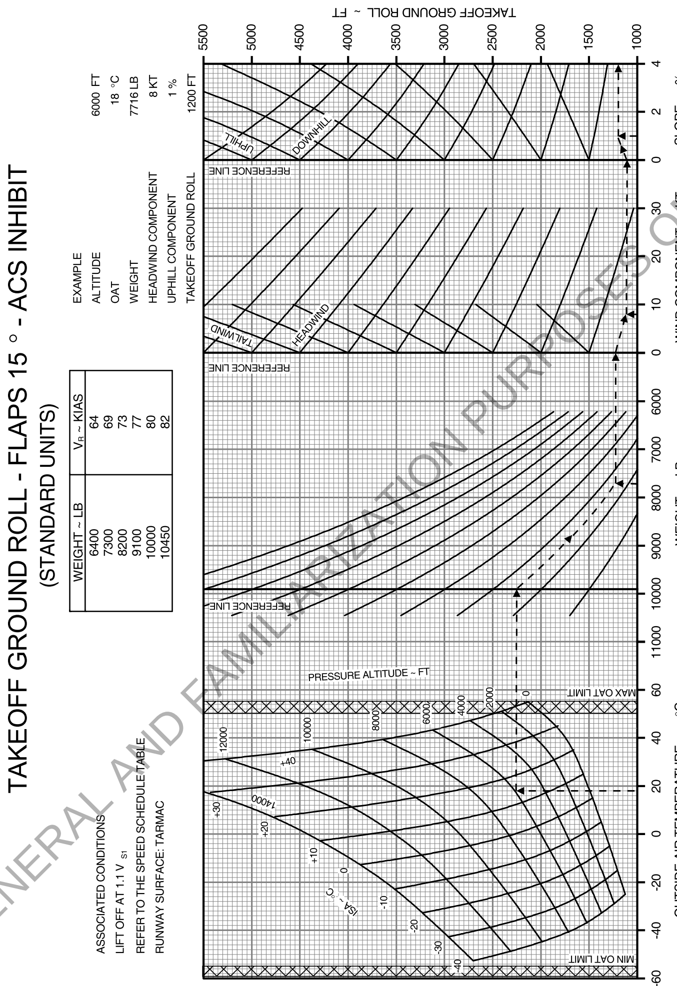
WEIGHT - KG	V_R - KIAS
2900	64
3300	69
3700	73
4100	77
4500	80
4740	82

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00266-A-001-01

Figure 5-3-2-16: Performance - Takeoff Ground Roll - Flaps 15° (metric units)

12-C-A15-60-0503-02A-030A-A



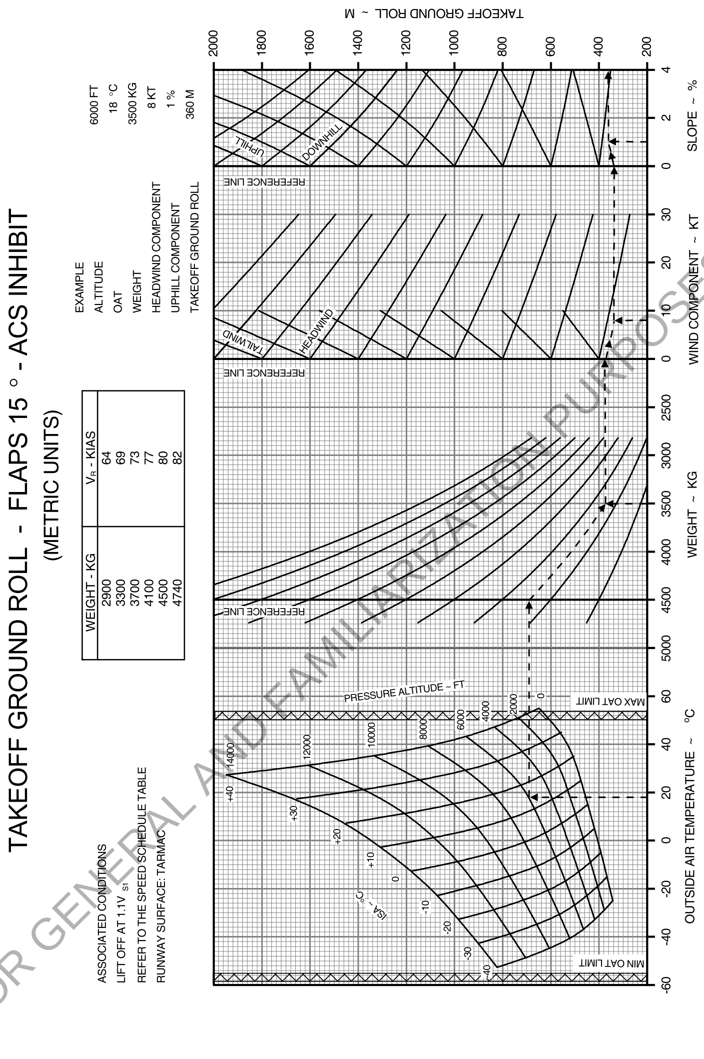
WEIGHT ~ LB	V_R ~ KIAS
6400	64
7300	69
8200	73
9100	77
10000	80
10450	82

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00267-A-001-01

Figure 5-3-2-17: Performance - Takeoff Ground Roll - Flaps 15° - ACS OFF (standard units)

12-C-A15-60-0503-02A-030A-A

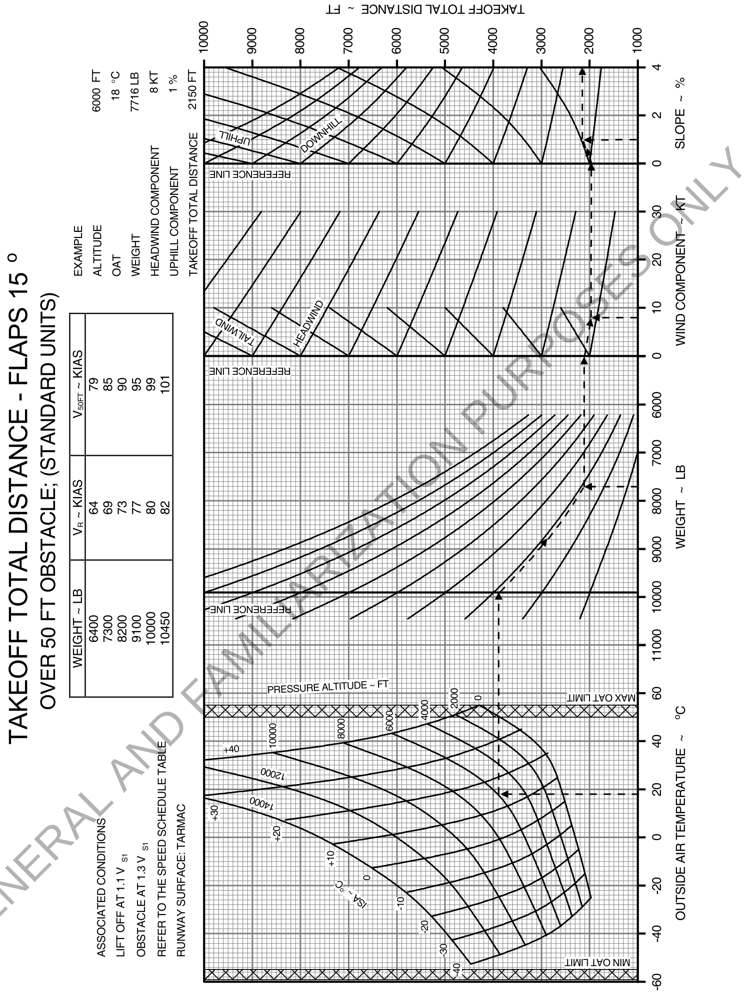


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00268-A-001-01

Figure 5-3-2-18: Performance - Takeoff Ground Roll - Flaps 15° - ACS OFF (metric units)

12-C-A15-60-0503-02A-030A-A



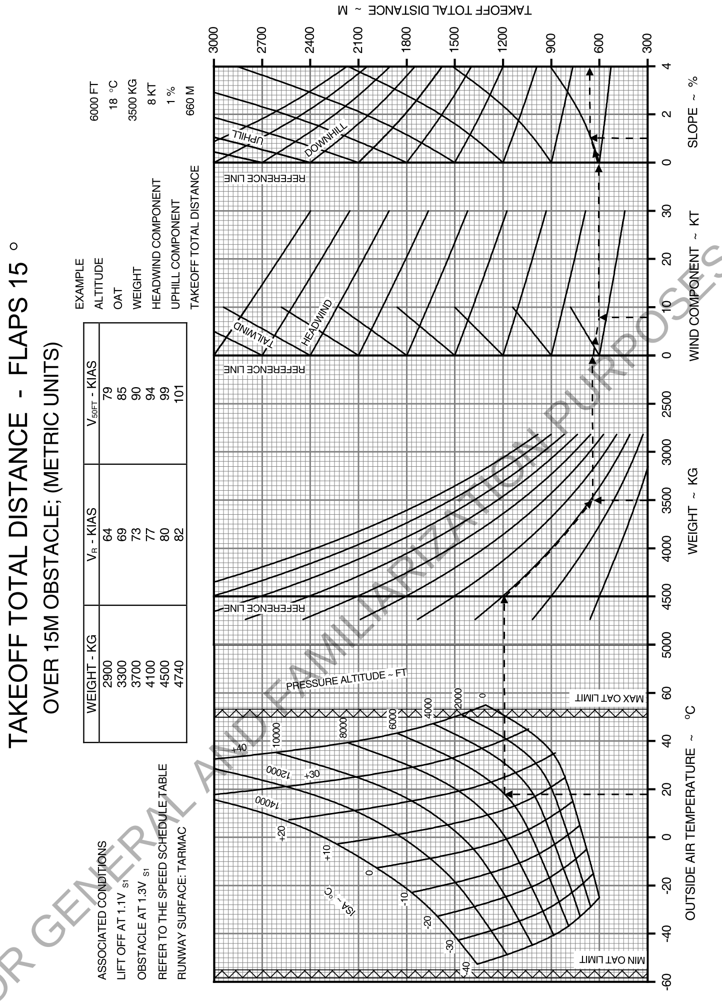
WEIGHT ~ LB	V_R ~ KIAS	V_{50FT} ~ KIAS
6400	64	79
7300	69	85
8200	73	90
9100	77	95
10000	80	99
10450	82	101

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00269-A-001-01

Figure 5-3-2-19: Performance - Takeoff Total Distance - Flaps 15° (standard units)

12-C-A15-60-0503-02A-030A-A

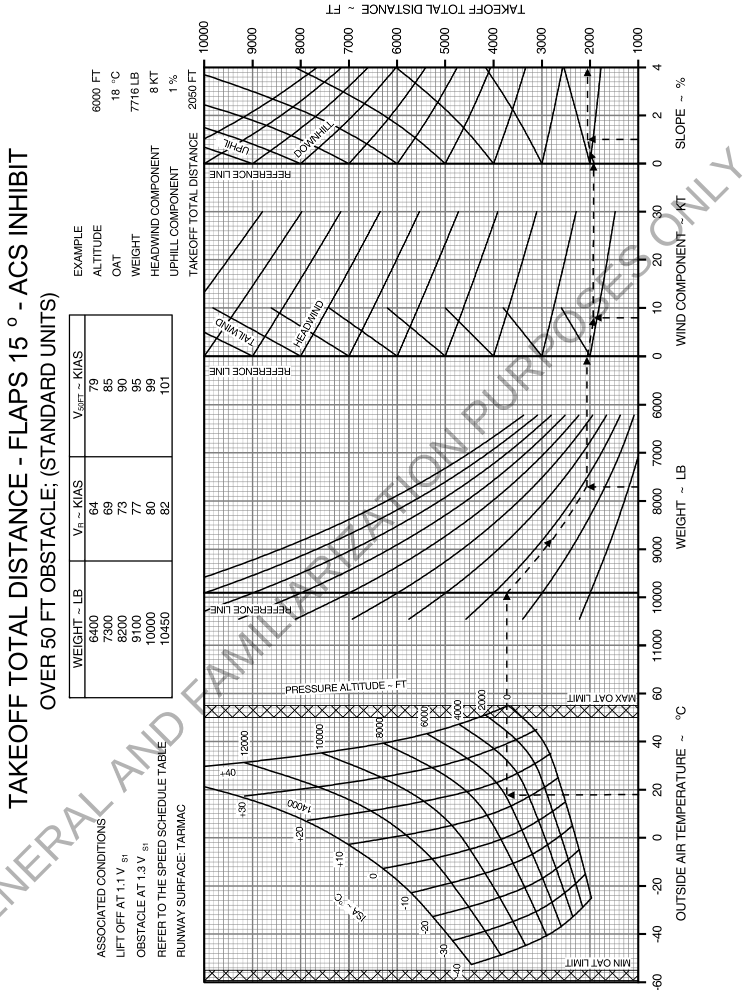


WEIGHT - KG	V_R - KIAS	V_{50FT} - KIAS
2900	64	79
3300	69	85
3700	73	90
4100	77	94
4500	80	99
4740	82	101

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00270-A-001-01

Figure 5-3-2-20: Performance - Takeoff Total Distance - Flaps 15° (metric units)

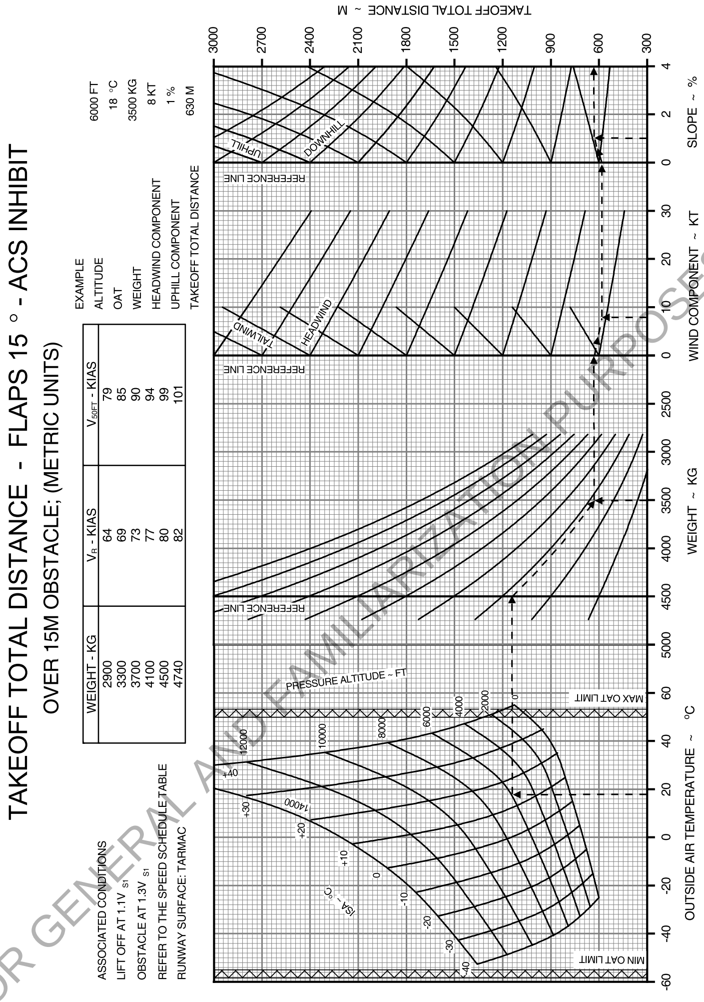


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00271-A-001-01

Figure 5-3-2-21: Performance - Takeoff Total Distance - Flaps 15° - ACS OFF (standard units)

12-C-A15-60-0503-02A-030A-A



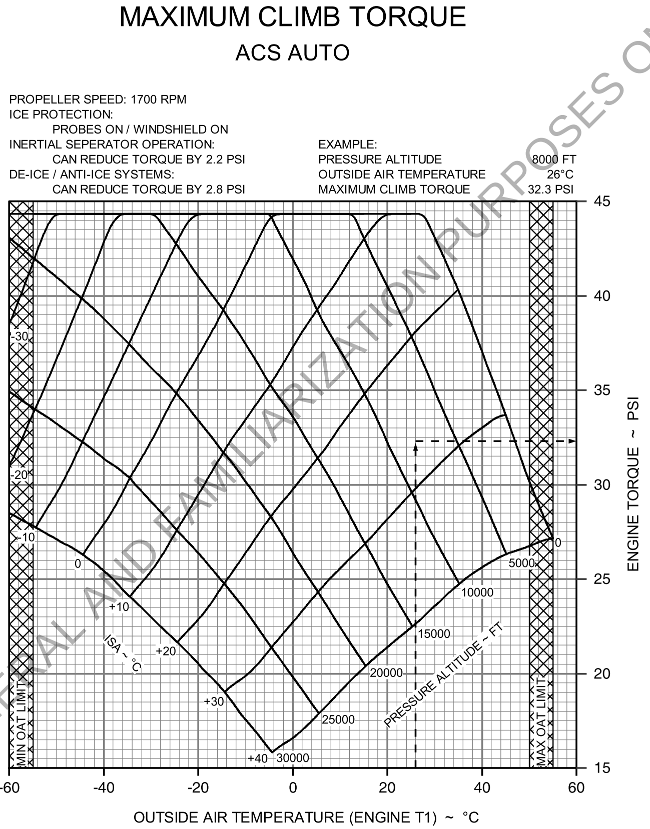
WEIGHT - KG	V_R - KIAS	V_{50FT} - KIAS
2900	64	79
3300	69	85
3700	73	90
4100	77	94
4500	80	99
4740	82	101

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00272-A-001-01

Figure 5-3-2-22: Performance - Takeoff Total Distance - Flaps 15° - ACS OFF (metric units)

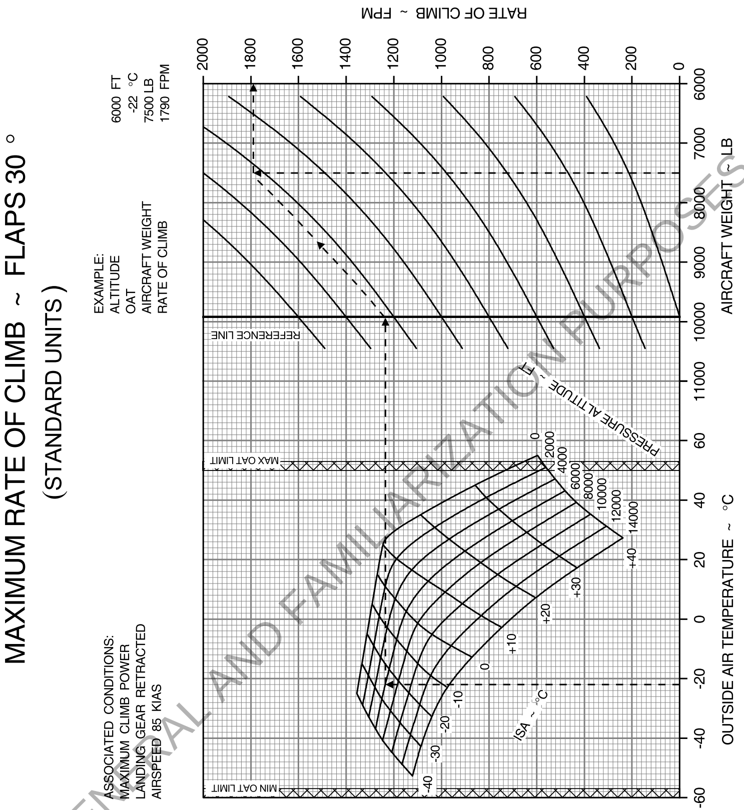
5-3-3 Performance Data - Climb Performance



ICN-12-C-A150503-A-S4080-00273-A-001-01

Figure 5-3-3-1: Performance - Maximum Climb Torque

12-C-A15-60-0503-03A-030A-A

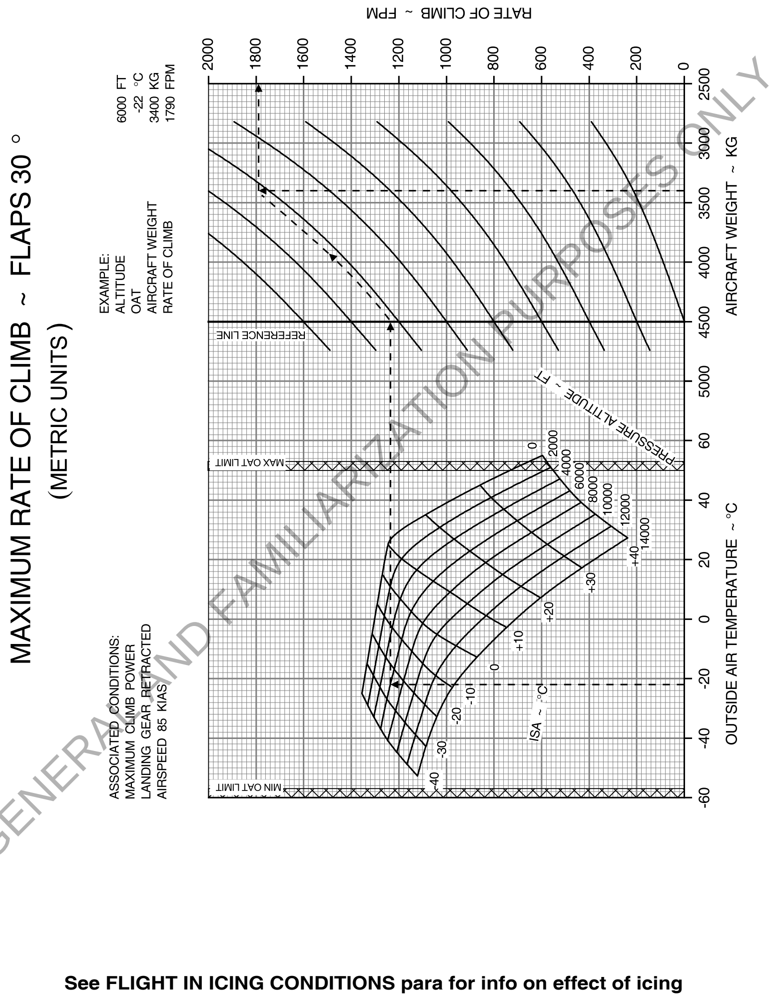


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00274-A-001-01

Figure 5-3-3-2: Performance - Maximum Rate Of Climb - Flaps 30° (standard units)

12-C-A15-60-0503-03A-030A-A

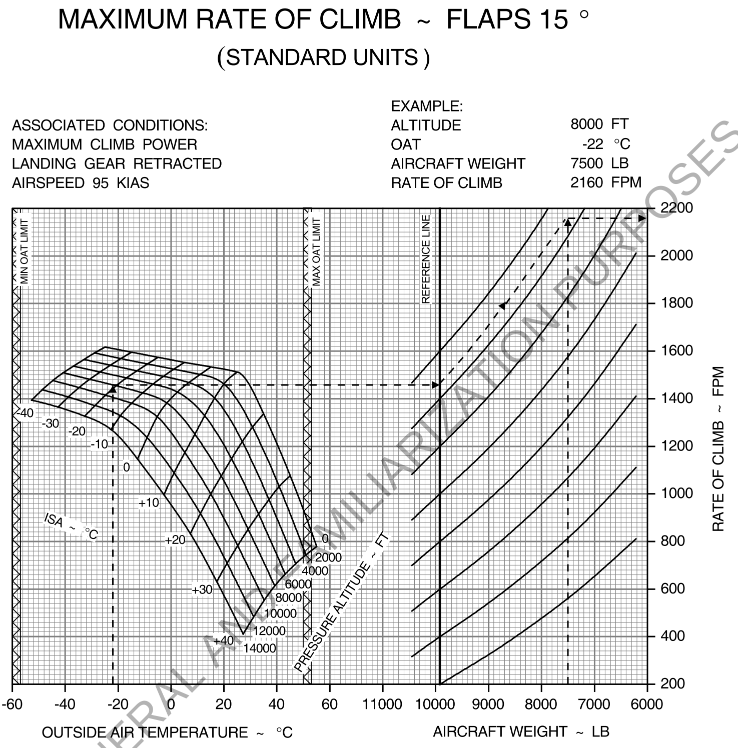


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00275-A-001-01

Figure 5-3-3-3: Performance - Maximum Rate Of Climb - Flaps 30° (metric units)

12-C-A15-60-0503-03A-030A-A

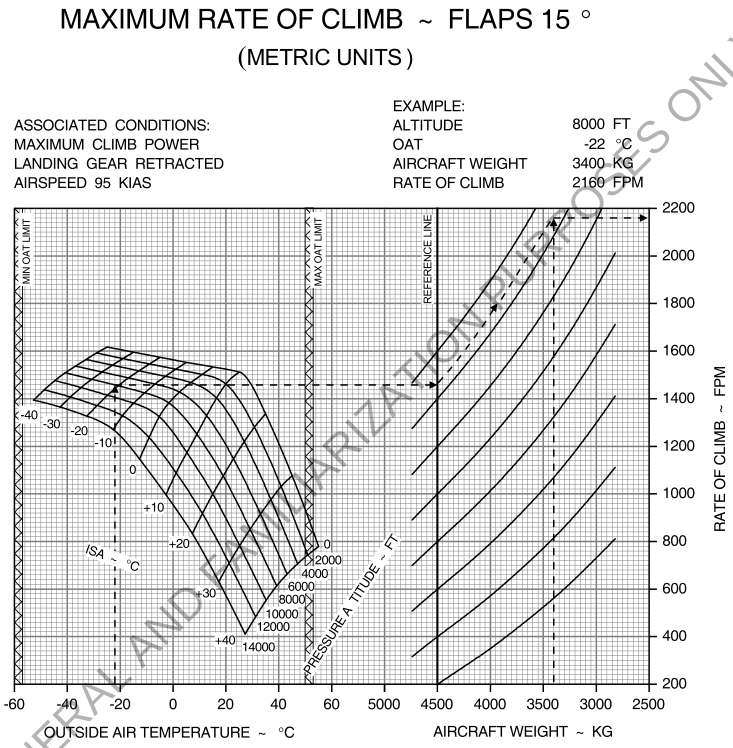


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00276-A-001-01

Figure 5-3-3-4: Performance - Maximum Rate Of Climb - Flaps 15° (standard units)

12-C-A15-60-0503-03A-030A-A

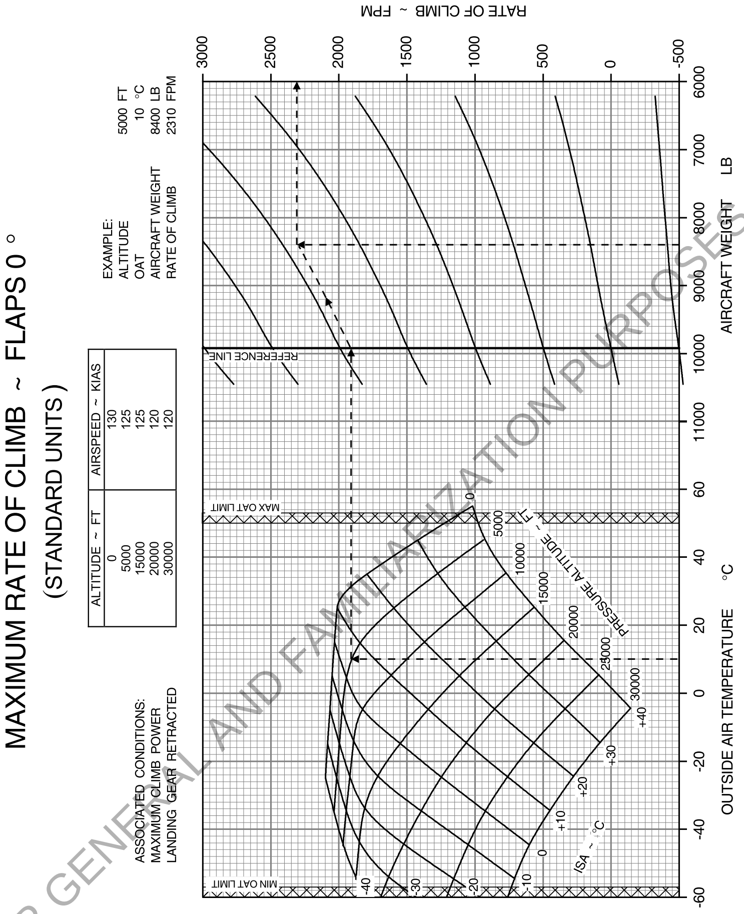


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00277-A-001-01

Figure 5-3-3-5: Performance - Maximum Rate Of Climb - Flaps 15° (metric units)

12-C-A15-60-0503-03A-030A-A

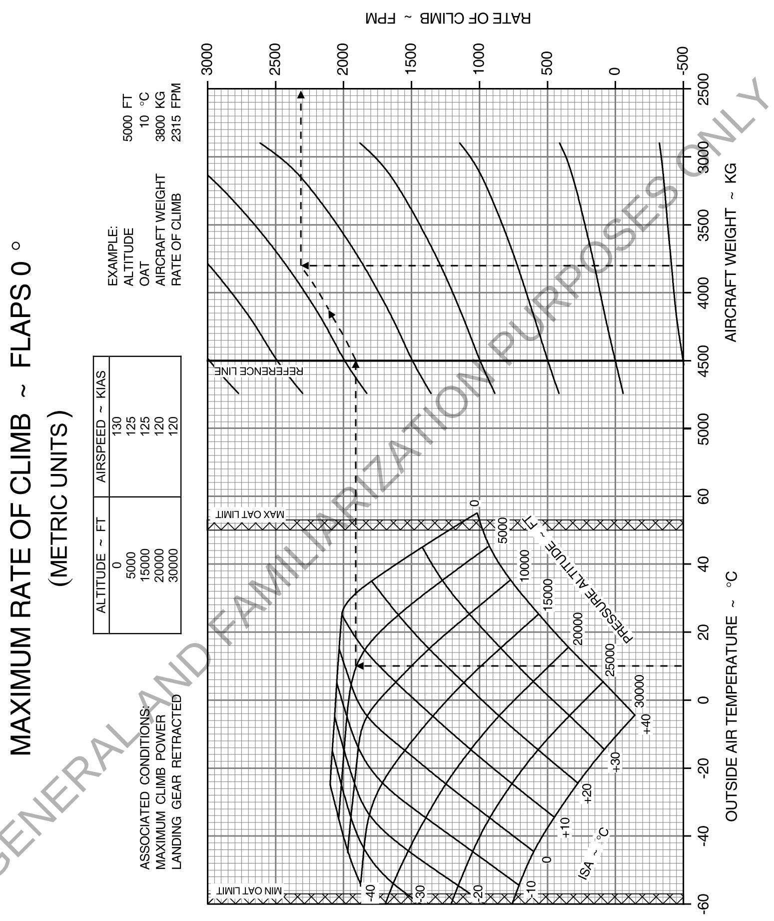


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00278-A-001-01

Figure 5-3-3-6: Performance - Maximum Rate Of Climb - Flaps 0° (standard units)

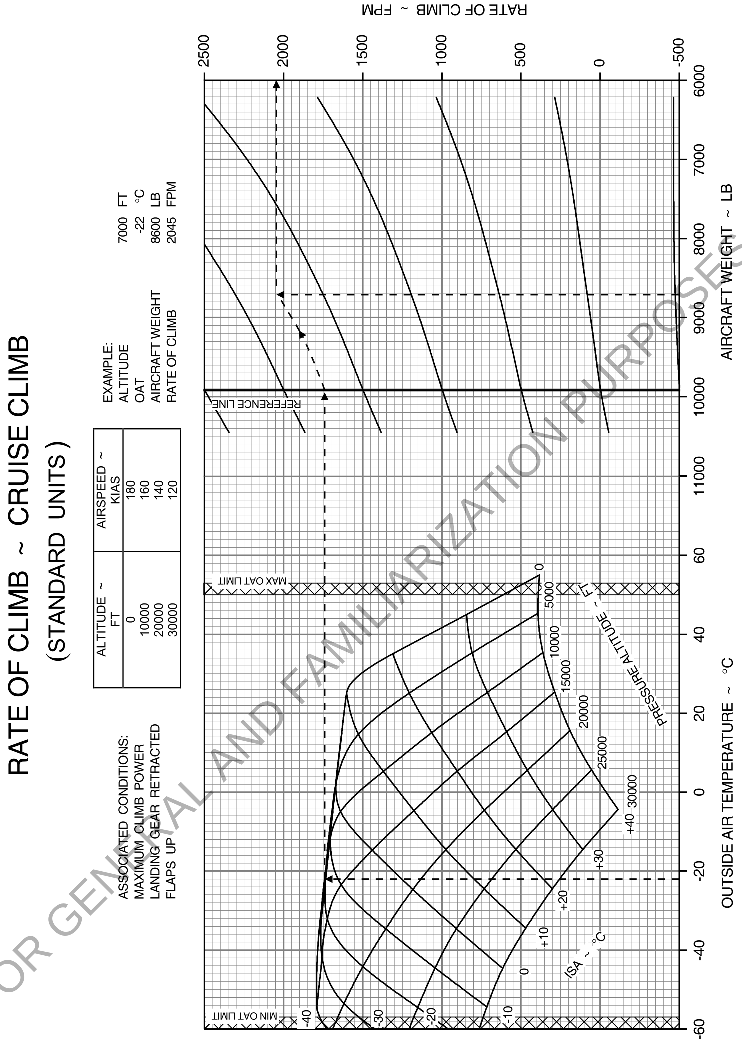
12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00279-A-001-01

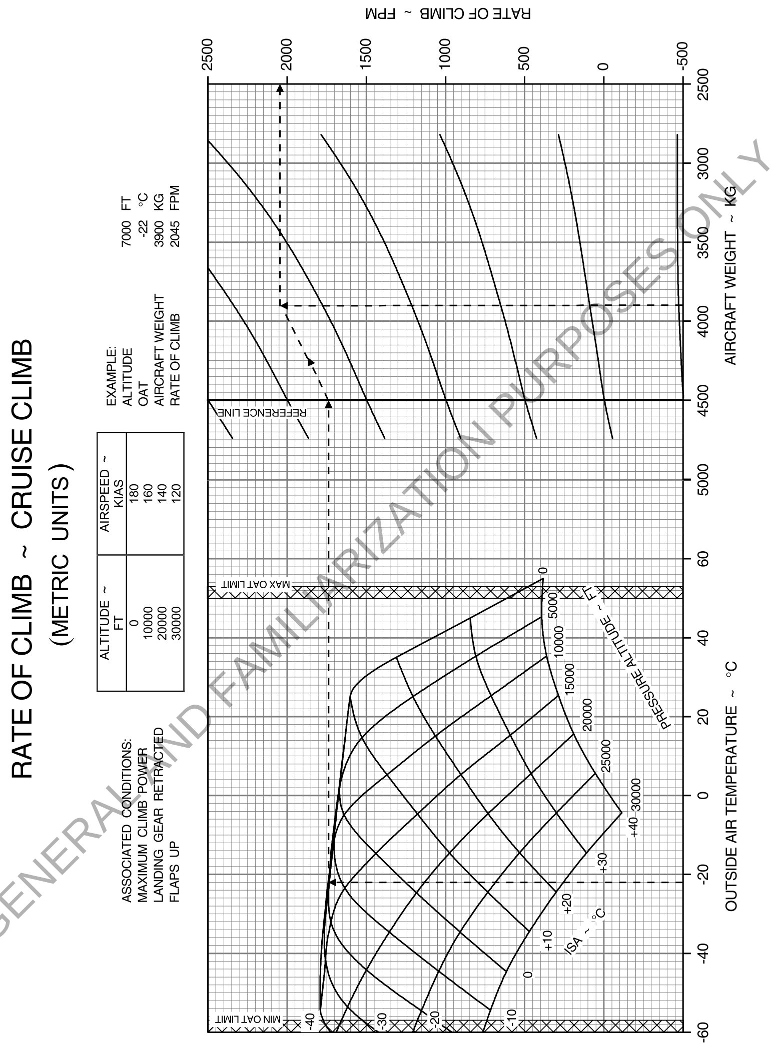
Figure 5-3-3-7: Performance - Maximum Rate Of Climb - Flaps 0° (metric units)

12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00280-A-001-01

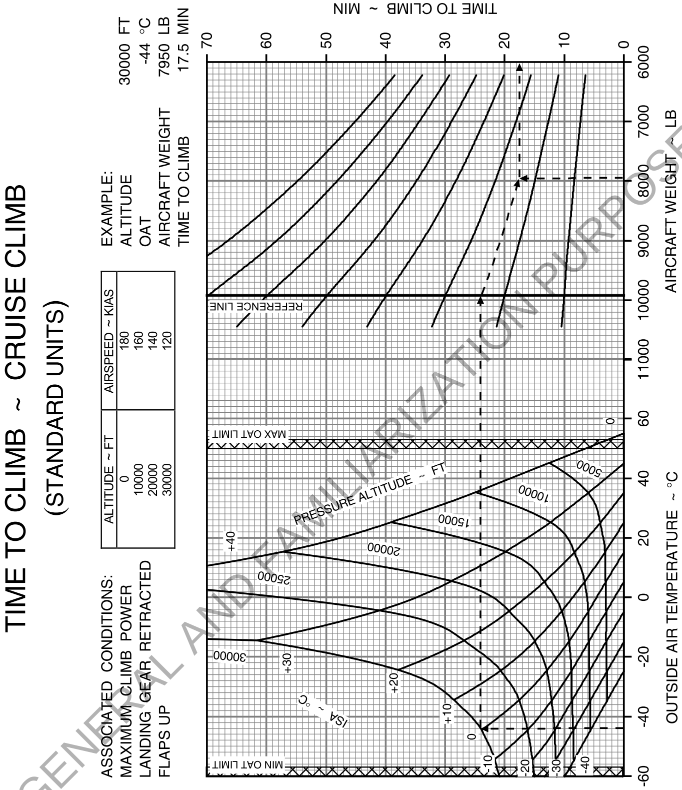
Figure 5-3-3-8: Performance - Rate Of Climb - Cruise Climb (standard units)



ICN-12-C-A150503-A-S4080-00281-A-001-01

Figure 5-3-3-9: Performance - Rate Of Climb - Cruise Climb (metric units)

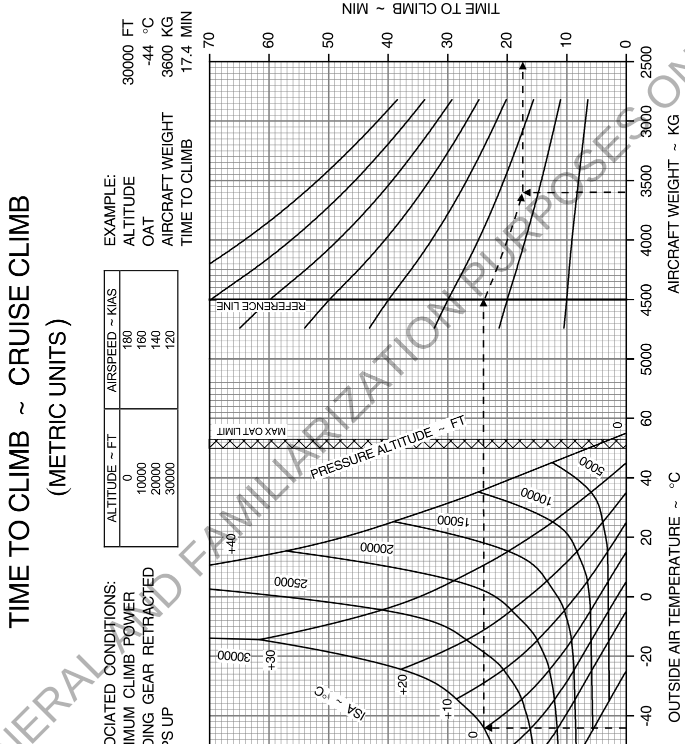
12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00282-A-001-01

Figure 5-3-3-10: Performance - Time To Climb - Cruise Climb (standard units)

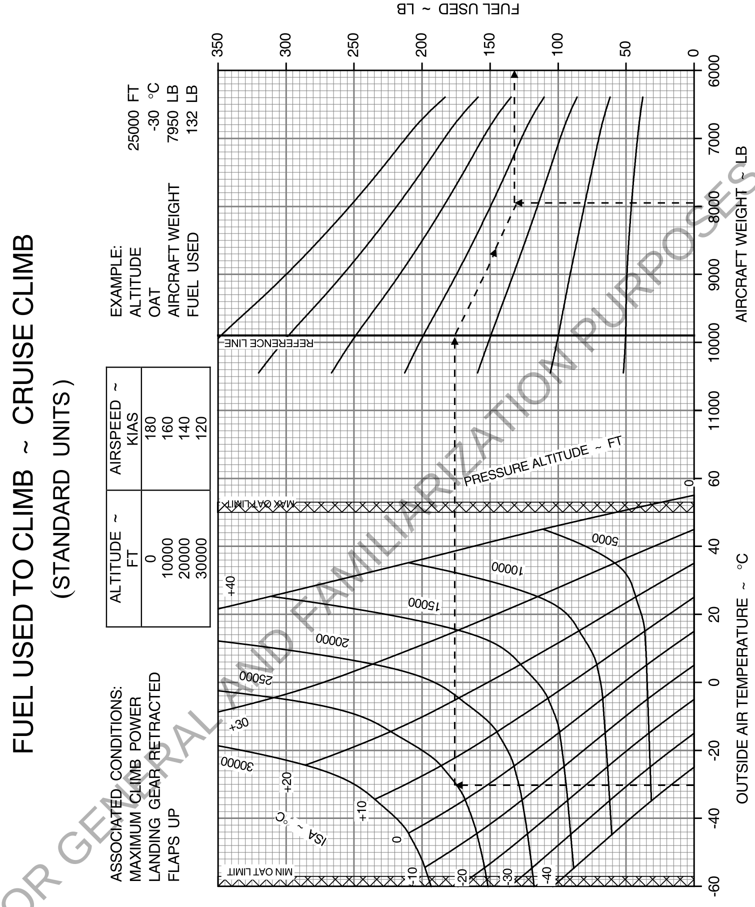
12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00283-A-001-01

Figure 5-3-3-11: Performance - Time To Climb - Cruise Climb (metric units)

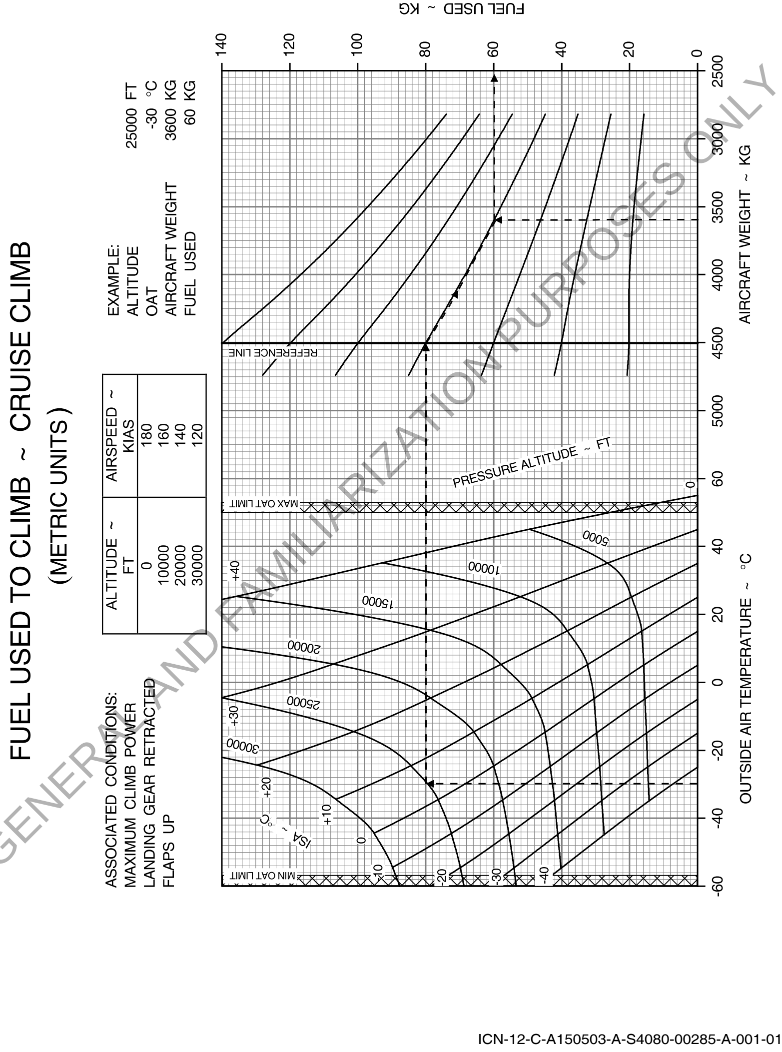
12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00284-A-001-01

Figure 5-3-3-12: Performance - Fuel Used To Climb - Cruise Climb (standard units)

