OPERATION MANUAL
PART B
PILATUS PORTER PC-6

Rev. No.: 00

19 April 2021

PT. Smart Cakrawala Aviation

SCA/OPS/1-010

PT.SCA

OPERATION MANUAL

OPERATION MANUAL PART B PC-6

MANUAL

01

MINISTRY OF TRANSPORTATION
DIRECTORATE GENERAL OF CIVIL AVIATION

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Tangerang, 12 August 2021

Our Ref : AU.010/22/19/DKPPU-2021

To : Mr. Pongky Majaya
PT Smart Cakrawala Aviation
Gedung Smartdeal Lt. 4
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Jakarta Pusat 10130, Indonesia
Tel. : +62-21-6305210
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Email : pongky.majaya@smartaviation.co.id

Subject : **REVIEW FOR THE APPROVAL OF OPERATION MANUAL PART B - PILATUS PC-6/B2-H4 REV. 01 DATED 12 AUGUST 2021**

Dear Mr. Pongky Majaya,

I refer to the submission of the above mentioned document for review and approval on 20 May 2021.

The Document submitted has been reviewed and found in compliance with the Civil Aviation Safety Regulation part 135 and **Approved.**

Sincerely Yours,

Capt. Anderson Adri P.
On Behalf of Director of DAAO
Act. Head of Section Surveillance of Aircraft Operation

cc. : Director of DAAO

MINISTRY OF TRANSPORTATION
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CONTROL PAGE

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LEP-1	LEP-1	00	April 2021
LEP-2	LEP-2	00	April 2021
LEP-3	LEP-3	00	April 2021

This Operation Manual (OM) Part B – Pilatus PC-6/B2-H4 has been reviewed and found meet all applicable requirements set forth in the Aviation Act No. 1 Year 2009 and Civil Aviation Safety Regulations (CASR). This Operation Manual Part B is approved for use by PT Smart Cakrawala Aviation with the understanding that Director General of Civil Aviation (DGCA) may require further revisions to this Manual as regulatory requirements or airworthiness standard are amended.

Any change to these manuals shall be reported to the Director General of Civil Aviation (DGCA) for Approval.

Tangerang, 12 August 2021
On behalf of the Director of Airworthiness and Aircraft Operations

CAPT. ANDERSON ADRI P.
Act. Head of Section Surveillance of Aircraft Operations

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PT. SMART CAKRAWALA AVIATION	D G C A
CAPT. A. JAHRON BURHANI OPERATION MANAGER	CAPT. RIZAL BAYU AZI, S.T, MMTr. CERTIFICATION PROJECT MANAGER

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MANUAL DISTRIBUTION LIST

CONTROL NO.	ASSIGNMENT (Title of Organization)	REMARK
01	PT. Smart Cakrawala Aviation Library	Hard & Soft Copy
02	Indonesian DGCA	Hard & Soft Copy
03	President Director	Soft Copy
04	Operation Manager	Soft Copy
05	Safety And Quality Manager	Soft Copy
06	Technical Manager	Soft Copy
07	Chief Pilot	Soft Copy
08	Chief Inspector	Soft Copy
09	Aircraft	Hard Copy
10	Home Base	Hard and Soft Copy
11	Satellite Base	Hard and Soft Copy
12	Aircrew	Soft Copy

RECORD OF REVISION

Revision Number	Pages Affected	SUBJECT	Effective Date	Inserted Date	Signature

REVISION OF HIGHTLIGHT

Revision Number	Revision Date	Chapter	Page	Description of Changed

1. GENERAL

1.1. INTRODUCTION

This Operations Manual Part B ***(OM Part B)*** - Aircraft Operating Information is issued by Operations Department for guidance in the operation of Pilatus PC-6/B2-H4. The OM Part B cannot cover all circumstances. However, they are intended to assist flight crewmembers to operate aircraft within the limitations of the Aircraft Flight Manual / Pilot Operating Handbook. All flight crew are expected to exercise sound judgment and consistency in their application.

This Pilatus PC-6/B2-H4 OM Part B details the method of operation of the PilatusPC-6/B2-H4 Series aircraft equipped with Pratt & Whitney PT6A-114A / PT6A-140 Turbo Prop Engines.

This manual has been compiled for use by the flight crew and other personnel involved in the daily operation of the aircraft, and for the initial and recurrent training of such personnel.

This manual is to be read in conjunction with the relevant Aircraft Flight Manual (AFM) / Pilot Operating Handbook (POH), the Civil Aviation Safety Regulation (CASR) and with the applicable sections of the Operations Manual Part A (OM part A). Where there is any variance between this manual and the AFM/POH or CASR, the AFM/POHor CASR will take precedence.

Nothing contained in this manual is to be construed as relieving the Pilot -in- Command (PIC) of the responsibility to take or direct action in an emergency or unusual circumstance which he considers necessary to preserve the safety of the aircraft and its passengers or cargo.

Standardization is one of the most powerful tools available to the crew to prevent the undesirable, to determine when something undesirable is occurring, and to deal with the undesirable should it occur. These OM Part B are provided as a part of the standardization tool. However, a standard procedure cannot be devised to cope withall situations. Although the OM Part B are to be complied with to the extent practical, there may be situations where compliance with some part is inadvisable. Should it be appropriate to deviate from the OM Part B all applicable flight crewmembers shall be thoroughly briefed.

1.2. EDITING, PUBLICATION AND AMANDEMENT RESPONSIBILITIES

1.2.1 Editing Manual

Annotation of Change

Amendments will be in the form of replacement pages. They will be accompanied by: Filing Instructions (for print copies), an updated List of Effective Pages (LEP), and a brief outline of the purpose and the nature of the changes. A solid vertical black bar will indicate all changes to text and diagrams, (change-bar) or in the margin closesto the page edge. Amended electronic copies shall be made available to all recipients.

Destruction and Disposal of Obsolete Operational Documents

On receipt of new documents either in hard copy, electronic or multimedia format, the previous version of the document shall be removed, destroyed and disposed ofin an appropriate manner.

To maintain a "current" status of all the documents, any updated will distributed regularly updated through Company Mail issued with Flight Documents updated.

1.2.2 Publication of Manual

Publication Authority

Operation Manager shall be responsible for the publication of the amendments to the Operations Manual. And it will be distributing by an electronic copy, then paper copy of the amendment will be distributing respectively (see of distribution list).

Management and Control of Flight Operations Documents / Publications

Documents and Publications relating to Flight Operations are controlled and managed by Operation Manager. All publications / documents sourced from a vendor shall be Library. All publications / documents sourced from a vendor shall be documented and a record of subscription / purchase shall be a period of two years. The validity of subscription shall be monitored.

On receipt of updates / revision to the publications, records of such updates / revision shall be maintained. Library team shall be responsible for the documentation, control and updates. All obsolete documents in all forms shall be suitably destroyed and disposed of as per the airline operations practices and procedures in force.

Operation Manager shall ensure that all documents / publications:

a. Are reviewed and approved for adequacy prior to issue.
b. Are updated, reviewed and approved for re-issue as necessary.
c. The current revision status is displayed.
d. Are available at point of use.
e. Are eligible, readily identify able and retrievable
f. Documents of external origin are identified and their distribution suitably managed.

That all obsolete are withdrawn to prevent unintended use by removing them from circulation and destroying / disposing per the procedure in force. Should any document be retained for any purpose with the Flight Operations, they shall be suitably identified and annotated as such, are stored in suitable electronic media ina designated computer.

A distribution list for all operational documents to manage its dissemination shall be maintained. All operational documents shall be duty signed by the issuing authority and these signed copies shall be deemed as original copy and shall be maintained at Library.
Dissemination
shall essentially be via electronic means like email to establish that the individual user has received the correct document.
All documents shall be published in PDF format for electronic dissemination. A record of receipt of all documents sent by Library to individual users shall be maintained for a period of 6 (six) months.
Each user, shall, further under take that they have received, read relevant documentation update shall be reflected in the Company Mail issued every Monday (if applicable) and available with the Flight Plan shall be handed o v e r to the Flight Crew. All Flight Crew while signing the Flight Release and understood all the operational information disseminated as detailed in the Company Mail.

Documents

The following publications are considered "ORIGINAL" documents:

g. Any document prepared by Flight Operations and issued by Operation Manager with signature in ink is deemed an original document.
h. Document NOT generated by Operation Manager but received from manufacturers of aircraft and associated vendors.
i. All original documents shall be kept with Library. Library shall maintain controlled copies of documents / publications marked "Controlled Copy" in red. An updated list of 'Controlled Copy' issued shall be available with the Library.

A designated person shall crosscheck availability of all the issued 'Controlled Copy'at the intended location on a bi-annual basis and corrective action shall be taken in case of discrepancy as per company policy / procedure in force.

Controlled Copies are NOT photo copied. Controlled Copies of relevant documents shall be maintained in main libraries and onboard the aircraft. Library shall be responsible to update the controlled copies in case of revision / changes to the original. All copies when printed by individual user shall be deemed to be uncontrolled copies and need to be updated by the user as required.
Uncontrolled copies shall be marked as ***UNCONTROLLED COPY*** *in red stamp.*

The set of documents available at the main Library are detailed and updated regularly.

1.2.3 Amending the Manual

General

Assurance activities or periodic review – A manual that fails to take account of changing circumstances is no longer relevant and loses credibility. All amendments to contents are to be subject to an internal approval changes to the Operations Manual may be required as a result of changes in the course of business, new operational requirements, quality and vetting process. Hand written amendments are NOT permitted, except in situations requiring immediate amendment in the interests of safety

Responsibility

Each copy of the Operations Manual remains the property of PT. Smart Cakrawala Aviation, who assumes the overall responsibility for updating the contents of the manual. However, each holder of the Operations Manual is personally responsible for the security, the condition and the amendment status of their copy. And for controlling and monitoring to keep current and update Operations Manual is responsibility Operation Manager.

Internal Responsibility for Initiating Amendments

Responsibility for the content of the various parts of this manual is vested as follows:

a. Operation Manager shall be responsible for contents related to Flight Operations and Safety.
b. Chief Pilot / Deputy shall be responsible for the contents related to Training and Standards.
c. All holders of the Operations Manual are responsible to notify their superior without delay, in case they notice any error or discrepancy in the manual.

Revision Cycle

The Operations Manual shall be review and revise if necessary twice a year, in thethird week of June and December, be effective on the first date of the next coming month (1^{st}July and January), unless there is a reason to issue a non-scheduled revision.

Conflict

In case of a conflict of the dates in the application of a new procedure, then the new procedure shall be used.

In case there is a conflict between the contents of a paper copy and an electronic copy, then the electronic copy shall be deemed correct.

Approval

The contents of the Operations Manual have been approved in their entirety both internally and by the DGCA prior to initial issue. Further, the contents of all amendments or revisions to the Operations Manual must be acceptable to, or, where applicable, approved by, the DGCA. The following procedure shall apply:

1.2.4 Amendments Requiring DGCA Approval

When the amendment concerns any part of the Operations Manual which must be approve, this approval shall be obtained before the publication of the amendment.

Exceptionally, if the amendment has an implication on safety, they it may be published and applied immediately provided that the approval required has been applies.

1.2.5 Distribution Confirmation of Receipt

All Operations Manual copies will be electronically distributed by Operation Manager in format soft copies, save hard copies for offices (A4 format) and the airplane library (A5 format), for ease of in-flight use, and shall have a ring binder that permits easy use and amendment under flight standard responsibility, but for individuals or users have the option of obtaining a softcopy or printing a hard copy at their own expense and responsibility for accuracy and update.

1.2.6 Performance / Currency Manual

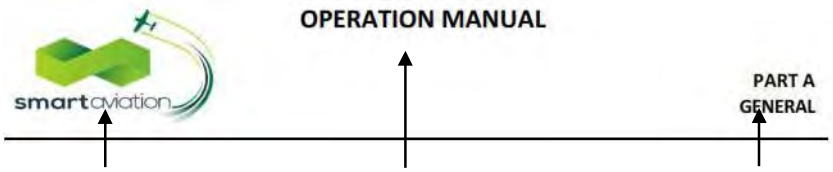
This Operations Manual will be reviewed for currency every 6 (six) month, the currency status of each page is given as follows:

- Manual Identifier / Issue Number / Revision / Date of Issue.

1.2.7 NOMENCLATURE

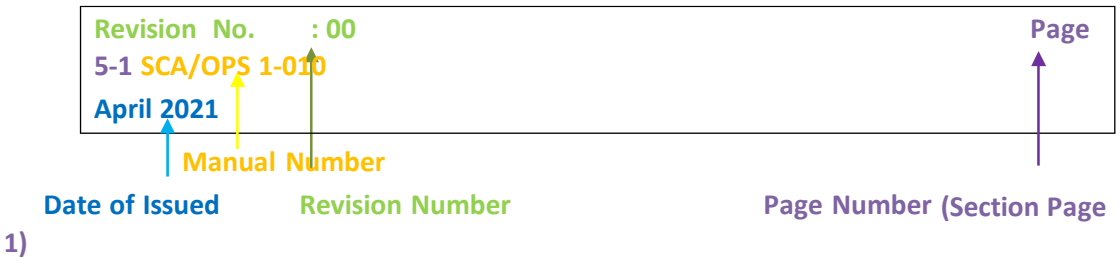
Chapter and Section Numbering
This Manual is subdivided into Chapters, Sections and Subsections.

1. Top of the Page



Company Logo **Manual's Name** **Part Identifier**

2. Bottom of the Page



A "decimal" nomenclature is used, as follows:

- Chapter - First Numerical Identifier;
- Section - Second Numerical Identifier;
- Sub-section - Third Numerical Identifier, and as necessary a bracketed letter identifier.

Example: 1.5.1.is:

- Chapter 1 : International Standard.
- Section 5 : Amending the manual.
- Sub-section 1 : General.

1.2.8 MANUAL CONTROL NUMBER

This Operations Manual is pertains to the Regulations & Quality System applicationin the flight operations activities will be identified and control by Operation Manager as document number SCA/OPS-1-001. Shown below is a brief description of the manual control number

SCA : Stands for the Company Names of PT. Smart Cakrawala Aviation.

OPS : Stands for the department issued manual.

1 : Stands for level manual procedure to be observed and implemented within company, its need approval from DGCA.

01 : Stands for Manual Serial Number for Operations Manual approved by DGCA

1.2.6 SYSTEM OF AMENDMENT AND REVISION

Operation Manager is responsible for the overall control of this manual and will authorize both the content and issuance of amendments and revisions.

Revisions will be numbered in sequence and will contain the date of issue. All revisions will be recorded in Revision Of Record (PAGE ROR) by the post holder forall departments.

However, it Is the responsibility of each manual holder to ensure all relevant staff is made aware of any material change to this manual.

1.3. APPLICABILITY

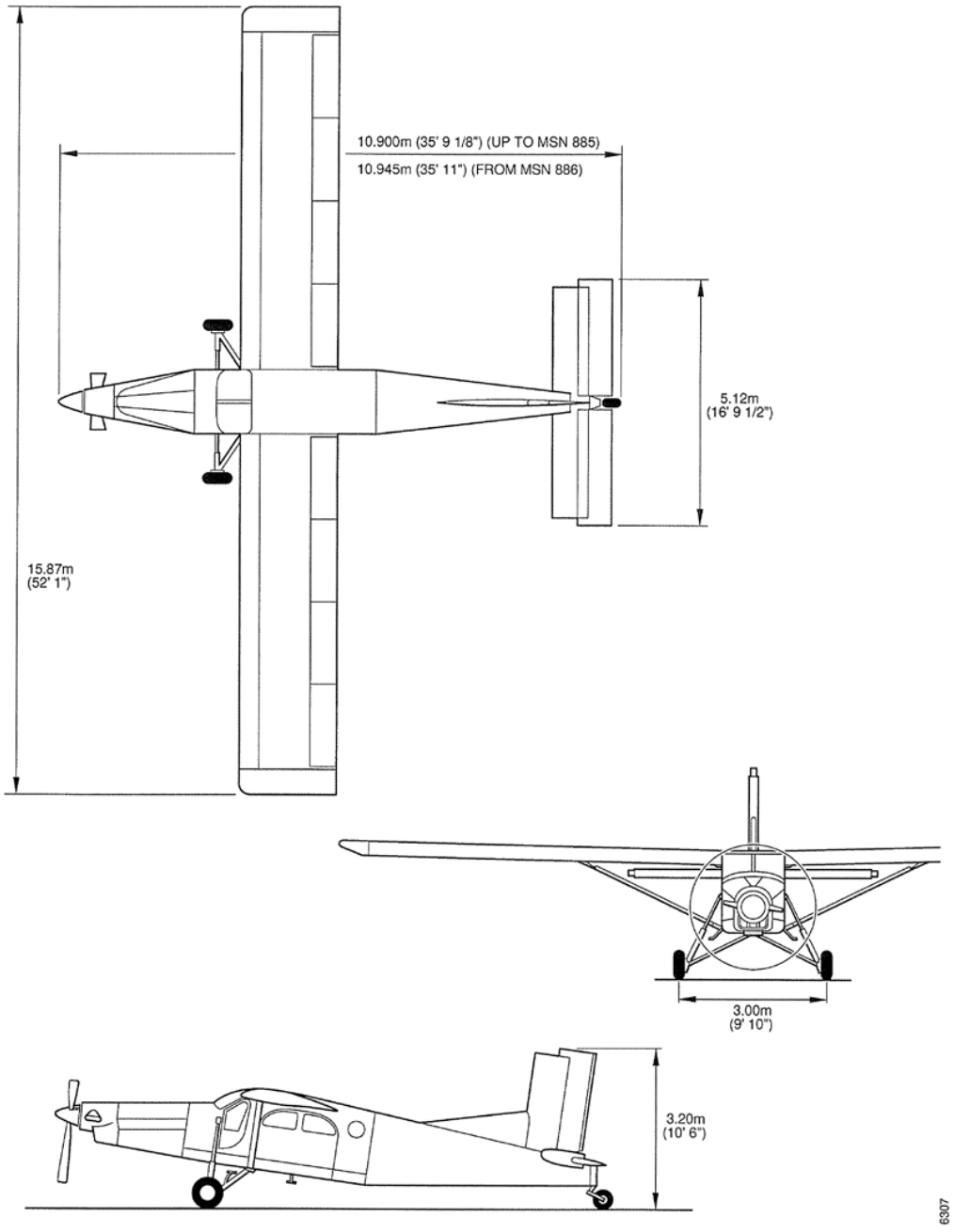
This Operations Manual Part B is applicable for the following Model / Series of Pilatus PC-6/B2-H4 aircraft:

Make and Model	Engine Type	Flight Instruments
Pilatus PC-6/B2-H4	PT6A-114A	G950

1.4. AIRCRAFT DIMENSION

This section details Aircraft Dimension applicable to the specific aircraft type. The information is drawn from the Pilot Operating Handbook/Aircraft Flight manual.

AIRCRAFT TYPE	DOCUMENTS MANUAL	SECTION
Pilatus PC-6/B2-H4	Aircraft Maintenance Manual	SECTION 6



1.5. DESCRIPTIVE DATA

This section details descriptive data applicable to the specific aircraft type. The information is drawn from the Pilot Operating Handbook/Aircraft Flight manual.

AIRCRAFT TYPE	DOCUMENTS MANUAL	SECTION
Pilatus PC-6/B2-H4	Aircraft Maintenance Manual	SECTION 6

1.6. DEFINITION

KCAS (**Knots Calibrated Airspeed)** is indicated airspeed corrected for position and instrument error and expressed in knots. Knots calibrated airspeed is equal to KTAS in
standard atmosphere at sea level.

KIAS (**Knots Indicated Airspeed)** is the speed shown on the airspeed indicator and expressed in knots.

KTAS (**Knots True Airspeed)** is the airspeed expressed in knots relative to undisturbed air which is KCAS corrected for altitude and temperature.

VA (**Maneuvering Speed)** is the maximum speed at which full or abrupt control movements may be used without overstressing the airframe.

VFE (**Maximum Flap Extended Speed)** is the highest speed permissible with wing flaps in a prescribed extended position.

VMO (Maximum Operating Speed) is the speed that may not be deliberately exceeded at any time.

VS (Stalling Speed or the minimum steady flight speed) is the minimum speed at which the airplane is controllable.

VSO (Stalling Speed or the minimum steady flight speed) is the minimum speed at which the airplane is controllable in the landing configuration at the most forward center of gravity.

VX (Best Angle of Climb Speed) is the speed which results in the greatest gain of altitude in a given horizontal distance.

VY (Best Rate of Climb Speed) is the speed which results in the greatest gain in altitude in a given time.

OAT (**Outside Air Temperature)** is the free air static temperature. It may be expressed in either degrees Celsius (°C) or degrees Fahrenheit (°F).

ISA (International Standard Atmosphere) is an atmosphere in which:

1. The air is a perfect dry gas.
2. The temperature at sea level is 15°C.
3. The pressure at sea level is 29.92 inches of mercury (inHg) (1013.2 mb).
4. The temperature gradient from sea level to the altitude at which the temperature is -56.5°C is -1.98°C per 1000 feet.

Standard Temperature is 15°C at sea level pressure altitude and decreases by 2°C for each 1000 feet of altitude.

Pressure Altitude is the altitude read from an altimeter when the altimeter's barometric scale has been set to 29.92 inches of mercury (inHg) (1013.2 mb).

Beta Mode is the engine operational mode in which propeller blade pitch is controlled by the power lever. The beta mode may be used during ground operations only.

Flameout is the unintentional loss of combustion chamber flame during operation.

Flat Rated denotes constant horsepower over a specific altitude and/or temperature.

Gas Generator RPM indicates the percent of gas generator RPM based on a figure of 100% being 37,500 RPM.

GCU (**Generator Control Unit)**

Hot Start is an engine start, or attempted start, which results in an ITT exceeding 1090°C.

ITT (Interstage Turbine Temperature)

Maximum Climb Power is the maximum power approved for normal climb. Use of this power setting is limited to climb operations. This power corresponds to that developed at the maximum torque limit, ITT of 765°C or Ng limit, whichever is less. This power corresponds to that shown in Section 5, Performance, Maximum Engine Torque for Climb.

Maximum Rated Power is the maximum power rating not limited by time. Use ofthis power should be limited to those abnormal circumstances which require maximum airplane performance (i.e., severe icing conditions or windshear downdrafts). This power corresponds to that developed at the maximum torque limit, ITT of 805°C or Ng limit, whichever is less.

Ng signifies gas generator RPM.

Propeller RPM indicates propeller speed in RPM.

RPM (**Revolutions Per Minute Reverse Thrust)** is the thrust produced when the propeller blades are rotated past flat pitch into the reverse range.

SHP is shaft horsepower and is the power delivered at the propeller shaft.

$$SHP = \frac{\text{Propeller RPM x Torque (foot - pounds)}}{5252}$$

Takeoff Power is the maximum power rating and is limited to a maximum of 5minutes whenever ITT is greater than 765°C, under normal operation. Use of this power should be limited to normal takeoff operations. This power corresponds to that shown in Section 5, Performance, Maximum Engine Torque For Takeoff.

Torque is a measurement of rotational force exerted by the engine on the propeller.

Windmill is propeller rotation from airstream inputs.

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 is not considered to be limiting.

Usable Fuel is the fuel available for flight planning.

Unusable Fuel is the quantity of fuel that cannot be safely used in flight.
PPH (Pounds Per Hour) is the amount of fuel consumed perhour.

NM/1000 Lbs (Nautical Miles Per Thousand Pounds of Fuel) is the distance which can be expected per 1000 pounds of fuel consumed at a specific engine power setting and/or flight configuration.

g is acceleration due to gravity.

Land As Soon As Possible (**Land at the nearest suitable airport)**. Unless otherwise specified, use Normal Procedures for Approach, Before Landing, and Landing. Extreme situations can require an off airport landing. Primary consideration is safety of occupants.

Land As Soon As Practical (**Land at a suitable airport)**. Unless otherwise specified, use Normal Procedures for Approach, Before Landing, and Landing. The primary consideration is the urgency of the emergency or abnormal situation. Continuing to the destination or an alternate with appropriate service facilities can be an option.

Reference Datum is an imaginary vertical plane from which all horizontal distances are measured for balance purposes.

Station is a location along the airplane fuselage given in terms of the distance from the reference datum.

Arm is the horizontal distance from the reference datum to the center of gravity (C.G.) of an item.

Moment is the product of the weight of an item multiplied by its arm. (Moment divided by the constant 1000 is used in this POH/AFM to simplify balance calculations by reducing the number of digits.)

Center of Gravity (C.G.) is the point at which an airplane or equipment would balance if suspended. Its distance from the reference datum is found by dividing the total moment by the total weight of the airplane.

Center of Gravity Arm is the arm obtained by adding the airplane's individual moments and dividing the sum by the total weight.

Center of Gravity Limits are the extreme center of gravity locations within which the airplane must be operated at a given weight.

Standard Empty Weight is the weight of a standard airplane, including unusable fuel, full operating fluids and full engine oil.
Basic Empty Weight is the standard empty weight plus the weight of optional equipment.

Useful Load is the difference between ramp weight and the basic empty weight.

Mean Aerodynamic Chord is a chord of an imaginary rectangular airfoil having the same pitching moments throughout the flight range as that of the actual wing.

Maximum Ramp Weight is the maximum weight approved for ground maneuver, and includes the weight of fuel used for start, taxi and runup.

Maximum Takeoff Weight is the maximum weight approved for the start of the takeoff roll.

Maximum Landing Weight is the maximum weight approved for the landing touchdown.

Tare is the weight of chocks, blocks, stands, etc. used when weighing an airplane, and is included in the scale readings. Tare is deducted from the scale reading to obtain the actual (net) airplane weight.

Scale Drift may occur on some types of electronic scales because of the inability of the scale to return to a true zero reading after weighing. If present, this deviation from zero should be accounted for when calculating the net weight of the airplane.

Residual Fuel is the fuel remaining when the airplane is defueled in a specific attitude by the normal means and procedures specified for draining the tanks.

1.7. UNITS OF MEASUREMENTS

1.7.1. The Dimensional Units Used in All Air and Ground Operations

MEASUREMENT OF	UNITS
Distance used in Navigation, Position reporting, etc.	Nautical Miles and tenths (note 1)
Relatively short distances such as those relating to reduced visibility and RVR.	Meters (note 2)
Aerodromes (runway length) Altitudes, elevations, and heights	Feet (ft)
Horizontal speed including wind	Knots
Vertical speed	Feet per minute
Wind direction for landing and take off	Degrees Magnetic
Visibility	Kilometers (note 2)
Altimeter setting	Hectopascal (InHg, mb)
Temperature	Degrees Celsius
Mass	Kilograms (pounds if specified in RFM)
Time	Hours and Minutes. The day beginning at Midnight Co-ordinate Universal Time (UTC)

Note 1 : One international nautical mile is 1852 meters
Note 2 : Visibility of less than 5 Km may be given in meters

1.7.2. Time System

The Co-ordinate Universal Time (UTC) is used in the air traffic and communications services and in the documents published by the Aeronautical Information Service (AIS), unless otherwise stated.

