

SINGLE RED LINE (SRL) SYSTEM FAILURE

- 1 SRL Switches & Circuit Breakers.....CHECK
- If condition cannot be corrected:*
- 2 SRL Switch.....OFF
- 3 EGT.....MONITOR
- 4 Land As Soon As Practical

FUEL PRESSURE DROP

- With engine malfunction:*
- 1 Condition Lever (affected engine).....EMERGENCY
STOP
 - 2 Main Fuel Valve Switch
(affected side).....CLOSED
 - 3 Engine Shutdown
(affected engine).....ACCOMPLISH
 - 4 Fuel Pressure (operating engine).....CHECK

TIP AUTO FUEL TRANSFER FAILURE - TIP MANUAL

- 1 Fuel Transfer Switch
(for tank not transferring).....TIP MANUAL
- 2 Fuel Quantity Indicators.....MONITOR
- 3 Tip Tank Quantity.....400 LB MAXIMUM
EACH AT LANDING
- 4 Fuel Unbalance.....150 LB MAXIMUM
AT LANDING

**OUTER AUTO FUEL TRANSFER FAILURE - OUTER
MANUAL**

- 1 Fuel Transfer Switch.....BOTH OFF
- 2 Outer Pump Manual Switch.....MAN
- 3 Fuel Quantity Indicators.....MONITOR
- 4 Fuel Unbalance.....150 LB MAXIMUM
AT LANDING
- 5 LH and RH Outer Fuel
Empty Lights.....ILLUMINATE
- 6 Outer Pump Manual Switch.....OFF

**OUTER FUEL TANK TRANSFER PUMP FAILURE
(EXCEPT S/N 700SA)**

In Auto mode:

- 1 Fuel Transfer Switch
(defective side).....OFF

If annunciator remains Illuminated:

- 2 Fuel Transfer Control Circuit
Breaker (defective side).....PULL

In Manual mode:

- 1 Outer Pump Switch.....OFF
- 2 Fuel Transfer Control Circuit
Breaker (defective side).....PULL
- 3 Outer Pump Switch.....MAN

HEATED WINDSHIELD OVER TEMP ILLUMINATED

- 1 Windshield Heat Low Switch
(faulty side).....OFF

TRIM AILERON TAB FAILURE

- 1 Trim Aileron Select Switch.....LH OR RH
- 2 Trim Aileron.....AS REQUIRED

TRIM AILERON TAB RUNAWAY

- 1 Trim Aileron Select Switch.....SELECT ONE SIDE
- If runaway continues:*
- 2 Trim Aileron Select Switch.....SELECT
OTHER SIDE

STATIC SYSTEM FAILURE

- 1 Static Source Select Valve.....ALTERNATE

P T/B PWR FAIL ILLUMINATED

S/N 1518 and above

- 1 Indicator Warning Flag.....VISIBLE
- 2 Turn and Bank Circuit Breaker.....PULL
- 3 Copilot Turn and Bank.....USE

CP T/B PWR FAIL ILLUMINATED

S/N 1518 and above

- 1 Indicator Warning FlagVISIBLE
- 2 Turn and Bank Circuit Breaker.....PULL

NO FLAP APPROACH AND LANDING

Descent:

- 1 Cabin Altitude.....SET
- 2 Fuel Transfer Control Switches.....TIP MANUAL
OR OFF
- 3 Altimeters.....SET
- 4 Windshield Defog.....AS REQUIRED
- 5 Ignition Switches.....AS REQUIRED
- 6 Anti-ice/De-ice.....AS REQUIRED
- 7 Taxi Lights.....AS REQUIRED

Approach:

- 8 Landing Data.....COMPUTED
(ADD 30% TO
LANDING
DISTANCE)
- 9 Fuel Quantity/Balance.....CHECK - IN LIMITS
- 10 Synchrophaser.....OFF
- 11 Differential Pressure.....ZERO
- 12 Condition Levers.....TAKEOFF LAND
- 13 Power.....AS REQUIRED
- 14 Airspeed150 KCAS MINIMUM
- 15 Cabin Sign.....ON
- 16 Anti-ice System.....AS REQUIRED
- 17 Landing Light.....AS REQUIRED
(BELOW 175 KCAS)

Before landing:

- 18 Landing GearDOWN
(BELOW 175 KCAS)
- 19 Airspeed.....140 KCAS MINIMUM
- 20 Brakes.....CHECK
- 21 Ignition Switches.....AS REQUIRED
- 22 Wing De-ice.....OFF
- 23 Autopilot/Yaw Damper.....OFF

Final approach (landing assured):

- 24 Airspeed.....1.25Vs
(115 KCAS MINIMUM)

Weight	1.25Vs (115KCAS MINIMUM)
11,025	129
10,500	127
10,000	123
9,500	119
9,000	116

EMERGENCY EXIT DOOR OPERATION

- 1 Manual Pressure Control Valve.....FULL DECREASE

When cabin depressurized:

- 2 Handle Access Cover.....PUSH IN
- 3 Emergency Exit Door Handle.....PULL, THEN LIFT
DOOR UP
AND INWARD

INADVERTENT ICING ENCOUNTER

- 1 Anti-ice (except engine).....ON
- 2 Wing De-iceON
- 3 Ignition Switches.....CONT OR ON
- 4 LH Engine Intake Anti-ice.....ON
- When proper operation of the LH engine is assured:***
- 5 RH Engine Intake Anti-ice.....ON
- When proper operation of both engines is assured:***
- 6 Ignition Switches.....CONT OR ON,
OBSERVE LIMITS

SEVERE ICING ENCOUNTER

- 1 Priority Handling.....REQUEST
- 2 Abrupt Maneuvering.....AVOID
- 3 Control Wheel.....HOLD
- 4 Autopilot.....DISENGAGE
- 5 Airspeed.....INCREASE
(180 KIAS
MINIMUM IN CRUISE)
- 6 Power.....MAINTAIN
OR INCREASE
- 7 Flaps.....MAINTAIN
- 8 Report Conditions to Air Traffic Control

	AFM Page
SINGLE RED LINE (SRL) SYSTEM FAILURE	4-1
A failure of the SRL System may be indicated by one or more of the following indications:	4-1
(1) An SRL FAIL annunciator illumination indicates loss of power to the system, loss of signal to the computer, loss of computer output signal, or the difference between the compensated EGT and SRL value is less than 15° C.	
(2) A sudden change in EGT of 20° C or more with no corresponding change in other engine parameters.	
(3) An erratic or fluctuating EGT indication.	
In the event of SRL failure, DO NOT reposition power levers until engine affected by the failure is positively identified.	4-1
If on ground, abort takeoff and repair system prior to flight.	
<div style="border: 2px solid black; padding: 5px; text-align: center; width: fit-content; margin: 10px auto;">CAUTION</div>	
DO NOT ADVANCE THE POWER LEVER ON AN ENGINE SUSPECTED OF SRL FAILURE BEYOND THE LAST KNOWN POSITION OF SAFE OPERATION.	4-1
1 SRL Switches & Circuit Breakers.....CHECK	
Verify that the SRL switches and circuit breakers are engaged or reset as necessary and observe EGT indication.	4-1
<i>If condition cannot be corrected:</i>	
2 SRL Switch.....OFF	
3 EGT.....MONITOR	
If engines are reasonably matched in torque, fuel flow and EGT, the unaffected engine may be used as a reference for setting power on the affected engine.	4-1
If uncertain about power setting, retard the power lever and follow the EGT schedule on the decal/face of the OAT gage.	4-1
For any OAT, the first two digits of the limiting EGT are noted on the face of the gage opposite the temperature.	
4 Land As Soon As Practical	4-1

FUEL PRESSURE DROP

With engine malfunction:

- | | | |
|---|--|-----|
| 1 | Condition Lever (affected engine).....EMERGENCY STOP | 4-2 |
|---|--|-----|

WARNING

DO NOT RETARD AFFECTED ENGINE POWER LEVER. PLACE AFFECTED ENGINE POWER LEVER TO TAKEOFF POSITION DURING FEATHERING OPERATION AND LEAVE THERE FOR THE REMAINDER OF FLIGHT.	4-2
---	-----

CAUTION

RUN-CRANK-STOP SWITCH MUST REMAIN IN RUN POSITION. DO NOT MOVE AFFECTED ENGINE POWER LEVER UNTIL PROPELLER IS FEATHERED.	4-2
--	-----

- | | | |
|---|--|-----|
| 2 | Main Fuel Valve Switch
(affected side).....CLOSED | 4-2 |
| 3 | Engine Shutdown
(affected engine).....ACCOMPLISH | 4-2 |
| 4 | Fuel Pressure (operating engine).....CHECK | 4-2 |

TIP AUTO FUEL TRANSFER FAILURE - TIP MANUAL

Fuel is not transferring from a tip tank to the main tank with the transfer switch in AUTO position	4-2
--	-----

- | | | |
|---|--|-----|
| 1 | Fuel Transfer Switch
(for tank not transferring).....TIP MANUAL | 4-2 |
| 2 | Fuel Quantity Indicators.....MONITOR | 4-2 |
| 3 | Tip Tank Quantity.....400 LB MAXIMUM
EACH AT LANDING | 4-3 |
| 4 | Fuel Unbalance.....150 LB MAXIMUM
AT LANDING | 4-3 |

NOTE

When the Fuel Transfer Switch is in the TIP MANUAL position, only the fuel in the tip tank will transfer to the main tank. Fuel cannot be transferred from either the left or right outer tank with the Fuel Transfer Switch in the AUTO position unless both tips can be emptied.	4-3
--	-----

**OUTER AUTO FUEL TRANSFER FAILURE - OUTER
MANUAL**

4-3

Fuel is not transferring from an outer tank to the main tank
with the transfer switch in AUTO position

- | | | | |
|---|-------------------------------|----------|-----|
| 1 | Fuel Transfer Switches..... | BOTH OFF | 4-3 |
| 2 | Outer Pump Manual Switch..... | MAN | 4-3 |

NOTE

Failure to position the Fuel Transfer Switch to OFF will
result in fuel not being pumped from the outer tanks.

- | | | | |
|---|---|------------------------------|-----|
| 3 | Fuel Quantity Indicators..... | MONITOR | 4-3 |
| 4 | Fuel Unbalance..... | 150 LB MAXIMUM
AT LANDING | 4-3 |
| 5 | LH and RH Outer Fuel
Empty Lights..... | ILLUMINATE | 4-3 |
| 6 | Outer Pump Manual Switch..... | OFF | 4-3 |

NOTE

If sufficient usable fuel remains in one of the outer tanks, it
may be used by disengaging the FUEL TRANSFER CONT
circuit breaker for the empty tank and placing the Outer
Pump Switch to MAN.

CAUTION

FAILURE TO DISENGAGE THE FUEL TRANSFER CONT
CIRCUIT BREAKER FOR THE EMPTY TANK MAY
RESULT IN DAMAGE TO THE TRANSFER PUMP.

**OUTER FUEL TANK TRANSFER PUMP FAILURE (EXCEPT
S/N 700SA)**

LH or RH Outer Fuel Empty Annunciator Illuminates with
Fuel Quantity Indicator showing fuel remaining in tank:

In Auto mode: 4-4

- | | | | |
|---|---|-----|-----|
| 1 | Fuel Transfer Switch
(defective side)..... | OFF | 4-4 |
|---|---|-----|-----|

If annunciator remains illuminated: 4-4

- | | | | |
|---|--|------|-----|
| 2 | Fuel Transfer Control Circuit
Breaker (defective side)..... | PULL | 4-4 |
|---|--|------|-----|

In Manual mode: 4-4

- | | | | |
|---|--|------|-----|
| 1 | Outer Pump Switch..... | OFF | 4-4 |
| 2 | Fuel Transfer Control Circuit
Breaker (defective side)..... | PULL | 4-4 |
| 3 | Outer Pump Switch..... | MAN | 4-4 |

CAUTION

MAXIMUM FUEL UNBALANCE (TIP TANK AND OUTER
TANK COMBINED) IS 150 POUNDS AT LANDING.

HEATED WINDSHIELD OVER TEMP ILLUMINATED	
1 Windshield Heat Low Switch	4-4
(faulty side).....OFF	4-4

TRIM AILERON TAB FAILURE	
Selecting LH or RH on the Trim Aileron Select Switch disconnects the electrical interconnection between the left and right trim aileron tabs. The surface can be operated independently by the control switch.	4-4

NOTE

The indicator will only register to the halfway mark either L or R when the operative trim aileron tab reaches maximum deflection.	4-4
1 Trim Aileron Select Switch.....LH OR RH	4-4
2 Trim Aileron.....AS REQUIRED	4-4
Determine operating side by selecting one side and checking operation. If trim aileron remains inoperative, select and check the other side.	

TRIM AILERON TAB RUNAWAY	
Maintain lateral control with spoiler and rudder	4-4
1 Trim Aileron Select Switch.....SELECT ONE SIDE	4-4
<i>If runaway continues:</i>	4-4
2 Trim Aileron Select Switch.....SELECT OTHER SIDE	4-4
Operate the selected surface by the trim aileron control switch and retrim	4-4

STATIC SYSTEM FAILURE

Loss of or erratic indications from the altimeter, airspeed,
or rate of climb indicators.

- 1 Static Source Select Valve.....ALTERNATE

CAUTION

USE APPLICABLE ALTERNATE STATIC CORRECTION
CHARTS IN SECTION 6 OF THE AFM.

NOTE

The differential indicating portion of the Cabin Altitude
Differential Pressure Indicator may not function.

P T/B PWR FAIL ILLUMINATED

S/N 1518 and above

- 1 Indicator Warning Flag.....VISIBLE
2 Turn and Bank Circuit Breaker.....PULL
3 Copilot Turn and Bank.....USE

CP T/B PWR FAIL ILLUMINATED

S/N 1518 and above

- 1 Indicator Warning FlagVISIBLE

NOTE

The warning flag will not become visible until the voltage to
the system decreases to approximately 12 VDC or less.
The system will remain reliable until the warning flag
becomes visible.

- 2 Turn and Bank Circuit Breaker.....PULL

NOTE

If a system failure occurs which causes a steadily
decreasing voltage in the LH and RH DC load buses
simultaneously:

(1) The pilot's turn and bank indicator will flag somewhere
in the range of 23.4 V to 22.0 V.

(2) The Master Caution light and the panel annunciator will illuminate somewhere in the range of 20 V to 17 V. This means that the CP T/B PWR FAIL annunciator will be illuminated also: however the decreasing voltage has not yet reached a value at which the copilot's turn and bank fails. This will occur in the range of 12 V to 10 V at which time the indicator will flag.

(3) If it is necessary to preserve the battery in order to use the copilot's turn and bank later in the flight, the pilot can isolate the battery.

NO FLAP APPROACH AND LANDING

Descent:

- | | | |
|---|---|--------|
| 1 | Cabin Altitude.....SET | 4-5 |
| | Set pressure controller to 1000 feet above landing field elevation. | 5-18-2 |

Adjust rate control knob so that airplane will be fully depressurized prior to landing. Generally, a rate of 300 to 500 fpm will be comfortable and ensure proper depressurization.

- | | | |
|---|---|--------|
| 2 | Fuel Transfer Control Switches.....TIP MANUAL
OR OFF | 5-18-2 |
|---|---|--------|

Select TIP MANUAL or OFF to prevent automatic operation of outer fuel transfer pumps during prolonged descent.



DO NOT USE OUTER FUEL TANKS DURING DESCENT. 5-18-2

- | | | |
|---|-----------------------------------|--------|
| 3 | Altimeters.....SET | 5-18-2 |
| 4 | Windshield Defog.....AS REQUIRED | 5-18-2 |
| 5 | Ignition Switches.....AS REQUIRED | 5-18-2 |

Select CONT (auto ignition installed) or ON (auto ignition not installed) in icing conditions or heavy precipitation. Observe duty cycle limitations.

In other than these conditions, select AUTO (auto ignition installed) or OFF (auto ignition not installed).

CAUTION

- IGNITION SHALL BE SELECTED TO CONT (IF AUTO IGNITION INSTALLED) OR ON (IF CONTINUOUS IGNITION INSTALLED) DURING APPROACH AND LANDING WHILE IN OR SHORTLY FOLLOWING FLIGHT IN ACTUAL OR POTENTIAL ICING CONDITIONS. 5-18-2
- 6 Anti-ice/De-ice.....AS REQUIRED 5-18-2
a Pitot & Static Anti-Ice.....ON
b Windshield Heat.....LOW
If descent through icing conditions is anticipated, turn on all anti-ice and de-ice equipment.
- 7 Taxi Lights.....AS REQUIRED
Recommend on for descent.
Approach: 5-18-2
- 8 Landing Data.....COMPUTED 5-18-2
(ADD 30% TO
LANDING
DISTANCE)
Compute landing weight, V_{REF} for flap up position, and landing distance. Other landing data may be required depending upon circumstances. Refer to Performance Section of AFM.
- 9 Fuel Quantity/Balance.....CHECK - IN LIMITS 5-18-2
Tip fuel must be below 400 pounds or an overweight landing inspection will be required. Balance within 150 pounds.
- 10 Synchrophaser.....OFF 5-18-2
- 11 Differential Pressure.....ZERO 5-18-2
Confirm cabin will be depressurized prior to landing.
- 12 Condition Levers.....TAKEOFF LAND 5-18-2
Provides maximum thrust in the event of a go around.
- 13 Power.....AS REQUIRED 5-18-2
- 14 Airspeed150 KCAS MINIMUM
- 15 Cabin Sign.....ON
Brief passengers
- 16 Anti-ice System.....AS REQUIRED
a Pitot & Static Anti-ice.....ON 5-18-2
b Windshield Heat.....LOW 5-18-2
- 17 Landing Light.....AS REQUIRED 5-18-2
(BELOW 175 KCAS) 5-18-3

Before landing:**NOTE**

It is strongly recommended that the airplane be established on a stable approach for the last 1000 feet of descent in IMC conditions (or for the complete final approach segment of a non precision approach if that segment is less than 1000 feet above the field) or the last 500 feet of descent in VMC conditions. A stable approach means that the airplane is configured for landing, all checklists have been completed, power is established at a setting to maintain an airspeed of V_{REF} to V_{REF} plus 20 knots, the airspeed is steady at V_{REF} to V_{REF} plus 20 knots, the proper glide path is being maintained, the airplane is trimmed, and no unusual maneuvering is required to accomplish the landing. A missed approach is recommended if deviation from any of these parameters occurs.

- 18 Landing GearDOWN 4-6
(BELOW 175 KCAS)
Opposite point of intended landing or at Final Approach 4-6
Fix.
Ensure 3 green landing gear position lights illuminated and the red unsafe light extinguished. If gear malfunction occurs, emergency extension may be required. Maximum speed for normal extension is 175 KCAS.
- 19 Airspeed.....140 KCAS MINIMUM 4-6
- 20 Brakes.....CHECK
Depress brake pedals, check firm pressure.
- 21 Ignition Switches.....AS REQUIRED 5-18-3/-4

CAUTION

THE IGNITION SHALL BE SELECTED TO CONT (AUTO- 5-18-3/-4
IGNITION INSTALLED) OR ON (CONTINUOUS IGNITION
INSTALLED) WHERE THERE IS WATER, SLUSH OR
SNOW ON THE RUNWAY.

CONT or ON if runway is contaminated, raining, or in icing conditions. Also, CONT or ON shortly following exit from icing conditions whenever ice remains forward of the engine nacelle. (Observe ignition duty cycle limits).
Otherwise, for aircraft with auto ignition installed, AUTO.

22 Wing De-ice.....OFF 5-19

NOTE

If the wing deice system is in auto during the approach,
cycle the wing deice off and on to allow one additional
cycle, then select the system off prior to landing. 5-19

23 Autopilot/Yaw Damper.....OFF

Final approach (landing assured):

24 Airspeed.....1.25Vs 4-6
(115 KCAS MINIMUM)

NOTE

Landing distance will increase approximately 30 %. 4-6

Weight	1.25Vs (115KCAS MINIMUM)
11,025	129
10,500	127
10,000	123
9,500	119
9,000	116

EMERGENCY EXIT DOOR OPERATION

- | | | |
|---|---|-----|
| 1 | Manual Pressure Control Valve.....FULL DECREASE | 4-6 |
| | <i>When cabin depressurized:</i> | 4-6 |
| 2 | Handle Access Cover.....PUSH IN | 4-6 |
| 3 | Emergency Exit Door Handle.....PULL, THEN LIFT
DOOR UP
AND INWARD | 4-6 |

INADVERTENT ICING ENCOUNTER

4-6

NOTE

Conditions exist for icing when the outside air temperature (OAT) on the ground is +10° C or below or the indicated OAT (RAT) in flight is +10° C or below and visible moisture in any form is present.