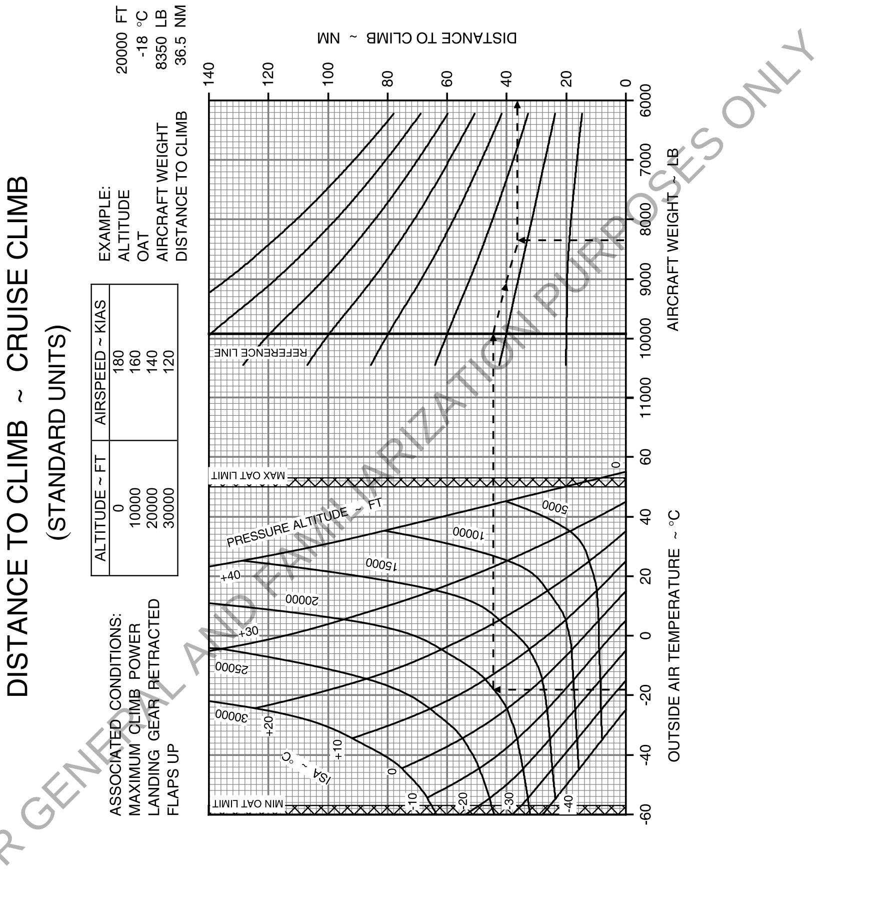
12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00285-A-001-01

Figure 5-3-3-13: Performance - Fuel Used To Climb - Cruise Climb (metric units)

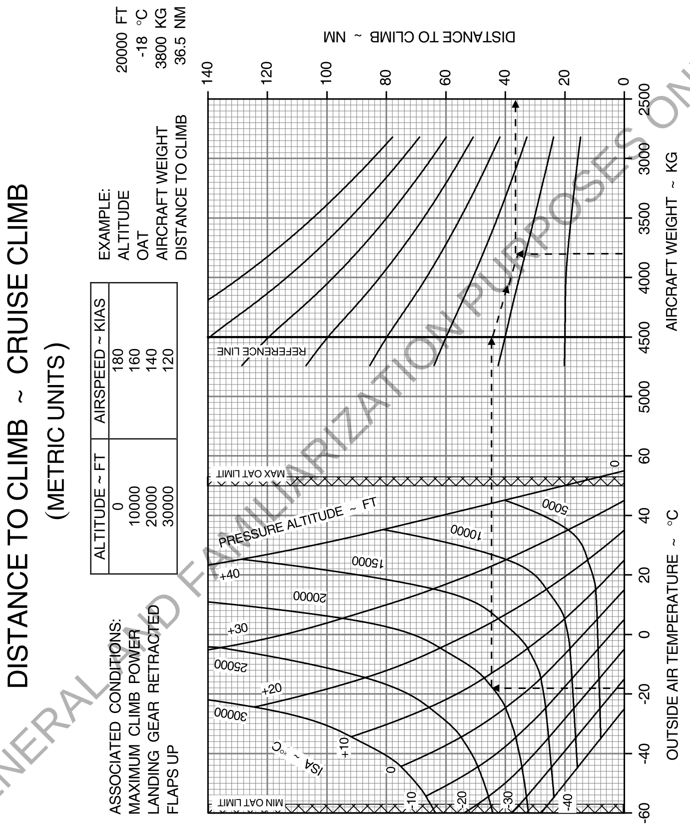
12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00286-A-001-01

Figure 5-3-3-14: Performance - Distance To Climb - Cruise Climb (standard units)

12-C-A15-60-0503-03A-030A-A



ICN-12-C-A150503-A-S4080-00287-A-001-01

Figure 5-3-3-15: Performance - Distance To Climb - Cruise Climb (metric units)

12-C-A15-60-0503-03A-030A-A

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5-3-4 Performance Data - Cruise Performance

MAXIMUM CRUISE POWER

NOTE: TORQUE AND FUEL FLOW BASED ON 8000 lb (3629 kg)

						@ 7000 lb (3175 kg)		@ 8000 lb (3629 kg)		@ 9000 lb (4082 kg)		@ 10000 lb (4536 kg)		@ 10400 lb (4717 kg)	
ISA (ºC)	Altitude (ft)	SAT (ºC)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)
-40	0	-25	36.9	608	276	241	223	241	223	241	223	241	223	241	223
	2000	-29	36.9	589	267	241	229	241	229	241	229	241	229	241	229
	4000	-33	36.9	572	259	241	236	241	236	241	236	241	236	241	236
	6000	-37	36.9	555	252	242	243	242	243	241	242	240	241	239	240
	8000	-41	40.6	577	262	240	248	239	247	239	247	237	245	237	245
	10000	-45	40.6	564	256	238	253	237	252	236	251	235	250	234	249
	12000	-49	40.6	556	252	235	258	234	257	234	256	232	254	232	254
	14000	-53	40.6	550	249	233	262	232	261	231	261	230	259	229	258
	16000	-57	40.6	543	246	230	267	230	266	229	265	227	264	227	263
	18000	-61	40.6	536	243	228	272	227	271	226	270	224	268	224	268
	20000	-65	36.9	487	221	224	276	224	276	223	275	222	273	221	273
	22000	-69	36.9	481	218	215	273	215	273	215	273	215	273	215	273
	24000	-73	34.2	446	202	206	270	206	270	206	270	206	270	206	270
	26000	-77	31.6	414	188	197	268	197	268	197	268	197	268	197	268
	28000	-81	29.3	383	173	189	265	189	265	189	265	189	265	189	265
	30000	-84	27.2	357	162	181	262	181	262	181	262	181	262	181	262
-30	0	-15	36.9	614	278	241	227	241	227	241	227	241	227	241	227
	2000	-19	36.9	595	270	241	234	241	234	241	234	241	234	241	234
	4000	-23	36.9	577	262	241	241	241	241	241	240	240	239	239	239
	6000	-27	40.6	598	271	240	246	239	245	238	245	237	243	237	243
	8000	-31	40.6	583	264	238	251	237	250	236	249	235	248	234	248
	10000	-35	40.6	569	258	236	256	235	255	234	254	233	253	232	252
	12000	-39	40.6	561	254	234	261	233	261	232	260	231	258	230	257
	14000	-43	40.6	555	252	232	267	231	266	230	265	228	263	228	263
	16000	-47	40.6	548	248	229	272	228	271	227	270	226	268	225	267
	18000	-51	40.6	541	245	227	277	226	276	225	275	223	273	222	272
	20000	-55	40.6	534	242	224	282	223	282	222	280	220	278	220	277
	22000	-59	37.0	486	220	215	280	215	280	215	280	215	280	215	280
	24000	-63	34.9	458	208	206	277	206	277	206	277	206	277	206	277
	26000	-67	32.3	426	193	197	275	197	275	197	275	197	275	197	275
	28000	-71	30.0	394	179	189	272	189	272	189	272	189	272	189	272
	30000	-74	27.8	367	166	181	269	181	269	181	269	181	269	181	269

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Figure 5-3-4-1: Performance - Maximum Cruise Power (Sheet 1 of 4)

12-C-A15-60-0503-04A-030A-A

MAXIMUM CRUISE POWER

NOTE: TORQUE AND FUEL FLOW BASED ON 8000 lb (3629 kg)

						@ 7000 lb (3175 kg)		@ 8000 lb (3629 kg)		@ 9000 lb (4082 kg)		@ 10000 lb (4536 kg)		@ 10400 lb (4717 kg)	
ISA (ºC)	**Altitude (ft)**	**SAT (ºC)**	**Torque (psi)**	**Fuel flow (lb/h)**	**Fuel flow (kg/h)**	**IAS (kt)**	**TAS (kt)**	**IAS (kt)**	**TAS (kt)**	**IAS (kt)**	**TAS (kt)**	**IAS (kt)**	**TAS (kt)**	**IAS (kt)**	**TAS (kt)**
-20	0	-5	36.9	620	281	241	232	241	232	241	232	241	232	241	232
	2000	-9	36.9	601	273	241	238	241	238	241	238	240	237	239	237
	4000	-13	40.6	620	281	240	244	239	244	239	243	238	242	237	241
	6000	-17	40.6	604	274	238	249	237	249	237	248	235	247	235	246
	8000	-21	40.6	589	267	236	254	235	254	235	253	233	251	233	251
	10000	-25	40.6	575	261	234	260	233	259	232	258	231	256	230	256
	12000	-29	40.6	567	257	232	265	231	264	230	263	229	261	228	261
	14000	-33	40.6	560	254	230	271	229	270	228	268	227	267	226	266
	16000	-37	40.6	553	251	228	276	227	275	226	274	224	272	224	271
	18000	-41	40.6	545	247	225	282	225	281	223	279	222	278	221	277
	20000	-45	40.6	539	244	223	288	222	287	221	285	219	283	218	282
	22000	-49	36.9	490	222	215	286	215	286	215	286	215	286	215	286
	24000	-53	35.6	471	214	206	284	206	284	206	284	206	284	206	284
	26000	-57	33.0	438	199	197	281	197	281	197	281	197	281	197	281
	28000	-61	30.6	406	184	189	278	189	278	189	278	189	278	189	278
	30000	-64	28.4	377	171	181	276	181	276	181	276	181	276	181	276
-10	0	5	36.9	627	284	241	236	241	236	241	236	240	235	240	235
	2000	1	40.6	644	292	241	243	240	242	239	241	238	240	238	240
	4000	-3	40.6	626	284	239	247	238	247	237	246	236	245	236	244
	6000	-7	40.6	610	277	237	252	236	252	235	251	234	250	233	249
	8000	-11	40.6	594	270	235	258	234	257	233	256	232	255	231	254
	10000	-15	40.6	581	263	232	263	232	262	231	261	229	260	229	259
	12000	-19	40.6	572	260	230	269	230	268	229	267	227	265	227	264
	14000	-23	40.6	566	257	228	274	227	273	226	272	225	270	224	270
	16000	-27	40.6	558	253	226	280	225	279	224	278	222	276	222	275
	18000	-31	40.6	550	250	224	286	223	285	221	283	220	281	219	280
	20000	-35	40.6	544	247	221	292	220	291	219	289	217	287	217	286
	22000	-39	39.2	521	236	215	292	214	292	213	290	211	288	210	287
	24000	-43	36.4	485	220	206	290	206	290	205	289	203	287	203	286
	26000	-47	33.8	451	205	197	287	197	287	197	287	195	284	194	283
	28000	-51	31.3	419	190	189	285	189	285	189	285	186	281	185	279
	30000	-54	29.1	389	176	181	282	181	282	180	282	177	277	176	275

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Figure 5-3-4-1: Performance - Maximum Cruise Power (Sheet 2 of 4)

MAXIMUM CRUISE POWER

NOTE: TORQUE AND FUEL FLOW BASED ON 8000 lb (3629 kg)

						@ 7000 lb (3175 kg)		@ 8000 lb (3629 kg)		@ 9000 lb (4082 kg)		@ 10000 lb (4536 kg)		@ 10400 lb (4717 kg)	
ISA (ºC)	Altitude (ft)	SAT (ºC)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)
0	0	15	40.6	670	304	241	240	240	240	240	239	239	238	238	238
	2000	11	40.6	651	295	239	246	239	245	238	244	237	243	236	242
	4000	7	40.6	632	286	237	250	236	250	236	249	235	248	234	247
	6000	3	40.6	615	279	235	256	234	255	234	254	232	253	232	252
	8000	-1	40.6	600	272	233	261	232	260	231	259	230	258	229	257
	10000	-5	40.6	585	265	231	266	230	265	229	264	228	263	227	262
	12000	-9	40.6	578	262	229	272	228	271	227	270	225	268	225	267
	14000	-13	40.6	570	259	227	278	226	277	224	275	223	273	222	273
	16000	-17	40.6	563	255	224	283	223	282	222	281	220	279	220	278
	18000	-21	40.4	552	251	221	289	220	288	219	285	217	283	216	282
	20000	-25	38.5	524	238	215	290	214	288	212	286	210	284	210	283
	22000	-29	36.3	493	223	208	290	207	288	205	285	203	283	202	282
	24000	-33	34.3	463	210	201	290	200	288	198	285	196	282	194	280
	26000	-37	32.2	434	197	194	289	192	286	190	284	187	280	186	278
	28000	-41	30.2	407	185	186	288	184	285	182	281	179	277	178	275
	30000	-44	28.2	381	173	179	286	177	283	174	278	170	273	169	271
10	0	25	40.6	677	307	240	243	239	243	238	242	237	241	237	240
	2000	21	40.6	657	298	238	248	237	248	236	247	235	246	235	245
	4000	17	40.6	638	290	236	253	235	253	234	252	233	251	233	250
	6000	13	40.6	621	282	234	259	233	258	232	257	231	255	230	255
	8000	9	40.6	606	275	232	264	231	263	230	262	229	261	228	260
	10000	5	40.6	591	268	229	269	229	269	228	267	226	266	225	265
	12000	1	40.6	583	265	227	275	226	274	225	273	223	271	223	270
	14000	-3	39.3	562	255	222	277	221	276	220	274	218	272	217	272
	16000	-7	37.8	537	244	217	279	216	278	214	276	212	274	211	273
	18000	-11	36.4	512	232	211	281	210	279	208	277	206	275	206	274
	20000	-15	34.8	486	220	206	283	204	281	202	278	200	276	199	274
	22000	-19	33.1	459	208	199	283	197	281	195	278	193	275	192	273
	24000	-23	31.2	431	196	192	283	190	280	188	277	185	273	184	271
	26000	-27	29.3	404	183	185	282	183	279	180	275	177	270	176	268
	28000	-31	27.4	378	172	178	281	175	277	172	272	169	267	167	264
	30000	-34	25.5	353	160	170	279	167	274	164	269	160	262	158	260

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Figure 5-3-4-1: Performance - Maximum Cruise Power (Sheet 3 of 4)

12-C-A15-60-0503-04A-030A-A

MAXIMUM CRUISE POWER

NOTE: TORQUE AND FUEL FLOW BASED ON 8000 lb (3629 kg)

						@ 7000 lb (3175 kg)		@ 8000 lb (3629 kg)		@ 9000 lb (4082 kg)		@ 10000 lb (4536 kg)		@ 10400 lb (4717 kg)	
ISA (ºC)	Altitude (ft)	SAT (ºC)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)	IAS (kt)	TAS (kt)
20	0	35	40.6	684	310	239	246	238	245	237	245	236	244	236	243
	2000	31	40.6	664	301	237	251	236	250	235	250	234	248	233	248
	4000	27	40.6	645	293	234	256	234	255	233	255	232	253	231	253
	6000	23	40.1	622	282	231	260	231	260	230	259	228	257	227	256
	8000	19	38.8	593	269	226	262	225	261	224	260	223	258	222	258
	10000	15	37.5	565	256	221	265	220	264	219	262	217	260	217	259
	12000	11	36.2	542	246	216	267	215	265	213	263	212	261	211	260
	14000	7	34.9	521	236	211	269	210	267	208	265	206	263	206	262
	16000	3	33.3	494	224	205	270	204	268	202	265	200	263	199	262
	18000	-1	32.1	470	213	200	272	198	269	196	267	194	264	193	263
	20000	-5	30.7	445	202	194	273	192	270	190	267	188	264	186	262
	22000	-9	29.2	420	191	188	273	186	270	184	267	181	263	179	261
	24000	-13	27.6	395	179	181	273	179	270	176	265	173	261	172	259
	26000	-17	26.0	371	168	175	272	172	268	169	263	165	258	164	256
	28000	-21	24.3	347	157	167	271	164	265	161	260	157	254	155	252
	30000	-24	22.8	325	147	160	269	157	263	153	257	148	250	146	246
30	0	45	34.9	636	288	225	236	224	235	223	234	221	232	220	231
	2000	41	35.0	614	279	223	241	222	240	221	238	219	236	218	236
	4000	37	34.6	591	268	220	245	219	244	217	242	216	240	215	239
	6000	33	33.8	565	256	216	247	215	246	213	244	211	242	211	241
	8000	29	32.8	538	244	211	250	210	248	208	246	206	244	206	243
	10000	25	31.7	513	232	207	252	205	250	203	248	202	246	201	245
	12000	21	30.7	492	223	202	254	200	252	198	250	197	247	195	246
	14000	17	29.6	470	213	197	255	195	253	193	251	191	248	190	246
	16000	13	28.5	449	204	192	257	190	255	188	252	185	248	184	247
	18000	9	27.4	426	193	186	258	184	255	182	252	179	248	178	247
	20000	5	26.3	403	183	181	259	179	256	176	252	173	248	171	246
	22000	1	25.1	380	173	175	259	173	256	169	252	166	247	165	245
	24000	-3	23.6	357	162	169	259	165	254	162	249	158	244	157	242
	26000	-7	22.3	335	152	162	258	159	253	155	247	151	241	149	238
	28000	-11	21.0	314	142	155	256	152	251	148	244	142	236	140	233
	30000	-14	19.7	294	133	148	254	144	248	140	241	134	230	130	225

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Figure 5-3-4-1: Performance - Maximum Cruise Power (Sheet 4 of 4)

LONG RANGE CRUISE

			@ 7000 lb (3175 kg)					@ 8000 lb (3629 kg)					@ 9000 lb (4082 kg)					@ 10000 lb (4536 kg)					@ 10400 lb (4717 kg)				
ISA (ºC)	Altitude (ft)	SAT (ºC)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)
-40	0	-25	20.0	446	202	189	175	20.0	446	202	187	173	20.0	446	202	187	172	20.0	446	202	183	169	20.0	446	201	182	168
	2000	-29	19.6	425	193	186	177	19.7	426	193	185	176	19.9	428	194	185	175	19.9	428	194	181	172	19.9	428	193	180	171
	4000	-33	19.2	404	183	183	179	19.5	407	184	182	179	19.7	409	186	182	178	19.7	410	186	179	175	19.9	411	185	178	175
	6000	-37	18.8	384	174	180	181	19.2	388	176	180	181	19.6	392	178	180	181	19.6	392	178	177	178	19.8	394	178	176	178
	8000	-41	18.4	365	166	177	184	18.9	370	168	177	184	19.5	376	170	177	184	19.5	376	171	174	181	19.7	378	171	174	181
	10000	-45	18.0	348	158	174	186	18.7	354	161	175	187	19.3	360	163	175	187	19.3	361	164	172	184	19.7	364	164	172	184
	12000	-49	17.6	334	151	171	188	18.4	341	155	172	189	19.2	349	158	172	190	19.2	349	158	170	187	19.6	353	160	170	187
	14000	-53	17.2	320	145	167	190	18.1	329	149	169	191	19.1	338	153	169	193	19.1	339	154	167	189	19.5	343	155	168	190
	16000	-57	16.8	306	139	164	192	17.9	316	143	166	194	18.9	326	148	166	196	18.9	327	148	164	192	19.5	332	150	165	193
	18000	-61	16.4	291	132	161	194	17.6	302	137	163	196	18.8	314	142	163	199	18.8	314	143	162	195	19.4	320	145	163	197
	20000	-65	16.0	277	125	157	195	17.3	289	131	160	199	18.7	302	137	160	202	18.7	303	137	159	198	19.3	309	140	161	200
	22000	-69	15.6	263	119	153	197	17.1	278	126	157	201	18.5	292	132	157	205	18.5	292	132	156	201	19.3	299	136	158	203
	24000	-73	15.2	251	114	149	198	16.8	266	121	153	203	18.4	282	128	153	208	18.4	282	128	153	203	19.2	290	132	155	206
	26000	-77	14.8	239	108	145	200	16.5	256	116	150	205	18.3	273	124	150	210	18.3	273	124	150	205	19.1	282	128	152	208
	28000	-81	14.4	228	104	141	201	16.3	247	112	146	207	18.1	265	120	146	213	18.1	266	120	146	207	19.1	275	124	148	210
	30000	-84	14.0	218	99	137	201	16.0	238	108	142	209	18.0	259	117	142	216	18.0	259	117	142	209	19.0	269	122	145	212
-30	0	-15	20.0	451	204	188	177	20.0	451	204	186	176	20.0	451	205	186	174	20.0	451	205	182	172	20.0	451	203	181	171
	2000	-19	19.6	429	195	185	180	19.7	431	195	184	178	19.9	432	196	184	177	19.9	433	196	180	175	19.9	433	195	179	174
	4000	-23	19.2	408	185	182	182	19.5	411	187	181	181	19.7	414	188	181	180	19.7	414	188	178	178	19.9	416	187	177	177
	6000	-27	18.8	389	176	179	184	19.2	393	178	179	184	19.6	397	180	179	183	19.6	397	180	175	180	19.8	399	180	175	180
	8000	-31	18.4	370	168	176	186	18.9	375	170	176	186	19.5	380	172	176	186	19.5	380	173	173	183	19.7	383	173	173	183
	10000	-35	18.0	352	160	172	188	18.7	358	162	173	189	19.3	365	165	173	189	19.3	365	166	170	186	19.7	368	166	171	186
	12000	-39	17.6	338	153	169	190	18.4	345	157	170	191	19.2	353	160	170	192	19.2	353	160	168	189	19.6	357	161	168	189
	14000	-43	17.2	324	147	166	192	18.1	333	151	167	194	19.1	342	155	167	195	19.1	342	155	165	192	19.5	347	157	166	192
	16000	-47	16.8	310	140	162	194	17.9	320	145	164	196	18.9	330	150	164	198	18.9	330	150	163	194	19.5	335	152	164	196
	18000	-51	16.4	294	133	159	196	17.6	306	139	161	199	18.8	317	144	161	201	18.8	318	144	160	197	19.4	323	147	161	199
	20000	-55	16.0	280	127	155	198	17.3	293	133	158	201	18.7	306	139	158	205	18.7	306	139	157	200	19.3	312	142	159	202
	22000	-59	15.6	266	121	152	200	17.1	281	127	155	204	18.5	295	134	155	208	18.5	295	134	154	203	19.3	302	137	156	205
	24000	-63	15.2	254	115	148	201	16.8	269	122	152	206	18.4	285	129	152	211	18.4	285	129	151	206	19.2	293	133	153	208
	26000	-67	14.8	242	110	144	202	16.5	259	117	148	208	18.3	276	125	148	214	18.3	276	125	148	208	19.1	285	129	150	211
	28000	-71	14.4	231	105	140	203	16.3	249	113	144	210	18.1	268	122	144	216	18.1	268	122	144	210	19.1	278	126	146	213
	30000	-74	14.0	221	100	135	204	16.0	241	109	141	212	18.0	261	118	141	219	18.0	262	119	140	211	19.0	272	123	143	215

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Figure 5-3-4-2: Performance - Long Range Cruise (Sheet 1 of 4)

LONG RANGE CRUISE

			@ 7000 lb (3175 kg)					@ 8000 lb (3629 kg)					@ 9000 lb (4082 kg)					@ 10000 lb (4536 kg)					@ 10400 lb (4717 kg)				
ISA (ºC)	Altitude (ft)	SAT (ºC)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)
-20	0	-5	20.0	455	207	187	180	20.0	456	207	185	178	20.0	456	207	185	176	20.0	456	207	181	174	20.0	456	205	180	173
	2000	-9	19.6	434	197	184	182	19.7	435	197	183	181	19.9	437	198	183	179	19.9	437	198	178	177	19.9	438	197	178	176
	4000	-13	19.2	413	187	181	184	19.5	416	189	180	184	19.7	419	190	180	182	19.7	419	190	176	180	19.9	421	189	176	179
	6000	-17	18.8	393	178	178	186	19.2	397	180	177	186	19.6	401	182	177	185	19.6	402	182	174	182	19.8	404	182	174	182
	8000	-21	18.4	374	170	174	189	18.9	379	172	175	189	19.5	385	174	175	188	19.5	385	175	171	185	19.7	388	175	171	185
	10000	-25	18.0	356	161	171	191	18.7	362	164	172	191	19.3	369	167	172	191	19.3	369	167	169	188	19.7	372	168	169	188
	12000	-29	17.6	342	155	168	193	18.4	350	159	169	194	19.2	357	162	169	194	19.2	358	162	166	191	19.6	361	163	167	191
	14000	-33	17.2	328	149	165	195	18.1	337	153	166	196	19.1	346	157	166	197	19.1	346	157	164	194	19.5	351	159	164	195
	16000	-37	16.8	313	142	161	197	17.9	324	147	163	199	18.9	334	151	163	200	18.9	334	152	161	197	19.5	339	154	162	198
	18000	-41	16.4	298	135	157	199	17.6	309	140	160	201	18.8	321	146	160	204	18.8	321	146	158	199	19.4	327	148	159	201
	20000	-45	16.0	283	128	154	200	17.3	296	134	156	204	18.7	309	140	156	207	18.7	309	140	155	202	19.3	316	143	157	204
	22000	-49	15.6	269	122	150	202	17.1	284	129	153	206	18.5	298	135	153	210	18.5	298	135	152	205	19.3	306	139	154	207
	24000	-53	15.2	257	116	146	203	16.8	272	124	150	208	18.4	288	131	150	213	18.4	288	131	149	207	19.2	296	134	151	210
	26000	-57	14.8	244	111	142	205	16.5	262	119	146	210	18.3	279	126	146	216	18.3	279	127	145	210	19.1	288	130	147	212
	28000	-61	14.4	233	106	138	206	16.3	252	114	143	213	18.1	271	123	143	219	18.1	271	123	142	212	19.1	281	127	144	215
	30000	-64	14.0	223	101	134	207	16.0	243	110	139	215	18.0	264	120	139	221	18.0	264	120	138	214	19.0	275	124	141	217
-10	0	5	20.0	460	209	186	182	20.0	460	209	184	180	20.0	461	209	184	178	20.0	461	209	179	176	20.0	461	207	178	175
	2000	1	19.6	439	199	183	184	19.7	440	200	181	183	19.9	442	200	181	181	19.9	442	200	177	179	19.9	443	199	176	178
	4000	-3	19.2	418	190	179	186	19.5	421	191	179	186	19.7	424	192	179	184	19.7	424	192	175	182	19.9	425	192	174	181
	6000	-7	18.8	398	180	176	189	19.2	402	182	176	188	19.6	406	184	176	187	19.6	406	184	172	184	19.8	408	184	172	184
	8000	-11	18.4	379	172	173	191	18.9	384	174	173	191	19.5	389	177	173	190	19.5	390	177	170	187	19.7	392	177	170	187
	10000	-15	18.0	360	163	170	193	18.7	367	166	170	193	19.3	373	169	170	193	19.3	373	169	167	190	19.7	377	170	167	190
	12000	-19	17.6	346	157	167	195	18.4	354	160	167	196	19.2	361	164	167	196	19.2	362	164	165	193	19.6	366	165	165	193
	14000	-23	17.2	332	151	163	197	18.1	341	155	164	198	19.1	350	159	164	200	19.1	351	159	162	196	19.5	355	160	163	197
	16000	-27	16.8	317	144	160	199	17.9	328	149	161	201	18.9	338	153	161	203	18.9	338	153	159	199	19.5	343	155	160	200
	18000	-31	16.4	302	137	156	201	17.6	313	142	158	203	18.8	325	147	158	206	18.8	325	148	156	201	19.4	331	150	157	203
	20000	-35	16.0	287	130	152	202	17.3	300	136	154	206	18.7	313	142	154	209	18.7	313	142	153	204	19.3	320	145	155	206
	22000	-39	15.6	272	124	148	204	17.1	287	130	151	208	18.5	301	137	151	212	18.5	302	137	150	207	19.3	309	140	151	209
	24000	-43	15.2	260	118	144	205	16.8	275	125	148	210	18.4	291	132	148	215	18.4	292	132	146	209	19.2	299	136	148	211
	26000	-47	14.8	247	112	140	207	16.5	264	120	144	212	18.3	282	128	144	218	18.3	282	128	143	211	19.1	290	132	145	214
	28000	-51	14.4	236	107	136	208	16.3	255	116	141	215	18.1	274	124	141	221	18.1	274	124	140	213	19.1	284	128	142	216
	30000	-54	14.0	225	102	132	209	16.0	246	111	137	217	18.0	267	121	137	223	18.0	267	121	136	215	19.0	277	126	138	218

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Figure 5-3-4-2: Performance - Long Range Cruise (Sheet 2 of 4)

LONG RANGE CRUISE

ISA (ºC)	Altitude (ft)	SAT (ºC)	@ 7000 lb (3175 kg) Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	@ 8000 lb (3629 kg) Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	@ 9000 lb (4082 kg) Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	@ 10000 lb (4536 kg) Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	@ 10400 lb (4717 kg) Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)
0	0	15	20.0	464	211	184	184	20.0	464	211	183	182	20.0	464	211	183	180	20.0	465	211	178	178	20.0	465	209	177	177
	2000	11	19.6	443	201	181	186	19.7	444	202	180	185	19.9	446	202	180	183	19.9	446	202	176	181	19.9	447	201	175	180
	4000	7	19.2	422	191	178	189	19.5	425	193	178	188	19.7	428	194	178	186	19.7	428	194	173	183	19.9	429	193	173	183
	6000	3	18.8	402	182	175	191	19.2	406	184	175	190	19.6	410	186	175	189	19.6	410	186	171	186	19.8	413	186	171	186
	8000	-1	18.4	382	173	172	193	18.9	388	176	172	193	19.5	394	178	172	192	19.5	394	179	168	189	19.7	396	178	168	189
	10000	-5	18.0	364	165	169	195	18.7	370	168	169	196	19.3	377	171	169	195	19.3	377	171	166	192	19.7	380	171	166	192
	12000	-9	17.6	349	158	165	197	18.4	357	162	166	198	19.2	365	166	166	199	19.2	365	166	163	195	19.6	369	166	163	195
	14000	-13	17.2	335	152	162	199	18.1	345	156	163	201	19.1	354	160	163	202	19.1	354	161	160	198	19.5	359	162	161	198
	16000	-17	16.8	321	145	158	201	17.9	331	150	159	203	18.9	341	155	159	205	18.9	342	155	157	200	19.5	347	157	158	201
	18000	-21	16.4	305	138	154	203	17.6	317	144	156	205	18.8	328	149	156	207	18.8	329	149	154	203	19.4	335	151	155	204
	20000	-25	16.0	289	131	150	204	17.3	302	137	153	208	18.7	316	143	153	210	18.7	316	143	151	206	19.3	323	146	152	207
	22000	-29	15.6	275	125	146	206	17.1	290	131	149	210	18.5	304	138	149	213	18.5	305	138	148	208	19.3	312	141	149	210
	24000	-33	15.2	262	119	142	207	16.8	278	126	146	212	18.4	294	133	146	216	18.4	294	133	144	210	19.2	302	137	146	213
	26000	-37	14.8	250	113	138	209	16.5	267	121	142	214	18.3	284	129	142	220	18.3	285	129	141	212	19.1	293	133	143	215
	28000	-41	14.4	238	108	134	210	16.3	257	117	139	217	18.1	276	125	139	222	18.1	277	125	137	214	19.1	286	129	139	217
	30000	-44	14.0	227	103	130	211	16.0	248	112	135	219	18.0	269	122	135	225	18.0	269	122	133	216	19.0	280	126	136	219
10	0	25	20.0	469	213	183	186	20.0	469	213	182	184	20.0	469	213	182	182	20.0	470	213	177	180	20.0	470	211	176	179
	2000	21	19.6	447	203	180	188	19.7	449	204	179	187	19.9	451	204	179	185	19.9	451	204	174	182	19.9	451	203	174	182
	4000	17	19.2	426	193	177	191	19.5	429	195	176	190	19.7	432	196	176	188	19.7	432	196	172	185	19.9	434	195	171	185
	6000	13	18.8	406	184	174	193	19.2	410	186	173	192	19.6	415	188	173	191	19.6	415	188	170	188	19.8	417	188	169	188
	8000	9	18.4	387	175	171	195	18.9	392	178	170	195	19.5	398	180	170	194	19.5	398	180	167	191	19.7	401	180	167	191
	10000	5	18.0	368	167	167	197	18.7	375	170	167	198	19.3	382	173	167	197	19.3	382	173	164	194	19.7	385	173	164	194
	12000	1	17.6	353	160	164	200	18.4	361	164	164	200	19.2	369	167	164	200	19.2	369	168	161	196	19.6	373	168	162	197
	14000	-3	17.2	339	154	160	201	18.1	349	158	161	202	19.1	358	162	161	203	19.1	358	162	158	199	19.5	363	163	159	200
	16000	-7	16.8	324	147	156	203	17.9	335	152	158	205	18.9	345	157	158	206	18.9	346	157	155	202	19.5	351	158	156	203
	18000	-11	16.4	308	140	152	205	17.6	320	145	154	207	18.8	332	151	154	209	18.8	332	151	152	205	19.4	338	153	153	206
	20000	-15	16.0	293	133	148	206	17.3	306	139	151	209	18.7	319	145	151	212	18.7	320	145	149	207	19.3	326	148	150	209
	22000	-19	15.6	278	126	145	208	17.1	293	133	147	212	18.5	308	139	147	215	18.5	308	140	146	209	19.3	315	143	147	211
	24000	-23	15.2	265	120	141	209	16.8	281	127	144	214	18.4	297	135	144	218	18.4	297	135	142	212	19.2	305	138	144	214
	26000	-27	14.8	252	114	137	211	16.5	270	122	140	216	18.3	287	130	140	221	18.3	288	131	139	214	19.1	296	134	140	216
	28000	-31	14.4	241	109	133	212	16.3	260	118	137	219	18.1	279	126	137	224	18.1	279	127	135	215	19.1	289	131	137	218
	30000	-34	14.0	230	104	129	213	16.0	250	114	133	220	18.0	271	123	133	226	18.0	272	123	131	217	19.0	283	128	133	220

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Figure 5-3-4-2: Performance - Long Range Cruise (Sheet 3 of 4)

LONG RANGE CRUISE

			@ 7000 lb (3175 kg)					@ 8000 lb (3629 kg)					@ 9000 lb (4082 kg)					@ 10000 lb (4536 kg)					@ 10400 lb (4717 kg)				
ISA (°C)	Altitude (ft)	SAT (°C)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	IAS (kt)	TAS (kt)
20	0	35	20.0	474	215	182	188	20.0	474	215	181	186	20.0	475	215	181	184	20.0	475	215	176	181	20.0	475	214	175	180
	2000	31	19.6	452	205	179	191	19.7	454	206	178	189	19.9	455	206	178	187	19.9	455	207	173	184	19.9	456	205	172	183
	4000	27	19.2	431	195	176	193	19.5	434	197	175	192	19.7	437	198	175	190	19.7	437	198	171	187	19.9	439	197	170	186
	6000	23	18.8	411	186	173	195	19.2	415	188	172	194	19.6	420	190	172	193	19.6	420	190	168	190	19.8	422	190	168	189
	8000	19	18.4	391	177	169	197	18.9	397	180	169	197	19.5	402	183	169	196	19.5	402	183	165	193	19.7	405	182	165	192
	10000	15	18.0	372	169	166	199	18.7	379	172	166	199	19.3	386	175	166	199	19.3	386	175	163	195	19.7	390	176	163	195
	12000	11	17.6	357	162	162	201	18.4	365	166	163	202	19.2	373	169	163	202	19.2	373	169	160	198	19.6	377	170	160	198
	14000	7	17.2	343	156	159	203	18.1	352	160	159	204	19.1	362	164	159	205	19.1	362	164	157	201	19.5	367	165	157	201
	16000	3	16.8	328	149	155	205	17.9	339	154	156	206	18.9	349	158	156	208	18.9	350	159	154	203	19.5	355	160	155	204
	18000	-1	16.4	312	141	151	206	17.6	324	147	153	209	18.8	336	152	153	211	18.8	336	152	151	206	19.4	342	154	151	207
	20000	-5	16.0	296	134	147	208	17.3	310	140	149	211	18.7	323	147	149	214	18.7	324	147	147	208	19.3	330	149	148	210
	22000	-9	15.6	282	128	143	210	17.1	296	134	146	213	18.5	311	141	146	217	18.5	312	141	144	211	19.3	319	144	145	212
	24000	-13	15.2	268	122	139	211	16.8	284	129	142	216	18.4	300	136	142	220	18.4	301	136	140	213	19.2	309	140	142	215
	26000	-17	14.8	255	116	135	212	16.5	273	124	139	218	18.3	291	132	139	223	18.3	291	132	137	215	19.1	300	136	138	217
	28000	-21	14.4	243	110	131	214	16.3	263	119	135	220	18.1	282	128	135	225	18.1	283	128	133	216	19.1	292	132	135	219
	30000	-24	14.0	233	106	127	214	16.0	253	115	131	222	18.0	274	124	131	228	18.0	275	125	129	217	19.0	286	129	131	221
30	0	45	20.0	479	217	181	190	20.0	479	217	179	188	20.0	480	217	179	186	20.0	480	218	174	183	20.0	480	216	173	182
	2000	41	19.6	457	207	178	192	19.7	458	208	177	191	19.9	460	209	177	189	19.9	460	209	172	186	19.9	461	208	171	185
	4000	37	19.2	436	198	175	195	19.5	439	199	174	194	19.7	442	200	174	192	19.7	442	200	169	189	19.9	443	200	169	188
	6000	33	18.8	415	188	172	197	19.2	420	190	171	196	19.6	424	192	171	195	19.6	424	192	167	192	19.8	426	193	166	191
	8000	29	18.4	395	179	168	199	18.9	401	182	168	199	19.5	407	185	168	198	19.5	407	185	164	194	19.7	410	186	164	194
	10000	25	18.0	376	171	165	201	18.7	383	174	164	201	19.3	390	177	164	201	19.3	390	177	161	197	19.7	394	178	161	197
	12000	21	17.6	361	164	161	203	18.4	369	167	161	203	19.2	377	171	161	204	19.2	378	171	158	199	19.6	382	173	158	200
	14000	17	17.2	347	157	157	205	18.1	356	162	158	206	19.1	366	166	158	207	19.1	366	166	155	202	19.5	371	168	156	203
	16000	13	16.8	332	150	153	206	17.9	342	155	155	208	18.9	353	160	155	209	18.9	353	160	152	205	19.5	359	162	153	206
	18000	9	16.4	315	143	149	208	17.6	327	149	151	211	18.8	339	154	151	212	18.8	340	154	149	207	19.4	346	156	150	208
	20000	5	16.0	300	136	145	210	17.3	313	142	148	213	18.7	327	148	148	215	18.7	327	148	145	210	19.3	334	151	146	211
	22000	1	15.6	285	129	142	211	17.1	300	136	144	215	18.5	315	143	144	219	18.5	315	143	142	212	19.3	323	146	143	214
	24000	-3	15.2	271	123	138	213	16.8	287	130	141	218	18.4	303	138	141	222	18.4	304	138	138	214	19.2	312	141	140	216
	26000	-7	14.8	258	117	134	214	16.5	276	125	137	220	18.3	294	133	137	224	18.3	295	134	135	216	19.1	303	137	136	218
	28000	-11	14.4	246	112	129	215	16.3	266	120	133	222	18.1	285	129	133	227	18.1	286	130	130	217	19.1	296	134	132	220
	30000	-14	14.0	235	107	125	215	16.0	256	116	129	222	18.0	277	126	129	229	18.0	278	126	125	216	19.0	289	130	128	220

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Figure 5-3-4-2: Performance - Long Range Cruise (Sheet 4 of 4)

MAXIMUM ENDURANCE CRUISE

NOTE: INDICATED AIRSPEED IS 115 KTS CONSTANT

ISA (ºC)	Altitude (ft)	SAT (ºC)	TAS (kt)	@ 7000 lb (3175 kg) Torque (psi)	@ 7000 lb Fuel flow (lb/h)	@ 7000 lb Fuel flow (kg/h)	@ 8000 lb (3629 kg) Torque (psi)	@ 8000 lb Fuel flow (lb/h)	@ 8000 lb Fuel flow (kg/h)	@ 9000 lb (4082 kg) Torque (psi)	@ 9000 lb Fuel flow (lb/h)	@ 9000 lb Fuel flow (kg/h)	@ 10000 lb (4536 kg) Torque (psi)	@ 10000 lb Fuel flow (lb/h)	@ 10000 lb Fuel flow (kg/h)	@ 10400 lb (4717 kg) Torque (psi)	@ 10400 lb Fuel flow (lb/h)	@ 10400 lb Fuel flow (kg/h)
-40	0	-25	107	9.4	324	147	9.9	329	149	10.4	336	152	10.9	342	155	11.1	345	157
	2000	-29	110	9.3	307	139	9.7	313	142	10.3	319	145	10.9	327	148	11.1	330	150
	4000	-33	113	9.2	292	132	9.6	297	135	10.2	305	138	10.9	313	142	11.1	316	143
	6000	-37	117	9.0	277	126	9.6	284	129	10.2	292	132	10.9	300	136	11.1	302	137
	8000	-41	120	9.0	265	120	9.6	272	123	10.2	279	127	10.9	287	130	11.1	290	131
	10000	-45	124	9.0	254	115	9.6	260	118	10.2	268	121	10.9	275	125	11.2	278	126
	12000	-49	127	9.0	245	111	9.6	251	114	10.2	259	117	11.0	267	121	11.3	270	122
	14000	-53	131	9.0	236	107	9.6	243	110	10.3	251	114	11.1	260	118	11.4	263	119
	16000	-57	135	9.0	228	103	9.7	235	106	10.5	243	110	11.3	252	114	11.7	255	116
	18000	-61	140	9.1	219	99	9.8	227	103	10.7	235	107	11.5	244	111	11.9	247	112
	20000	-65	144	9.2	212	96	10.0	219	99	10.9	228	103	11.8	237	107	12.1	241	109
	22000	-69	149	9.4	204	93	10.2	212	96	11.1	221	100	12.1	231	105	12.4	234	106
	24000	-73	154	9.6	198	90	10.4	205	93	11.4	215	98	12.4	225	102	12.8	229	104
	26000	-77	159	9.8	192	87	10.6	200	91	11.6	210	95	12.7	221	100	13.1	225	102
	28000	-81	164	10.0	187	85	10.9	196	89	12.0	206	94	13.1	217	98	13.5	221	100
	30000	-84	170	10.2	183	83	11.2	192	87	12.4	204	92	13.5	215	98	14.0	220	100
-30	0	-15	109	9.4	327	148	9.8	332	151	10.3	339	154	10.9	346	157	11.2	350	159
	2000	-19	112	9.3	310	141	9.7	316	143	10.3	323	147	10.9	331	150	11.2	334	152
	4000	-23	116	9.1	295	134	9.6	301	137	10.3	309	140	10.9	317	144	11.2	320	145
	6000	-27	119	9.0	281	128	9.6	288	131	10.3	296	134	10.9	304	138	11.2	306	139
	8000	-31	123	9.0	269	122	9.6	275	125	10.3	283	128	10.9	291	132	11.2	293	133
	10000	-35	126	9.0	257	117	9.6	263	119	10.2	271	123	10.9	279	126	11.2	282	128
	12000	-39	130	9.0	248	112	9.6	255	115	10.3	262	119	11.1	271	123	11.4	275	125
	14000	-43	134	9.0	240	109	9.6	247	112	10.4	255	116	11.3	264	120	11.6	268	122
	16000	-47	138	9.1	232	105	9.8	239	108	10.6	248	112	11.5	257	117	11.8	261	118
	18000	-51	143	9.2	223	101	9.9	231	105	10.8	240	109	11.7	249	113	12.1	253	115
	20000	-55	147	9.4	216	98	10.1	223	101	11.0	232	105	12.0	242	110	12.4	246	112
	22000	-59	152	9.5	208	94	10.3	216	98	11.3	226	103	12.3	236	107	12.7	240	109
	24000	-63	157	9.7	202	92	10.6	210	95	11.6	220	100	12.6	231	105	13.1	235	106
	26000	-67	163	9.9	196	89	10.8	205	93	11.9	216	98	13.0	226	103	13.4	231	105
	28000	-71	168	10.2	192	87	11.1	201	91	12.3	212	96	13.4	223	101	13.9	228	103
	30000	-74	174	10.4	187	85	11.4	197	89	12.6	209	95	13.8	221	100	14.3	225	102

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Figure 5-3-4-3: Performance - Maximum Endurance Cruise (Sheet 1 of 4)