1.7.3. Local Time

- Western Indonesia is UTC + 7 hrs
- Central Indonesia is UTC + 8 hrs
- Eastern Indonesia Is UTC + 9 hrs

1.8. CONVERSION OF UNITS OF MEASUREMENTS

1.8.1. Volume

Converting	To	Multiply by
Imperial Gallons	Liters	4.54596
Liters	Imperial Gallons	0.219975
US Gallons	Liters	3.78531
Liters	US Gallons	0.264179
Imperial Gallons	US Gallons	1.20095
US Gallons	Imperial Gallons	0.832674

1.8.2. Distance

Converting	To	Multiply by
Feet	Meters	0.3048
Meters	Feet	3.28084
Miles	Nautical Miles	0.868976
Nautical Miles	Miles	1.15078
Nautical Miles	Kilometers	1.852
Kilometers	Nautical Miles	0.539957
Miles	Kilometers	1.609
Kilometers	Miles	0.621504

1.8.3. Speed

Converting	To	Multiply by
Knots	Miles per Hour	1.15078
Miles per Hour	Knots	0.8684976
Meters per Second	Knots	1.9
Knots	Meters per Second	0.5263157

1.8.4. Mass

Converting	To	Multiply by
Kilograms	Pounds	2.204622
Pounds	Kilograms	0.453592

1.8.5. Barometric Pressure

Converting	To	Multiply by
Inches Hg	Hectopascal	33.86
Hectopascal	Inches Hg	0.0295

1.8.6. Temperature

Converting	To	Formula
Celsius	Fahrenheit	(°C x 9/5) + 32
Fahrenheit	Celsius	(°F - 32) x 5/9

CERTIFICATE LIMITATIONS

2.1 CERTIFICATE

Basis:	US Civil Air Regulations Part 3 (CAR 3)
Category:	Normal
Swiss Type Certificate:	No. F56-10

2.2 ENGINE

Manufacturer:	United Aircraft of Canada Ltd.
Model:	PT6A-27 Turboprop
US Type Certificate:	FAA E4EA
Propeller Shaft Gear Ratio:	0.0663:1

CERTIFICATE LIMITATIONS

2.3ENGINE LIMITATIONS

Condition	Operating Limits					
Power Setting	Torque (5) psig	Maximum ObservedITT - °C	Gas Gen. Speed (Ng) (4) %	Prop. Speed (Np) RPM	Oil Press. psig (1)	Oil Temp. °C (2)
Take-off	47.3	725	101.5	2000	80 - 100	10 - 99
Max. Cont./(4) Enroute Emer.	47.3	725	101.5	2000	80 - 100	10 - 99
Max. ClimbMax. Cruise	47.3	695	101.5	2000	80 -100	0 - 99
Low Idle		660 (6)			40 (Min.)	-40 to 99
Starting		1090 (3)				-40 (Min.)
Acceleration	53 (3)	825 (3)	102.6 (3)	2420		0 - 99
Max. Reverse	47.3 (7)	725	101.5	2000	80 - 100	0 - 99

Normal oil pressure is 80-100 psi at gas generator speeds above 72% with oil temperature between 60 and 70°C. Oil pressures below 80 psi are undesirable, and should be tolerated only for the duration of the flight, preferably at a reduced power setting. Oil pressures below normal constitute an engine discrepancy and should be corrected before take-off. Oil pressuresbelow 40 psi are unsafe, and require that either the engine be shut down or a landing be made as soon as possible, using the minimum power required to sustain flight.

1. For increased oil service life (i.e. time between oil changes) an oil temperature between 74 and80°C is recommended.
2. When ambient temperature is less than 0°C and engine is cold soaked, assume OAT equals oiltemperature.
3. When OAT is less than -40°C and engine is cold soaked, engine must be heated prior tostarting to raise oil temperature to more than -40°C
4. These values are time-limited to two seconds.
5. For every 10°C below -30°C ambient temperature, reduce maximum allowable Ng by 2.2%.
6. Maximum permissible sustained torque is 47.3 psi.
7. At 51 % Ng minimum. Increase Ng as required to maintain temperature limit.
8. Ng must be set so as not to exceed power limitations. Reverse power operation should not exceed one minute duration.

CERTIFICATE LIMITATIONS

Power Lever Operation

Positioning of the power lever below the idle stop in flight is prohibited. Such positioning may lead to lossof airplane control or may result in an engine overspeed condition and consequent loss of engine power.

CERTIFICATE LIMITATIONS

2.4 PROPELLER

Manufacturer: Hartzell Propeller, Inc.

Hub Model: HC-B3TN-3D

Blade Model: T10178CNR, T10178CNRK, T10178CR or T10178CRK

or

T10178C, T10178CK, T10178CH or T10178CK modified according to Pilatus Service Bulletin No.149.

Propeller de-icing must be OFF when the propeller is not operating (rotating).

2.5 FUEL

Refer to current issue of PRATT AND WHITNEY OF CANADA Service Bulletin No. 1244.Fuels conforming to CPW 204 specifications:

- ASTM-D-1655 Jet A, Jet A-1 and Jet B
- IATA Kerosene and wide-cut

Emergency use of aviation gasoline MIL-G-5572, all grades, is permitted for a total time period notexceeding 150 hours during any overhaul period. It is not necessary to purge the unused fuel from the system when alternative fuel types are used.

2.6 OIL

For approved oil grades and oil limitations refer to the current issue of PRATT AND WHITNEY OF CANADAService Bulletin No. 1001.

2.7 PLACARDS

2.7.1 **Engine Placards** On the instrument panel shelf:
" DO NOT REVERSE IN FLIGHT "

Adjacent to oil cooler control:
" OIL COOLER PULL - WARM PUSH - COLD "

2.7.2 **Flight Placards** On the instrument console:

1. Maneuvers **" NO ACROBATIC MANEUVERS INCLUDING SPINS ARE APPROVED "**
2. Operating Category **" THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE APPROVEDAIRPLANE FLIGHT MANUAL "**
3. Icing Conditions **" FLYING INTO PREDICTED AND ACTUAL ICING CONDITIONS IS NOT APPROVED. OPERATION IN FALLING SNOW IS NOT APPROVED UNLESS SNOWVANES ARE INSTALLED "**
4. Fire **" CAUTION**

CERTIFICATE LIMITATIONS

IN CASE OF FIRE IN ENGINE COMPARTMENT OR FUMES IN CABIN PULL HERE AND PUSH CABIN HEAT CONTROL "

5. Airspeeds **" ATTENTION MAX AIRSPEEDS**

	KNOTS(IAS)	KM/H
FLAPS DOWN	95	176
FLAPS UP	151	280
MANEUVERING	119	220 "

6. Landing Flap Control **" WARNING**
(only if hinged doors are installed) ENSURE HINGED DOORS ARE CLOSED BEFORE **OPERATING FLAPS "**

7. Stall Warning TEST On left instrument panel:**" STALL PUSH TO TEST "**

2.7.3 Fuel System Placards

1. Valve Adjacent to the fuel system valve:**" FUEL SYSTEM VALVE "**
2. Capacity "- CLOSED FUEL
   USABLE CAPACITY 644 LTR
   170 US GAL
   520 KG 1145 LBS

   - OPEN "
3. Guard (if installed) Version 1:
   Depends on installation Above fuel system valve:
   " PULL AND ROTATE GUARDTO RELEASE "

   or Version 2
   Beside guard:
   " PUSH TO RELEASE "

2.7.4 Doors

2.7.5 Parking Brake

" PARKING BRAKE
a. PULL LOCKING CABLE
b. PRESS PEDALS
c. RELEASE PEDALS
d. RELEASE LOCKING CABLE "

2.7.6 Control Column Switches

On the instrument console

(for aircraft 825-1005 post SB 11-001)(for aircraft 1006 and up)

CERTIFICATE LIMITATIONS

2.8 GENERAL LIMITATIONS

2.8.1 Flight Instrument Markings

AIRSPEED INDICATOR (IAS)	KNOTS	KM/H
FLAPS DOWN (WHITE ARC)	52 to 95	96 - 176
FLAPS UP (GREEN ARC)	58 to 119	108 - 220
CAUTIONARY (YELLOW ARC)	119 to 151	220 - 280
MAXIMUM (RED RADIAL)	151	280

2.8.2 Engine Instruments Markings

TORQUEMETER		PSIG
Normal (green arc)	0 to 47.3	Maximum, take-off or
reverse (red radial)	47.3	
Maximum, acceleration (red triangle)	53	

INTER TURBINE TEMP. (ITT)	°C
Normal operation (green arc)	300 to 725
Maximum, take-off or reverse (red radial)	725
Maximum, for starting (red triangle)	1090

OIL TEMPERATURE	°C
Normal (green arc)	10 to 80
Cautionary (yellow arc)	80 to 99
Maximum (red radial)	99

OIL PRESSURE PSIG	
Minimum (red radial)	40
Cautionary (yellow arc)	40 to 80
Normal (green arc)	80 to 100
Maximum (red radial)	100

GAS GENERATOR TACHOMETER (Ng)	%
Maximum (red radial)	101.5
Acceleration (red triangle)	102.6

PROPELLER TACHOMETER (Np)	RPM
Normal Operating Range (green radial)	2000
Maximum (red radial)	2025
Acceleration (red triangle)	2420

VOLT/AMMETER	VOLTS

CERTIFICATE LIMITATIONS

Normal operation (green arc)	24 to 28.5
Maximum (red radial)	28.5

AMPS
Battery Supply Limit (yellow radial) -60

2.8.3 Airspeed Limits [Refer to flight instrument markings]

	KNOTS	KM/H
Never exceed (V_{NE})	151	280
Structural Cruising (V_C)	119	220
Maneuvering (V_A)	119	220
Flaps Extended (V_{FE})	95	176

2.8.4 Types of Operation
Instrumentation must be installed for day, night, VFR, or IFR operation, as specified by the appropriate operating rules.

2.8.5 Altitude
Maximum Operating Altitude 25,000 feet

2.8.6 Flight Load Factors

		Flaps up	Flaps Extended
Maximum positive	+3.58 g	+2.00 g	
Maximum negative	-1.43 g	0.00 g	

2.8.7 Maneuvers
No acrobatic maneuvers (including spins) are approved.

2.8.8 Weights (kg)

Max. Ramp Weight	2810 kg
Max. Take-Off Weight	2800 kg
Max. Landing Weight	2660 kg
Max. Zero Fuel Weight	2400 kg

NOTE

For loading refer to the "

DURE" as given in the Appendix

“WEIGHT AND BALANCE”.

CERTIFICATE LIMITATIONS

2.8.9 Center of Gravity Envelope

up to 1450 kg = 11% to 38% (3209 – 3722 mm)

at 2800 kg = 32% to 38% (3608 – 3722 mm)

Straight line variation between points given.

2.8.10 Max. Weight in Cabin 1000 kg.

2.8.11 Max. permissible floor load is 488 kg / sq. m.

2.8.12 Max. Load on Trap Doors
The load on each door must not exceed 150 kg.

2.8.13 Operation with Snow Vanes
Remove snow vanes at ambient temperatures above 15°C (59°F).

CERTIFICATE LIMITATIONS

2.8.14 Tire Inflation PressureMain Wheel

Standard	24 x 7.7 - 8 PR	49 psi
Low Pressure	11 - 12 - 8 PR	20 psi
Tail Wheel		
Standard	5.00-4 - 6 PR	47 psi

2.8.15 Certificated Noise Data (2800 kg MTOW)

In accordance with ICAO Annex 16, Chapter 6, "AIRCRAFT NOISE" (equivalentto FAA FAR 36, Appendix F), the established noise levels are as follows:

2.8.15.1	Noise level during overflightat 1000 ft altitude, at 25°C outside air temperature:	77.0 dB(A)
2.8.15.2	Performance correction at 15°C:	-1.7 dB(A)
2.8.15.3	Certificated Noise Level:	75.3 dB(A)
2.8.15.4	In accordance with FAA FAR 36, Appendix G, the established noise level is asfollows:	
2.8.15.5	Certificated Noise Level:	79.4 dB(A)

It has not been determined by the Certifying Authority whether the noise level of this airplane is, or will be acceptable, or unacceptable for operation into, or out of any airport.

2.8.16 Mooring

The aircraft must be moored if it is parked for long periods, or if wind speeds in excess of15 knots are expected. If wind speeds in excess of 52 knots are expected it is recommended to put the aircraft in a hangar as damage to the aircraft and mooring equipment can occur.

2.9 HORIZONTAL STABILIZER TRIM

It is mandatory that the dual motor horizontal stabilizer electrical trim system is installed and serviceable (both motors operational).

2.10 WING TIPS

The color of the composite wing tips must not exceed a solar absorptivity of 0.6 (white and other lightcolors will be within this limitation).

CERTIFICATE LIMITATIONS

2.11 CARGO TRANSPORTATION

For the transportation of cargo the following equipment is required:

- Tie-down Fittings P/N 119.78.06.083
- Retainer Bars (Short) P/N 119.78.06.086
- Retainer Bars (Long) P/N 119.78.06.087
- Tie-down Straps with a breaking strength of 817 kg minimum per strap

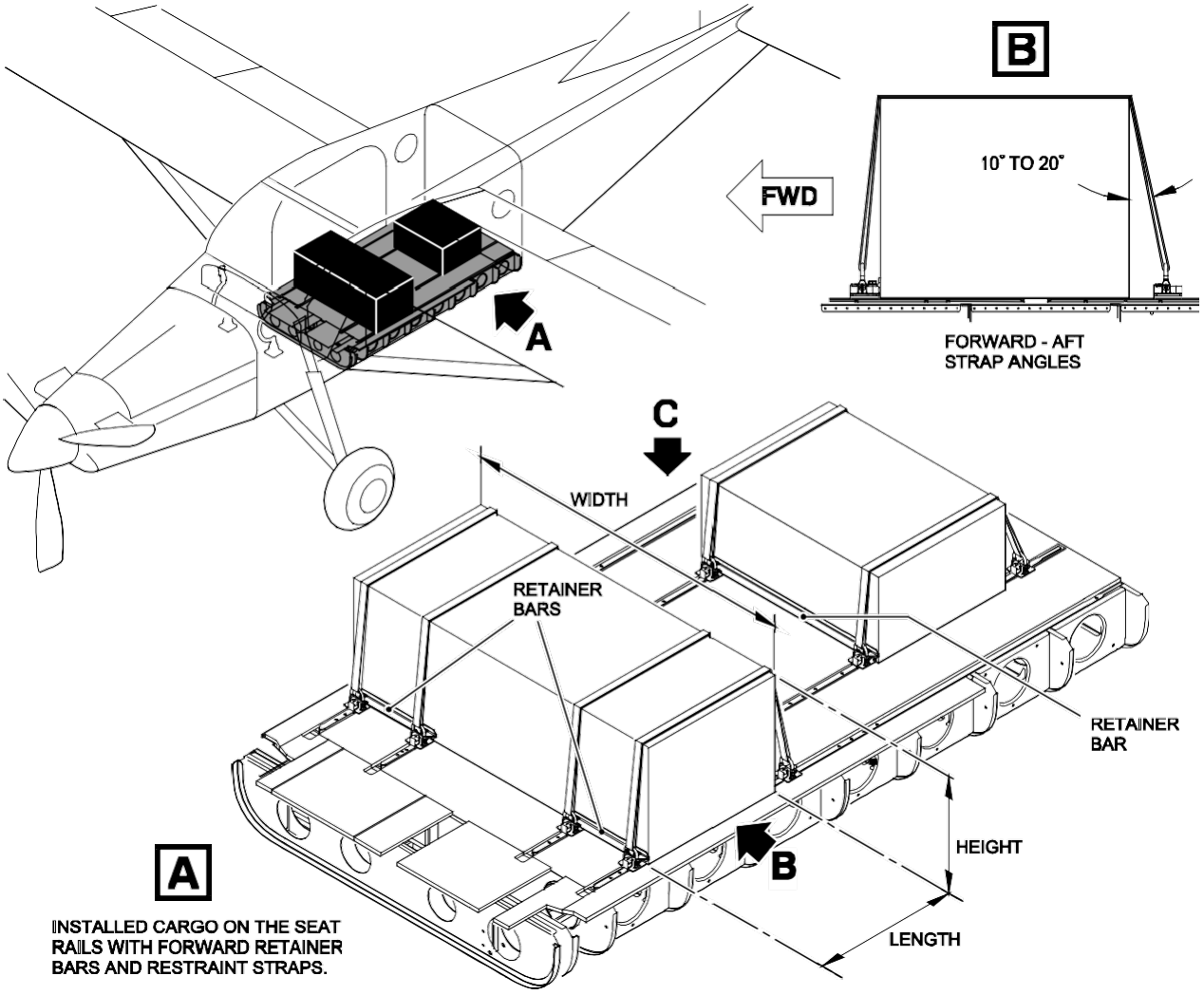
Position and restrain the cargo as follows (Ref. Fig.1):

1. Position the cargo with the longer side on the floor so that the height is less than the length.
2. Position the cargo so that the C of G is at half the height or less.
3. Install the retainer bar(s) in front of the cargo.
4. Position the cargo over the pair of seat rails so that the C of G is central between the seat rails.
5. Make sure the cargo is pushed firmly against the retainer bar(s).
6. Restrain the cargo with straps placed in the fore-aft direction between the ring on the forward tie-downfitting and the ring on the aft tie-down fitting. Do not place the straps diagonally.
7. Install the tie-down fittings a minimum of 100 mm from the end of the seat rail.
8. Install the tie-down fittings a minimum of 300 mm apart on the same seat rail. If the cargo mass is morethan 70 kg per pair of seat rails, increase the distance between the tie-down fittings to 600 mm.
9. Position the tie-down fittings to give a strap angle of between 10° and 20°.
10. If necessary, put additional restraining straps laterally on cargo straddling the center seat rails.

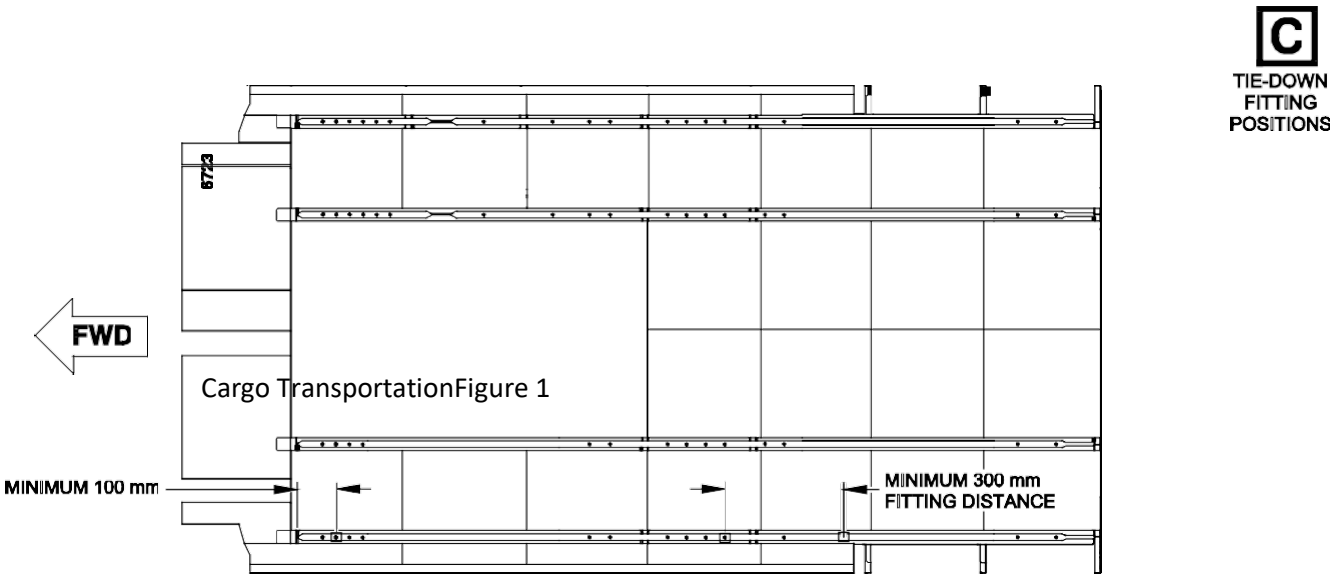
Using the procedure above, for each retainer bar, a maximum mass of 140 kg can be secured. For a full cabin width cargo, resting on two pairs of seat rails and secured with two retainer bars in front of the cargoand four tie-down fittings aft of the cargo, a mass of 280 kg can be secured.

Another similar cargo with a mass of 280 kg can be secured at a distance of 600 mm from the adjacentcargo provided the maximum floor loading, and the weight and balance, are within limits.

CERTIFICATE LIMITATIONS



CERTIFICATE LIMITATIONS



Cargo TransportationFigure 1

OPERATING PROCEDURES

3.1 ENGINE DESCRIPTION

GENERAL

The PT6A-27 engine has a three-stage axial, single-stage centrifugal compressor driven by a single- stage reaction turbine. Another single-stage reaction turbine, counter-rotating with the first, drives the output shaft. Fuel is sprayed into the annular combustion chamber by fourteen individually removablefuel nozzles mounted around the gas generator case. An igniter unit and two igniters are used to startcombustion. A hydro-pneumatic fuel control schedules fuel flow to maintain the power set by the gas generator power lever. Propeller speed is kept constant by the propeller governor, except in the betarange where the maximum propeller speed is controlled by the pneumatic section of the propeller governor.

Immediately following touchdown, partial or full reverse thrust may be obtained by lifting and retardingthe power lever aft of the detent. Reverse thrust can be varied by moving the power lever to any position aft of the lift detent.

BETA RANGE

BETA MODE operation of the propeller is used in flight to effect fast deceleration and high rates of descent. In the beta range, the propeller blades are set at a low positive pitch angle to provide a braking effect for steep controlled descents. When operating in the beta mode, the propeller pitch angle is controlled by power lever movement between the lift detent and the point where constant speed operation becomes effective.

NOTE

BETA MODE is provided in descent at airspeeds below 100 KIAS with the POWER lever near or at the detent. Only small movements of the POWER lever are necessary to change rate of descent or airspeed. Approaches in full BETA MODE (POWER lever at detent) are not permitted at airspeeds below 1.3 Vs.

REVERSE THRUST

Either full or partial reverse thrust is obtained by lifting and moving the power lever to any position aft of the lift detent. The PROP LOW P (propeller low pitch) caption will illuminate. With full reverse thrust a small amount of torque, biased to the left, may be noticeable.

Reverse thrust is for ground operation only and must not be used in flight. In the unlikely event of thepropeller moving to reverse pitch in flight, a sudden increase in drag, accompanied by buffeting and the PROP LOW P warning caption in the annunciator panel will illuminate. If corrective action (an advance of the power lever) fails to rectify the reverse pitch condition, the propeller should be feathered.

OPERATING PROCEDURES

3.2 ENGINE RATING

The engine ratings and power lever and propeller control settings are as follows:

Take-Off/Maximum Continuous/Maximum Climb-Cruise

This rating is the maximum power permissible and corresponds to 550 SHP (47.3 psi at 2000 RPM) atsea level up to 43°C ambient temperature. The maximum allowable output torque and/or Inter Turbine Temperature must NOT be exceeded.

OPERATING PROCEDURES

3.3 ENGINE/PROPELLER CONTROLS AND INSTRUMENTATION

POWER LEVER (GAS GENERATOR)

This lever serves to modulate engine power from full reverse thrust to take-off power. The POWER lever assembly incorporates a lift detent which establishes the most rearward position of the lever for flight conditions.

PROPELLER CONTROL

The propeller control provides adjustment of the propeller constant speed unit to maintain propeller speed at 2000 RPM and allows feathering and unfeathering of the propeller. The propeller control lever is installed in the console together with the power lever and the idle control lever. The propeller control range is divided by a detent into the flight position which is forward of the detent and provides a propeller speed of 2000 RPM and a position behind the detent which allows the propeller to be feathered.

CAUTION

DO NOT FEATHER THE PROPELLER WITH TORQUE ABOVE 17 PSIAS TRANSIENT OVERTORQUE OF THE ENGINE WILL RESULT.

IDLE CONTROL

The Idle Control is a three-position control lever combining two distinct functions. It provides high and low idle settings of the gas generator at speeds of approx. 70% and 52% respectively, and fuel cut- off. The positions are defined as follows: HIGH IDLE - full forward; LOW IDLE - mid-stop, and CUT- OFF - full aft. The engine fuel cut-off position is obtained by lifting the IDLE CONTROL lever, pressing the red locking device against its spring and pulling the IDLE CONTROL lever fully aft. Low idle is obtained by lifting and pushing the control forward to the mid-stop position. The high idle position is obtained by lifting and pushing the control fully forward.

CAUTION

THE ENGINE MUST BE OPERATED IN HIGH IDLE WHEN THE NEEDFOR RAPID ENGINE ACCELERATION IS ANTICIPATED.

HIGH-IDLE (FLIGHT-IDLE)

High-Idle gas generator minimum speed is obtained by positioning the engine Idle Control fully forward. The fuel topping governor will reduce Propeller RPM to less than 2000 RPM in the event of afree turbine (propeller) overspeed condition.

LOW-IDLE (GROUND-IDLE)

OPERATING PROCEDURES

Low-idle gas generator minimum speed is obtained by positioning IDLE CONTROL at MID-stop. Thepower lever can then select gas generator speeds from 52% Ng up to 100% Ng.

ENGINE STARTER SWITCH

This switch energizes the starter mechanism (via the starter relay) which cranks the gas generator forengine starting.

IGNITION SWITCH

This switch energizes the ignition system for ground and air starts.

ANTI ICE SWITCH

This switch energizes heating elements on:

- the pneumatic sense line to the FCU
- the pneumatic servo line connecting the FCU with the propeller governor
- the pitot tube and the static ports

The ANTI ICE switch must be ON when ambient temperature is 4°C or less than 4°C and visible moisture is in the air.

AUXILIARY FUEL PUMP SWITCH

This switch energizes the booster pump in the fuel collector tank and is energized during engine starting, taxiing, take-off, landing phases and engine shut-down phase. An advisory caption on the annunciator panel illuminates whenever the pump is energized.

FUEL SYSTEM VALVE

The fuel system ON/OFF valve is located on the cockpit firewall and is operated by a manual control to the left of the pilot's seat. If a guard is installed it must be operated prior to rotating the valve.

OIL COOLER CONTROL

Operates a hinged flap which controls air flow through the oil cooler to maintain oil temperatures within specified limits.