4-6

WARNING

IN THE EVENT OF AN INADVERTENT ICING ENCOUNTER, IMMEDIATE ACTION MUST BE TAKEN BY THE PILOT WHEN THE SITUATION IS DISCOVERED.

4-6

- (1) MAINTAIN AIRPLANE CONTROL.
- (2) CHECK ENGINE INLETS AND WING LEADING EDGES AND TAKE APPROPRIATE ACTION AS DESCRIBED IN THIS PROCEDURE.
- (3) EXIT ICING CONDITIONS, IF REQUIRED.

IN ORDER TO MINIMIZE ICE ACCUMULATIONS ON UNPROTECTED LOWER SURFACES, MAINTAIN A MINIMUM SPEED OF 180 KIAS DURING OPERATIONS IN SUSTAINED CRUISE IN ICING CONDITIONS. THIS WILL PROVIDE AN ANGLE OF ATTACK THAT REDUCES EXPOSURE (FRONTAL AREA) OF THE LOWER SURFACES TO ICE ACCUMULATION. IF UNABLE TO MAINTAIN 180 KIAS AT MAXIMUM CONTINUOUS POWER, A CHANGE IN ALTITUDE AND/OR COURSE MAY BE NECESSARY TO MAINTAIN MINIMUM AIRSPEED AND/OR TO EXIT THE ICING CONDITIONS.

4-7

IF ICE HAS BEEN ALLOWED TO BUILD UP ON THE ENGINE AIR INLET, IT MUST BE REMOVED AS SOON AS POSSIBLE. HOWEVER, BEFORE ACTIVATING THE ENGINE AIR INTAKE ANTI-ICE, THE PILOT SHOULD BE AWARE THAT AS THE ICE IS REMOVED, IT COULD DISRUPT THE AIRFLOW TO THE ENGINE AND RESULT IN FLAMEOUT OF THAT ENGINE. THE PILOT SHOULD BE PREPARED FOR THE POSSIBILITY OF SINGLE ENGINE OPERATION.

4-7

- | | | | |
|---|---|----------------|-----|
| 1 | Anti-ice (except engine)..... | ON | 4-7 |
| 2 | Wing De-ice | ON | 4-7 |
| 3 | Ignition Switches..... | CONT OR ON | 4-7 |
| | If Auto ignition is installed "CONT", if Continuous ignition is installed "ON". | | |
| 4 | LH Engine Intake Anti-ice..... | ON | 4-7 |
| | <i>When proper operation of the LH engine is assured:</i> | | |
| 5 | RH Engine Intake Anti-ice..... | ON | 4-7 |
| | <i>When proper operation of both engines is assured:</i> | | |
| 6 | Ignition Switches..... | CONT OR ON, | 4-7 |
| | | OBSERVE LIMITS | |
| | If auto ignition is installed "CONT", if continuous ignition is installed "ON". | | |

SEVERE ICING ENCOUNTER

- | | | | |
|---|--|--------------------|-----|
| | | 4-7 | |
| | Severe icing may result with visible rain at temperatures below 0° C, or with droplets that splash or splatter on impact at temperatures below 0° C. | 4-7 | |
| | Take steps to exit severe icing immediately. | | |
| | Procedures for exiting severe icing apply to all flight phases from takeoff to landing. While severe icing may form at temperatures as low as minus 18° C, increase vigilance is warranted at temperatures around freezing with visible moisture present. If the visual cues specified in the Operating Limitations Section of the AFM for identifying severe icing conditions are observed, accomplish the following. | 4-7 | |
| 1 | Priority Handling..... | REQUEST | 4-8 |
| | Change route and/or altitude to immediately exit the severe icing and to avoid extended exposure to flight conditions more severe than those for which the airplane is certified. | | 4-8 |
| 2 | Abrupt Maneuvering..... | AVOID | 4-8 |
| 3 | Control Wheel..... | HOLD | 4-8 |
| | If the autopilot is engaged, firmly hold the control wheel prior to disengaging the autopilot. If the autopilot is not engaged, it should remain disengaged. | | 4-8 |
| 4 | Autopilot..... | DISENGAGE | 4-8 |
| 5 | Airspeed..... | INCREASE | 4-8 |
| | | (180 KIAS | |
| | | MINIMUM IN CRUISE) | |
| | If an unusual roll response, an uncommanded roll, or an unusual trim is observed, lower the nose (reduce the angle of attack) and allow the airspeed to increase before any reduction of engine power. | | 4-8 |

- | | | | |
|---|--|-------------------------|-----|
| 6 | Power..... | MAINTAIN
OR INCREASE | 4-8 |
| 7 | Flaps..... | MAINTAIN | 4-8 |
| | Do not extend flaps during extended operation in icing conditions. Operation with flaps extended can result in a reduced wing angle of attack, with the possibility of ice forming on the upper surface further aft on the wing than normal, possibly aft of the protected area. | | 4-8 |
| | If the flaps are already extended, do not retract them until the airframe is clear of ice. | | |
| 8 | Report Conditions to Air Traffic Control | | 4-8 |

ABNORMAL

MU-2B-60 EMERGENCY AND ABNORMAL PROCEDURES TABLE OF CONTENTS

ENGINE	ENGINE FAILURE PRIOR TO LIFTOFF	E-1
	ENGINE FAILURE AFTER LIFTOFF- CONTINUED CLIMB NOT POSSIBLE	E-1
	ENGINE FAILURE AFTER LIFTOFF – CONTINUED CLIMB	E-1
	BETA LIGHT ON IN FLIGHT	E-2
	AUTOIGNITION RELIGHT	E-2
	FAILURE (applicable to airplanes equipped with auto-ignition system)	
	ENGINE SHUTDOWN	E-2
	DRIFTDOWN	E-3
	SINGLE ENGINE LANDING	E-3
	SINGLE ENGINE GO-AROUND	E-5
	ENGINE FIRE	E-5
	AIRSTART	E-5
	SRL SYSTEM FAILURE	A-1
	FUEL BOOST PUMP FAILURE	E-6
FUEL	FUEL PRESSURE DROP	A-1
	TIP AUTO FUEL TRANSFER FAILURE- TIP MANUAL	A-1
	OUTER AUTO FUEL TRANSFER FAILURE – OUTER MANUAL	A-2
	OUTER FUEL TANK TRANSFER PUMP FAILURE (except S/N 700SA)	A-2
	SMOKE AND FUME ELIMINATION	E-7
	BATTERY OVERHEAT	E-10
ELECTRICAL/ SMOKE	L OR R DC GEN OUT ANNUNCIATOR ILLUMINATES	E-11
	INVERTER FAIL ANNUNCIATOR CYCLES ON/OFF	E-12

SEE NEXT PAGE

ELECTRICAL/ SMOKE	INVERTER FAIL ANNUNCIATOR ILLUMINATES	E-12
	L FEEDER OUT ANNUNCIATOR ILLUMINATES	E-13
	R FEEDER OUT ANNUNCIATOR ILLUMINATES	E-13
LANDING GEAR	LANDING GEAR NOT FULLY RETRACTED	E-8
	LANDING GEAR EMERGENCY EXTENSION	E-8
AIR CONDITIONING/ PRESSURIZATION	CABIN PRESS LOW ANNUNCIATOR ILLUMINATED	E-9
	AIR COND SYS FAIL ANNUNCIATOR ILLUMINATED	E-9
	EMERGENCY DESCENT	E-10
	PITCH TRIM RUNAWAY	E-13
FLIGHT CONTROLS	TRIM AILERON TAB FAILURE	A-3
	TRIM AILERON TAB RUNAWAY	A-3
	NO FLAP APPROACH AND LANDING	A-4
	STATIC SYSTEM FAILURE	A-3
ICE PROTECTION	HEATED WINDSHIELD OVER TEMP ILLUMINATED	A-2
	INADVERTANT ICING ENCOUNTER	A-6
	SEVERE ICING ENCOUNTER	A-6
	DEFOG OVER TEMP ANNUNCIATOR ILLUMINATED	E-9
MISCELLANEOUS	P T/B PWR FAIL ANNUNCIATOR ILLUMINATED	A-3
	CP T/B PWR FAIL ANNUNCIATOR ILLUMINATED	A-3
	EMERGENCY EXIT DOOR OPERATION	A-5

Intentionally Left Blank

ENGINE FAILURE PRIOR TO LIFTOFF

- 1 Power Levers.....GROUND IDLE
- 2 Brakes.....AS REQUIRED
- 3 Reverse Thrust.....AS REQUIRED

ENGINE FAILURE AFTER LIFTOFF - CONTINUED CLIMB NOT POSSIBLE

- 1 Landing Gear.....DOWN
- 2 Power(operating engine).....AS REQUIRED
- 3 Flaps.....TAKEOFF
- 4 Land Straight Ahead.....105 KCAS MINIMUM

ENGINE FAILURE AFTER LIFTOFF - CONTINUED CLIMB

- 1 Landing Gear.....UP
- 2 Airspeed.....V_{XSE} MINIMUM
FOR FLAP
CONFIGURATION
- 3 Condition Lever (failed engine).....EMERGENCY
STOP
- 4 Power Lever (failed engine).....TAKEOFF
- 5 Landing Light.....RETRACT
- 6 Airspeed.....V_{YSE} MINIMUM
FOR FLAP
CONFIGURATION
- 7 Flaps.....5°
- 8 Airspeed.....140 KCAS MINIMUM
- 9 Flaps.....UP
- 10 Airspeed.....150 KCAS
- 11 Power(operating engine).....AS REQUIRED
- 12 Engine Shutdown
(failed engine).....ACCOMPLISH

BETA LIGHT ON IN FLIGHT

With no control problem:

- 1 Engine Shutdown (affected engine).....PRIOR
TO LANDING

With control problem:

- 2 Engine Shutdown (affected engine).....IMMEDIATE
- 3 Land Using Single Engine Procedures

AUTO IGNITION RELIGHT FAILURE (APPLICABLE TO AIRPLANES EQUIPPED WITH AUTO IGNITION SYSTEM)

- 1 Failed Engine EGT and RPM.....CHECK
If EGT or RPM abnormal:
- 2 Condition Lever (failed engine).....EMERGENCY
STOP
- 3 Power Lever (failed engine).....TAKEOFF
- 4 Engine Shutdown.....ACCOMPLISH

ENGINE SHUTDOWN

- 1 Condition Lever (failed engine).....EMERGENCY
STOP
- 2 Power Lever (failed engine).....TAKEOFF
- 3 Trim.....SET
- 4 Power (operating engine).....AS REQUIRED
- 5 DC Generator Switch (failed engine).....OFF
- 6 Voltammeter
(main bus tie check in flight).....CHECK
- 7 DC Generator Load (operating engine).....REDUCE
(IF NECESSARY)

- 8 Cabin Air Selector Switch.....OPERATING
ENGINE OR RAM
- 9 Operating Engine Power Lever.....SET
AS REQUIRED
- 10 Synchrophaser.....OFF
- 11 Ignition Switch (failed engine).....OFF

DRIFTDOWN

- 1 Engine Shutdown (failed
engine).....ACCOMPLISH
- 2 Power (operating engine).....AS REQUIRED
- 3 Airspeed.....135 KCAS
RECOMMENDED FOR
PROLONGED DESCENT
- 4 Pressurization System.....SELECT
OPERATING ENGINE
BLEED AIR

SINGLE ENGINE LANDING

- 1 Engine Shutdown (failed
engine).....ACCOMPLISH
Descent (single engine) :
- 2 Cabin Altitude.....SET
- 3 Fuel Transfer Control Switches... ..TIP MAN OR OFF
- 4 Altimeters.....SET
- 5 Windshield Defog.....AS REQUIRED
- 6 Ignition Switch.....AS REQUIRED
- 7 Anti-ice & De-ice.....AS REQUIRED
- 8 Taxi Lights.....AS REQUIRED

Approach (single engine) :

- 9 Landing Data.....COMPUTED
- 10 Fuel Quantity / Balance.....CHECK
- 11 Propeller Synchrophaser.....OFF
- 12 Differential Pressure.....ZERO
- 13 Condition Lever (operating
engine).....TAKEOFF LAND
- 14 Power Lever (operating
engine).....AS REQUIRED
- 15 Cabin Sign.....ON
- 16 Windshield Heat.....LOW
- 17 Cabin Air Selector Switch.....OFF OR RAM
- 18 Landing Gear.....UP
- 19 Flaps.....UP
- 20 Airspeed.....150 KCAS
(140 KCAS MINIMUM)

Base leg or final descent :

- 21 Flaps.....5°
- 22 Airspeed.....140 KCAS
(130 KCAS MINIMUM)
- 23 Ignition Switch.....AS REQUIRED
- 24 Wing De-ice.....OFF
- 25 Autopilot / Yaw Damper.....OFF
- 26 Landing Lights.....AS REQUIRED

Landing assured :

- 27 Landing Gear.....DOWN
- 28 Power Lever (operating
engine).....AS REQUIRED
- 29 Brakes.....CHECK
- 30 Flaps.....20°
- 31 Airspeed.....110 KCAS
OVER RUNWAY

After touchdown:

- 32 Brakes.....AS REQUIRED
- 33 Reverse.....AS REQUIRED

SINGLE ENGINE GO AROUND

- 1 Condition Lever (operating engine).....TAKEOFF LAND
- 2 Power Lever(operating engine).....TAKEOFF
- 3 Landing Gear.....UP
- 4 Landing Light.....RETRACT
- 5 Flaps.....5°
- 6 Airspeed.....140 KCAS
- 7 Flaps.....UP
(WHEN POSITIVE CLIMB ESTABLISHED)
- 8 Cabin Air Selector Switch.....RAM OR OFF
- 9 Airspeed.....150 KCAS
- 10 Engine Anti-ice Switch.....AS REQUIRED

ENGINE FIRE

- 1 Condition Lever (failed engine).... EMERGENCY STOP
- 2 Power Lever (failed engine).....TAKEOFF
- 3 Fire Handle (failed engine).....PULL
- 4 Engine Shutdown.....ACCOMPLISH
- 5 Land As Soon As Possible

AIRSTART

- 1 Airspeed.....100 TO 180 KCAS
-150 KCAS
RECOMMENDED
- 2 Altitude.....BELOW 20,000 FT
- 3 SRL System.....ON
- 4 Synchrophaser.....OFF
- 5 EGT.....BELOW 200°C
(IF FEASIBLE)
- 6 Condition Lever.....MINIMUM CRUISE

- 7 Power Lever.....HALF INCH
FORWARD
OF FLIGHT IDLE
- 8 Start Selector Switch.....AIRSTART & SAFE
- 9 Ignition Switch.....OFF
- 10 Run-Crank-Stop Switch.....RUN
- 11 Unfeather Switch.....HOLD
TO 30% RPM
- 12 Condition Lever.....AS REQUIRED
- 13 Power Lever.....AS REQUIRED
- 14 Voltammeter
(main bus tie check in flight).....CHECK
- 15 DC Generator Switch.....ON / RESET
IF NECESSARY
- 16 Voltammeter.....27 TO 29.5 VDC
- 17 Ignition Switch.....AS REQUIRED
- 18 Cabin Air Selector Switch.....BOTH
- 19 Synchrophaser.....AS REQUIRED

FUEL BOOST PUMP FAILURE

- 1 Fuel Boost Pump
Circuit Breaker (faulty side).....DISENGAGE
- 2 Land As Soon As Possible

SMOKE AND FUME ELIMINATION

Cabin or cockpit smoke or odor, known or unknown source:

- 1 Oxygen Outlet Valve.....OPEN
- 2 Oxygen Masks.....DON AND USE

Known source:

- 1 Faulty Circuit or System.....SWITCH OFF AND
DISENGAGE
ASSOCIATED
CIRCUIT BREAKERS

Unknown source:

- 1 Cockpit and Cabin Room Light
Switches.....ON
- 2 Master Switch.....EMERGENCY
- 3 Battery Switches.....BOTH ISOLATE
- 4 DC Generator Switches.....BOTH OFF
- 5 Inverter Switch.....OFF
- 6 All Switches and Circuit
Breakers.....OFF OR
DISENGAGE
- 7 Master Switch.....NORMAL
- 8 Battery, DC Generator
Switches and Inverter Switch.....ON

If smoke or odor stops :

- 9 Switches and Circuits Breakers
for Equipment Essential to the
Particular Phase of Flight.....ON OR ENGAGE
ONE AT A TIME
(ATTEMPT TO
ISOLATE CIRCUIT)

If smoke or odor increases:

- 10 Cabin Air Selector Switch.....RAM
- 11 Battery, DC Generator, and
Inverter Switches.....OFF
- 12 Manual Pressure Control Valve..FULL DECREASE

- 13 Execute High Speed Descent
to Low Altitude If Necessary
- 14 Pilot's Communication Door.....OPEN
- 15 Emergency Exit.....OPEN
(IF FEASIBLE)

If smoke or odor persists:

- 16 Land As Soon As Possible

LANDING GEAR NOT FULLY RETRACTED

- 1 Airspeed.....130 KCAS MAXIMUM
- 2 Flaps.....5°
- 3 Landing Gear.....DOWN

***If green lights indicate normal, but unsafe light
indicates abnormal:***

- 4 Land As Soon As Practical

***If green lights indicate abnormal, and unsafe light
indicates abnormal:***

- 4 Landing Gear Emergency
Extention.....ACCOMPLISH
- 5 Land As Soon As Practical

If green lights and unsafe light indicate normal:

- 4 Landing Gear.....UP
- 5 Green Lights and Unsafe Light.....CHECK NORMAL
INDICATION

LANDING GEAR EMERGENCY EXTENSION

- 1 Airspeed.....130 KCAS MAXIMUM
- 2 Flaps.....5°
- 3 Landing Gear Circuit Breakers
(control, landing gear, door).....PULL
- 4 Landing Gear Position
Indicator Circuit Breaker.....ENGAGED

- 5 Landing Gear.....DOWN
- 6 Landing Gear Emergency
Handle.....PULL AND PUMP
- 7 Landing Gear Light.....CHECK

CABIN PRESS LOW ANNUNCIATOR ILLUMINATED

- 1 Oxygen.....AS REQUIRED
- 2 Cabin Pressurization Control.....CHECK
- 3 Manual Pressure Control Valve.....FULL INCREASE
- 4 Cabin Air Selector Switch.....BOTH OR
OPERATING ENGINE

If pressure remains low :

- 5 Descend to Alltitude Not Requiring Oxygen

AIRCOND SYS FAIL ANNUNCIATOR ILLUMINATED

- 1 Cabin Air Selector Switch.....RH
- 2 Cabin Pressurization Control.....CHECK
- 3 Oxygen.....AS REQUIRED
- 4 Descend to Altitude Not
Requiring Oxygen.....HIGH OR LOW
SPEED DESCENT

If air conditioning system fail annunciator remains illuminated:

- 5 Cabin Air Selector Switch.....RAM

DEFOG OVER TEMP ANNUNCIATOR ILLUMINATED

- 1 Defogging Selector Valve.....FULL DEC
- 2 Emergency Descent.....AS SOON
AS POSSIBLE
- 3 Manual Pressure Control Valve.....FULL DEC
- 4 Cabin Air Selector Switch.....RAM

EMERGENCY DESCENT

High Speed Descent

- 1 Oxygen Mask / Valve.....DON / OPEN
- 2 Power Levers.....FLIGHT IDLE
- 3 Condition Levers.....TAKEOFF LAND
- 4 Airspeed.....V_{MO}/M_{MO}

Low Speed descent

- 1 Oxygen Mask / Valve.....DON / OPEN
- 2 Power Levers.....FLIGHT IDLE
- 3 Condition Levers.....TAKEOFF LAND
- 4 Landing Gear.....DOWN
(BELOW 175 KCAS)
- 5 Flaps.....40°
(BELOW 120 KCAS)
- 6 Airspeed.....V_{FE} (155
KCAS MAXIMUM)

BATTERY OVERHEAT

***Battery temperature 120° annunciator
illuminates :***

If on ground : DO NOT TAKEOFF
AND MONITOR

If in flight:

- 1 Battery Temperature.....MONITOR

If temperature reaches 140 ° F:

- 2 Battery Isolate Switch.....ISOLATE

***Battery overtemp annunciator (RED 150°F Light)
illuminates :***

If on ground : ABORT

If in flight:

- 3 Battery Isolate Switch.....ISOLATE

If temperature continues to rise after isolating and goes full scale :

- 4 Land As Soon As Possible

If battery has cooled below 120 ° F approaching terminal area:

- 5 Battery Isolate Switch.....ON (FOR
LANDING TO
PREVENT POWER
LOSS AT
LOW RPM)

If battery temperature 120 ° annunciator reilluminates, exercise caution. Notify tower of problem prior to landing:

- 6 Battery Isolate Switch.....ISOLATE

L OR R DC GEN OUT ANNUNCIATOR ILLUMINATED

- 1 Generator Control and
Generator Field Circuit
Breakers (affected side).....CHECK
IF OUT, RESET

If light remains illuminated:

- 2 DC Generator Switch
(affected side).....RESET, THEN ON

If light is not extinguished:

- 3 DC Generator Switch (affected
side).....OFF
- 4 Voltammeters
(main bus tie check in flight).....CHECK
- 5 DC Generator Load (operating
engine).....REDUCE
(IF NECESSARY)

INVERTER FAIL ANNUNCIATOR CYCLES ON/OFF

Applies to S/N 700SA, 731SA Through 798SA

- 1 Inverter Switch.....OFF
- 2 Fuel Quantity.....CALCULATE
- 3 Engine Instruments (operating
engine).....MONITOR
- 4 Alternate Flight Instruments.....USE
- 5 Land As Soon As Possible

INVERTER FAIL ANNUNCIATOR ILLUMINATED

***If aircraft is not equipped with a 6 bus AC system,
skip steps 3 and 4:***

- 1 Inverter Switch.....SELECT
OTHER INVERTER
- 2 Affected Inverter Power and
Control Circuit Breakers.....PULL

If main inverter failed (6 AC bus):

- 3a LH 115VAC Power Circuit
Breaker.....PULL
- 3b LH 26VAC Power Circuit
Breaker.....PULL

If standby inverter failed (6 AC bus):

- 4a RH 115VAC Power Circuit
Breaker.....PULL
- 4b RH 26VAC Power Circuit
Breaker.....PULL

***If inverter fail annunciator illuminated after
selecting other inverter:***

- 5 Inverter Switch.....OFF
- 6 Power and Control Circuit
Breakers (affected side).....PULL
- 7 Fuel Quantity.....CALCULATE
- 8 Engine Instruments (operating
engine).....MONITOR
- 9 Alternate Flight Instruments.....USE
- 10 Land As Soon As Possible

L FEEDER OUT ANNUNCIATOR ILLUMINATED

- 1 Inverter Switch.....STANDBY
- 2 LH Feeder Control Circuit
Breaker.....CHECK, RESET
- 3 50AMP Bus Tie Circuit Breaker.....CHECK, RESET
***If reset is unsuccessful, reduce load on RH Bus
and reset CB:***
- 4 Electrical Load.....MONITOR

R FEEDER OUT ANNUNCIATOR ILLUMINATED

- 1 Inverter Switch.....MAIN
- 2 RH Feeder Control Circuit
Breaker.....CHECK, RESET
- 3 50AMP Bus Tie Circuit Breaker.....CHECK, RESET
***If reset is unsuccessful, reduce load on LH Bus
and reset CB:***
- 4 Electrical Load.....MONITOR

PITCH TRIM RUNAWAY

- 1 Autopilot/Trim Disconnect
Switch.....PRESS & HOLD
- 2 LH Radio Master Switch.....OFF
- 3 Autopilot/Trim Disconnect
Switch.....RELEASE
- 4 Manual Trim.....AS REQUIRED
- 5 Autopilot Master (If Installed).....OFF
- 6 Pitch Trim Circuit Breaker &
Autopilot Circuit Breakers.....DISENGAGE
- 7 LH Radio Master Switch.....ON

Intentionally Left Blank

AFM
page

ENGINE FAILURE PRIOR TO LIFTOFF

- | | | |
|---|--------------------------------|-----|
| 1 | Power Levers.....GROUND IDLE | 3-1 |
| | Use reverse thrust as required | 3-1 |
| 2 | Brakes.....AS REQUIRED | 3-1 |
| 3 | Reverse Thrust.....AS REQUIRED | 3-1 |

CAUTION

ON OTHER THAN DRY, HARD SURFACE RUNWAYS, IT IS POSSIBLE TO APPLY MORE REVERSE THRUST THAN CAN BE COUNTERACTED BY RUDDER, BRAKES, AND NOSEWHEEL STEERING.

ENGINE FAILURE AFTER LIFTOFF - CONTINUED CLIMB NOT POSSIBLE

CAUTION

CHECK SINGLE ENGINE RATE OF CLIMB* BY USING SINGLE ENGINE CLIMB PERFORMANCE CHART (GEAR UP) IN PILOT OPERATION MANUAL TO DETERMINE WHETHER LAND STRAIGHT AHEAD OR CONTINUE CLIMBING BEFORE TAKEOFF.

* IF SINGLE ENGINE RATE OF CLIMB IS NEGATIVE VALUE, REDUCING TAKEOFF WEIGHT IS RECOMENDED.

- | | | |
|---|--|-----|
| 1 | Landing Gear.....DOWN | 3-1 |
| 2 | Power(operating engine).....AS REQUIRED | 3-1 |
| 3 | Flaps.....TAKEOFF | 3-1 |
| | Leave in selected position | 3-1 |
| 4 | Land Straight Ahead.....105 KCAS MINIMUM | 3-1 |

ENGINE FAILURE AFTER LIFTOFF - CONTINUED CLIMB

- | | | |
|---|---|-----|
| 1 | Landing Gear.....UP | |
| 2 | Airspeed.....V _{XSE} MINIMUM | |
| | FOR FLAP | |
| | CONFIGURATION | |
| 3 | Condition Lever (failed engine).....EMERGENCY | 3-1 |
| | STOP | |
| 4 | Power Lever (failed engine).....TAKEOFF | 3-1 |

WARNING

IDENTIFY FAILED ENGINE BY POWER ASYMMETRY AND ENGINE INSTRUMENTS. DO NOT RETARD FAILED ENGINE POWER LEVER. PLACE FAILED ENGINE POWER LEVER TO TAKEOFF POSITION DURING FEATHERING OF PROPELLER AND LEAVE THERE FOR THE REMAINDER OF THE FLIGHT.

3-1

CAUTION

RUN-CRANK-STOP SWITCH MUST REMAIN IN RUN POSITION.

3-1

5 Landing Light.....RETRACT 3-1
6 Airspeed.....V_{YSE} MINIMUM 3-1
FOR FLAP
CONFIGURATION

7 Flaps.....5° 3-1

8 Airspeed.....140 KCAS MINIMUM

9 Flaps.....UP 3-2

10 Airspeed.....150 KCAS 3-2

11 Power(operating engine).....AS REQUIRED 3-2

WARNING

AIR CONDITIONING AND PRESSURIZATION SYSTEM MUST REMAIN OFF TO ATTAIN FULL CLIMB CAPABILITY.

3-2

12 Engine Shutdown 3-2
(failed engine).....ACCOMPLISH 3-2

NOTE

Single engine climb rates are best attained with wings level by use of rudder to correct for yawing tendency and using the minimum amount of spoiler necessary to maintain lateral control.

3-2

FLAP SETTING	V _{XSE} (KCAS)	V _{YSE} (KCAS)	3-2
0° (Up)	140	150*	
5°	130	140	
20°	125	135	

*V_{YSE}, Maximum Takeoff Gross Weight, Sea Level
Standard day, Flaps 0° is 152 KCAS. 150KCAS is recommended for all weights.

	AFM page
BETA LIGHT ON IN FLIGHT	
Should either beta range annunciator illuminate in flight in other than a full stall condition and no control problem is present in rpm or yaw:	3-2
<i>With no control problem:</i>	3-2
1 Engine Shutdown (affected engine).....PRIOR TO LANDING	3-2
<i>With control problem:</i>	3-2
2 Engine Shutdown (affected engine).....IMMEDIATE	3-2
3 Land Using Single Engine Procedures	3-2
<div>CAUTION</div>	
ILLUMINATION OF EITHER BETA RANGE ANNUNCIATOR IN FLIGHT MAY BE AN INDICATION OF A PROPELLER CONTROL MALFUNCTION. IT MAY BE IMPOSSIBLE TO REDUCE THRUST ON THE AFFECTED ENGINE DURING LANDING OR AFTER TOUCHDOWN.	3-2

AUTO IGNITION RELIGHT FAILURE (APPLICABLE TO AIRPLANES EQUIPPED WITH AUTO IGNITION SYSTEM)	
Ignition annunciator light illuminates with auto-ignition selected, engine fails to accelerate properly.	3-3
1 Failed Engine EGT and RPM.....CHECK	3-3
<i>If EGT or RPM abnormal:</i>	
2 Condition Lever (failed engine).....EMERGENCY STOP	3-3
3 Power Lever (failed engine).....TAKEOFF	3-3
4 Engine Shutdown.....ACCOMPLISH	3-3
<div>CAUTION</div>	
IF ACTUATION OF THE AUTO IGNITION WAS DUE TO ICE INGESTION, ENSURE THAT APPROPRIATE PROCEDURES ARE EXECUTED FOR FLIGHT IN ICING CONDITIONS.	3-3

		AFM page
ENGINE SHUTDOWN		
	If engine failure occurs, or if a sudden loss or significant fluctuation ($\pm 7.5\%$) of indicated torque pressure occurs, as indicated by airplane yaw, promptly shutdown the affected engine and determine the cause prior to further operation.	3-3
1	Condition Lever (failed engine)..... EMERGENCY STOP	3-3
2	Power Lever (failed engine)..... TAKEOFF	3-3

WARNING

IDENTIFY FAILED ENGINE BY POWER ASYMMETRY AND ENGINE INSTRUMENTS. DO NOT RETARD FAILED ENGINE POWER LEVER. PLACE FAILED ENGINE POWER LEVER TO TAKEOFF POSITION DURING THE FEATHERING OF PROPELLER AND LEAVE THERE FOR THE REMAINDER OF THE FLIGHT.

3-3

CAUTION

- RUN-CRANK-STOP SWITCH MUST REMAIN IN RUN POSITION. 3-3
- 3 Trim.....SET 3-3
- 4 Power (operating engine).....AS REQUIRED 3-3
- 5 DC Generator Switch (failed engine).....OFF 3-3
- 6 Voltammeter (main bus tie check in flight).....CHECK

NOTE

Both voltammeters should indicate between 27 and 29.5 volts. Amperage on the side of the operating engine should be less than 200 amps (175 amps if above 28,000 feet).

CAUTION

IF EITHER VOLTAMMETER INDICATES BATTERY VOLTAGE (22 - 24 VOLTS) INSTEAD OF GENERATOR VOLTAGE (27 - 29.5 VOLTS) THE 200 AMP BUS TIE CIRCUIT BREAKER IS OPEN AND THE FOLLOWING EQUIPMENT IS POWERED BY BATTERY ONLY. REDUCE LOADS ON THE AFFECTED BUS TO SAVE BATTERY FOR LANDING.

LEFT DC GENERATOR INOPERATIVE, 200 AMP BUS TIE CIRCUIT BREAKER OPEN, NO. 1 BATTERY POWERS

- a. MAIN INVERTER
- b. LH WINDSHIELD HEAT
- c. LH RADIO MASTER (AUTOPILOT, COMM 1, PHONE AUDIO, RNAV, ATC 1, ADF 1, VOR 1, DME 2)

RIGHT DC GENERATOR INOPERATIVE, 200 AMP BUS TIE CIRCUIT BREAKER OPEN, NO. 2 BATTERY POWERS

- a. STANDBY INVERTER
- b. RH WINDSHIELD HEAT
- c. LANDING GEAR (EXCEPT INDICATOR LIGHTS)
- d. RH RADIO MASTER (COMM 2, SPEAKER AUDIO, RADAR, ATC 2, ADF 2, DME 1, VOR 2)

- | | | | |
|---|---|----------------------------|-----|
| 7 | DC Generator Load (operating engine)..... | REDUCE
(IF NECESSARY) | 3-4 |
| 8 | Cabin Air Selector Switch..... | OPERATING
ENGINE OR RAM | 3-4 |

NOTE

Ram Air Position will depressurize Cabin. Oxygen may be required. 3-4

NOTE

If maximum thrust is required, select RAM.

- | | | | |
|----|--------------------------------------|--------------------|-----|
| 9 | Operating Engine Power Lever..... | SET
AS REQUIRED | 3-4 |
| 10 | Synchrophaser..... | OFF | 3-4 |
| 11 | Ignition Switch (failed engine)..... | OFF | 3-4 |

AFM
page

DRIFTDOWN		
Following an engine failure at altitudes above 25,000 feet pressure altitude:		
1	Engine Shutdown (failed engine).....ACCOMPLISH	3-4
2	Power (operating engine).....AS REQUIRED	3-4
3	Airspeed.....135 KCAS	3-4
RECOMMENDED FOR PROLONGED DESCENT		
4	Pressurization System.....SELECT OPERATING ENGINE BLEED AIR	3-4

NOTE

For prolonged descent above 25,000 feet pressure altitude, it may be necessary to utilize oxygen. Observe cabin altitude warning light. Recommended airspeed for prolonged descent is 135 KCAS with operating engine at maximum continuous power setting.

3-4

SINGLE ENGINE LANDING

CAUTION

THE USE OF 40° FLAPS WITH AN ENGINE INOPERATIVE IS NOT RECOMMENDED. ALWAYS MAINTAIN AIRSPEED ABOVE V_{XSE} FOR FLAP SETTING BEING USED UNTIL LANDING IS ASSURED.

3-4

NOTE

Use power as required to maintain proper airspeed. When planning a single engine landing, if the airplane is able to climb or maintain altitude on the single engine, it is generally prudent to fly a wide pattern to a long, stabilized final. Proper airspeed control and configuration management will greatly ease the workload and increase the margin of safety.

NOTE

Once the gear are extended, the airplane may not be able to climb even with full power set on the operating engine, unless the gear are subsequently retracted. Landing gear extension requires approximately 17 seconds to accomplish. Circling approaches and non-precision approaches should be flown with the landing gear up until the field is in sight, the landing is assured and a normal glidepath can be maintained to touchdown, at which time the gear are lowered. For visual approaches and precision approaches, where a normal glidepath can be maintained until touchdown, the landing gear should be lowered at the final approach fix or turning base leg, as appropriate.

NOTE

Proper selection of a landing field in the event of an engine failure is essential. A circling approach at minimums places a much greater workload on the pilot than a visual approach. An ILS provides greater safety margins than a non-precision approach.

- 1 Engine Shutdown (failed engine).....ACCOMPLISH 3-4
- Descent (single engine) :**
- 2 Cabin Altitude.....SET 5-18-2

NOTE

Set pressure controller to 1,000 feet above landing field elevation. Adjust rate control knob so that airplane will be fully depressurized prior to landing. Generally, a rate of 300 to 500 fpm will be comfortable and ensure proper depressurization.

- 3 Fuel Transfer Control Switches.....TIP MAN OR OFF 5-18-2

CAUTION

Select TIP MANUAL or OFF to prevent automatic operation of outer fuel transfer pumps during descent.

- 4 Altimeters.....SET 5-18-2
- 5 Windshield Defog.....AS REQUIRED 5-18-2

- | | |
|---|--------|
| | AFM |
| | page |
| 6 Ignition Switch.....AS REQUIRED | 5-18-2 |
| Select CONT (auto ignition installed) or ON (auto ignition not installed) in icing conditions or heavy precipitation. Observe duty cycle limitations. | 5-18-2 |
| In other than these conditions, select AUTO (auto ignition installed) or OFF (auto ignition not installed). | 5-18-2 |

CAUTION

- | | |
|--|--------|
| IGNITION SHALL BE SELECTED TO CONT (IF AUTO IGNITION INSTALLED) OR ON (IF CONTINUOUS IGNITION INSTALLED) DURING APPROACH AND LANDING WHILE IN OR SHORTLY FOLLOWING FLIGHT IN ACTUAL OR POTENTIAL ICING CONDITIONS. | 5-18-2 |
| 7 Anti-ice & De-ice.....AS REQUIRED | 5-18-2 |
| a Pitot & Static Anti-ice.....ON | 5-18-2 |
| b Windshield Heat.....LOW | 5-18-2 |
| If descent through icing conditions is anticipated, turn on all anti-ice and de-ice equipment. | |

- | | |
|-------------------------------|--|
| 8 Taxi Lights.....AS REQUIRED | |
| Recommended on for descent. | |

Approach (single engine) :

- | | |
|--|--------|
| 9 Landing Data.....COMPUTED | 5-18-2 |
| Recommended landing flap setting is flap 20° although flap 40° is available. Compute landing weight, V_{REF} for selected flaps position, and landing distance. Other landing data may be required depending upon the circumstances. Refer to the performance section of the AFM. For landing with a crosswind, adjust V_{REF} by one half the steady state wind plus all of the gusts, not to exceed V_{REF} plus 10 knots. When landing with any ice accumulation on the wing, increase the computed V_{REF} by 15 knots. When landing with an asymmetric fuel condition, increase computed V_{REF} by 10 knots. Approach speeds should not be below V_{REF} (adjusted) until landing flare. | |

- | | |
|--------------------------------------|-----|
| 10 Fuel Quantity / Balance.....CHECK | 3-4 |
|--------------------------------------|-----|

NOTE

Tip fuel must be below 400 pounds or an overweight landing inspection will be required.
Balance within 150 pounds.

	AFM page
11 Propeller Synchrophaser.....OFF	5-18-2
12 Differential Pressure.....ZERO	5-18-2
Confirm cabin will be depressurized prior to turning off cabin air.	
13 Condition Lever (operating engine).....TAKEOFF LAND	3-4
Provides maximum thrust in the event of a go-around.	
14 Power Lever (operating engine).....AS REQUIRED	3-5
15 Cabin Sign.....ON	5-18-2
Brief passengers.	
16 Windshield Heat.....LOW	5-18-2
17 Cabin Air Selector Switch.....OFF OR RAM	3-4

NOTE

Ensures maximum power available in the event of a go around.

18 Landing Gear.....UP	3-5
19 Flaps.....UP	3-5
20 Airspeed.....150 KCAS	3-5
(140 KCAS MINIMUM)	

Base leg or final descent :

Approximately 1000 ft AGL

NOTE

It is strongly recommended that the airplane be established on a stable approach for the last 1000 feet of descent in instrument meteorological conditions (or for the complete final approach segment of a non precision approach if that segment is less than 1000 feet above the field) or the last 500 feet of descent in visual meteorological conditions. A stable approach means that the airplane is configured for approach, all checklists have been completed (except for landing assured items), power is established at a setting to maintain 140 KCAS (minimum 130 KCAS), airspeed is steady at 140 KCAS (minimum 130 KCAS), the proper glide path is maintained, the airplane is trimmed, and no unusual maneuvering is required to accomplish the landing. A missed approach is recommended if deviation from any of these parameters occurs.

When operating with one engine, selection of gear down, flaps 20° and deceleration to runway threshold speed should not occur until landing is assured.

	AFM page
21 Flaps.....5°	3-5
22 Airspeed.....140 KCAS (130 KCAS MINIMUM)	3-5
23 Ignition Switch.....AS REQUIRED	5-18-3/ 5-18-4

NOTE

ON or CONT for operating engine (OFF for failed engine) if runway is contaminated, raining, or in icing conditions.

5-18-3/
5-18-4

Also, ON or CONT for operating engine (OFF for failed engine) shortly following exit from icing conditions.

Otherwise, for aircraft with auto ignition installed, AUTO.

24 Wing De-ice.....OFF	5-19
------------------------	------

NOTE

If the wing deice system is in auto during the approach, cycle the wing deice off and on to allow one additional cycle, then select the system off prior to landing.

5-19

25 Autopilot / Yaw Damper.....OFF	
-----------------------------------	--

NOTE

Autopilot must remain off for approach and/or landing. Refer to AFM supplement.