MAXIMUM ENDURANCE CRUISE

NOTE: INDICATED AIRSPEED IS 115 KTS CONSTANT

				@ 7000 lb (3175 kg)			@ 8000 lb (3629 kg)			@ 9000 lb (4082 kg)			@ 10000 lb (4536 kg)			@ 10400 lb (4717 kg)		
ISA (ºC)	Altitude (ft)	SAT (ºC)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)
-20	0	-5	111	9.3	329	149	9.8	335	152	10.3	342	155	11.0	350	159	11.2	353	160
	2000	-9	114	9.2	313	142	9.7	319	145	10.3	327	148	11.0	335	152	11.2	338	153
	4000	-13	118	9.1	298	135	9.7	305	138	10.3	313	142	11.0	321	146	11.2	324	147
	6000	-17	121	9.1	284	129	9.6	291	132	10.3	299	136	10.9	307	139	11.2	310	141
	8000	-21	125	9.0	272	123	9.6	278	126	10.3	286	130	10.9	294	133	11.2	297	135
	10000	-25	129	9.0	260	118	9.6	267	121	10.3	275	125	11.1	284	129	11.4	287	130
	12000	-29	133	9.0	251	114	9.6	258	117	10.4	267	121	11.2	276	125	11.6	280	127
	14000	-33	137	9.1	243	110	9.7	251	114	10.6	260	118	11.4	269	122	11.8	273	124
	16000	-37	141	9.2	235	107	9.9	243	110	10.8	252	114	11.7	262	119	12.0	266	120
	18000	-41	146	9.3	227	103	10.1	235	107	11.0	244	111	11.9	254	115	12.3	258	117
	20000	-45	151	9.5	219	100	10.3	227	103	11.3	237	108	12.2	247	112	12.6	251	114
	22000	-49	156	9.7	212	96	10.5	221	100	11.5	231	105	12.6	241	109	13.0	246	111
	24000	-53	161	9.9	206	93	10.8	215	97	11.8	225	102	12.9	236	107	13.4	240	109
	26000	-57	167	10.1	201	91	11.1	210	95	12.2	221	100	13.3	232	105	13.8	237	107
	28000	-61	172	10.4	196	89	11.4	206	93	12.6	217	99	13.8	229	104	14.2	234	106
	30000	-64	178	10.7	192	87	11.7	202	92	13.0	215	97	14.2	227	103	14.7	232	105
-10	0	5	113	9.3	332	150	9.7	337	153	10.4	346	157	11.0	354	161	11.2	357	162
	2000	1	117	9.2	315	143	9.7	322	146	10.4	331	150	11.0	339	154	11.3	342	155
	4000	-3	120	9.1	301	136	9.7	308	140	10.3	316	143	11.0	324	147	11.2	327	148
	6000	-7	124	9.1	287	130	9.7	294	133	10.3	302	137	11.0	310	141	11.2	313	142
	8000	-11	127	9.0	275	125	9.6	282	128	10.3	290	131	11.0	298	135	11.4	302	137
	10000	-15	131	9.0	263	119	9.6	270	122	10.4	279	126	11.2	288	131	11.5	292	132
	12000	-19	136	9.1	254	115	9.7	262	119	10.6	271	123	11.4	281	127	11.7	285	129
	14000	-23	140	9.2	247	112	9.9	255	116	10.7	264	120	11.6	274	124	12.0	278	126
	16000	-27	144	9.3	239	108	10.0	247	112	10.9	257	116	11.9	267	121	12.2	271	123
	18000	-31	149	9.4	231	105	10.2	239	108	11.2	249	113	12.2	259	118	12.6	263	119
	20000	-35	154	9.6	223	101	10.4	232	105	11.5	242	110	12.5	253	115	12.9	257	116
	22000	-39	159	9.8	216	98	10.7	225	102	11.8	236	107	12.8	247	112	13.3	251	114
	24000	-43	165	10.1	210	95	11.0	219	99	12.1	231	105	13.2	242	110	13.7	246	112
	26000	-47	170	10.3	205	93	11.3	215	97	12.5	226	103	13.7	238	108	14.1	242	110
	28000	-51	176	10.6	201	91	11.6	211	96	12.9	223	101	14.1	235	107	14.6	240	109
	30000	-54	183	11.0	197	89	12.0	207	94	13.3	220	100	14.6	233	106	15.2	239	108

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Figure 5-3-4-3: Performance - Maximum Endurance Cruise (Sheet 2 of 4)

MAXIMUM ENDURANCE CRUISE

NOTE: INDICATED AIRSPEED IS 115 KTS CONSTANT

				@ 7000 lb (3175 kg)			@ 8000 lb (3629 kg)			@ 9000 lb (4082 kg)			@ 10000 lb (4536 kg)			@ 10400 lb (4717 kg)		
ISA (ºC)	Altitude (ft)	SAT (ºC)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)
0	0	15	115	9.2	333	151	9.8	340	154	10.4	348	158	11.0	357	162	11.3	360	163
	2000	11	119	9.2	318	144	9.7	325	147	10.4	333	151	11.0	342	155	11.3	345	156
	4000	7	122	9.1	303	138	9.7	310	141	10.4	319	145	11.0	327	148	11.2	330	150
	6000	3	126	9.1	290	131	9.7	297	135	10.3	305	138	11.0	313	142	11.3	317	144
	8000	-1	130	9.1	277	126	9.7	284	129	10.4	293	133	11.2	302	137	11.5	306	139
	10000	-5	134	9.1	265	120	9.7	272	124	10.5	282	128	11.4	292	132	11.7	296	134
	12000	-9	138	9.2	257	117	9.9	266	120	10.7	275	125	11.6	285	129	11.9	289	131
	14000	-13	143	9.3	250	113	10.0	258	117	10.9	268	122	11.8	279	126	12.2	283	128
	16000	-17	147	9.4	242	110	10.2	251	114	11.1	261	118	12.1	272	123	12.5	276	125
	18000	-21	152	9.6	234	106	10.4	243	110	11.4	254	115	12.4	264	120	12.8	269	122
	20000	-25	157	9.8	227	103	10.6	235	107	11.7	246	112	12.7	257	117	13.2	261	119
	22000	-29	163	10.0	220	100	10.9	229	104	12.0	241	109	13.1	252	114	13.6	256	116
	24000	-33	168	10.3	214	97	11.2	224	101	12.4	235	107	13.5	247	112	14.0	252	114
	26000	-37	174	10.6	209	95	11.6	219	99	12.8	231	105	14.0	243	110	14.5	248	113
	28000	-41	180	10.9	205	93	11.9	215	98	13.2	228	103	14.5	241	109	15.0	246	112
	30000	-44	187	11.2	201	91	12.3	212	96	13.7	225	102	15.1	239	108	15.6	245	111
10	0	25	117	9.2	336	152	9.8	344	156	10.4	352	160	11.1	360	163	11.3	364	165
	2000	21	121	9.2	321	145	9.8	328	149	10.4	336	153	11.0	345	156	11.3	348	158
	4000	17	124	9.2	306	139	9.7	313	142	10.4	322	146	11.0	330	150	11.3	334	151
	6000	13	128	9.1	292	133	9.7	300	136	10.4	308	140	11.1	318	144	11.4	322	146
	8000	9	132	9.1	280	127	9.7	287	130	10.5	297	135	11.3	307	139	11.6	311	141
	10000	5	136	9.1	268	122	9.8	277	125	10.6	287	130	11.5	297	135	11.8	301	136
	12000	1	141	9.3	261	118	10.0	269	122	10.8	279	127	11.7	290	131	12.1	294	133
	14000	-3	145	9.4	254	115	10.1	262	119	11.0	273	124	12.0	284	129	12.4	288	131
	16000	-7	150	9.5	246	112	10.3	255	116	11.3	266	120	12.3	277	126	12.7	281	128
	18000	-11	155	9.7	238	108	10.6	247	112	11.6	258	117	12.6	270	122	13.0	274	124
	20000	-15	160	9.9	231	105	10.8	240	109	11.9	251	114	13.0	263	119	13.4	267	121
	22000	-19	166	10.2	224	102	11.1	234	106	12.2	245	111	13.4	257	117	13.9	262	119
	24000	-23	172	10.5	218	99	11.4	228	104	12.6	240	109	13.8	253	115	14.3	258	117
	26000	-27	178	10.8	214	97	11.8	224	102	13.1	236	107	14.3	249	113	14.9	254	115
	28000	-31	184	11.2	210	95	12.3	221	100	13.6	234	106	14.9	247	112	15.4	253	115
	30000	-34	191	11.6	207	94	12.7	218	99	14.1	232	105	15.5	246	112	16.1	252	114

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Figure 5-3-4-3: Performance - Maximum Endurance Cruise (Sheet 3 of 4)

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MAXIMUM ENDURANCE CRUISE

NOTE: INDICATED AIRSPEED IS 115 KTS CONSTANT

				@ 7000 lb (3175 kg)			@ 8000 lb (3629 kg)			@ 9000 lb (4082 kg)			@ 10000 lb (4536 kg)			@ 10400 lb (4717 kg)		
ISA (ºC)	Altitude (ft)	SAT (ºC)	TAS (kt)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)	Torque (psi)	Fuel flow (lb/h)	Fuel flow (kg/h)
20	0	35	119	9.2	340	154	9.8	347	157	10.4	356	161	11.1	364	165	11.3	367	167
	2000	31	123	9.2	324	147	9.7	331	150	10.4	340	154	11.0	348	158	11.3	351	159
	4000	27	127	9.1	309	140	9.7	316	143	10.4	325	147	11.1	334	152	11.4	338	153
	6000	23	130	9.1	295	134	9.7	303	137	10.4	312	142	11.2	323	146	11.6	327	148
	8000	19	135	9.2	283	128	9.8	291	132	10.6	301	137	11.4	312	141	11.8	316	143
	10000	15	139	9.2	272	123	9.9	281	127	10.8	291	132	11.6	302	137	12.0	306	139
	12000	11	143	9.4	265	120	10.1	273	124	11.0	284	129	11.9	295	134	12.3	299	136
	14000	7	148	9.5	258	117	10.2	266	121	11.2	278	126	12.2	289	131	12.6	294	133
	16000	3	153	9.7	250	113	10.5	259	118	11.5	271	123	12.5	282	128	12.9	287	130
	18000	-1	158	9.9	242	110	10.7	252	114	11.8	263	119	12.9	275	125	13.3	280	127
	20000	-5	163	10.1	235	107	11.0	245	111	12.1	256	116	13.2	268	122	13.7	273	124
	22000	-9	169	10.4	229	104	11.4	239	108	12.5	251	114	13.7	263	119	14.2	268	122
	24000	-13	175	10.7	224	101	11.7	234	106	13.0	246	112	14.2	259	118	14.7	264	120
	26000	-17	181	11.1	219	99	12.1	230	104	13.4	243	110	14.8	256	116	15.3	261	119
	28000	-21	188	11.5	215	98	12.6	227	103	14.0	240	109	15.3	254	115	15.9	260	118
	30000	-24	195	11.9	213	96	13.1	224	102	14.5	239	108	15.9	254	115	16.5	260	118
30	0	45	121	9.2	343	156	9.8	350	159	10.4	359	163	11.1	368	167	11.3	371	168
	2000	41	125	9.2	327	148	9.8	334	152	10.4	343	156	11.1	352	160	11.4	356	161
	4000	37	129	9.2	312	142	9.7	320	145	10.4	329	149	11.2	339	154	11.5	343	156
	6000	33	133	9.2	299	135	9.7	306	139	10.5	317	144	11.4	327	148	11.7	332	150
	8000	29	137	9.2	287	130	9.9	295	134	10.7	306	139	11.6	317	144	11.9	321	146
	10000	25	141	9.3	276	125	10.0	285	129	10.9	296	134	11.8	307	139	12.2	311	141
	12000	21	146	9.5	269	122	10.2	278	126	11.1	289	131	12.1	300	136	12.4	305	138
	14000	17	151	9.6	262	119	10.4	271	123	11.4	283	128	12.4	295	134	12.8	299	136
	16000	13	156	9.8	254	115	10.6	264	120	11.7	276	125	12.7	288	131	13.1	293	133
	18000	9	161	10.0	247	112	10.9	257	116	12.0	269	122	13.1	281	128	13.5	286	130
	20000	5	166	10.3	240	109	11.3	250	113	12.4	262	119	13.6	275	125	14.0	280	127
	22000	1	172	10.6	234	106	11.6	244	111	12.8	257	117	14.0	270	122	14.5	275	125
	24000	-3	178	11.0	229	104	12.0	240	109	13.3	253	115	14.6	266	121	15.1	271	123
	26000	-7	185	11.4	224	102	12.5	236	107	13.8	249	113	15.1	263	119	15.7	269	122
	28000	-11	192	11.8	221	100	12.9	233	106	14.3	247	112	15.7	262	119	16.3	268	121
	30000	-14	199	12.2	218	99	13.4	231	105	14.9	246	111	16.4	262	119	17.0	268	122

ICN-12-C-A150503-A-S4080-00299-A-001-01

Figure 5-3-4-3: Performance - Maximum Endurance Cruise (Sheet 4 of 4)

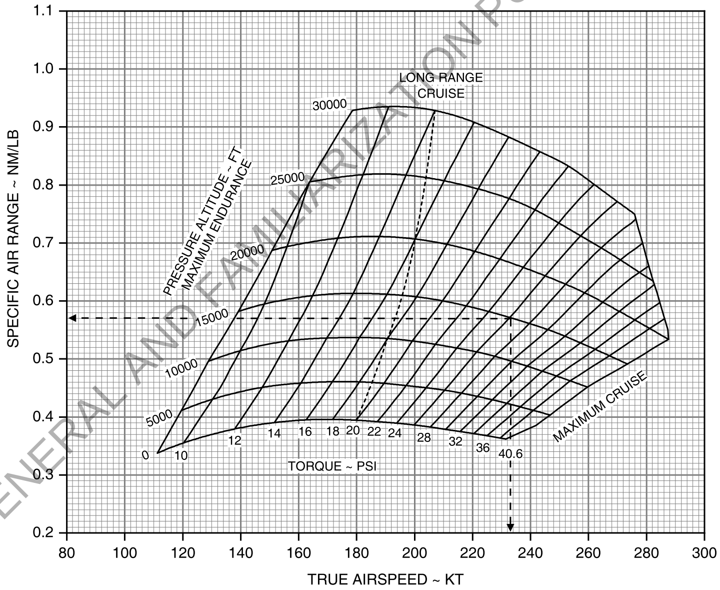
5-3-5 Performance Data - Specific Air Range

SPECIFIC AIR RANGE

7000 LB (3175 KG) - ISA-20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:		
PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	233	KT
SPECIFIC AIR RANGE	0.57	NM/LB



ICN-12-C-A150503-A-S4080-00300-A-001-01

Figure 5-3-5-1: Performance - Specific Air Range (7000 lb) (Sheet 1 of 3)

12-C-A15-60-0503-05A-030A-A

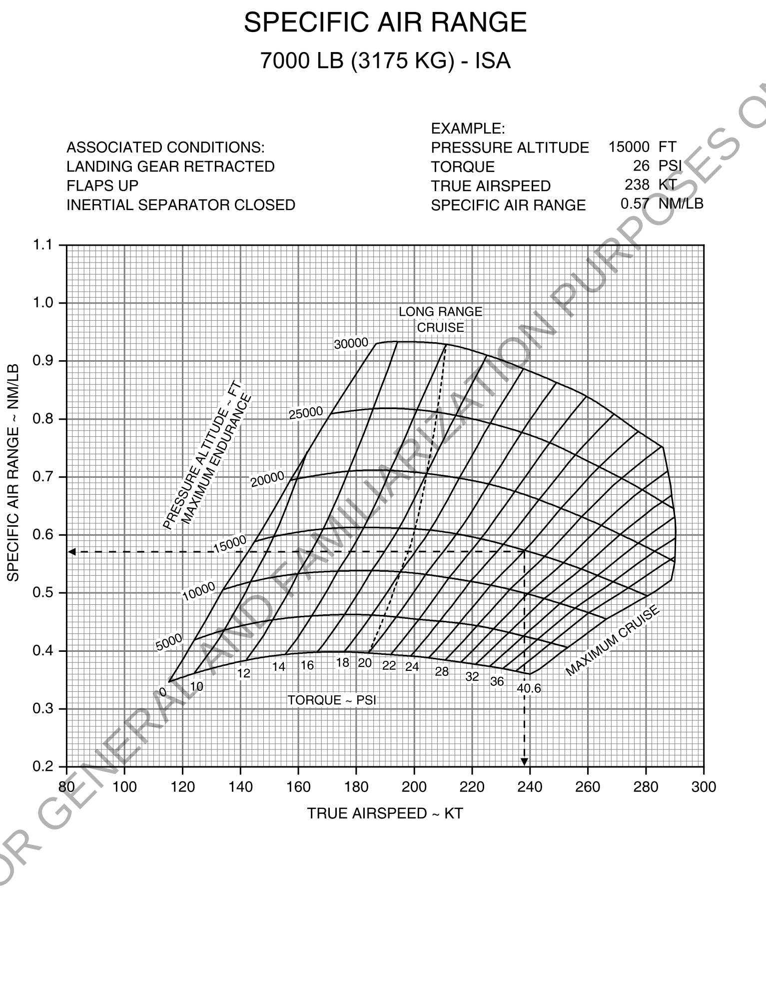


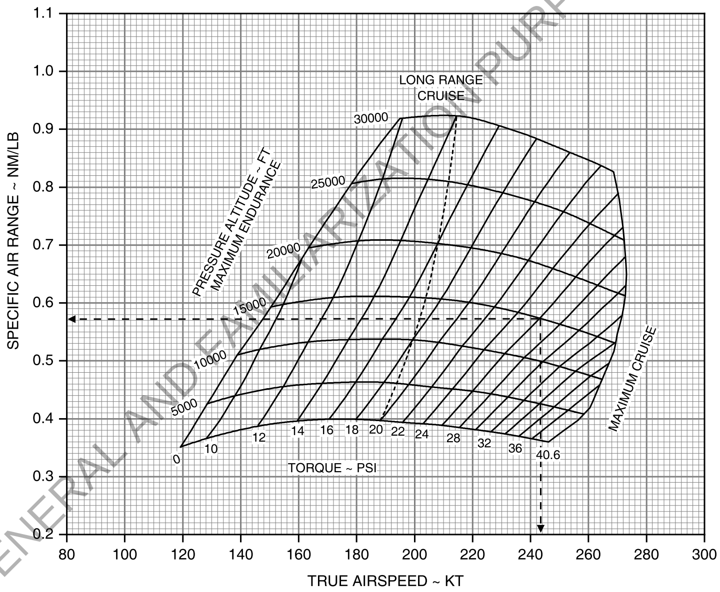
Figure 5-3-5-1: Performance - Specific Air Range (7000 lb) (Sheet 2 of 3)

SPECIFIC AIR RANGE

7000 LB (3175 KG) - ISA+20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:		
PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	243	KT
SPECIFIC AIR RANGE	0.57	NM/LB



ICN-12-C-A150503-A-S4080-00302-A-001-01

Figure 5-3-5-1: Performance - Specific Air Range (7000 lb) (Sheet 3 of 3)

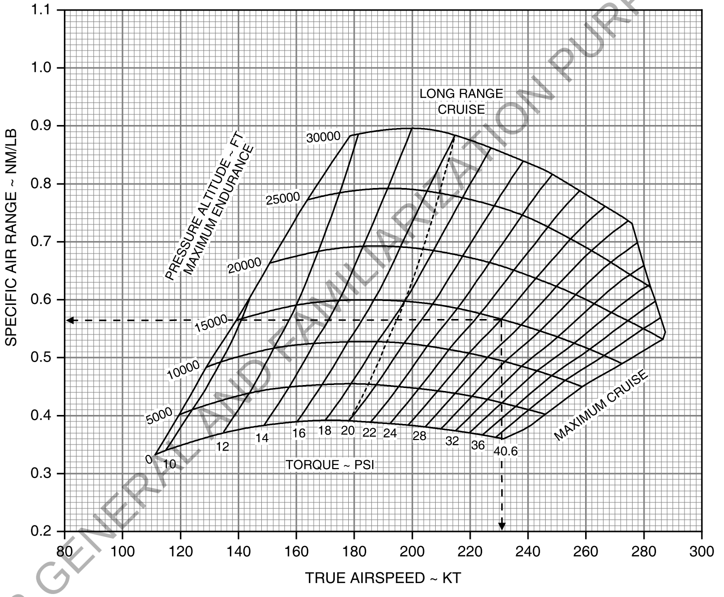
12-C-A15-60-0503-05A-030A-A

SPECIFIC AIR RANGE

8000 LB (3629 KG) - ISA-20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:		
PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	231	KT
SPECIFIC AIR RANGE	0.57	NM/LB



ICN-12-C-A150503-A-S4080-00303-A-001-01

Figure 5-3-5-2: Performance - Specific Air Range (8000 lb) (Sheet 1 of 3)

12-C-A15-60-0503-05A-030A-A

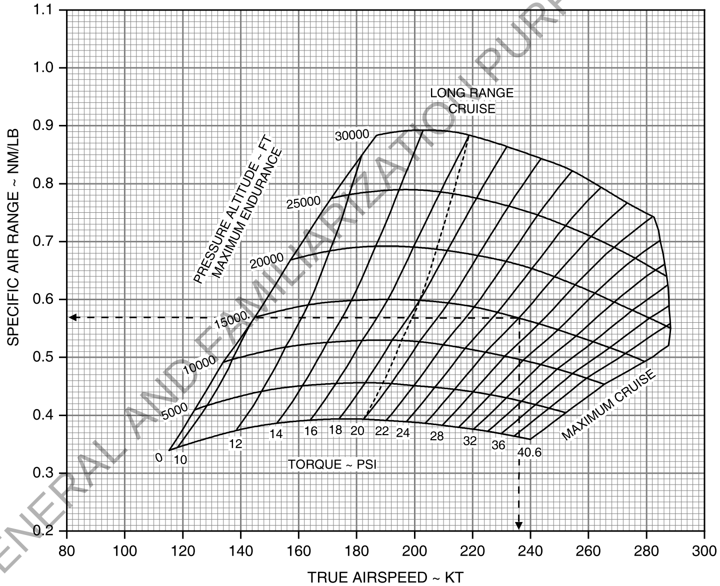
SPECIFIC AIR RANGE

8000 LB (3629 KG) - ISA

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:

PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	236	KT
SPECIFIC AIR RANGE	0.57	NM/LB



ICN-12-C-A150503-A-S4080-00304-A-001-01

Figure 5-3-5-2: Performance - Specific Air Range (8000 lb) (Sheet 2 of 3)

12-C-A15-60-0503-05A-030A-A

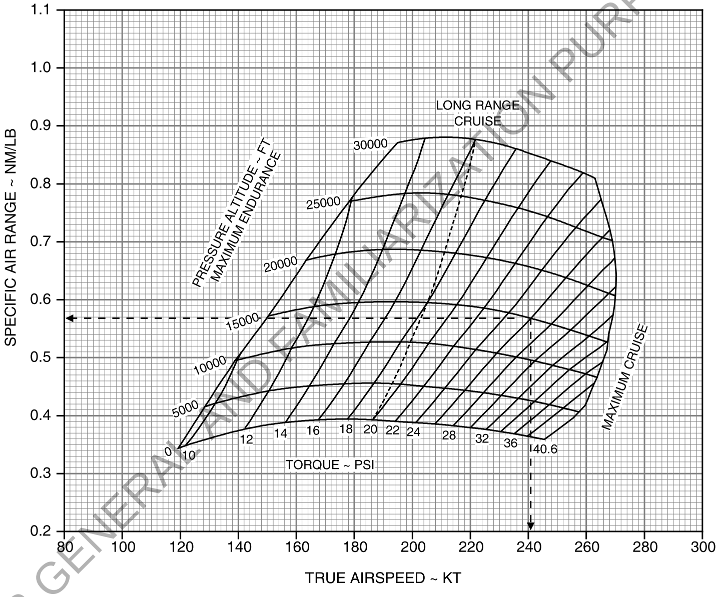
SPECIFIC AIR RANGE

8000 LB (3629 KG) - ISA+20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:

PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	241	KT
SPECIFIC AIR RANGE	0.57	NM/LB



ICN-12-C-A150503-A-S4080-00305-A-001-01

Figure 5-3-5-2: Performance - Specific Air Range (8000 lb) (Sheet 3 of 3)

12-C-A15-60-0503-05A-030A-A

SPECIFIC AIR RANGE

9000 LB (4082 KG) - ISA-20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:		
PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	229	KT
SPECIFIC AIR RANGE	0.56	NM/LB

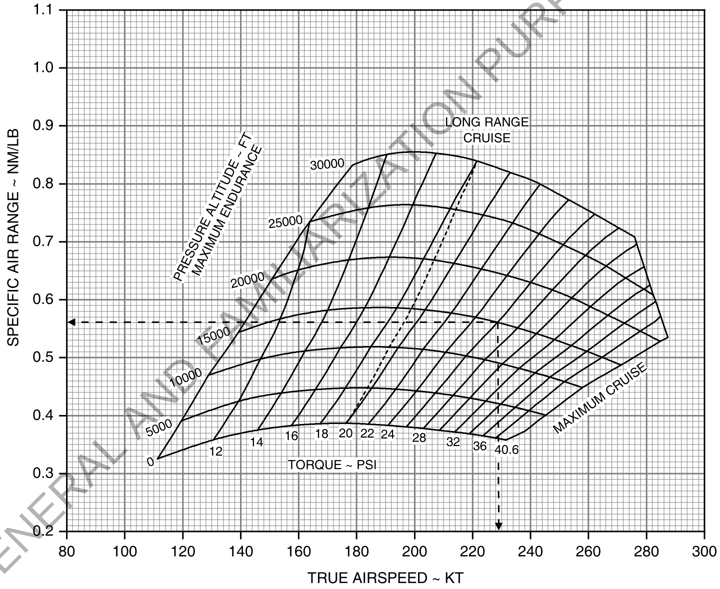


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Figure 5-3-5-3: Performance - Specific Air Range (9000 lb) (Sheet 1 of 3)

12-C-A15-60-0503-05A-030A-A

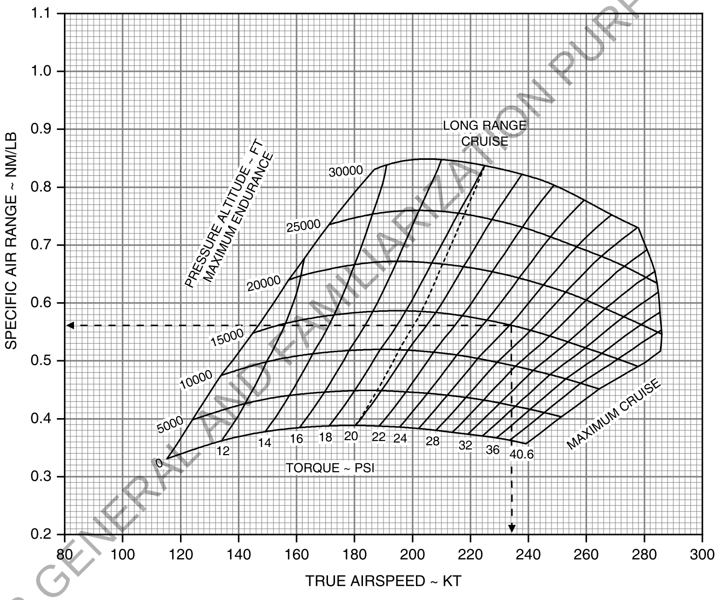
SPECIFIC AIR RANGE

9000 LB (4082 KG) - ISA

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:

PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	234	KT
SPECIFIC AIR RANGE	0.56	NM/LB



ICN-12-C-A150503-A-S4080-00307-A-001-01

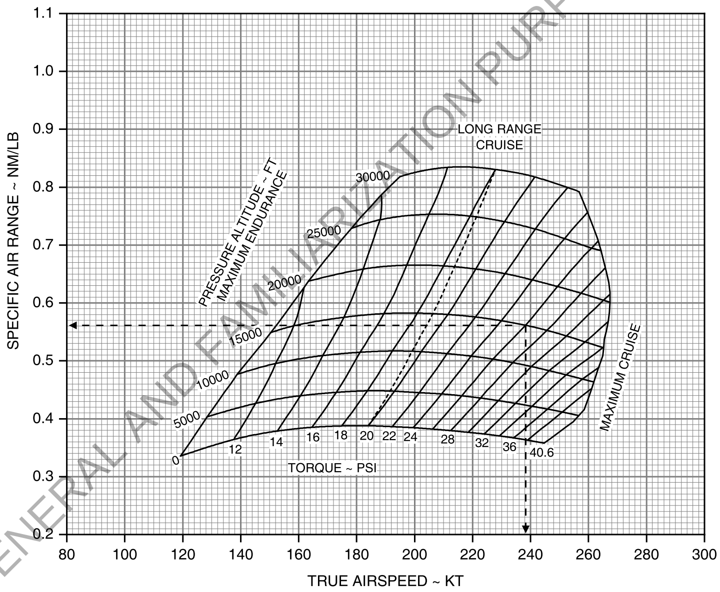
Figure 5-3-5-3: Performance - Specific Air Range (9000 lb) (Sheet 2 of 3)

SPECIFIC AIR RANGE

9000 LB (4082 KG) - ISA+20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:		
PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	238	KT
SPECIFIC AIR RANGE	0.56	NM/LB



ICN-12-C-A150503-A-S4080-00308-A-001-01

Figure 5-3-5-3: Performance - Specific Air Range (9000 lb) (Sheet 3 of 3)

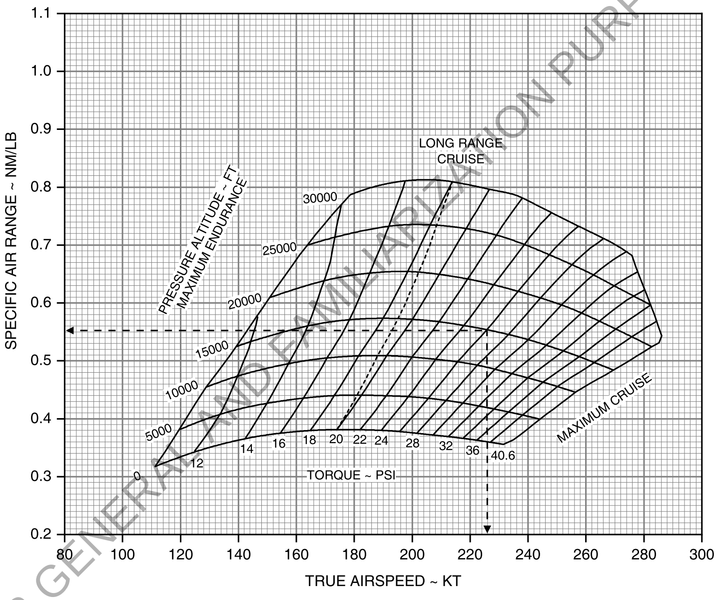
12-C-A15-60-0503-05A-030A-A

SPECIFIC AIR RANGE

10000 LB (4536 KG) - ISA-20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:		
PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	226	KT
SPECIFIC AIR RANGE	0.55	NM/LB



ICN-12-C-A150503-A-S4080-00309-A-001-01

Figure 5-3-5-4: Performance - Specific Air Range (10,000 lb) (Sheet 1 of 3)

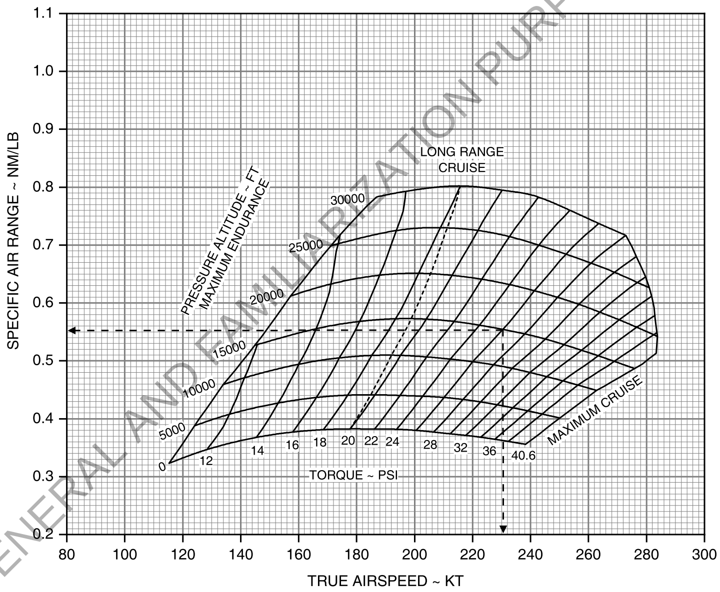
SPECIFIC AIR RANGE

10000 LB (4536 KG) - ISA

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:

PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	230	KT
SPECIFIC AIR RANGE	0.55	NM/LB



ICN-12-C-A150503-A-S4080-00310-A-001-01

Figure 5-3-5-4: Performance - Specific Air Range (10,000 lb) (Sheet 2 of 3)

12-C-A15-60-0503-05A-030A-A

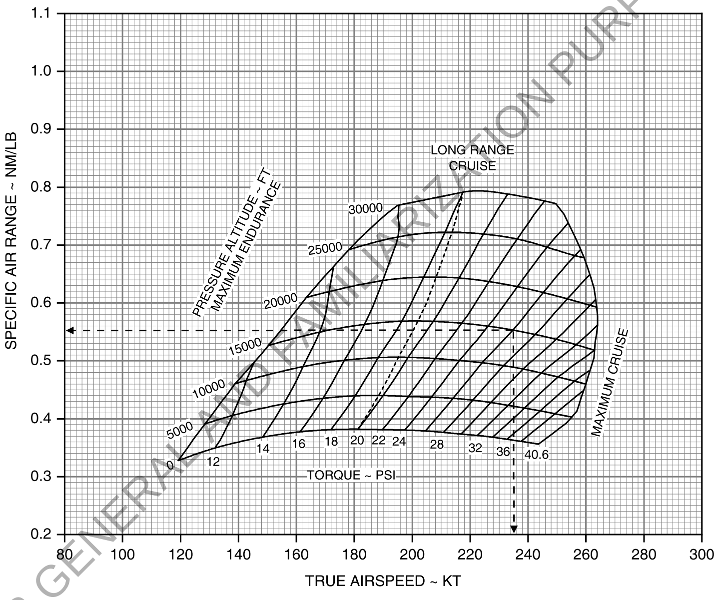
SPECIFIC AIR RANGE

10000 LB (4536 KG) - ISA+20°

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:

PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	235	KT
SPECIFIC AIR RANGE	0.55	NM/LB



ICN-12-C-A150503-A-S4080-00311-A-001-01

Figure 5-3-5-4: Performance - Specific Air Range (10,000 lb) (Sheet 3 of 3)

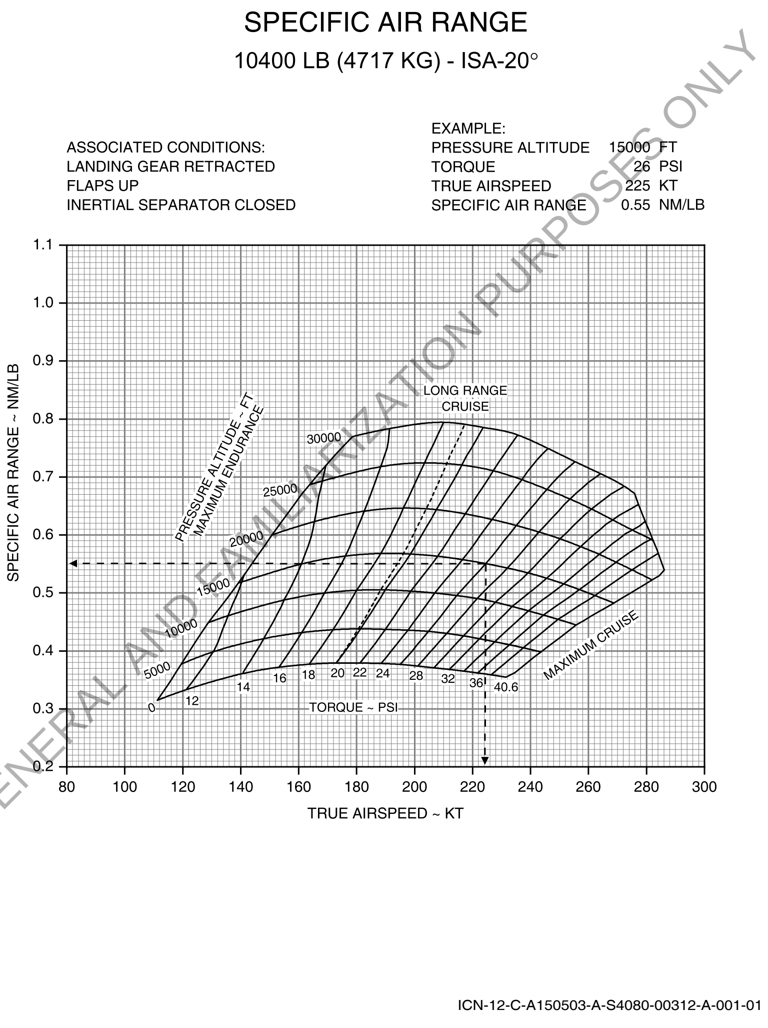


Figure 5-3-5-5: Performance - Specific Air Range (10,400 lb) (Sheet 1 of 3)

12-C-A15-60-0503-05A-030A-A

SPECIFIC AIR RANGE

10400 LB (4717 KG) - ISA

ASSOCIATED CONDITIONS:
LANDING GEAR RETRACTED
FLAPS UP
INERTIAL SEPARATOR CLOSED

EXAMPLE:

PRESSURE ALTITUDE	15000	FT
TORQUE	26	PSI
TRUE AIRSPEED	229	KT
SPECIFIC AIR RANGE	0.55	NM/LB

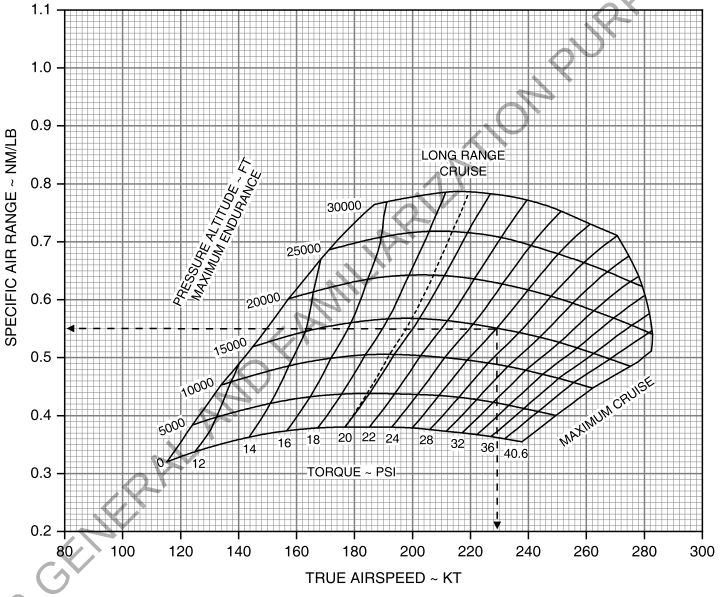


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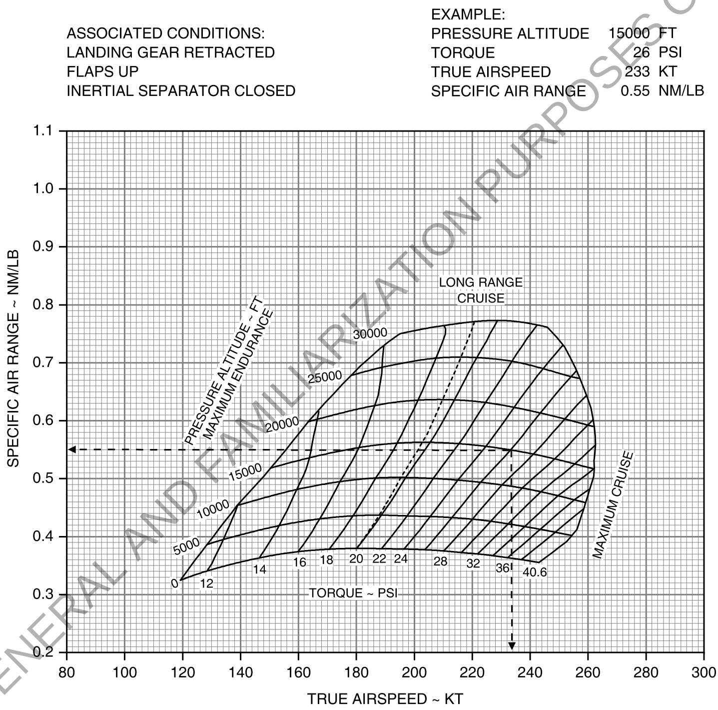
Figure 5-3-5-5: Performance - Specific Air Range (10,400 lb) (Sheet 2 of 3)

SPECIFIC AIR RANGE

10400 LB (4717 KG) - ISA+20°



ICN-12-C-A150503-A-S4080-00314-A-001-01

Figure 5-3-5-5: Performance - Specific Air Range (10,400 lb) (Sheet 3 of 3)

12-C-A15-60-0503-05A-030A-A

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5-3-6 Performance Data - Holding Time and Fuel

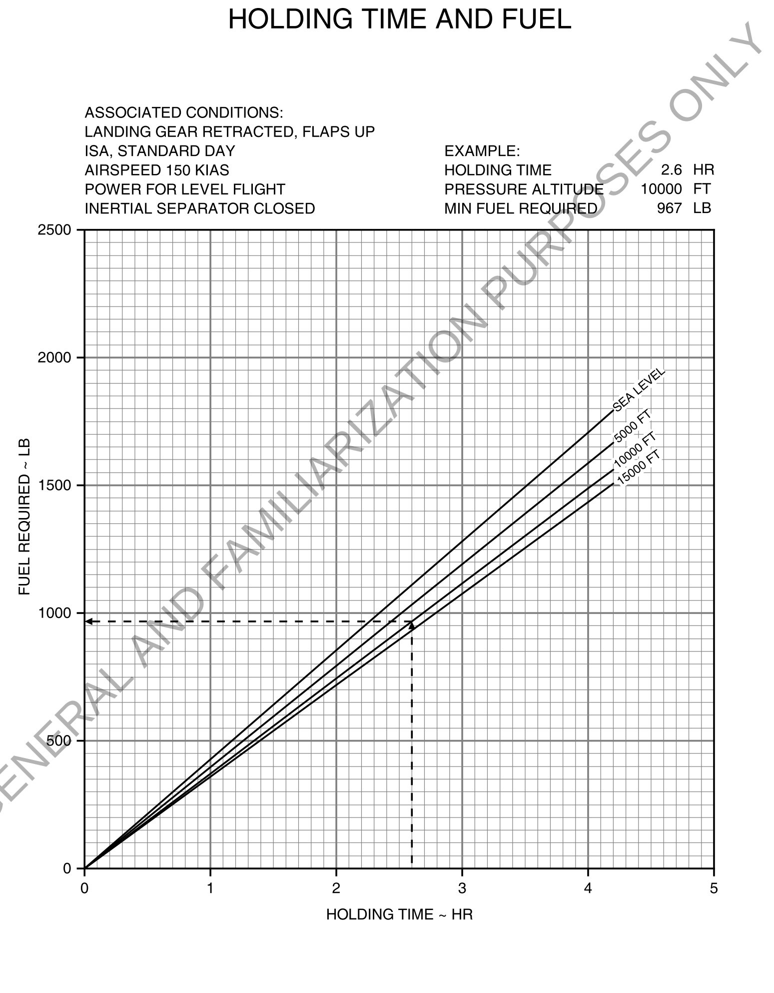

Figure 5-3-6-1: Performance - Holding Time and Fuel

12-C-A15-60-0503-06A-030A-A

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5-3-7 Performance Data - Descend Performance

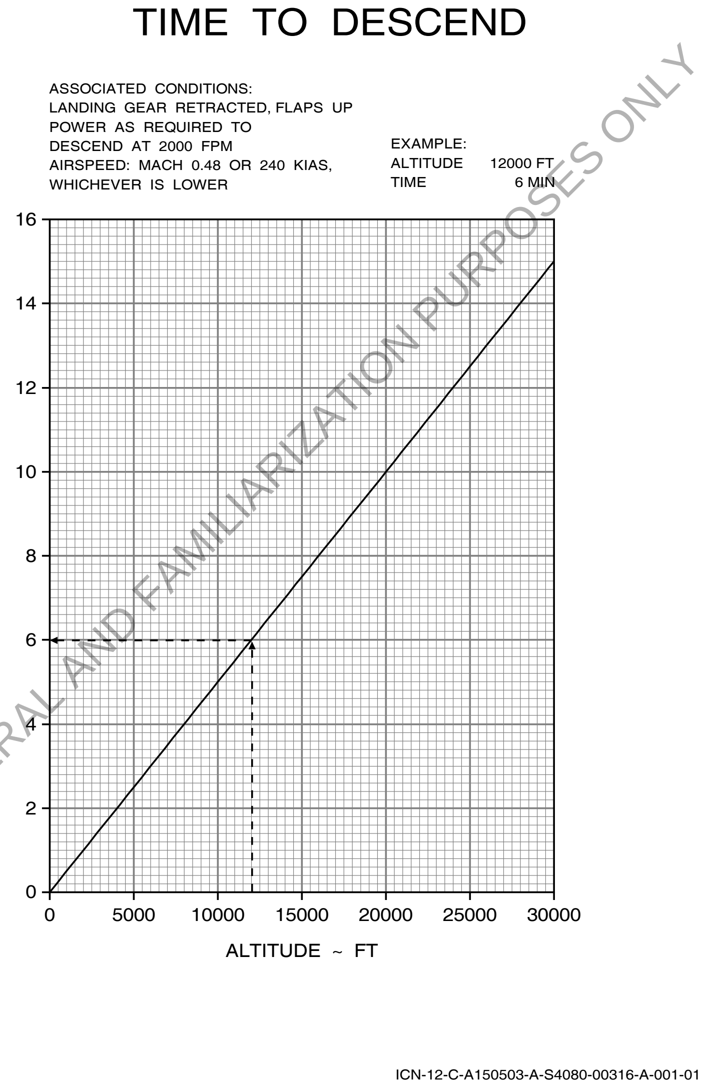
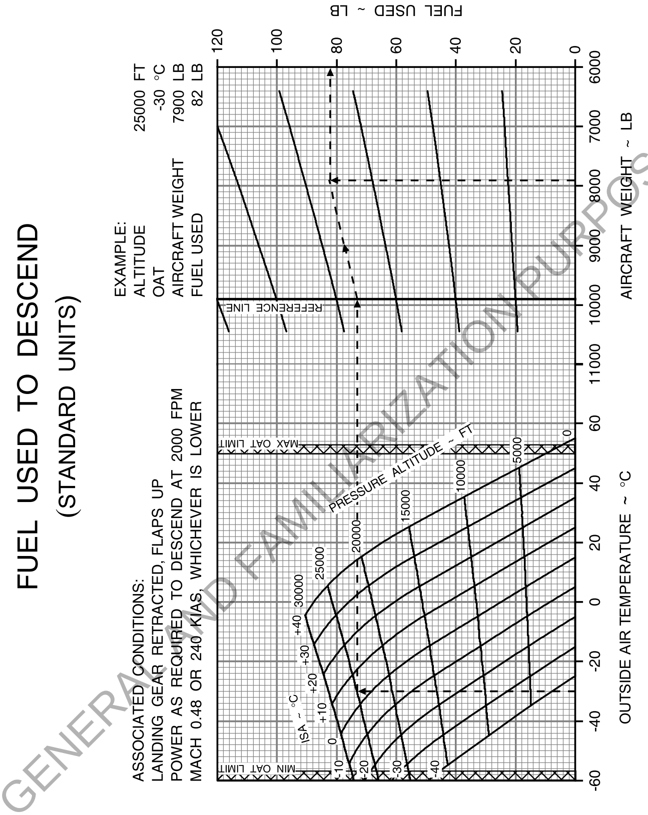