TORQUEMETER

The torquemeter system determines the shaft output torque. Torque values are obtained by sensing and recording the differential pressure at two outlets on the reduction gear case. The resultant pressure is displayed on the torquemeter as a digital readout and an analog indication.

OPERATING PROCEDURES

INTER TURBINE TEMPERATURE INDICATOR

The Inter Turbine Temperature sensing system provides an accurate reference of engine operating temperatures and is taken at a point between the two turbines. Eight parallel-connected chromel/alumel thermocouple probes adjacent to the leading edge of the interstage vanes are employed to sense the temperature which is displayed on the ITT indicator as a digital readout and an analog indication.

PROPELLER TACHOMETER (Np)

The propeller tachometer indicates propeller RPM.

GAS GENERATOR TACHOMETER (GAS GENERATOR Ng)

This tachometer indicates gas generator speed as a percentage of maximum continuous gas generator speed. A gas generator speed of 37,500 RPM represents 100% Ng and is displayed as a digital readout and an analog indication.

OIL PRESSURE INDICATOR

Indicates the oil pressure on the delivery side of the oil pressure pump.

OIL TEMPERATURE INDICATOR

Indicates the temperature of the oil at the oil pressure pump outlet.

OPERATING PROCEDURES

3.4 FLAP SYSTEM DESCRIPTION

The flaps are extended and retracted by an electric motor. Depending on build status, one of the following systems is installed:

PRESELECTABLE FLAP SYSTEM (older versions)

The preselectable flap system has a three position switch labelled UP - TO - LD. The flaps will, after selection, automatically move to the selected position.

A flap position indicator is installed. Depending upon indicator type, either the actual (transient) flap position will be displayed, or a shutter will appear during flap travel until the selected flap position is reached (UP, TO, or LD).

CONTINUOUSLY VARIABLE FLAP SYSTEM (newer versions)

The continuously variable flap system has a switch labeled UP - OFF – DN. Depending on build status, the switch is either one which is spring-loaded to the OFF position or one which is manually selected to the OFF position.

If the spring-loaded switch is installed, the flaps move in the selected direction as long as the switch is held in the UP or DN position. When the switch is released it returns automatically to the OFF position and the flaps stay at the position selected.

If the other type of switch is installed, the flaps move in the selected direction when the switch is set tothe UP or DN position (to stop flap movement before full travel is reached, the switch must be manually set to the OFF position).

The flap indicator shows the actual position of the flaps at all times. It must be used to set the flaps tothe desired setting (UP, TO or LD) or any intermediate position.

OPERATING PROCEDURES

3.5 TRIM SYSTEM DESCRIPTION

HORIZONTAL STABILIZER ELECTRIC TRIM SYSTEM

The horizontal stabilizer electric trim system consists of:

A dual motor (Main and Alternate Motors) electrically-operated linear actuator, one end attached to a support frame in the rear fuselage and the other end attached to the horizontal stabilizer.

A normal trim control system which incorporates two three-position spring-loaded trim switches and two relays. One switch is located on each of the two control column grips. These switchescontrol the Main actuator, which operates at twice the speed of the Alternate Trim System actuator motor.

An Alternate Trim Control System which incorporates an actuator control switch positioned on the instrument panel and labelled ALTERNATE STAB TRIM, NOSE DN, NOSE UP.

An Interrupt system which incorporates a guarded switch positioned on the instrument panel shelf and labelled TRIM INTERRUPT. When the TRIM INTERRUPT switch is in the 'NORMAL'position, both the Main and Alternate systems are active. When the TRIM INTERRUPT switch is in the 'INTERRUPT' position, both the Main and Alternate systems are inactive.

An electrically-operated trim position indicator located on the upper left side of the instrument panel.

MAIN SYSTEM

Normal longitudinal trim operation is accomplished by operating either the trim control switch onthe pilot's control column grip, or, the trim control switch on the co-pilot's control column grip. Both switches are similar and are spring-loaded to neutral. The trim control switch on the pilot's control column has priority. Nose DOWN (DN) trim is accomplished by moving the switch to the

up position and Nose UP trim is accomplished by moving the switch to the down position.Operating either trim switch energizes the actuator which moves the horizontal stabilizer.

In NORMAL operation the stabilizer trim actuator is powered via a circuit breaker marked STABTRIM.

ALTERNATE SYSTEM

If the normal trim control system fails, an alternate trim system is available. The alternate trimsystem consists of a switch labelled ALTERNATE STAB TRIM, NOSE DN, NOSE UP.

RUDDER ELECTRICAL TRIM SYSTEM (IF INSTALLED)

The electric rudder trim system consists of:

rudder trim switch
rudder trim circuit breakerrudder trim actuator rudder trim indicator

AILERON ELECTRICAL TRIM SYSTEM (IF INSTALLED)

OPERATING PROCEDURES

The electric aileron trim system consists of:

aileron trim switch
aileron trim circuit breakeraileron trim actuator aileron trim indicator

3.6 APIBOX DESCRIPTION (IF INSTALLED)

- **GENERAL**

- The APIBOX is a flight data and monitoring system, similar to a CVFDR. The acquired data is stored on an SD memory card and on a crash and fire proof memory unit. With the corresponding debriefing software, the data can be read from the SD memory card.

- The system comprises:

- A power supply (APIPWR) unit which manages power to all the other units

- A sensor unit (APICAP) installed in the cockpit which collects static and dynamic pressure, inputs from pilot's and co-pilot's event switches, OAT, instrument temperature (behind pilot PFD), GPS data and data from an integrated 3-axis accelerometer and a 2-axis accelerometer which is located in the tail of the aircraft

- A unit which collects turbine parameters (ITT, Ng, Np, Torque, Fuel flow) and sends it to the data collecting unit

- A data retrieval unit (APISD) on the RH side of the cockpit panel. It consists of two annunciator lights (green and red), a numeric display, and a SD memory card reader

- A data collecting unit with a crash and fire resistant memory (APIV2), installed in the avionics rack

- GPS receiver

- Pilot and co-pilot event buttons

- Temperature sensors on the wing (OAT), behind the pilots PFD and in the avionics rack

FRONT PANEL

The front panel of the APIBOX (APISD) has:

- a green LED
- a red LED (reserved for future use and should always be OFF, except at power up test)
- a numeric display (displays status and error codes)
- a pushbutton (used for maintenance purposes)
- a memory card slot (used to insert a removable memory card)

OPERATING PROCEDURES

STARTING THE APIBOX

The flight data recorder starts when the Battery Master Switch is set ON. The green LED on the APIBOX shows that the system has electrical power.At start-up, the green LED flashes for up to 30 seconds, then stays on.

If the green LED continues to flash after 30 seconds, the APIBOX is unserviceable.

STARTING RECORDING

Flight data recording starts automatically after start-up.

STOPPING RECORDING

Flight data recording stops automatically when all of the following conditions are met:

- Engine RPM is 0
- Indicated airspeed below 40 knots
- Ground speed below 5 knots (if GPS ground speed available)
- Low variations of lateral, longitudinal and vertical aircraft accelerations
- Low variations of static pressure

SYSTEM SHUT DOWN

The APIBOX shuts down when the Battery Master Switch is set OFF if the conditions listed above aremet and the recording has stopped.

Pressing the OFF button on the APIPWR unit will shut down the APIBOX even if it is still recording.

OPERATING PROCEDURES

3.7 PILOTS OPERATING INSTRUCTIONS

3.7.1 NORMAL PROCEDURES

3.7.1.1 PREFLIGHT INSPECTION

1	All covers and locks	REMOVE
2	Wing, Tail and Control surfaces	CHECK CLEAN/UNDAMAGED

CAUTION

TO PREVENT STALLING OF THE HORIZONTAL STABILIZER WITH FULL FLAPS SELECTED THE HORIZONTAL STABILIZER MUST BE CLEAN.

3	Propeller	CHECK propeller and spinner for nicks and security, and propeller for oil leaks
4	Air Intake Filters (if installed)	CHECK for obstructions (clean if required)
5.	Landing Gear/Brakes	CONDITION
6.	Tailwheel	CONDITION
7.	Tailwheel Locking Lever	CHECK security of locking plate
8.	Mainwheel Dirt Scrapers (if installed)	CHECK general condition
9	Tires	CHECK general condition and inflation
10.	Fuel Tanks	CHECK for required quantity
11.	Windshield and Windows	CHECK for cleanliness and proper condition
12.	Oil Tank Contents (before first flight of day only)	CHECK oil level. Max. level is between No. '0' and '1' markings. If engine has remained stationary for 12 hours or more, the level drops by approx. 1/2 unit. Service to 1 quartbelow maximum only
13.	Engine Drains Collector Tanks	DRAIN accumulated fluid
14.	Main Fuel Filter (before first flight of day only)	DRAIN accumulated water
15.	Water Sediment Tank Underwing Tanks (if installed)	DRAIN accumulated water
16.	Lights	CHECK
17.	Pitot/Prop Heater	CHECK
18.	Stall Warning	CHECK
19.	Static Vents	CHECK

OPERATING PROCEDURES

20.	Cabin	a) CHECK for required pressure of oxygensystem (if installed) b) CHECK condition of cabi security of equipment ar proper stowage of cargo c) LOCK seats as desired and fasten seatbelts d) CHECK that cabin doors are securelyclosed
21.	Passenger Briefing	As appropriate

3.7.1.2 BEFORE ENGINE STARTING

1.	Doors	CLOSED
2.	Seats/Rudder Pedals	ADJUST and LOCK

WARNING

MAKE SURE FLIGHT CONTROL GUST LOCKS ARE REMOVEDBEFORE TAKE-OFF

3.	Flight Controls	UNLOCK, CHECK correct travel
4.	Parking Brake	SET
5.	Power Lever	IDLE DETENT

CAUTION

DO NOT MOVE PCL TO REVERSE WHEN ENGINE IS STOPPED.

OPERATING PROCEDURES

6.	Idle Control Lever	CUT-OFF
7.	Propeller Control Lever	(At OATs, above +10°C - set feather) (At OATs, below +10°C - set full forward)
8.	Starter Switch	OFF
9.	Ignition Switch	OFF
10.	Generator Switch	OFF
11	Aux Fuel Pump Switch	OFF
12.	LDG. Lights	OFF/UP
13.	Radio Master:	
	- Bat Radio	OFF
	- Gen Radio	OFF
14.	Battery Master Switch	ON, CHECK VOLTAGE
15.	With Ext. Power Supply:	
	- Battery Master	ON
	- GPU	CONNECTED, CHECK VOLTAGE
16.	Annunciator Panel	TEST
17.	Fuel System Valve	OPEN, GATED
18.	Fuel Quantity/Totalizer	CHECK / SET
19.	Engine Instruments	CONDITION
20.	Oil Temp.	CHECK (above -40°C)

3.7.1.3 ENGINE STARTING

1.	Aux Fuel Pump Switch	ON
2.	Propeller Area	CLEAR
3.	Starter Switch	ON
4.	Oil Pressure	CHECK rising
5.	Ignition Switch	ON

When Ng stabilized (Min. 12% Ng):

6.	Idle Control Lever	LOW IDLE

ITT MONITOR (Max 1090°C for 2 seconds)When Low-Idle RPM is attained (Min. 46%):

7.	Starter Switch	OFF
8.	Ignition Switch	OFF
9.	Oil Pressure	CHECK GREEN ARC
	ITT	STABILIZED BELOW 660°C

CAUTION

IF ENGINE FAILS TO LIGHT UP WITHIN 10 SECONDS AFTER SELECTING LOW-IDLE, ABORT START. ALLOW A 30-SECOND FUELDRAINING PERIOD FOLLOWED BY A DRY MOTORING RUN BEFOREATTEMPTING ANOTHER START.

OPERATING PROCEDURES

3.7.1.4 AFTER ENGINE STARTING

1.	If engine start with GPU:	
-	GPU	DISCONNECT
-	Battery Master Switch	CONFIRM ON, CHECK VOLTAGE.
2.	Propeller Control Lever	FORWARD.

(Before first flight of day cycle twice tofeather)

3.	Generator Switch	ON, CHECK GEN.
	caption out, volts 28Vand positive amps.	

CAUTION

DO NOT SELECT THE GENERATOR TO **ON** WITH THE PROPELLER FEATHERED AND DO NOT FEATHER THE PROPELLER WITH THE GENERATOR ON.

4.	Ng	CHECK above 51%
5.	Radio Master:	
-	Bat Radio	ON
-	Gen Radio	ON
6.	Inverter (if installed)	ON
7.	Avionics	ON / SET AS REQUIRED
8.	Compass	SYNCHRONIZED
9.	Artificial Horizon(s)	ERECT
10.	APIBOX (APISD) (if installed)	CHECK Green LED ON

3.7.1.5 BEFORE TAXIING

1.	Passengers	SECURE
2.	Landing Lights	AS REQUIRED
3.	Nav Lights	ON

3.7.1.6 TAXIING

1.	Tailwheel	STEER

NOTE

The tailwheel is steerable with the rudder through 25° left and right of the neutral position.When the tailwheel is more than 25° from the neutral position the tailwheel is in free swivel.

2.	Park Brake	RELEASE
3.	Brakes	CHECK functioning.
4.	Flight Instruments	FUNCTIONING

(Horizon steady, compass turn,turn and slip correct indication)

OPERATING PROCEDURES

3.7.1.7 BEFORE TAKE-OFF

WARNING

AN EXTREMELY OUT-OF-TRIM STABILIZER CAN, IN COMBINATION WITH LOADING, FLAPS POSITION AND POWER INFLUENCE, RESULTIN AN UNCONTROLLABLE AIRCRAFT AFTER THE AIRCRAFT LEAVESTHE GROUND.

CAUTION

FAILURE TO SET CORRECT TRIM SETTINGS WILL RESULT IN LARGECONTROL FORCES AND/OR UNREQUESTED PITCHING/YAWING.

1.	Trims:	
-	Stabilizer:	If Trim Warning System installed, check nolight or sound
for mid c.g.		GREEN MARK (0°).
for FWD/AFT c.g		GREEN ARC (2° Nose Up/2° Nose Down)
-	Aileron	GREEN MARK (0°)
-	Rudder	GREEN MARK (7° right)
2.	Flaps	SET TO (28°)

WARNING

MAKE SURE THAT ALL GROUND CONTROL LOCKS AND/OR GUSTLOCKS ARE DISENGAGED / REMOVED BEFORE TAKE-OFF.

3.	Flight Controls	FULL and FREE MOVEMENT
4.	Altimeter	SET
5.	Fuel Quantity	CHECK
6.	Aux Fuel Pump Switch	ON
7.	Anti-ice Switch	AS REQUIRED
8.	Prop de-ice (if installed)	AS REQUIRED
9.	Strobe Lights	ON
10.	Oil Temp	GREEN ARC
11.	Instruments	CHECKED
12.	Heating Control	OFF
13.	Doors/Windows	CLOSED

When Aligned on the Runway:

14.	Tail Wheel	LOCK
15.	Rudder Pedals	FREE
16.	Tail Wheel Lock Check	CONFIRM AIRCRAFT ROLLS STRAIGHTWHEN ASYMMETRIC BRAKING
17.	Idle Control Lever	HIGH IDLE

OPERATING PROCEDURES

3.7.1.8 TAKE-OFF

Engine limitations:

1.	Torque	47.3 PSI (Max. transient 53 PSI)
2.	ITT	725°C (Max. transient 825°C for 2 seconds)
3.	Ng	101.5% (Max transient 102.6%)
4.	Np	2000 RPM (Max transient 2420 RPM)

3.7.1.9 CLIMB

1.	Flaps	UP
2.	Aux Fuel Pump Switch	OFF
3.	Oil Cooler	SET (oil temperature between 74 and 80°C)
4.	Landing Light(s)	UP/OFF
5.	Heating	AS REQUIRED
6.	ITT	Max. 695°C

3.7.1.10 CRUISE

1.	Oil Temperature between 74 and 80°C	ADJUST oil cooler control to maintain oil temperature
2.	ITT	Max. 695°C
3.	Engine Instruments	MONITOR
4.	Ignition Switch Select	ON during heavy rain

3.7.1.11 BEFORE LANDING

1.	Altimeter	SET
2.	Fuel quantity	SUFFICIENT
3.	Aux Fuel Pump Switch	ON
4.	Ignition Switch Select	ON
5.	Idle Control Lever	HIGH IDLE

NOTE

In order to reduce noise emission in the approach and landing modes,the Idle Control lever may be selected to LOW IDLE. Refer to AFM Supplement Report No.1887, for procedures and warnings.

WARNING

DEPOSITS OF ICE OR DIRT ON THE HORIZONTAL STABILIZER COULD CAUSETHE HORIZONTAL STABILIZER TO STALL WHEN FULL FLAPS ARE SET.

WHEN AN ICE OR DIRT BUILD-UP ON THE STABILIZER IS SUSPECTED, IT ISRECOMMENDED THAT A FLAPLESS LANDING IS MADE.

3.7.1.12 LANDING

1.	Flaps	AS REQUIRED
2.	Trim	AS REQUIRED. Trim the aircraft for an approach speed of

OPERATING PROCEDURES

68 KCAS and sufficient power for a 3° glide slope (approximately 10 PSI power and 3 units of aircraft nose up trim)

3. Cabin Heating OFF
4. Landing Light(s) DOWN and ON
5. Tailwheel CHECKED LOCKED

3.7.1.1BALKED LANDING

WARNING

WITH FLAPS IN LANDING POSITION AND HORIZONTAL STABILIZER TRIM FULL NOSE UP,DO NOT SELECT MAX POWER BEFORE HORIZONTAL STABILIZER TRIM IS RESET TO "0".

1. Power Lever ADVANCE for take-off power
2. Wing Flaps RETRACT to TO
3. Climb Speed 65 KCAS
4. Wing Flaps RETRACT after reaching safe altitudeand airspeed

3.7.1.14 AFTER LANDING

1. Stabilizer Trim Set to safe position for take-off (within GREEN ARC).

If Trim Warning Systeminstalled, check no light or sound

2. Idle Control Lever LOW-IDLE
3. Tailwheel STEER
4. Flaps UP
5. Anti-ice Switch OFF
6. Ignition Switch OFF

OPERATING PROCEDURES

7.	Prop de-ice (if installed)	OFF
8.	Strobe Light(s)	OFF

ENGINE SHUT DOWN

1.	Tailwheel Control	LOCK
2.	Power Lever	RETARD

(Allow engine to stabilize at idle with minimum ITT for one minute)

3.	Parking Brake	SET
4.	RadioMaster:	
-	BAT Radio	OFF
-	GEN Radio OFF	
5.	Landing lights	UP/OFF
6.	Cockpit/Cabin Fan	OFF
7.	Generator Switch	OFF

CAUTION

DO NOT SELECT THE GENERATOR TO **ON** WITH THE PROPELLER FEATHERED AND DO NOT FEATHER THE PROPELLER WITH THE GENERATOR ON.

8.	Propeller Control Lever	SELECT FEATHER
9.	Idle Control Lever	CUT-OFF

WARNING

IF THERE IS ANY EVIDENCE OF FIRE WITHIN THE ENGINE AFTERSHUT-DOWN INDICATED BY HIGH ITT, PROCEED AS DESCRIBEDUNDER "CLEARING THE ENGINE".

NOTE
Ensure that the compressor decelerates freely during run-down.

10.	Aux Fuel Pump Switch	OFF (when Ng below 5%)
11.	Nav Lights	OFF
12.	Battery Master Switch	OFF

POSTFLIGHT

1.	Propeller	SECURE to prevent windmilling
2.	External Locks and Covers	INSTALL

CAUTION

IF MODERATE TO STRONG WINDS ARE EXPECTED, THE AIRCRAFTMUST BE TIED DOWN AND PROPERLY SECURED.

NOTE
Do not use internal and external locks together.

OPERATING PROCEDURES

3.7.2 EMERGENCY PROCEDURES

3.7.2.1 ENGINE FAILURE IN FLIGHT

CAUTION

DO NOT SHUT DOWN AN ENGINE DURING TAKE-OFF OR LANDING BECAUSE OF SUSPECTED ENGINE FAILURE UNLESS AN ENGINE MALFUNCTION IS DEFINITELY DETERMINED.

WARNING

DO NOT ATTEMPT TO RE-START AN ENGINE IF THE ENGINEFAILURE WAS THE RESULT OF A TECHNICAL PROBLEM.

3.7.2.2 AIR START

An engine flame-out will be noticed by an indicated drop in ITT, torque pressure, Ng and Np.

The recommended air start technique is to initiate the Immediate Relight procedure immediatelyafter the flame-out occurs, always assuming the flame-out was not the result of an engine malfunction and the aircraft's altitude does not allow to perform a Normal Relight Procedure.

If the Ng is less than 46%, a Normal Relight should be initiated.

The relight envelope for successful air starts covers all operational altitudes and airspeeds.Above 20,000 ft starting temperatures may tend to be high.

3.7.2.3 IMMEDIATE RELIGHT (NG > 46%)

1.	Power Lever	RETARD to detent
2.	Idle Control Lever	LOW-IDLE
3.	Aux Fuel Pump	ON
4.	Starter Switch	ON
5.	Ignition Switch	ON
6.	ITT/Ng/Np/Fuel Flow Indicators	MONITOR
7.	Oil Pressure Indicator	MIN. 40 psiWhen engine stabilized in LOW-IDLE:
8.	Starter Switch	OFF
9.	Ignition Switch	OFF
10.	Idle Control Lever	HIGH-IDLE
11.	Power Lever	AS REQUIRED
12.	Land as soon as possible	

OPERATING PROCEDURES

NOTE

Immediate relight should only be carried out when height is critical for normal relight. Use only during real emergency, do not practice duringtraining due to possible high ITT.

OPERATING PROCEDURES

If the Immediate Relight procedure is unsuccessful or Ng is less than 46%, the Engine Securingprocedure should be performed as follows:

3.7.2.4 ENGINE SECURING

1.	Idle Control Lever	CUT-OFF
2.	Propeller Control Lever	FEATHER
3.	Power Lever	RETARD to detent
4.	Aux Fuel Pump Switch	OFF
5.	Fuel System Valve	CLOSE
6.	Generator Switch	OFF
7.	Anti-ice Switch	OFF – if not required
8.	Prop de-ice Switch (if installed)	OFF – if not required
9.	Electrical Power	REDUCE all non-essential electrical equipment to a battery discharge current of less than 35A

3.7.2.5 NORMAL RELIGHT

1.	Propeller Control Lever	FORWARD
2.	Power Lever	RETARD
3.	Idle Control Lever	CUT-OFF
4.	BAT Radio/GEN Radio BUS Switches	OFF
5.	Fuel System Valve	OPEN
6.	Generator Switch	OFF
7.	Aux Fuel Pump Switch	ON
8.	Starter Switch	ON
9.	Ignition Switch	ON
10.	Oil Pressure Indicator	CHECK RISINGWhen Ng stabilized above 12%:
11.	Idle Control Lever	LOW-IDLE
12.	ITT	MONITOR

When Ng 52%:

13.	Oil Pressure	CHECK, GREEN ARC
14.	Starter Switch	OFF
15.	Ignition Switch	OFF
16.	Generator Switch	ON
17.	Idle Control Lever	HIGH IDLE
18.	Power Lever	AS REQUIRED
19.	BAT Radio/GEN Radio BUS Switches	ON
20.	Land as soon as possible	

NOTE

For a power off landing establish the best glide speed, which should benot less than 75 knots IAS.

OPERATING PROCEDURES

SMOKE AND FIRE

ENGINE FIRE ON THE GROUND (in engine compartment)

The following procedure is used if there is evidence of fire in the engine compartment while theaircraft is on the ground:

1.	Idle Control Lever	CUT-OFF
2.	Fuel System Valve	CLOSE
3.	Ignition Switch	OFF
4.	Battery Switch	OFF
5.	Generator Switch	OFF
6.	Aux Fuel Pump Switch	OFF
7.	Aircraft	EVACUATE
8.	Fire	EXTINGUISH
9.	Ground crew	ALERT

ENGINE FIRE ON THE GROUND (within the engine)

The following procedure is to be used if there is evidence of a fire within the engine. Air passingthrough the engine is utilised to purge the fire from the combustion section, gas generator turbine, power turbine and exhaust system.

1.	Idle Control Lever	CUT-OFF
2.	Fuel System Valve	CLOSE
3.	Ignition Switch	OFF
4.	Generator Switch	OFF
5.	Aux Fuel Pump Switch	ON (to lubricate fuel pump)
6.	Starter Switch	ON

WARNING

SHOULD THE FIRE PERSIST, INDICATED BY SUSTAINED ITT, CLOSE FUELSYSTEM VALVE AND CONTINUE MOTORING (STARTER OPERATION).

CAUTION

DO NOT EXCEED STARTER LIMITATION (30 seconds).

7.	Starter Switch	OFF
8.	AUX FUEL PUMP SWITCH	OFF
9.	Battery Switch	OFF
10.	Aircraft	EVACUATE
11.	Fire	EXTINGUISH
12.	Ground crew	ALERT

OPERATING PROCEDURES

3.7.2.6 CLEARING THE ENGINE ON THE GROUND

The following procedure is used to clear the engine when it is necessary to remove internallytrapped fuel and vapor. Air passing through the engine is utilized to purge fuel and fuel vaporfrom the combustion section, gas generator turbine, power turbine and exhaust system.

1.	Idle Control Lever	CUT-OFF
2.	Ignition Switch	OFF
3.	Generator Switch	OFF
4.	Aux Fuel Pump Switch	ON (to lubricate fuel pump)
5.	Starter Switch	ON

OPERATING PROCEDURES

NOTE

Maintain starter operation for 10 seconds then allow starter to coolone minute before re-engaging.

CAUTION

DO NOT EXCEED STARTER LIMITATION (30 SECONDS).

6.	Starter Switch	OFF
7.	Aux Fuel Pump Switch	OFF

ENGINE FIRE IN FLIGHT (in engine compartment)

In the event of a fire in the engine compartment while the aircraft is in flight:

1.	Idle Control Lever	CUT-OFF
2.	Propeller Control Lever	FEATHER
3.	Fuel System Valve	CLOSE
4.	Aux Fuel Pump Switch	OFF
5.	Cabin Air Emergency Shut-Off	PULL
6.	Cabin Heat Control	PUSH
7.	Power Lever	RETARD to detent
8.	Anti-ice Switch	OFF – if not required
9.	Prop de-ice Switch (if installed)	OFF – if not required
10.	Electrical Power	REDUCE all non-essential electrical equipment to a battery discharge current of less than 35A

CAUTION

ENGINE SHUT-DOWN WILL RESULT IN THE LOSS OF SUCTIONTO VACUUM DRIVEN GYRO INSTRUMENT.

NOTE

For a power off landing establish the best glide speed, which should benot less than 75 knots IAS.

3.7.2.7 SMOKE OR FUMES IN-FLIGHT

The following procedure is used if smoke or fumes are detected in the cockpit or passengercompartment.