26 Landing Lights.....AS REQUIRED	5-18-2
Landing assured :	3-5
27 Landing Gear.....DOWN	3-5

NOTE

Ensure 3 green landing gear position lights illuminated and the red unsafe light extinguished. If gear malfunction occurs, emergency extension may be required. Maximum speed for normal extension is 175KCAS. For visual and ILS approaches, the landing gear will normally be extended at the final approach fix or turning base leg. For non-precision or circling approaches, the landing gear will normally be extended when landing is assured and a normal glidepath can be maintained to touchdown.

28 Power Lever (operating engine).....AS REQUIRED	3-5
29 Brakes.....CHECK	
30 Flaps.....20°	3-5
31 Airspeed.....110 KCAS OVER RUNWAY	3-5

AFM
page

WARNING

DO NOT ATTEMPT A GO AROUND BELOW 400 FEET
AGL OR AFTER 20° OF FLAPS ARE SELECTED. 3-5

CAUTION

UP TO 10% ADDITIONAL RUNWAY MAY BE REQUIRED
USING THIS PROCEDURE WHEN COMPARED TO THE
NORMAL TWO ENGINE LANDING DISTANCE. 3-5

After touchdown: 3-5

- 32 Brakes.....AS REQUIRED
33 Reverse.....AS REQUIRED 3-5

CAUTION

ON OTHER THAN DRY, HARD SURFACE RUNWAYS, IT
IS POSSIBLE TO APPLY MORE REVERSE THRUST
THAN CAN BE COUNTERACTED BY RUDDER,
BRAKES, AND NOSEWHEEL STEERING. 3-5

SINGLE ENGINE GO AROUND

WARNING

UNDER CERTAIN COMBINATIONS OF WEIGHT,
TEMPERATURE, AND PRESSURE ALTITUDES, WITH
LANDING GEAR DOWN AND FLAPS 20° SINGLE
ENGINE GO AROUND MAY NOT BE POSSIBLE AT
ALTITUDES OF LESS THAN 400 FEET AGL.
DURING TRANSITION FROM STEADY APPROACH
(GEAR DOWN AND FLAPS 20°) TO ESTABLISHMENT
OF POSITIVE CLIMB (GEAR UP, FLAPS UP) AN
ALTITUDE LOSS WILL RESULT. 3-6

A GO AROUND AFTER FLAPS ARE EXTENDED TO 20°
SHOULD NOT BE ATTEMPTED. DO NOT SELECT 40°
FLAPS UNTIL LANDING IS ASSURED. ALWAYS
MAINTAIN AIRSPEED ABOVE V_{XSE} FOR FLAP SETTING
BEING USED UNTIL LANDING IS ASSURED.

- 1 Condition Lever (operating 3-6
engine).....TAKEOFF LAND
2 Power Lever(operating engine).....TAKEOFF 3-6
Smoothly apply power toward takeoff power while 3-6
maintaining airplane control.

NOTE

Once target airspeed and configuration are established, raise pitch attitude to maintain desired target airspeed.

- | | | | |
|----|-----------------------------------|-------------|-----|
| 3 | Landing Gear..... | UP | 3-6 |
| 4 | Landing Light..... | RETRACT | |
| 5 | Flaps..... | 5° | 3-6 |
| 6 | Airspeed..... | 140 KCAS | 3-6 |
| 7 | Flaps..... | UP | 3-6 |
| | (WHEN POSITIVE CLIMB ESTABLISHED) | | |
| 8 | Cabin Air Selector Switch..... | RAM OR OFF | 3-6 |
| 9 | Airspeed..... | 150 KCAS | 3-6 |
| 10 | Engine Anti-ice Switch..... | AS REQUIRED | 3-6 |

ENGINE FIRE

If LH or RH engine fire annunciator illuminates:

- | | | | |
|---|--------------------------------------|----------------|-----|
| 1 | Condition Lever (failed engine)..... | EMERGENCY STOP | 3-6 |
| 2 | Power Lever (failed engine)..... | TAKEOFF | 3-6 |

WARNING

IDENTIFY FAILED ENGINE BY POWER ASYMMETRY AND/OR FIRE WARNING INDICATOR AND/OR ENGINE INSTRUMENTS. DO NOT RETARD FAILED ENGINE POWER LEVER. PLACE FAILED ENGINE POWER LEVER TO TAKEOFF POSITION DURING THE FEATHERING OF PROPELLER AND LEAVE THERE FOR THE REMAINDER OF THE FLIGHT.

CAUTION

RUN-CRANK-STOP SWITCH MUST REMAIN IN RUN POSITION. DO NOT MOVE AFFECTED ENGINE POWER LEVER UNTIL PROPELLER IS FEATHERED.

- | | | | |
|---|----------------------------------|------------|-----|
| 3 | Fire Handle (failed engine)..... | PULL | 3-7 |
| 4 | Engine Shutdown..... | ACCOMPLISH | 3-7 |
| 5 | Land As Soon As Possible | | 3-7 |

AIRSTART

CAUTION

ENSURE ENGINE STOPPAGE WAS NOT THE RESULT
OF MALFUNCTION WHICH MIGHT MAKE IT
DANGEROUS TO ATTEMPT A RESTART.

3-7

NOTE

Perform engine cooldown if EGT is above 200°C. Windmill
the propeller below 5% RPM by placing the condition lever
to MIN CRUISE and intermittently depressing the unfeather
switch. When EGT is below 200°C or the RPM exceeds
5%, place the condition lever to EMERGENCY STOP.

- | | | | |
|---|-----------------|-----------------|-----|
| 1 | Airspeed..... | 100 TO 180 KCAS | 3-7 |
| | | -150 KCAS | |
| | | RECOMMENDED | |
| 2 | Altitude..... | BELOW 20,000 FT | 3-7 |
| 3 | SRL System..... | ON | 3-7 |

NOTE

Engine will not airstart unless SRL is on and operable.

3-7

- | | | | |
|----|--|-----------------|-----|
| 4 | Synchrophaser..... | OFF | 3-7 |
| 5 | EGT..... | BELOW 200°C | 3-7 |
| | | (IF FEASIBLE) | |
| 6 | Condition Lever..... | MINIMUM CRUISE | 3-7 |
| 7 | Power Lever..... | HALF INCH | 3-7 |
| | | FORWARD | |
| | | OF FLIGHT IDLE | |
| 8 | Start Selector Switch..... | AIRSTART & SAFE | 3-7 |
| 9 | Ignition Switch..... | OFF | 3-7 |
| 10 | Run-Crank-Stop Switch..... | RUN | 3-7 |
| 11 | Unfeather Switch..... | HOLD | 3-8 |
| | | TO 30% RPM | |
| a | At 10%, Engine Start Light..... | ILLUMINATES | 3-8 |
| b | EGT..... | MONITOR | 3-8 |
| | | (MAXIMUM 770°C) | |
| c | If Indicated Combustion (Light Off)
Does Not Occur Within 15 Seconds
Past 10% RPM, | | 3-8 |
| | or By 25% RPM..... | ABORT START | |
| d | If Acceleration Is Slow Above
25%..... | USE FUEL | 3-8 |
| | | ENRICH SWITCH | |
| e | If Acceleration Stagnates and
EGT Continues to Rise..... | ABORT START | 3-8 |

AFM
page

NOTE

If ABORT was caused by high EGT, reduce altitude and increase airspeed, if possible, before attempting a restart.
If ABORT was caused by no combustion, reduce altitude and reduce airspeed, if possible, before attempting a restart.

3-8

CAUTION

DO NOT ALLOW ENGINE TO WINDMILL IN THE 18% TO 28% RPM RANGE.

3-8

- 12 Condition Lever.....AS REQUIRED
13 Power Lever.....AS REQUIRED
14 Voltammeter
(main bus tie check in flight).....CHECK

3-8

3-8

CAUTION

IF EITHER VOLTAMMETER INDICATES BATTERY VOLTAGE (22 - 24 VOLTS) INSTEAD OF GENERATOR VOLTAGE (27 - 29.5 VOLTS) THE 200 AMP BUS TIE CIRCUIT BREAKER IS OPEN. IF THE BUS TIE CIRCUIT BREAKER IS OPEN, ALL SYSTEMS WILL BE POWERED NORMALLY ONCE THE SECOND GENERATOR HAS BEEN PLACED BACK ON LINE. HOWEVER, THE SUBSEQUENT LOSS OF AN ENGINE OR GENERATOR WILL CAUSE SOME SYSTEMS TO BE POWERED BY A BATTERY. AFTER LANDING, RESET THE BUS TIE BREAKER PRIOR TO THE NEXT FLIGHT.

- 15 DC Generator Switch.....ON / RESET
IF NECESSARY
16 Voltammeter.....27 TO 29.5 VDC
17 Ignition Switch.....AS REQUIRED
18 Cabin Air Selector Switch.....BOTH
19 Synchrophaser.....AS REQUIRED

3-8

3-8

3-8

3-8

3-8

AFM
page**FUEL BOOST PUMP FAILURE*****L or R boost pump fail annunciator illuminated:***

- | | | |
|---|------------------------------------|-----------|
| 1 | Fuel Boost Pump | 3-8 |
| | Circuit Breaker (faulty side)..... | DISENGAGE |
| 2 | Land As Soon As Possible | 3-8 |

NOTE

Main wing tank unusable fuel is 60 pounds with one boost pump failed.

3-8

SMOKE AND FUME ELIMINATION***Cabin or cockpit smoke or odor, known or unknown source:***

3-8-1/-2

- | | | | |
|---|--------------------------|-------------|----------|
| 1 | Oxygen Outlet Valve..... | OPEN | 3-8-1/-2 |
| 2 | Oxygen Masks..... | DON AND USE | 3-8-1/-2 |

Known source:

3-8-1/-2

- | | | | |
|---|-------------------------------|---|-----------------|
| 1 | Faulty Circuit or System..... | SWITCH OFF AND
DISENGAGE
ASSOCIATED
CIRCUIT BREAKERS | 3-8-1/
3-8-2 |
|---|-------------------------------|---|-----------------|

Unknown source:

3-8-1/-2

- | | | | |
|---|---|-----------|----------|
| 1 | Cockpit and Cabin Room Light
Switches..... | ON | 3-8-1/-2 |
| 2 | Master Switch..... | EMERGENCY | 3-8-1/-2 |

WARNING

CABIN WILL DEPRESSURIZE. AT A MINIMUM ALL INSTRUMENTS EXCEPT ENGINE TACHOMETERS, COPILOT ALTIMETER, COPILOT AIRSPEED, COPILOT TURN AND BANK, COPILOT ATTITUDE INDICATOR AND MAGNETIC COMPASS WILL BE INOPERATIVE. ALL LIGHTS EXCEPT COCKPIT AND CABIN ROOM LIGHTS, COPILOTS TURN AND BANK LIGHTS (S/N 1518SA AND SUBSEQUENT) AND ENGINE FIRE WARNING LIGHTS WILL BE INOPERATIVE. ALL RADIOS WILL BE INOPERATIVE. PARTIAL PANEL FLIGHT AND LET DOWN WITH NO COMMUNICATIONS TO A VFR LANDING WILL BE REQUIRED UNLESS NECESSARY SYSTEMS CAN BE RESTORED. IF ELECTRICAL POWER CANNOT BE RESTORED, A NO FLAP LANDING WITH EMERGENCY GEAR EXTENSION WILL BE NECESSARY.

3-8-1/-2

- | | | | |
|---|----------------------------|--------------|----------|
| 3 | Battery Switches..... | BOTH ISOLATE | 3-8-1/-2 |
| 4 | DC Generator Switches..... | BOTH OFF | 3-8-1/-2 |
| 5 | Inverter Switch..... | OFF | 3-8-1/-2 |

AFM
page

- 6 All Switches and Circuit Breakers.....OFF OR 3-8-1/
DISENGAGE 3-8-2
- 7 Master Switch.....NORMAL 3-8-1/-2
- 8 Battery, DC Generator 3-8-1/
Switches and Inverter Switch.....ON 3-8-2
- If smoke or odor stops :***
- 9 Switches and Circuits Breakers
for Equipment Essential to the 3-8-1/
Particular Phase of Flight.....ON OR ENGAGE 3-8-2
ONE AT A TIME
(ATTEMPT TO
ISOLATE CIRCUIT)

CAUTION

GIVE EACH CIRCUIT OR SYSTEM TIME TO SMOKE OR 3-8-1/-2
MALFUNCTION AGAIN BEFORE GOING TO NEXT
CIRCUIT OR SYSTEM.
IF FIRE/SMOKE STARTS AGAIN, DISABLE THE
CIRCUIT IMMEDIATELY, THEN CONTINUE TO ISOLATE
ANY OTHER CIRCUITS OR SYSTEMS.

WARNING

- ENSURE THE OXYGEN OUTLET VALVE IS CLOSED 3-9
WHEN USE OF OXYGEN MASKS IS NO LONGER
REQUIRED.
- If smoke or odor increases:*** 3-9
- 10 Cabin Air Selector Switch.....RAM 3-9
- 11 Battery, DC Generator, and
Inverter Switches.....OFF 3-9
- 12 Manual Pressure Control Valve.....FULL DECREASE 3-9
- 13 Execute High Speed Descent
to Low Altitude If Necessary 3-9
- 14 Pilot's Communication Door.....OPEN 3-9
- 15 Emergency Exit.....OPEN 3-9
(IF FEASIBLE) 3-9
- If smoke or odor persists:*** 3-9
- 16 Land As Soon As Possible 3-9

AFM
page**LANDING GEAR NOT FULLY RETRACTED**

- If UNSAFE light does not extinguish within approximately 17 seconds after placing the Landing Gear Switch to UP, or if the light illuminates during flight, recycle the system in accordance with the following procedures
- 3-9
- 1 Airspeed.....130 KCAS MAXIMUM 3-9
- 2 Flaps.....5° 3-9
- 3 Landing Gear.....DOWN 3-9
- If green lights indicate normal, but unsafe light indicates abnormal:*** 3-9
- 4 Land As Soon As Practical 3-9
- If green lights indicate abnormal, and unsafe light indicates abnormal:*** 3-9
- 4 Landing Gear Emergency
- Extention.....ACCOMPLISH 3-9
- 5 Land As Soon As Practical 3-9
- If green lights and unsafe light indicate normal:*** 3-9
- 4 Landing Gear.....UP 3-9
- 5 Green Lights and Unsafe Light.....CHECK NORMAL 3-9
- INDICATION

NOTE

If the UNSAFE light is illuminated, place Landing Gear Switch DOWN and proceed according to light indications as stated in Step 3. 3-10

LANDING GEAR EMERGENCY EXTENSION

- 1 Airspeed.....130 KCAS MAXIMUM 3-10
- 2 Flaps.....5° 3-10
- 3 Landing Gear Circuit Breakers
- (control, landing gear, door).....PULL 3-10
- 4 Landing Gear Position
- Indicator Circuit Breaker.....ENGAGED 3-10
- 5 Landing Gear.....DOWN 3-10
- 6 Landing Gear Emergency
- Handle.....PULL AND PUMP 3-10

	AFM
	page
7 Landing Gear Light.....CHECK	3-10
If indicator lights are inoperative,continue to pump until pump handle cannot be moved	3-10

NOTE

After pulling Landing Gear Emergency Handle, main landing gear doors unlatch and cannot be closed again in the air. If indicator lights are operational, the RED UNSAFE light will illuminate and will remain illuminated because the gear doors are open. Do not attempt to electrically retract landing gear after Emergency Extension. After landing, the main landing gear lock lever mechanism and the clutch for the main landing gear forward door actuating mechanism must be reset prior to flight.

CABIN PRESS LOW ANNUNCIATOR ILLUMINATED

1 Oxygen.....AS REQUIRED	3-10
2 Cabin Pressurization Control.....CHECK	3-10
Check pressure controller. If incorrectly set, adjust controller to proper altitude.	3-10
3 Manual Pressure Control Valve.....FULL INCREASE	3-10
4 Cabin Air Selector Switch.....BOTH OR OPERATING ENGINE	3-10
<i>If pressure remains low :</i>	3-10
5 Descend to Altitude Not Requiring Oxygen	3-10
If cabin pressure low annunciator remains illuminated, descend aircraft to minimum safe altitude or 10,000', whichever is higher.	

AIRCOND SYS FAIL ANNUNCIATOR ILLUMINATED

1 Cabin Air Selector Switch.....RH	3-11
2 Cabin Pressurization Control.....CHECK	3-11
3 Oxygen.....AS REQUIRED	3-11
4 Descend to Altitude Not Requiring Oxygen.....HIGH OR LOW SPEED DESCENT	3-11
Descent to higher of Minimum Safe Altitude or 10,000 feet, if possible, if the cabin does not maintain sufficient pressurization, or if the air cond sys fail light remains illuminated.	
<i>If air conditioning system fail annunciator remains illuminated:</i>	
5 Cabin Air Selector Switch.....RAM	3-11

AFM
page**DEFOG OVER TEMP ANNUNCIATOR ILLUMINATED**

- | | | | |
|--|------------------------------------|------------------------|------|
| 1 | Defogging Selector Valve..... | FULL DEC | 3-11 |
| 2 | Emergency Descent..... | AS SOON
AS POSSIBLE | 3-11 |
| To prepare for depressurization, descent aircraft to
minimum safe altitude or 10,000', whichever is higher. | | | |
| 3 | Manual Pressure Control Valve..... | FULL DEC | 3-11 |
| 4 | Cabin Air Selector Switch..... | RAM | 3-11 |

EMERGENCY DESCENT***High Speed Descent***

- | | | | |
|--|--------------------------|----------------------------------|------|
| 1 | Oxygen Mask / Valve..... | DON / OPEN | 3-11 |
| Declare emergency with air traffic control | | | |
| 2 | Power Levers..... | FLIGHT IDLE | 3-11 |
| 3 | Condition Levers..... | TAKEOFF LAND | 3-11 |
| 4 | Airspeed..... | V _{MO} /M _{MO} | 3-11 |

Low Speed descent

- | | | | |
|---|--------------------------|---------------------------------------|------|
| 1 | Oxygen Mask / Valve..... | DON / OPEN | |
| Declare emergency with air traffic control | | | |
| 2 | Power Levers..... | FLIGHT IDLE | 3-11 |
| 3 | Condition Levers..... | TAKEOFF LAND | 3-11 |
| 4 | Landing Gear..... | DOWN | 3-11 |
| (BELOW 175 KCAS) | | | |
| Observe 175 KCAS V _{LO} /V _{LE} | | | |
| 5 | Flaps..... | 40° | 3-11 |
| (BELOW 120 KCAS) | | | |
| 6 | Airspeed..... | V _{FE} (155
KCAS MAXIMUM) | 3-11 |

BATTERY OVERHEAT

Battery temperature 120° annunciator illuminates:

If on ground : DO NOT TAKEOFF AND MONITOR 3-11

If in flight:

1 Battery Temperature.....MONITOR 3-11

If temperature reaches 140° F: 3-11

2 Battery Isolate Switch.....ISOLATE 3-11

Battery overtemp annunciator (RED 150°F Light) illuminates : 3-11

If on ground : ABORT 3-11

If in flight: 3-11

3 Battery Isolate Switch.....ISOLATE 3-11

NOTE

If both batteries have overtemped and are both disconnected, operate on generators only. 3-12

If temperature continues to rise after isolating and goes full scale : 3-12

4 Land As Soon As Possible 3-12

If battery has cooled below 120°F approaching terminal area: 3-12

5 Battery Isolate Switch.....ON (FOR 3-12
LANDING TO
PREVENT POWER
LOSS AT
LOW RPM)

If battery temperature 120 ° annunciator reilluminates, exercise caution. Notify tower of problem prior to landing: 3-12

6 Battery Isolate Switch.....ISOLATE 3-12

CAUTION

IF BATTERY TEMPERATURE REACHED 150° F,
EITHER DURING START OR IN FLIGHT, BATTERY
MUST BE REMOVED FOR BENCH TEST AND
INSPECTION PRIOR TO NEXT FLIGHT.

AFM
page

L OR R DC GEN OUT ANNUNCIATOR ILLUMINATED

- 1 Generator Control and
Generator Field Circuit
Breakers (affected side).....CHECK 3-12
IF OUT, RESET
- If light remains illuminated:*** 3-12
- 2 DC Generator Switch
(affected side).....RESET, THEN ON 3-12
- If light is not extinguished:*** 3-12
- 3 DC Generator Switch(affected
side).....OFF 3-12
- 4 Voltmeters
(main bus tie check in flight).....CHECK 3-13
Both voltmeters should indicate between 27 and 29.5 volts. 3-13
Amperage on the side of the operating engine should be
less than 200 AMPS (175 AMPS if above 28,000 feet).