Figure 5-3-7-1: Performance - Time to Descend

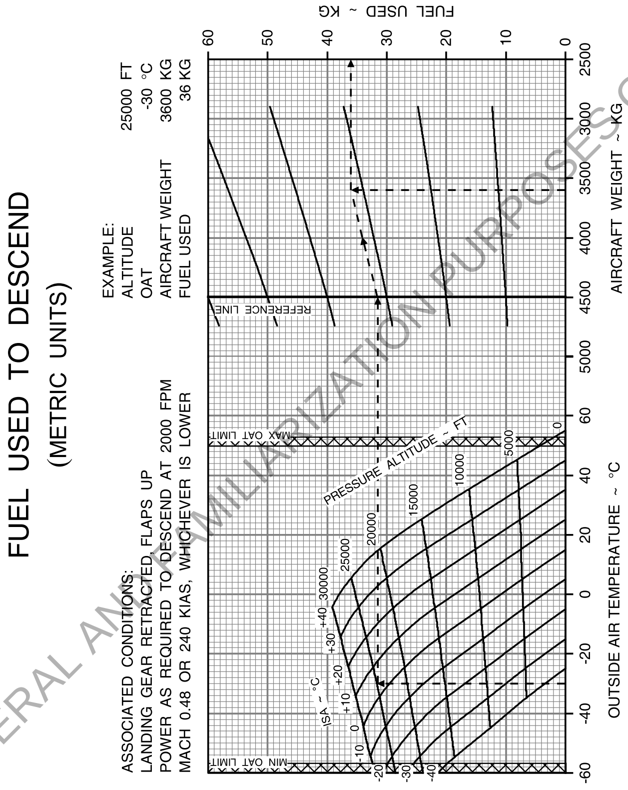
12-C-A15-60-0503-07A-030A-A



ICN-12-C-A150503-A-S4080-00317-A-001-01

Figure 5-3-7-2: Performance - Fuel Used To Descend (standard units)

12-C-A15-60-0503-07A-030A-A

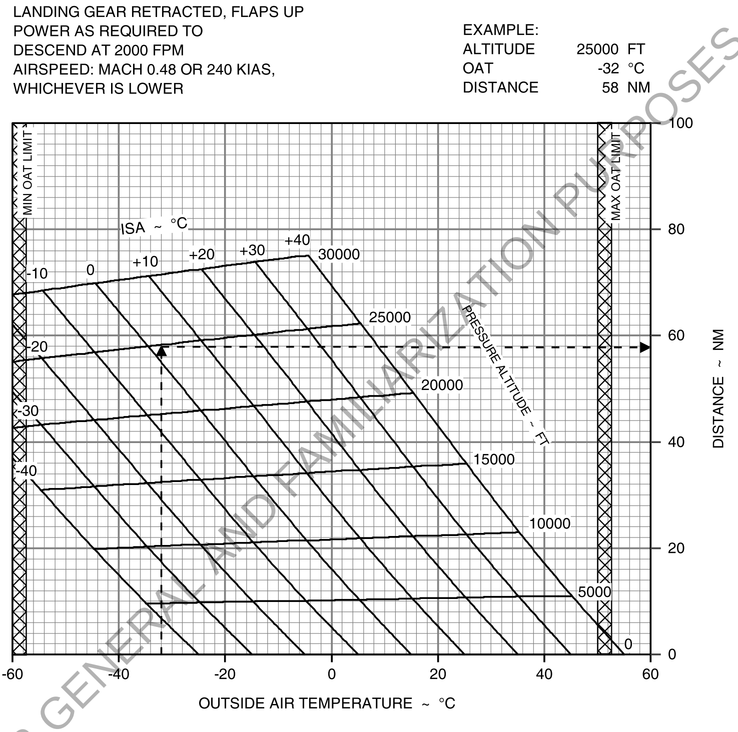


ICN-12-C-A150503-A-S4080-00318-A-001-01

Figure 5-3-7-3: Performance - Fuel Used To Descend (metric units)

12-C-A15-60-0503-07A-030A-A

DISTANCE TO DESCEND

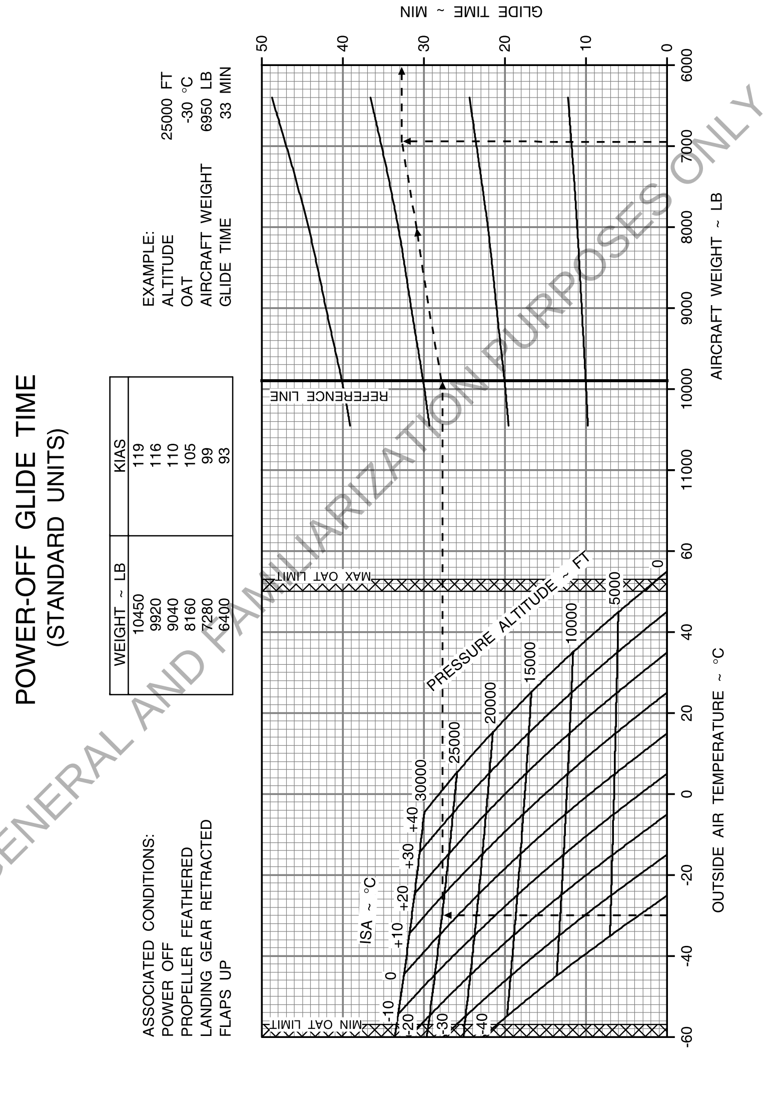


ICN-12-C-A150503-A-S4080-00319-A-001-01

Figure 5-3-7-4: Performance - Distance to Descend

12-C-A15-60-0503-07A-030A-A

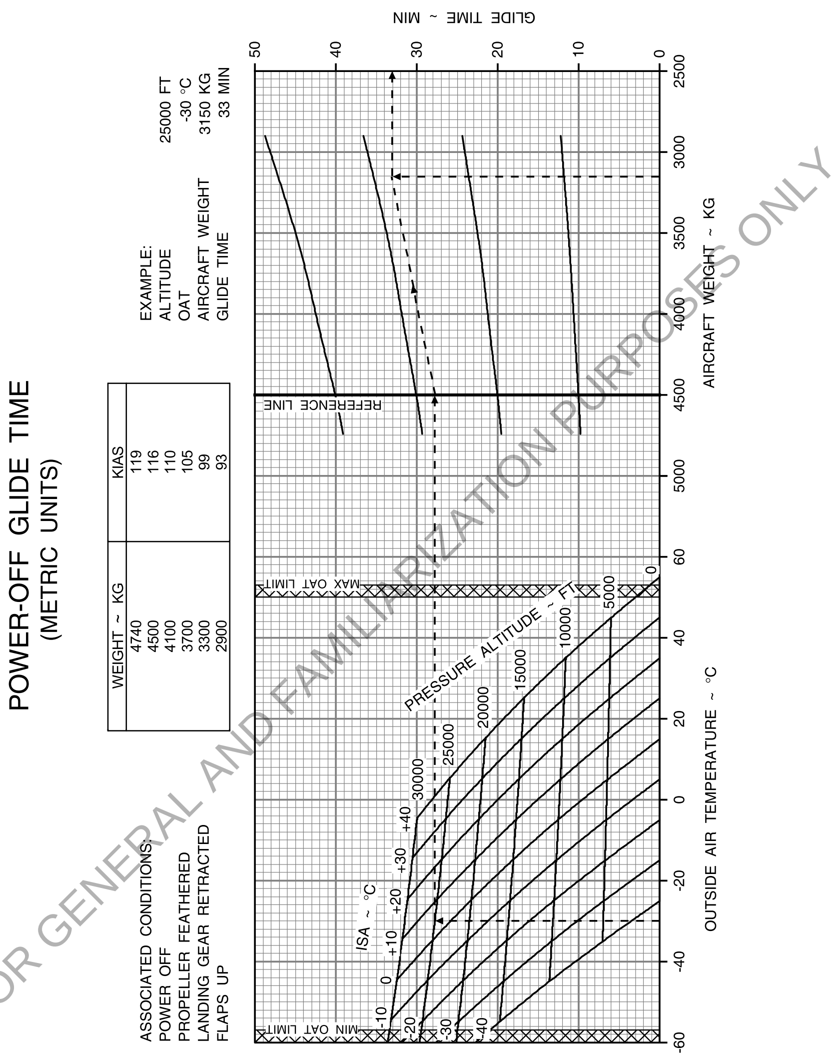
5-3-8 Performance Data - Power-off Glide Performance



ICN-12-C-A150503-A-S4080-00320-A-001-01

Figure 5-3-8-1: Performance - Power-off Glide Time (standard units)

12-C-A15-60-0503-08A-030A-A



ICN-12-C-A150503-A-S4080-00321-A-001-01

Figure 5-3-8-2: Performance - Power-off Glide Time (metric units)

12-C-A15-60-0503-08A-030A-A

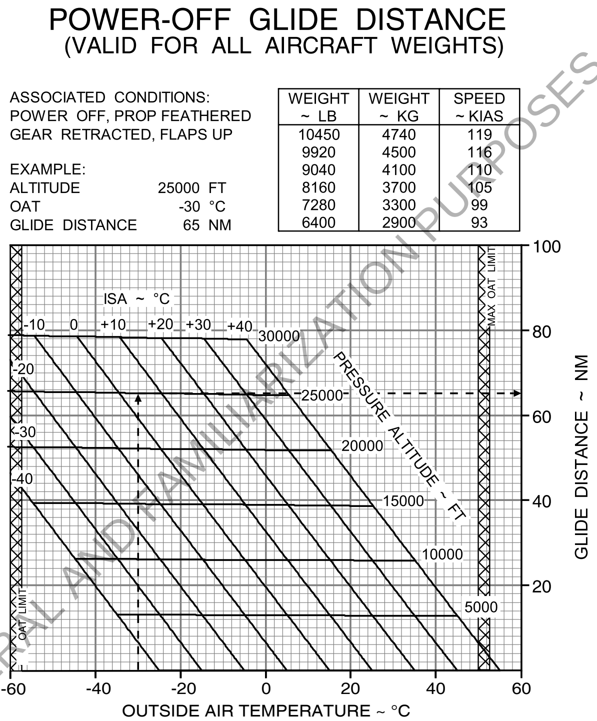


Figure 5-3-8-3: Performance - Power-off Glide Distance

12-C-A15-60-0503-08A-030A-A

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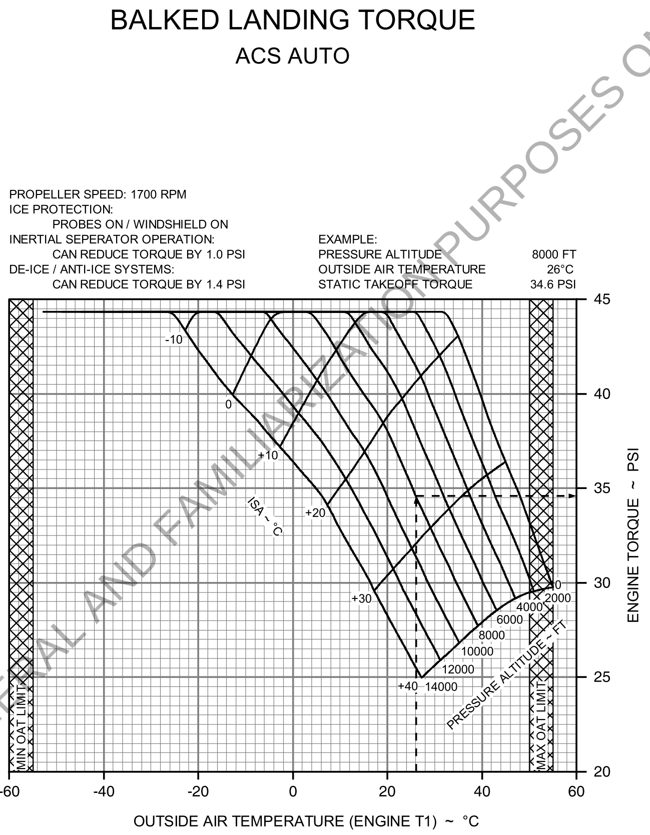
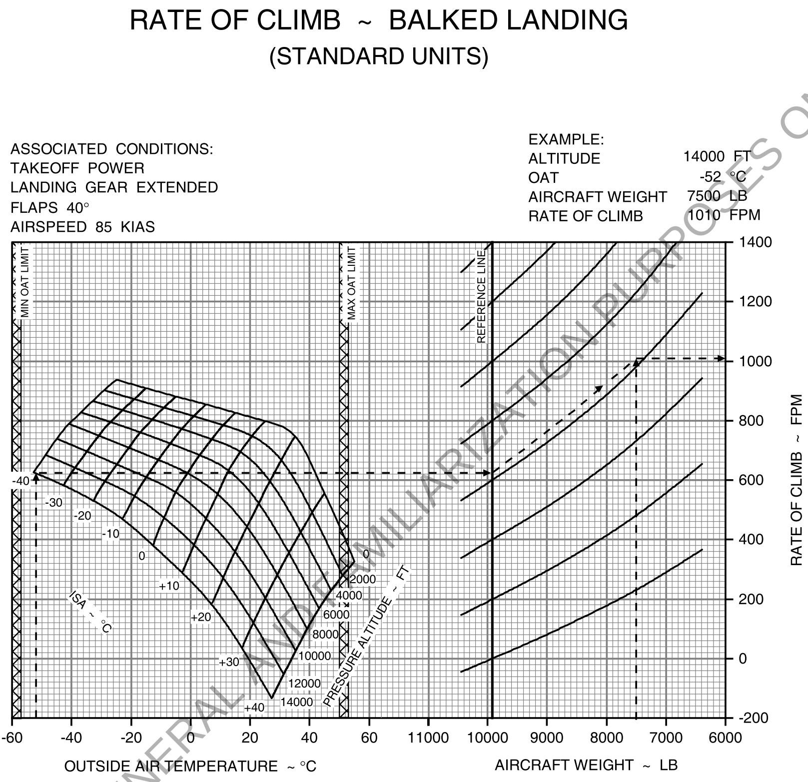
5-3-9 Performance Data - Balked Landing Performance



ICN-12-C-A150503-A-S4080-00323-A-001-01

Figure 5-3-9-1: Performance - Balked Landing Torque

12-C-A15-60-0503-09A-030A-A



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

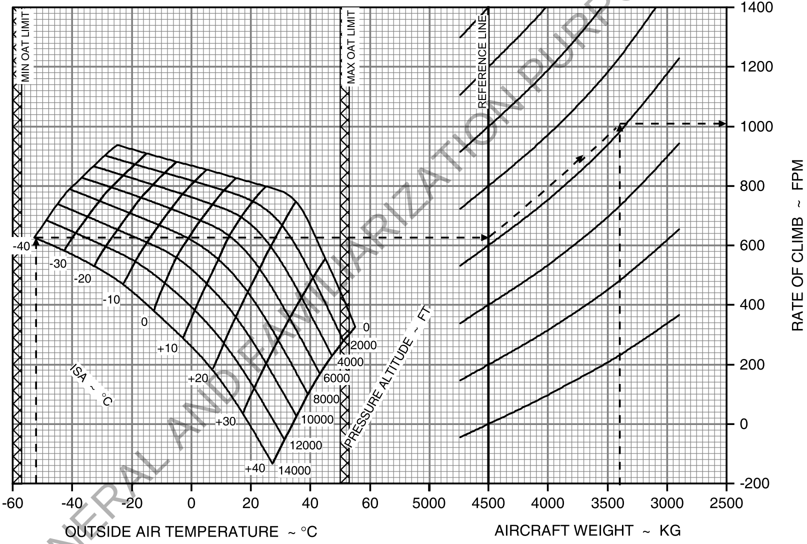
ICN-12-C-A150503-A-S4080-00324-A-001-01

Figure 5-3-9-2: Performance - Rate Of Climb - Balked Landing (standard units)

RATE OF CLIMB ~ BALKED LANDING
(METRIC UNITS)

ASSOCIATED CONDITIONS:
TAKEOFF POWER
LANDING GEAR EXTENDED
FLAPS 40°
AIRSPEED 85 KIAS

EXAMPLE:	
ALTITUDE	14000 FT
OAT	-52 °C
AIRCRAFT WEIGHT	3400 KG
RATE OF CLIMB	1010 FPM



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00325-A-001-01

Figure 5-3-9-3: Performance - Rate Of Climb - Balked Landing (metric units)

12-C-A15-60-0503-09A-030A-A

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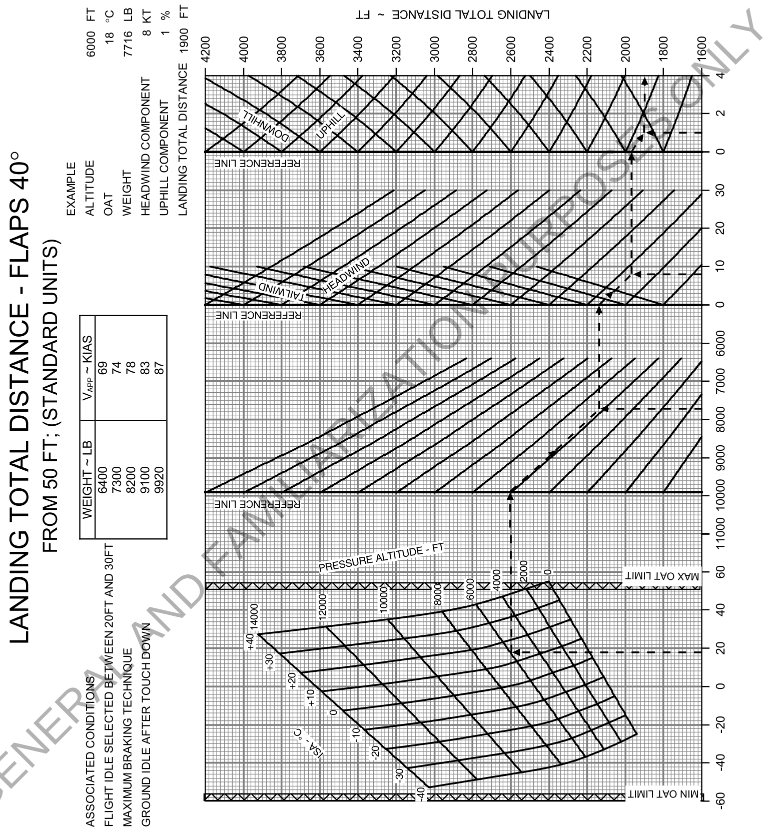
5-3-10 Performance Data - Landing Performance

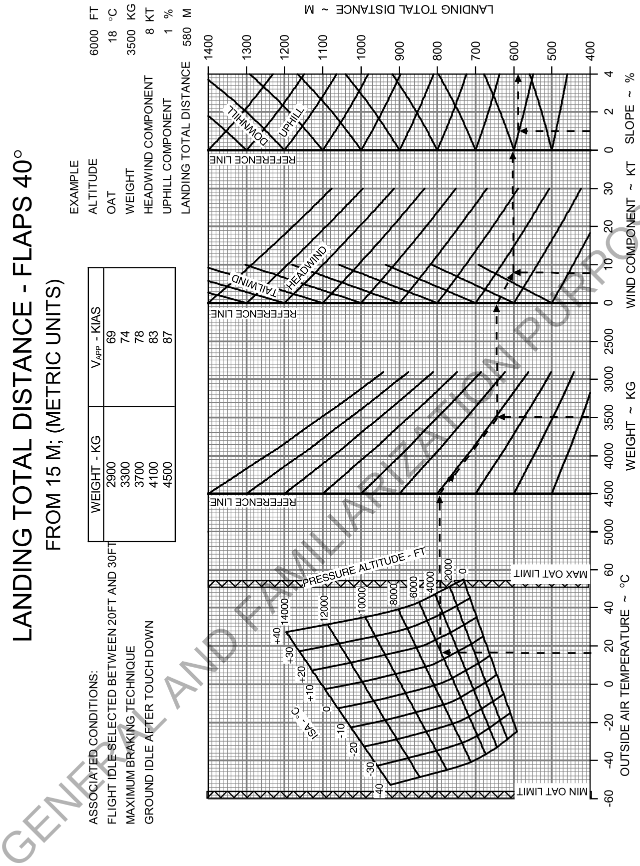


See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00326-A-001-01

Figure 5-3-10-1: Performance - Landing Total Distance - Flaps 40° (standard units)

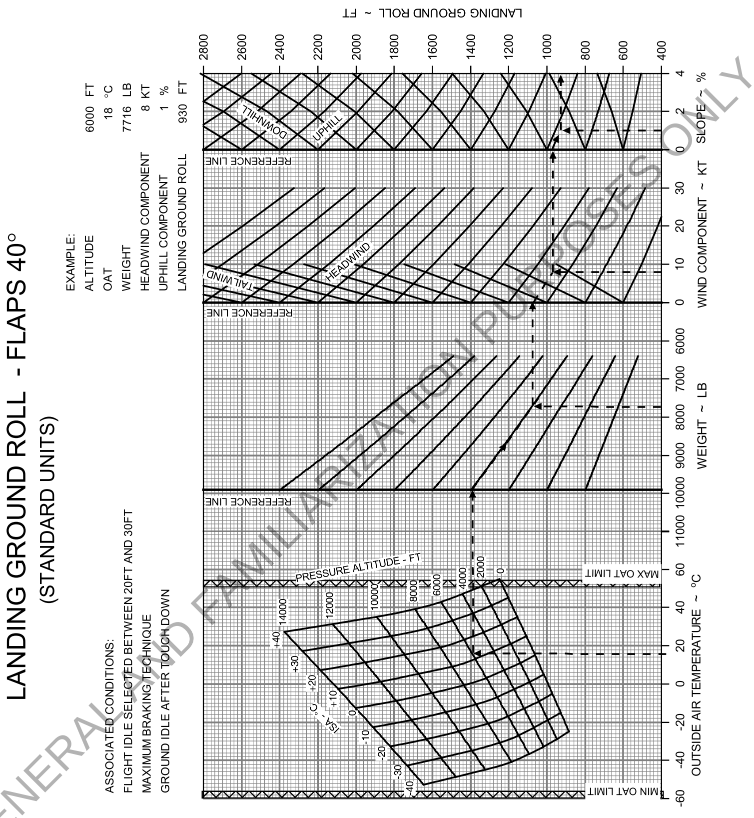
12-C-A15-60-0503-10A-030A-A



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00327-A-001-01

Figure 5-3-10-2: Performance - Landing Total Distance - Flaps 40° (metric units)



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00328-A-001-01

Figure 5-3-10-3: Performance - Landing Ground Roll - Flaps 40° (standard units)

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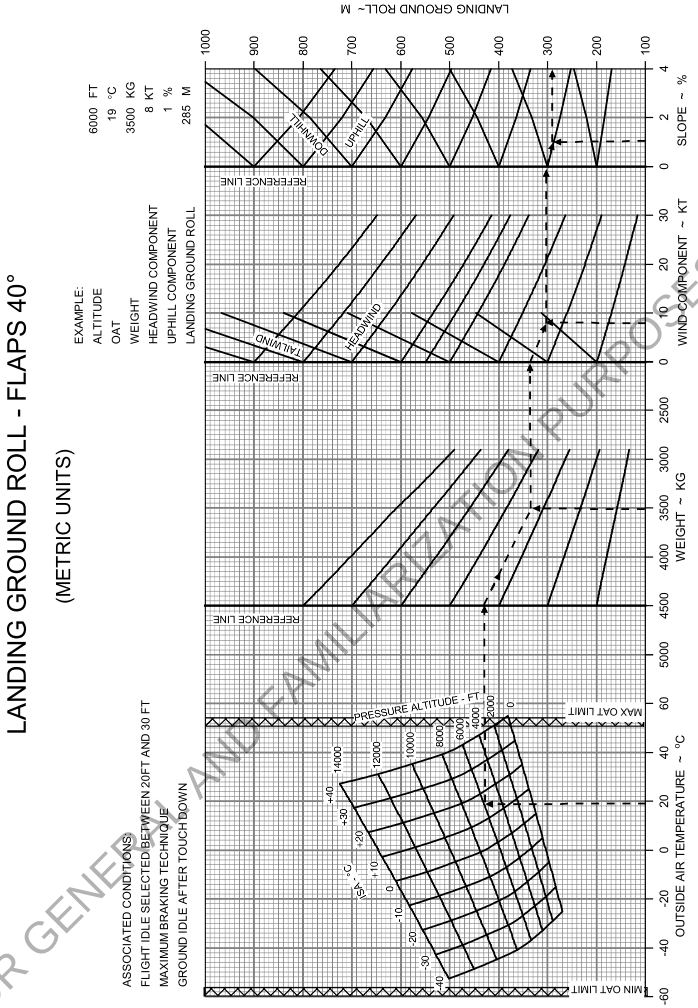

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

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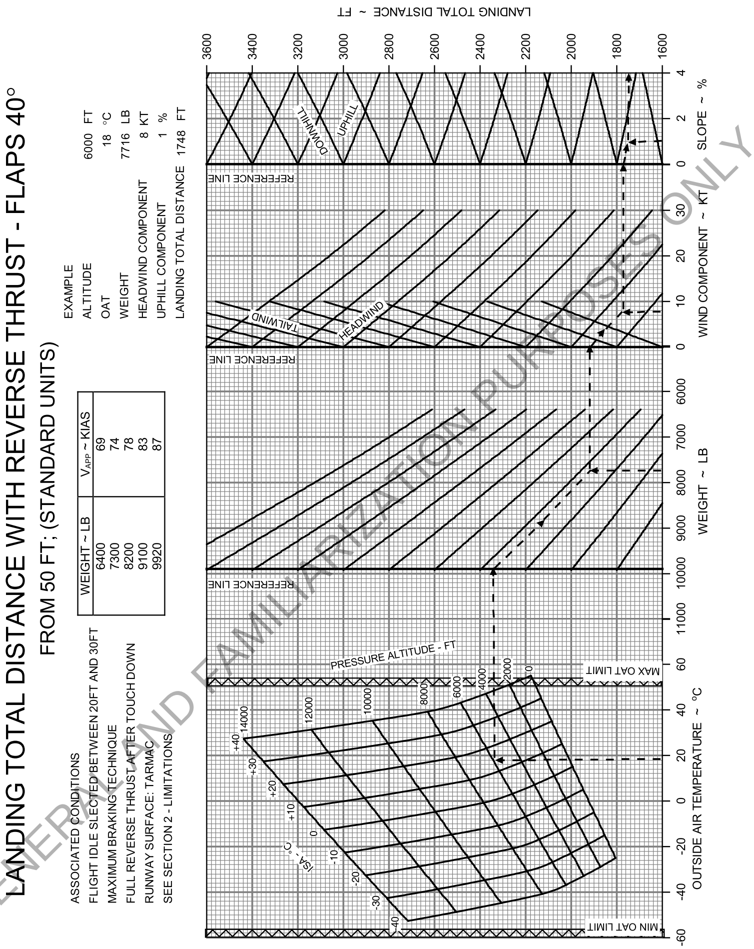
Figure 5-3-10-4: Performance - Landing Ground Roll - Flaps 40° (metric units)



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See FLIGHT IN ICING CONDITIONS para for info on effect of icing

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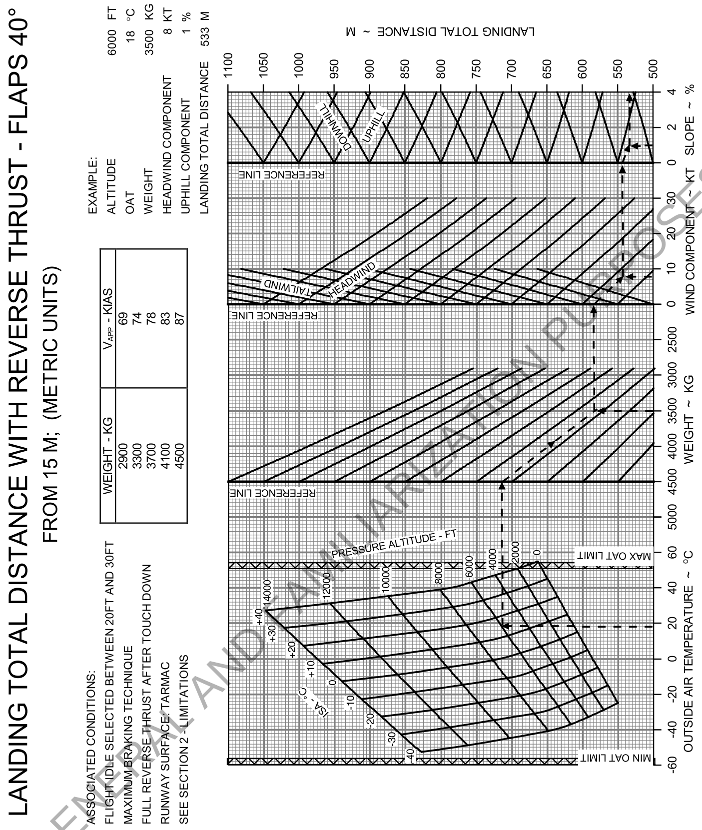
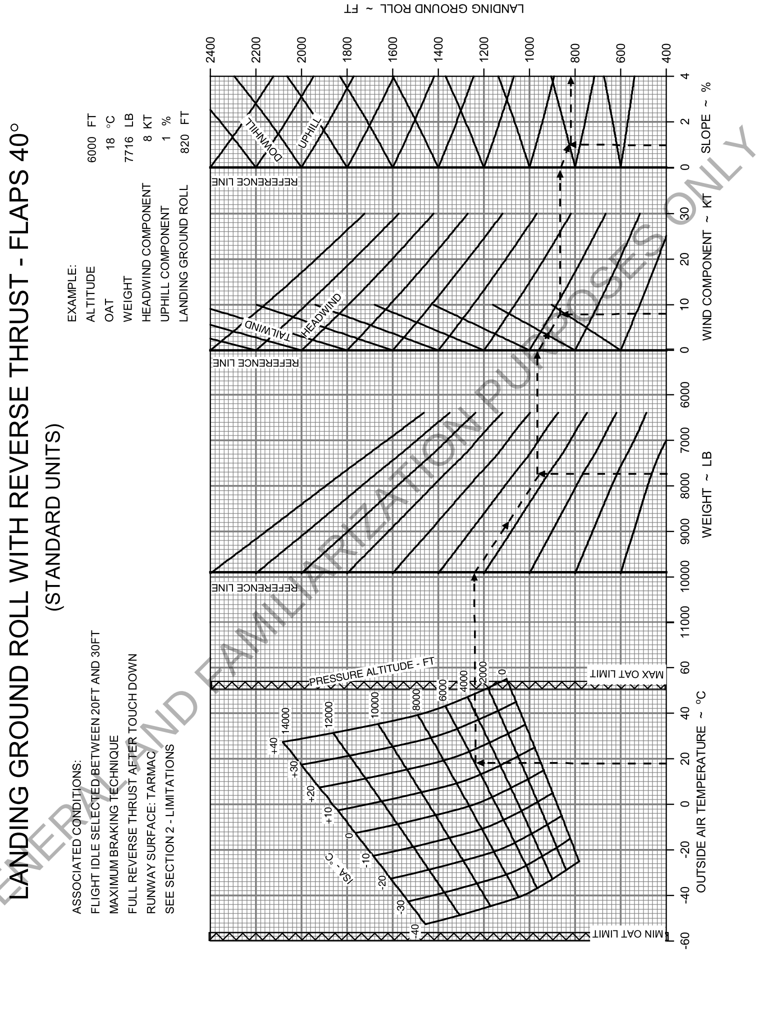
Figure 5-3-10-5: Performance - Landing Total Distance with the use of Reverse Thrust - Flaps 40° (standard units)



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00331-A-001-01

Figure 5-3-10-6: Performance - Landing Total Distance with the use of Reverse Thrust - Flaps 40° (metric units)



See FLIGHT IN ICING CONDITIONS para for info on effect of icing

ICN-12-C-A150503-A-S4080-00332-A-001-01

Figure 5-3-10-7: Performance - Landing Ground Roll with the use of Reverse Thrust - Flaps 40° (standard units)

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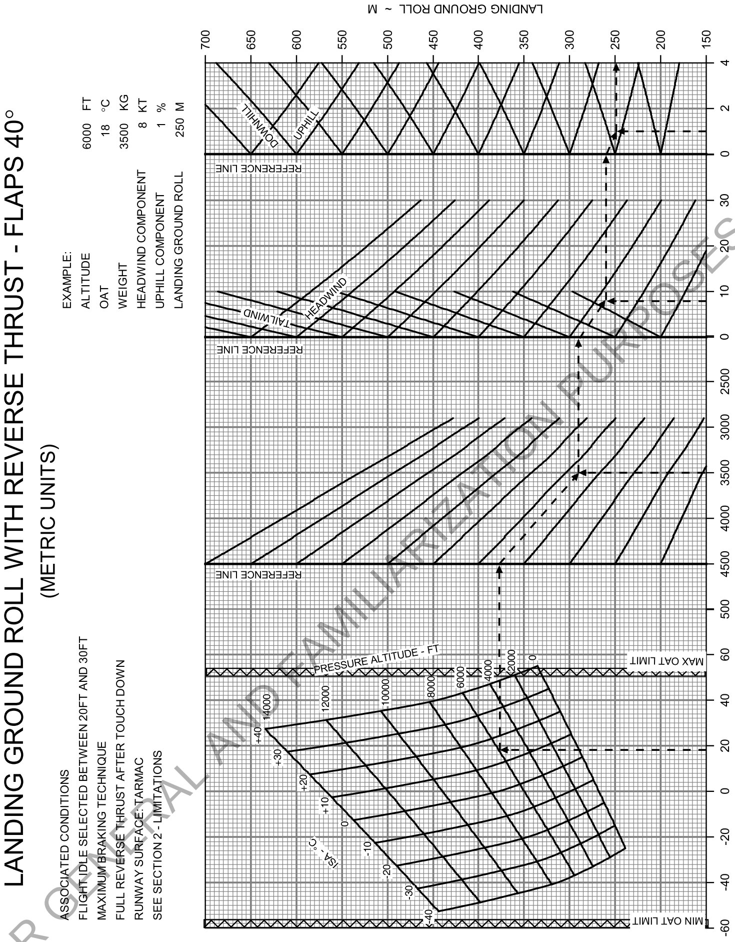

See FLIGHT IN ICING CONDITIONS para for info on effect of icing

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Figure 5-3-10-8: Performance - Landing Ground Roll with the use of Reverse Thrust - Flaps 40° (metric units)

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5-4-1 Flight in Icing Conditions - General

The following section presents performance information related to the operation in or into known icing conditions. This information was derived analytically from actual wind tunnel tests with natural ice. The following cases are considered:

- 45 minutes holding in moderate icing conditions with fully operational pneumatic de-ice boots and substantial ice accretion on unprotected surfaces
- 20 minutes holding in moderate icing conditions with ice accretion on the total airframe due to inoperative pneumatic de-ice boots.

Besides these aerodynamic degradations, performance losses to the aircraft's propulsion system have been considered (increased bleed air extraction, inertial separator open, less ram recovery, and ice-build up on unprotected parts of the propeller blades).

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5-4-2 Flight in Icing Conditions - Flaps

When operating in or into known icing conditions, the use of Flaps 30° or 40° is prohibited.

When operating in or into known icing conditions with fully operational pneumatic de-ice boots, the flap position is limited to a maximum of 15°.

When operating in or into known icing conditions with failed operational pneumatic de-ice boots, the flap position is limited to a maximum of 0°.

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5-4-3 Flight in Icing Conditions - Stall Speeds

When operating in STICK PUSHER ICE MODE the stick pusher computer automatically reduces the shaker and pusher settings as measured by the angle of attack vanes, by 8°. With operational pneumatic de-ice boots, this results in an increase of the stall speed at the maximum takeoff weight of 12 kts with flaps set to 0° and 9 kts with flaps set to 15°.

The wings level stall speeds at the maximum takeoff weight of 10450 lb (4740 kg) and with flight idle power are summarized in Table 5-4-3-1.

Table 5-4-3-1: Stall Speeds in accordance with ICE Mode Set

FLAPS	STALL SPEED (PUSHER ACTIVATION) AT MTOW - KIAS	
0°	Non icing	95
	Icing conditions (STICK PUSHER ICE MODE)	107
	Pneumatic de-ice boots failure (unprotected)	110
15°	Non icing	78
	Icing conditions (STICK PUSHER ICE MODE)	87

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5-4-4 Flight in Icing Conditions - Engine Torque

When the engine inlet inertial separator is open and during flight, the maximum torque available can be reduced by up to 2.2 psi in non-icing conditions, and up to 2.8 psi in icing conditions.

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5-4-5 Flight in Icing Conditions - Takeoff Performance

The flaps must be set to 15° for takeoff. The use of flaps 30° for takeoff is prohibited.

When de-icing / anti-icing fluids are applied to the aircraft before departure, and/or when the stick pusher is in ICE mode: The takeoff reference speeds must be adjusted to the values indicated by the corresponding correction table.

Takeoff Total Distance

The total takeoff distance is calculated by first computing the total takeoff distance in non-icing conditions from Fig. 5-3-2-19 (standard units), Fig. 5-3-2-20 (metric units), Fig. 5-3-2-21 (ACS OFF, standard units) and Fig. 5-3-2-22 (ACS OFF, metric units) and then correcting that distance for takeoff in or into known icing conditions by using the corrections in Table 5-4-5-1, Table 5-4-5-2 and Table 5-4-5-3.

Icing correction (%) = A + B + C

Note
Due to the increased reference speed associated with icing conditions, the relative effect of wind on field performance becomes less pronounced. Thus, the wind effect given by the performance graphs (for non-icing conditions) needs to be attenuated (weakened). That is why a headwind component leads to an increase in the required field length, and a tailwind leads to a decrease (as illustrated by Table 5-4-5-2).

Table 5-4-5-1: Icing Corrections to Takeoff Total Distance - Altitude Correction (Table A)

Table A	Takeoff Weight (kg (lb))					
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)	4740 (10450)
V_R / V_{50ft} (KIAS)	72 / 88	77 / 94	81 / 100	86 / 105	90 / 110	92 / 113
0 ft	+21	+26	+27	+28	+29	+30
2000 ft	+23	+26	+27	+28	+30	+31
4000 ft	+26	+26	+27	+29	+30	+32
6000 ft	+26	+26	+28	+29	+31	+32
8000 ft	+26	+27	+28	+30	+32	+33
10000 ft	+25	+27	+28	+30	+32	+33
12000 ft	+26	+27	+29	+30	+32	+33
14000 ft	+27	+29	+30	+31	+33	+33

Table 5-4-5-2: Icing Corrections to Takeoff Total Distance - Wind Correction (Table B)

Table B	Takeoff Weight (kg (lb))
Wind Correction (%)	2900 - 4740 (6393 - 10450)
10 kts Tailwind	-3
No Wind	0
10 kts Headwind	+1
20 kts Headwind	+3
30 kts Headwind	+5

Table 5-4-5-3: Icing Corrections to Takeoff Total Distance - Slope Correction (Table C)

Table C	Takeoff Weight (kg (lb))					
Slope Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)	4740 (10450)
4% down	+2	+2	+1	-1	-2	-2
2% down	+2	+2	-1	-1	-1	-1
No Slope	0	0	0	0	0	0
2% up	+4	+2	+2	+3	+4	+4
4% up	+7	+5	+5	+7	+9	+10

Takeoff Ground Roll

Analogically, the takeoff ground roll is derived correcting the distances obtained from Fig. 5-3-2-15 (standard units), Fig. 5-3-2-16 (metric units), Fig. 5-3-2-17 (ACS OFF, standard units) or Fig. 5-3-2-18 (ACS OFF, metric units) by using the corrections in Table 5-4-5-4, Table 5-4-5-5 and Table 5-4-5-6.

Icing correction (%) = A + B + C

Table 5-4-5-4: Icing Corrections to Takeoff Ground Roll - Altitude Correction (Table A)

Table A	Takeoff Weight (kg (lb))					
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)	4740 (10450)
V_R / V_{50ft} (KIAS)	72 / 88	77 / 94	81 / 100	86 / 105	90 / 110	92 / 113
0 ft	+28	+28	+29	+29	+30	+30
2000 ft	+28	+28	+29	+29	+30	+30
4000 ft	+28	+28	+29	+29	+30	+30
6000 ft	+28	+28	+29	+29	+30	+30
8000 ft	+28	+28	+29	+29	+30	+30
10000 ft	+28	+28	+29	+29	+30	+30
12000 ft	+28	+28	+29	+29	+30	+30
14000 ft	+28	+29	+30	+30	+31	+32

Table 5-4-5-5: Icing Corrections to Takeoff Ground Roll - Wind Correction (Table B)

Table B	Takeoff Weight (kg (lb))
Wind Correction (%)	2900 - 4740 (6393 - 10450)
10 kt Tailwind	-4
No Wind	0
10 kt Headwind	+2
20 kt Headwind	+5
30 kt Headwind	+8

Table 5-4-5-6: Icing Corrections to Takeoff Ground Roll - Slope Correction (Table C)

Table C	Takeoff Weight (kg (lb))					
Slope Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)	4740 (10450)
4% down	0	0	-1	-1	-1	-1
2% down	0	0	0	0	0	-1
No Slope	0	0	0	0	0	0
2% up	+1	+1	+1	+2	+2	+3
4% up	+1	+2	+3	+4	+6	+6

Example:

- Pressure Altitude = 6000 ft
- Outside Air Temperature = -10 °C
- Weight = 3500 kg
- Headwind Component = 8 kt
- Uphill Component = 1%
- Takeoff Ground Roll = 300 m (from Fig. 5-3-2-16)
- Icing Correction (A + B + C) = 28.5% + 1.6% + 0.5% = 30.6%
- Takeoff Ground Roll in Icing Conditions = 300 m * 1.306 = 392 m.

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5-4-6 Flight in Icing Conditions - Accelerate-Stop Performance

The flaps must be set to 15° for takeoff. The use of flaps 30° for takeoff is prohibited.

The maximum speed for power chop is assumed to be 10 kt higher than that for non-icing conditions.

The total accelerate-stop distance is calculated by first computing the total accelerate-stop distance in non-icing conditions from Fig. 5-3-2-13 (standard units), Fig. 5-3-2-14 (metric units) and then correcting that distance for takeoff in or into known icing conditions by using the corrections in Table 5-4-6-1, Table 5-4-6-2 and Table 5-4-6-3.

Icing correction (%) = A + B + C

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Table 5-4-6-1: Icing Corrections to Accelerate-Stop Distance - Altitude Correction (Table A)

Table A	Takeoff Weight (kg (lb))					
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)	4740 (10450)
Power Chop Speed (KIAS)	76	81	86	90	95	97
0 ft	+25	+26	+27	+28	+28	+29
2000 ft	+25	+26	+27	+28	+29	+29
4000 ft	+26	+27	+28	+28	+29	+29
6000 ft	+26	+27	+28	+29	+29	+30
8000 ft	+26	+27	+28	+29	+30	+30
10000 ft	+27	+28	+28	+29	+30	+30
12000 ft	+27	+28	+29	+29	+30	+30
14000 ft	+28	+29	+30	+30	+31	+32

Table 5-4-6-2: Icing Corrections to Accelerate-Stop Distance - Wind Correction (Table B)

Table B	Takeoff Weight (kg (lb))
Wind Correction (%)	2900 - 4740 (6393 - 10450)
10 kts Tailwind	-3
No Wind	0
10 kts Headwind	+2
20 kts Headwind	+3
30 kts Headwind	+5

Table 5-4-6-3: Icing Corrections to Accelerate-Stop Distance - Slope Correction (Table C)

Table C	Takeoff Weight (kg (lb))					
Slope Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)	4740 (10450)
4% down	+2	+2	+2	+2	+2	+2
2% down	+1	+1	+1	+1	+1	+1
No Slope	0	0	0	0	0	0
2% up	0	0	0	+1	+1	+2
4% up	0	+1	+1	+2	+4	+6

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5-4-7 Flight in Icing Conditions - Maximum Rate of Climb

The use of Flaps 30° is prohibited in or into known icing conditions. After icing encounters, and with visible ice accretion on the airframe, a climb is performed with the flaps retracted and a climb speed based on the schedule as given in Table 5-4-7-1.