1.	Cabin Air Emergency Shut-Off	PULL
2.	Cabin Heat Control	PUSH
3.	D/V Window	OPEN
4.	Crew entry doors	OPEN

If crew or passengers occupy cabin:

5.	Cabin Doors	OPEN

OPERATING PROCEDURES

If no crew or passengers occupy cabin:

6.	Trapdoor	OPEN (according to cabin configuration andcrew availability)

If specific electrical equipment showing evidence of damage:

7.	Electrical Equipment C/B	PULL

OPERATING PROCEDURES

8.	Electrical Power	REDUCE all non-essential electricalequipment
9.	Land as soon as possible	

If smoke or fumes persist, follow procedure for IN FLIGHT ENGINE FIRE.

NOTE

Once pulled, the cabin air emergency shut-off cannot be reset in flight.

FORCED LANDING (engine inoperative)

1.	Prop control lever	FEATHER
2.	Fuel System Valve	CLOSE
3.	Flaps	TO
4.	Turn to nearest airfield and glide for range	
5.	Speed	75 KIAS (Best Glide Speed)
6.	Harness (Crew and Pax)	TIGHT
7.	Radio	EMER-CALL

When landing assured:

8.	Flaps	LD
9.	Battery	OFF
10.	Speed	70 KIAS

3.7.2.8 COCKPIT DOORS EMERGENCY OPENING

The following procedure is to be used if a cockpit door needs to be jettisoned.
A red-painted, safety-wired door jettison lever is located on the upper forward door frame.

1.	Cockpit Door Handle	UNLOCK POSITION
2.	Door Jettison Lever	PULL INBOARD and DOWN
3.	Cockpit Door	PUSH OUTWARD

NOTE

Considerable physical force can be required to jettison a door during cruise, or at descent flight speeds. The pilot should consider reducing airspeed and then inducing light side slip to counteract the airflow alongthe sides of the cockpit.

3.7.2.9 TRIM RUNAWAY

3.7.2.9.1. HORIZONTAL STABILIZER TRIM

1.	Airspeed	REDUCE to obtain acceptable residual control forces

OPERATING PROCEDURES

WARNING

MINIMUM SAFE AIRSPEEDS MUST BE OBSERVED.

2.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
3.	STAB TRIM CB's	PULL
4.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' DOWN

OPERATING PROCEDURES

- IF TRIM DOES NOT MOVE (IT INDICATES A MAIN SYSTEM TRIM RUNAWAY)

5.	ALTERNATE STAB TRIM NOSE DN/UP	
Switch	OPERATE to achieve required trim	

NOTE

If a single trim position indicator is installed, the indicator will move tomax nose up position if the STAB TRIM CB is pulled.

- IF TRIM DOES MOVE (IT INDICATES AN ALTERNATE SYSTEM TRIM RUNAWAY)

6.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
7.	STAB TRIM CB's PUSH	
8.	Main Trim Switch	PRESS and HOLD in opposite direction
9.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' DOWN

NOTE

Both motors (main and alternate) will operate. As the main motor isfaster, it will override the alternate.

As soon as trim is in desired position

10.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
11.	Land without further trim operation	

3.7.2.9.2 RUDDER TRIM

1.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
2.	RUDDER TRIM CB	PULL
3.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' DOWN

NOTE

Rudder Trim is inoperative.

3.7.2.9.3 AILERON TRIM

1.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' UP
2.	AILERON TRIM CB	PULL
3.	TRIM INTERRUPT Switch	SELECT 'INTERRUPT' Down

NOTE

Aileron trim is inoperative.

OPERATING PROCEDURES

3.7.2.10 JAMMED TRIM ACTUATORS

If an actuator becomes jammed in an extreme position, control forces will increase.

1. Airspeed — REDUCE to obtain acceptable residualcontrol forces

WARNING

MINIMUM SAFE AIRSPEEDS MUST BE OBSERVED.

2. Land as soon as practical

OPERATING PROCEDURES

In addition, the following has to be performed for a jammed horizontal stabilizer trim actuator,depending on position jammed.

JAMMED IN THE FULLY NOSE UP POSITION

CAUTION

WITH AN AFT CENTER OF GRAVITY DO NOT USE FLAPS FORLANDING.

JAMMED IN FULLY NOSE DOWN POSITION

In Cruise

1. Flaps SET TO position (below 95 kts)

For Landing

1. Flaps SET LD position

3.7.2.11 LOSS OF ELEVATOR CONTROL

CAUTION

THE PITCH TRIM IS POWERFUL AND LARGE TRIM CHANGES CAN RESULT FROM CHANGES IN AIRSPEED AND POWER. TO AVOID LARGEPITCH EXCURSIONS, AVOID LARGE POWER CHANGES AND ADJUST ELEVATOR TRIM CONSTANTLY.

1. PWR OUT of Beta range
2. Elevator trim OPERATE to achieve required aircraftattitude
3. Land as soon as practical

WARNING

MINIMUM SAFE AIRSPEEDS HAVE TO BE OBSERVED

NOTES

It is recommended to perform a controllability check (simulated approach/landing attitude) at a safe altitude.

Consider use of FLAPS to assist in maintaining the required aircraft attitude.

OPERATING PROCEDURES

3.7.2.12 INADVERTENT SPIN

Intentional spinning is prohibited (Refer to Section 1, Para. H. (7) 'Maneuvers')In case of inadvertent spin entry, the recovery procedure is as follows:

1. REDUCE POWER
2. RETRACT FLAPS IMMEDIATELY (IF EXTENDED)
3. CHECK SLIP BALL, THEN APPLY FULL OPPOSITE RUDDER
4. STICK CENTERED

WARNING

ALTITUDE LOSS CAN BE AS MUCH AS 1300 FT FROM SPIN ENTRY TO RECOVERED LEVEL FLIGHT

OPERATING PROCEDURES

3.7.2 SYSTEM EMERGENCIES

ANNUNCIATOR PANEL WARNING CAPTIONS

3.7.2.12.1 PROP LOW P

Selection of POWER lever to REVERSE will cause the PROP LOW P (propeller low pitch)warning caption and the MASTER warning light to illuminate and activate a warning tone.

1.	Power Lever	ADVANCE
2.	MASTER Warning Light	PRESS TO RESET

NOTE

Fast movement of the POWER lever to retard, for BETA operation during steepdescent, may cause the PROP LOW P warning caption to momentarily illuminate and the MASTER warning light to illuminate - PRESS TO RESET.

3.7.2.12.2 BATT BUS

When power to the battery busbar falls to less than 14 volts and/or the battery busbar is earthed, the BATT BUS warning caption and the MASTER warning light illuminate and thewarning tone is activated.

1.	MASTER Warning Light	PRESS TO RESET
2.	Battery Switch	OFF
3.	Volt/Ammeter	MONITOR
4.	Bus Tie CB	PULL

NOTE

Trims do not operate.

3.7.2.12.3 GEN BUS

When the power to the generator busbar falls to less than 14 volts and/or the generator busbaris earthed, the GEN BUS warning caption and the MASTER warning light illuminate and the warning tone is activated.

1.	MASTER Warning Light	PRESS TO RESET
2.	Check Generator Switch	ON
3.	GEN Reset Switch	ON then release
4.	Volt/Ammeter	CHECK

If GEN BUS warning caption remains illuminated:

5.	Bus Tie CB	PULL

Load shed to conserve power:

6.	Anti-ice Switch	OFF – if not required

OPERATING PROCEDURES

7.	Prop de-ice Switch (if installed)	OFF – if not required
8.	Electrical Power to a battery discharge current of less than 35A	REDUCE all non-essential electrical equipment
9.	Land as soon as practical	

OPERATING PROCEDURES

3.7.2.13 ANNUNCIATOR PANEL CAUTION CAPTIONS (CONT'D)

SUCTION

In the event of failure of the suction system, the SUCTION caution caption and the MASTER caution light illuminate and the warning tone is activated. The suction pressure may be too high,or too low, for satisfactory operation of the vacuum-driven gyro instrument. A LOW IDLE settingwith HEATING ON may also create a low SUCTION situation.

1.	MASTER Caution Light	PRESS TO RESET
2.	Power Lever	INCREASE
	and/or	
	Heating	OFF
3.	Vacuum-driven gyro(s)	MONITOR

CAUTION

WITH SUCTION CAPTION ON, VACUUM-DRIVEN INSTRUMENTS MAYBECOME INACCURATE OR FAIL.

NOTE

Fast movement of the power lever may cause the SUCTION caution caption to momentarily illuminate and the MASTER caution light to illuminate - PRESS TO RESET.

BATT HOT

(Ni-Cd batteries only; not applicable if lead acid batteries installed).

If the battery temperature is more than 65°C, and/or the battery temperature sensor is not properly connected, the BATT HOT caution caption and the MASTER caution light illuminate,and the warning tone is activated.

1.	MASTER Caution Light	PRESS TO RESET
2.	Battery Switch	OFF

If possible, maintain VMC in case of generator failure.

If battery temperature falls to less than 65°C and the BATT HOT caution caption goes out, waitapproximately 5 minutes.

3.	Battery Switch	ON (Once Only)
4.	BATT HOT Caution Caption	MONITOR
5.	Battery Current	MONITOR

NOTE:

If BATT HOT caution caption comes on again, switch battery OFF, do notre-engage.

OPERATING PROCEDURES

GENERATOR

If the generator fails, the GENERATOR caution caption and the MASTER caution light illuminateand the warning tone is activated.

1.	MASTER Caution Light	PRESS TO RESET
2.	Generator Switch	ON
3.	GEN Reset Switch	ON then release
4.	Volt/Ammeter	CHECK

OPERATING PROCEDURES

If generator still inoperative:

5.	Generator Switch	OFF

Load shed to conserve power:

6.	Anti-ice Switch	OFF – if not required
7.	Prop de-ice Switch (if installed)	OFF – if not required
8.	Electrical Power	REDUCE all non-essential electricalequipment

to a battery discharge current of less than 35A

9. Land as soon as practical

NOTE

With the generator inoperative, a 75% charged battery will last for 30minutes with a discharge rate of 50 Amps.

F-FILTER

The fuel filter, attached to frame 3 of the fuselage nose section, is equipped with a pressure differential switch. When the filter becomes clogged the fuel outlet pressure is less than the fuelinlet pressure. This difference, detected by the pressure differential switch, causes the F- FILTER caution caption and the MASTER caution light to illuminate, and the warning tone is activated. If the filter becomes fully clogged, unfiltered fuel is fed to the engine via the fuel filter by-pass line.

1.	MASTER Caution Light	PRESS TO RESET
2.	Land as soon as practical	

NOTE

The F-FILTER caution caption remains illuminated until situation is rectified.

FUEL PRESS

If the fuel pressure to the engine falls below 5.5 psi the FUEL PRESS caution caption and theMASTER caution light illuminate, and the warning tone is activated.

1.	Aux Fuel Pump Switch	ON
2.	MASTER Caution Light	PRESS TO RESET

Check FUEL PRESS caution caption out and AUX F PUMP advisory caption illuminated.

INVERTER (if installed)

If the selected inverter fails, the INVERTER caution caption and the MASTER caution lightilluminate and the warning tone is activated.

1.	MASTER Caution Light	PRESS TO RESET
2.	Alternate Inverter	SELECT
3.	INVERTER Caution Caption	CHECK OFF

OPERATING PROCEDURES

4. Flight Instrument Flags — CHECK CLEAR

OXYGEN (If installed)

When the oxygen system pressure falls to less than 400 psi the OXYGEN caution caption andthe MASTER caution light illuminate and the warning tone is activated.

1. MASTER Caution Light — PRESS TO RESET

NOTES

1. The OXYGEN caution caption will remain illuminated until the oxygen system isreplenished.

2. From the time the OXYGEN caution caption first illuminates, an oxygen duration of30 minutes can be expected for two pilots with oxygen regulators set to NORMAL.

CHIP

If the chip detector plug becomes contaminated the CHIP detector caution caption and theMASTER caution light illuminate, and the warning tone is activated.

1. Power Lever — REDUCE POWER
2. MASTER Caution Light — PRESS TO RESET
3. Land as soon as practical

CAUTION

IF CHIP DETECTOR CAUTION CAPTION ILLUMINATES DURINGGROUND OPERATION, ENGINE MUST BE SHUT DOWN.

OPERATING PROCEDURES

3.9 WARNING, CAUTION AND ADVISORY CAPTIONS/LIGHTS

The annunciator panel comprises a set of lighted windows containing warning captions (red), cautioncaptions (amber), and advisory captions (green) as applicable to the aircraft systems.

The captions within the lighted windows are as follows:

RED CAPTIONS

PROP LOW P	Illuminates when propeller goes into minimum pitch in flight.
BATT BUS	Illuminates when battery bus voltage falls to less than 14 volts DC.
GEN BUS	Illuminates when generator bus is off line.

AMBER CAPTIONS

SUCTION	Illuminates when suction system is less than 4.5 psi or more than 5.2 psi.
BATT HOT	Illuminates when battery temperature is more than 65°C, or batterytemperature sensor is not properly connected. (Ni-Cd battery only; not applicable if lead acid battery installed).
GENERATOR	Illuminates when generator is off line.
F FILTER	Illuminates when fuel filter is clogged.
FUEL PRESS	Illuminates when fuel pressure falls to less than 5.5 psi.
INVERTER	Illuminates when inverter output falls to less than 13 volts AC.(if installed)
OXYGEN	Illuminates when oxygen pressure falls to less than 400 psi.(if installed)
CHIP	Illuminates when magnetic chip detector detects metallic contamination of the engine oil system.
GPS MSG	Illuminates if a GPS message is present.(if installed)

GREEN CAPTIONS

AUX F PUMP	Illuminates when AUX F PUMP is operating.
ANTI ICE	Illuminates when anti-ice system is energized.
PROP DE-ICE	Illuminates when prop de-ice system is operating.(if installed)

Located on the left side of the instrument panel are the following warning lights and caution light:

RED LIGHTS

STALL Warning PUSH TO TEST	Illuminates at a predetermined speed before stall.

OPERATING PROCEDURES

MASTER Warning	Illuminates when a warning caption illuminates on annunciator panel.PUSH TO RESET

OPERATING PROCEDURES

WARNING, CAUTION AND ADVISORY CAPTIONS/LIGHTS (CONT'D)

AMBER LIGHT

MASTER Caution PUSH TO RESET	Illuminates when a caution caption illuminates on annunciator panel.

The ANNUNCIATOR LIGHT TEST push button, when pressed, causes the annunciator panel captions, the MASTER warning and MASTER caution lights to illuminate and a warning tone to soundin the flight compartment headsets and loudspeakers.

PERFORMANCE INFORMATION

4.1 GENERAL

The following performance values are based on flight test results and calculations for type certificationof the PC-6/B2-H4 airplane and may be obtained under the indicated conditions, with the airplane and powerplant in good condition, and with normal pilot proficiency.

All speeds in this section are calibrated airspeeds, CAS, knots.

NOTE
Additional performance graphs for temperatures up to ISA + 30°C areincluded in Section G.

PERFORMANCE INFORMATION

4.2 PERFORMANCE FOR 2800 KG, GROSS WEIGHT, WITH NO WIND, ON LEVEL,PAVED RUNWAY. (Idle Control at High Idle Position)

CONDITIONS		OUTSIDE AIR TEMPERATURE					
	Altitude feet	ISA -30°	ISA -20°C	ISA -10°C	ISA	ISA +10°C	ISA +20°C
		SNOW VANES MAY BE INSTALLED				SNOW VANES MUST BE REMOVED	
TAKE-OFF DISTANCE Distance required to take-off and climb to 15 m (50 ft.) Take-off Power Flaps TO 28° Climb speed 69 KCAS		m	m	m	m	m	m
	S.L.	460	465	470	475	480	490
	2000	470	475	480	485*	490	505
	4000	475	480	485*	490*	505	590
	6000	485	490*	495*	505*	570	675
LANDING DISTANCE ** At gross landing weight Distance required to land over 15 m obstacle and stop with brakes and reverse thrust Flaps LD 38° Approach at 68 KCAS		m	m	m	m	m	m
	S.L.	285	295	305	315	325	335
	2000	300	310	320	330	340	350
	4000	310	320	330	340	350	360
	6000	325	335	345	355	365	375
NORMAL RATE-OF-CLIMB Take-off/Maximum continuous power Flaps up Airspeed 77 KCAS		ft/min	ft/min	ft/min	ft/min	ft/min	ft/min
	S.L:	1070	1050	1030	1010	990	970
	2000	1040	1020	1000	980*	960	930
	4000	1010	990	970*	950*	930	835
	6000	980	960*	940*	920*	895	735
BALKED LANDING CLIMB Take-off/Maximum continuous power Flaps LD Airspeed 65 KCAS		ft/min	ft/min	ft/min	ft/min	ft/min	ft/min
	S.L.	800	780	760	740	720	700
	2000	770	750	730	710*	690	660
	4000	740	720	700*	680*	660	565
	6000	710	690*	670*	650*	610	460

Figure 3-1 Normal Performance at 2800 kg Gross Weight.

PERFORMANCE INFORMATION

* Take-off Performance and Climb Performance will be reduced with snow vanes or engine air intakefilters installed (See AFM Supplement 1904).

** Landing figures are based on approximately 1700 to 1900 fpm sink rate.

PERFORMANCE INFORMATION

4.3 SHORT TAKE-OFF PERFORMANCE FOR 2800 KG, GROSS WEIGHT, WITH NOWIND, ON LEVEL, PAVED RUNWAY.

(Idle Control at High Idle Position)

CONDITIONS STOL TAKE-OFF	Altitude feet	OUTSIDE AIR TEMPERATURE					
		ISA -30°C	ISA -20°C	ISA -10°C	ISA	ISA +10°C	ISA +20°C
		SNOW VANES MAY BE INSTALLED				SNOW VANES MUST BE REMOVED	
TAKE-OFF DISTANCE Distance required to take-off and climb to 15 m (50 ft.) Take-off Power Flaps TO 28° Climb speed 69 KCAS		m	m	m	m	m	m
	S.L.	425	430	435	440	445	455
	2000	435	440	445	450*	455	470
	4000	440	445	450*	455*	470	555
	6000	450	455*	460*	470*	530	635

Figure 3-2 Short Take-off Performance at 2800 kg Gross Weight.

* Take-off Performance will be reduced with snow vanes or engine air intake filters installed(see AFM Supplement 1904).

4.4 STALLING SPEED

The stalling speeds for gross weight of 2800 kg are given in Figure 3-3 below for various angles ofbank, and flap setting.

FLAP SETTING		ANGLE OF BANK		
		0° KCAS	30° KCAS	60° KCAS
Clean	0°	58	62	82
TO	28°	53	57	75
LD	38°	52	56	74

Figure 3-3 Stalling Speed at 2800 kg Gross Weight.

PERFORMANCE INFORMATION

- Speeds given are minimum speeds with power off; with power on, the values decrease.
- The loss in altitude after a stall at maximum weight is approximately 200 ft.

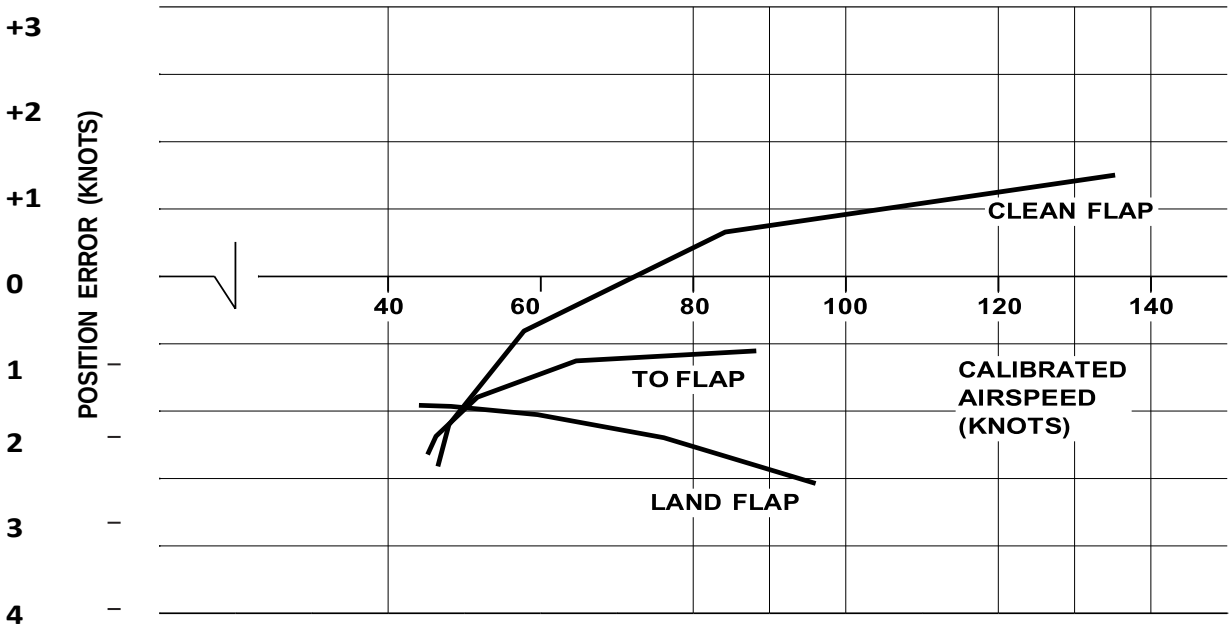
4.5 MAXIMUM DEMONSTRATED CROSSWIND

Maximum demonstrated crosswind velocity is 20 kts (not a limitation).

4.6 AIRSPEED POSITION ERROR CORRECTION

The following graph is used to determine indicated airspeed from calibrated airspeed.

INDICATED AIRSPEED = CALIBRATED SPEED − POSITION ERROR

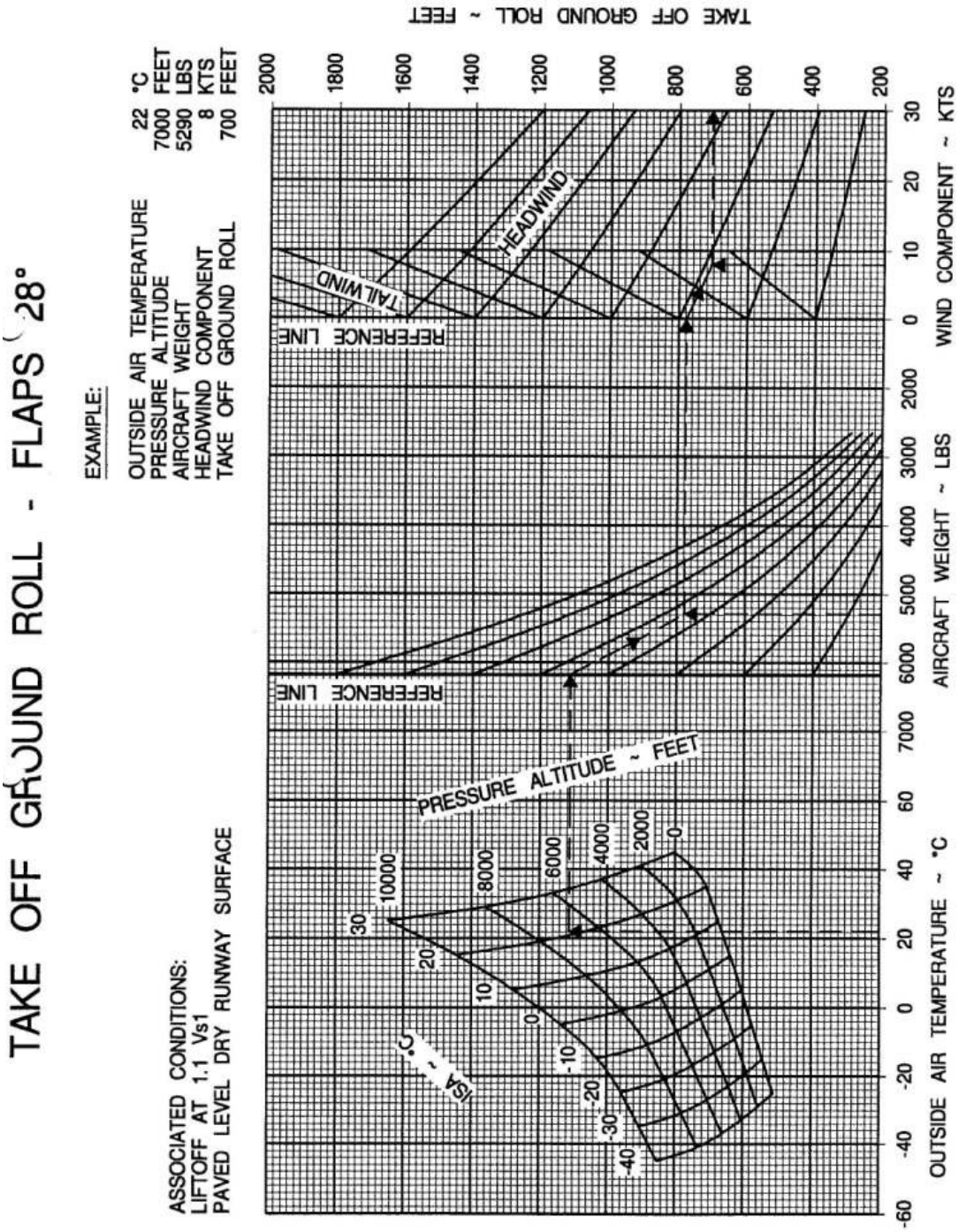


To obtain indicated airspeed (IAS), enter the graph at the desired calibrated airspeed (CAS) and follow the speed line vertically until it intersects the desired configuration line. From the intersection, read horizontally to the Position Error correction. Subtract the Position Error from the CAS to obtain IAS