CAUTION

IF EITHER VOLTAMMETER INDICATES BATTERY 3-13
VOLTAGE (22 - 24 VOLTS) INSTEAD OF GENERATOR
VOLTAGE (27 - 29.5 VOLTS) THE 200 AMP
BUS TIE CIRCUIT BREAKER IS OPEN AND THE
FOLLOWING EQUIPMENT IS POWERED BY BATTERY
ONLY. REDUCE LOADS ON THE AFFECTED BUS TO
SAVE BATTERY FOR LANDING.

LEFT DC GENERATOR INOPERATIVE, 200 AMP BUS
TIE CIRCUIT BREAKER OPEN, NO. 1 BATTERY
POWERS

- a. MAIN INVERTER
- b. LH WINDSHIELD HEAT
- c. LH RADIO MASTER (AUTOPILOT, COMM 1, PHONE
AUDIO, RNAV, ATC 1, ADF 1, VOR 1, DME 2)

RIGHT DC GENERATOR INOPERATIVE, 200 AMP BUS
TIE CIRCUIT BREAKER OPEN, NO. 2 BATTERY
POWERS

- a. STANDBY INVERTER
- b. RH WINDSHIELD HEAT
- c. LANDING GEAR (EXCEPT INDICATOR LIGHTS)
- d. RH RADIO MASTER (COMM 2, SPEAKER AUDIO,
RADAR, ATC 2, ADF 2, DME 1, VOR 2)

- 5 DC Generator Load (operating
engine).....REDUCE 3-13
(IF NECESSARY)

AFM
page

INVERTER FAIL ANNUNCIATOR CYCLES ON/OFF

Applies to S/N 700SA, 731SA Through 798SA

3-14

- 1 Inverter Switch.....OFF

3-14

WARNING

IF INVT FAIL ANNUNCIATOR CYCLES ON AND OFF,
IMMEDIATELY PLACE INVERTER SWITCH TO THE OFF
POSITION.

3-14

CAUTION

POWER WILL BE LOST TO THE FOLLOWING
EQUIPMENT:

3-14

- a.MAIN FUEL QUANTITY INDICATOR
- b.LH AND RH ENGINE FUEL PRESSURE INDICATORS
- c.TRIM POSITION INDICATOR AND INTEGRAL
INSTRUMENT LIGHTING (5 VOLT LIGHTING)
- d.AC POWER TO VARIOUS FLIGHT INSTRUMENTS (i.e.
PILOT'S ADI AND HSI, NAVS, RADAR, AUTOPILOT)
- e.LH AND RH ENGINE OIL PRESSURE INDICATORS

THE FOLLOWING ITEMS WILL REMAIN OPERATIVE:

- a.BOTH VHF COMMUNICATION RADIOS
- b.NAV AUDIO
- c.ADF AUDIO
- d.ALL DC ONLY SYSTEMS

- 2 Fuel Quantity.....CALCULATE

3-14

With the main fuel quantity indicator inoperative, calculate
approximate fuel quantity remaining for flight and plan
accordingly.

3-14

- 3 Engine Instruments (operating
engine).....MONITOR

3-14

- 4 Alternate Flight Instruments.....USE

3-14

NOTE

3-14

The following equipment list gives the primary instrument
and its alternate:

PRIMARY

ALTERNATE

- a. F/D ADI

Copilot Vacuum

Attitude Gyro

- b. HSI's

Magnetic Compass

(Center Windshield
Post)

- c. Pilot Altimeter

Copilot Barometric

Altimeter

- d. RMI's

None

- 5 Land As Soon As Possible

3-14

AFM

page

3-15/3-16

INVERTER FAIL ANNUNCIATOR ILLUMINATED

If aircraft is not equipped with a 6 bus AC system, skip steps 3 and 4:

6 AC bus refers to aircraft 799SA, 1501SA and up, and aircraft modified by Service Recommendation 034/24-002.

- 1 Inverter Switch.....SELECT 3-15/3-16
OTHER INVERTER

- 2 Affected Inverter Power and Control Circuit Breakers.....PULL 3-15/3-16

If main inverter failed (6 AC bus):

- 3a LH 115VAC Power Circuit Breaker.....PULL

- 3b LH 26VAC Power Circuit Breaker.....PULL

If standby inverter failed (6 AC bus):

- 4a RH 115VAC Power Circuit Breaker.....PULL

- 4b RH 26VAC Power Circuit Breaker.....PULL

If inverter fail annunciator illuminated after selecting other inverter: 3-15/3-16

- 5 Inverter Switch.....OFF 3-15/3-16

- 6 Power and Control Circuit Breakers (affected side).....PULL 3-15/3-16

CAUTION

POWER WILL BE LOST TO THE FOLLOWING EQUIPMENT: 3-15/3-16

- a. MAIN FUEL QUANTITY INDICATOR
- b. LH AND RH ENGINE FUEL PRESSURE INDICATORS
- c. TRIM POSITION INDICATOR AND INTEGRAL INSTRUMENT LIGHTING (5 VOLT LIGHTING)
- d. AC POWER TO VARIOUS FLIGHT INSTRUMENTS (i.e. PILOT'S ADI AND HSI, NAVS, RADAR, AUTOPILOT)
- e. LH AND RH ENGINE OIL PRESSURE INDICATORS

THE FOLLOWING ITEMS WILL REMAIN OPERATIVE:

- a. BOTH VHF COMMUNICATION RADIOS
- b. NAV AUDIO
- c. ADF AUDIO
- d. ALL DC ONLY SYSTEMS

- 7 Fuel Quantity.....CALCULATE 3-15/3-16
With the main fuel quantity indicator inoperative, calculate approximate fuel quantity remaining for flight and plan accordingly.

- 8 Engine Instruments (operating engine).....MONITOR 3-15/3-16

AFM

page

9 Alternate Flight Instruments.....USE 3-15/3-16

NOTE

The following equipment list gives the primary instrument and its alternate:

PRIMARY

a. F/D ADI

b. HSI's

c. Pilot Altimeter

d. RMI's

ALTERNATE

Copilot Vacuum

Attitude Gyro

Magnetic Compass

(Center Windshield
Post)

Copilot Barometric

Altimeter

None

10 Land As Soon As Possible

3-15/3-16

L FEEDER OUT ANNUNCIATOR ILLUMINATED

1 Inverter Switch.....STANDBY 3-17

2 LH Feeder Control Circuit
Breaker.....CHECK, RESET 3-17

CAUTION

CAUTION

IF RESET IS UNSUCCESSFUL, POWER WILL BE LOST
TO THE FOLLOWING EQUIPMENT:

a. MAIN INVERTER

b. LH WINDSHIELD HEAT

c. LH RADIO MASTER (AUTOPILOT, COMM 1,AUDIO
PHONE, RNAV, ATC 1, ADF 1, VOR 1, DME 2)

3 50AMP Bus Tie Circuit Breaker.....CHECK, RESET 3-17

***If reset is unsuccessful, reduce load on RH Bus and
reset CB:*** 3-17

NOTE

The landing gear will operate normally if the BUS TIE
circuit breaker remains engaged.

AFM
page

- | | | |
|---|---|------|
| 4 | Electrical Load.....MONITOR | 3-17 |
| | Reduce to essential items as required and limit equipment operation to remain within 50 AMP capacity of bus tie circuit breaker | 3-17 |

CAUTION

- | | |
|--|------|
| IF BOTH THE BUS TIE AND LH FEED CONT CIRCUIT BREAKERS REMAIN OPEN: | 3-17 |
| a.LANDING GEAR MUST BE EXTENDED MANUALLY USING LANDING GEAR EMERGENCY EXTENSION PROCEDURE. | |
| b.LANDING GEAR POSITION INDICATOR LIGHTS WILL BE INOPERATIVE. | |

R FEEDER OUT ANNUNCIATOR ILLUMINATED

- | | | |
|---|--|------|
| 1 | Inverter Switch.....MAIN | 3-18 |
| 2 | RH Feeder Control Circuit Breaker.....CHECK, RESET | 3-18 |

CAUTION

IF RESET IS UNSUCCESSFUL, THE LANDING GEAR MUST BE EXTENDED MANUALLY USING LANDING GEAR EMERGENCY EXTENSION PROCEDURE AND POWER WILL BE LOST TO THE FOLLOWING EQUIPMENT:

- | | | |
|----|---|------|
| a. | STANDBY INVERTER | |
| b. | RH WINDSHIELD HEAT | |
| c. | LANDING GEAR (EXCEPT INDICATOR LIGHTS) | |
| d. | RH RADIO MASTER (COMM 2, AUDIO SPEAKER, RADAR, ATC 2, ADF 2, DME 1, VOR 2) | |
| 3 | 50AMP Bus Tie Circuit Breaker.....CHECK, RESET | 3-18 |
| | <i>If reset is unsuccessful, reduce load on LH Bus and reset CB:</i> | 3-18 |

NOTE

The cabin will remain pressurized and the flaps will operate normally if the BUS TIE circuit breaker remains engaged.

		AFM
		page
4	Electrical Load	3-18
	MONITOR	
	Reduce to essential items as required and limit equipment operation to remain within 50 AMP capacity of bus tie circuit breaker	3-18

WARNING

THE CABIN WILL DEPRESSURIZE IF BOTH THE BUS TIE AND THE RH FEEDER CONT CIRCUIT BREAKERS REMAIN OPEN.

3-18

CAUTION

IF BOTH THE BUS TIE AND RH FEEDER CONT CIRCUIT BREAKERS REMAIN OPEN, FLAPS WILL BE INOPERATIVE AND FIXED IN THEIR POSITION AT TIME OF POWER FAILURE.

3-18

PITCH TRIM RUNAWAY

An unscheduled trim input or continuation of elevator trim movement will be indicated by movement of the elevator manual trim wheel and possible illumination of the trim up or trim down annunciator light on the autopilot control head. Detail procedure is referred to an appropriate AFM supplement.

1	Autopilot/Trim Disconnect		
	Switch.....PRESS & HOLD	SUPP	
	Pressing this switch (second detent for M4-D equipped aircraft) will remove power from the electric trim as long as the switch is held in. The manual trim wheel can now be used to relieve pressures. Selecting the trim switches in the direction opposite to trim motion on or grabbing trim wheel will also stop the runaway.		
2	LH Radio Master Switch.....OFF	SUPP	
	This will remove power from the electric trim and allow manual trim without pressing the trim Autopilot disconnect switch.		
3	Autopilot/Trim Disconnect		
	Switch.....RELEASE	SUPP	
4	Manual Trim.....AS REQUIRED	SUPP	
5	Autopilot Master (If Installed).....OFF	SUPP	
6	Pitch Trim Circuit Breaker &		
	Autopilot Circuit Breakers.....DISENGAGE	SUPP	
7	LH Radio Master Switch.....ON	SUPP	

EMERGENCY

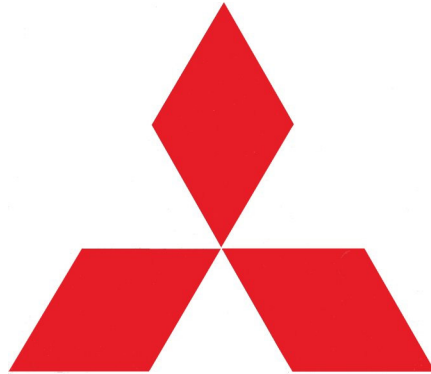
MU-2B-60 EMERGENCY AND ABNORMAL PROCEDURES TABLE OF CONTENTS

ENGINE	ENGINE FAILURE PRIOR TO LIFTOFF	E-1
	ENGINE FAILURE AFTER LIFTOFF- CONTINUED CLIMB NOT POSSIBLE	E-1
	ENGINE FAILURE AFTER LIFTOFF – CONTINUED CLIMB	E-1
	BETA LIGHT ON IN FLIGHT	E-2
	AUTOIGNITION RELIGHT	E-2
	FAILURE (applicable to airplanes equipped with auto-ignition system)	
	ENGINE SHUTDOWN	E-2
	DRIFTDOWN	E-3
	SINGLE ENGINE LANDING	E-3
	SINGLE ENGINE GO-AROUND	E-5
	ENGINE FIRE	E-5
	AIRSTART	E-5
	SRL SYSTEM FAILURE	A-1
	FUEL BOOST PUMP FAILURE	E-6
FUEL	FUEL PRESSURE DROP	A-1
	TIP AUTO FUEL TRANSFER FAILURE- TIP MANUAL	A-1
	OUTER AUTO FUEL TRANSFER FAILURE – OUTER MANUAL	A-2
	OUTER FUEL TANK TRANSFER PUMP FAILURE (except S/N 700SA)	A-2
	SMOKE AND FUME ELIMINATION	E-7
	BATTERY OVERHEAT	E-10
ELECTRICAL/ SMOKE	L OR R DC GEN OUT ANNUNCIATOR ILLUMINATES	E-11
	INVERTER FAIL ANNUNCIATOR CYCLES ON/OFF	E-12

SEE NEXT PAGE

ELECTRICAL/ SMOKE	INVERTER FAIL ANNUNCIATOR ILLUMINATES	E-12
	L FEEDER OUT ANNUNCIATOR ILLUMINATES	E-13
	R FEEDER OUT ANNUNCIATOR ILLUMINATES	E-13
LANDING GEAR	LANDING GEAR NOT FULLY RETRACTED	E-8
	LANDING GEAR EMERGENCY EXTENSION	E-8
AIR CONDITIONING/ PRESSURIZATION	CABIN PRESS LOW ANNUNCIATOR ILLUMINATED	E-9
	AIR COND SYS FAIL ANNUNCIATOR ILLUMINATED	E-9
	EMERGENCY DESCENT	E-10
	PITCH TRIM RUNAWAY	E-13
FLIGHT CONTROLS	TRIM AILERON TAB FAILURE	A-3
	TRIM AILERON TAB RUNAWAY	A-3
	NO FLAP APPROACH AND LANDING	A-4
	STATIC SYSTEM FAILURE	A-3
ICE PROTECTION	HEATED WINDSHIELD OVER TEMP ILLUMINATED	A-2
	INADVERTANT ICING ENCOUNTER	A-6
	SEVERE ICING ENCOUNTER	A-6
	DEFOG OVER TEMP ANNUNCIATOR ILLUMINATED	E-9
MISCELLANEOUS	P T/B PWR FAIL ANNUNCIATOR ILLUMINATED	A-3
	CP T/B PWR FAIL ANNUNCIATOR ILLUMINATED	A-3
	EMERGENCY EXIT DOOR OPERATION	A-5

Intentionally Left Blank



MU-2B-60

PILOT CHECKLIST
YET 06220C

Acceptance Status

MU-2B-60 Pilot Checklist

YET06220 Rev. C

Accepted: Walker J. Hutchings
Federal Aviation Administration

Date: February 12, 2007

MITSUBISHI HEAVY INDUSTRIES AMERICA INC.

4951 AIRPORT PARKWAY
SUITE 800

ADDISON, TEXAS 75001

TEL: (972) 934-5480

FAX: (972) 934-5488

MITSUBISHI SERVICE PUBLICATIONS TRANSMITTAL

The attached Mitsubishi MU-2B series Service Publication has been issued by Mitsubishi Heavy Industries, Ltd. in Japan, who is the type certificate holder of the MU-2 aircraft. It is the owner and/or operator's responsibility to adhere to or comply with new information contained in the attached publication.

NOTE

THIS PUBLICATION IS PRINTED AND/OR DISTRIBUTED BY TURBINE AIRCRAFT SERVICES, INC., ADDISON, TEXAS UNDER CONTRACT WITH MITSUBISHI HEAVY INDUSTRIES AMERICA, INC., UNDER LICENSE FROM MITSUBISHI HEAVY INDUSTRIES LTD. ADDRESS ALL COMMENTS OR INQUIRIES REGARDING DISTRIBUTION OF THIS PUBLICATION OR RECEIPT OF ANY OF THE PUBLICATIONS LISTED HEREIN TO:

**Turbine Aircraft Services Inc.
4550 Jimmy Doolittle Drive,
Addison, Texas 75001
USA**

**Attention: Rick Wheldon
Phone: (972) 248-3108 X 209
Fax: (972) 248-3321**

Intentionally Left Blank

LIST OF EFFECTIVE PAGES

INSERT LATEST REVISED PAGES, DESTROY
SUPERCEDED PAGES

This document is an abbreviation of the procedures contained in the FAA Approved Airplane Flight Manual, MR-0273-1. Dates of issue for original and changed pages are:

Original	ORIG	May 30, 2006	Includes AFM Rev 14
Revision	A	July 18, 2006	Includes AFM Rev 14
Revision	B	Dec. 25, 2006	Includes AFM Rev 14
Revision	C	Feb. 12, 2007	Includes AFM Rev 14

<u>Page No.</u>	<u>Revision No.</u>
Introduction INTRO-1 to INTRO-10	C
Normal Procedures Table of Contents N-TOC-1 to N-TOC-4	C
Normal Procedures N-1 to N-20	C
Emergency Procedures Table of Contents E-TOC-1 to E-TOC-4	C
Emergency Procedures E-1 to E-14	C
Abnormal Procedures Table of Contents A-TOC-1 to A-TOC-4	C
Abnormal Procedures A-1 to A-6	C
Expanded Normal Procedures NX-1 to NX-60	C
Expanded Emergency Procedures EX-1 to EX-26	C
Expanded Abnormal Procedures AX-1 to AX-12	C
Performance Table of Contents P-TOC-1 to P-TOC-2	C
Performance P-1 to P-12	C

MU-2 CHECKLIST

This document is an abbreviation of the procedures contained in Section 3 (Emergency Procedures), Section 4 (Abnormal Procedures), and Section 5 (Normal Procedures) of the FAA Approved Airplane Flight Manual (AFM). It is provided as an aid to cockpit management. The checklist consists of an abbreviated checklist and an expanded checklist. In the abbreviated checklist, applicable warnings, cautions and notes have been omitted for brevity. Also, detailed procedures for accomplishing the checklist items are not included. Consequently, operators using the abbreviated checklist must be fully familiar with and operate in accordance with the official applicable AFM. The expanded checklist includes most but not all warnings, cautions and notes, as well as tips for accomplishing the various procedures. Operators should be thoroughly familiar with both the expanded checklist and the applicable procedures from the AFM.

The abbreviated and expanded checklists are subdivided into a normal procedures section, an abnormal procedures section, and an emergency procedures section.

These checklists are consistent with known configurations of the airplane as originally delivered, or as later modified and incorporated into the AFM by MHI. However, the operator must review these checklists to ensure that any modifications installed in the operator's specific aircraft after original delivery are properly incorporated. MHI assumes no responsibility for the incorporation of procedures for after market installations.

When revisions to Sections 3, 4, or 5 of the AFM are incorporated into the AFM, MHIA will provide revisions to this checklist to all operators subscribing to the revision service for the checklist. The checklists must be updated by the operator accordingly.

For normal procedures, checklist items can (and in most cases should) be accomplished before the checklist is executed. This means that the pilot can and should accomplish his functions as circumstances and good judgment dictate. The checklist then becomes verification that the items have not been forgotten. The Normal Procedures checklist has been designed as a "check-list" rather than a "do-list."

Some items on the checklists have optional positions for proper compliance, such as flaps on the takeoff checklist. Where a response of "AS REQUIRED" is listed on the checklist, the pilot should state the condition (or position) of the item involved (such as "on", "closed", "20 degrees", "guard down", etc.)

A normal procedures checklist typically should not be started until sufficient time and attention can be devoted to its expeditious completion. Groupings have been selected so that the reading can be accomplished quickly with minimal interruptions.

In Section 3 (Emergency Procedures), some procedures have steps which are highlighted. The operator would be expected to comply with those steps by memory in the event of an actual malfunction. Otherwise, good cockpit discipline would require the operator to open and refer to the Emergency or Abnormal Checklist during the execution of the applicable procedure. Even with the highlighted items, there will generally be no need to hurry the procedure.

Emphasis should be placed on accurately, rather than rapidly, accomplishing the procedure.

There are some procedures in the AFM which do not lend themselves to a checklist format, but which nevertheless must be followed when circumstances dictate. Examples would include the normal operation of all systems such as the autopilot or anti-icing systems and the various climb and cruise profiles and procedures. Operators are expected to be familiar with all systems and procedures contained in the AFM and know when and how to use them regardless of whether or not a checklist has been published.