Table 5-4-7-1: Climb Speed in Icing Conditions

Flaps UP	Non-Icing	Icing	Pneumatic De-Ice Boot Failure
Altitude (ft)	KIAS	KIAS	KIAS
0	130	135	140
5000	125		
10000	125		
15000	125		
20000	120		
25000	120		
30000	120		

The total climb performance is calculated by first computing the Rate of Climb in non-icing conditions from Fig. 5-3-3-6 (standard units) or Fig. 5-3-3-7 (metric units) and then correcting the Rate of Climb in or into known icing conditions by using the corrections in Table 5-4-7-2 (with operational pneumatic de-ice boots) or Table 5-4-7-3 (with the pneumatic de-ice boots inoperative).

Table 5-4-7-2: Icing Corrections to Maximum Rate of Climb with Operational Pneumatic De-ice Boots

Altitude (ft)	Rate of Climb Correction (feet per minute)			
	Takeoff Weight (kg (lb))			
	2900 (6393)	3500 (7716)	4500 (9921)	4740 (10450)
0	-1230	-1030	-790	-750
5000	-1280	-1060	-800	-760
10000	-1320	-1090	-830	-780
15000	-1330	-1100	-840	-790
20000	-1380	-1140	-850	-800
25000	-1400	-1150	-870	-820
30000	-1430	-1180	-880	-840

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Table 5-4-7-3: Icing Corrections to Maximum Rate of Climb with Pneumatic De-ice Boots Inoperative

Rate of Climb Correction (feet per minute)				
Altitude (ft)	Takeoff Weight (kg (lb))			
	2900 (6393)	3500 (7716)	4500 (9921)	4740 (10450)
0	-1510	-1270	-970	-920
5000	-1590	-1330	-1010	-950
10000	-1650	-1380	-1050	-990
15000	-1700	-1410	-1080	-1010
20000	-1810	-1500	-1130	-1060
25000	-1870	-1540	-1170	-1100
30000	-1940	-1600	-1210	-1150

Example:

- Pressure Altitude = 5000 ft
- Outside Air Temperature = -10 °C
- Aircraft Weight = 3800 kg
- Rate of Climb (non-icing) = 2400 fpm (from Fig. 5-3-3-7)
- Icing Correction = -982 fpm (interpolated from Table 5-4-7-2)
- Max. Rate of Climb in Icing Conditions = 2400 fpm - 982 fpm = 1418 fpm.

5-4-8 Flight in Icing Conditions - Holding Endurance

During holding flight in icing conditions, a higher engine torque is required to maintain level flight. Table 5-4-8-1 and Table 5-4-8-2 give the increases in fuel flow with respect to non-icing conditions. Refer to Fig. 5-3-6-1.

Table 5-4-8-1: Icing Conditions to Holding Fuel Flow with Operational Pneumatic De-ice Boots

Fuel Flow Correction (%)	
Altitude (ft)	Aircraft Weight (kg (lb)) 2900 - 4740 (6393 - 10450)
0	+29
5000	+33
10000	+37
15000	+45

Table 5-4-8-2: Icing Conditions to Holding Fuel Flow with Pneumatic De-ice Boots Inoperative

Fuel Flow Correction (%)	
Altitude (ft)	Aircraft Weight (kg (lb)) 2900 - 4740 (6393 - 10450)
0	+36
5000	+41
10000	+48
15000	+57

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5-4-9 Flight in Icing Conditions - Balked Rate of Climb

The use of Flaps 30° or Flaps 40° is prohibited in or into known icing conditions.

After icing encounters and with visible ice accretion on the airframe, a balked landing climb is performed with Flaps 15° and a climb speed of 105 KIAS. The total climb performance is calculated by first computing the Rate of Climb in non-icing conditions from Fig. 5-3-9-2 (standard units) or Fig. 5-3-9-3 (metric units) and then correcting the Rate of Climb in or into known icing conditions by using the corrections in Table 5-4-9-1.

Table 5-4-9-1: Icing Corrections to Balked Landing Climb with Operational Pneumatic De-ice Boots

Rate of Climb Correction (feet per minute)			
Altitude (ft)	Landing Weight (kg (lb))		
	2900 (6393)	3500 (7716)	4500 (9921)
0	-140	-100	-80
2000	-140	-100	-80
4000	-150	-100	-80
6000	-150	-100	-80
8000	-150	-110	-90
10000	-160	-110	-90
12000	-150	-110	-80
14000	-150	-110	-80

After failure of the airframe pneumatic boots in icing conditions, a balked landing climb is performed with Flaps 0° and a climb speed of 130 KIAS. The total climb performance is calculated by first computing the Rate of Climb in non-icing conditions from Fig. 5-3-9-2 (standard units) or Fig. 5-3-9-3 (metric units) and then correcting the Rate of Climb in or into known icing conditions by using the corrections in Table 5-4-9-2.

Table 5-4-9-2: Icing Corrections to Balked Landing Climb with Pneumatic De-ice Boots inoperative

Rate of Climb Correction (feet per minute)			
Altitude (ft)	Landing Weight (kg (lb))		
	2900 (6393)	3500 (7716)	4500 (9921)
0	-580	-450	-320
2000	-620	-480	-340
4000	-670	-520	-360
6000	-700	-540	-380
8000	-740	-580	-400
10000	-780	-610	-420
12000	-800	-630	-440
14000	-950	-750	-530

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5-4-10 Flight in Icing Conditions - Landing Performance

The flaps must be set to 15° for landing. The use of Flaps 30° or 40° for landing is prohibited. With pneumatic de-ice boots failed; a flaps-up-landing must be performed. For both flap configurations, the landing reference speed must be adjusted to the values indicated by the corresponding correction table. The landing distance is calculated by first computing the landing distance in non-icing conditions and then correcting that distance for landing in or into known icing conditions by using the correction tables below (see Table 5-4-10-1).

Icing correction (%) = A + B + C

Table 5-4-10-1: Landing in Icing Conditions - Overview

Reverse Thrust	Pneumatic De-ice Boots	Flap Setting	Landing Performance Information	Non-icing Figure No.	Icing Correction Table
No	Operational	Flaps 15°	Landing Total Distance	Fig. 5-3-10-1 Fig. 5-3-10-2	Table 5-4-10-2 (A) Table 5-4-10-3 (B) Table 5-4-10-4 (C)
			Landing Ground Roll	Fig. 5-3-10-3 Fig. 5-3-10-4	Table 5-4-10-5 (A) Table 5-4-10-6 (B) Table 5-4-10-7 (C)
	Inoperative	Flaps 0°	Landing Total Distance	Fig. 5-3-10-1 Fig. 5-3-10-2	Table 5-4-10-8 (A) Table 5-4-10-9 (B) Table 5-4-10-10 (C)
			Landing Ground Roll	Fig. 5-3-10-3 Fig. 5-3-10-4	Table 5-4-10-11 (A) Table 5-4-10-12 (B) Table 5-4-10-13 (C)
Yes	Operational	Flaps 15°	Landing Total Distance	Fig. 5-3-10-5 Fig. 5-3-10-6	Table 5-4-10-14 (A) Table 5-4-10-15 (B) Table 5-4-10-16 (C)
			Landing Ground Roll	Fig. 5-3-10-7 Fig. 5-3-10-8	Table 5-4-10-17 (A) Table 5-4-10-18 (B) Table 5-4-10-19 (C)
	Inoperative	Flaps 0°	Landing Total Distance	Fig. 5-3-10-5 Fig. 5-3-10-6	Table 5-4-10-20 (A) Table 5-4-10-21 (B) Table 5-4-10-22 (C)

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Table 5-4-10-1: Landing in Icing Conditions - Overview (continued from previous page)

Reverse Thrust	Pneumatic De-ice Boots	Flap Setting	Landing Performance Information	Non-icing Figure No.	Icing Correction Table
			Landing Ground Roll	Fig. 5-3-10-5 Fig. 5-3-10-6	Table 5-4-10-23 (A) Table 5-4-10-24 (B) Table 5-4-10-25 (C)

Table 5-4-10-2: Icing Corrections to Landing Total Distance - Flaps 15° - No Reverse Thrust - Altitude Correction (Table A)

Table A	Landing Weight (kg (lb))				
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
V_{APP} (KIAS)	84	90	95	100	105
0 ft	+38	+41	+43	+45	+47
2000 ft	+39	+42	+44	+46	+48
4000 ft	+41	+44	+46	+48	+49
6000 ft	+42	+45	+47	+49	+50
8000 ft	+44	+46	+48	+50	+52
10000 ft	+45	+47	+50	+51	+53
12000 ft	+46	+49	+51	+52	+53
14000 ft	+48	+50	+52	+52	+52

Table 5-4-10-3: Icing Corrections to Landing Total Distance - Flaps 15° - No Reverse Thrust - Wind Correction (Table B)

Table B	Landing Weight (kg (lb))				
Wind Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
10 kt Tailwind	-5	-5	-5	-5	-5
No Wind	0	0	0	0	0
10 kt Headwind	+3	+3	+3	+3	+3
20 kt Headwind	+6	+6	+6	+6	+6
30 kt Headwind	+11	+10	+10	+10	+9

Table 5-4-10-4: Icing Corrections to Landing Total Distance - Flaps 15° - No Reverse Thrust - Slope Correction (Table C)

Table C	Landing Weight (kg (lb))
Slope Correction (%)	2900 - 4500 (6393 - 9921)
4% down	+1
2% down	0
No Slope	0
2% up	0
4% up	0

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Table 5-4-10-5: Icing Corrections to Landing Ground Roll - Flaps 15° - No Reverse Thrust - Altitude Correction (Table A)

Table A	Landing Weight (kg (lb))				
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
V_{APP} (KIAS)	84	90	95	100	105
0 ft	+64	+59	+56	+57	+58
2000 ft	+61	+57	+57	+58	+59
4000 ft	+59	+56	+58	+59	+60
6000 ft	+56	+57	+58	+59	+60
8000 ft	+57	+58	+59	+61	+62
10000 ft	+57	+59	+60	+61	+63
12000 ft	+58	+59	+61	+62	+64
14000 ft	+59	+61	+62	+64	+65

Table 5-4-10-6: Icing Corrections to Landing Ground Roll - Flaps 15° - No Reverse Thrust - Wind Correction (Table B)

Table B	Landing Weight (kg (lb))				
Wind Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
10 kt Tailwind	-7	-7	-6	-5	-5
No Wind	0	0	0	0	0
10 kt Headwind	+6	+5	+4	+4	+4
20 kt Headwind	+14	+11	+9	+9	+8
30 kt Headwind	+23	+19	+16	+15	+14

Table 5-4-10-7: Icing Corrections to Landing Ground Roll - Flaps 15° - No Reverse Thrust - Slope Correction (Table C)

Table C	Landing Weight (kg (lb))
Slope Correction (%)	2900 - 4500 (6393 - 9921)
4% down	-3
2% down	-1
No Slope	0
2% up	+2
4% up	+4

Table 5-4-10-8: Icing Corrections to Landing Total Distance - Flaps 0° - No Reverse Thrust - Altitude Correction (Table A)

Table A	Landing Weight (kg (lb))				
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
V_{APP} (KIAS)	104	111	118	124	130
0 ft	+86	+92	+97	+101	+104
2000 ft	+89	+94	+99	+103	+106
4000 ft	+93	+98	+103	+107	+110
6000 ft	+95	+100	+105	+109	+113
8000 ft	+99	+104	+109	+113	+118
10000 ft	+101	+107	+112	+116	+121
12000 ft	+104	+109	+115	+120	+120
14000 ft	+108	+114	+120	+119	+117

Table 5-4-10-9: Icing Corrections to Landing Total Distance - Flaps 0° - No Reverse Thrust - Wind Correction (Table B)

Table B	Landing Weight (kg (lb))				
Wind Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
10 kt Tailwind	-12	-11	-11	-11	-11
No Wind	0	0	0	0	0
10 kt Headwind	+7	+6	+6	+6	+6
20 kt Headwind	+15	+14	+14	+13	+13
30 kt Headwind	+25	+24	+23	+22	+21

Table 5-4-10-10: Icing Corrections to Landing Total Distance - Flaps 0° - No Reverse Thrust - Slope Correction (Table C)

Table C	Landing Weight (kg (lb))				
Slope Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
4% down	-2	-3	-4	-4	-3
2% down	-1	-1	-1	-1	-1
No Slope	0	0	0	0	0
2% up	+2	+2	+2	+2	+2
4% up	+3	+3	+3	+3	+3

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Table 5-4-10-11: Icing Corrections to Landing Ground Roll - Flaps 0° - No Reverse Thrust - Altitude Correction (Table A)

Table A	**Landing Weight (kg (lb))**				
Altitude Correction (%)	**2900 (6393)**	**3300 (7275)**	**3700 (8157)**	**4100 (9039)**	**4500 (9921)**
V_{APP} (KIAS)	**104**	**111**	**118**	**124**	**130**
0 ft	+117	+112	+111	+113	+115
2000 ft	+114	+110	+112	+115	+117
4000 ft	+111	+112	+115	+1118	+121
6000 ft	+110	+114	+117	+121	+124
8000 ft	+113	+117	+121	+125	+129
10000 ft	+115	+120	+124	+129	+133
12000 ft	+118	+122	+127	+132	+138
14000 ft	+122	+127	+134	+137	+137

Table 5-4-10-12: Icing Corrections to Landing Ground Roll - Flaps 0° - No Reverse Thrust - Wind Correction (Table B)

Table B	**Landing Weight (kg (lb))**				
Wind Correction (%)	**2900 (6393)**	**3300 (7275)**	**3700 (8157)**	**4100 (9039)**	**4500 (9921)**
10 kt Tailwind	-13	-12	-11	-10	-10
No Wind	0	0	0	0	0
10 kt Headwind	+12	+10	+9	+8	+8
20 kt Headwind	+26	+22	+19	+18	+17
30 kt Headwind	+46	+38	+33	+30	+28

Table 5-4-10-13: Icing Corrections to Landing Ground Roll - Flaps 0° - No Reverse Thrust - Slope Correction (Table C)

Table C	**Landing Weight (kg (lb))**				
Slope Correction (%)	**2900 (6393)**	**3300 (7275)**	**3700 (8157)**	**4100 (9039)**	**4500 (9921)**
4% down	-7	-7	-6	-7	-6
2% down	-3	-3	-3	-2	-2
No Slope	0	0	0	0	0
2% up	+6	+6	+6	+6	+6
4% up	+12	+11	+11	+11	+10

Table 5-4-10-14: Icing Corrections to Landing Total Distance - Flaps 15° - With Reverse Thrust - Altitude Correction (Table A)

Table A	**Landing Weight (kg (lb))**				
Altitude Correction (%)	**2900 (6393)**	**3300 (7275)**	**3700 (8157)**	**4100 (9039)**	**4500 (9921)**
V_{APP} (KIAS)	**84**	**90**	**95**	**100**	**105**
0 ft	+32	+36	+38	+40	+41
2000 ft	+34	+37	+39	+40	+42
4000 ft	+36	+38	+40	+42	+43
6000 ft	+37	+39	+41	+42	+44
8000 ft	+39	+41	+42	+44	+43
10000 ft	+40	+41	+43	+43	+45
12000 ft	+40	+42	+43	+45	+46
14000 ft	+42	+42	+45	+46	+47

Table 5-4-10-15: Icing Corrections to Landing Total Distance - Flaps 15° - With Reverse Thrust - Wind Correction (Table B)

Table B	**Landing Weight (kg (lb))**
Wind Correction (%)	**2900 - 4500 (6393 - 9921)**
10 kt Tailwind	-5
No Wind	0
10 kt Headwind	+3
20 kt Headwind	+6
30 kt Headwind	+11

Table 5-4-10-16: Icing Corrections to Landing Total Distance - Flaps 15° - With Reverse Thrust - Slope Correction (Table C)

Table C	**Landing Weight (kg (lb))**
Slope Correction (%)	**2900 - 4500 (6393 - 9921)**
4% down	0
2% down	0
No Slope	0
2% up	0
4% up	+1

Table 5-4-10-17: Icing Corrections to Landing Ground Roll - Flaps 15° - With Reverse Thrust - Altitude Correction (Table A)

Table A	Landing Weight (kg (lb))				
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
V_{APP} (KIAS)	84	90	95	100	105
0 ft	+55	+52	+49	+50	+50
2000 ft	+53	+50	+50	+50	+50
4000 ft	+52	+50	+50	+50	+51
6000 ft	+50	+50	+50	+50	+51
8000 ft	+50	+50	+51	+51	+51
10000 ft	+50	+50	+51	+51	+51
12000 ft	+50	+51	+51	+51	+52
14000 ft	+50	+51	+51	+52	+52

Table 5-4-10-18: Icing Corrections to Landing Ground Roll - Flaps 15° - With Reverse Thrust - Wind Correction (Table B)

Table B	Landing Weight (kg (lb))				
Wind Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
10 kt Tailwind	-7	-7	-7	-6	-6
No Wind	0	0	0	0	0
10 kt Headwind	+5	+5	+4	+4	+4
20 kt Headwind	+12	+10	+9	+8	+8
30 kt Headwind	+21	+18	+15	+14	+13

Table 5-4-10-19: Icing Corrections to Landing Ground Roll - Flaps 15° - With Reverse Thrust - Slope Correction (Table C)

Table C	Landing Weight (kg (lb))
Slope Correction (%)	2900 - 4500 (6393 - 9921)
4% down	-2
2% down	-1
No Slope	0
2% up	+2
4% up	+3

Table 5-4-10-20: Icing Corrections to Landing Total Distance - Flaps 0° - With Reverse Thrust - Altitude Correction (Table A)

Table A	**Landing Weight (kg (lb))**				
Altitude Correction (%)	**2900 (6393)**	**3300 (7275)**	**3700 (8157)**	**4100 (9039)**	**4500 (9921)**
V_{APP} (KIAS)	**104**	**111**	**118**	**124**	**130**
0 ft	+77	+84	+88	+91	+94
2000 ft	+80	+86	+89	+93	+95
4000 ft	+84	+89	+92	+95	+98
6000 ft	+86	+90	+94	+97	+99
8000 ft	+89	+93	+96	+99	+99
10000 ft	+91	+95	+98	+98	+103
12000 ft	+93	+96	+97	+102	+105
14000 ft	+95	+95	+102	+105	+107

Table 5-4-10-21: Icing Corrections to Landing Total Distance - Flaps 0° - With Reverse Thrust - Wind Correction (Table B)

Table B	**Landing Weight (kg (lb))**				
Wind Correction (%)	**2900 (6393)**	**3300 (7275)**	**3700 (8157)**	**4100 (9039)**	**4500 (9921)**
10 kt Tailwind	-13	-13	-14	-14	-9
No Wind	0	0	0	0	0
10 kt Headwind	+6	+6	+6	+6	+6
20 kt Headwind	+14	+14	+14	+13	+13
30 kt Headwind	+24	+23	+23	+22	+21

Table 5-4-10-22: Icing Corrections to Landing Total Distance - Flaps 0° - With Reverse Thrust - Slope Correction (Table C)

Table C	**Landing Weight (kg (lb))**
Slope Correction (%)	**2900 - 4500 (6393 - 9921)**
4% down	-3
2% down	-1
No Slope	0
2% up	+2
4% up	+3

Table 5-4-10-23: Icing Corrections to Landing Ground Roll - Flaps 0° - With Reverse Thrust - Altitude Correction (Table A)

Table A	Landing Weight (kg (lb))				
Altitude Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
V_{APP} (KIAS)	104	111	118	124	130
0 ft	+103	+99	+96	+97	+98
2000 ft	+101	+97	+97	+98	+98
4000 ft	+99	+97	+98	+99	+99
6000 ft	+97	+98	+99	+99	+100
8000 ft	+98	+99	+100	+101	+102
10000 ft	+98	+100	+101	+102	+104
12000 ft	+99	+100	+102	+103	+105
14000 ft	+100	+102	+104	+106	+105

Table 5-4-10-24: Icing Corrections to Landing Ground Roll - Flaps 0° - With Reverse Thrust - Wind Correction (Table B)

Table B	Landing Weight (kg (lb))				
Wind Correction (%)	2900 (6393)	3300 (7275)	3700 (8157)	4100 (9039)	4500 (9921)
10 kt Tailwind	-14	-13	-13	-13	-12
No Wind	0	0	0	0	0
10 kt Headwind	+11	+9	+8	+8	+7
20 kt Headwind	+24	+21	+18	+17	+16
30 kt Headwind	+42	+36	+31	+29	+27

Table 5-4-10-25: Icing Corrections to Landing Ground Roll - Flaps 0° - With Reverse Thrust - Slope Correction (Table C)

Table C	Landing Weight (kg (lb))
Slope Correction (%)	2900 - 4500 (6393 - 9921)
4% down	-6
2% down	-3
No Slope	0
2% up	+4
4% up	+8

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5-5-1 Flight Planning Example

5-5-1-1 General

This section gives an example of flight planning for aircraft with a five bladed propeller. Before performance calculations can begin, it will be necessary to determine the aircraft loading. Refer to Section 6, Weight and Balance to calculate the actual aircraft loading.

Table 5-5-1-1: Aircraft Configuration

Aircraft Configuration:	
Takeoff Weight Usable Fuel	8798 lb 1650 lb

Table 5-5-1-2: Airport Conditions

Departure Airport Conditions:		**Destination Airport Conditions:**	
Field Pressure Altitude	4000 ft	Field Pressure Altitude	2000 ft
OAT	+17 °C (ISA +10 °C)	OAT	+16 °C (ISA +5 °C)
Wind Component	9 kt (headwind)	Wind Component	6 kt (headwind)
Runway Slope	1% (uphill)	Runway Slope	1.5% (downhill)
Field Length	3690 ft	Field Length	2550 ft
Total Trip Distance	765 nm		

Table 5-5-1-3: Cruise Conditions

Cruise Conditions:	
Pressure Altitude	FL 280
Forecast Temperature	-31 °C (ISA +10 °C)
Forecast Wind Component	10 kt (headwind)

5-5-1-2 Takeoff

Apply the departure airport conditions and the aircraft weight to the appropriate takeoff performance charts and check that the corresponding distances are less than the available field length at the departure airport.

Apply the departure airport conditions to the Takeoff Power Chart to determine maximum torque to be applied before brake release.

5-5-1-3 Climb

Note

The climb performance chart assumes a no wind condition. The pilot must consider the effect of the winds aloft when computing time, fuel, and distance to climb. The fuel to climb includes the fuel consumed during the takeoff run.

Apply the cruise conditions of pressure altitude and temperature (respectively 28000 ft and ISA +10 °C in this case) to the appropriate chart to determine the time, fuel, and distance to climb from sea level to the cruise altitude at the specified takeoff weight (8798 lb in this case). Next, apply the departure airport conditions (respectively 4000 ft and ISA +10 °C in this case) to the same chart to determine those same values to climb from sea level to the departure airport. Subtract the values for the departure airport from those for the cruise altitude. The remaining values are the time, fuel, and distance to climb from the departure airport to the cruise altitude.

Table 5-5-1-4: Time, Fuel and Distance to climb from Departure Airport to Cruise Altitude

Climb	Time	Fuel	Distance
From S.L. to 28000 ft	21 min	190 lb	68 nm
From S.L. to departure airport	2 min	30 lb	6 nm
Departure airport to 28000 ft	19 min	160 lb	62 nm

5-5-1-4 Descent

Note

The descent performance chart assumes a no wind condition. The pilot must consider the effect of the winds aloft when computing time, fuel, and distance to descend.

Apply the cruise conditions of pressure altitude and temperature (respectively 28000 ft and ISA +10 °C in this case) to the appropriate chart to determine the time, fuel, and distance to descend from cruise altitude to sea level. The weight at the beginning of the descent is not known exactly at this stage, but it can be estimated in practice as shown below:

Takeoff weight	-	Usable fuel	+	Fuel reserve*	+	Allowance for descent	=	Weight at beginning of descent
8798	-	1650	+	300	+	100	=	7548 lb

** As required by operating regulations, here a reserve corresponding to 45 min hold at 5000 ft is assumed.*

Next, apply the destination airport conditions (respectively 2000 ft and ISA + 5°C in this case) to the same chart to determine those same values to descend from the destination airport to sea level. Subtract the values for the destination airport from those for the cruise altitude. The remaining values are the time, fuel, and distance to descend from the cruise altitude to the destination airport.

Table 5-5-1-5: Time, Fuel and Distance to descent from Cruise Altitude to Destination Airport

Descent	Time	Fuel	Distance
From 28000 ft to S.L.	14 min	88 lb	66 nm
From destination airport to S.L.	1 min	9 lb	4 nm
From 28000 ft to destination airport	13 min	79 lb	62 nm

5-5-1-5 Cruise

Calculate the cruise distance by subtracting the climb and descent distances from the total trip distance. Select a cruise power setting and refer to the appropriate chart to determine the true airspeed and fuel flow for the forecast cruise conditions. Adjust the true airspeed for the winds aloft headwind component to determine the ground speed. Divide the cruise distance by the ground speed to determine the cruise time. Calculate the cruise fuel required by multiplying the fuel flow by the cruise time.

Cruise distance

Total trip distance	-	Climb distance	-	Descent distance	=	Cruise distance
765	-	62	-	62	=	641

Cruise power setting

By assuming an average cruise weight of 8500 lb, Maximum Cruise Power setting for 28000 ft. at ISA +10°C yields 275 KTAS at 378 lb/hr.

Ground speed

Cruise speed	±	Headwind component	=	Ground speed
275	-	10	=	265 KTAS

Cruise time

Cruise distance	/	Ground speed	=	Cruise time
641 nm	/	265 kt	=	2.42 hr (2 hr 25 min)

Cruise fuel

Cruise time	*	Fuel flow	=	Cruise flow
2.42 hr	*	378 lb/hr	=	914 lb

5-5-1-6 Landing

Calculate the estimated landing weight by the subtracting the weight of the fuel for climb, descent, and cruise from the takeoff weight.

Takeoff weight	- Climb fuel	- Descent fuel	- Cruise fuel	= Landing weight
8798	- 160	- 79	- 914	= 7645 lb

Apply the destination airport conditions and the calculated aircraft weight to the appropriate landing performance charts and check that the corresponding distances are less than the available field length at the destination airport.

5-5-1-7 Total flight time

The total flight time is the sum of the time to climb, descent, and cruise.

Climb time	+ Descent time	+ Cruise time	= Total time
19 min	+ 13 min	+ 2 hr 25 min	= 2 hr 57min

5-5-1-8 Total fuel required

The total fuel required is the sum of the fuel consumed during engine start and ground operation, takeoff and climb, descent, and cruise.

Ground ops	+ TO & Climb	+ Descent	+ Cruise	+ Reserve	= Total fuel required
40	+ 160	+ 79	+ 914	+ 300	= 1489 lb

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SECTION 6

Weight and Balance (EASA Approved)

Table of Contents

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6-1 General

This section contains the information required to determine the Basic Empty Weight and Moment of the aircraft, adjust the B.E.W. & M as equipment is added or removed, and calculate aircraft loading for various flight operations. Sample loading forms are provided.

To achieve the performance designed for the aircraft it must be flown with approved weight and center of gravity limits.

It is the responsibility of the pilot in command to make sure that the aircraft does not exceed the maximum weight limits and is loaded within the center of gravity range before takeoff.

Weight in excess of the maximum takeoff weight may be a contributing factor to an accident, especially with other factors of temperature, airfield elevation and runway conditions. The aircraft's climb, cruise and landing performance will also be affected. Loads that the aircraft was not designed for may be put on the structure, particularly during landing.

The pilot should routinely determine the balance of the aircraft since it is possible to be within the maximum weight limit and still exceed the center of gravity limits. Information regarding the Basic Empty Weight can be found on the Weight and Balance Records in this section.

Installed equipment information can be found in the Equipment List at the back of this manual. Using the basic empty weight and moment together with the Loading Form the pilot can determine the weight and moment for the loaded aircraft by computing the total weight and moment and then determine whether they are within the Center of Gravity Envelope.

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6-2 Preparations for Airplane Weighing

1. Make sure that all applicable items listed on the airplane equipment list are installed in their proper locations.
2. Clean airplane. Remove dirt, excessive grease, water, and foreign items.
3. Completely defuel the fuel tanks. Use the wing fuel drain ports for the completion of the task.
4. Fill oil, hydraulic fluid, and all other operating fluids to full capacity.
5. Make sure that the flaps are fully retracted and that the flight controls are in the neutral position.
6. Place crew seats in the center position and make sure the cabin passenger seats are in the correct positions. Refer to the relevant Interior Configuration Code Seat Location Chart in this Section.
7. Close access panels and passenger door.
8. Make sure that all tires are inflated to normal operating pressure.
9. Place airplane in a closed hangar to prevent scale reading errors due to wind.

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6-3 Airplane Weighing with Load Plates

6-3-1 Leveling

Open the cargo door and place a level across the seat tracks. Adjust the main gear tire pressure (do not exceed the recommended maximum tire pressure) until the airplane is laterally level. Place the level along the top of the inboard seat track and adjust the nose tire pressure until the airplane is longitudinally level. Refer to Section 8, Levelling of this Handbook for more information concerning airplane leveling. Remove the level and carefully close the cargo door.

6-3-2 Weighing

1 Record the tare weight for each applicable scale on Fig. 6-3-1 Airplane Weighing Form.

2 Refer to the manufacturer's instructions and position the aircraft on the load plates.

3 With the airplane level and brakes released, record the weight shown on each scale in the appropriate section on Fig. 6-3-1 Airplane Weighing Form.

4 Subtract the tare weight from the applicable scale reading. Record the resulting net weights in the appropriate section on Fig. 6-3-1 Airplane Weighing Form.

5 Refer to Fig. 6-3-2 and Fig. 6-3-3, Sheet 2 and 3. Record the strut extensions of the nose gear (a), the left main gear (b) and the right main gear (c) on Fig. 6-3-2 Sheet 2 Airplane Weighing Form. Calculate the average of the main gear strut extensions (b) and (c) and record the average (B) on Fig. 6-3-2 Sheet 2 Airplane Weighing Form.

6 Calculate the arm of the nose gear (A) from the extension of the nose gear strut (a) using the table in Fig. 6-3-2 Sheet 2. If the extension of the nose gear strut (a) is in between two values in the table, the arm of the nose gear (A) must be calculated by linear interpolation. Record the arm of the nose gear (A) in the appropriate section on Fig. 6-3-2 Sheet 2 Airplane Weighing Form.

7 Calculate the arm of the main gear (B) from the average extension of the main gear struts (b) and (c) using the table in Fig. 6-3-3 Sheet 3. If the average extension of the main gear struts is in between two values in the table, the arm of the main gear (B) must be calculated by linear interpolation. Record the arm of the main gear (B) in the appropriate section on Fig. 6-3-2 Sheet 2 Airplane Weighing Form.

8 Calculate the airplane C.G. arm using the formula in Fig. 6-3-3 Sheet 3 and record it in the appropriate section on Fig. 6-4-2, Airplane Basic Empty Weight.

9 Refer to Fig. 6-4-2. Adjust weight and moment for unusable fuel and optional equipment installed after airplane weighing to determine airplane Total Basic Empty Weight and Moment.

10 Update Fig. 6-6-1, Weight and Balance Record, as required.

11 After weighing return tire pressures to operational values. Refer to Section 8, Fuel Anti-Ice Additive for instructions.

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Scale Position	Symbol	Scale Reading lb (kg)	Tare lb (kg)	Net Weight lb (kg)
Nose Landing Gear	N			
Left Main Landing Gear	L			
Right Main Landing Gear	R			
TOTAL AIRCRAFT WEIGHT				

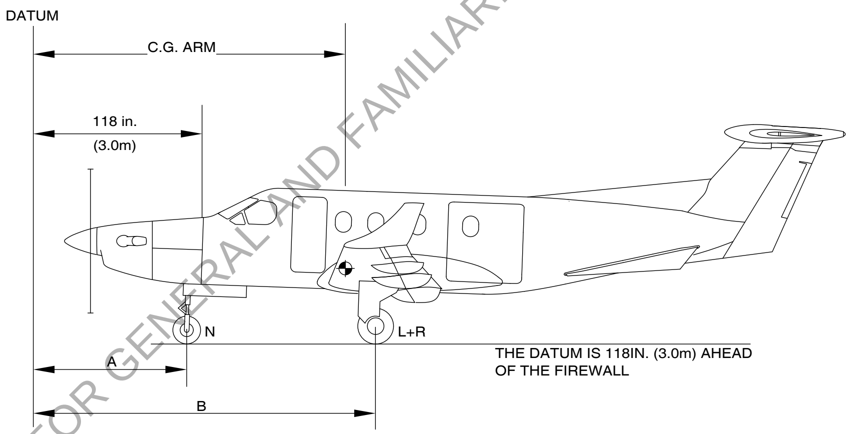

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Figure 6-3-1: Airplane Weighing Form

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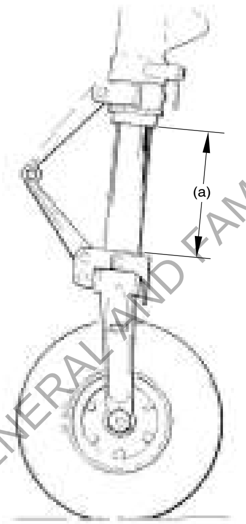
Landing Gear	Symbol	Dimension mm	Average (b) mm	Arm in (mm)	
Nose	(a)		- -		(A)
Left Main	(b)				(B)
Right Main	(c)		(L+R) / 2		

NOSE GEAR ARM



Dimension (a) is strut extension

Dimension (a) (mm)	Arm (A) (in)	Arm (A) (mm)
0	111.90	2842
20	111.82	2840
40	111.74	2838
60	111.62	2835
80	111.54	2833
100	111.46	2831
120	111.34	2828
140	111.27	2826
160	111.19	2824
180	111.07	2821
200	110.99	2819
220	110.91	2817
240	110.79	2814

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Figure 6-3-2: Airplane Weighing Form

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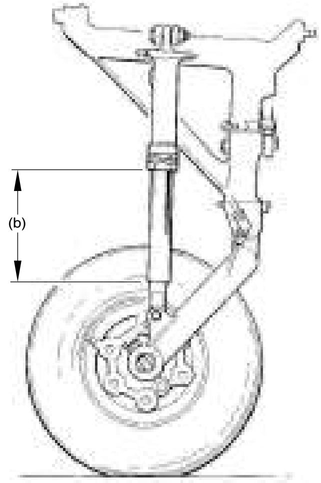
MAIN GEAR ARM



Dimension (b) is strut extension

Dimension (b) (mm)	Arm (B) (in)	Arm (B) (mm)
110	254.78	6471
130	254.46	6463
150	254.07	6453
170	253.60	6441
190	253.04	6427
210	252.41	6411
230	251.71	6393
250	250.88	6372
270	249.97	6349
290	248.91	6322
310	247.73	6292

Calculate the airplane C.G. arm as weighed:

$$\text{C.G. Arm (In or m)} = \frac{N \times A + (L + R) \times B}{T}$$

Where:
- A = Nose Landing gear arm
- B = Main Landing gear arm
- N = Nose Landing gear weight
- L = Left main landing gear weight
- R = Right main landing gear weight
- T = Total weight of N + L + R

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Figure 6-3-3: Airplane Weighing Form

6-4 Airplane Weighing with Jacks and Load Cells

6-4-1 Leveling

Put the jacks in position below the wing and tail jacking points. The fuselage jacking points must not be used. Refer to the manufacturer's instructions for the use of the load cell equipment. Position the load cells and adapters and slowly raise the aircraft clear of the ground.

Open the cargo door and place a level across the seat tracks. Place the level along the top of the inboard seat track and adjust the tail jack until the airplane is longitudinally level. Refer to Section 8, Levelling of this Handbook for more information concerning airplane leveling. Remove the level and carefully close the cargo door.

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6-4-2 Weighing

1 With the airplane level, record the weight shown on each load cell in the appropriate section on Fig. 6-4-1, Airplane Weighing Form.

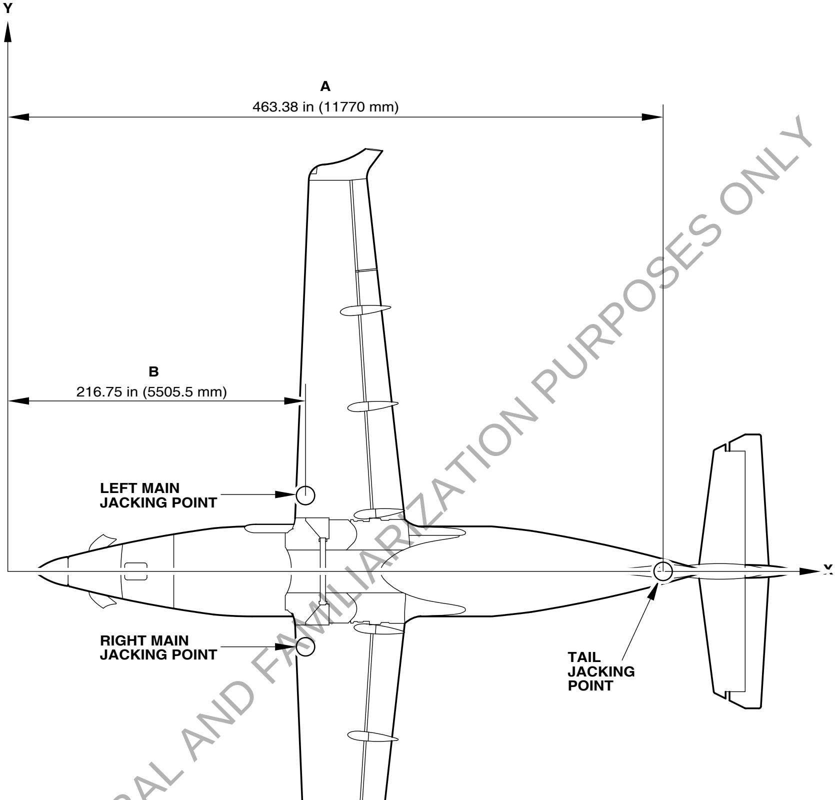
2 Calculate airplane C.G. Arm and record on Fig. 6-4-2, Airplane Basic Empty Weight. The C. G. Arm calculation formula is:

C. G. Arm in (m) = ((L + R) x B + T x A) / (L + R + T)

3 Adjust weight and moment for unusable fuel and optional equipment installed after airplane weighing to determine airplane Total Basic Empty Weight and Moment.

4 Calculate Basic Empty Weight C.G.

5 Update Fig. 6-6-1, Weight and Balance Record, as required.



Scale Position	Symbol	Scale Reading lb (kg)
Tail Jacking Point	**T**	
Left Main Jacking Point	**L**	
Right Main Jacking Point	**R**	
TOTAL AIRCRAFT WEIGHT		

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Figure 6-4-1: Airplane Weighing Form

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Model:	Serial No:	Registration No:			Date:	
Item	Weight		C.G. Arm		Moment	
	lb	kg	in	m	lb-in	mkg
1. Airplane Weight, C.G. arm, and moment (As weighed in Figure 6-1)						
2. Unusable Fuel	32.9	14.9	225.6	5.73	7422	85.39
3. Optional equipment, if applicable						
4. Optional equipment, if applicable						
5. Optional equipment, if applicable						
6. TOTAL BASIC EMPTY WEIGHT AND MOMENT (Sum of 1 thru 5)						

AIRPLANE USEFUL LOAD - NORMAL CATEGORY OPERATION

Ramp Weight		- Ramp Weight		= Useful Load	
lb	kg	lb	kg	lb	kg
		-	-	=	=

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Figure 6-4-2: Airplane Basic Empty Weight

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The Basic Empty Weight, C.G., and Useful Load are for the airplane as licensed at the factory. These figures are only applicable to the specific airplane serial number and registration number shown. Refer to Fig. 6-6-1. Weight and Balance Record when modifications to the airplane have been made.

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6-5 Weight and Balance Determination for Flight

6-5-1 General

This section contains the crew seats, baggage, fuel load moments charts and C of G envelopes in LB-IN and KG-M.

Refer to the Interior Configurations section for the passenger seat moments. Find the correct Moment Chart for the Interior Code No. of the aircraft.

An Example Loading Form and a blank Loading Form for owners/operators use are given in Fig. 6-5-1 and Fig. 6-5-2. Instructions on how to use the charts, complete the loading form and to determine if center of gravity is within approved limits are given below.

6-5-2 Completion of the Loading Form

Enter the current Running Basic Empty Weight and Total Moment from Fig. 6-6-1 in the appropriate space on the Loading Form, Fig. 6-5-2 (be careful to factor the moment by 1000 if appropriate).

Enter the weights of all of the crew, passengers, items stowed in cabinets and baggage to be loaded, in the appropriate space on the Loading Form, Fig. 6-5-2.

Use the Moment Charts in Table 6-5-2, Table 6-5-3, Table 6-5-4, Table 6-5-5, Table 6-5-6, and Table 6-5-7, to determine the moment for the crew and baggage.

Use the correct Interior Code No. Moment Chart in the Interior Configurations section, to determine the moment for the passengers.

Enter the moment of each item in the appropriate space on the Loading Form, Fig. 6-5-2.

Add the weight and moment of all of the items to the Basic Empty Weight and Moment of the airplane to determine the Zero Fuel Weight and Moment. Divide the moment by the weight to determine the c.g. arm.

Locate this point in the C.G. Envelope, Fig. 6-5-3. If the point falls within the envelope, the loading meets the weight and balance requirements.

Use the Moment Chart in Table 6-5-8 and Table 6-5-9, to determine the moment of the fuel load.

Enter the weight and moment of the fuel in the appropriate space on the Loading Form, Fig. 6-5-2.

Add the fuel weight and moment to the calculated Zero Fuel Weight and Moment to determine the Ramp Weight and Moment. Divide the moment by the weight to determine the c.g. arm.

Locate this point in the C.G. Envelope, Fig. 6-5-3. If the point falls within the envelope, the loading meets the weight and balance requirements.

Subtract the weight and moment of the fuel allowance for engine start and ground operations to determine Takeoff Weight and Moment. Divide the moment by the weight to determine the c.g. arm. Nose and main landing gear retraction or extension and flap retraction or extension weight and balance effects need not to be considered by the pilot for the weight and balance calculation.

Locate this point in the C.G. Envelope, Fig. 6-5-3. If the point falls within the envelope, the loading meets the weight and balance requirements for takeoff.

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6-5-3 Combi Conversion

A Combi Conversion can be made from the removal of cabin seats from a Corporate Commuter and the removal of cabin seats and furnishings from an Executive Interior aircraft. The Combi Interior consists of 2 crew seats and payload or a combination of seats and payload. Cargo nets can be installed to attachment points at frames 24 and 27. Refer to Section 2, Limitations, Other Limitations for the Cargo Limitations.

The airplane is weighed at the factory before the time of delivery. When other interior configurations are required, adjust the Basic Empty Weight and Moment and complete the landing form as follows:

- Make a temporary mark on the seat rail at the forward edge of the Corporate Commuter Seat(s) or mark position of the Executive Seat attachment fittings of the seat(s) to be removed with masking tape or similar material to expedite reinstallation. Remove the passenger seats and furnishings as required
- Use the passenger seats and furnishings weight and moment data in the relevant Interior Code section and determine the total weight and moment difference of the interior items removed from the aircraft.

Table 6-5-1: Example: EX-6S-2 Conversion Seat 5/6 removed. Frame 27 Cargo Net installed.

ITEM	WEIGHT LB (KG)	MOMENT LB-IN (KG-M)
Passenger Seat 5	- 60.09 (- 27.26)	- 19764.40 (- 227,70)
Passenger Seat 6	- 60.09 (- 27.26)	- 20485.50 (- 236,00)
Frame 27 Cargo Net	+ 3.60 (+ 1,65)	+ 1049.00 (+ 12,21)
Total Value	- 116.58 (- 52,87)	- 39200.90 (- 451,49)

Note

The figures are taken from the “Passenger Seats and Furnishings Weight and Moment Chart”.

Enter the Total Value on line 2 of the Loading Form, Fig. 6-5-2.

Calculate the cargo moment as follows:

1. Locate one of the luggage net floor attachment points at frame 34.
2. Measure distance from the attachment point to the center of the cargo i.e. 35 in (0,889 m).
3. The fuselage station dimension at the luggage net attachment point is 361.15 in (9,170 m)
4. The arm of the cargo is the fuselage station dimension of the net attachment point minus the distance to the center of the cargo.
5. Example:
   - Distance to cargo center = 35 in (0,889 m)
   - Net Fuselage Station = 361.15 in (9,170 m)
   - Cargo Arm = 361.15 in - 35 in = 326.15 in (9,170 m - 0,889 m = 8,281 m).
6. Enter the cargo arm and the weight of the cargo plus tie down straps and cargo arm on the Loading Form.

Complete the remainder of the Loading Form as given above.

When re-installing the passenger seats, return the seats to their original positions and verify the dimensions as shown in the Seat Location Chart for the aircraft configuration. Secure the arresting pin on the Corporate Commuter Seat(s) or install the locking needles on the Executive Seat(s). Remove the temporary seat rail marks.

Table 6-5-2: Moment Chart - Crew Occupant Moments (imperial)

CREW OCCUPANT MOMENTS (LB-IN) ARM 160.27 IN*							
WEIGHT lb	**MOMENT** lb-in*	**WEIGHT** lb	**MOMENT** lb-in*	**WEIGHT** lb	**MOMENT** lb-in*	**WEIGHT** lb	**MOMENT** lb-in*
50	8014	**100**	16027	**150**	24040	**200**	32054
60	9616	**110**	17630	**160**	25643	**210**	33657
70	11219	**120**	19232	**170**	27246	**220**	35259
80	12822	**130**	20835	**180**	28849	**230**	36862
90	14424	**140**	22438	**190**	30451	**240**	38465
* Arm for center position only. Adjust arm 0.69 inch for each hole from center position. Maximum seat travel is +/- 4 holes or +/- 2.76 inches from center position.							