PERFORMANCE INFORMATION

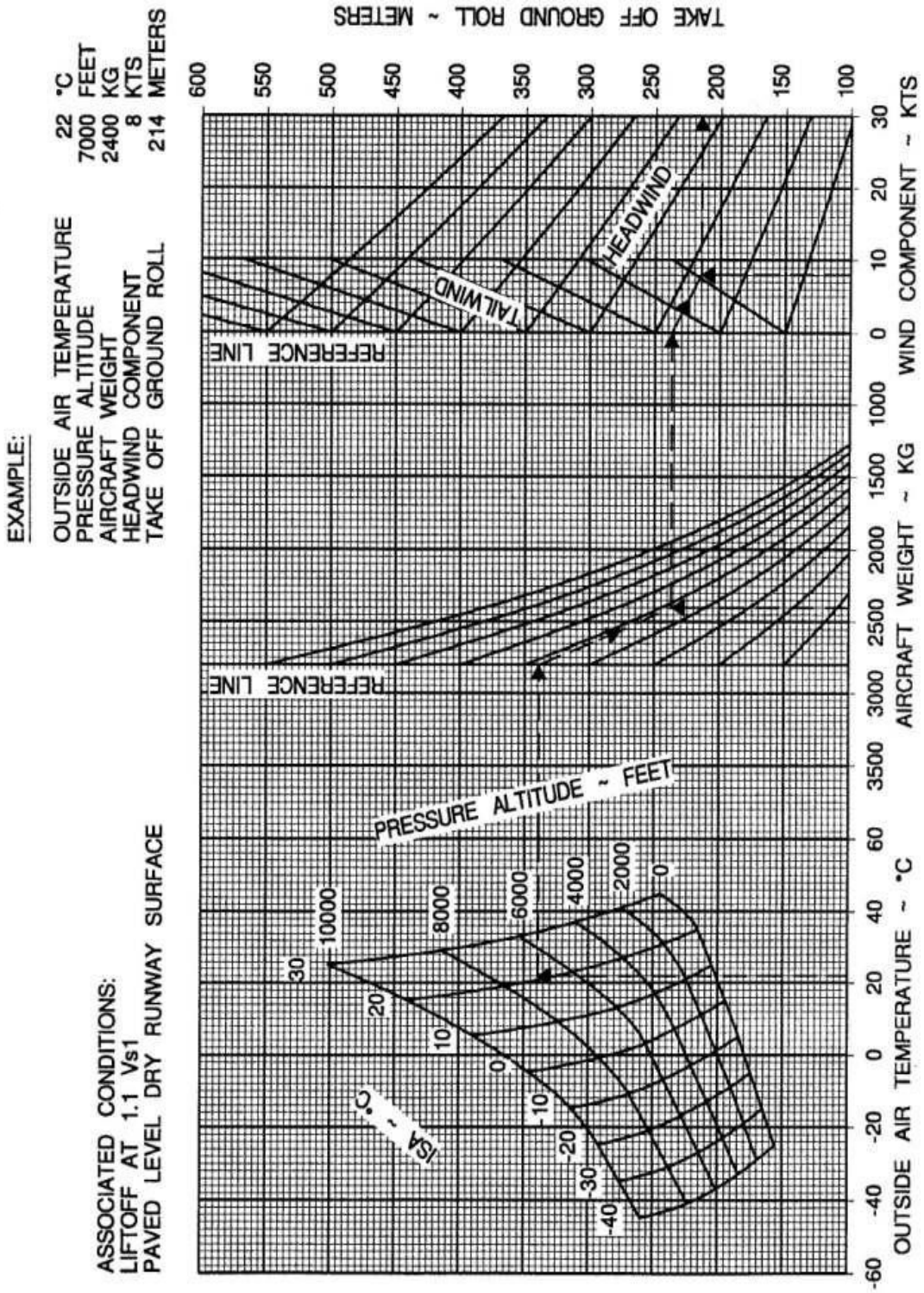
4.7 PERFORMANCE INFORMATION UP TO ISA + 30°C

ERFORM

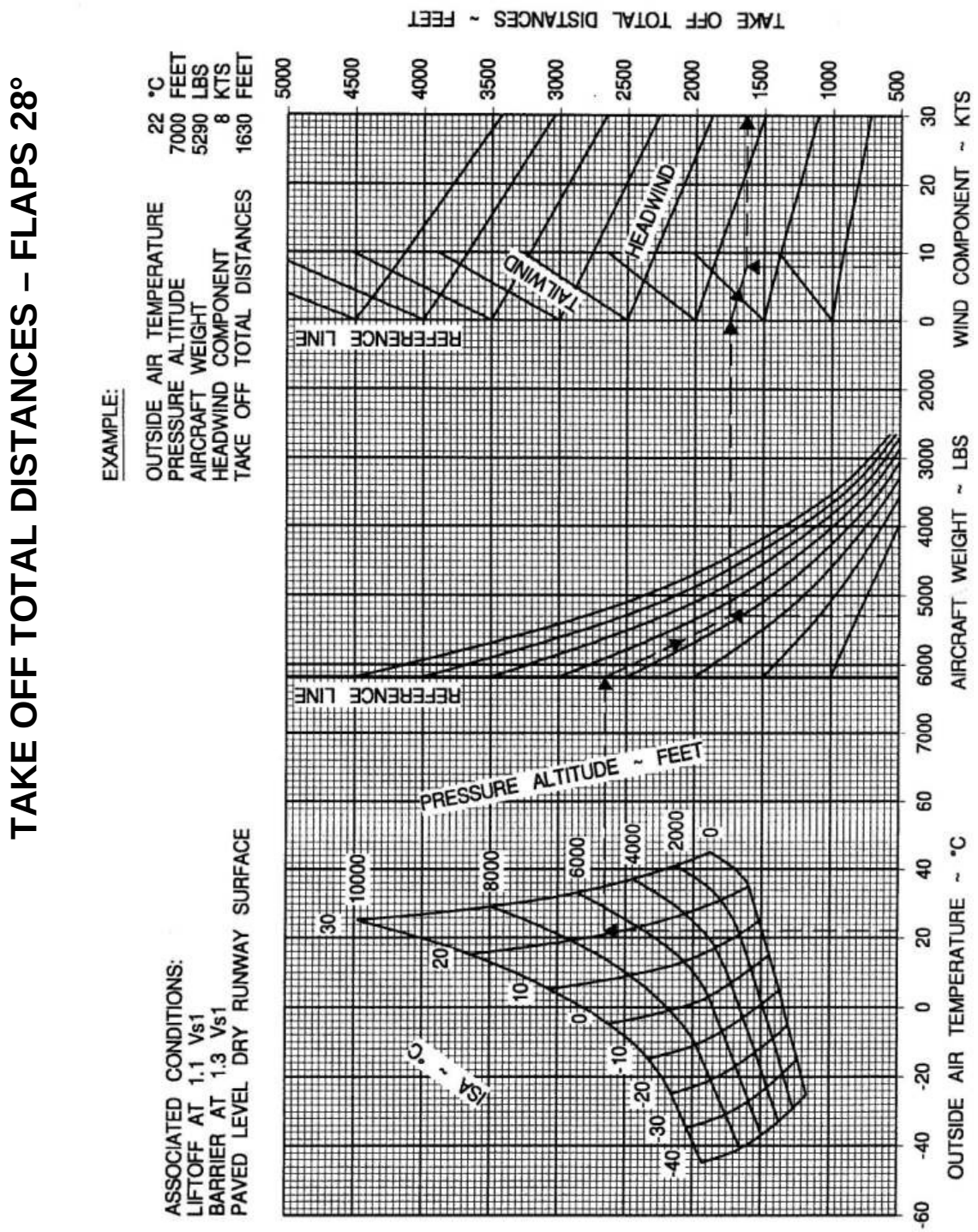


PERFORMANCE INFORMATION

TAKE OFF GROUND ROLL – FLAPS 28°

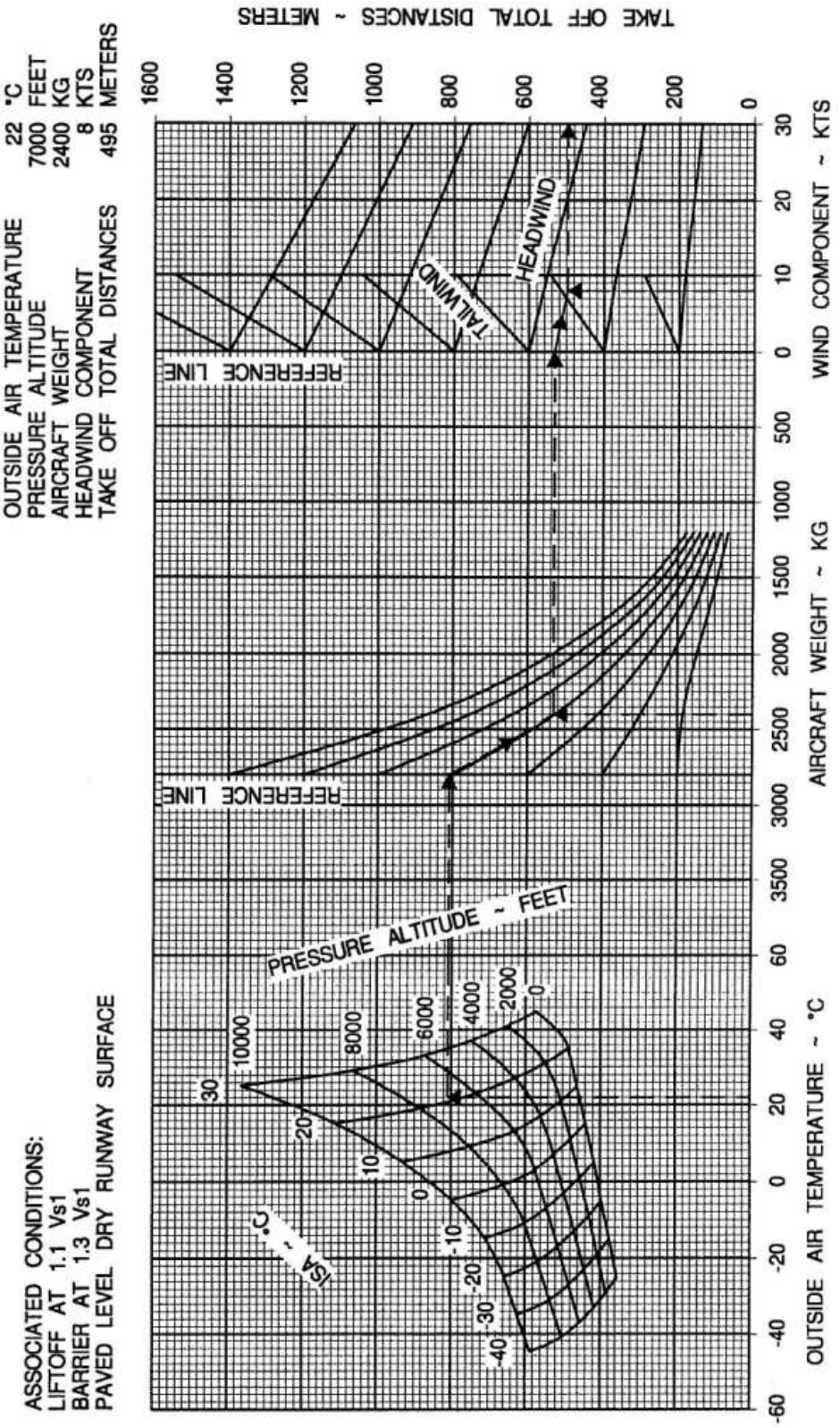


PERFORMANCE INFORMATION

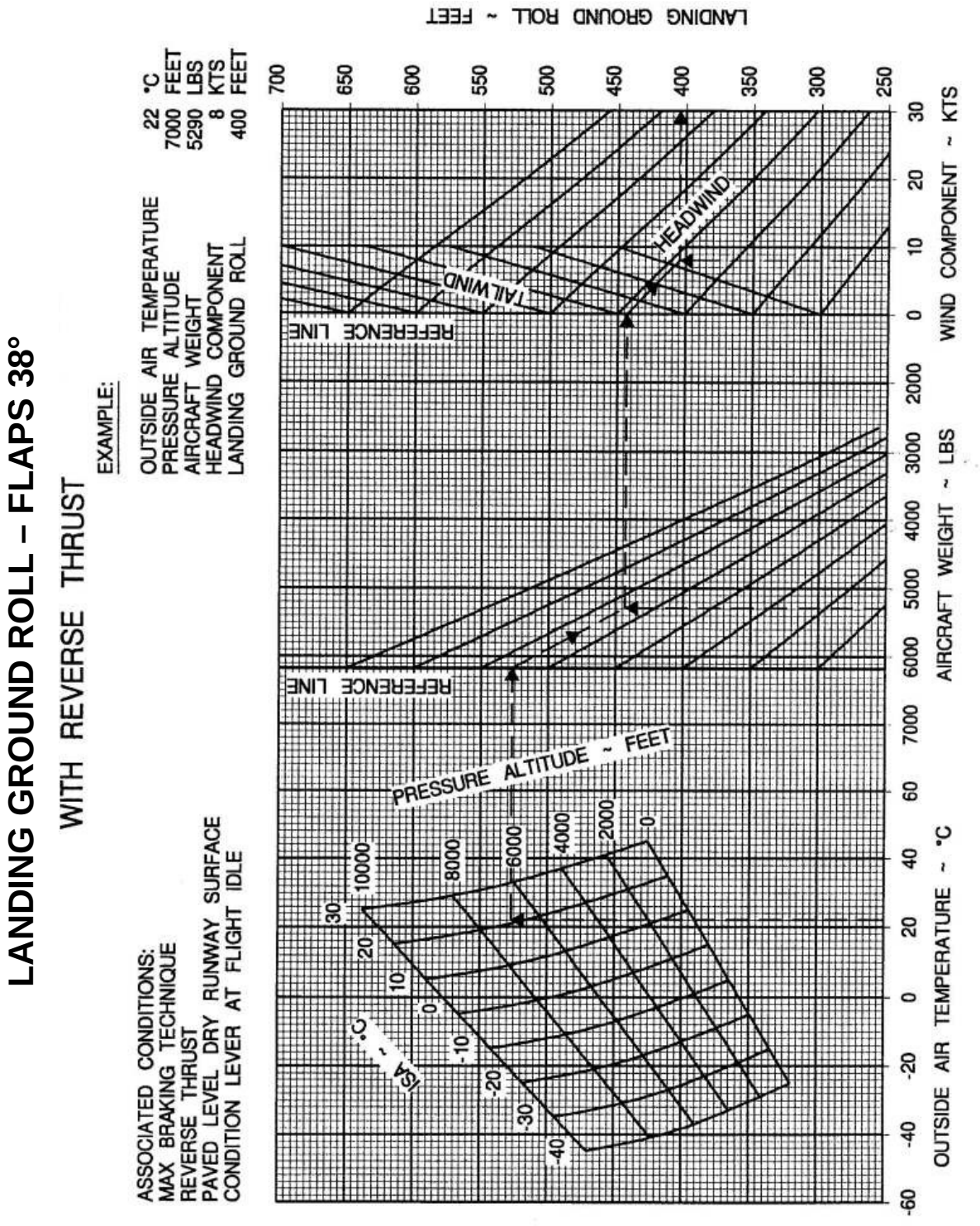


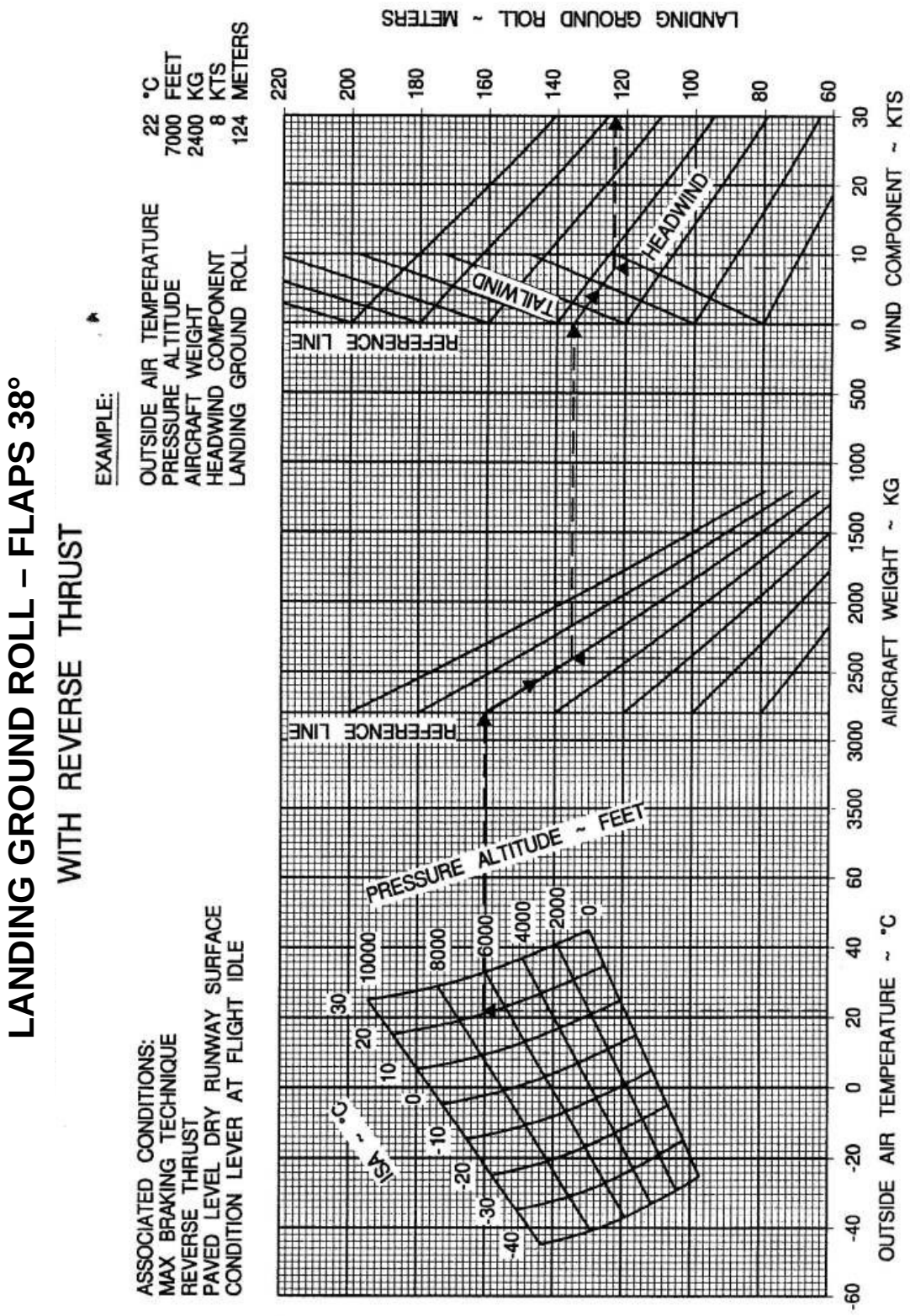
PERFORMANCE INFORMATION

TAKE OFF TOTAL DISTANCES – FLAPS 28°

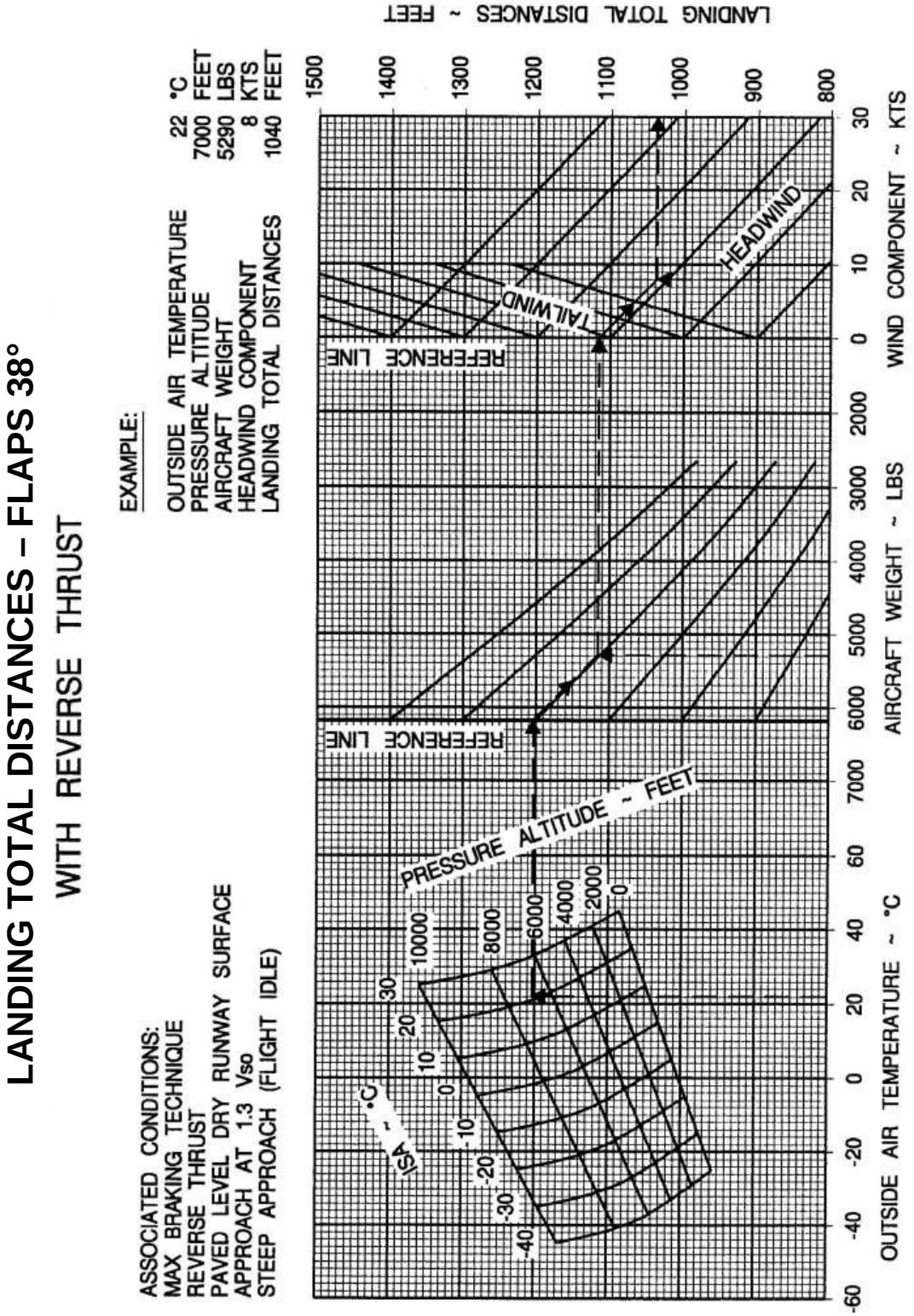


PERFORMANCE INFORMATION




LANDING GROUND ROLL – FLAPS 38°
WITH REVERSE THRUST
EXAMPLE:
OUTSIDE AIR TEMPERATURE 22 °C
PRESSURE ALTITUDE 7000 FEET
AIRCRAFT WEIGHT 2400 KG
HEADWIND COMPONENT 8 KTS
LANDING GROUND ROLL 124 METERS
ASSOCIATED CONDITIONS:
MAX BRAKING TECHNIQUE
REVERSE THRUST
PAVED LEVEL DRY RUNWAY SURFACE
CONDITION LEVER AT FLIGHT IDLE
LANDING GROUND ROLL ~ METERS
220
200
180
160
140
120
100
80
60
REFERENCE LINE
TAILWIND
HEADWIND
WIND COMPONENT ~ KTS
30
20
10
0
500
1000
1500
2000
2500
3000
3500
AIRCRAFT WEIGHT ~ KG
REFERENCE LINE
PRESSURE ALTITUDE ~ FEET
10000
8000
6000
4000
2000
0
ISA °C
30
20
10
0
-10
-20
-30
-40
OUTSIDE AIR TEMPERATURE ~ °C
60
40
20
0
-20
-40
-60