When accomplishing these checklists, operators must always be aware that their first and foremost responsibility is to maintain control of the airplane. Primary attention should be given to airspeed and altitude control. Situational awareness must also be constantly maintained. It is essential for the operator to always place the airplane at appropriate altitudes and airspeeds for the current and forecast conditions. While many maneuvers contained in the checklists will specify airspeeds at certain points in the procedure, neither the presence nor the absence of such specifications in the checklists in any way relieves the operator of the responsibility to control the airplane at all times. Also, steps in the various AFM procedures which should be accomplished routinely by a competent operator throughout a flight, such as "engine instruments, monitor" or "power... set as required," are typically removed from the checklists. Again, neither the presence nor the absence of such specifications in the checklists in any way relieves the operator of the responsibility to accomplish those various tasks.

INTRODUCTION TO MU-2B-60 TAKEOFF CLIMB PERFORMANCE CHARTS

Engine failure during takeoff is an event that the pilot must be prepared for when planning a flight for any aircraft. Pilot actions depend on where in the takeoff the engine failure is recognized. For an engine failure prior to liftoff, the decision must be to abort and stop straight ahead. For an engine failure after liftoff, the decision will depend on the climb capability of the airplane at the takeoff configuration, weight, altitude, and temperature.

To aid the pilot in making a decision to continue or abort a takeoff in event of an engine failure immediately after liftoff, climb performance charts have been developed. Two charts are presented for each takeoff flap setting as a function of altitude, temperature and weight. The first presents the rate of climb capability for the airplane with gear fully retracted and at a speed of V_{YSE} . The second presents the maximum weight for positive rate of climb with the gear down at the V_{50FT} speed. These data are based on achieving takeoff power per the power assurance charts in the Airplane Flight Manual with the bleed air selector off.

It is suggested that the pilot not make a takeoff where the rate of climb chart at the selected flap position indicates a single engine climb capability of negative value. An off-load in weight and/or waiting for a lower ambient temperature should improve the residual climb capability.

Acceleration and climb capability of the MU-2B-60 is very high with both engines producing takeoff power. Therefore, the airplane usually transits the critical low speed/low altitude environment quickly, and it is in the

pilot's best interest to accelerate as quickly as possible towards V_{YSE} . These performance charts are intended to inform the pilot of the climb capability in this critical area immediately after liftoff. There are two conditions for engine failure that are addressed with these performance charts:

- 1) If an engine failure is recognized immediately after liftoff, with the gear still extended, a chart presents the maximum weight for positive climb rate. If the takeoff weight exceeds this weight, a landing straight ahead should be made. The decision to abort immediately after liftoff can be made in the pilot's pre-flight planning.
- 2) If an engine failure is recognized after an altitude between 75 ft and 100 ft AGL has been attained with the gear retracting, and the appropriate rate of climb chart indicates an adequate positive rate of climb, the takeoff may be continued (obstacle clearance should also be considered).

Flight tests have demonstrated that a takeoff through 50 ft AGL and subsequent land-back requires approximately 7,000 ft of runway at sea level and moderate weights. High density altitudes will increase this requirement. A land-back, even with some damage to the airplane, is preferable to attempting to continue a takeoff with low or negative climb capability.

Flight tests have also shown that the airplane can be successfully accelerated through the gear and flap retraction sequence if an engine failure is recognized after an altitude between 75 ft and 100 ft AGL is achieved if the airplane has residual climb capability as determined from the rate of climb chart presented in this section.

As with any in flight emergency, the pilot's number one job is to maintain control of the airplane. The decision point to abort or continue the takeoff should be part of the pilot's preflight planning routine, as should be the decision not to attempt the takeoff where the rate of climb chart at the selected flap position indicates a single engine climb capability of negative value.

PREFLIGHT CHECK (COCKPIT and CABIN)

- 1 Oxygen Cylinder.....OPEN, CHECK
- 2 Oxygen Outlet Valve and
Gauge (copilot's side panel).....OPEN, CHECK
- 3 Emergency Gear Extension
Handle.....DOWN AND
SAFETIED
- 4 Landing Gear Switch.....DOWN
- 5 Parking Brake.....AS REQUIRED
- 6 Left Switch Panel.....CHECK
- 7 Static Source Select.....NORMAL STATIC
SOURCE
- 8 Other Switches.....OFF
- 9 Battery Key Switch.....ON
- 10 Battery Temperature Warning.....TEST
- 11 Main Bus Tie (on ground).....CHECK
- 12 Inverter Switch.....STBY THEN MAIN
- 13 Control Lock.....REMOVE AND
STOWED
- 14 Fuel.....CHECK
- 15 Instrument Panel.....CHECK
- 16 Center Pedestal.....CHECK
- 17 Flaps.....SET FOR
TAKEOFF
- 18 Trim.....CHECK & SET
- 19 Right Switch PanelCHECK
- 20 Overhead Switch Panel.....CHECK
- 21 Warning and Indicator Lights.....CHECK
(SRL FAILED
ANNUNCIATORS
ILLUMINATED)
- 22 Inverter Switch.....OFF
- 23 Battery Key Switch.....OFF
- 24 Fire Extinguisher.....CHECK
- 25 Publications & Documents.....ON BOARD
- 26 Load and Baggage.....SECURE
- 27 Emergency Exit Door.....SECURED
- 28 Seat Backs.....UPRIGHT
- 29 Table.....STOWED AND
COVERED

PREFLIGHT CHECK (EXTERIOR)

(1) LH WING TRAILING EDGE

- 1 General Condition.....CHECK
- 2 Flap, Spoiler and Trim Aileron.....CHECK
- 3 Tailpipe, EGT Probes and
Turbine.....CHECK
- 4 Static Discharger.....CHECK

**(2) LH WING TIP TANK, LEADING EDGE
AND NACELLE**

- 1 General Condition.....CHECK
- 2 Tip Tank Filler Cap.....CHECK FOR
SECURITY
- 3 Wing Tip & Taxi Lights.....CHECK
- 4 Wing Tie Downs.....REMOVED
- 5 Ice Inspection Light.....CHECK
- 6 Fuel Leakage.....CHECK
- 7 Main/Outer Fuel Tank Filler
Caps.....CHECK FOR
SECURITY
- 8 Main/Outer Fuel Tank Vent
Ports.....CHECK FOR
OBSTRUCTION
- 9 Engine Air Intake.....CHECK FOR
DAMAGE
AND FOREIGN
OBJECTS
- 10 Engine Air Intake Drain Valve
(Applicable to S/N 1535SA
and subsequent).....PRESS; NOTE
ANY EXCESSIVE
FLUID DRAINAGE
- 11 Nacelle/Doors and Latches.....GENERAL
CONDITION
AND LATCHES
SECURED
- 12 Oil Level.....CHECK (BETWEEN
FULL AND ADD);
CAP SECURED
- 13 Nacelle Door (Oil Access).....LOCKED
- 14 Oil Leakage.....CHECK
- 15 Oil Cooler Inlet Anti-icing Boots.....CHECK FOR
TEARS
AND ABRASIONS

- 16 Propeller.....CHECK FOR
FLAT PITCH AND
FREE ROTATION
(NORMAL
DIRECTION
OF ROTATION)
- 17 De-icing Boots.....CHECK
FOR TEARS
AND ABRASIONS

(3) NOSE AND FORWARD SECTION OF FUSELAGE

- 1 LH Forward Main Gear Door.....CHECK
- 2 General Condition.....CHECK
- 3 Pitot Tube Covers.....REMOVE
- 4 Pitot-Static Holes.....CHECK FOR
OBSTRUCTION
- 5 Lower Rotation Beacon
(if installed).....CHECK
- 6 Landing Lights.....CHECK
- 7 Nose Landing Gear Strut.....CHECK FOR
EXTENSION
- 8 Uplimit Mechanism.....CHECK
- 9 Nose Landing Gear Doors.....CHECK FOR
SECURITY
- 10 Nose Gear Torque Link.....CONNECTED
- 11 Tire Inflation/Condition.....CHECK
- 12 Static Wire.....CHECK
- 13 Nose Landing Gear Tie Downs
and Chocks.....REMOVE
- 14 Windshield.....CHECK FOR
CLEANLINESS
AND DAMAGE
- 15 Windshield Wipers.....CHECK CONDITION
AND SECURITY
- 16 RH Forward Main Gear Door.....CHECK

**(4) RH WING NACELLE, LEADING EDGE,
AND TIP TANK**

- 1 General Condition.....CHECK
- 2 Stall Warning Vane.....CHECK
- 3 De-icing Boots.....CHECK FOR
TEARS
AND ABRASIONS

- 4 Propeller.....CHECK FOR
FLAT PITCH AND
FREE ROTATION
(NORMAL
DIRECTION
OF ROTATION)
- 5 Oil Cooler Inlet Anti-Icing Boots.....CHECK FOR
TEARS
AND ABRASIONS
- 6 Oil Leakage.....CHECK
- 7 Nacelle Door (Oil Access).....LOCKED
- 8 Oil Level.....CHECK (BETWEEN
FULL AND ADD);
CAP SECURED
- 9 Nacelle/Doors and Latches.....GENERAL
CONDITION
AND LATCHES
SECURED
- 10 Engine Air Intake Drain Valve.....PRESS; NOTE
ANY EXCESSIVE
FLUID DRAINAGE
- 11 Engine Air Intake.....CHECK
FOR DAMAGE
AND FOREIGN
OBJECTS
- 12 Main/Outer Fuel Tank Vent
Ports.....CHECK FOR
OBSTRUCTION
- 13 Main/Outer Fuel Tank Filler
Caps.....CHECK FOR
SECURITY
- 14 Fuel Leakage.....CHECK
- 15 Wing Tie Downs.....REMOVED
- 16 Wing Tip & Taxi Lights.....CHECK
- 17 Tip Tank Filler Cap.....CHECK FOR
SECURITY

(5) RH WING TRAILING EDGE

- 1 General Condition.....CHECK
- 2 Static Discharger.....CHECK
- 3 Tailpipe, EGT Probes and
Turbine.....CHECK
- 4 Flap, Spoiler and Trim Aileron.....CHECK

(6) RH CENTER AND REAR SECTION OF FUSELAGE

- 1 General Condition.....CHECK
- 2 Main Landing Gear Door.....CHECK FOR
SECURITY
- 3 Main Landing Gear Strut and
Tire.....CHECK FOR
EXTENSION
AND PROPER
INFLATION
- 4 Main Landing Gear Brake Disc
and Wheel Well.....CHECK
- 5 Landing Gear Door Ground
Control Switch.....NORMAL AND
SAFETIED
- 6 Main Landing Gear.....REMOVE CHOCKS
- 7 Ram-Air Intake.....CHECK FOR
OBSTRUCTIONS
- 8 Aft Fuselage Tie Down.....REMOVE
- 9 Cooling Air Discharge Duct.....CHECK FOR
DAMAGE
AND FOREIGN
OBJECTS

(7) EMPENNAGE

- 1 General Condition.....CHECK
- 2 External Surface Locks.....REMOVE
- 3 Control Surface and Tabs.....CHECK
- 4 Upper Rotating Beacon.....CHECK
- 5 Tail Light.....CHECK
- 6 Deicing Boots.....CHECK FOR
TEARS
AND ABRASIONS

**(8) LH REAR AND CENTER SECTIONS OF
FUSELAGE**

- 1 General Condition.....CHECK
- 2 Cooling Air Intake.....CHECK FOR
DAMAGE
AND FOREIGN
OBJECTS
- 3 External Power Receptacle
Door.....CHECK
- 4 Battery Vent.....CHECK FOR
DAMAGE
AND FOREIGN
OBJECTS
- 5 Main Landing Gear.....REMOVE CHOCKS
- 6 Main Landing Gear Brake Disc
and Wheel Well.....CHECK
- 7 Main Landing Gear Strut and
Tire.....CHECK FOR
EXTENSION
AND PROPER
INFLATION
- 8 Main Landing Gear Door.....CHECK FOR
SECURITY
- 9 Ejector Exhaust Port.....CHECK FOR
OBSTRUCTIONS

BEFORE STARTING ENGINES

- 1 Passenger Briefing.....COMPLETE
- 2 Seat.....ADJUSTED
- 3 Safety Belts and Shoulder
Harness.....FASTEN
- 4 Parking Brake.....SET
- 5 Takeoff Data.....COMPUTED
- 6 Circuit Breakers.....CHECK
- 7 Radio Masters.....OFF
- 8 Battery Key Switch.....ON
- 9 DC Generator Switch.....OFF
- 10 Inverter Switch.....MAIN OR STBY
- 11 Cabin & Pilot Communication
Door.....LOCKED
- 12 APU.....AS REQUIRED
- 13 Fuel Quantity.....CHECK
- 14 Cabin Sign, Rotating Beacon.....SET
- 15 Navigation Light.....AS REQUIRED

STARTING ENGINES

- 1 Battery Select Switch.....AS REQUIRED
 - 2 SRL Switches.....ON
 - 3 Both Run-Crank-Stop Switches.....RUN
 - 4 EGT.....CHECK
- If feather valve check is not required,
proceed to 6:***
- 5 Feather Valve Check.....ACCOMPLISH
 - 6 Power Levers.....HALF INCH
FORWARD
OF FLIGHT IDLE
 - 7 Condition Levers.....TAXI
 - 8 Start Selector Switch.....AS REQUIRED
 - 9 Propellers.....CLEAR AND
ON LOCKS
 - 10 Engine Start / NTS Check.....ACCOMPLISH
- If APU start, proceed to 12:***
- 11 Battery Recharge.....AS REQUIRED
 - 12 Other Engine.....START,
REPEATING
SEQUENCE
(STEP 8- 10)

AFTER STARTING ENGINES

- 1 Engine Instruments.....CHECK
- If APU start is not required, proceed to 3:***
- 2 APU.....DISCONNECT
- 3 Generator Switches
(main bus tie check).....EITHER LH OR
RH ON
- 4 Voltammeter
(main bus tie check).....CHECK
- 5 Generator Switches
(main bus tie check).....BOTH ON AND
CHECK
- 6 Radio Master SwitchesON
- 7 Battery Select Switch.....PARALLEL
- 8 Fuel Transfer.....AUTO
- 9 Start Select Switch.....AIR START
AND SAFE
- 10 Cabin Air.....BOTH
- 11 De-ice/Anti-ice System CheckAS REQUIRED
 - a PITOT AND STATIC ANTI-ICE SYSTEM
 - b STALL WARNING ANTI-ICE SYSTEM
 - c PROPELLER ANTI-ICE SYSTEM
 - d ENGINE INTAKE AND OIL COOLER AIR INTAKE
ANTI-ICE SYSTEMS
 - e HEATED WINDSHIELD ANTI-ICE SYSTEM
 - f WING AND EMPENNAGE DEICE SYSTEM
- If overspeed governor check is not required,
proceed to 13:***
- 12 Overspeed Governor Check.....AS REQUIRED
- 13 Single Red Line (SRL)
/Delta P.....CHECK (PROPS
ON LOCKS)
- 14 Flaps.....SET FOR
TAKEOFF
- 15 Flight Controls.....FREE
- 16 Autopilot.....CHECK
- 17 Trim Tabs.....SET
- 18 Avionics.....CHECK & SET
- 19 Start Locks.....DISENGAGE
- 20 Supplemental NTS.....CHECK
- 21 Annunciator Panel &
Warning Lights.....CLEAR
- 22 Landing Lights/Taxi Lights.....AS REQUIRED

PREFLIGHT OPERATION CHECK

ITEM	POWER LEVER	CONDITION LEVER	CHECK ITEMS
LOW SPEED TAXI	GROUND IDLE	TAXI	1. Engine Speed must be 76.5% - 78.5% RPM 2. BETA RANGE annunciator normally illuminated 3. Oil Pressure minimum 40 psi 4. Fuel Pressure minimum 15 psi 5. No Caution Lights illuminated
HIGH SPEED TAXI	GROUND IDLE	TAKEOFF LAND	1. Engine Speed must be 96% - 97% RPM 2. BETA RANGE annunciator must be illuminated
REVERSE	REVERSE	TAKEOFF LAND	1. Engine Speed must be above 94.5% RPM 2. BETA RANGE annunciator must be illuminated
TAKEOFF	TAKEOFF POWER POSITION	TAKEOFF LAND	1. Engine Speed must be 99.5% - 101% RPM 2. Oil Pressure must be 70 - 120 psi 3. BETA RANGE annunciator must be extinguished

TAXI

- 1 Brakes & Steering.....CHECK
- 2 Flight Instruments.....CHECK
- 3 Power.....SET AS REQUIRED
(MAINTAIN
MINIMUM
76.5% RPM)

BEFORE TAKEOFF

- 1 Lights.....AS REQUIRED
- 2 De-ice & Anti-ice.....AS REQUIRED
- 3 Transponder.....ON
- 4 Radar.....AS REQUIRED
- 5 Cabin Air.....AS REQUIRED
- 6 Flaps.....SET FOR
TAKEOFF
- 7 Condition Levers.....TAKEOFF LAND
- 8 Friction.....SET
- 9 Ignition Switches.....AS REQUIRED
- 10 Trim Tabs.....SET
- 11 Engine Instruments.....CHECK
- 12 Annunciator Panel &
Warning Lights.....CLEAR
- 13 Heading.....CHECK

TAKEOFF SPEEDS

FLAPS 5°	V _R	V ₅₀	V _{XSE}	V _{YSE}
11,575 LBS	109	120	130	140
11,000 LBS	106	120	130	140
10,000 LBS	101	120	130	140
9,000 LBS	100	120	130	140

FLAPS 20°

11,575 LBS	105	113	125	135
11,000 LBS	103	113	125	135
10,000 LBS	100	113	125	135
9,000 LBS	100	113	125	135

AFTER TAKEOFF

- 1 Landing Gear.....UP
- 2 Landing Light.....RETRACT
- 3 Flaps.....RETRACT ON
SCHEDULE
- 4 Airspeed (normal climb).....155 KCAS
- 5 Power.....MAXIMUM
CONTINUOUS
- 6 Cabin Air.....BOTH
- 7 Ignition Switches.....AS REQUIRED
- 8 De-ice & Anti-ice.....AS REQUIRED
(ADD 10% KCAS
IN ICING)
- 9 Cabin Pressurization.....SET
- 10 Engine Instruments.....CHECK
- 11 Synchrophaser.....AS REQUIRED

VISIBLE MOISTURE ENCOUNTERS



DURING ALL OPERATIONS IN VISIBLE MOISTURE,
CAREFULLY MONITOR EGT. DO NOT ALLOW EGT
TO EXCEED 650°C.

FLIGHT IN ICING CONDITIONS

WARNING

PILOTS SHOULD BE AWARE THAT OPERATION OF THE AUTOPILOT'S VERTICAL MODES MAY RESULT IN AN UNSAFE AIRSPEED IF ICE ACCUMULATES ON THE AIRPLANE. IN ORDER TO MINIMIZE ICE ACCUMULATIONS ON UNPROTECTED LOWER SURFACES , MAINTAIN A MINIMUM SPEED OF 180 KIAS DURING OPERATIONS IN SUSTAINED CRUISE IN ICING CONDITIONS.

IF UNABLE TO MAINTAIN 180 KIAS AT MAXIMUM CONTINUOUS POWER , A CHANGE OF ALTITUDE AND/OR COURSE MAY BE NECESSARY TO MAINTAIN MINIMUM AIRSPEED AND/OR EXIT THE ICING CONDITIONS.

DURING LANDING, DO NOT SELECT 40 ° FLAPS WHEN OPERATING IN ICING CONDITIONS.