Table 6-5-3: Moment Chart - Crew Occupant Moments (metric)

CREW OCCUPANT MOMENTS (KG-M) ARM 4.071 m*							
WEIGHT kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m
25	101,78	**50**	203,55	**75**	305,33	**100**	407,10
30	122,13	**55**	223,91	**80**	325,68	**105**	427,46
35	142,49	**60**	244,26	**85**	346,04	**110**	447,81
40	162,84	**65**	264,62	**90**	366,39	**115**	468,17
45	183,20	**70**	284,97	**95**	386,75	**120**	488,52
* Arm for center position only. Adjust arm 0.018 meter for each hole from center position. Maximum seat travel is +/- 4 holes or +/- 0.070 meters from center position.							

Table 6-5-4: Moment Chart - Rear Baggage Area Moments - Standard Net at Frame 34 (imperial)

REAR BAGGAGE AREA MOMENTS (LB-IN) STANDARD NET AT FRAME 34 - ARM 371.0 IN							
WEIGHT lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in
10	3710	110	40810	210	77910	310	115010
20	7420	120	44520	220	81620	320	118720
30	11130	130	48230	230	85330	330	122430
40	14840	140	51940	240	89040	340	126140
50	18550	150	55650	250	92750	350	129850
60	22260	160	59360	260	96460	360	133560
70	25970	170	63070	270	100170	370	137270
80	29680	180	66780	280	103880	380	140980
90	33390	190	70490	290	107590	390	144690
100	37100	200	74200	300	111300	397	147287

Table 6-5-5: Moment Chart - Rear Baggage Area Moments - Standard Net at Frame 34 (metric)

REAR BAGGAGE AREA MOMENTS (KG-M) STANDARD NET AT FRAME 34 - ARM 9.420 M							
WEIGHT Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m
5	47,10	55	518,10	105	989,10	155	1460,10
10	94,20	60	565,20	110	1036,20	160	1507,20
15	141,30	65	612,30	115	1083,30	165	1554,30
20	188,40	70	659,40	120	1130,40	170	1601,40
25	235,50	75	706,50	125	1177,50	175	1648,50
30	282,60	80	753,60	130	1224,60	180	1695,60
35	329,70	85	800,70	135	1271,70		
40	376,80	90	847,80	140	1318,80		
45	423,90	95	894,90	145	1365,90		
50	471,00	100	942,00	150	1413,00		

Table 6-5-6: Moment Chart - Rear Baggage Area Moments - Extendable Net at Frame 32 (imperial)

REAR BAGGAGE AREA MOMENTS (LB-IN) EXTENDABLE NET AT FRAME 32 - ARM 361.0 IN							
WEIGHT lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in
10	3610	140	50543	270	97476	400	144409
20	7220	150	54154	280	101087	410	148020
30	10831	160	57764	290	104697	420	151630
40	14441	170	61374	300	108307	430	155240
50	18051	180	64984	310	111917	440	158850
60	21661	190	68594	320	115528	450	162461
70	25272	200	72205	330	119138	460	166071
80	28882	210	75815	340	122748	470	169681
90	32492	220	79425	350	126358	480	173291
100	36102	230	83035	360	129969	490	176902
110	39713	240	86646	370	133579	500	180512
120	43323	250	90256	380	137189		
130	46933	260	93866	390	140799		

Table 6-5-7: Moment Chart - Rear Baggage Area Moments - Extendable Net at Frame 32 (metric)

REAR BAGGAGE AREA MOMENTS (KG-M) EXTENDABLE NET AT FRAME 32 - ARM 9.17 M							
WEIGHT Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg- m	**WEIGHT** Kg	**MOMENT** Kkg-m
5	45,85	70	641,90	135	1237,95	200	1834,00
10	91,70	75	687,75	140	1283,80	205	1879,85
15	137,55	80	733,60	145	1329,65	210	1925,70
20	183,40	85	779,45	150	1375,50	215	1971,55
25	229,25	90	825,30	155	1421,35	220	2017,40
30	275,10	95	871,15	160	1467,20	225	2063,25
35	320,95	100	917,00	165	1513,05		
40	366,80	105	962,85	170	1558,90		
45	412,65	110	1008,70	175	1604,75		
50	458,50	115	1054,55	180	1650,60		
55	504,35	120	1100,40	185	1696,45		
60	550,20	125	1146,25	190	1742,30		
65	596,05	130	1192,10	195	1788,15		

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Table 6-5-8: Moment Chart - Fuel Load Moments (imperial)

FUEL LOAD MOMENTS (LB-IN)							
WEIGHT lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in	**WEIGHT** lb	**MOMENT** lb-in
100	22572	800	183555	1500	347656	2200	511463
200	45161	900	207111	1600	371079	2300	534839
300	67776	1000	230572	1700	394500	2400	558130
400	90443	1100	253974	1800	417912	2500	581450
500	113351	1200	277441	1900	441347	2600	604724
600	136538	1300	300811	2000	464746	2700	628029
700	159955	1400	324221	2100	488120		

Table 6-5-9: Moment Chart - Fuel Load Moments (metric)

FUEL LOAD MOMENTS (KG-M)							
WEIGHT Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m	**WEIGHT** Kg	**MOMENT** Kg-m
50	286,64	400	2337,14	750	4419,61	1100	6497,53
100	573,59	450	2635,13	800	4717,33	1150	6793,90
150	860,84	500	2932,34	850	5014,59	1200	7090,37
200	1149,27	550	3230,45	900	5312,14	1250	7385,69
250	1441,88	600	3526,99	950	5608,06		
300	1738,40	650	3824,03	1000	5905,10		
350	2037,52	700	4122,29	1050	6201,26		

Note

Unusable fuel is considered in empty weight. The chart shows only additional fuel.

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PC-12/47E EXAMPLE LOADING FORM	INTERIOR CODE: STD-9S		
ITEM	**WEIGHT lb**	**ARM AFT OF DATUM in**	**MOMENT lb-in**
1. **Basic Empty Weight**	5613	225.16	1263823
2. Combi Interior Conversion	NA	NA	NA
3. Pilot	170	160.27	27246
4. Copilot (Right Seat Passenger)	170	160.27	27246
5. Passenger 1	170	210.35	35760
6. Passenger 2	170	207.35	35250
7. Passenger 3	170	243.35	41370
8. Passenger 4	170	240.35	40860
9. Passenger 5	170	276.35	46980
10. Passenger 6	170	273.35	46470
11. Passenger 7	170	309.35	52590
12. Passenger 8	170	306.35	52080
13. Passenger 9	170	339.35	57690
14. Optional Wardrobe		191.00	
15. LH Cabinet		212.10	
16. RH Cabinet		211.19	
17. a. Rear Baggage (net at frame 32) b. Rear Baggage (net at frame 34)	215	361.00 371.00	79765
18. Cargo			
19. **Zero Fuel Weight** MZFW 9039 lb (Sum of 1 thru 18)	7698	235.68	1814269
20. Fuel	1650	-	382790
21. **Ramp Weight** MRW 10495 lb (Sum of 19 + 20)	9348	235.03	2197059
22. Less Fuel for Ground Operations	-40	-	
23. Fuel at Takeoff (Sum of 20 + 22)	1610	-	373421
24. **Takeoff Weight** MTOW 10450 lb (Sum of 19 + 23)	9308	235.03	2187690

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Figure 6-5-1: Example Loading Form - Imperial Units

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PC-12/47E LOADING FORM INTERIOR CODE: STD-9S			
ITEM	**WEIGHT lb**	**ARM AFT OF DATUM in (m)**	**MOMENT lb-in (kg-m)**
1. **Basic Empty Weight**			
2. Combi Interior Conversion			
3. Pilot		160.27 (4.071)	
4. Copilot (Right Seat Passenger)		160.27 (4.071)	
5. Passenger 1			
6. Passenger 2			
7. Passenger 3			
8. Passenger 4			
9. Passenger 5			
10. Passenger 6			
11. Passenger 7			
12. Passenger 8			
13. Passenger 9			
14. Optional Wardrobe		191.00 (4.851)	
15. LH Cabinet		212.10 (5.387)	
16. RH Cabinet		211.19 (5.364)	
17. a. Rear Baggage (net at frame 32) b. Rear Baggage (net at frame 34)		361.00 (9.170) 371.00 (9.423)	
18. Cargo			
19. **Zero Fuel Weight** MZFW 9039 lb (4100 kg) (Sum of 1 thru 18)			
20. Fuel		-	
21. **Ramp Weight** MRW 10495 lb (4760 kg) (Sum of 19 + 20)			
22. Less Fuel for Ground Operations		-	-
23. Fuel at Takeoff (Sum of 20 + 22)			
24. **Takeoff Weight** MTOW 10450 lb (4740 kg) (Sum of 19 + 23)			

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Figure 6-5-2: Loading Form

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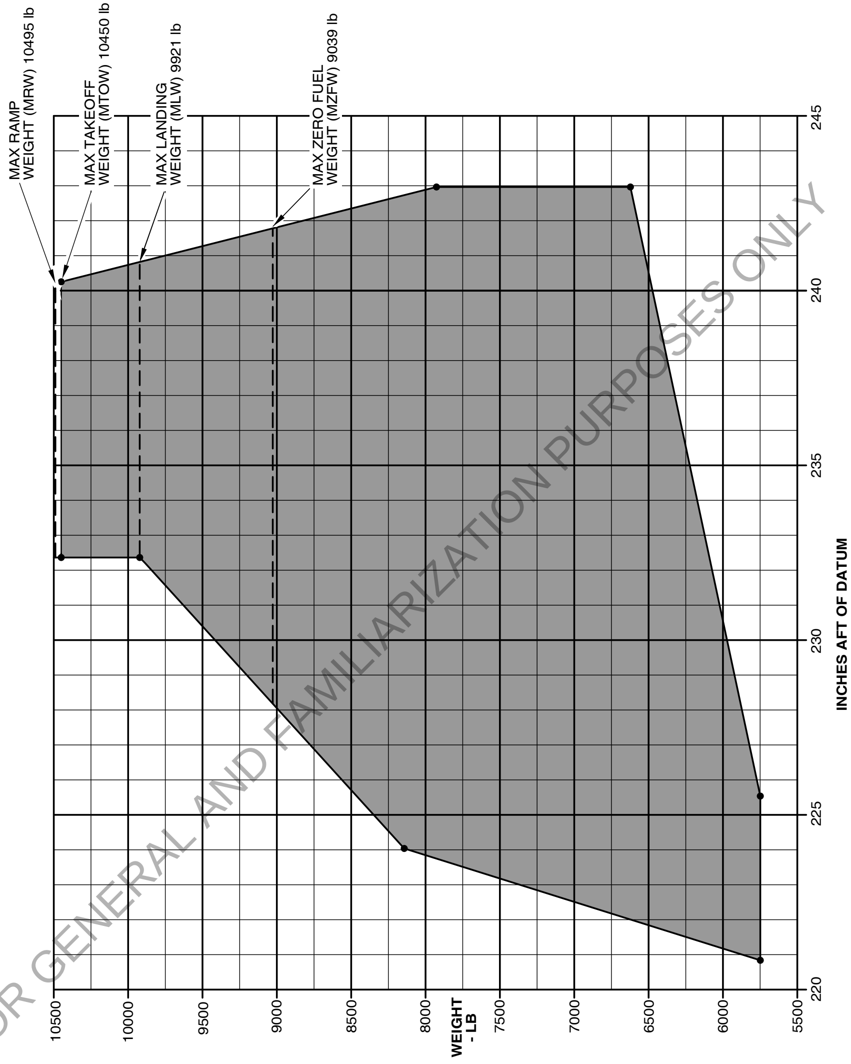

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Figure 6-5-3: C. G. Envelope (Sheet 1 of 2)

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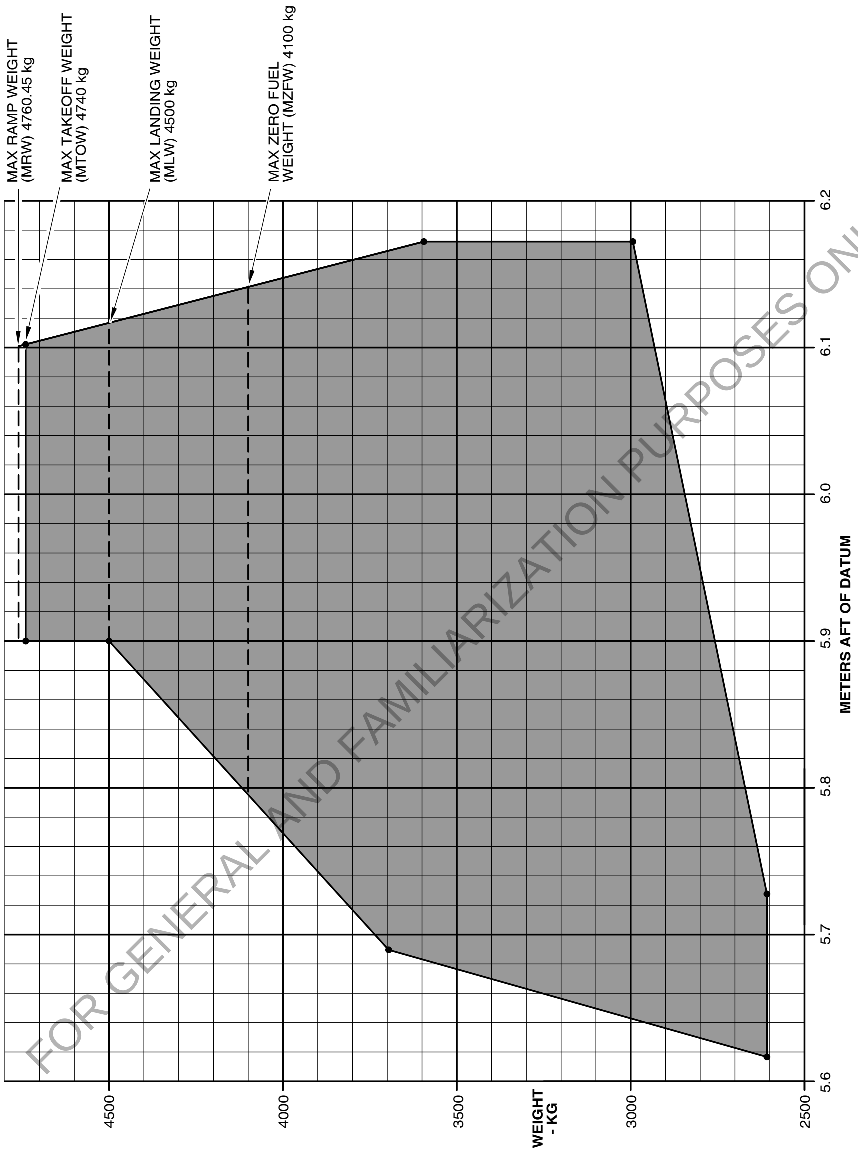

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Figure 6-5-3: C. G. Envelope (Sheet 2 of 2)

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6-5-4 Equipment List

Refer to Pilatus Report No. 02047, Airplane equipment List, attached to the back of this report. The equipment list itemizes the installed equipment included in the Basic Empty Weight indicated in the Airplane Basic Empty Weight figure Fig. 6-4-2 of this Airplane Flight Manual.

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6-6 Weight and Balance Records

Fig. 6-6-1 Weight and Balance Record is a log of the modifications that occurred after the airplane was licensed at the factory. Any change to the permanently installed equipment or airplane modifications which effect the airplane Basic Empty Weight or Total Moment must be entered in Fig. 6-6-1 Weight and Balance Record. The last entry on the Weight and Balance Record will be the current airplane Basic Empty Weight and Total Moment.

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Serial Number			Registration Number				Page Number	
Date	Item No.	Description of Article or Modification	Add (+) Rem (-)	Weight Change			Running Basic Empty Weight	
				Wt lb (kg)	Arm in (m)	Moment lb-in / 1000 (mkg)	Wt lb (kg)	Moment lb-in / 1000 (mkg)
		As Delivered						

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Figure 6-6-1: Weight and Balance Record (Sheet 1 of 2)

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Serial Number			Registration Number				Page Number	
Date	Item No.	Description of Article or Modification		Weight Change			Running Basic Empty Weight	
			Add (+) Rem (-)	Wt lb (kg)	Arm in (m)	Moment lb-in / 1000 (mkg)	Wt lb (kg)	Moment lb-in / 1000 (mkg)

ICN-12-C-A150606-A-S4080-00148-A-001-01

Figure 6-6-1: Weight and Balance Record (Sheet 2 of 2)

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6-7 General Loading Recommendations

6-7-1 General

The following general loading recommendation is intended as only a guide. Refer to Section 2, Limitations, Other Limitations for Seating and Cargo Limitations. The pilot in command must refer to the appropriate moment charts, loading form, and the C.G. Envelope to determine that the airplane is properly loaded.

Fuel load may be limited by maximum weight.

Load fuel equally between the left and right wing fuel tanks.

6-7-2 Cargo

Before loading the airplane, attach the tail support stand to prevent the tail from contacting the ramp surface while ground personnel are in the aft cabin during the loading process.

Observe the maximum floor and seat rail load limits given on the placard on the forward and rear cargo door frame. Fig. 6-7-1 gives the cabin dimensions and loading areas.

Cargo having a total weight less than 66 lbs (30 kg) may be stowed aft of the cargo net. Heavier cargo is to be secured in the cabin area with tie-down straps attached to seat rail anchor points. Refer to Fig. 6-7-2, Fig. 6-7-3, Fig. 6-7-4, Fig. 6-7-5, Fig. 6-7-6, Fig. 6-7-7, Fig. 6-7-9, Fig. 6-7-10, Fig. 6-7-11 and Fig. 6-7-12 for cargo weight calculation, restraining bar installation and tie-down strap installation. Refer to Fig. 6-7-13 for cargo net installation.

Refer to the Illustrated Parts Catalog (IPC) Chapter 25 for the part numbers of the approved cargo restraint nets, tie down straps, load carriers and retaining bars.

6-7-3 Hazardous Materials

Protection against the damaging effects of leakage of hazardous materials has not been provided in the cargo area. Provisions should be made for protection if carriage of these materials is planned.

In addition to the pilot in command, other personnel used for loading and unloading should be properly trained concerning the handling, storage, loading and unloading of hazardous materials if they are to be carried.

Information and regulations pertaining to the air transportation of hazardous materials is outlined in the Code of Federal Regulations (CFR) Title 49 and in the International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air.

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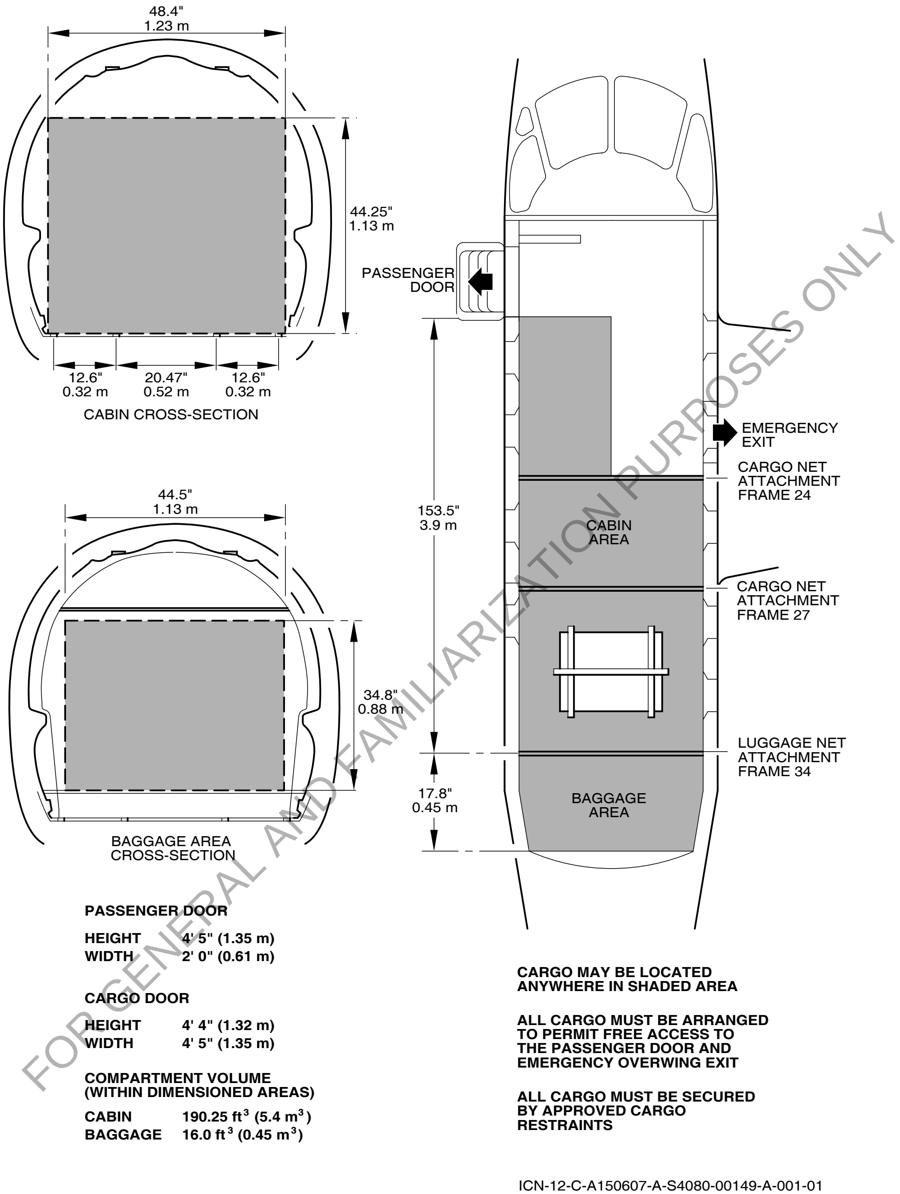

Figure 6-7-1: Loading Areas

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6-7-4 Maximum Allowable Weight Per Single Container (Without Special Equipment)

The maximum allowable weight is based on the package dimensions, vertical c.g. and the number of seat rails used to secure the fore-aft tie-down straps.

The flowcharts below can be used to determine whether the weight of a cargo item is acceptable, which Restraint Bars are to be used, and how the cargo is to be loaded.

The cargo dimensions are defined as shown in Fig. 6-7-2.

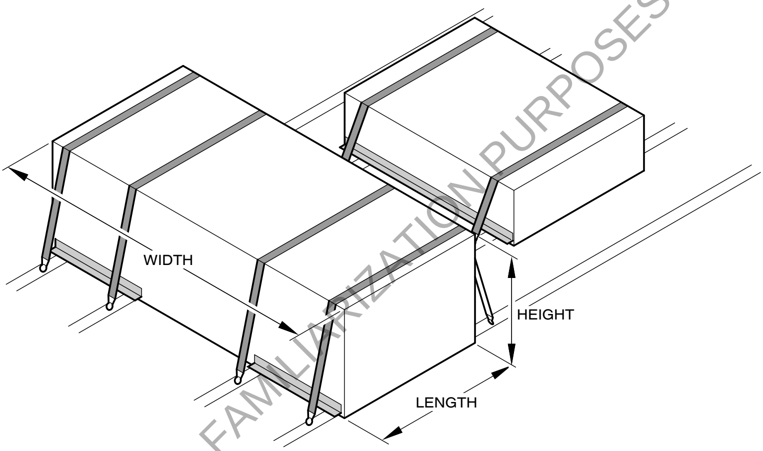

Figure 6-7-2: Cargo Dimensions

The process to decide whether and how cargo can be tied down follows the following 4 steps

1 Determine the cargo size and orientation.

2 Determine the correct restraint bars.

3 Determine the correct cargo tie-down configuration chart and curve.

4 Determine allowable cargo weight.

These steps are explained in the following flowcharts, followed by an example to demonstrate their use.

MAXIMUM ALLOWABLE WEIGHT PER SINGLE CONTAINER
(WITHOUT SPECIAL EQUIPMENT)

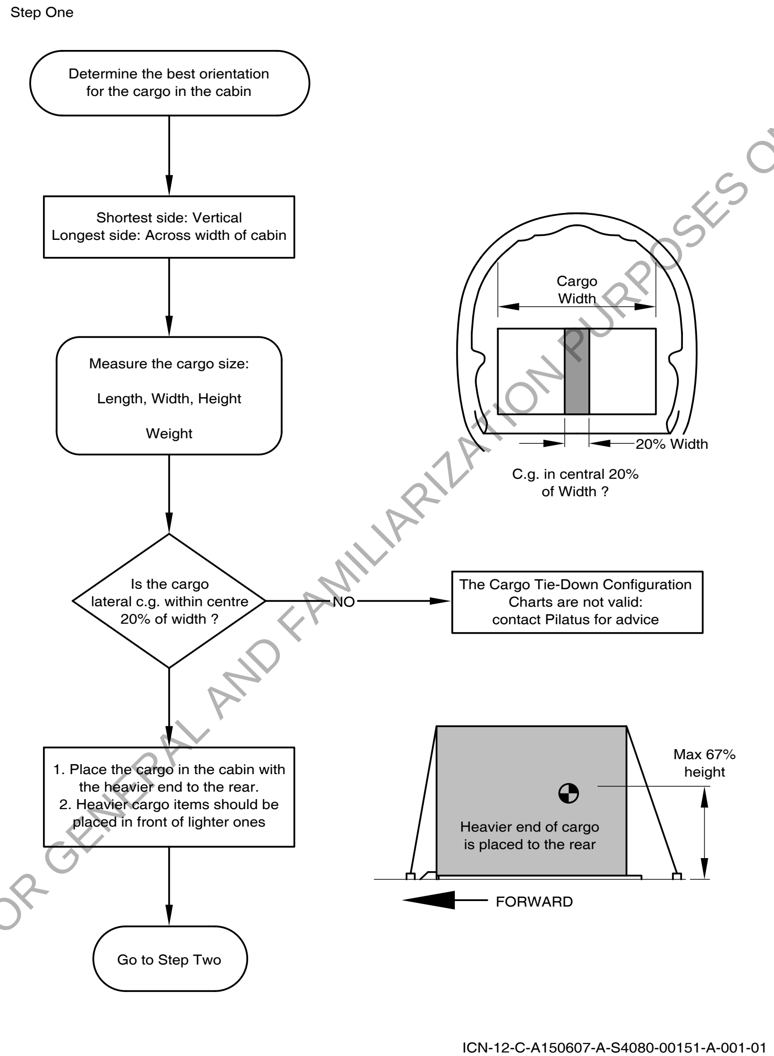

Figure 6-7-3: Step One - Cargo Size and Orientation

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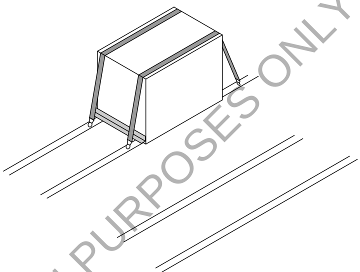
Step Two

Choose the correct Restraint Bar(s) based on the cargo width

↓

Cargo width between 14.5'' and 15.75''
(between 370 mm and 400 mm)
Use a single, short Restraint Bar
(525.25.12.072 or 525.25.12.171 or 525.25.12.276)
at one side of the aircraft



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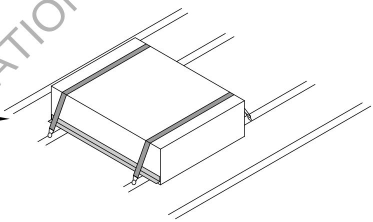
Cargo width between 22.5'' and 33''
(between 570 mm and 840 mm)
Use a single, long Restraint Bar
(525.25.12.073 or 525.25.12.172 or 525.25.12.277)
in the centre of the aircraft



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Cargo width between 33'' and 48.4''
(between 840 mm and 1,230 mm)
Use both short Restraint Bars
(525.25.12.072 or 525.25.12.171 or 525.25.12.276)
one either side of the aircraft

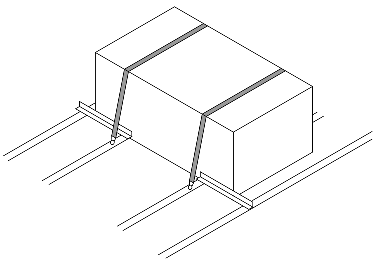

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Figure 6-7-4: Step Two - Determine the Correct Cargo Restraint Bars

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MAXIMUM ALLOWABLE WEIGHT PER SINGLE CONTAINER (WITHOUT SPECIAL EQUIPMENT)

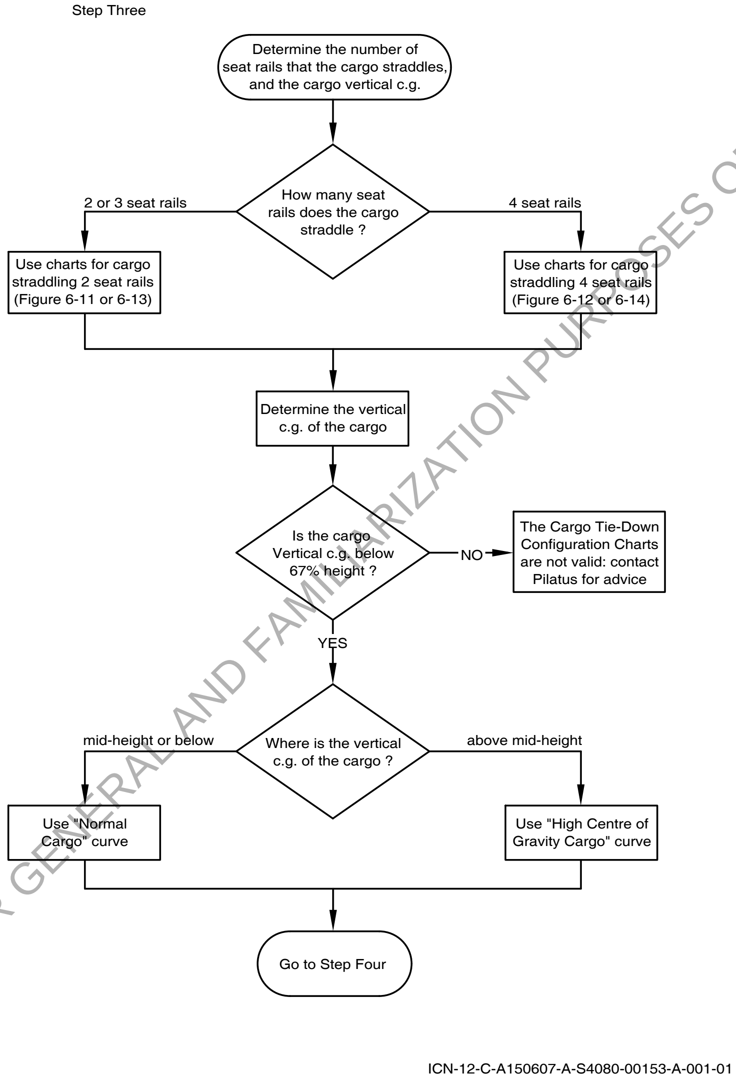

Figure 6-7-5: Step Three - Determine the number of Seat Rails that the Cargo straddles, and the Cargo vertical c.g.

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MAXIMUM ALLOWABLE WEIGHT PER SINGLE CONTAINER (WITHOUT SPECIAL EQUIPMENT)

Step Four

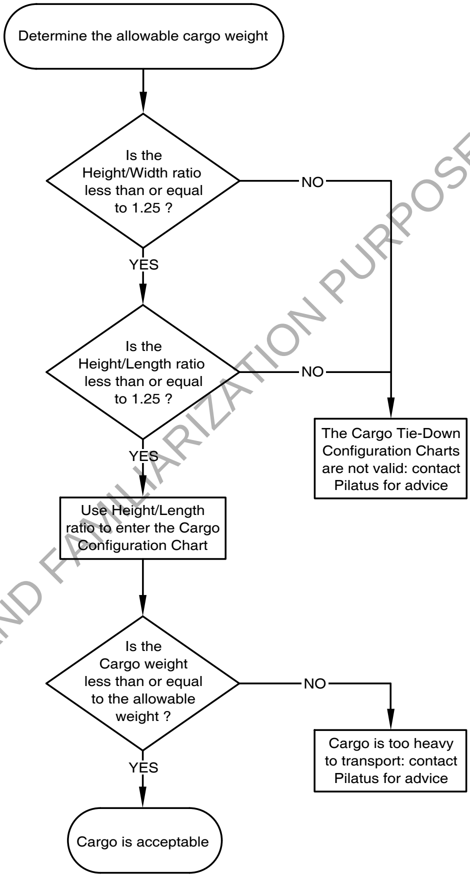

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Figure 6-7-6: Step Four - Determine Allowable Cargo Weight

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6-7-4.1 Restrain Cargo in Cabin

Fit the Restraint Bars and the Load Carrier Assemblies to the aircraft. If there is more than one cargo item, try to place the heavier items forward of the lighter ones.

Place cargo in cabin: ensure cargo is firmly against Restraint Bar(s).

Restrain cargo with straps attached to the seat rails.

- The straps shall be placed in the fore-aft direction: do not place diagonally
- Place front strap fitting as close as feasible to Restraint Bar. Place rear fitting to give a strap angle of 10° to 20°, as shown in Fig. 6-7-7.
- Additional straps may be placed laterally on cargo straddling the centre two seat rails, if desired.

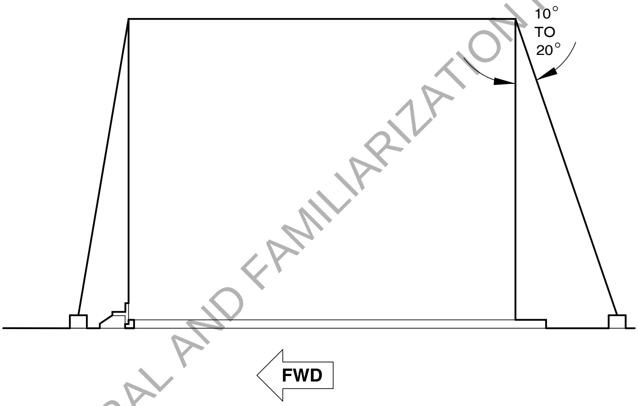

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Figure 6-7-7: Fore-aft Strap Angles

Perform the Weight and Balance check to verify that the Maximum Takeoff Weight (MTOW) and aircraft c.g. position are within the limits given in Section 2, Limitations, Weight Limits and Center of Gravity Limits.

6-7-4.2 Example

The cargo to be transported is shown below. Looking down, the c.g. is roughly in the centre of the box, but its height is unknown.

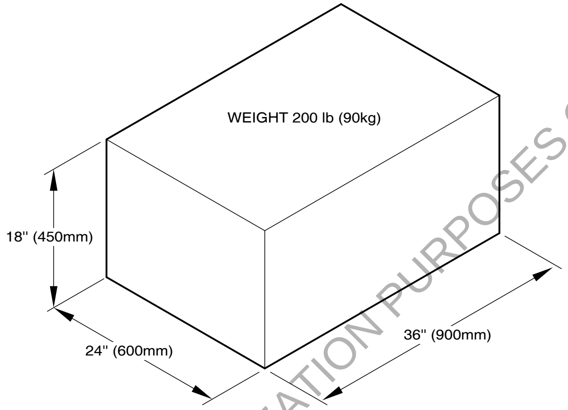

Figure 6-7-8: Maximum Allowable Weight Per Single Container (Without Special Equipment)

1 Determine the cargo size and orientation

1.1 The best orientation in the cabin is with the shortest side (18”) vertical and the longest side (36”) across the cabin width. Fig. 6-7-1 shows that this will fit in the cargo area.

1.2 Using the definitions of Fig. 6-7-2, the cargo dimensions are:

- Height: 18” (450 mm)
- Length: 24” (600 mm)
- Width: 36” (900 mm).

1.3 The cargo lateral c.g. is approximately in middle of the box: the charts are valid.

2 Determine the correct restraint bars

2.1 The cargo width is 36” (900mm). Both short restraining bars are used.

2.2 Two cargo-restraining straps, fitted to the inner seat rails, are required.

3 Determine the correct cargo tie-down configuration chart and curve

3.1 The front stop is attached to 4 seat rails, but cargo tie down straps can only be fitted to the inner seat tracks. This cargo straddles 2 seat rails. The restraining Bars are angle shaped (not “T”-section) and thus Fig. 6-7-9 is used.

3.2 The cargo vertical c.g. position is unknown: use the “high centre of gravity” curve.

4 Determine allowable cargo weight

4.1 Height/Width = 18”/36” = 0.33. Less than 1.25, therefore OK.

4.2 Height/Length = 18”/24” = 0.75. Less than 1.25, therefore OK.

4.3 From Fig. 6-7-9, the allowable cargo weight is 214 lb (97kg): cargo weight is acceptable.

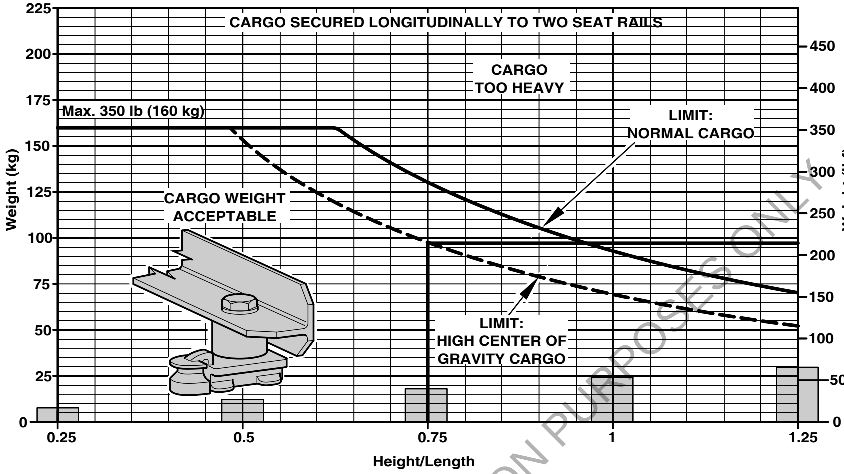

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Figure 6-7-9: Cargo straddling two (2) seat rails: Angle Restraining Bar

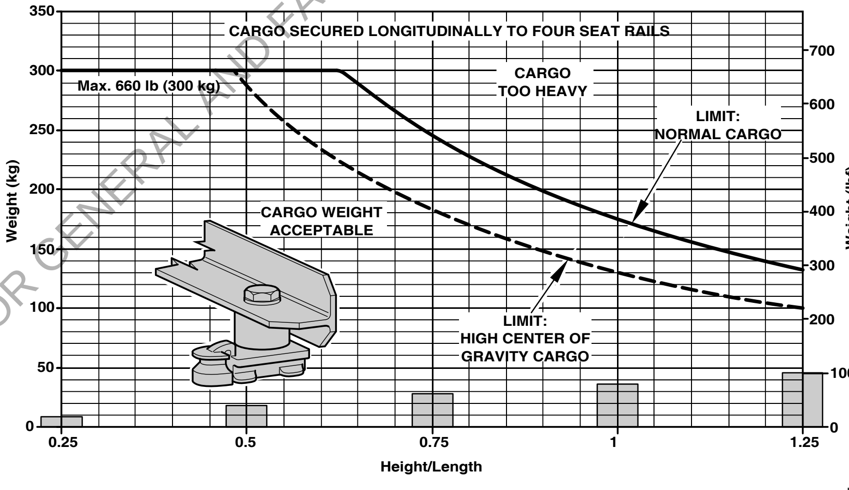

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Figure 6-7-10: Cargo straddling four (4) seat rails: Angle Restraining Bar

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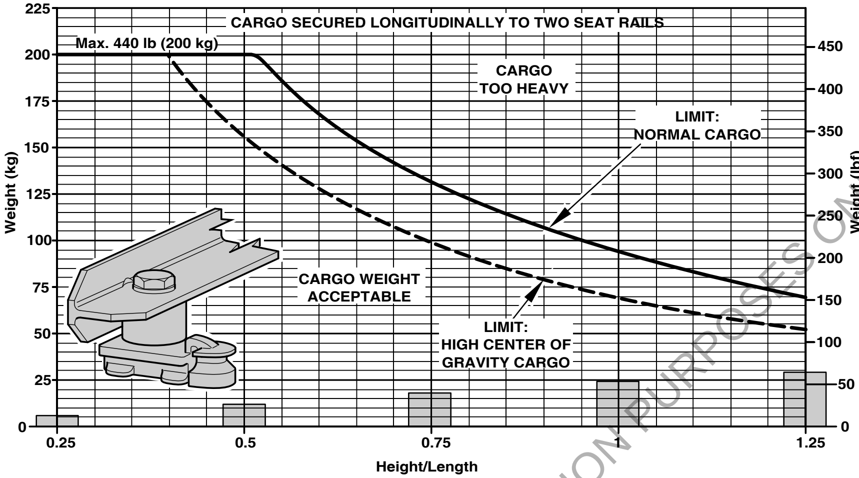

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Figure 6-7-11: Cargo straddling two (2) seat rails: "T" Restraining Bar

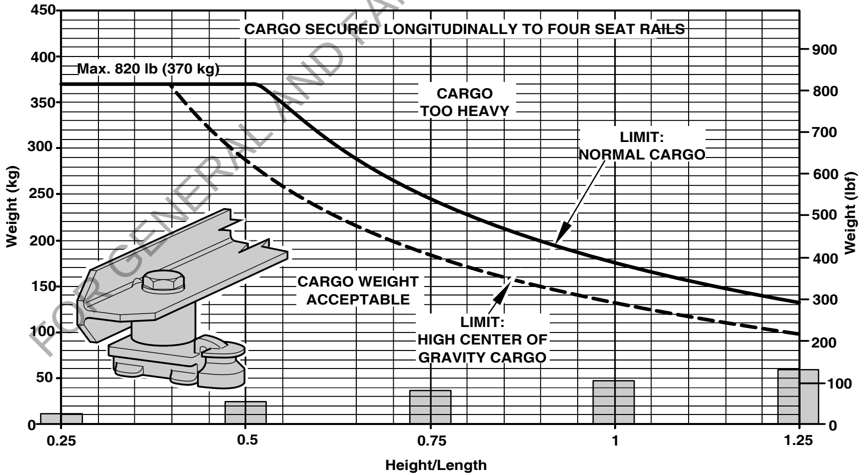

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Figure 6-7-12: Cargo straddling four (4) seat rails: "T" Restraining Bar

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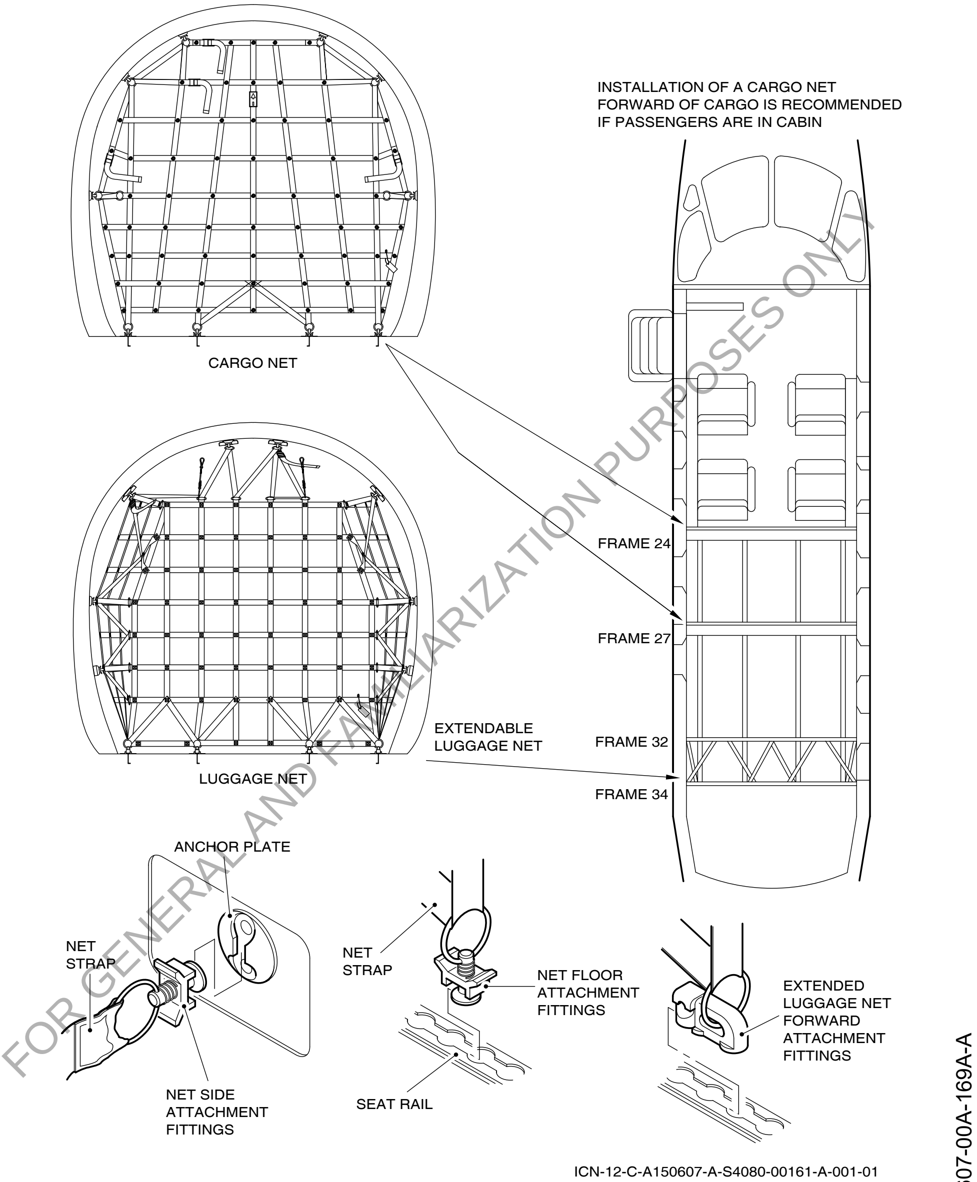

Figure 6-7-13: Cargo and Luggage Restraint Installation

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6-8 Interior Configurations

6-8-1 General

The PC-12 was designed and certified initially with two basic cabin interior configurations, a Corporate Commuter (Code STD-9S) and an Executive interior (Code EX-6S). The Corporate Commuter interior consists of two crew seats and 9 standard passenger seats. Two versions of standard passenger seats are available: with or without a literature pocket installed. The Executive interior consists of two crew seats and 6 executive seats with forward storage cabinets and a toilet.