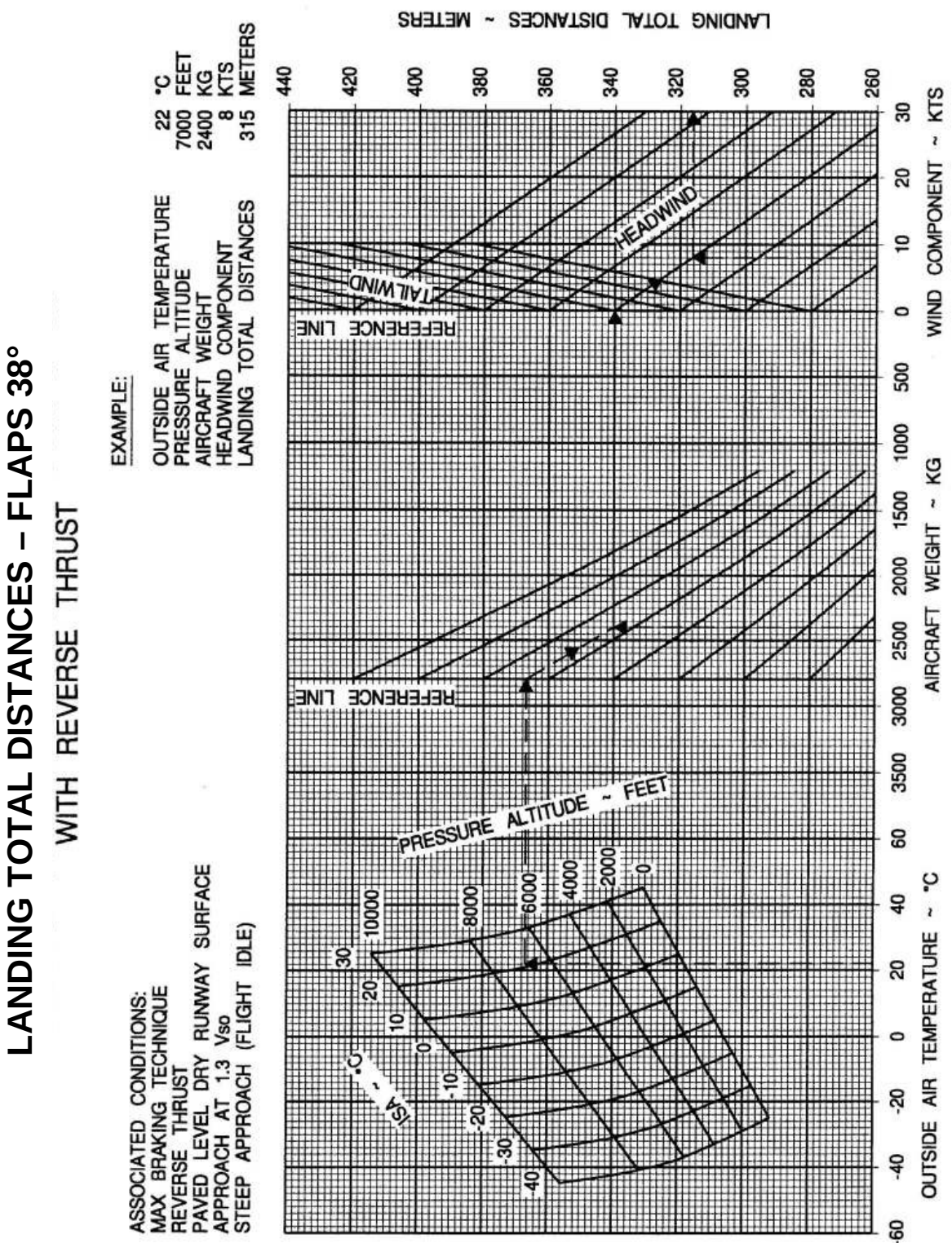
PERFORMANCE INFORMATION



LANDING TOTAL DISTANCES – FLAPS 38°

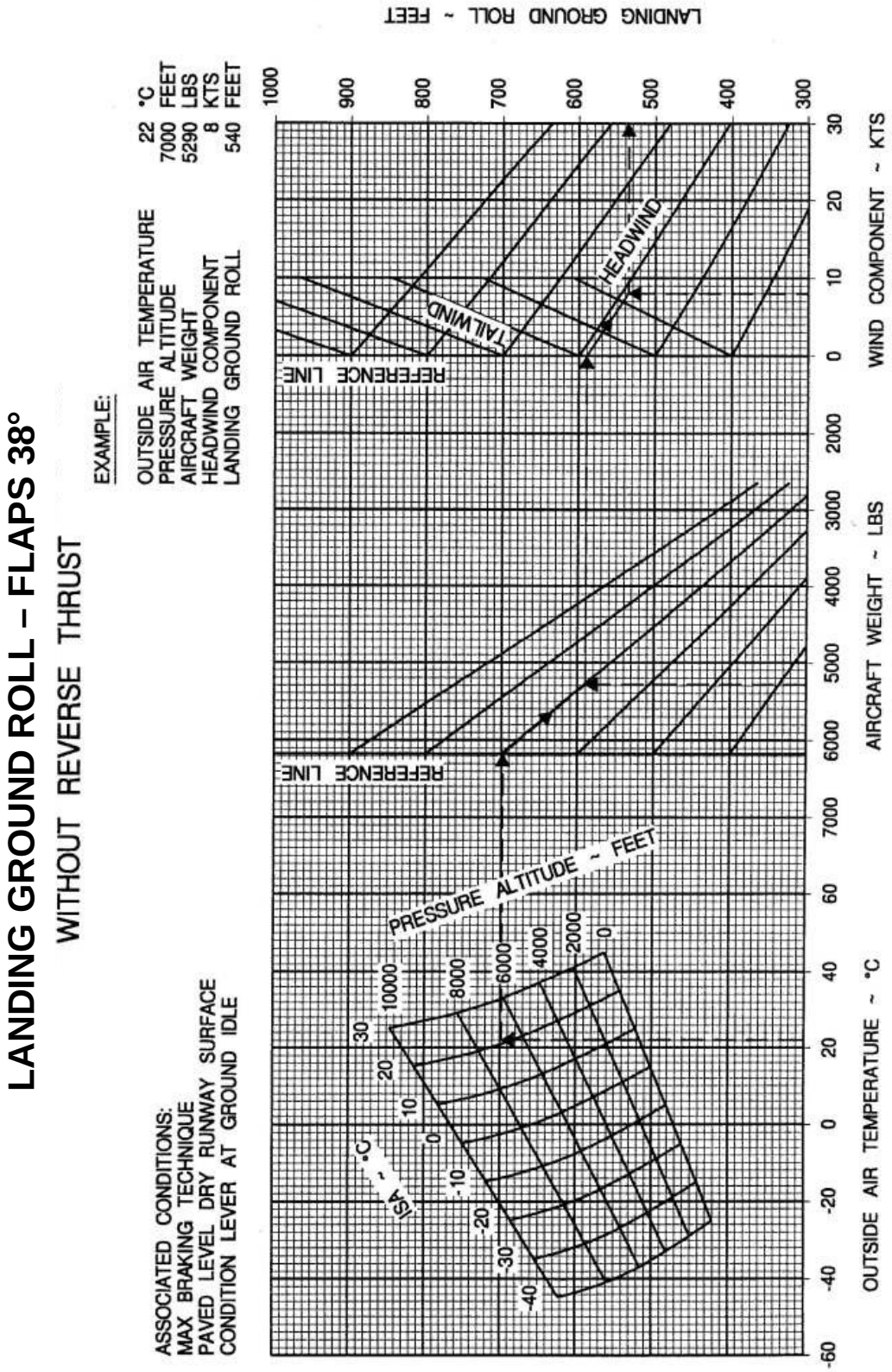
WITH REVERSE THRUST

PERFORMANCE INFORMATION

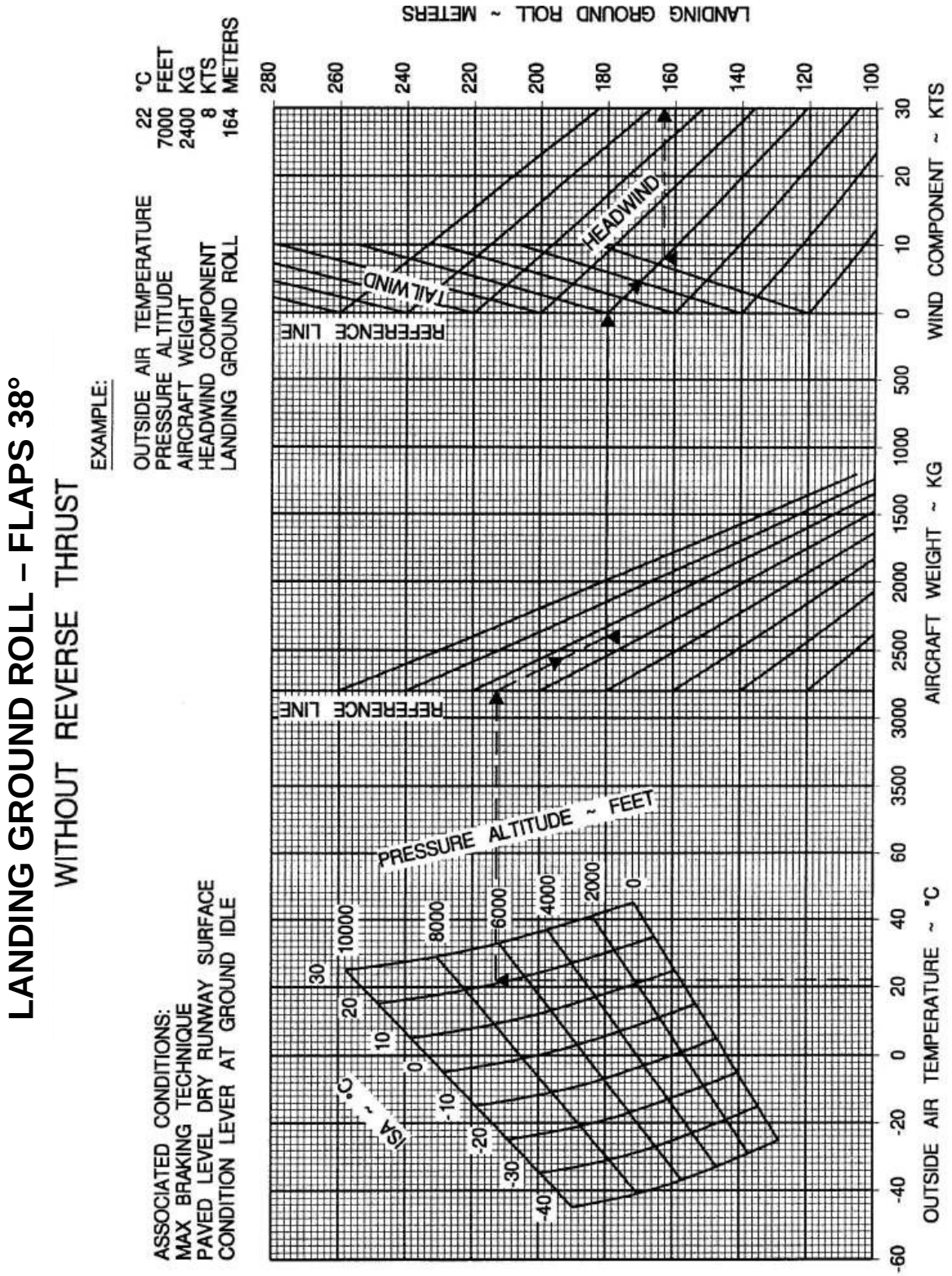


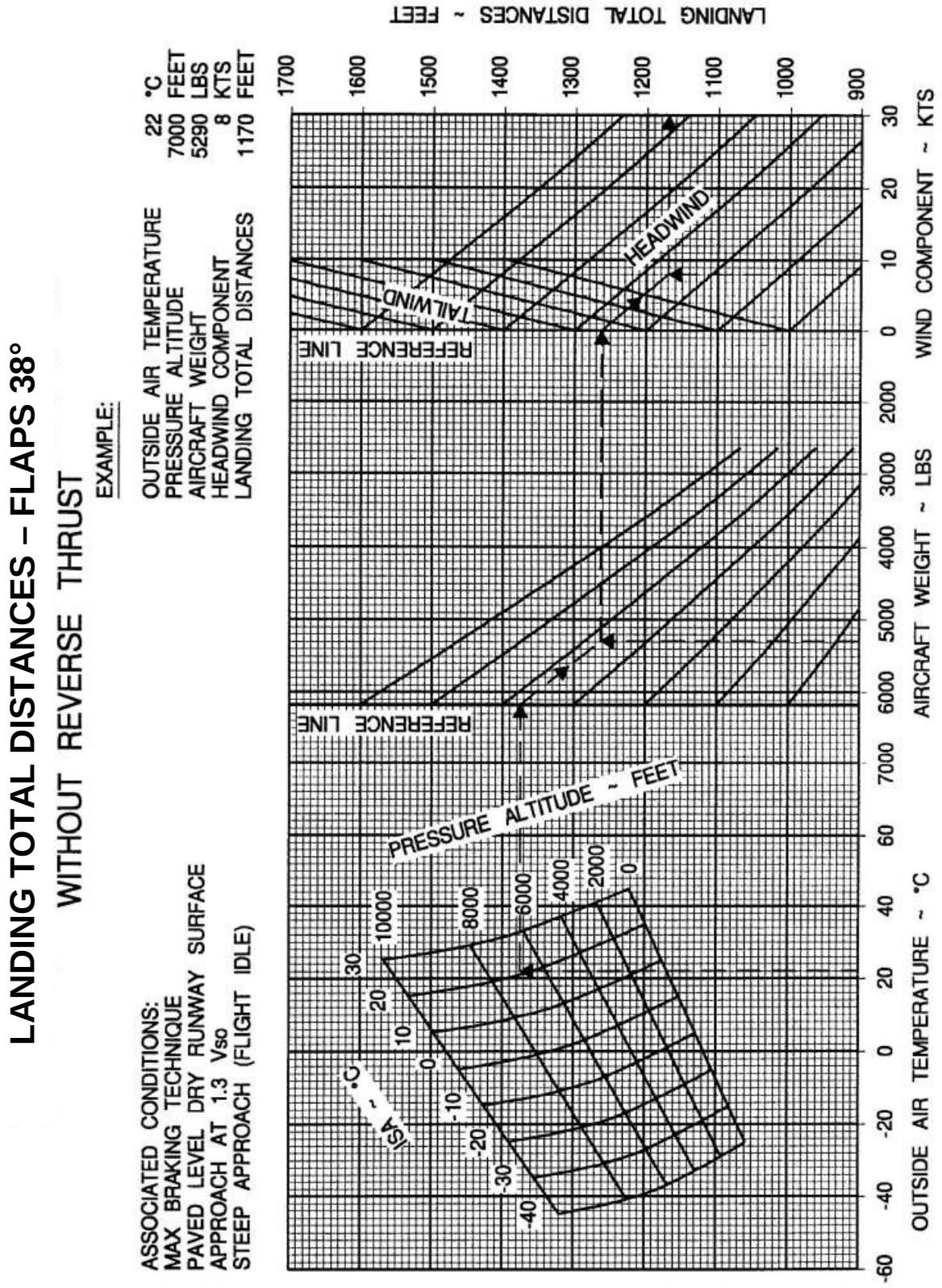
LANDING GROUND ROLL – FLAPS 38°

WITHOUT REVERSE THRUST

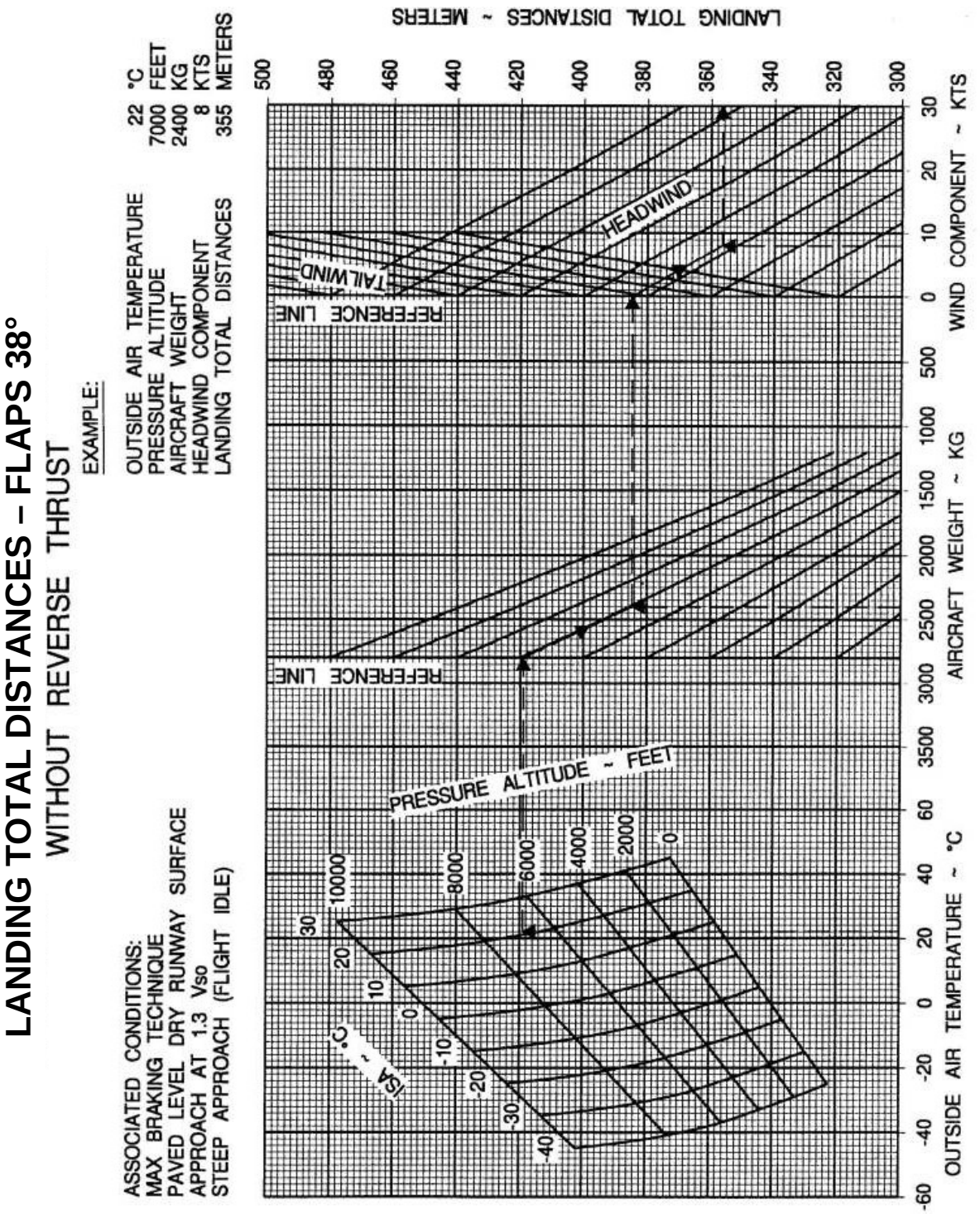


PERFORMANCE INFORMATION

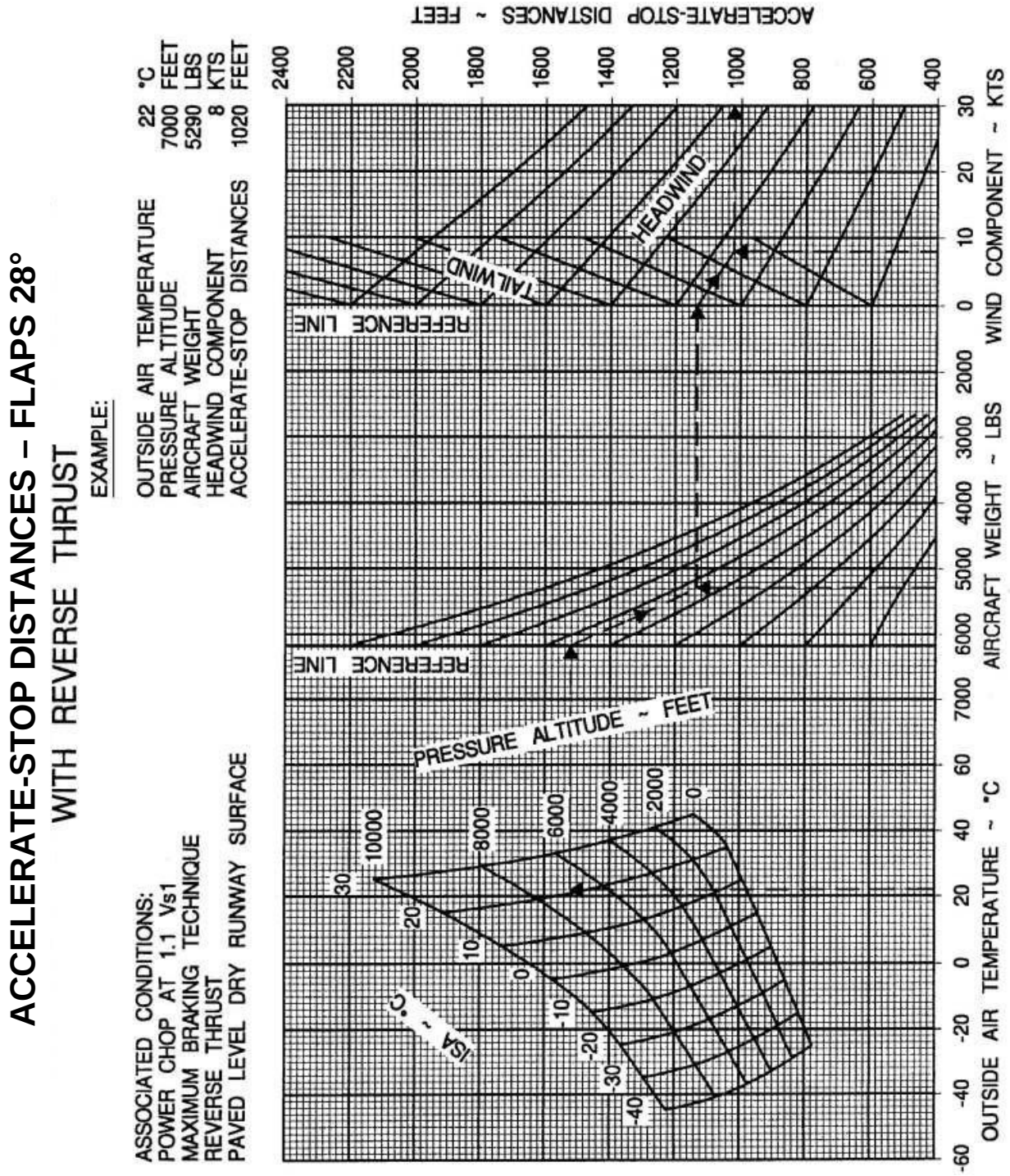



LANDING TOTAL DISTANCES - FEET
1700
1600
1500
1400
1300
1200
1100
1000
900
HEADWIND
TAILWIND
REFERENCE LINE
REFERENCE LINE
PRESSURE ALTITUDE - FEET
10000
8000
6000
4000
2000
0
ISA - °C
30
20
10
0
-10
-20
-30
-40
OUTSIDE AIR TEMPERATURE - °C
30
20
10
0
-20
-40
-60
AIRCRAFT WEIGHT - LBS
2000
3000
4000
5000
6000
7000
WIND COMPONENT - KTS
30
20
10
0
LANDING TOTAL DISTANCES – FLAPS 38°
WITHOUT REVERSE THRUST
EXAMPLE:
OUTSIDE AIR TEMPERATURE 22 °C
PRESSURE ALTITUDE 7000 FEET
AIRCRAFT WEIGHT 5290 LBS
HEADWIND COMPONENT 8 KTS
LANDING TOTAL DISTANCES 1170 FEET
ASSOCIATED CONDITIONS:
MAX BRAKING TECHNIQUE
PAVED LEVEL DRY RUNWAY SURFACE
APPROACH AT 1.3 Vso
STEEP APPROACH (FLIGHT IDLE)