CLIMB (18000') / CRUISE

- 1 Taxi Lights.....OFF
- 2 Cabin Sign.....AS REQUIRED
- 3 Altimeters.....SET
- 4 Cabin Pressurization.....CHECK
- 5 Fuel Balance and Transfer.....CHECK
- 6 Generator Load.....CHECK
- 7 Anti-ice/De-ice Systems.....AS REQUIRED
(180 KIAS
MINIMUM IN ICING)
- 8 Oxygen/Crew Mask.....CHECK
- 9 Power.....SET AS REQUIRED
(96% RPM TO
98% RPM)
- 10 Engine Instruments.....MONITOR

DESCENT

- 1 Cabin Altitude.....SET
- 2 Fuel Transfer Control Switches... ..TIP MANUAL
OR OFF
- 3 Altimeters.....SET
- 4 Windshield Defog.....AS REQUIRED
- 5 Ignition SwitchesAS REQUIRED
- 6 Anti-ice/De-ice.....AS REQUIRED
(ADD 10% KCAS
IN ICING)
- 7 Taxi Lights.....AS REQUIRED

APPROACH

- 1 Landing Data.....COMPUTED
- 2 Fuel Quantity/Balance.....CHECK - IN LIMITS
- 3 Synchrophaser.....OFF
- 4 Differential Pressure.....ZERO
- 5 Condition Levers.....TAKEOFF LAND
- 6 Power.....AS REQUIRED
- 7 Flaps5 ° (BELOW
175 KCAS)
- 8 Airspeed140 KCAS MINIMUM
- 9 Cabin Sign.....ON
- 10 Anti-ice System.....AS REQUIRED
(ADD 10% KCAS
IN ICING)
- 11 Landing Lights.....AS REQUIRED
(BELOW 175KCAS)

LANDING THRESHOLD SPEED (V_{REF})

WEIGHT	FLAPS 20°	FLAPS 40°
11025 LBS	110	119
10500 LBS	108	116
10000 LBS	105	114
9500 LBS	102	111
9000 LBS	100	108

BEFORE LANDING

- 1 Landing Gear.....DOWN
- 2 Brakes.....CHECK
- 3 FlapsAS REQUIRED
- 4 Ignition SwitchesAS REQUIRED
- 5 Wing De-ice.....OFF
- 6 Autopilot/Yaw Damper.....OFF

AFTER LANDING

- 1 Power LeversGROUND IDLE
- 2 Beta Range AnnunciatorsILLUMINATED
- 3 Power LeversREVERSE
(AS REQUIRED)
- 4 Power LeversGROUND IDLE
WHEN REVERSING
COMPLETED
- 5 Ignition Switches.....OFF
- 6 Condition Levers.....TAXI
- 7 Anti-ice.....OFF
- 8 Lights.....AS REQUIRED
- 9 Rader & Transponder.....STANDBY
- 10 FlapsAS REQUIRED
- 11 Trim Tabs.....RESET

STOPPING ENGINES

- 1 Power LeversGROUND IDLE
- 2 Radio Masters.....OFF
- 3 Engine Shutdown.....ACCOMPLISH
- 4 Parking BrakeAS REQUIRED
- 5 Overhead Switch Panel.....OFF
- 6 Oxygen Outlet Valve.....CLOSED
- 7 Cabin Air Selector.....OFF
- 8 Fuel Transfer Switch.....OFF
- 9 DC Generator Switches.....OFF
- 10 Inverter Switch.....OFF
- 11 Other Switches.....OFF (EXCEPT
MAIN FUEL
VALVES AND SRL)
- 12 Battery Key Switch.....OFF
- 13 Flight Control LockINSTALL
- 14 Oxygen Cylinder Valve.....CLOSED

SECURING

- 1 Chocks.....INSTALL
- 2 Nose Gear Torque Link.....DISCONNECT
- 3 Plugs & Covers.....INSTALL
- 4 Parking Brake.....OFF
- 5 Bag & Cabin Lights.....OFF

TURNAROUND

If engine restarts are anticipated in 10 to 45 minutes:

- 1 Park airplane into wind if possible.
- 2 Manually turn engine rotating group in direction of normal rotation.
- 3 Continue these procedures until engine restart required.

CRANKING

Complete BEFORE STARTING ENGINES Checklist

- 1 Battery Select SwitchPARALLEL OR
SERIES
- 2 Main Fuel Valve Switches.....OPEN
- 3 Run-Crank-Stop SwitchCRANK
- 4 Start Selector SwitchLH GND
START OR RH
GND START
- 5 Engine Start SwitchPRESS AND HOLD

When RPM stagnates:

- 6 Engine Start Switch.....RELEASE

INFLIGHT NTS CHECK (FEATHERING OPERATION)	
On Engine to be Shutdown:	
1 Recommended Airspeed.....	150-180 KCAS
2 Recommended Altitude.....	5000 FT AGL MIN, DAY - VFR ONLY
3 Synchrophaser	OFF
4 Power Lever	FLIGHT IDLE
5 DC Generator Switch.....	OFF
6 Amperage.....	CHECK
7 Bleed Air (engine to shutdown).....	OFF
8 Ignition (engine to shutdown).....	OFF
9 Run-Crank-Stop Switch	STOP (HOLD TO 50% RPM)
10 Condition Lever.....	EMERGENCY STOP (AT 30% RPM)
11 Airstart.....	ACCOMPLISH

SYSTEM OPERATION	
(1) SYNCHROPHASER	
1 Engines	SYNCHRONIZE MANUALLY (99.5% MAXIMUM)
2 Synchrophaser Control Switch.....	ON
3 To Change Blade Relationship Between Propellers.....	ADJUST PHASE SELECT AS NECESSARY
(2) ENGINE CONTINUOUS IGNITION SYSTEM (If Auto Ignition System is not installed)	
1 Continuous Ignitions.....	ON
2 Both Indicator Lights.....	ILLUMINATED
(3) AUTO IGNITION SYSTEM (If Auto Ignition System is installed)	
AUTOMATIC OPERATION:	
1 Ignition Switches.....	AUTO
2 Annunciator Lights	EXTINGUISHED
CONTINUOUS OPERATION:	
1 Ignition Switches.....	CONT
2 Annunciator Lights	ILLUMINATED

(4) FUEL TRANSFER SYSTEM

- 1 L and R Fuel Transfer SwitchesAUTO
- 2 Appropriate Fuel Transfer
Control Switch.....OFF

**(5) AIR CONDITIONING AND PRESSURIZATION
SYSTEM**

HEATING/COOLING/PRESSURIZATION:

- 1 Manual Pressure Control Valve.....FULL INCREASE
- 2 Auto-Manual Selector Switch.....AUTO
- 3 Cabin Supply Air Temperature
Selector.....AS DESIRED
- 4 Cabin Air Selector SwitchBOTH (LH OR
RH AS DESIRED)
- 5 Cabin Altitude Selector Knob.....AS DESIRED
- 6 Cabin Rate Control Knob.....AS DESIRED
- 7 Cabin Air Outlet Select Switch.....AS DESIRED
(CEILING
OR FLOOR)
- 8 Forward Conditioned Air Outlet
KnobNORMAL

MAXIMUM COOLING:

- 1 Cabin Supply Air Temperature
Selector.....FULL COLD
or Auto-Manual Selector Switch.....MANUAL COLD
- 2 Air Outlets.....OPEN

MAXIMUM HEATING:

- 1 Cabin Supply Air Temperature
Selector.....FULL HOT
or Auto-Manual Selector Switch.....MANUAL HOT
- 2 Air Outlets.....OPEN

FORCED VENTILATION:

- 1 Cabin Air Selector SwitchBOTH
- 2 Manual Pressure Control Valve.....DECREASE

RAM AIR VENTILATION:

- 1 Manual Pressure Control Valve.....DECREASE
UNTIL CABIN
DIFFERENTIAL
PRESSURE
IS ZERO
- 2 Auto-Manual Selector Switch.....OFF
- 3 Cabin Air Selector Switch.....RAM

WINDSHIELD DEFOG SYSTEM:

- 1 Cabin Air Selector Switch.....BOTH
- 2 Forward Conditioned Air Outlet Knob.....DEFOG

If sufficient defogging cannot be obtained:

- 3 Cabin Supply Air Temperature Selector.....FULL HOT or Auto-Manual Selector Switch.....MANUAL HOT

(6) OXYGEN SYSTEM

SYSTEM USAGE:

- 1 Cockpit Outlet ValveFULL OPEN
- 2 Oxygen Mask.....INSERT HOSE IN OUTLET, ROTATE 1/4 TURN CLOCKWISE TO DETENT POSITION AND DON MASK
- 3 Flow Indicator.....CONFIRM OXYGEN FLOW BY ABSENCE OF RED LINE INDICATOR IN HOSE

AFTER USING:

- 1 Cockpit Outlet ValveCLOSE
- 2 Oxygen Mask.....DISCONNECT
- 3 Oxygen Cylinder Shutoff Valve.....CLOSE (AFTER LANDING)

TIME TABLE

OXYGEN DURATION CHART - 22 CU. FT. CYLINDER (622 LITERS)

PERSONS USING	DURATION IN HRS. AND MIN. AT FOLLOWING ALTITUDES			
	15,000 FT	20,000 FT	25,000 FT	31,000 FT
1	4 hr. 13 min.	3 hr. 22 min.	2 hr. 50 min.	2 hr. 27 min.
2	2 hr. 6 min.	1 hr. 41 min.	1 hr. 25 min.	1 hr. 13 min.
3	1 hr. 24 min.	1 hr. 7 min.	56 min.	49 min.
4	1 hr. 3 min.	50 min.	42 min.	36 min.
5	50 min.	40 min.	34 min.	29 min.
6	42 min.	33 min.	28 min.	24 min.
7	36 min.	28 min.	24 min.	21 min.
8	31 min.	25 min.	21 min.	18 min.
9	29 min.	22 min.	18 min.	16 min.
10	25 min.	20 min.	17 min.	14 min.
11	23 min.	18 min.	15 min.	13 min.

(7) PITOT AND STATIC ANTI-ICE SYSTEM

Inflight Operation - Prior to Flight Into Known Icing

Conditions:

- 1 Pitot & Static Anti-ice Switches.....ON
- 2 Loadmeter Select Switch.....LH PITOT AND
STATIC POSITION
- 3 Loadmeter Operating Range50 TO .85
- 4 Loadmeter Select Switch.....RH PITOT AND
STATIC POSITION
- 5 Loadmeter Operating Range..... .50 TO .85
- 6 Pitot & Static Anti-ice Switches.....ON

(8) STALL WARNING ANTI-ICE SYSTEM

Inflight Operation - Prior to Flight Into Known Icing

Conditions:

- 1 Stall Vane Anti-ice Switch.....ON
- 2 Loadmeter Select Switch.....STALL VANE
- 3 Loadmeter Operating Range..... .30 TO .70
- 4 Stall Vane Anti-ice Switch.....AS REQUIRED

(9) PROPELLER ANTI-ICE SYSTEM

Inflight Operation - Prior to Flight Into Known Icing

Conditions:

- 1 Propeller De-ice Switches.....ON
- 2 Loadmeter Select Switch.....POSITION TO
LH PROP
- 3 Loadmeter Operating Range..... .85 TO 1.05
- 4 Loadmeter Select Switch.....POSITION TO
RH PROP
- 5 Loadmeter Operating Range..... .85 TO 1.05
- 6 Propeller De-ice Switches.....AS REQUIRED

(10) ENGINE INTAKE AND OIL COOLER AIR INTAKE ANTI-ICE SYSTEM

Inflight Operation - Prior to Flight Into Known Icing

Conditions:

- 1 Engine Intake Anti-ice Switches.....ON
- 2 Indicator Lights.....ILLUMINATE
- 3 Oil Cooler Inlet Anti-ice
Switches.....ON
- 4 Indicator Lights.....ILLUMINATE
- 5 Engine Intake and Oil Cooler
Anti-Ice Switches.....AS REQUIRED

(11) HEATED WINDSHIELD ANTI-ICE SYSTEM
INFLIGHT OPERATION:

- 1 Windshield Heat Low Switches,
LH and RH.....ON
- 2 If Ice Forms, High Heat
Switches.....ON (L OR
R AS REQUIRED)
- 3 When Ice is Removed, High
Heat Switches.....OFF

When clear of icing conditions:

- 1 Windshield Heat Low Switches
LH and RH.....ON

(12) WING AND EMPENNAGE DEICE SYSTEM
INFLIGHT OPERATION:

- 1 Wing Ice Light Switch.....ON (AT NIGHT)
- 2 Wing De-ice Switch.....ON
- 3 Ice Accumulation on Wing
Leading Edge.....MONITOR
- 4 Wing De-ice Switch.....OFF AFTER
LEAVING
ICING CONDITIONS
AND AIRCRAFT
IS CLEAR OF
ACCUMULATED
ICE

SEVERE ICING CONDITIONS:

- 1 Wing De-ice Switch.....MANUALLY CYCLE
- 6 SECONDS ON,
10 SECONDS OFF
- 2 Wing De-ice Switch.....OFF AFTER
LEAVING
ICING CONDITIONS
AND AIRCRAFT
IS CLEAR OF
ACCUMULATED
ICE

BLENDING ANTI -ICE ADDITIVE TO FUEL

BLENDING PROCEDURES:

- 1 Using HI-FLO PRIST blender manufactured by PPG INDUSTRIES, INC., remove actuator cap.
- 2 Press valve button (attached to tube and clip assembly) into valve on top of can.
- 3 Reattach actuator cap by positioning onto can.
- 4 Place clip with tubing onto fuel nozzle.
- 5 To start flow, press actuator down fully. To stop flow, press tilt to side and return to normal position.
- 6 Use can upright and start flow of PRIST after refueling begins (refueling should be at a minimum rate of 30 gal/min. to a maximum of 60 gal/min.). A rate of less than 30 gal/min. may be used when topping off tanks.
- 7 Stop flow of PRIST a moment before refueling stops.

ALTERNATE BLENDERS:

If alternate blenders must be used such as PRIST proportioner Model PRB-101 or AP-2, use instructions furnished with blender.

**LANDING GEAR AND FLAP SYSTEMS -
EXTEND/RETRACT CYCLES**

Landing Gear	
Extension or Retraction	17 SECONDS
Flap Extension	
Up to 5°.....	17 SECONDS
5°to 20°.....	10 SECONDS
20°to 40°.....	6 SECONDS
Flap Retraction	
40°to 20°.....	4 SECONDS
20°to 5°.....	10 SECONDS
5° to Up	21 SECONDS

	AFM page
PREFLIGHT CHECK (COCKPIT and CABIN)	5-1
Refer the preflight check procedures in the airplane flight manual, after maintenance and airplane storage.	5-1
1 Oxygen Cylinder.....OPEN, CHECK Charged, valve open (note pressure) masks available for all passenger seats.	5-5
WARNING	
IF THE VALVE ON THE OXYGEN CYLINDER IS CLOSED, NO OXYGEN CAN BE SUPPLIED TO THE MASK OUTLETS.	5-5
2 Oxygen Outlet Valve and Gauge (copilot's side panel).....OPEN, CHECK Open cockpit valve. Ensure pressure same as at cylinder. Ensure masks available and plugged in for pilot, and copilot, if required. Check oxygen flow through masks. Close cockpit oxygen outlet valve.	5-5
WARNING	
RESIDUAL PRESSURE MAY BE SHOWN ON THE OXYGEN GAUGE EVEN THOUGH THE VALVE ON THE OXYGEN CYLINDER IS CLOSED. ASSURE THAT THE PRESSURE READINGS ARE THE SAME AND THE CYLINDER VALVE IS OPEN. CLOSE THE OXYGEN OUTLET VALVE UPON COMPLETION OF THE CHECK.	5-5
3 Emergency Gear Extension Handle.....DOWN AND SAFETIED	5-2
4 Landing Gear Switch.....DOWN To prevent gear retraction when power is applied.	5-2
5 Parking Brake.....AS REQUIRED Pilot should note whether chocks are in place when approaching the airplane. If further towing is anticipated, ensure chocks are in place and leave parking brake off. If no further towing is anticipated, parking brake may be set by simultaneously pulling on the parking brake handle, rotating the handle 90 degrees clockwise, and depressing the brake pedals.	5-2

WARNING

IF BATTERY TEMPERATURE REACHES 150°F DURING START, BATTERY MUST BE REMOVED FOR BENCH TEST AND INSPECTION PRIOR TO FLIGHT. 5-7

NOTE

The expanded scale will not start to indicate until a cell temperature of 100°F or above is reached. 5-7

- 11 Main Bus Tie (on ground).....CHECK
- a Battery Isolate Switches..... BOTH NORMAL 5-2
 - 1) Battery 1 Isolate Switch.....ISOLATE 5-2
 - Both voltammeters must indicate 22 to 24 volts and no FEEDER OUT annunciator will be illuminated.
 - 2) Battery 2 Isolate Switch.....ISOLATE. 5-2
 - Both batteries will be isolated.
 - 3) Battery 1 Isolate Switch NORMAL 5-2
 - Both voltammeters must indicate 22 to 24 volts and no FEEDER OUT annunciator will be illuminated.
 - 4) Battery 2 Isolate Switch.....NORMAL 5-2

CAUTION

IF EITHER VOLTAMMETER READS ZERO, THE 200 AMP BUS TIE CIRCUIT BREAKER IS OPEN AND THE CORRESPONDING FEEDER OUT ANNUNCIATOR WILL BE ILLUMINATED. MALFUNCTION MUST BE CORRECTED PRIOR TO FLIGHT. 5-2

- 12 Inverter Switch.....STBY THEN MAIN 5-3/5-7
 - a Check inverter fail annunciator extinguished 5-7
- 13 Control Lock.....REMOVE AND STOWED 5-2
- 14 Fuel.....CHECK 5-3
- When loading fuel, observe limitations. Fuel must be loaded mains, outers, and tips, in that order. Observe 45 US gallon tip tank maximum imbalance.

	AFM page
15 Instrument Panel.....CHECK	5-6
a Ignition Switches.....OFF	5-6
b Ignition Test (If auto ignition system is installed)	5-9/ 5-22-1/-2
1) Both Run-Crank-Stop Switches.....RUN	5-9/ 5-22-1/-2
2) Auto Ignition Switches.....CONT, NOTE	
LH AND RH IGNITION	5-9/
LIGHTS ILLUMINATED	5-22-1/-2
3) Auto Ignition Switches.....AUTO, NOTE	
LH AND RH IGNITION	
LIGHTS ILLUMINATED	5-9/5-23
4) Auto Ignition Switches.....OFF, NOTE	
LH AND RH IGNITION	
LIGHTS EXTINGUISHED	5-9/5-23
c Ignition Test (If continuous ignition system is installed)	
1) Both Run-Crank-Stop Switches.....RUN	
2) Continuous Ignition Switches.....ON (BOTH IGNITOR	
LIGHTS ILLUMINATED)	
3) Continuous Ignition Switches.....OFF (BOTH	
IGNITOR LIGHTS	
EXTINGUISHED)	
d Boost Pumps.....CHECK (L AND	
R BOOST PUMP	
FAIL ANNUNCIATORS	
EXTINGUISHED)	5-7
e Stall Warning System.....CHECK	5-7
Stall warning stick shaker actuates when the ground test	
switch is activated. Stick shaker should not activate when	
the flight test is activated.	
f Fuel Quantity Test Switch.....TEST	5-8
Check main, outer, and tip indicator needles move	
smoothly to "0" position, FUEL LOW LEVEL annunciator	
illuminates when main tank quantity indicator indicates	
approximately 200 pounds.	
g Fuel Low Level Test Switch.....TEST(FUEL LOW	
LEVEL ANNUNCIATOR	
ILLUMINATES)	5-8

AFM
page

h Outer Pump Test Switch.....	TEST	5-8
NOTE		
Both Fuel Transfer Switches must be in the OFF position for the system to TEST effectively.		5-8
1) Outer Fuel Empty Annunciators (with fuel).....	ILLUMINATE	
	THEN EXTINGUISH	5-8
2) Outer Fuel Empty Annunciators (no fuel).....	ILLUMINATE	5-8
i Defog Warning test.....	CHECK DEFOG DEFOG OVERHEAT WARNING annunciator illuminates when test switch actuated	
j Propeller synchrophaser.....	SWITCH OFF, LIGHT PRESS TO TEST.	
k All Other Instruments and Gages.....	CHECK	
16 Center Pedestal.....	CHECK	5-6
a Condition Levers.....	FREE MOVEMENT, SET AT TAXI	5-6/5-8
b Power Levers.....	FREE MOVEMENT, SET BETWEEN GROUND IDLE AND FLIGHT IDLE	5-6/5-8
c Run-Crank-Stop Switches.....	CRANK	5-6
d Start Selector Switch.....	AIR START AND SAFE	5-6
e SRL Switches.....	ON	5-6
17 Flaps.....	SET FOR TAKEOFF	5-3/5-14
Select flaps to 5° or 20°. Allows inspection of jackscrews and flap condition during exterior preflight.		
18 Trim.....	CHECK & SET	5-3/5-8
Elevator 4° - 6° nose up , rudder 2° left and aileron 1° left. Check all tabs free of binding.		
19 Right Switch Panel	CHECK	5-6
a Cabin Air Selector Switch.....	OFF	5-6
b Auto-Manual Selector Switch.....	OFF	5-6
c Manual Pressure Control Valve.....	FULL INCREASE	5-6
d Cabin Altitude Selector Knob.....	SET APPROXIMATELY 1,000 FEET ABOVE AIRPORT ELEVATION	5-6
e Cabin Rate Control Knob.....	MINIMUM	5-6

AFM
page

PREFLIGHT CHECK (EXTERIOR)

CAUTION

IF AIRPLANE HAS SET IN OR FLOWN THROUGH
MOISTURE, OR HAS BEEN WASHED, PERFORM PITOT
STATIC SYSTEM DRAIN PROCEDURES (SEE PILOTS
OPERATING MANUAL, SECTION 3).