Variations to the two basic interior configurations are continuously being developed. The various configurations that have been approved are given below. Before using them it is the operators responsibility to check whether they require authorization by their regulatory authority. Some of the configurations require structural and system modifications, check with the Service Bulletin Index for the applicable SB's.

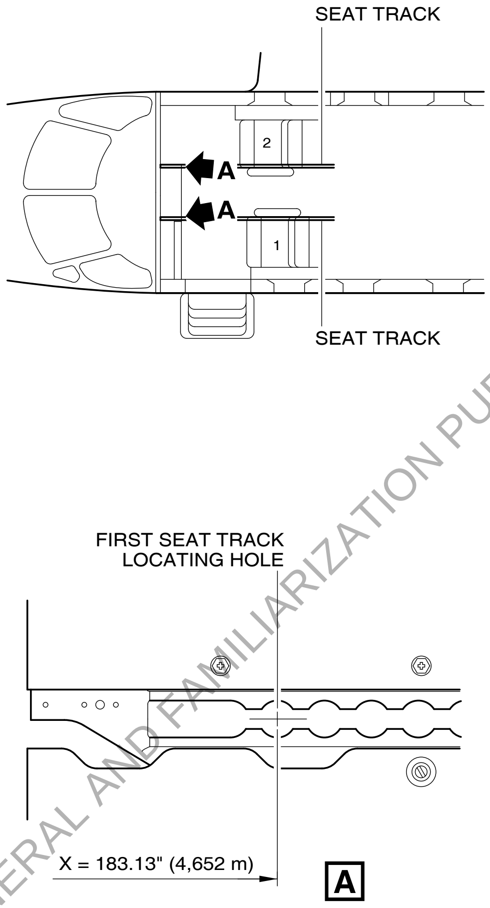
A Code Number is given to each interior configuration. The code is shown on a placard which is installed on the cargo door frame. The placard code gives the type and number of seats that are installed in the aircraft. Before making any changes to the interior configuration, contact Pilatus to make sure that any modification work or SB's are identified for embodiment. The placard must then be changed to show the correct code for the new configuration.

It is possible for aircraft with the executive interior to have more than one placard installed on the cargo door frame. The removal or installation of the rear seats must be done in accordance with an approved configuration. The correct weight and moment charts for the configuration must then be used for weight and balance determination for flight.

The following code numbers have been allocated and the seat locations, if applicable, are given in the following sub-sections:

- CORPORATE COMMUTER Interior Layout CODE STD-9S (nine standard seats)
- EXECUTIVE Interior Layout CODE EX-6S-2 (six executive seats)
- EXECUTIVE Interior Layout CODE EX-8S (eight executive seats)
- EXECUTIVE Interior Layout CODE EX-6S-STD-2S (six executive seats and two standard seats)
- EXECUTIVE Interior Layout CODE EX-4S-STD-4S (four executive seats and four standard seats)
- No Cabin Interior Configuration.

All distances on the passenger seat locating charts given in this section are based on the first seat track locating hole (refer to Fig. 6-8-1).



NOTE:

CABIN SEAT LOCATION IS DEFINED AS THE DISTANCE FROM THE CENTER OF THE FIRST SEAT TRACK LOCATING HOLE TO THE CENTER OF THE CENTER ARRESTING PIN ON EACH SEAT.

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Figure 6-8-1: Interior Configurations - First Seat Track Locating Hole

12-C-A15-30-0608-00A-169A-A

6-8-2 Corporate Commuter Interior Code STD-9S

6-8-2.1 General

The basic Corporate Commuter Interior consisting of 9 standard passenger seats.

The section contains the following information:

- passenger seat location chart
- permitted passenger seat Part Numbers that can be installed
- passenger seat and furnishings weight and moment chart (standard and metric units)
- passenger seat occupant moment charts (standard and metric units).

All distances on the passenger seat locating chart are based on the first seat track locating hole (refer to Fig. 6-8-1).

CORPORATE COMMUTER INTERIOR CODE STD-9S

SEAT LOCATIONS

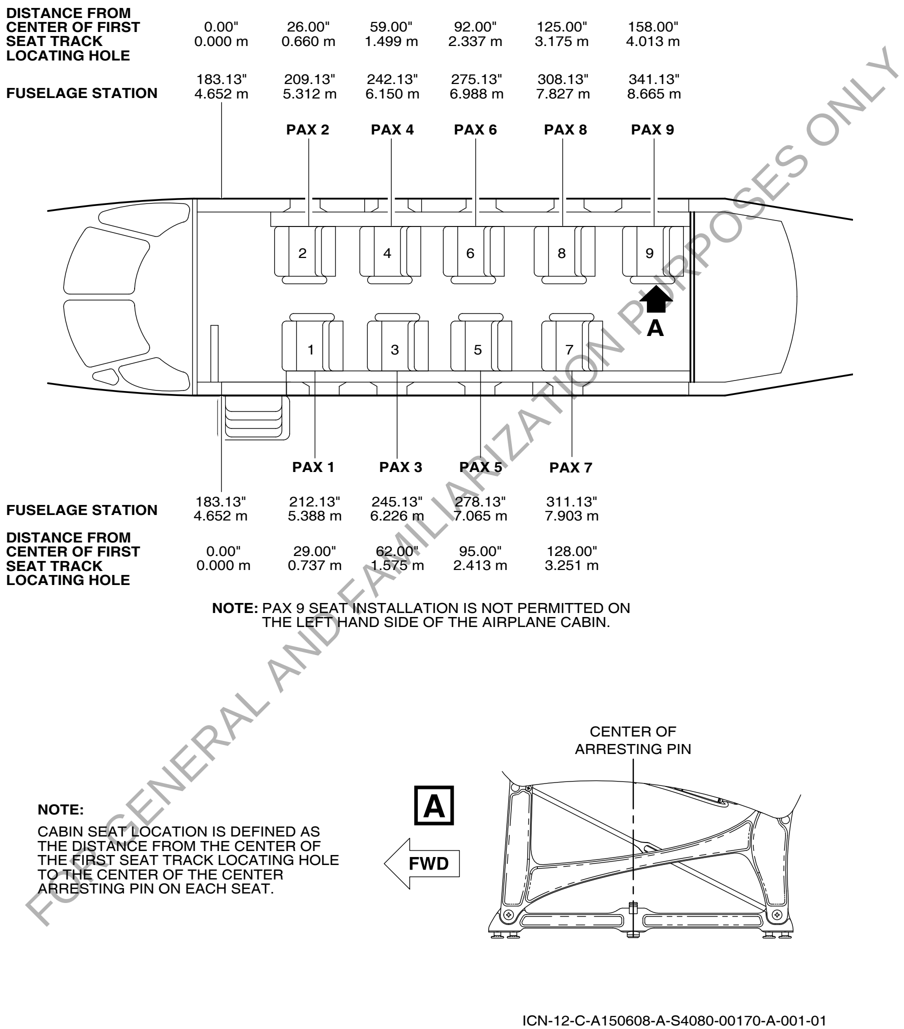

Figure 6-8-2: Corporate Commuter Interior Code STD-9S Seat Locations

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6-8-2.2 Permitted Passenger Seat Part Numbers That Can Be Installed

Table 6-8-1: STD-9S - Permitted Passenger Seat Part Numbers That Can Be Installed

SEAT NO.	SEAT PART NUMBER
1,3,5,7	959.30.01.445 (with literature pocket) 959.30.01.447 (without literature pocket)
2,4,6,8,9	959.30.01.446 (with literature pocket) 959.30.01.448 (without literature pocket)

Note

The CARES^{TM} child restraint system (part number 959.30.01.591), for children older than 24 months and weight between 22 - 44 lb (10 - 20 kg), can be used on all of the above seats.

6-8-2.3 Passenger Seats and Furnishings Weight and Moment Chart

Table 6-8-2: STD-9S - Passenger Seats and Furnishings Weight and Moment Chart

ITEM	WEIGHT lb (kg)	MOMENT lb-in (kg-m)
PASS SEAT 1	31.6 (14,3)	6890 (79,38)
PASS SEAT 2	31.6 (14,3)	6795 (78,29)
PASS SEAT 3	31.6 (14,3)	7933 (91,40)
PASS SEAT 4	31.6 (14,3)	7838 (90,30)
PASS SEAT 5	31.6 (14,3)	8975 (103,41)
PASS SEAT 6	31.6 (14,3)	8881 (102,32)
PASS SEAT 7	31.6 (14,3)	10018 (115,42)
PASS SEAT 8	31.6 (14,3)	9923 (114,33)
PASS SEAT 9	31.6 (14,3)	10966 (126,35)
FR 24 CARGO NET	3.6 (1,65)	941 (10,96)
FR 27 CARGO NET	3.6 (1,65)	1049 (12,21)
FR 32 EXTENDABLE BAGGAGE NET	6.44 (2,92)	2325 (26,78)
FR 34 BAGGAGE NET	5.13 (2,325)	1855 (21,38)

Adjust the aircraft Basic Empty Weight on the Loading Form Fig. 6-5-2 for items removed/ added when converting to or from a Combi Interior Conversion.

When installing the extendable baggage net refer to Section 2, Limitations, Other Limitations for the Luggage Limitations.

6-8-2.4 Passenger Seat Occupant Moment Charts (Standard and Metric Units)

Table 6-8-3: STD-9S - Passenger Seat Occupant Moment Chart (imperial)

PASSENGER SEAT OCCUPANT MOMENTS (LB - IN)									
WEIGHT (lb)	**PAX 1 (210.35 in)**	**PAX 2 (207.35 in)**	**PAX 3 (243.35 in)**	**PAX 4 (240.35 in)**	**PAX 5 (276.35 in)**	**PAX 6 (273.35 in)**	**PAX 7 (309.35 in)**	**PAX 8 (306.35 in)**	**PAX 9 (339.35 in)**
50	10517	10367	12167	12017	13817	13667	15467	15317	16967
60	12621	12441	14601	14421	16581	16401	18561	18381	20361
70	14724	14514	17034	16824	19344	19134	21654	21444	23754
80	16828	16588	19468	19228	22108	21868	24748	24508	27148
90	18931	18661	21901	21631	24871	24601	27841	27571	30541
100	21035	20735	24335	24035	27635	27335	30935	30635	33935
110	23138	22808	26768	26438	30398	30068	34028	33698	37328
120	25242	24882	29202	28842	33162	32802	37122	36762	40722
130	27345	26955	31635	31245	35925	35535	40215	39825	44115
140	29449	29029	34069	33649	38689	38269	43309	42889	47509
150	31552	31102	36502	36052	41452	41002	46402	45952	50902
160	33655	33175	38935	38455	44215	43735	49495	49015	54295
170	35759	35249	41369	40859	46979	46469	52589	52079	57689
180	37862	37322	43802	43262	49742	49202	55682	55142	61082
190	39966	39396	46236	45666	52506	51936	58776	58206	64476
200	42069	41469	48669	48069	55269	54669	61869	61269	67869
210	44173	43543	51103	50473	58033	57403	64963	64333	71263
220	46276	45616	53536	52876	60796	60136	68056	67396	74656
230	48380	47690	55970	55280	62560	62870	71150	70460	78050
240	50483	49763	58403	57683	66323	65603	74243	73523	81443

Table 6-8-4: STD-9S - Passenger Seat Occupant Moment Chart (metric)

PASSENGER SEAT OCCUPANT MOMENTS (KG - M)									
WEIGHT (kg)	**PAX 1 (5,343 m)**	**PAX 2 (5,267 m)**	**PAX 3 (6,181 m)**	**PAX 4 (6,105 m)**	**PAX 5 (7,019 m)**	**PAX 6 (6,943 m)**	**PAX 7 (7,857 m)**	**PAX 8 (7,781 m)**	**PAX 9 (8,619 m)**
25	133,57	131,67	154,53	152,62	175,48	173,58	196,44	194,53	215,49
30	160,28	158,00	185,43	183,14	210,58	208,29	235,72	233,44	258,58
35	187,00	184,33	216,34	213,67	245,67	243,01	275,01	272,34	301,68
40	213,71	210,66	247,24	244,19	280,77	277,72	314,30	311,25	344,78
45	240,43	237,00	278,15	274,72	315,86	312,44	353,58	350,15	387,87
50	267,14	263,33	309,05	305,24	350,96	347,15	392,87	389,06	430,97
55	293,85	289,66	339,96	335,76	386,06	381,87	432,16	427,97	474,07
60	320,57	316,00	370,86	366,29	421,15	416,58	471,44	466,87	517,16
65	347,28	342,33	401,77	396,81	456,25	451,30	510,73	505,78	560,26
70	374,00	368,66	432,67	427,34	491,34	486,01	550,02	544,68	603,36
75	400,71	395,00	463,58	457,86	526,44	520,73	589,31	583,59	646,46
80	427,42	421,33	494,48	488,38	561,54	555,44	628,59	622,50	689,55
85	454,14	447,66	525,39	518,91	596,63	590,16	667,88	661,40	732,65
90	480,85	473,99	556,29	549,43	631,73	624,87	707,17	700,31	775,75
95	507,57	500,33	587,20	579,96	666,82	659,59	746,45	739,21	818,84
100	534,28	526,66	618,10	610,48	701,92	694,30	785,74	778,12	861,94
105	560,99	552,99	649,01	641,00	737,02	729,02	825,03	817,03	905,04
110	587,71	579,33	679,91	671,53	772,11	763,73	864,31	855,93	948,13
115	614,42	605,66	710,82	702,05	807,21	798,45	903,60	894,84	991,23
120	641,14	631,99	741,72	732,58	842,30	833,16	942,89	933,74	1034,33

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6-8-3 Executive Interior Code EX-6S-2

6-8-3.1 General

The basic Executive Interior consisting of 6 executive passenger seats. The section contains the following information:

- passenger seat location chart
- permitted passenger seat Part Numbers that can be installed
- passenger seats and furnishings weight and moment chart (standard and metric units)
- passenger seat occupant moment charts (standard and metric units).

All distances on the passenger seat locating chart are based on the first seat track locating hole (refer to Fig. 6-8-1).

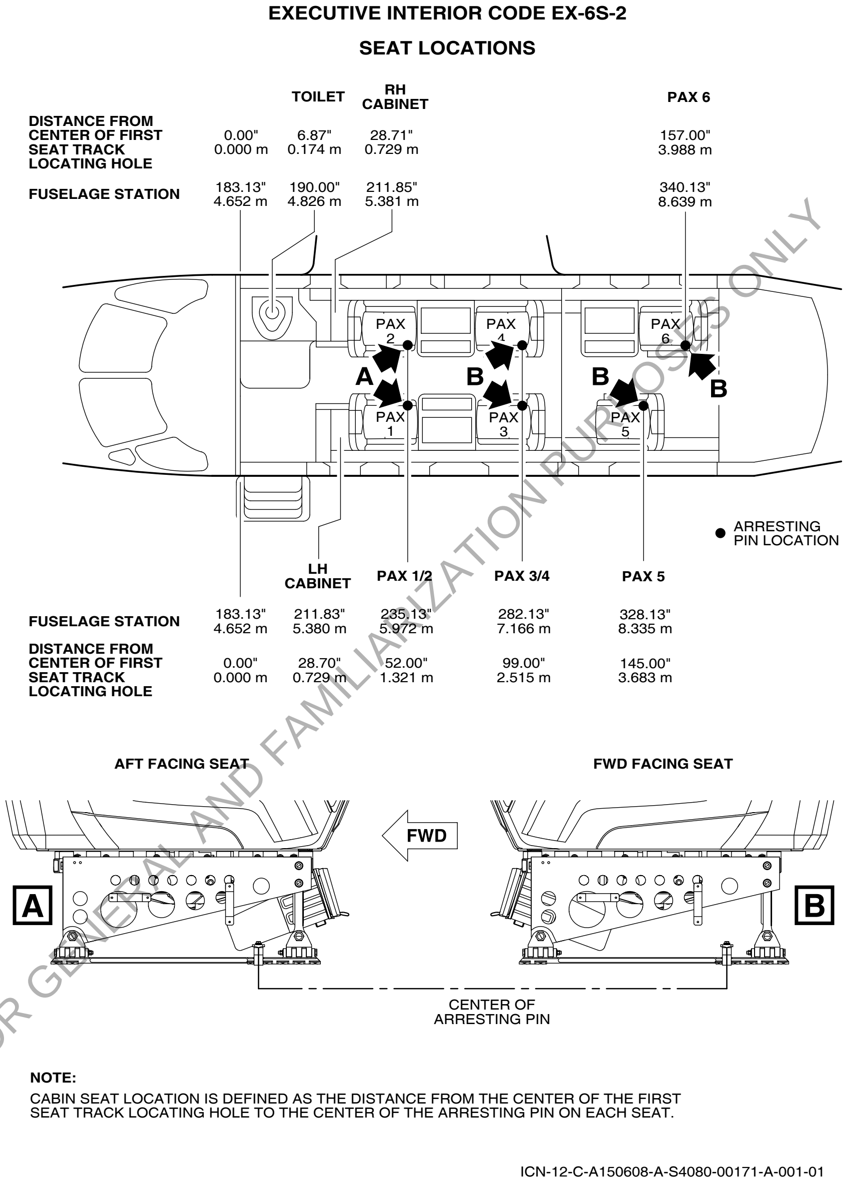

Figure 6-8-3: Executive Interior Code EX-6S-2 Seat Locations

6-8-3.2 Permitted Passenger Seat Part Numbers That Can Be Installed

Table 6-8-5: EX-6S-2 - Permitted Passenger Seat Part Numbers That Can Be Installed

SEAT NO.	Seat Part Number
1	959.30.00.017 959.30.00.019 959.30.00.081 959.30.00.083
2	959.30.00.049 959.30.00.051 959.30.00.113 959.30.00.115
3, 5	959.30.00.001 through 959.30.00.016 959.30.00.065 through 959.30.00.080
4, 6	959.30.00.033 through 959.30.00.048 959.30.00.097 through 959.30.00.112

Note

The CARES™ child restraint system (part number 959.30.01.591), for children older than 24 months and weight between 22 - 44 lb (10 - 20 kg), can be used on seats 3 to 6. Additional limitations apply when the optional Drop-Down Oxygen Mask system is installed, refer to AFMS 02415.

6-8-3.3 Passenger Seats and Furnishings Weight and Moment Chart

Table 6-8-6: EX-6S-2 - Passenger Seats and Furnishings Weight and Moment Chart

ITEM	WEIGHT lb (kg)	MOMENT lb-in (kg-m)
PASS SEAT 1 OR 2	56.28 (25,53)	12682.9 (146,1)
PASS SEAT 3 OR 4	57.71 (26,18)	16327 (188,1)
PASS SEAT 5	57.71 (26,18)	18981.6 (218,7)
PASS SEAT 6	57.71 (26,18)	19674.1 (226,7)
TOILET	81.0 (36,7)	15390.0 (177,3)
LH CABINET	31.3 (14,2)	6630.3 (76,5)
RH CABINET	27.0 (12,3)	5720 (66,0)
FR 24 CARGO NET	3.6 (1,65)	941 (10,96)
FR 27 CARGO NET	3.6 (1,65)	1049 (12,21)
FR 32 EXTENDABLE BAGGAGE NET	6.44 (2,92)	2325 (26,78)
FR 34 BAGGAGE NET	5.13 (2,325)	1855 (21,38)

Adjust the aircraft Basic Empty Weight on the Loading Form Fig. 6-5-2 for items removed/ added when converting to or from a Combi Interior Conversion.

When installing the extendable baggage net refer to Section 2, Limitations, Other Limitations for the Luggage Limitations.

6-8-3.4 Passenger Seat Occupant Moment Charts (Standard and Metric Units)

Table 6-8-7: EX-6S-2 - Passenger Seat Occupant Moment Chart (imperial)

PASSENGER SEAT OCCUPANT MOMENTS (LB - IN)				
WEIGHT (lb)	**PAX 1/2 (232.22 in)**	**PAX 3/4 (276.04 in)**	**PAX 5 (322.04 in)**	**PAX 6 (334.04 in)**
50	11611	13802	16102	16702
60	13933	16563	19323	20043
70	16256	19323	22543	23383
80	18578	22083	25763	26723
90	20900	24844	28984	30064
100	23222	27604	32204	33404
110	25545	30365	35425	36745
120	27867	33125	38645	40085
130	30189	35886	41866	43426
140	32511	38646	45086	46766
150	34834	41406	48306	50106
160	37156	44167	51527	53447
170	39478	46927	54747	56787
180	41800	49688	57968	60128
190	44123	52448	61188	63468
200	46445	55209	64409	66809
210	48767	57969	67629	70149
220	51089	60729	70849	73489
230	53412	63490	74070	76830
240	55734	66250	77290	80170

Table 6-8-8: EX-6S-2 - Passenger Seat Occupant Moment Chart (metric)

PASSENGER SEAT OCCUPANT MOMENTS (KG - M)				
WEIGHT (kg)	**PAX 1/2 (5,899 m)**	**PAX 3/4 (7,011 m)**	**PAX 5 (8,180 m)**	**PAX 6 (8,485 m)**
25	147,5	175,3	204,5	212,1
30	177,0	210,3	245,4	254,5
35	206,4	245,4	286,3	297,0
40	235,9	280,5	327,2	339,4
45	265,4	315,5	368,1	381,8
50	294,9	350,6	409,0	424,2
55	324,4	385,6	449,8	466,7
60	353,9	420,7	490,8	509,1
65	383,4	455,7	531,7	551,5
70	412,9	490,8	572,6	593,9
75	442,4	525,9	613,5	636,4
80	471,9	560,9	654,4	678,8
85	501,4	596,0	695,3	721,2
90	530,9	631,0	736,2	763,6
95	560,4	666,1	777,1	806,0
100	589,9	701,1	818,0	848,5
105	619,3	736,2	858,9	890,9
110	648,8	771,3	899,8	933,3
115	678,3	806,3	940,7	975,7
120	707,8	841,4	981,6	1018,2

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6-8-4 Executive Interior Code EX-8S

6-8-4.1 General

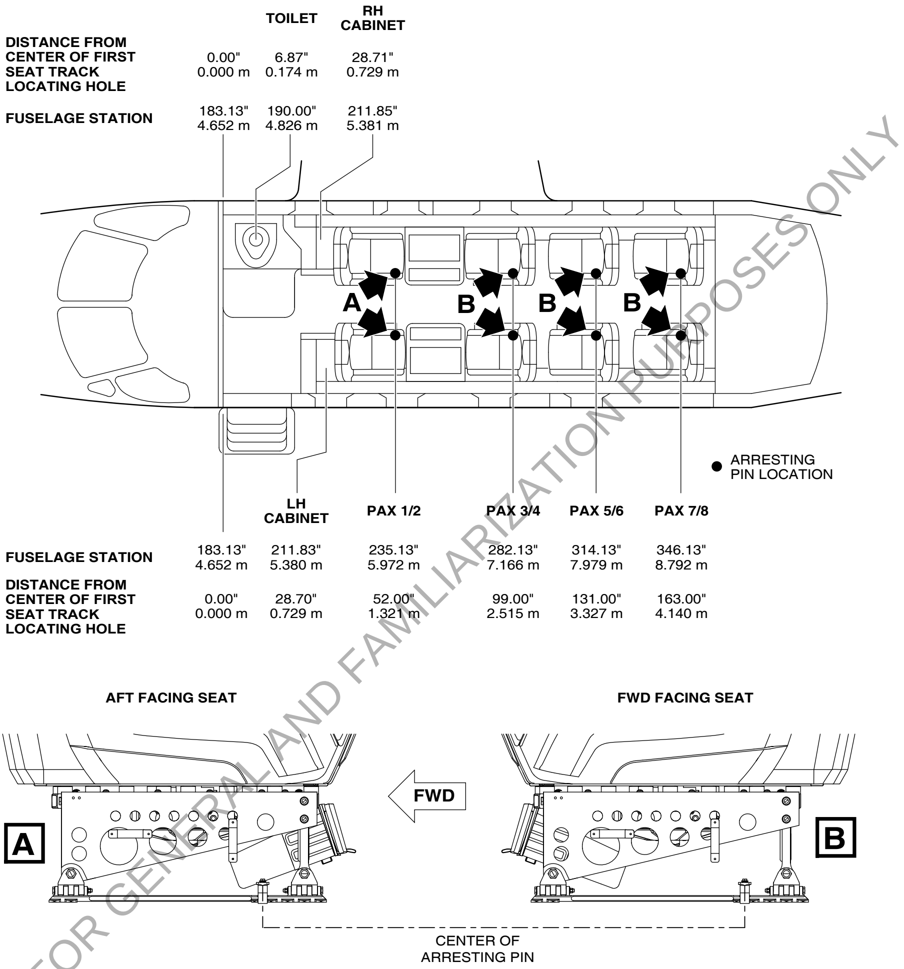
This configuration is a variation of the basic executive interior and consists of 8 executive passenger seats. It is the operator's responsibility to check before using this configuration whether they require authorization by their regulatory authority. The following information is given:

- passenger seat location chart
- permitted passenger seat Part Numbers that can be installed
- passenger seats and furnishings weight and moment chart (standard and metric units)
- passenger seat occupant moment charts (standard and metric units).

All distances on the passenger seat locating chart are based on the first seat track locating hole (refer to Fig. 6-8-1).

EXECUTIVE INTERIOR CODE EX-8S

SEAT LOCATIONS



NOTE:

CABIN SEAT LOCATION IS DEFINED AS THE DISTANCE FROM THE CENTER OF THE FIRST SEAT TRACK LOCATING HOLE TO THE CENTER OF THE ARRESTING PIN ON EACH SEAT.

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Figure 6-8-4: Executive Interior Code EX-8S Seat Locations

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6-8-4.2 Permitted Passenger Seat Part Numbers That Can Be Installed

Table 6-8-9: EX-8S - Permitted Passenger Seat Part Numbers That Can Be Installed

SEAT NO.	PART NO.
1	959.30.00.017 959.30.00.019 959.30.00.081 959.30.00.083
2	959.30.00.049 959.30.00.051 959.30.00.113 959.30.00.115
3, 5, 7	959.30.00.001 through 959.30.00.016 959.30.00.065 through 959.30.00.080
4, 6, 8	959.30.00.033 through 959.30.00.048 959.30.00.097 through 959.30.00.112

Note

The CARES^{TM} child restraint system (part number 959.30.01.591), for children older than 24 months and weight between 22 - 44 lb (10 - 20 kg), can be used on seats 3 to 8. Additional limitations apply when the optional Drop-Down Oxygen Mask system is installed, refer to AFMS 02415.

6-8-4.3 Passenger Seats and Furnishings Weight and Moment Chart

Table 6-8-10: EX-8S - Passenger Seats and Furnishings Weight and Moment Chart

ITEM	WEIGHT lb (kg)	MOMENT lb-in (kg-m)
PASS SEAT 1 OR 2	56.28 (25,53)	12682.9 (146,1)
PASS SEAT 3 OR 4	57.71 (26,18)	16327.0 (188,1)
PASS SEAT 5 OR 6	57.71 (26,18)	18173.68 (209,4)
PASS SEAT 7 OR 8	57.71 (26,18)	19975.4 (230,1)
TOILET	81.0 (36,7)	15390.0 (177,3)
LH CABINET	31.3 (14,2)	6630.3 (76,5)
RH CABINET	27.0 (12,3)	5720 (66,0)
FR 24 CARGO NET	3.6 (1,65)	941 (10,96)
FR 27 CARGO NET	3.6 (1,65)	1049 (12,21)
FR 32 EXTENDABLE BAGGAGE NET	6.44 (2,92)	2325 (26,78)
FR 34 BAGGAGE NET	5.13 (2,325)	1855 (21,38)

Adjust the aircraft Basic Empty Weight on the Loading Form Fig. 6-5-2 for items removed/added when converting to or from a Combi Interior Conversion.

When installing the extendable baggage net refer to Section 2, Limitations, Other Limitations for the Luggage Limitations.

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6-8-4.4 Passenger Seat Occupant Moment Charts (Standard and Metric Units)

Table 6-8-11: EX-8S - Passenger Seat Occupant Moment Chart (imperial)

PASSENGER SEAT OCCUPANT MOMENTS (LB - IN)				
WEIGHT (lb)	**PAX 1/2 (232.22 in)**	**PAX 3/4 (276.04 in)**	**PAX 5/6 (308.04 in)**	**PAX 7/8 (340.04 in)**
50	11611	13802	15402	17002
60	13933	16563	18483	20403
70	16256	19323	21563	23803
80	18578	22083	24643	27203
90	20900	24844	27724	30604
100	23222	27604	30804	34004
110	25545	30365	33885	37405
120	27867	33125	36965	40805
130	30189	35886	40046	44206
140	32511	38646	43126	47606
150	34834	41406	46206	51006
160	37156	44167	49287	54407
170	39478	46927	52367	57807
180	41800	49688	55448	61208
190	44123	52448	58528	64608
200	46445	55209	61609	68009
210	48767	57669	64689	71409
220	51089	60729	67769	74809
230	53412	63490	70850	78210
240	55734	66250	73930	816110

Table 6-8-12: EX-8S - Passenger Seat Occupant Moment Chart (metric)

PASSENGER SEAT OCCUPANT MOMENTS (KG - M)				
WEIGHT (kg)	**PAX 1/2 (5,899 m)**	**PAX 3/4 (7,011 m)**	**PAX 5/6 (7,824 m)**	**PAX 7/8 (8,637 m)**
25	147,5	175,3	195,6	215,9
30	177,0	210,3	234,7	259,1
35	206,4	245,4	273,9	302,3
40	235,9	280,5	313,0	345,5
45	265,4	315,5	352,1	388,7
50	294,9	350,6	391,2	431,9
55	324,4	385,6	430,3	475,0
60	353,9	420,7	469,5	518,2
65	383,4	455,7	508,6	561,4
70	412,9	490,8	547,7	604,6
75	442,4	525,9	586,8	647,8
80	471,9	560,9	625,9	691,0
85	501,4	596,0	665,1	734,2
90	530,9	631,0	704,2	777,3
95	560,4	666,1	743,3	820,5
100	589,9	701,1	782,4	863,7
105	619,3	736,2	821,6	906,9
110	648,8	771,3	860,7	950,1
115	678,3	806,3	899,8	993,3
120	707,8	841,4	938,9	1036,5

6-8-5 Executive Interior Code EX-6S-STD-2S

6-8-5.1 General

This configuration is a variation of the basic Executive interior and consists of 6 executive passenger seats and 2 standard seats. It is the operator's responsibility to check before using this configuration whether they require authorization by their regulatory authority. The following information is given:

- passenger seat location chart
- permitted passenger seat Part Numbers that can be installed
- passenger seats and furnishings weight and moment chart
- passenger seat occupant moments (standard and metric units).

All distances on the passenger seat locating chart are based on the first seat track locating hole (refer to Fig. 6-8-1).

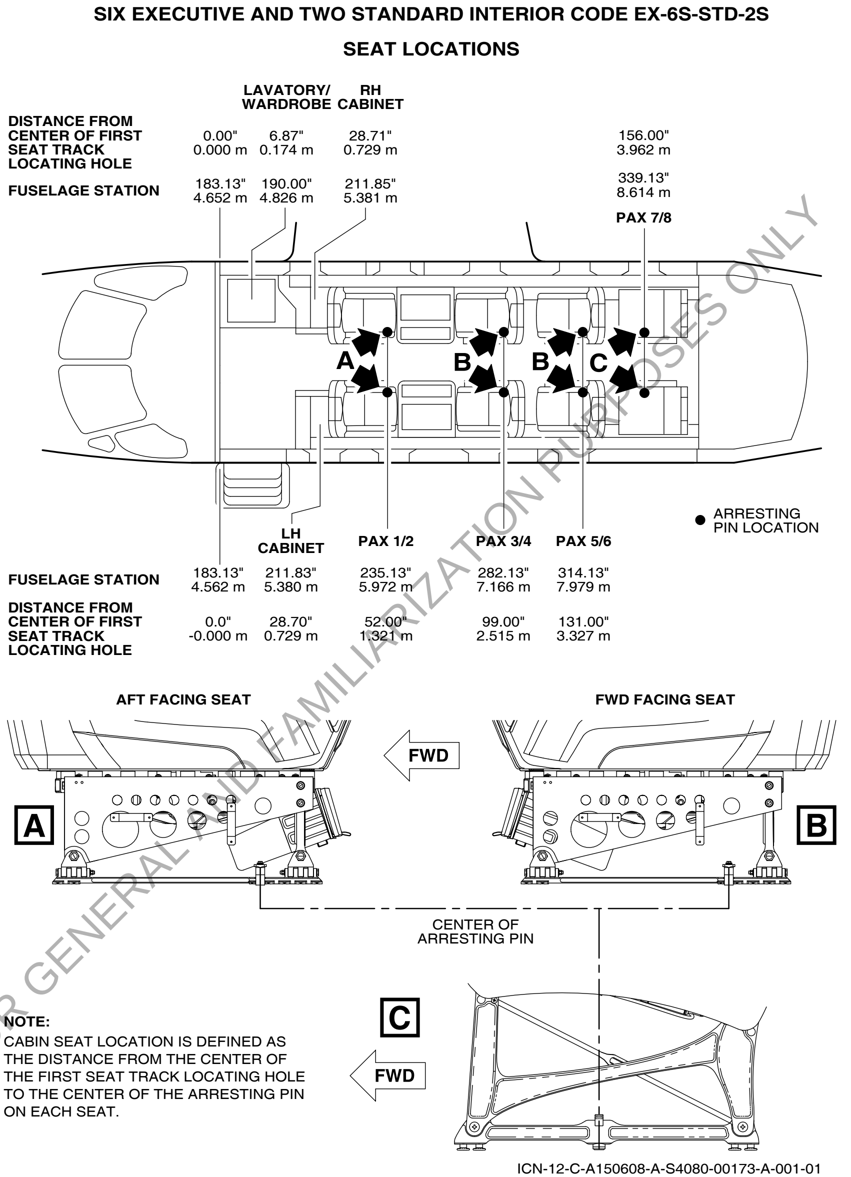

Figure 6-8-5: Six Executive and Two Standard Interior Code EX-6S-STD-2S Seat Locations

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6-8-5.2 Permitted Passenger Seat Part Numbers That Can Be Installed

Table 6-8-13: EX-6S-STD-2S - Permitted Passenger Seat Part Numbers That Can Be Installed

SEAT NO.	PART NO.
1	959.30.00.017 959.30.00.019 959.30.00.081 959.30.00.083
2	959.30.00.049 959.30.00.051 959.30.00.113 959.30.00.115
3, 5	959.30.00.001 through 959.30.00.016 959.30.00.065 through 959.30.00.080
4, 6	959.30.00.033 through 959.30.00.048 959.30.00.097 through 959.30.00.112
7	959.30.01.445 (with literature pocket) 959.30.01.447 (without literature pocket)
8	959.30.01.446 (with literature pocket) 959.30.01.448 (without literature pocket)

Note

The CARES™ child restraint system (part number 959.30.01.591), for children older than 24 months and weight between 22 - 44 lb (10 - 20 kg), can be used on seats 3 to 8. Additional limitations apply when the optional Drop-Down Oxygen Mask system is installed, refer to AFMS 02415.

6-8-5.3 Passenger Seats and Furnishings Weight and Moment Chart

Table 6-8-14: EX-6S-STD-2S - Passenger Seats and Furnishings Weight and Moment Chart

ITEM	WEIGHT lb (kg)	MOMENT lb-in (kg-m)
PASS SEAT 1 OR 2	56.28 (25,53)	12682.9 (146,1)
PASS SEAT 3 OR 4	57.71 (26,18)	16327.0 (188,1)
PASS SEAT 5 OR 6	57.71 (26,18)	18173.7 (209,4)
PASS SEAT 7 OR 8	31.60 (14,30)	10903 (125,62)
TOILET or WARDROBE	81.0 (36,7) 45.0 (20,4)	15390 (177,3) 8595 (98,97)
LH CABINET	31.3 (14,2)	6630.3 (76,5)
RH CABINET	27.0 (12,3)	5720 (66,0)
FR 24 CARGO NET	3.6 (1,65)	941 (10,96)
FR 27 CARGO NET	3.6 (1,65)	1049 (12,21)
FR 32 EXTENDABLE BAGGAGE NET	6.44 (2,92)	2325 (26,78)
FR 34 BAGGAGE NET	5.13 (2,325)	1855 (21,38)

Adjust the aircraft Basic Empty Weight on the Loading Form Fig. 6-5-2 for items removed/added when converting to or from a Combi Interior Conversion.

When installing the extendable baggage net refer to Section 2, Limitations, Other Limitations for the Luggage Limitations.

6-8-5.4 Passenger Seat Occupant Moment Charts (Standard and Metric Units)

Table 6-8-15: EX-6S-STD-2S - Passenger Seat Occupant Moment Chart (imperial)

PASSENGER SEAT OCCUPANT MOMENTS (LB - IN)				
WEIGHT (lb)	**PAX 1/2 (232.22 in)**	**PAX 3/4 (276.04 in)**	**PAX 5/6 (308.04 in)**	**PAX 7/8 (337.35 in)**
50	11611	13802	15402	16867
60	13933	16563	18483	20241
70	16256	19323	21563	23614
80	18578	22083	24643	26988
90	20900	24844	27724	30361
100	23222	27604	30804	33735
110	25545	30365	33885	37108
120	27867	33125	36965	40482
130	30189	35886	40046	43855
140	32511	38646	43126	47229
150	34834	41406	46206	50602
160	37156	44167	49287	53975
170	39478	46927	52367	57349
180	41800	49688	55448	60722
190	44123	52448	58528	64096
200	46445	55209	61609	67469
210	48767	57969	64689	70843
220	51089	60729	67769	74216
230	53412	63490	70850	77590
240	55734	66250	73930	80963

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Table 6-8-16: EX-6S-STD-2S - Passenger Seat Occupant Moment Chart (metric)

PASSENGER SEAT OCCUPANT MOMENTS (KG - M)				
WEIGHT (kg)	**PAX 1/2 (5,899 m)**	**PAX 3/4 (7,011 m)**	**PAX 5/6 (7,824 m)**	**PAX 7/8 (8,569 m)**
25	147,5	175,3	195,6	214,2
30	177,0	210,3	234,7	257,1
35	206,4	245,4	273,9	299,9
40	235,9	280,5	313,0	342,7
45	265,4	315,5	352,1	385,6
50	294,9	350,6	391,2	428,4
55	324,4	385,6	430,3	471,3
60	353,9	420,7	469,5	514,1
65	383,4	455,7	508,6	557,0
70	412,9	490,8	547,7	599,8
75	442,4	525,9	586,8	642,6
80	471,9	560,9	625,9	685,5
85	501,4	596,0	665,1	728,3
90	530,9	631,0	704,2	771,2
95	560,4	666,1	743,3	814,0
100	589,9	701,1	782,4	856,9
105	619,3	736,2	821,6	899,7
110	648,8	771,3	860,7	942,5
115	678,3	806,3	899,8	985,4
120	707,8	841,4	938,9	1028,2

6-8-6 Executive Interior Code EX-4S-STD-4S

6-8-6.1 General

This configuration is a variation of the basic Executive interior and consists of 4 executive passenger seats and 4 standard seats. It is the operator’s responsibility to check before using this configuration whether they require authorization by their regulatory authority. The following information is given:

- passenger seat location chart
- permitted passenger seat Part Numbers that can be installed
- passenger seats and furnishings weight and moment chart
- passenger seat occupant moments (standard and metric units).

All distances on the passenger seat locating chart are based on the first seat track locating hole (refer to Fig. 6-8-1).

FOUR EXECUTIVE AND FOUR STANDARD INTERIOR CODE EX-4S-STD-4S

SEAT LOCATIONS

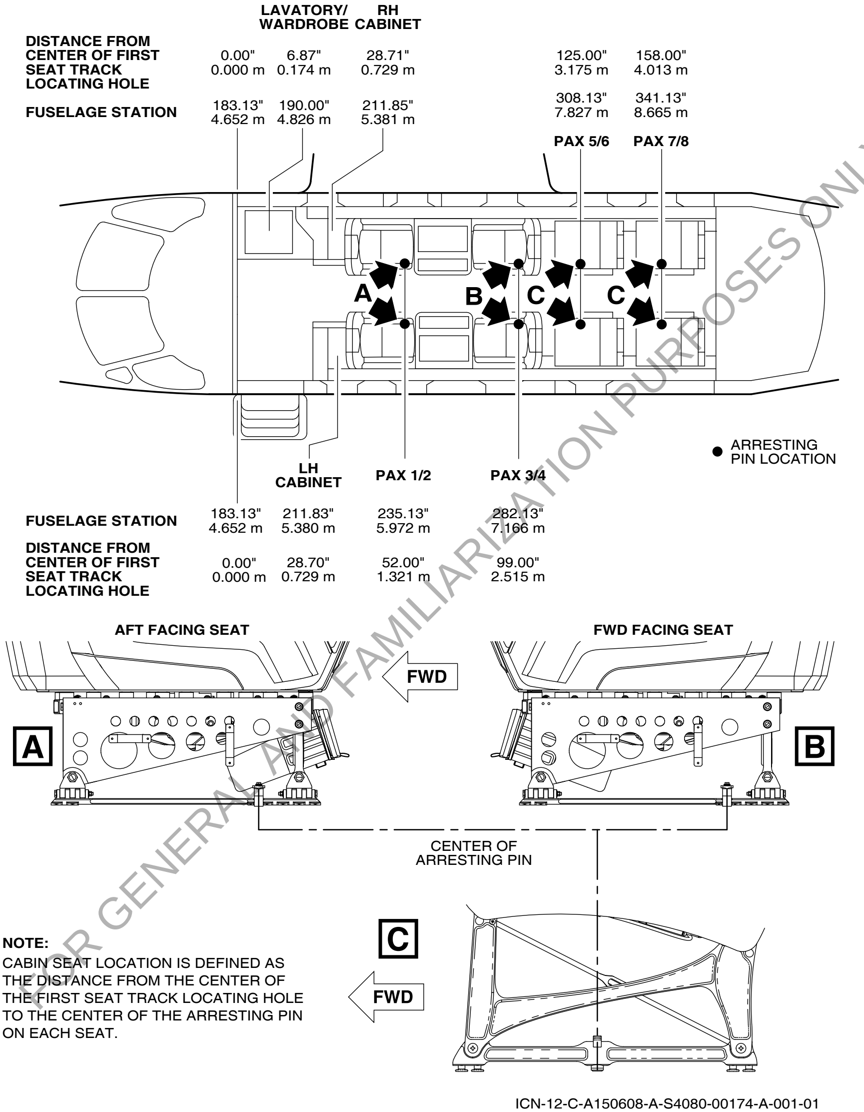

Figure 6-8-6: Four Executive and Four Standard Interior Code EX-4S-STD-4S Seat Locations

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6-8-6.2 Permitted Passenger Seat Part Numbers That Can Be Installed

Table 6-8-17: EX-4S-STD-4S - Permitted Passenger Seat Part Numbers That Can Be Installed

SEAT NO.	PART NO.
1	959.30.00.017 959.30.00.019 959.30.00.081 959.30.00.083
2	959.30.00.049 959.30.00.051 959.30.00.113 959.30.00.115
3	959.30.00.001 through 959.30.00.016 959.30.00.065 through 959.30.00.080
4	959.30.00.033 through 959.30.00.048 959.30.00.097 through 959.30.00.112
5, 7	959.30.01.445 (with literature pocket) 959.30.01.447 (without literature pocket)
6, 8	959.30.01.446 (with literature pocket) 959.30.01.448 (without literature pocket)

Note

The CARES™ child restraint system (part number 959.30.01.591), for children older than 24 months and weight between 22 - 44 lb (10 - 20 kg), can be used on seats 3 to 8. Additional limitations apply when the optional Drop-Down Oxygen Mask system is installed, refer to AFMS 02415.

6-8-6.3 Passenger Seats and Furnishings Weight and Moment Chart

Table 6-8-18: EX-4S-STD-4S - Passenger Seats and Furnishings Weight and Moment Chart

ITEM	WEIGHT lb (kg)	MOMENT lb-in (kg-m)
PASS SEAT 1 OR 2	56.28 (25,53)	12682.9 (146,1)
PASS SEAT 3 OR 4	57.71 (26,18)	16327.0 (188,1)
PASS SEAT 5 OR 6	31.60 (14,30)	9923 (114,33)
PASS SEAT 7 OR 8	31.60 (14,30)	10966 (126,35)
TOILET or WARDROBE	81.0 (36,7) 45.0 (20,4)	15390 (177,3) 8595 (98,97)
LH CABINET	31.3 (14,2)	6630.3 (76,5)
RH CABINET	27.0 (12,3)	5720 (66,0)
FR 24 CARGO NET	3.6 (1,65)	941 (10,96)
FR 27 CARGO NET	3.6 (1,65)	1049 (12,21)
FR 32 EXTENDABLE BAGGAGE NET	6.44 (2,92)	2325 (26,78)
FR 34 BAGGAGE NET	5.13 (2,325)	1855 (21,38)

Adjust the aircraft Basic Empty Weight on the Loading Form Fig. 6-5-2 for items removed/ added when converting to or from a Combi Interior Conversion.

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When installing the extendable baggage net refer to Section 2, Limitations, Other Limitations for the Luggage Limitations.