PERFORMANCE INFORMATION

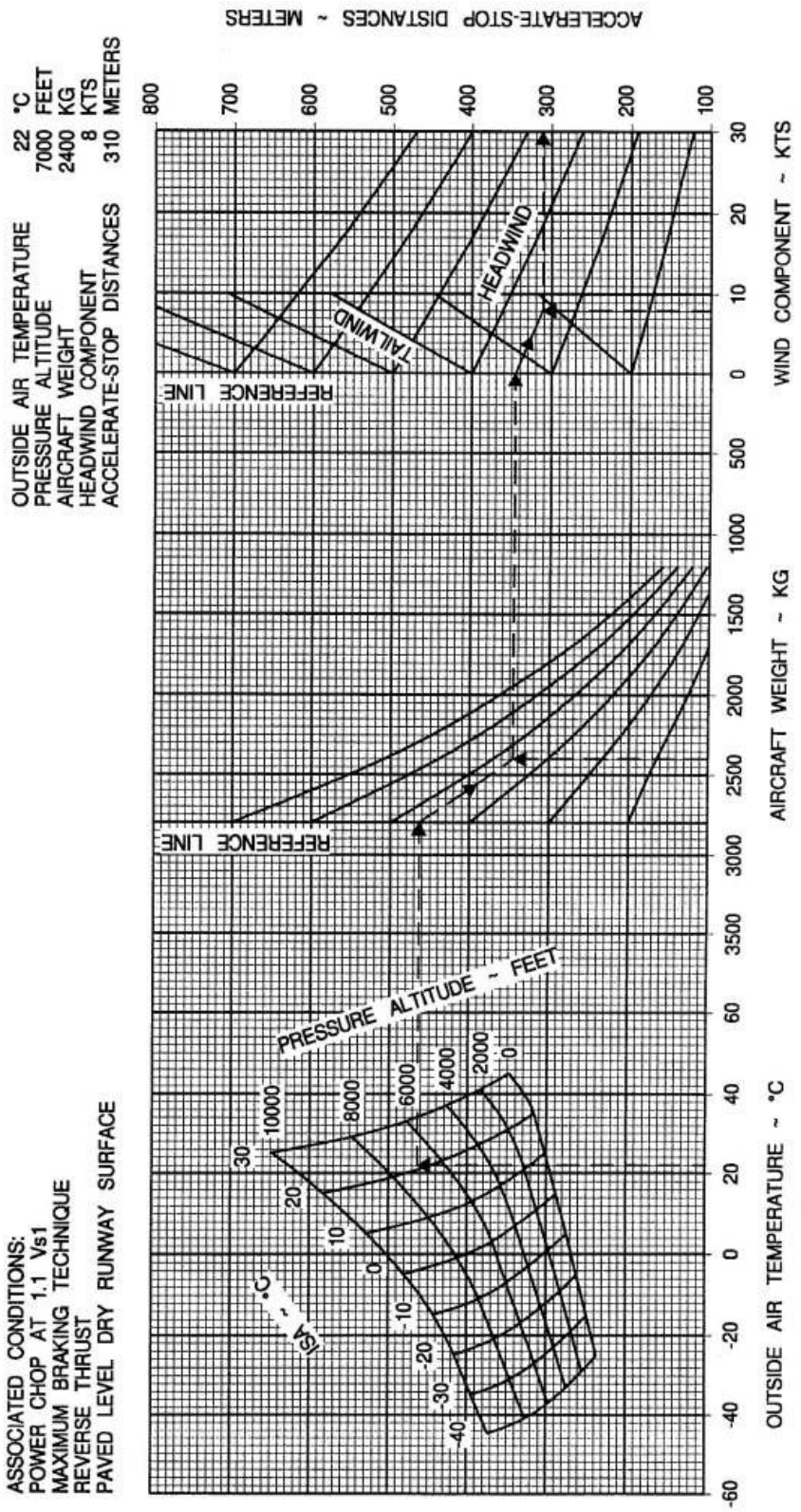


PERFORMANCE INFORMATION

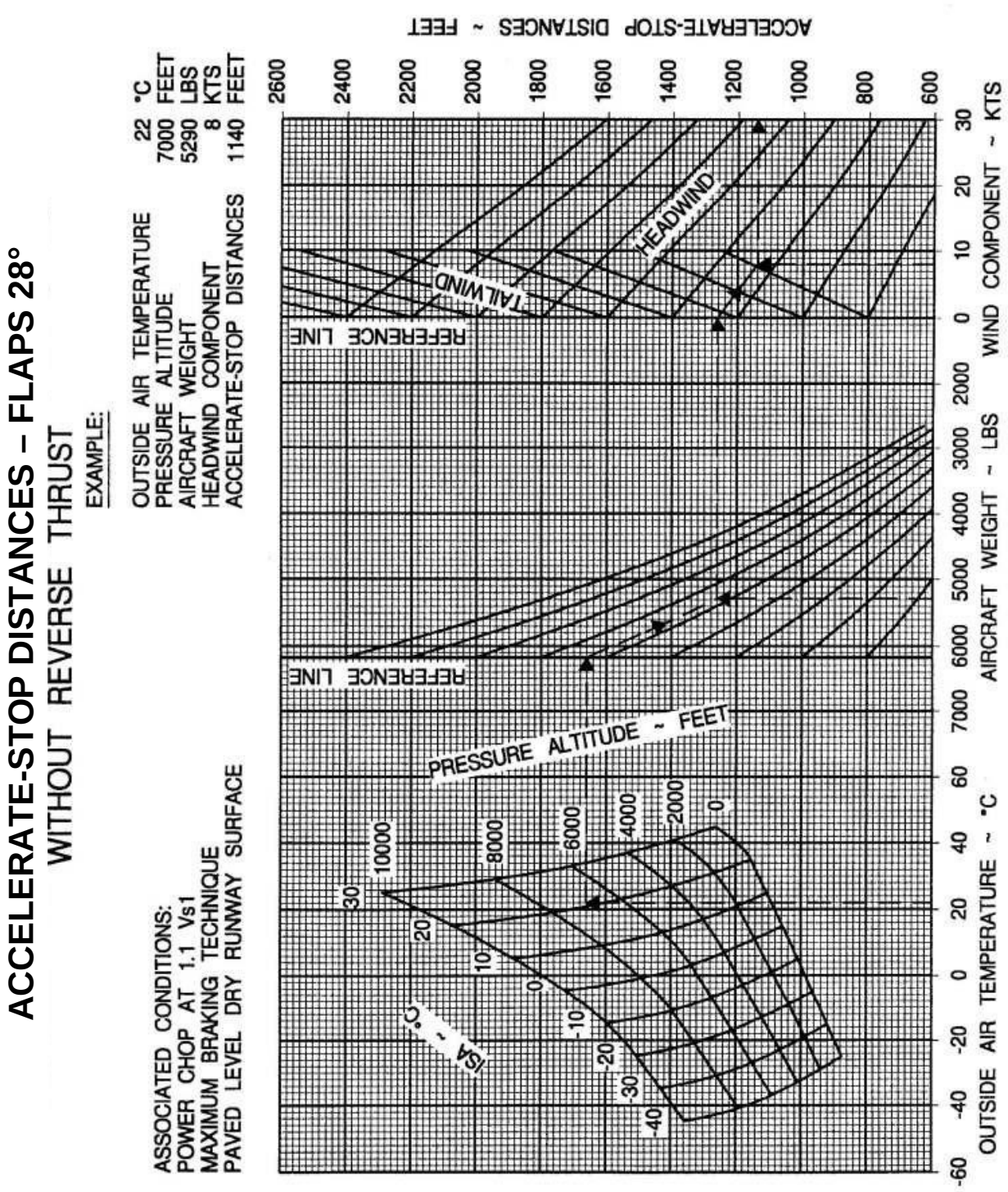


ACCELERATE-STOP DISTANCES – FLAPS 28°

WITH REVERSE THRUST

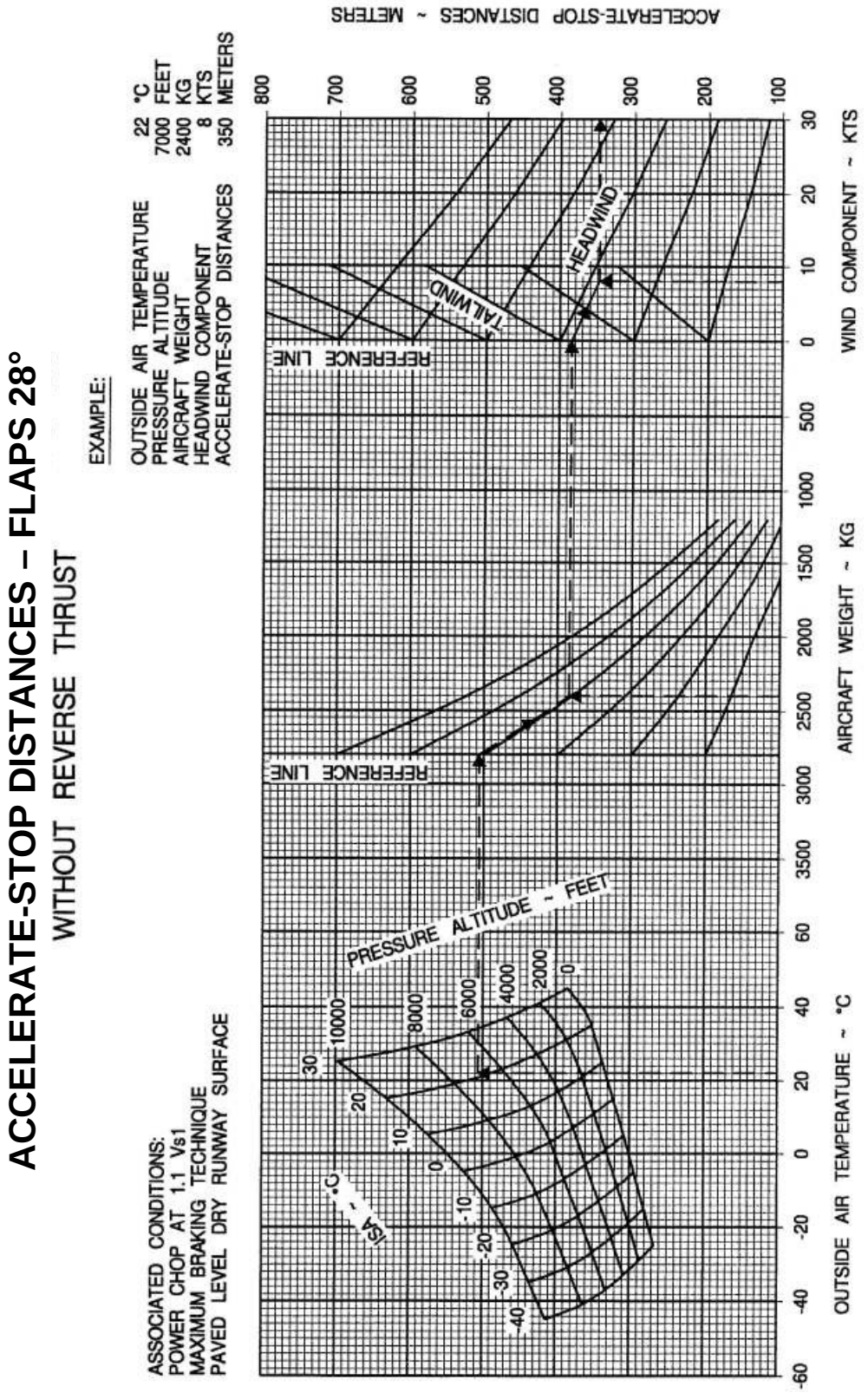


PERFORMANCE INFORMATION

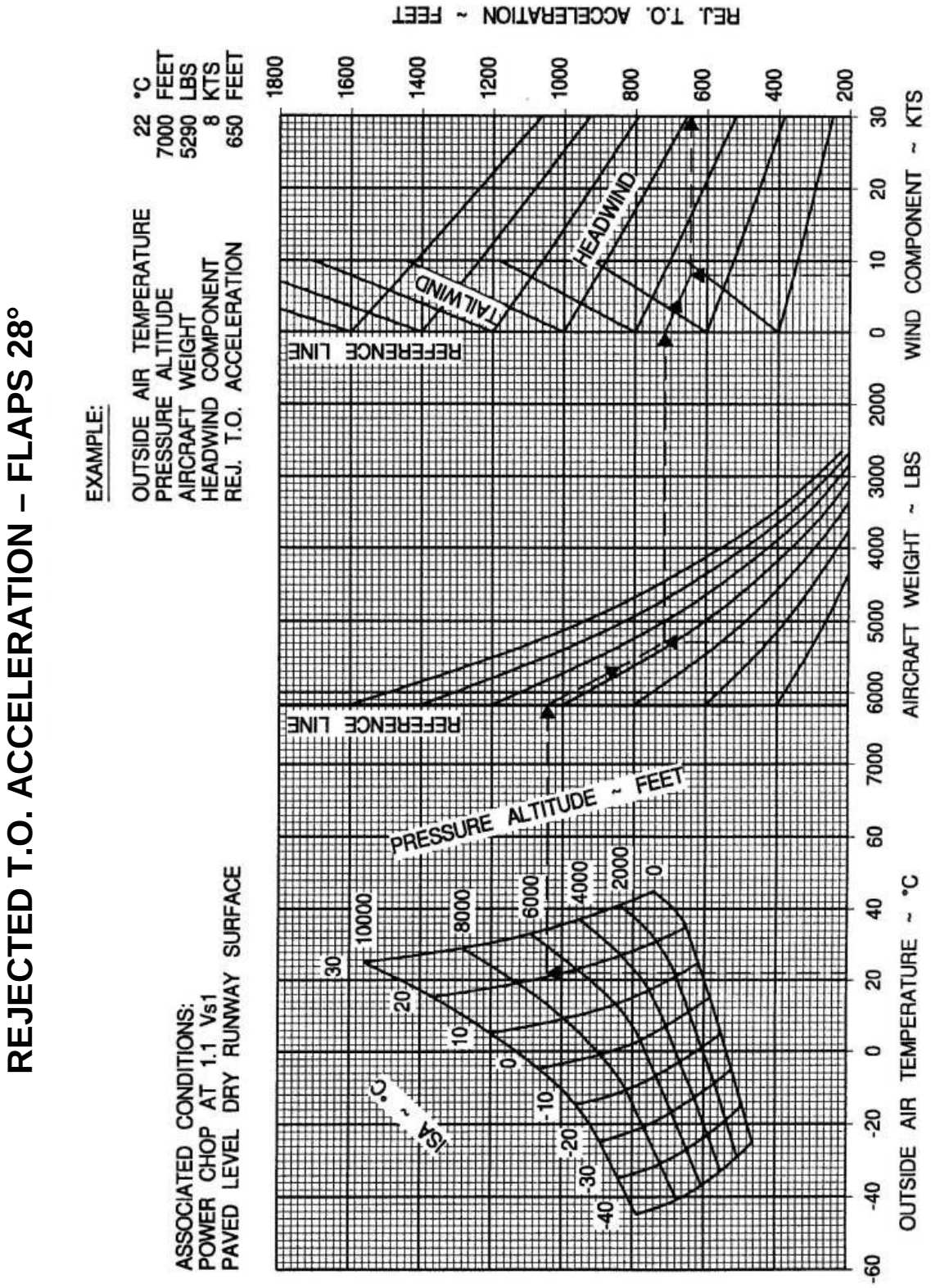


ACCELERATE-STOP DISTANCES – FLAPS 28°

WITHOUT REVERSE THRUST

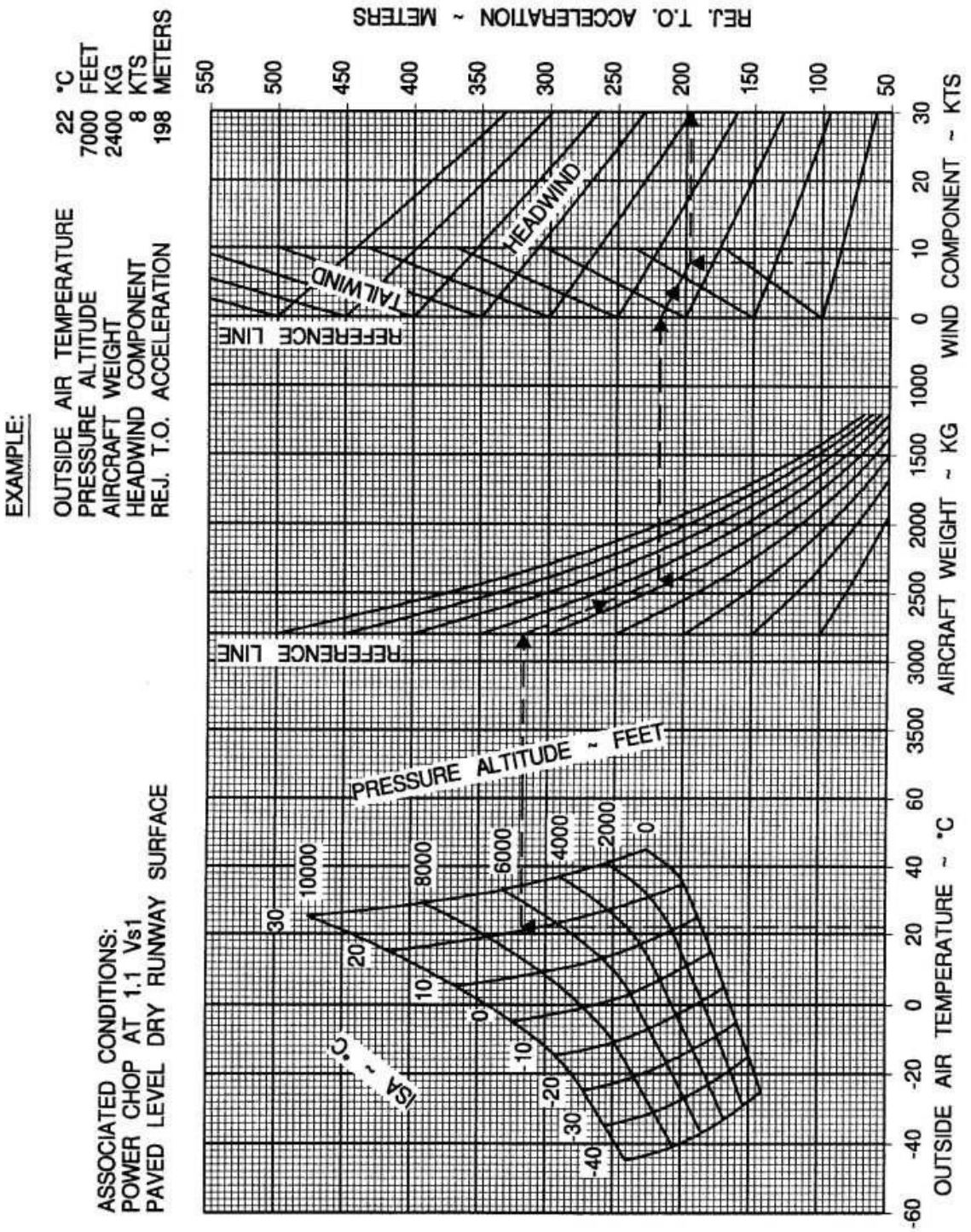


PERFORMANCE INFORMATION



PERFORMANCE INFORMATION

REJECTED T.O. ACCELERATION – FLAPS 28°



CHAPTER 5
SUPPLEMENTS

Flight Manual Supplements are issued to provide information associated with optional equipment or modifications. The equipment concerned, if installed, is listed in the Appendix of the basic Airplane Flight Manual.

The information contained in applicable supplements supersedes information of the same naturefound in the basic Airplane Flight Manual.

For Supplements which are approved by the Swiss Federal Office for Civil Aviation for the present aircraft model see Type Certificate Data Sheet F56-10.

In the table below, the Operator should insert an X against all Supplements applicable to the airplanein its operational configuration.

Supplement Report No.	Description	Inserted(X)
1804	Operation with King KWS 56 Color Weather Radar System	
1812	Operation with RNAV King KNS 81	
1813	Operation with RNAV and TACAN King KNS 81	
1824	Operation with Cabin Doors Removed and Sliding Door/Hatch Open	
1825	Operation with Skis Installed Note that operation with skis is prohibited when underwing tanks are installed	
1826-1	Operation with Underwing Fuel Tanks (372 / 477 / 487 liters)	
1846	Operation with Bendix RDS 82 Color Weather Radar System	
1848	Operation with Rudder Electrical Trim System	
1849	Operation with Aileron Electrical Trim System	
1850	Operation with Emergency Battery System Installed	
1859	Operation with Ferry Fuel Tank Installation P/N 6266.143 in the cabin	
1860	Operation with Ferry Fuel Tank Installation P/N V-43593 in the cabin	
1861	Operation with Agricultural Equipment Installed	
1862	Operation with Water Tank P/N 119.70.06.712 for Fire-fighting	
1887	Q-operation (Quiet Operation)	

CHAPTER 5
SUPPLEMENTS

Supplement Report No.	Description	Inserted(X)
1898	Operation with Micronair Underwing Spray Pod System	
1904	Operation with Air Intake Filter Mk.3B Installed	
1905	Operation with Global OMEGA/VLF GNS 500A-4 Navigation System	
1906	Operation with Bendix King RDS 84 Color Weather Radar System	
1913	Operation with Bendix IU-2023B Remote Computer Unit	
1914	Operation with Propeller De icing System (Hot Prop)	
1915	Operation with Camera Assembly Installed	
1948	Reduced Noise Operation (Adjustable Propeller Speed)	
01988	Operation with Trimble TNL-2000 GPS Navigation System Installed	
02043	Operation with Bendix King KLN 90 GPS Navigation System Installed	
02048	Operation with Emergency Fuel Control (Manual Override)	
02057	Operation with Bendix King KLN 90A Navigation System Installed	
02090	Operation with On-board Oxygen System (up to MSN 839)	
02098	Operation with Bendix King RDR 2000 Color Weather Radar System	
02101	Operation with Bendix King KLN90B GPS Navigation System Installed	
02105	Operation with On-board Oxygen System (from MSN 840)	
02174	Operation with De-icing System for FAA STC Four-blade Propeller	
02186	Operation with the B-RNAV (RNP-5) Version of the KLN 90B GPS avigation System Installed	
02207	Operation with Horizontal Stabilizer Trim Warning System	
02230	Mechanical Flap System	
02264	Garmin GNS 430 VHF Communications Transceiver, VOR and ILS Receiver And GPS Receiver System	
02265	Honeywell Multi-Function Display KMD-850	
02274	Garmin GNS 530 VHF Communications Transceiver, VOR and ILS Receiver and GPS Receiver System	

CHAPTER 5
SUPPLEMENTS

Supplement Report No.	Description	Inserted(X)
02275	Standby BUS, GEN & EXT PWR Switches, Landing Lights Switchesand Optional Mission BUS	
02283	Leica Dual Camera Installation, SN 950 and Up	
02290	Garmin GNS 530 TAWS	
02291	Honeywell KTA 870 Traffic Advisory System (TAS)	
02293	Honeywell KHF 950 HF System	
02311	Honeywell KHF 1050 HF System	
02315	Honeywell KRA 405B Radar Altimeter System	
02316	Garmin GNS 430W and 430AW VHF taxitions	
02317	Garmin GNS 530W and 530AW VHF Communications	
02318	Multiple Sensor Camera Installation, MSN 948 and Up	
02342	PC-6/B2-H4 Aircraft Registered in the Peoples Republic of China	
02349	Passenger Seats with Torso Restraint System	
02275	Standby BUS, GEN & EXT PWR Switches, Landing Lights Switchesand Optional Mission BUS	
02283	Leica Dual Camera Installation, SN 950 and Up	
02290	Garmin GNS 530 TAWS	
02291	Honeywell KTA 870 Traffic Advisory System (TAS)	
02293	Honeywell KHF 950 HF System	
02311	Honeywell KHF 1050 HF System	
02315	Honeywell KRA 405B Radar Altimeter System	
02316	Garmin GNS 430W and 430AW VHF Communications	
02317	Garmin GNS 530W and 530AW VHF Communications	
02318	Multiple Sensor Camera Installation, MSN 948 and Up	
02342	PC-6/B2-H4 Aircraft Registered in the Peoples Republic of China	
02349	Passenger Seats with Torso Restraint System	

CHAPTER 5
SUPPLEMENTS

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02311	Honeywell KHF 1050 HF System	
02315	Honeywell KRA 405B Radar Altimeter System	
02316	Garmin GNS 430W and 430AW VHF Communications	
02317	Garmin GNS 530W and 530AW VHF Communications	
02318	Multiple Sensor Camera Installation, MSN 948 and Up	
02342	PC-6/B2-H4 Aircraft Registered in the Peoples Republic of China	
02349	Passenger Seats with Torso Restraint System	

LIST OF EFFECTIVE PAGES

SECTION	PAGE	REVISION	DATE
Record of Revision	ROR-1	00	Apr, 2021
List Of Effective Pages	LEP-1	00	Apr, 2021
List Of Effective Pages	LEP-2	00	Apr, 2021
SECTION 1 INTRODICTION			
Table of Contents	TOC-1	00	Apr, 2021
Section 1	1-1	00	Apr, 2021
Section 1	1-2	00	Apr, 2021
Section 1	1-3	00	Apr, 2021
SECTION 2 OPERATION			
Table of Contents	TOC-1	00	Apr, 2021
Section 2	2-1	00	Apr, 2021
Section 2	2-2	00	Apr, 2021
Section 2	2-3	00	Apr, 2021
Section 2	2-4	00	Apr, 2021
Section 2	2-5	00	Apr, 2021
Section 2	2-6	00	Apr, 2021
Section 2	2-7	00	Apr, 2021
Section 2	2-8	00	Apr, 2021
SECTION 3 SAFETY			
Table of Contents	TOC-1	00	Apr, 2021
Section 3	3-1	00	Apr, 2021
Section 3	3-2	00	Apr, 2021
SECTION 4 CREW MATTERS			
Table of Contents	TOC-1	00	Apr, 2021
Section 4	4-1	00	Apr, 2021
Section 4	4-2	00	Apr, 2021
Section 4	4-3	00	Apr, 2021
Section 4	4-4	00	Apr, 2021
Section 4	4-5	00	Apr, 2021
Section 4	4-6	00	Apr, 2021

SECTION	PAGE	REVISION	DATE
SECTION 5 EMERGENCY RESPONSE PLAN			
Table of Contents	TOC-1	00	Apr, 2021
Section 5	5-1	00	Apr, 2021
Section 5	5-2	00	Apr, 2021
Section 5	5-3	00	Apr, 2021
Section 5	5-4	00	Apr, 2021
SECTION 6 EMERGENCY RESPONSE PLAN			
Table of Contents	TOC-1	00	Apr, 2021
Section 6	6-1	00	Apr, 2021
Section 6	6-2	00	Apr, 2021

SECTION 1
INTRODICTION

SECTION 1 INTRODUCTION

1.1. CERTIFICATION

This Standard Operating Procedures (SOP) has been reviewed and approved as anofficial Company document by:

DATE :	DATE :	DATE :

1.2. ACKNOWLEDGMENT

All Personnel assigned to this contract are to sign an Acknowledgement Sheet (See Appendices) to confirm they have read and understood the contents of this Procedure.

1.3. PURPOSE

The Cessna 208 standard procedure for Photo Flight Operations prov1des information regarding operational and administrative information regarding all Cessna 208 Operations related to all domestic and south east Asia area which is based at Tarr kan.

It is PT. Smart Cakrawala Aviation (SCA) responsibility to ensure that all operations are conducted in efficiently as required as safety matters. These SOP is described all requirements of SCA Operation Manual (OM), Company Maintenance Manual (CMM) and Safety Management System Manual (SMSM).

Each personnel that involved in this operation shall follow the procedures and practice in each SCA operations. All apart from the activities shall be reported immediately toOperations Manager, Maintenance Manager, Safety Manager to have consideration.

For some aspect that not contained, should discussed further to make decision that should consider safety matters. This SOP may have some reviewing to evaluate the effectiveness due to changing some operations conditions.

Any changes shall be socialized immediately to all related personnel and acknowledged. It is all personnel responsibility to be actively to keep the SOP up date and applied in area acquisition of Photo Flight.

1.4. SCOPE OF SERVICES

The Aircraft is based in Pontianak Airport. It is intended for Photo Flight or LIDAR (Light Detection & Ranging) Survey of Indonesia Areas.

The Aircraft shall be clean and readily positioned to be proceeded for camera installations 30 minutes before team arrive.

1.5. FLIGHT SCHEDULE

The Procedure of LIDAR Operations request will be coordinate with Relations Department as appropriate. The flight Schedule will be issued from SCA Customer Representatives. Operations Manager and Chief Pilot will have coordination either with sales department and customer to prepare schedule and flight plan. The Plans shall be relaying to related department to prepare the Flight missions.

1.6. AIRCRAFT STATUS

It is SCA responsibility to inform all customers regarding Aircraft Status. The means of to keep update information is to give full services regarding aircraft availability to all SCA customers.

Any unavailable of aircraft due to maintenance or any others operational matters shall be reported immediately. This responsibility shall be concerned and coordinate by all related department, these means by Operations, Maintenance, and safety Department.

For schedule maintenance that planned, shall be notified to customers and for any revision at minimum one month prior to schedule maintenance.

SECTION 2
OPERATION

SECTION 2 OPERATION

2.1. GENERAL INFORMATION

LIDAR is an active remote sensing system that can be operated in either a profiling or scanning mode using pulses of light to illuminate the terrain. LIDAR data collection involves mounting an airborne laser scanning system onboard an aircraft along with a kinematic Global Positioning System (GPS) receiver to locate an x, y, z position and an inertial navigation system to monitor the pitch, roll, and heading of the aircraft. By accurately measuring the round trip travel time of the laser pulse from the aircraft to the ground, a highly accurate spot elevation can be calculated. Depending upon the altitude and speed of the aircraft along with the laser repetition rate it is possible to obtain point densities that would likely take months to collect using traditional ground survey methods.

2.2. LIDAR SYSTEM EQUIPMENT

LIDAR (Light Detection and Ranging) is technology that uses laser pulses to generate large amount of data about the physical layout of terrain and landscape feature. The LIDAR system hosted by a LIDAR system and attached at airplane to be operated in a computer-tethered configuration. LIDAR mapping mission operated by a team, consist of a Pilot, a Security Officer, a Survey-navigator (as required) and a Camera operator. The LIDAR system equipment consists of:

1. LIDAR System, Camera, Camera mounting and platform.
2. Control table.
3. Differential GPS and Wide Band DGPS antenna.
4. Two Oxygen bottles and Masks as required
5. Air photo Navigation GPS.
6. Additional aircraft battery to supply on board LIDAR and MFDC equipments (as required)
7. Pilot display for navigation and notebook for camera controller.

2.3. QUALIFICATIONS

No pilot and Camera operator shall undertake photo flight mission unless they have completed the required qualification and training:

- Pilot should hold a CPL and recommended to be certified as aerial photo flight pilot.
- Pilot and Navigator/Camera Operator are strongly recommended to attend the Physiological Training programs. Courses include information on Hypoxia,

Hyperventilation, altitudes - Chamber Rides when operate on hi altitude more than 10.000'

- Pilot and Navigator/Camera Operator must be in healthy condition specially when fly high altitudes mission.

2.4. LIMITATIONS

Maximum LIDAR equipments weight shall not be exceed the approved design weight as specified in the aircraft weight and C.G limitation.

Vne shall be determined by the limitation set forth in the Flight Manual or by Pilot determination of a safe speed considering stability and atmospheric conditions.

The pilot in command has FINAL authority onto weather. Pilot must consider terrain, availability of alternate landing airport, and current weather patterns when making his decision.

The following are intended as guide lines in helping the pilot make those decisions.

In the lowlands, basic weather minimum are ½ mile (1 km) visibility and clear of clouds.

In the mountainous areas the pilot must not allow himself to become trapped in a canyon without alternate airport to land in the event of weather deteriorates. This may mean departing an area in good weather when the ridge lines closed.

2.5. LIDAR INSTALLATION

2.5.1. Pre Installation

Installation at the aircraft is / are done by customer under supervision by engineer including:

- Engineer must be check specification of LIDAR and all equipment including
- Voltage LIDAR, Camera, and all equipment
- Ampere LIDAR, Camera, and all equipment
- Check physically all connectors and cable are proper with aircraft requirement

Conducted by customer/ operator under supervision / engineer to check conformance of.

2.5.2. Preparation

- Placing equipment in the aircraft
- Measurement distance GPS and IMU
- Installation and Checking Cable Connector

All equipment shall be installed as properly to be ready for data acquisitions.

2.5.3. Equipment Test

As equipment installed, the test shall be conducted to check conformance of:

- Activated from Aircraft Power
- Laser testing / Calibiation
- Camera Capture checking / Ground Test

All equipment work properly to be recorded.