6-8-6.4 Passenger Seat Occupant Moment Charts (Standard and Metric Units)

Table 6-8-19: EX-4S-STD-4S - Passenger Seat Occupant Moment Chart (imperial)

PASSENGER SEAT OCCUPANT MOMENTS (LB - IN)				
WEIGHT (lb)	**PAX 1/2 (232.22 in)**	**PAX 3/4 (276.04 in)**	**PAX 5/6 (306.35 in)**	**PAX 7/8 (339.35 in)**
50	11611	13802	15317	16967
60	13933	16563	18381	20361
70	16256	19323	21444	23754
80	18578	22083	24508	27148
90	20900	24844	27571	30541
100	23222	27604	30635	33935
110	25545	30365	33698	37328
120	27867	33125	36762	40722
130	30189	35886	39825	44115
140	32511	38646	42889	47509
150	34834	41406	45952	50902
160	37156	44167	49015	54295
170	39478	46927	52079	57689
180	41800	49688	55142	61082
190	44123	52448	58206	64476
200	46445	55209	61269	67869
210	48767	57969	64333	71263
220	51089	60729	67396	74656
230	53412	63490	70460	78050
240	55734	66250	73523	81443

Table 6-8-20: EX-4S-STD-4S - Passenger Seat Occupant Moment Chart (metric)

PASSENGER SEAT OCCUPANT MOMENTS (KG - M)				
WEIGHT (kg)	**PAX 1/2 (5,899 m)**	**PAX 3/4 (7,011 m)**	**PAX 5/6 (7,781 m)**	**PAX 7/8 (8,619 m)**
25	147,5	175,3	194,5	215,5
30	177,0	210,3	233,4	258,6
35	206,4	245,4	272,3	301,7
40	235,9	280,5	311,2	344,8
45	265,4	315,5	350,2	387,9
50	294,9	350,6	389,1	431,0
55	324,4	3856,	428,0	474,1
60	353,9	420,7	466,9	517,2
65	383,4	455,7	505,8	560,3
70	412,9	490,8	544,7	603,4
75	442,4	525,9	583,6	646,5
80	471,9	560,9	622,5	689,6
85	501,4	596,0	661,4	732,6
90	530,9	631,0	700,3	775,7
95	560,4	666,1	739,2	818,8
100	589,9	701,1	778,1	861,9
105	619,3	736,2	817,0	905,0
110	648,8	771,3	855,9	948,1
115	678,3	806,3	894,8	991,2
120	707,8	841,4	933,7	1034,3

6-8-7 No Cabin Interior Configuration

6-8-7.1 General

The No Cabin Interior Configuration does not have any seats, interior panels, interior lighting, PSU panels, or O_2 masks.

No persons are allowed in the cabin.

Cargo may be placed in the cabin using the loading procedures given in Section 6-7, General Loading Recommendations. Baggage and cargo items ≤66 lb (30 kg) may be placed in the baggage area aft of the luggage net.

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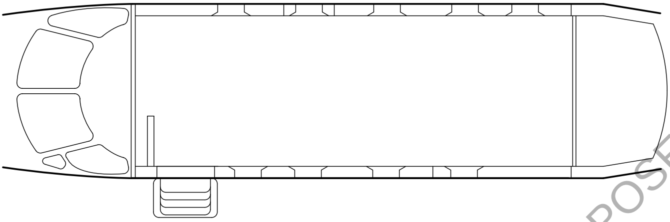
NO CABIN INTERIOR CONFIGURATION



NOTE:
INTERIOR CONFIGURATION
PLACARD NOT REQUIRED

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Figure 6-8-7: No Cabin Interior Configuration

6-8-7.2 Furnishings Weight and Moment Chart

Table 6-8-21: No Cabin Interior Furnishings Weight and Moment Chart

ITEM	WEIGHT lb (kg)	MOMENT lb-in (kg-m)
FR 24 CARGO NET	3.6 (1,65)	941 (10,96)
FR 27 CARGO NET	3.6 (1,65)	941 (10,96)
FR 34 BAGGAGE NET	5.13 (2,325)	1341 (15,44)

SECTION 7

Airplane and Systems Description

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7-1 General

The airplane is a low wing, T-tail, single engine, retractable landing gear type designed to transport passengers, cargo, or various combinations of both passengers and cargo.

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7-2 Airframe

7-2-1 General

The aircraft construction is conventional semimonocoque, primarily incorporating aluminum alloy, but composite structures are used in certain areas. Flush riveting is used where appropriate to minimize drag. Access panels are installed to facilitate inspection and maintenance. The complete airframe is electrically bonded to eliminate electromagnetic interference and static discharge wicks are used to reduce static charges while in flight.

7-2-2 Fuselage

The fuselage consists of the engine area, nose gear assembly, cockpit, cabin, and aft fuselage. The engine area contains the powerplant and associated accessories. The engine cowling is constructed from a carbon/nomex honeycomb material and is covered by a copper foil for lightning protection. The engine mount is welded steel tubing and bolted to the firewall in four places. The firewall is titanium and protected by insulation material.

A left and a right windshield, two side windows, and a Direct Vision (DV) window provide cockpit visibility. The windshield is made of two glass layers with an interlayer, while the two side windows and the DV window are made of two stretched acrylic layers with an interlayer. All windows are made of two ply laminated design.

The cabin area is aft of the cockpit to the aft pressure bulkhead and contains the passenger door, the cargo door, and an emergency overwing exit. The nine cabin windows are two ply laminated monolithic stretched acrylic and incorporate dry neoprene seals. Airplane avionics are mounted under the cabin floor, running the length of the center cabin, and are accessible through quick release panels. The cabin carry-through spar attachment fittings are one-piece machined aluminum. Fuselage fairings are constructed from either carbon/nomex or aramid/ nomex honeycomb material.

A safety net is installed aft of the rear pressure bulkhead to protect the bulkhead from damage during maintenance.

7-2-3 Empennage

The empennage is a T-tail design with the horizontal stabilizer mounted on top of the vertical stabilizer. The vertical and horizontal stabilizer assemblies are conventional aluminum construction. The horizontal stabilizer is a trimmable structure. The dorsal fin is made of glass fiber honeycomb and the ventral fin is made of kevlar honeycomb material.

7-2-4 Wings

The wings are of conventional construction incorporating front and rear spars, ribs, and skin. The front and rear spars are mainly from machined aluminum alloy plate. Both spars include fuselage and integral landing gear attachment points, while the rear spar also integrates flap actuator attachment points. Main load carrying ribs are machined from aluminum alloy plate. All other ribs are formed sheet metal. The ribs incorporate lightening holes to reduce weight and integral beads for stiffening. The wing skin is stiffened clad aluminum alloy sheet riveted to the spars and ribs. Access panels are in the wing bottom only.

Each wing is attached to the fuselage using three titanium shear bolts and, at the aft upper fitting, one steel tension bolt.

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Each wing contains an integral fuel tank, aileron, flaps, de-ice boot, and main landing gear. The fuel tanks are located between ribs 3 and 16, forward of the main spar to the nose rib and between ribs 6 and 16 behind the main spar to the rear spar.

The ailerons are conventional construction with a single spar and ribs. The aileron access panels are a carbon/nomex honeycomb construction. The ailerons are mass balanced and the aileron/wing gap is sealed.

Each wing incorporates a single piece Fowler flap of conventional construction, with three support arms and associated linkages. The wing trailing edges above the flaps are foam core covered with carbon laminate while the flap fairings are a carbon laminate with nomex honeycomb reinforcement strips.

A surface mounted de-ice boot is attached to the nose skin of each wing. Each wing has a main landing gear attached to the front and rear spar, with a carbon fiber/nomex honeycomb gear door attached to the leg. The wing tips are constructed of carbon fiber/honeycomb with a top layer of copper foil for lightning protection.

7-3 Flight Controls

7-3-1 General

Refer to Fig. 7-3-1. Flight Controls - General, for system controls and flap operation.

The flight control system is conventional using push-pull rods and carbon steel cables. Electric trim systems are provided for the aileron, rudder, and elevator. All trim systems can be disconnected in the event of a runaway condition.

An aileron/rudder interconnect system is installed to improve lateral stability and turn coordination.

When the pilot initiates a turn by giving a roll control input, the spring package in the interconnect systems applies a force to the rudder cables that tends to deflect the rudder in the direction of the turn. Alternatively, when the pilot gives a yaw control input by pushing one of the rudder pedals, the spring package applies a force to the aileron control system which tends to roll the aircraft in the direction of turn.

7-3-2 Aileron

The ailerons are connected to the cockpit control wheels by control cables in the fuselage and push-pull rods in the wings. Each aileron is attached to the wing at two hinge points.

Each aileron has a trim tab which is connected to a geared lever (Flettner) mechanism. The mechanism is installed inside the aileron and makes the trim tabs act as balance tabs when the ailerons are moved. They move in the opposite direction to the ailerons. The left aileron trim tab is also operated electrically from the cockpit. Refer to Trim system, for more information.

7-3-3 Elevator

The elevator is a two piece unit attached to the horizontal stabilizer at a total of five hinge points and is connected to the cockpit control wheel by carbon steel control cables. A down spring is installed in the control circuit to improve longitudinal stability. The elevator is equipped with static discharge wicks to dissipate static charges to the atmosphere.

Pitch trim is provided by positioning the horizontal stabilizer. Refer to Trim System, for more information.

7-3-4 Rudder

The rudder is a single piece unit attached to the vertical stabilizer at two hinge points and is connected to the cockpit rudder pedals by carbon steel control cables. Both pilot and copilot rudder pedals are adjustable by use of a crank located between each set of rudder pedals. Clockwise rotation of the crank moves the pedals aft. The rudder is equipped with static discharge wicks to dissipate static charges to the atmosphere.

The rudder incorporates a trim tab that is electrically operated from the cockpit. Refer to Trim Trim system, for more information.

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7-3-5 Trim

The aileron, horizontal stabilizer and rudder trim are electrically operated. Aileron and horizontal stabilizer trim operation is controlled by a switch on the outboard yoke of each control wheel, rudder trim operation is controlled by a switch on the Engine Power Control Lever. Before selecting pitch or aileron trim, press and hold the trim engage switch located on the forward side of each outboard control wheel yoke. A display for aileron, horizontal stabilizer and rudder trim position is shown on the systems Multi-Function Display (MFD).

Pitch trim is accomplished by an electrically controlled actuator connected to the moveable horizontal stabilizer. The actuator has two separate motors: a manual stabilizer trim motor (controlled by the manual trim switches) and an alternate stabilizer trim motor (controlled by the autopilot). The alternate stabilizer trim motor can also be used as a back-up system by the pilot. To activate alternate Stabilizer trim, press the ALTERNATE STAB TRIM switch on the center console to NOSE UP or NOSE DOWN as needed.

The leading edge of the horizontal stabilizer moves down for nose-up trim and moves up for nose-down trim. At the root of the left horizontal stabilizer leading edge are trim range indicator markings to show full travel in either direction and the takeoff trim range. As part of the pre-flight inspection these trim indicator markings should be used to verify the cockpit trim position indication.

If there is uncommanded trim operation, all trim operation (manual and auto trim) can be stopped by lifting the switch guard and pressing the TRIM INTR switch located in front of the Engine Control quadrant on the center console.

7-3-6 Flaps

Each wing trailing edge has a single piece Fowler type flap supported by three flap arms. The flaps are controlled by a selector handle located to the right of the power controls on the center console. The flaps may be set to one of the four preset positions 0°, 15°, 30° and 40° by moving the handle to the appropriate position. If the flap lever is not at one of the four preset positions, the Flap Control and Warning Unit (FCWU) will drive the flaps to the nearest preset position.

The flaps are electrically actuated. There is a single flap Power Drive Unit (PDU) installed below the cabin floor at the rear main frame. It drives screw actuators at the inboard and middle stations through flexible shafts. The screw actuators are connected to the flap actuating arms.

The flap control system incorporates a failure detection system. The system can detect a failure of a flexible shaft by disconnection or jamming, potentially resulting in flap asymmetry or failure of the system to achieve the selected flap position. The system can detect a failure of a single actuator, potentially resulting in single flap panel twisting. If a failure is detected, the FCWU disconnects the power to the PDU and the Crew Alerting System (CAS) window will show **Flaps**. This condition cannot be reset by pilot action, a landing should be made, refer to Section 3, Emergency Procedures, Flaps Failure.

A rotation sensor is installed on each of the outer flap screw actuators. These sense the rotation of the flexible shafts and give signals to the FCWU. The FCWU monitors these signals for asymmetrical flexible shaft rotation of more than 20 rotations (caused by a broken inner flap drive shaft). If failure is detected, the FCWU disconnects the power to the PDU and the CAS window will show a Flaps caution. This condition cannot be reset by pilot action. To detect satisfactory system operation, the FCWU monitors the left sensor for 10 rotations of the flexible shaft in the first 7 seconds of a flap up or down selection. If the selected flap position is not achieved the FCWU disconnects the power to the PDU and **Flaps** will be shown.

There are five position sensors in the flap system, one at each center flap actuating arm, one at each inner flap actuating arm and one on the flap position lever, which give signals to the FCWU. The FCWU monitors the signals from the left and right flap sensors for flap asymmetry (caused by a broken inner flap drive shaft). If an asymmetry is detected, power to the PDU is disconnected and **Flaps** will come on. Flap panel asymmetry occurs when the difference between the left and right flap angle exceeds a specific angle in accordance with the table below.

Table 7-3-1: Flap Position Symmetry Limits

Flap position between:	Asymmetry occurs when the left and right flap panel difference is at least:
0° and 15°	1.6°
15° and 30°	4.3°
30° and 40°	5°

The FCWU also monitors the signals from the left and right flap sensors for twisting of the left or right flap (caused by a broken outer flap drive shaft or unequal movement of the flap screw actuators). If a failure is detected, the FCWU disconnects the power to the PDU and the CAS window will show a Flaps caution.

Additionally if flap asymmetry or twist is detected and the flap angle is greater than 2° after 10 seconds, the **Pusher** will show and the stick pusher will default to ‘safe’ mode. **Pusher Safe Mode** will show in the CAS window. In the ‘safe’ mode the stick pusher will operate at the flap 0° flap speed setting.

If the PDU motor overheats or a stalled motor condition is detected, a signal from the PDU will open the FLAP circuit breaker on the Generator 1 Bus circuit breaker panel. The FCWU then removes the up or down command to the PDU and the CAS window will show **Flaps**. After waiting for a period of 5 minutes the FLAP circuit breaker can be reset (max. 2 attempts) and normal flap operation resumes. This is the only pilot resettable failure and cycling the flap circuit breaker, if it has not opened, will not reset any other failure mode detected.

To avoid an inadvertent flap down command at high speed, flap down enable is disabled when the flap selector handle is in the 0° position.

Flap system operation may be stopped at any time by lifting the switch guard and pressing the INTERRUPT FLAP switch on the center console to INTR. The CAS window will show **Flaps**. If the switch is moved back to the NORM position, normal operation will not resume, even if the FCWU does not detect any failures.

A FLAP GROUND RESET switch is installed on the maintenance test panel (right sidewall behind the copilot seat). The FLAP GROUND RESET switch is only operational on the ground for maintenance purposes.

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7-3-7 Indication / Warning

Symbolic aircraft views of the trim positions for the aileron trim tab (roll), rudder trim tab (yaw) and horizontal stabilizer (pitch) are shown in the TRIM window of the systems MFD. In flight, the trim indications are shown in white. An invalid trim status will be shown with an amber cross. On the ground, the trim logic changes and the colors change based on the trim position. The neutral trim positions change to green and the pitch trim also has a green diamond (aft cg). The aircraft symbols change to green when each trim position is correctly set for takeoff. If the trim position is not correctly set, the aircraft symbol will be white and a CAS **Takeoff Configuration** will be displayed on the CAS window. A green trim in motion indicator will show when the autopilot is moving the rudder and horizontal stabilizer trim. An invalid autopilot trim parameter will be shown with an amber cross over the indicator.

Flap position is shown in the FLAP window of the systems MFD by a white symbolic flap pointer which moves in relation to flap movement. The window is marked in white with the positions 0, 15, 30 and 40. The pointer and the degree position mark will change to green when the pointer reaches the selected flap position and is adjacent to the mark. When the aircraft is on ground and flaps are at 40° the pointer will show white and a CAS **Takeoff Configuration** will be displayed on the CAS window. When airborne and the flaps are up, the flap indications change from their default white to a grey color after 20 seconds. An invalid flap condition or status related to the flap position will be shown by an amber cross.

If the airspeed goes above the maximum limit for the current flap setting, the Flight Alerting System (FAS) will initiate an “Overspeed” warning on the Primary Flight Display (PFD) and a “Speed” voice callout will be heard. A red Vconstraint bar will be shown on the right side of the PFD ASI tape and the airspeed digital readout will change to red.

If a stabilizer trim runaway of the main system is sensed, a CAS **Pitch Trim Runaway** will be displayed and a “Trim Runaway” voice callout will be heard.

If a rudder trim runaway is sensed, a CAS **Yaw Trim Runaway** will be displayed and a “Trim Runaway” voice callout will be heard.

In case of a pitch or yaw trim runaway, take action in accordance with Section 3, Emergency Procedures, Electrical Trim

On the ground and with weight on the wheels the aircraft is monitored for Takeoff Configuration by the Monitoring Warning System (MWS). The MWS monitors the position of the trim tabs, horizontal stabilizer, flaps, and the engine and airspeed conditions. If any of the trims or the flap position are not in the takeoff range with the engine running, **Takeoff Configuration** will be shown in the CAS window of the systems MFD. If any of the trims or the flap position are not in the takeoff range, and the engine torque is increased more than 20 psi with an airspeed of less than 50 KIAS, the FAS will initiate a NO TAKEOFF warning on the PFD and a “No Takeoff” voice callout will be heard.

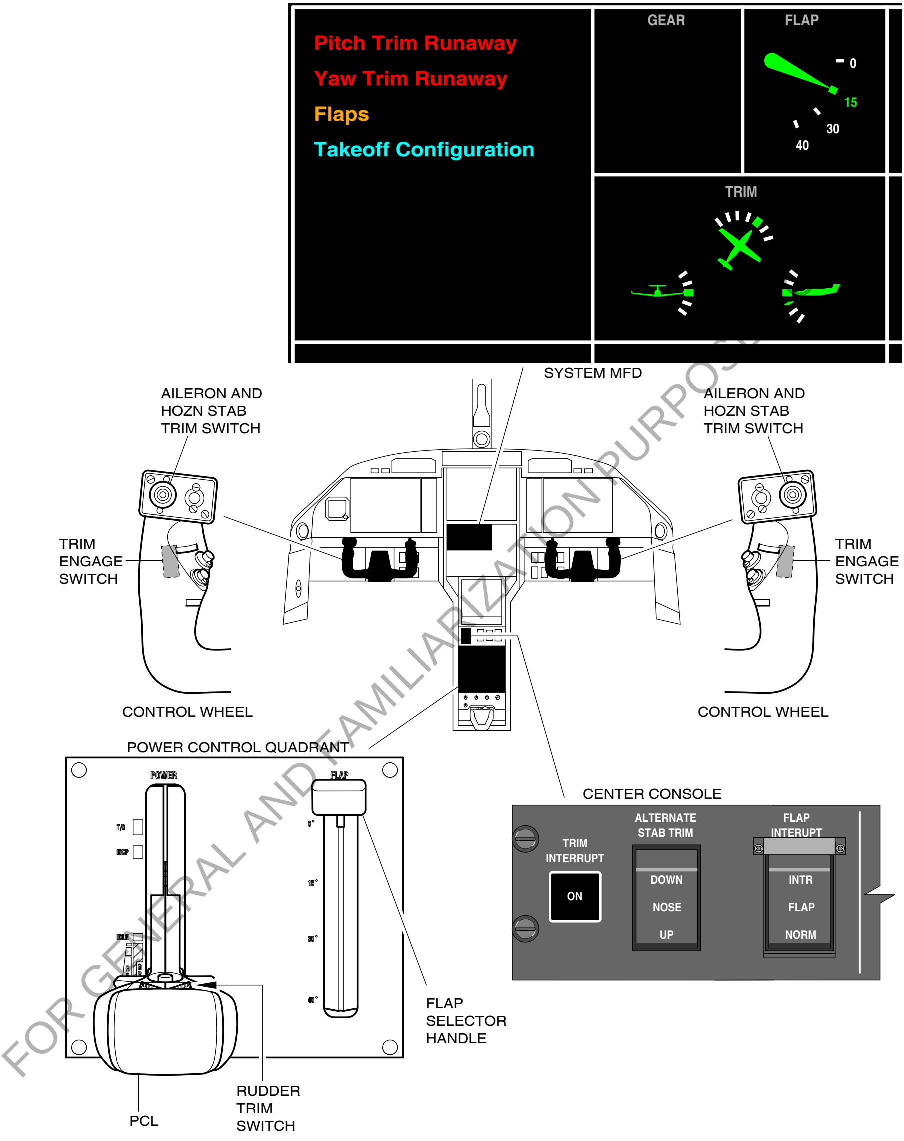

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Figure 7-3-1: Flight Controls - General

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7-4 Landing Gear

7-4-1 General

Refer to Fig. 7-4-2. Landing Gear System, for system operation.

The landing gear is a conventional tricycle configuration that is extended and retracted using electromechanical actuators. Landing gear operation is completely automatic upon pilot gear selection.

All landing gear are held in the fully retracted position by a mechanical brake internal to the actuators. No mechanical uplocks are installed.

Landing gear position is shown on three icons in the GEAR window of the systems Multi Function Display (MFD).

Nosewheel steering is accomplished by mechanical nosewheel steering and by differential braking.

Aircraft braking is controlled by toe pedals that operate brake assemblies attached to the left and right landing gear. Propeller reverse also contributes to aircraft braking. Refer to Section 7-11, Propeller, for more information.

7-4-2 Description

The nose gear is a hydraulic fluid and nitrogen filled shock strut. The shock strut consists of a piston and fork assembly that slides inside a cylinder. A torque link connects the piston/fork assembly to the cylinder. The cylinder is mounted inside the nosewheel well. The nose gear is locked in the extended position by putting the folding strut in an overcenter position. A spring is attached to the nose gear to assist in free fall during emergency extension. The nose gear doors are spring loaded to the open position and are mechanically closed during nose gear retraction. The nose gear retracts rearward into the nosewheel well and is completely enclosed by the gear doors when the landing gear is retracted. Proximity switches give the up or down signal to the Modular Avionics Unit (MAU).

Both main landing gear are trailing link types. A hydraulic fluid and nitrogen filled shock strut connects the trailing link to the main leg hinge point. The main gears are locked in the extended position by putting the folding strut in an overcenter position. A spring is attached to the main gears to assist in free fall during emergency extension. The main landing gear doors consist of a single door that is attached to the main gear leg and the outside edge of the main gear wheel well. Each main gear retracts inward into the main gear wheel well. With the landing gear retracted the main landing gear wheel and tire assemblies are not enclosed and protrude out of the main gear wheel well approximately one inch (25.4 mm). Proximity switches give the up signal to the MAU. Microswitches give the down signal to the MAU.

All landing gear are held in the fully retracted position by a mechanical brake internal to the actuators. No mechanical uplocks are required.

Nose wheel steering is accomplished using the rudder pedals which are mechanically connected to the nosewheel. Additional nosewheel steering is done through differential braking. Use of rudder pedal only will turn the nosewheel ± 12 degrees from center while differential braking will turn the nosewheel ± 60 degrees from center. A shimmy damper is installed on the nose landing gear strut to eliminate nosewheel oscillations.

The tires are a low pressure type that allow operations from soft and unimproved fields.

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7-4-3 Electromechanical Actuators

7-4-3.1 Description

Both nose landing gear and main landing gear actuators have the same functionality and are electromechanical, self-rigging type actuators. The actuator motor control and monitoring electronics are incorporated within the actuator. Control is provided by the landing gear selector handle and the landing gear control system (including the Gear Relay Unit).

The actuator consists of an electric motor connected to a series of gears which reduce speed. The gear train has a thrust bearing connected to a ball screw and shaft. The ball screw transforms the rotation of the gear to the linear movement necessary to extend and retract the landing gear.

The motor brake is engaged when actuator movement is stopped.

An emergency gear extension system is a cable-operated system to disengage the gear train from the electric motor. Once initiated, the emergency free fall is damped by a centrifugal brake within the actuator to avoid damage to the structure.

Electrical power supply for the actuators is provided from the SECONDARY POWER LINE. Power is applied to the actuators for 30 seconds following gear handle movement.

Cockpit controls consist of the following:

- A landing gear selector handle is located on the pilot's lower right panel and facilitates extension or retraction of the landing gear. It activates up and down switches situated directly on the handle system. The handle is equipped with an electrical spring loaded solenoid which prevents it from moving to the retracted position when the airplane is on the ground. The airplane on ground status is sensed by the MAU
- An emergency gear extension (release cable) system, actuated with a handle, located at the rear of the center console, is used to disengage the gear train in the actuator and enables emergency free fall of the landing gear if the electric drive system fails.

7-4-3.2 Operation

When the landing gear handle is set to the up (or down) position a command signal is sent to the actuator to move to the retracted/extended position. At the same time the actuators are powered for 30 seconds.

The main and nose landing gears are held in its extended position by an overcenter two piece drag link and an overcenter spring.

The actuators are of the linear type with the main landing gear actuators also incorporating the down locking mechanism.

7-4-4 Indication/Warning

Extended position indication is provided by micro switches situated at the main landing gear drag link and a proximity switch on the nose landing gear door. Retraction position indication is provided by proximity switches on the main and nose landing gear doors.

Landing gear position is shown by three icons (one for each gear) in the GEAR window of the systems MFD. Each icon can show gear displays for various conditions (refer to Fig. 7-4-1).

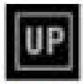
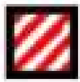
Condition of left main gear, right main gear and nose gear	Color and Font	Gear Display
State is 'undetermined'	Amber cross on black background	
State is 'Gear Up' normal	White UP with white box outline	
State is 'Gear Up' declutter (flaps up)	Grey UP with grey box outline	
State is 'Gear Up' warning	White UP in red box	
State is 'Gear Down'	Black DN with green background	
State is 'Gear in Transit'	White hatched lines with black background	
State is 'Gear in Transit Warning'	White hatched lines with red background	

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Figure 7-4-1: Landing Gear Position Icons

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The Flight Alerting System (FAS) will initiate a Gear warning message on the Primary Flight Display (PFD) and an aural warning will sound if the landing gear is not down and locked whilst in the air with:

- an airspeed of less than 130 KIAS and the PCL at idle
- the flaps set to 30 or 40°
- a radar altitude of less than 200 ft and a power setting of less than 10 psi.

The Crew Alerting System (CAS) displays the following cautions and advisory messages for the Electric Landing Gear System:

Gear Actuator Cntl	Indicates a failure reported by one of the landing gear actuators. Gear should not be cycled unnecessarily. Gear can be lowered if it is raised. Maintenance action required.
Gear Control Fault	Indicates loss of redundancy in landing gear control system, such as a stuck gear handle position switch. Gear will still function normally with a single fault.

7-4-5 Emergency Extension System

To manually extend the landing gear set the landing gear selector handle to DN with airspeed 120 KIAS. Open the Emergency Gear Extension Lever cover and pull the Emergency Lever. This will allow the landing gear to free fall. If the landing gear does not completely extend and show three green indicators, banking the airplane left and right to use the G-load may assist the emergency extension of the main landing gear. Reducing airspeed and engine power to reduce aerodynamic load may assist the emergency extension of the nose landing gear.

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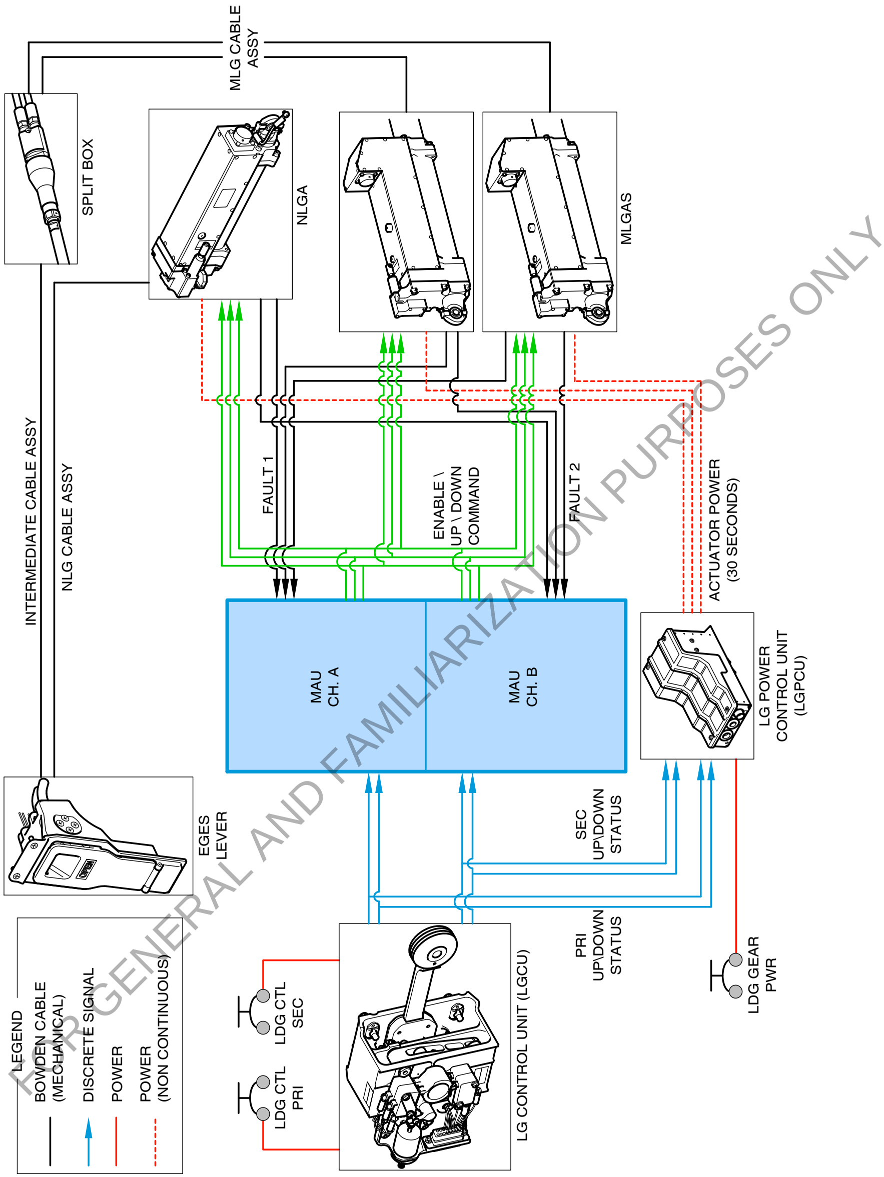

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Figure 7-4-2: Landing Gear System (Sheet 1 of 3)

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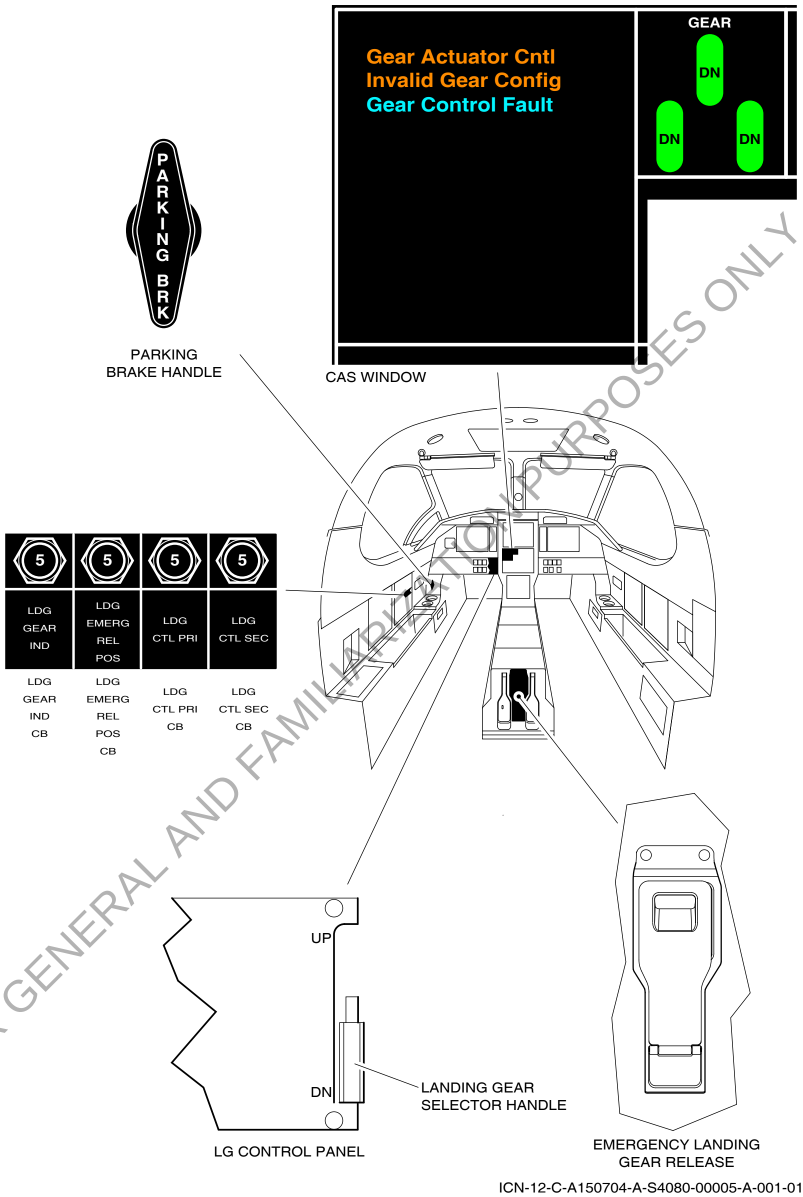

Figure 7-4-2: Landing Gear System (Sheet 2 of 3)

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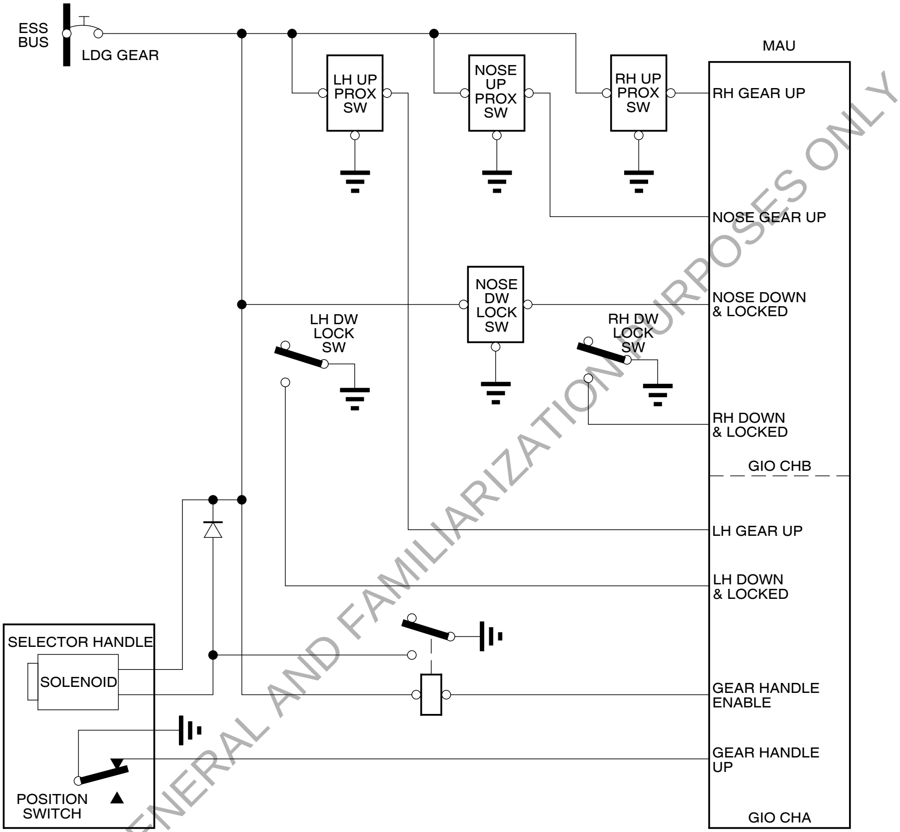

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Figure 7-4-2: Landing Gear System (Sheet 3 of 3)

7-4-6 Air / Ground System

The aircraft “in air” or “on ground” (AIR/GND) status is determined from a combination of aircraft systems interfaced to the MAU:

- LH main gear proximity switch
- RH main gear proximity switch
- Radar Altimeter - altitude
- Calibrated airspeed (ADAHRS computed).

By comparison monitoring of the above systems the MAU determines the AIR/GND status of the aircraft. MAU Channel A outputs a discrete signal to control the LH AIR/GND relays. MAU Channel B outputs a discrete signal to control the RH AIR/GND relays.

The LH AIR/GND signal is sent to the following systems:

- Propeller de-ice
- Flaps
- ECS
- LH Stick Pusher Computer
- Flight Time Counter.

The RH AIR/GND signal is sent to the following systems:

- RH Stick Pusher Computer
- Logo Lights (optional system).

If the MAU determines a disparity between the monitors by comparison monitoring, a correct determination of the AIR/GND status is still possible as the suspect (invalid) monitor is disregarded in the determination. When the MAU determines that all monitors disagree it results in an invalid AIR/GND state. If the AIR/GND state is invalid a **Air/Ground Fail** will be shown on the CAS.

When **Air/Ground Fail** shows the AIR/GND state defaults to AIR.

A dormant fault in the LH and RH main gear proximity switches is possible as a result of the AIR/GND monitor function of the MAU. To avoid this CAS status alerts will be given for **LH WOW Fault**, **RH WOW Fault** or **LH + RH WOW Fault** when the MAU determines either or both proximity switch inputs are invalid.

7-4-7 Brakes

Refer to Fig. 7-4-3, Brake System, for system operation.

Aircraft braking is provided by two brake assemblies, one bolted to each main landing gear axle. The brakes are controlled by toe pedals attached to each rudder pedal assembly. The pilot and copilot left toe brakes operate the left brake while the pilot and copilot right toe brakes operate the right brake.

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The brake system consists of a brake fluid reservoir, four brake master cylinders, a left and right shuttle valve, a parking brake valve, and two brake assemblies. If the pilot and copilot simultaneously apply pressure to the same side brake pedal, the one applying the greatest pressure will control the braking.

The brake fluid reservoir is located on the right hand side of the cabin sidewall and incorporates a fluid level indicator.

A separate brake master cylinder, located in the cockpit footwell, is mechanically connected to each toe pedal. There is no mechanical connection between the pilot and copilot brake pedals. Two shuttle valves, a left and a right, are used to select inputs from their respective pilot and copilot brake pedals. Pressing a brake pedal causes the applicable brake master cylinder to force brake fluid through the respective shuttle valve and parking brake valve to the brake assembly.

The six piston brake assemblies have steel friction surfaces and three retractors. The retractors pull the pressure plate back when no hydraulic pressure is applied to the brake assembly. When the system is pressurized and the retractors are flush with the piston housing, the brake linings must be overhauled.

The parking brake valve has two off-center cams that hold open poppet valves whenever the parking brake is released. This allows hydraulic fluid flow through the brake system. When the parking brake is set, the off-center cams are rotated to allow the poppet valves to close. This traps brake fluid under pressure between the parking brake valve and the brake assemblies.

To set the parking brake, pull the PARKING BRK T-handle fully out and rotate to lock, then evenly press both brake pedals. Release pedal pressure and the brakes will remain set. To release the brakes, rotate and push the PARKING BRK T-handle fully in.

7-4-8 Wheels and Tires

The wheels are split-hub type, the main wheels have three fusible plugs which melt when there is too much heat from the brakes. Tubeless tires are installed on the wheels and each wheel has a tire inflation valve and an overinflation safety plug. The main wheels have fairings on the outer hubs which make the wheels aerodynamically smooth when the landing gear is retracted.

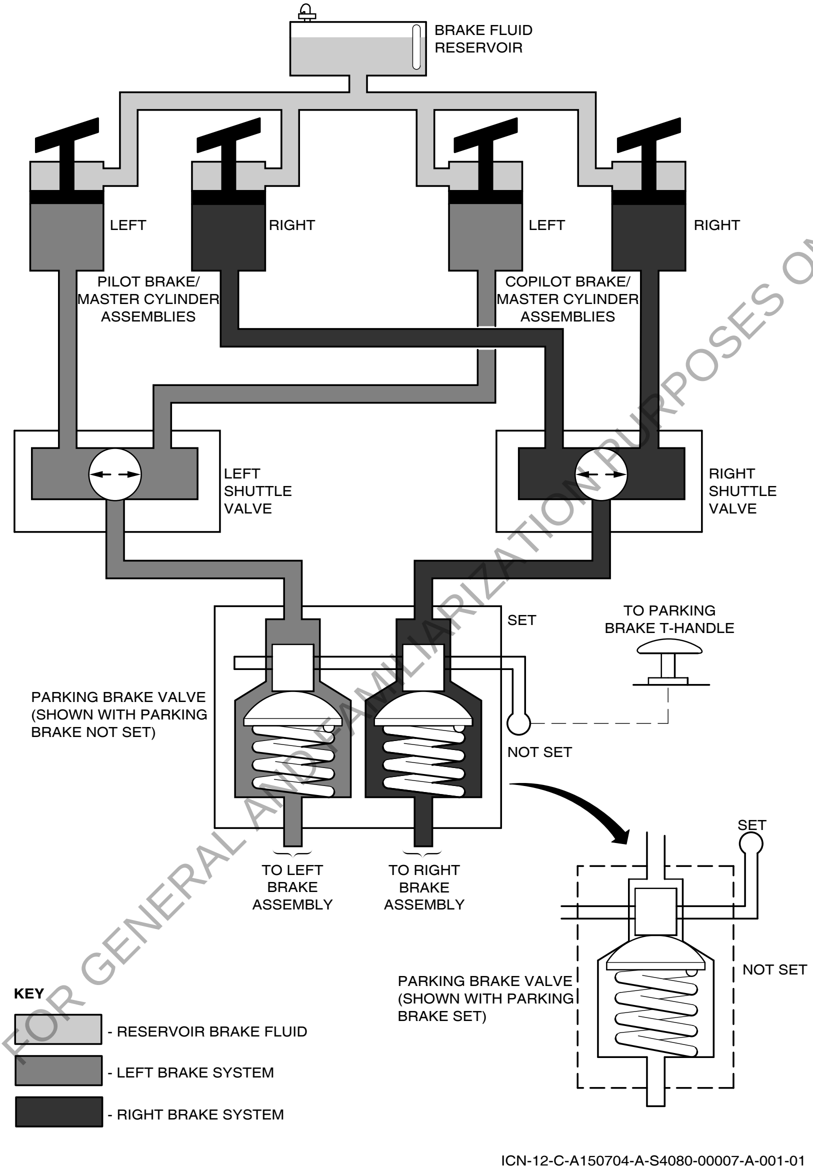

Figure 7-4-3: Brake System

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7-5 Baggage Compartment

7-5-1 General

A baggage compartment is provided at the rear of the cabin and is accessible during flight. A standard luggage net is secured at twelve attachment points to secure the baggage. An extendible baggage net can be installed instead of the standard net, to secure baggage in front of and in the baggage compartment. The floor attachments at the front of the net can be moved between Frames 32 and 34.

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7-6 Cargo Tie-Downs

7-6-1 General

Tie-down anchor points fit into the seat rails and lock into place by an over-center lever. Tie-down straps can be secured to these anchor points.

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7-7 Seats / Restraint Systems

7-7-1 Seats

7-7-1.1 Crew Seats

Refer to Fig. 7-7-1, Crew Seat - Controls

The crew seats are adjustable fore and aft and vertically. They also have controls for recline, thigh support, back cushion lumbar support, armrests and headrest. The fore and aft and recline control levers are on the rear inboard side of the seats. The vertical adjustment lever and the thigh support control wheel are at the front of the seat cushion. When the thigh support control wheel is turned it raises or lowers the thigh pads. There is a push button at the bottom of each side of the seat back board. When the inboard button is pushed the lumbar support pad can be moved up or down with the aid of a handle. When the outboard button is pushed the lumbar support pad can be moved inwards or outwards by easing or applying body weight to the back cushion. The padded armrests can be moved upwards and inwards to provide free access to get in and out of the seat. They also have a control wheel on the underside which can be used to adjust the height of the armrest. The seat headrest can be adjusted by moving the headrest to the side and rotating it to one of the six lock positions. There is a life vest stowage box installed under the seat.

7-7-1.2 Passenger Seats

Refer to Fig. 7-7-2, Commuter Seat - Typical

Refer to Fig. 7-7-3, Executive Seat - Typical

The standard passenger seats have a reclining backrest, sliding headrest, a folding inner armrest, and a restraint system.

The executive seats are leather upholstered, with swivel and forward/rear/inboard travel. Seat travel is as follows:

- 4” (101.6 mm) forward/aft for forward facing executive seats
- 2” (50.8 mm) forward/aft for rearward facing executive seats
- 3.6” (91.4 mm) inboard for all executive seats.

A reclining backrest, sliding headrest, sliding armrest, magazine pocket and a restraint system are fitted. The seat position control is located on the forward edge of the arm. Pulling up on the control handle will allow the seat to be moved to the desired position. Releasing the control handle will lock the seat in position. The control for the back recline is a round push button located in the inner surface of the arm. Depressing the button will allow the seat back angle to be adjusted. Depending on the seat location in the cabin, the seat can be reclined to a lay flat position.

7-7-2 Seat Belts And Shoulder Harnesses

Each crew seat is equipped with a four-point restraint system consisting of an adjustable lap belt and a dual-strap inertia reel-type shoulder harness. Each passenger seat is equipped with a three-point restraint system consisting of an adjustable reel-type lap belt and an inertia reel-type shoulder harness.

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