2.5.4. Equipment Re-Test

Re-test shall be conducted if the previous test resulting "Error". The step for re-test procedure shall be starting from checking cable, electricity supply and hardware checks, equipment re-test shall be done by customer / operator under supervision pilot and license aircraft engineer (LAE)

2.6. MOBILIZATION

2.6.1. Team Advance

Before mission starting team advance shall make preparation regarding the mission, they shall prepare in Airport will be base of mission, the team advance will prepare for ground handling, Airport Authority for flight clearance, fuel storage, arrangement for hotel and transportation crew.

2.6.2. Crew Duty

Before mission starting, the crew shall be ensuring that all documents shall be completed such as Security Clearance Indonesia Air Force & Security clearance Indonesia defense ministry. Check the weather condition, Aircraft serviceability and all equipment for acquisition processing.

2.7. LIDAR ACQUISITION

2.7.1. Preparation

As crew did the preflight activity and aircraft has release by Engineer in-charge, the Acquisition team will start the equipment by using Aircraft power supply.

2.7.2. Coordination

Flight team shall have coordination with surveyor team regarding the current condition of the weather to acquisition the data. Actual weather information shall be forwarded to client regarding the next action.

2.7.3. Standby

Instead of bad weather, the acquisition data processing postponed.

2.7.4. Calibration

Equipment shall be calibrated at each beginning of acquisition processing. The process of calibration is by turn on the laser in manual method and then flying as required height at the surface of the airport that has installed by GPS. At this step Laser shall be synchronized by the GPS.

2.7.5. Over Head

The over head equipment shall be started by turn on the laser in manual before the aircraft take off and flying at routes that the GPS located. Laser and GPS shall be synchronized.

2.7.6. Flight Routes

The flight routes for Photo Flight operations shall be prior to clear sky view to maximize the gaining data.

2.8. PREFLIGHT BRIEFING

SCA shall ensure that every operations shall be conducted base on aviation safety standard. It is principal for every Pilot in Command initiate to conduct the item as follows:

- Conduct a pre-flight briefing with the camera operator.
- The briefing should consist of aircraft operation safety and discuss survey specification.
- Discuss with briefing office and ATC in detail about areas coordinate, total planned flight line, total photo, flight direction, terrain, flying height and other related issues such as wind direction, weather condition, flight traffic etc.
- Pilot has full authority to reject the plan if the flight plan does not meet to the flight safety standard.

2.9. PREFLIGHT INSPECTIONS

Before aircraft start the engine, pilot should ask the camera operator and under supervision (LAE) to make final inspection of the equipment operating system to ensure all equipment work properly

If any problem found, quickly troubleshoot, do not start the engine before the problem solved:

- Camera operator should check the camera cover lens.
- Camera operator should check the camera system by pushing the shutter release and inspect the image result.

- Camera operator should check the DGPS system by watching the GPS signal quality.
- Pilot should check Pilot Display navigation GPS system.
- All aerial photo crew must check the oxygen bottle, and oxygen mask

2.10. IN-FLIGHT PROCEDURES

After aircraft take off, take the most efficient and safest route to the target area. The detail map, flight directions and flight route will be appearing at the air photo navigation GPS display screen.

Watch the air photo navigation screen GPS, when entering the flight line, maintains the heading of the aircraft on track, flying height and ground speed.

Pilot should constantly sweep through instruments while keeping on line 'and, in addition, monitor the radio as well keep a sharp look out for other traffic.

The tolerance for flight line off track is 20 meters. And altitude 50 feets. The average ground speed require for photo flight is 110 knots . **Note: IAS not less than 100 knt (save single engine speed)**

Pilot should inform the camera operator of the angle between aircraft course and heading (crab angle).

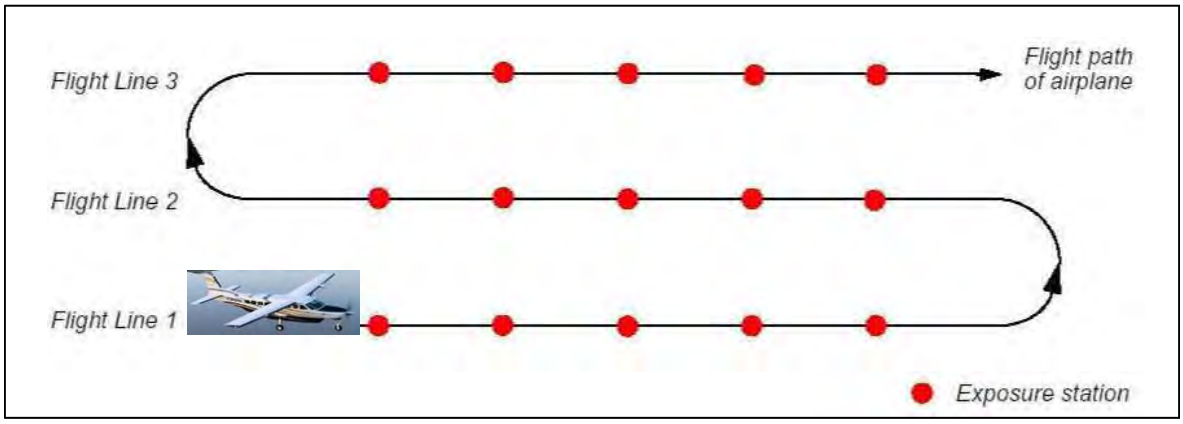

Figure 2. Typical Aerial Photo flight path for mapping purpose.

Camera navigator/operator should inform when the aircraft position does not meet the mission required parameters to take aerial photo. The navigator issue "Camera On" command when the camera operator ready to start taking picture.(as required). After finish taking picture of the line, navigator should issue "Camera Off" command to give information that the data acquisition at that line has completed.(as required). The Camera operator will change to next line onto the pilot display. Start turns the aircraft

in “S-turn” or “tear drop” maneuver, bank angle not more than 20^{O} to enter the next line. During turning PIC should check engine instrument.

During the photo acquisition, keep the communication quite. Camera operator should not distract the Pilot concentration by giving too many instructions. Communications between camera operator and Pilot only allowed when the airplane or Fix Wings far off track the flight line or equipment problem occur.

2.11. FLIGHT FOLLOWING

The Pilot in Command shall be responsible for maintaining continuous radio contact with the Primary Flight Following Station. The Primary Flight Station shall maintain continuously, listening watch on the designated frequency at any time flying operations area in progress. Flight Following Station:

- Location
- Frequencies
- Operating Hours

Operation staff shall keep an accurate log of all transmissions and record the pertinent details (e.g. departure time, altitude, endurance and number of persons on board). Or keep monitoring by spider track

If the Pilot is unable to maintain continuous radio contact with the Primary Flight Following Station, he shall establish contact with a Secondary Flight Following Station and request that Station to assume responsibility for flight following until such time that continuous radio contact can be re-established with original station.

Flight following shall be in addition to any air traffic control or advisory services and not replace them. Pilots are reminded of the importance of using all available means to ensure that the flight in progress is known to dispatcher and any flight delays are notified immediately.

Each destination shall be contacted as soon as possible to prepare the next load or passengers for next destination. During flight, the pilot shall transmit an “Operation Normal” call at interval not exceeding three (30) minutes. The Pilot shall report all take-offs and landings giving at least:

- Aircraft Call Sign
- Point of Departure
- Destination
- Endurance
- ETA at Destination

- Number of people on board
- Route, if not direct or standard
- ETD if have a plan for second Shorty

When on approach to a landing destination, a landing call shall be made. If the aircraft will be shut down after landing, this information must be included in the landing call.

2.12. MAINTENANCE PROCEDURES

The procedures are set in SCA Company Maintenance Manual (CMM) & SCA Approved Aircraft Inspection Program (AAIP) which is designated at Pontianak & Tarakan Base. All scheduled maintenance shall be carried out at the designated Base.

All pilots shall assist engineers with their requirements such as providing information on aircraft performance and serviceability problems. Engineers shall discuss all maintenance planning with Operations Manager as early as possible, to avoid inconvenient or short notice disruptions to customer's flight programs.

Any extended AOG time that affects the customer's programs shall be reported to Operations and Marketing Managers very immediately.

2.13. DOCUMENTATION AT BASE AREAS

Sufficient quantities of the following documents and forms shall be kept on each site. Pilots and Engineers on site shall take necessary action to have required documentation and keep the records up dated. Aircraft documentation that shall be on board:

1. Pilot Operational Hand Book (POH) Cessna PC-6/B2-H4/208B
2. Aircraft Check List
3. Minimum Equipment List (MEL)
4. Certification of Airworthiness (C of A)
5. SOP Cessna 208
6. Operation Manual Part A and B
7. Opspec
8. Certification of Registration (C of R)
9. Engine Certification
10. Route Chart (ONC, AIP etc)
11. Security Clearance
12. Flight Approval (For International route)

13. Operations Daily Record (ODR)
14. Passenger & Cargo Manifest
15. Flight & Maintenance Log
16. Weight & Balance Data
17. Compass Swing Data
18. Radio Permit
19. Aircraft Insurance
20. Dangerous Goods

2.14. RECORDS

The reports that shall comply by crew as administrative requirements can be follows:

(a) An Operation Daily Record (ODR) must be completed each day's. An ODR must be signed by Pilot in Command and Customer, distributed as well for Customer, Finance, Operations & file as properly. ODR shall be filled by accurate information including fuel data and dispatch reliability due to departure time.
(b) The Flight & Maintenance Log must be completed and the record shall be copied for Technical Services, Inspector, and Operation & Aircraft file.
(c) Fuel Dockets or Fuel consumption forms must be filled as well.
(d) Weekending Report that contains flying hours in last 7 days shall be reported to management and to be entry at Internal Report system.
(e) Completed Pilot Monthly Report (PMR)
(f) Operations Petty Cash per mission shall be reported with accurate supporting documents and submitted to finance. All documents shall be copied also for Operations actual budgeting reporting

SECTION 3
SAFETY

SECTION 3 SAFETY

3.1. HAZARDS & SAFETY CONTROL

3.1.1. Hazards & Safety Control

Pilot and Camera operator expose to potential hazard related to the aircraft operations requiring them to maintain awareness of their situations at all times. Due to the high elevation at mountainous and large changes in altitude during high altitude aerial photo flight, there are number of potential problem that Pilot and Camera operator must be aware of Some of these problems could become quite serious, i.e. hypothermia, hypoxia high altitude sickness.

During emergency or hard landing, heavy turbulence situation Pilot and Operator may inadvertently collide with LIDAR equipment. Electrical fire may occur in the cabin compartment caused by a short circuit at LIDAR equipment.

3.1.2. Safety Controls

Minimum mandatory Personal Protective Equipment of LIDAR is safety shoes and seat belt, which must be worn at all times when onboard the aircraft.

Emergency or hard landing or heavy turbulence: Navigator and operator should always wear seat belt at any time onboard the aircraft. General aircraft safety operations procedure must be followed.

Hypoxia and high-altitude sickness: When flying above 10,000 feet, use oxygen mask and communication system. Before airborne always check the oxygen bottle contains, airflow pressure gauge and oxygen mask conditions. To ensure the oxygen supplies work properly while airborne, Pilot and Camera Operator should inspect both oxygen quantity gauges in every 15 minutes.

Cold: When flying above 10,000 feet, temperature onboard the aircraft may drop to -10˚ Celsius, Pilot and Camera operator should wear warm clothing. Navigator and operator should use proper warm gloves.

Improper embark and disembark the aircraft: Navigator and operator need to be briefed before boarding the aircraft, wearing seat belt, fire extinguisher locations, emergency exit, etc.

Improper equipment installation and un-installation: Aviation engineer should install all the equipment to the aircraft with no exception.

3.2. FUEL PROCEDURES

Full details of fuel handling and quality control are contained in the OM Part A and CMM.

3.3. SAFETY EQUIPMENT

SCA shall ensure that safety equipments are available and maintained as properly.

The following items shall be on board during operations, such as:

- First aid Kit
- Fire Extinguisher
- ELT
- Jungle Survival
- Sea Survival

Any additional items will provide as the type of the operations. QSS Department will make any recommendation for any safety equipment to make the flight compliance of safety requirement.

SECTION 4
CREW MATTERS

SECTION 4 CREW MATTERS

4.1. CREW DUTIES & FLIGHT TIME LIMITATIONS

The Crew are contained of Pilot in Command (PIC), Engineer in Charge (EIC) & Operations Staff. Their responsibilities can be follows.

4.1.1. The Pilot in Command

The Pilot in Commands responsible for

(a) The ultimate safety of the aircraft, its passengers, crew and cargo. Such as ensuring safety precautions are taken before and during refueling.

(b) Ensuring a comprehensive passenger safety briefing is given before each departure.

(c) Following any course of action deemed necessary to preserve the safety of the flight. He may, in any such situation, deviate from prescribed routes, methods, procedures or minima only and to the extent required in consideration of safety. When such authority is exercised, in addition to keeping air traffic services advised of his actions and intentions, the Captain must forward a written report to the Chief Pilot tat the first practical opportunity.

(d) The Calculation of weight & balance data prior to each flight from first departure.

(e) Must keep appropriate ATC facilities and flight operations offices fully informed of the progress of the flight.

(f) Maintaining discipline and initiating orders, instructions or advice to the crew as necessary to properly conduct the flight

(g) Assuming operational responsibility for the aircraft from the time he arrives for duty until his duty is completed

(h) Analyzes weather conditions and determines correct performance of parameter for each flight

4.1.2. The Engineer in charge

The Engineer in charge is responsible for:

(a) Ensuring all aircraft assigned to the contract are kept in the highest possible state of cleanness, serviceability and appearance at all times.

(b) Compliance with all requirements of the CASR's, Company Maintenance Manual and other Company rules and regulations which is socialized at Basic Indoctrination season.

(c) Proper completion and certification of all aircraft documentation, work documentation and other Company paperwork requirements in accordance with applicable rules and regulations.

(d) Coordination with the Pilot in Command (PIC) on all on-site maintenance planning and execution, to minimize downtime and inconvenience to the customer.

(e) Making a proper hand-over to any replacement engineer and ensuring that no aircraft or contract location is departed before a replacement engineer arrives.

(f) Immediately reporting any discovered aircraft or documentation discrepancy, or any hazard, incident or accident relating to any aircraft or Company work place.

(g) Compliance with Company policy and procedures concerning the control of Spares, Tooling and Equipment in the Field.

All crew members are required to provide their best efforts in conducting their duties and to ensure they present themselves in the best interests of customer.

No staff member is to be affected by alcohol, narcotics or other stimulants' while on duty. As guidance, alcohol is removed from the bloodstream at a fixed rat of about one fluid ounce per hour, for the average person. Good sense will suggest no drinking alcohol within 8 to 14 hours of duty, to avoid infringing this regulation. After –effects of drugs are less well documented. Consult a doctor if in doubt.

4.1.3. Flight Time Limitations

All pilots shall observe the requirements of CASR Part 135, relating to flight time limitations and rest periods.

Single pilot flight time limitations are:

- 6 hours per day,

- 40 hours in any 7 consecutive days,
- 100 hours in any 30 consecutive days,
- 300 hours in any 90 consecutive days,
- 1,050 hours in any 365 consecutive days

When a flight operation is prolonged, resulting in a pilot flying more than 6 hours in 24 consecutive hours, the pilot shall be given a rest period of not less than 18 hours before resuming further duty.

4.2. DUTY TIME LIMITATION

A. Definitions

"Duty time" means that time flight crewmembers in available for flight and other related operational duties in any consecutive 24 hours period.

B. Description

1. The maximum duty time flight crewmember is 12 consecutive hours.
2. Following the duty time for crewmember shall be provided an interrupt rest period in suitable accommodations of not less than 10 consecutive hours.

4.2.1. Required Day Off

Crewmember and each flight operations officer with not less than one day off as A period of time consisting of 24 consecutive hours during which time a pilot, or flight operations officer are free from all duties or contact by the company, except:

(1) where a person is stationed for an extended period of time at a location other than that person's domicile, and where that person is in agreement, such station may be considered, for the purposes of a day off, that person's domicile.

(2) where an air carrier provides more than the minimum of one day off in any 7 consecutive day period, the requirement to provide such day off at that person's domicile, does not apply.

4.3. CREW RESOURCE MANAGEMENT

The Company strongly promotes the use of CRM techniques in all multi crew operations.

All crew members are reminded of the following CRM key factors which should contribute to safety and a professional working relationship between all crew members.

Crew Concept

"Individuals working together with clearly defined roles and responsibilities".

The Communication Process

a. Solicit and give feedback
b. Listen carefully
c. Focus on behavior, not people
d. Maintain focus on the goal
e. Verify operational outcome is achieved

Situational Awareness (S/A)

ADVOCACY - To increase other's S/A

State position
Suggest solutions
Be persistent and focused
Listen carefully

INQUIRY - To increase your own S/A

Decide what, whom, how to ask
Ask clear, concise questions
Relate concerns accurately
Draw conclusions from valid information
Keep an open mind

Remember - Questions enhance communication flow. Don't give in to the temptation to ask a question when Advocacy is required. Use of Advocacy or Inquiry should raise a "red flag".

"Cockpit Management Skills Contribute to Situational Awareness"

The Error Chain

The error chain is a concept that describes human error accidents as the result of a sequence of events that culminate in a mishap. There is seldom an overpowering cause, but rather a number of contributing factors or errors, hence the term "error chain". The links of these error chains are identifiable by means of eleven clues divided into operational and human factors. Breaking any one link in the chain might potentially break the entire error chain and prevent a mishap.

1 2 3 4 5 6	Failure to meet targets Undocumented Procedures Departure from SOP Violating minimums or limitations No one flying the aircraft No one looking out the window	OPERATIONAL FACTORS
7 8 9	Communications Ambiguity Unresolved discrepancies	HUMAN FACTORS

Decision-Making Process

Identify the problem

- Communicate it
- Achieve Agreement
- Obtain Commitment

Consider appropriate SOP's

Think beyond the obvious alternatives

Make decisions as a result of the process

Resist the temptation to make an immediate decision and then

support it with the facts

Techniques to Improve Decision-Making

Anticipate needs; think

aheadStandardized

Train and practice
Maintain a professional

attitudeCommunicate

effectively

Be disciplined and deliberate

4.4. CREW CHANGES

Pilot and Engineer field tours shall be scheduled and controlled by the Operations and Technical Departments respectively.

No crew member shall depart an assigned duty station until his replacement has arrivedand is fully prepared and briefed to commence work.

4.5. PILOT TRAINING

The check and training captains are responsible for ensuring that all pilots are trained in accordance with DGCA regulations. Each pilot working on these operations shall receive a Recurrent Training/ Proficiency Check annually.

Prof Check conducted in Pontianak or Tarakan base prior notification should be given to the customer if training is required due to scheduling constraints.

When any check flight has been carried out, copy of the training form is to be completed as per the training manual.

SECTION 5
EMERGENCY RESPONSE PLAN

SECTION 5 EMERGENCY RESPONSE PLAN

5.1. INTRODUCTION

This section is intended to provide guidance for Pontianak and Tarakan base in responding to such an event. This section describes the Company's aviation accident response organization and the overall response strategy and provides guidance on initial steps to be taken to activate PT. Smart Cakrawala Aviation (SCA) elements consistent with that strategy. All accident response actions will be aligned with priorities, listed below:

a. Support Company personnel and families.
b. Work with authorities to provide Life Safety support to affected personnel.
c. Proactively respond with sufficient resources to professionally support affected parties.
d. Professionally manage and protect Company resources.
e. Determine what occurred, and modify procedures as necessary to prevent recurrence, where possible.

5.2. RESPONSIBILITIES

SCA will establish direction and control for the entire response. SCA will act as the strategic decision making body and use Company resources, as necessary, to respond to internal and external demands. The response will include the establishment of an Emergency Response Center (ERC) to coordinate the technical aspects of a response and the related investigation.

Additionally, SCA may mobilize members of its emergency response investigation team (Go-Team) and may mobilize selected support personnel (On-Site Support Team) to the vicinity of the accident to jointly manage the On-Site response.

The Go-Team will join with appropriate agencies to investigate the causes of the accident. The On-Site Support Team will assist with personnel and family support, security, media relations, and relations with others affected by the accident.

5.3. SEARCH & RESCUE (SAR) MISSION

SCA shall take charge of the initial coordination and management of the Search and Rescue (SAR) mission. As the Operation Manager is based in Jakarta, he may delegate some SAR tasks to other personal in-charge and/or customer personnel in other locations, if this will achieve a more effective SAR effort. However, the Operation Manager will retain overall responsibility for managing and coordinating the SAR effort until a Civil Aviation Search and Rescue Agency officially takes over. As soon as the Search and Rescue Agency takes over responsibility for the SAR mission, the Operation Manager role will convert to coordinator between the Agency and SCA.

5.4. SAR PROCEDURES

A flight following system will be used to monitor the position of the aircraft and to determine if the aircraft is overdue. SAR response will be triggered by an alert system that commences when the aircraft is overdue and progresses to deployment of SAR resources when a Distress Phase is declared.

Any employee must notify the nearest SCA office should the existence of any SAR Phase come to their notice. The Operation Manager must be immediately informed of the incident and the ERP will be activated.

5.5. SAR RESOURCES

The authority responsible for Search and Rescue in Indonesia is the National SAR Agency, Badan SAR Nasional (BASARNAS)

Gedung Badan Sar National

Jlan Angkasa Blok B. 15 Kav 2-3, kemayoran

Jakarta Pusat 10720

Email : basarnas@basarnas.go.id
Cc : kagahar@basarnas.go.id

Pusdatin@basarnas.go.id

Telp : (62-21) 6570 1116
Fax : (62-21) 6570 1152

Additional details are contained in the SAR section of the Indonesian Aeronautical Information Publication (AIP).

Contact details for SAR agencies in other countries can be found in the SAR section of each country's AIP, copies of which are kept in the Operations room.

5.6. FLIGHT FOLLOWING

As quick and successful SAR operations depend upon knowing the position of the aircraft in distress, all flights shall be conducted on full SAR procedures.

A Primary Flight Following Station shall be nominated for each contract.

One or more Secondary Flight Following Stations shall be nominated for back-up purposes.

The Pilot in Command shall be responsible for maintaining continuous radio contact with the Primary Flight Following Station. The Primary Flight Following Station shall maintain continuous listening watches on the Company frequency at any time flying operations are in progress.

FOO shall keep an accurate log of all transmissions and record the pertinent details (eg, departure time, altitude, endurance and number of persons on board).

If the Pilot in Command is unable to maintain continuous radio contact with the Primary Flight Following Station, he shall establish contact with a Secondary Flight Following Station and request that Station to assume primary responsibility for flight following until such time that continuous radio contact can be re-established with the original Station.

5.7. EMERGENCY PHASES OF OVERDUE AIRCRAFT

Emergency Phases are divided into 3 parts - Uncertainty, Alert, Distress.

If, at any time during flight watch or SAR response, information is received that indicates the aircraft or its occupants are in grave and imminent danger, a Distress Phase must be declared immediately.

Similarly, if five (5) minutes elapses from the estimated time of arrival of the aircraft at its destination and no radio contact can be made with the aircraft, a Distress Phase must be declared immediately.

The SAR Phases are defined as:

5.7.1. Uncertainty Phase

Begins five (5) minutes after the aircraft fails to make a scheduled report.

The Operation Manager must be alerted as well as another Manager

All should attempt to contact the aircraft on HF and VHF radio.

Contact should also be attempted through the air traffic control or advisory service monitoring the progress of the flight.

5.7.2. Alert Phase

Begins fifteen (15) minutes after the aircraft fails to make a scheduled report (10 minutes after declaration of Uncertainty Phase) and when no visual or radio contact with the aircraft is made or when:

- Apprehension exists as to the safety of the aircraft;
- Information has been received that the safe functioning of the aircraft is impaired;
- There is reason to believe the safe conduct of the flight is in jeopardy.

At this point, SAR resources must be alerted.

5.7.3. Distress Phase

Begins when an aircraft fails to land within five (5) minutes of estimate time arrival or when:

- There is reasonable certainty that the aircraft and its occupants are threatened by grave and imminent danger and require assistance;
- The aircraft is known to be subject to unlawful interference;
- Following an Alert Phase there is the probability that the aircraft is in distress;
- Fuel on board is considered to be exhausted.
- The aircraft is likely to or about to make, or has made, a forced landing or has ditched or crashed.

At this point, SAR resources must be mobilized.

5.7.4. Overdue Aircraft Checklist

To enable a quick, effective and rational response to an SAR situation, the following checklist should be used to gather as much relevant information as possible. Information that is relevant and available will vary with each SAR situation but the more information that can be gathered, the more effective the SAR effort will be.

In addition to information concerning the overdue aircraft, local information may also be valuable to the Operation Manager and the Search and Rescue Agency, to improve the effectiveness of the SAR effort.

All information must be passed on to the Operation Manager as quickly as possible.

All persons involved in a SAR exercise should keep a personal written log of all events, communications, and the times they occurred. This will help to prevent overlaps or gaps in SAR coordination and act as a record for the administrative requirements that follow every SAR exercise.

SECTION 6
APPENDICES

SECTION 6 APPENDICES

6.1. FLIGHT FOLLOWING SYSTEM

1. **Pontianak Operation Control Center**
   VHF Frequency : MHz
   HF Frequency : MHz
   Operating Hrs : Sunrise to Sunset

2. **Tarakan Base Facilities**
   VHF Frequency : MHz
   HF Frequency : MHz
   Operating Hrs : Sunrise to Sunset

3. **Nabire Base Facilities**
   VHF Frequency : MHz
   HF Frequency : MHz
   Operating Hrs : Sunrise to Sunset

6.2. CONTACTS NUMBER

Ref to OM Part A chapter **2.3.1 Management Personnel And Contact Number**

6.3. CESSNA CARAVAN 208/208B AIRCRAFT SPECIFICATION

Cessna Caravan 208/208B is single engine operation under Day VFR only.

No	Description	PK-SNH	PK-SNN	PK-SNS	PK-SNP
1.	Serial Number	208-00609	208-0556	PC-6/B2-H4B2341	PC-6/B2-H4B5495
2.	Year of Manufacturer	5 MAR 2018	31 JAN 2014	8 FEB 2012	17 DEC 2018
3.	Powered by Engine	PT6A – 114 A	PT6A – 114 A	PT6A – 114 A	PT6A – 114 A
4.	Output Power	28 V	28 V	28 V	28 V
5.	MTOW Load	8095	8095	8785	9062
6.	Cabin Seats	9	9	9	9
7.	Average Cruise TAS	184	184	184	184
8.	Max Cruise Speed	167	167	175	195
9.	Max Speed (VMO)	175	175	175	175
10.	Fuel Consuming	193 L / Hours	193 L / Hours	193 L / Hours	193 L / Hours
11.	Baggage Compt. Max Floor Load.	3.390	3.390	3.596	3.596
12.	Empty Weight	4.705 LBS	4.705 LBS	5.189 LBS	5.150 LBS
13.	Total Fuel	2.246 LBS	2.246 LBS	2.246 LBS	2.246 LBS