5-3

(1) LH WING TRAILING EDGE

5-3

- 1 General Condition.....CHECK
- 2 Flap, Spoiler and Trim Aileron.....CHECK
- 3 Tailpipe, EGT Probes and
Turbine.....CHECK
- 4 Static Discharger.....CHECK

5-3

5-3

5-3

5-3

**(2) LH WING TIP TANK, LEADING EDGE
AND NACELLE**

5-3

- 1 General Condition.....CHECK
- 2 Tip Tank Filler Cap.....CHECK FOR
SECURITY
- 3 Wing Tip & Taxi Lights.....CHECK
- 4 Wing Tie Downs.....REMOVED
- 5 Ice Inspection Light.....CHECK
- 6 Fuel Leakage.....CHECK
- 7 Main/Outer Fuel Tank Filler
Caps.....CHECK FOR
SECURITY
- 8 Main/Outer Fuel Tank Vent
Ports.....CHECK FOR
OBSTRUCTION
- 9 Engine Air Intake.....CHECK FOR
DAMAGE
AND FOREIGN
OBJECTS
- 10 Engine Air Intake Drain Valve
(Applicable to S/N 1535SA
and subsequent).....PRESS; NOTE
ANY EXCESSIVE
FLUID DRAINAGE
- 11 Nacelle/Doors and Latches.....GENERAL
CONDITION
AND LATCHES
SECURED

5-3

5-3

5-3

5-3

5-3

5-3

5-3

5-3

5-3

5-3

5-3

	AFM page
12 Oil Level.....CHECK (BETWEEN FULL AND ADD); CAP SECURED	5-3
13 Nacelle Door (Oil Access).....LOCKED	5-3
14 Oil Leakage.....CHECK	5-4
15 Oil Cooler Inlet Anti-icing Boots.....CHECK FOR TEARS AND ABRASIONS	5-4
16 Propeller.....CHECK FOR FLAT PITCH AND FREE ROTATION (NORMAL DIRECTION OF ROTATION)	5-4
17 De-icing Boots.....CHECK FOR TEARS AND ABRASIONS	5-4
(3) NOSE AND FORWARD SECTION OF FUSELAGE	5-4
1 LH Forward Main Gear Door.....CHECK	5-4
2 General Condition.....CHECK	5-4
3 Pitot Tube Covers.....REMOVE	5-4
4 Pitot-Static Holes.....CHECK FOR OBSTRUCTION	5-4
5 Lower Rotation Beacon (if installed).....CHECK	5-4
6 Landing Lights.....CHECK	5-4
7 Nose Landing Gear Strut.....CHECK FOR EXTENSION	5-4
8 Uplimit Mechanism.....CHECK	5-4
9 Nose Landing Gear Doors.....CHECK FOR SECURITY	5-4
10 Nose Gear Torque Link.....CONNECTED	5-4
11 Tire Inflation/Condition.....CHECK	5-4
12 Static Wire.....CHECK	5-4
13 Nose Landing Gear Tie Downs and Chocks.....REMOVE	5-4
14 Windshield.....CHECK FOR CLEANLINESS AND DAMAGE	5-4
15 Windshield Wipers.....CHECK CONDITION AND SECURITY	5-4
16 RH Forward Main Gear Door.....CHECK	5-4

AFM
page

**(4) RH WING NACELLE, LEADING EDGE,
AND TIP TANK**

- | | | | |
|----|---|--|-----|
| 1 | General Condition..... | CHECK | 5-4 |
| 2 | Stall Warning Vane..... | CHECK | 5-4 |
| 3 | De-icing Boots..... | CHECK FOR
TEARS
AND ABRASIONS | 5-4 |
| 4 | Propeller..... | CHECK FOR
FLAT PITCH AND
FREE ROTATION
(NORMAL
DIRECTION
OF ROTATION) | 5-4 |
| 5 | Oil Cooler Inlet Anti-Icing Boots..... | CHECK FOR
TEARS AND ABRASIONS | 5-4 |
| 6 | Oil Leakage..... | CHECK | 5-4 |
| 7 | Nacelle Door (Oil Access)..... | LOCKED | 5-4 |
| 8 | Oil Level..... | CHECK (BETWEEN
FULL AND ADD);
CAP SECURED | 5-4 |
| 9 | Nacelle/Doors and Latches..... | GENERAL
CONDITION
AND LATCHES
SECURED | 5-4 |
| 10 | Engine Air Intake Drain Valve..... | PRESS; NOTE
ANY EXCESSIVE
FLUID DRAINAGE | 5-4 |
| 11 | Engine Air Intake..... | CHECK
FOR DAMAGE
AND FOREIGN
OBJECTS | 5-4 |
| 12 | Main/Outer Fuel Tank Vent
Ports..... | CHECK FOR
OBSTRUCTION | 5-4 |
| 13 | Main/ Outer Fuel Tank Filler
Caps..... | CHECK FOR
SECURITY | 5-4 |
| 14 | Fuel Leakage..... | CHECK | 5-4 |
| 15 | Wing Tie Downs..... | REMOVED | 5-4 |
| 16 | Wing Tip & Taxi Lights..... | CHECK | 5-4 |
| 17 | Tip Tank Filler Cap..... | CHECK FOR
SECURITY | 5-4 |
- (5) RH WING TRAILING EDGE**
- | | | | |
|---|--|-------|-----|
| 1 | General Condition..... | CHECK | 5-4 |
| 2 | Static Discharger..... | CHECK | 5-4 |
| 3 | Tailpipe, EGT Probes and
Turbine..... | CHECK | 5-4 |

	AFM page
4 Flap, Spoiler and Trim Aileron.....CHECK	5-4
(6) RH CENTER AND REAR SECTION OF FUSELAGE	5-4
1 General Condition.....CHECK	5-4
2 Main Landing Gear Door.....CHECK FOR SECURITY	5-4
3 Main Landing Gear Strut and Tire.....CHECK FOR EXTENSION AND PROPER INFLATION	5-4
4 Main Landing Gear Brake Disc and Wheel Well.....CHECK	5-4
5 Landing Gear Door Ground Control Switch.....NORMAL AND SAFETIED	5-4
6 Main Landing Gear.....REMOVE CHOCKS	5-4
7 Ram-Air Intake.....CHECK FOR OBSTRUCTIONS	5-4
8 Aft Fuselage Tie Down.....REMOVE	5-4
9 Cooling Air Discharge Duct.....CHECK FOR DAMAGE AND FOREIGN OBJECTS	5-4
(7) EMPENNAGE	5-5
1 General Condition.....CHECK	5-5
2 External Surface Locks.....REMOVE	5-5
3 Control Surface and Tabs.....CHECK	5-5
4 Upper Rotating Beacon.....CHECK	5-5
5 Tail Light.....CHECK	5-5
6 Deicing Boots.....CHECK FOR TEARS AND ABRASIONS	5-5

AFM
page

**(8) LH REAR AND CENTER SECTIONS OF
FUSELAGE**

1	General Condition.....	CHECK	5-5
2	Cooling Air Intake.....	CHECK FOR DAMAGE AND FOREIGN OBJECTS	5-5
3	External Power Receptacle Door.....	CHECK	5-5
4	Battery Vent.....	CHECK FOR DAMAGE AND FOREIGN OBJECTS	5-5
5	Main Landing Gear.....	REMOVE CHOCKS	5-5
6	Main Landing Gear Brake Disc and Wheel Well.....	CHECK	5-5
7	Main Landing Gear Strut and Tire.....	CHECK FOR EXTENSION AND PROPER INFLATION	5-5
8	Main Landing Gear Door.....	CHECK FOR SECURITY	5-5
9	Ejector Exhaust Port.....	CHECK FOR OBSTRUCTIONS	5-5

		AFM page
BEFORE STARTING ENGINES		5-6
1 Passenger Briefing.....	COMPLETE	5-5
Passengers should be briefed on the use of the oxygen system, emergency exit, cabin door, use of seat belts, and adherence to no smoking sign. Also, advise passengers to stow loose baggage under seats, stow and cover tables and adjust seat backs to the upright position for takeoff and landing, and observe precautions on cabin safety card.		
2 Seat.....	ADJUSTED	5-5
Adjusted to allow full and free movement of flight controls. Ensure seat positioned so that full rudder deflection can be achieved in the event of an engine failure.		
3 Safety Belts and Shoulder Harness.....	FASTEN	5-5
4 Parking Brake.....	SET	5-5
Apply pressure to toe brakes, pull handle aft, and rotate handle to set parking brake.		
5 Takeoff Data.....	COMPUTED	5-6
Check weight and balance, select takeoff flap position and determine V_R , maximum takeoff weight limit, takeoff distance, power assurance, and single engine climb capability for selected flap position with gear down & up. Other takeoff parameters may need to be considered.		
6 Circuit Breakers.....	CHECK	5-7
7 Radio Masters.....	OFF	5-7
To prevent power surges through the avionics during start.		
8 Battery Key Switch.....	ON	5-6 /5-7 /5-10 /5-24
22 v minimum for start. Battery key should be on for APU start. (Monitor temperature maximum 140 °F)		
9 DC Generator Switch.....	OFF	
No generator assist is allowed during start.		
10 Inverter Switch.....	MAIN OR STBY	5-7
a Inverter Fail Annunciator.....	EXTINGUISHED	5-7
11 Cabin & Pilot Communication Door.....	LOCKED	5-5 & 5-13
Check cabin door annunciator extinguished and pilot communication door closed.		

AFM
page

- | | | |
|--|---|----------------------|
| 12 APU..... | AS REQUIRED | 5-7/5-8/
5-22 |
| a Battery Select Switch..... | PARALLEL | 5-7 |
| b APU..... | CONNECT | 5-7
/5-8
/5-22 |
| c Check Voltmeters | 28 VDC DESIRED
(APU MUST
BE CAPABLE OF 800
AMPS AND MINIMUM
OF 16 VDC DURING
START CYCLE). | 5-7/5-8/
5-22 |
| d OAT 10°C or Less..... | APU
RECOMMENDED | 5-8/5-22 |
| e Battery Temperature Above 120°F..... | APU REQUIRED | 5-8/5-22 |

NOTE

If battery temperature 120°F light is illuminated, do not takeoff until the light is extinguished.

- 13 Fuel Quantity.....CHECK
Ensure fuel load and balance sufficient for flight and within limits.
- 14 Cabin Sign, Rotating Beacon.....SET 5-8/5-14
- 15 Navigation Light.....AS REQUIRED

AFM
page

STARTING ENGINES

- 1 Battery Select Switch.....AS REQUIRED

5-8/5-22

5-8/5-22-1
/5-22-2

Select parallel for all APU starts and battery starts if OAT is above 10 degrees C. Series is recommended for battery starts when OAT is 10 degrees C or less. During start, monitor battery temperature. For parallel starts, if a battery temperature reaches 140° F, isolate the battery. For series starts, if a battery temperature reaches 140° F, abort is recommended. For parallel or series starts, if a battery temperature rises to 150° F, abort is required.

5-8/
5-22-1/
5-22-2

- 2 SRL Switches.....ON

5-9/
5-22-1/
5-22-2

SRL must be on to ensure operation of speed switches during start. Monitor SRL fail annunciators during start. SRL fail annunciators will remain on until approximately 14%rpm.

- 3 Both Run-Crank-Stop Switches.....RUN

5-9/
5-22-1/
5-22-2

This arms fuel and ignition during start.

- 4 EGT.....CHECK

5-9/5-23
5-10/5-24

Should be below 200°C. If the EGT is above 200°C, it may be reduced by hand turning the engine or by cranking the engine. To crank the engine, use cranking procedure.

***If feather valve check is not required,
proceed to 6:***

- 5 Feather Valve Check.....ACCOMPLISH

5-21

CAUTION

FEATHER VALVE CHECK REQUIRED

5-8/5-21

- 1) PRIOR TO THE FIRST FLIGHT OF THE DAY
- 2) BEFORE EVERY FLIGHT, INTENTIONAL ENGINE SHUTDOWN IS PLANNED
- 3) BEFORE EVERY FLIGHT, AFTER FEATHERING LINKAGE ADJUSTED
- 4) AFTER MAINTENANCE OF THE FEATHERING SYSTEM

- a LH Unfeather Switch.....PRESS AND HOLD

(LH BETA RANGE
LIGHT ILLUMINATED) 5-21

AFM
page

- b LH Condition Lever.....EMERGENCY STOP
(LH BETA RANGE
LIGHT EXTINGUISHED) 5-21
- c LH Condition Lever.....TAXI
(LH BETA RANGE
LIGHT ILLUMINATED) 5-21
- d LH Unfeather Switch.....RELEASE
(LH BETA RANGE
LIGHT EXTINGUISHED) 5-22
- e Repeat Steps "a" through "d" for Right Engine. 5-22

WARNING

IF THE BETA RANGE LIGHT DOES NOT EXTINGUISH
OR DOES NOT ILLUMINATE AS REQUIRED DURING
THE ABOVE PROCEDURE, ENGINE START SHOULD
NOT BE ATTEMPTED UNTIL MAINTENANCE HAS BEEN
CONDUCTED ON THE AIRCRAFT TO CORRECT THE
DISCREPANCY. 5-22

- 6 Power Levers.....HALF INCH 5-22-1/
FORWARD 5-22-2
OF FLIGHT IDLE
- 7 Condition Levers.....TAXI 5-8
- 8 Start Selector Switch.....AS REQUIRED 5-9/5-23
Select engine to be started and position the start selector
switch to L or R.
- 9 Propellers.....CLEAR AND 5-9/
ON LOCKS 5-22-1/
5-22-2

NOTE

Ensure that the propellers are clear prior to starting. If the
propeller is feathered, place the Power Lever in REVERSE
and hold the Unfeather Switch until the blades reach the
lock position. 5-9/
5-22-1/
5-22-2

AFM
page

- d Ignition and EGT Rise.....RELEASE ENGINE
START SWITCH 5-9/5-23
- 1) SRL Fail Annunciator.....EXTINGUISHED
ABOVE 14% RPM 5-9/5-23
- 2) EGT.....MONITOR 5-9/5-23
- 3) Within 10 seconds past 10% RPM
or by 20% RPM.....INDICATED
COMBUSTION
OR PLACE
RUN-CRANK-STOP
SWITCH TO STOP 5-9/5-23
- e Illumination of Beta Range
Annunciator.....RELEASE
UNFEATHER SWITCH 5-23
- NTS System check is satisfactory if :* 5-23
- 1) Beta Range Annunciator.....EXTINGUISHES
AS ENGINE
STARTS TO ROTATE. 5-23
- 2) Beta Range Annunciator.....ILLUMINATED
AT 18% TO
30% RPM (MAYBE AS
LATE AS 40% RPM). 5-23

WARNING

IF ENGINE FAILS NTS CHECK, CORRECT PRIOR TO
FLIGHT. 5-23

CAUTION

IF NTS CHECK IS UNSATISFACTORY, CONTINUE
START. WARM OIL TO NORMAL RANGE (55°C
MINIMUM) THEN SHUT DOWN AND PERFORM CHECK
AGAIN. IF NTS CHECK IS AGAIN UNSATISFACTORY,
FLIGHT SHALL NOT BE ATTEMPTED UNTIL
MALFUNCTION IS CORRECTED. 5-23

NOTE

The BETA RANGE annunciator should not illuminate before
10% RPM and may blink between 10% and 40% RPM ,
but must be illuminated by 40% RPM. Releasing the
Unfeather switch and moving the Power Lever slightly
forward of GROUND IDLE after steady illumination of the
BETA RANGE annunciator may cause the BETA RANGE
annunciator to blink. 5-23

AFM
page

- f Power Lever (engine being started).....SLIGHTLY ABOVE
GROUND IDLE 5-24
- 1) Above 25%RPM with Slow
Acceleration if EGT is below 700°C..USE FUEL
ENRICHMENT SWITCH 5-24
- 2) Prior to 50% RPM.....INCREASING OIL
PRESS OR PLACE
RUN-CRANK-STOP
SWITCH TO STOP 5-24
- 3) 60% RPM, End of Ignition, Engine
Start Indicator Light.....EXTINGUISHED. IF
ILLUMINATED PLACE
RUN-CRANK-STOP
SWITCH TO STOP 5-24

CAUTION

IF ANY MALFUNCTION OCCURS, PROPELLER FAILS TO ROTATE, RPM DOES NOT REACH 10% WITHIN APPROXIMATELY 10 SECONDS, EGT RISES RAPIDLY TOWARDS START LIMIT, ENGINE STOPS, RPM STAGNATES PRIOR TO 40% RPM DURING STARTING PROCEDURES, ANY UNUSUAL NOISE OR VIBRATION OCCURS, OR ENGINE INSTRUMENTS INDICATE ABNORMAL CONDITIONS, SHUT DOWN ENGINE IMMEDIATELY BY PLACING CONDITION LEVER IN EMERGENCY STOP POSITION. IF EGT RAPIDLY APPROACHES 770°C DURING START, POSITION THE CONDITION LEVER TO EMERGENCY STOP. RESTART SHOULD NOT BE TRIED UNTIL EGT DROPS BELOW 200°C. COOL AND CLEAR ENGINE WITH CRANKING PROCEDURE OF SECTION 5. 5-24

NOTE

If fuel is not ignited while attempting engine start, crank engine to expel fuel before attempting start again. Observe starter motor limit. Use Cranking Procedure, Section 5
Above 25% RPM, slow acceleration may indicate failure of auto-start system. Auto-start system will automatically enrich the start fuel schedule to maintain a constant EGT of approximately 690-700°C throughout the start. However, other parameters may influence and cause start temperature to vary, such as engine temperature, tail wind or weak batteries.

- g Engine RPM.....STABILIZE AT ABOUT 5-10/5-24
76.5 TO 78.5%
- h SRL Fail Annunciator.....EXTINGUISHED 5-10/5-24

If APU start, proceed to 12:

- 11 Battery Recharge.....AS REQUIRED 5-11/5-25
Charging may begin with the condition lever at taxi while the oil temperature is below 55 degrees C. Once the oil temperature is above 55 degrees C, the condition lever may be placed to TAKEOFF LAND to increase charging rate. After recharging, reset the condition lever to TAXI.
- a Generator Switches.....BOTH ON 5-11/5-25
(EQUALIZATION
CIRCUITS ENERGIZED)
- When charging rate is less than 100 amps:** 5-11/5-25
- b Generator Switch 5-11/5-25
(inoperative engine).....OFF
- c Condition Lever (operating engine).....TAKEOFF LAND 5-11/5-25
- d Charge Rate.....200 AMPS MAXIMUM 5-11/5-25
- e Battery Temperature.....140°F MAXIMUM 5-11/5-25
- When charging rate is less than 100 amps:** 5-25
- f Condition Lever (operating engine).....TAXI 5-11/5-25

AFM
page

g Generator Switches.....BOTH OFF 5-25

CAUTION

DO NOT ATTEMPT ANOTHER BATTERY START IF BAT
TEMP 120°ANNUN CIATOR IS ILLUMINATED. SHUT
DOWN AND CORRECT PROBLEM PRIOR TO FLIGHT. 5-25

12 Other Engine.....START, 5-25
REPEATING
SEQUENCE
(STEP 8- 10)

AFTER STARTING ENGINES

1 Engine Instruments.....CHECK 5-24
a Oil Temperature.....CHECK ABOVE 55°C
BEFORE ADVANCING
POWER LEVERS
ABOVE 78.5%RPM 5-13

Refer to AFM Chapter 5 "Preflight Operation Check" for 5-13-1/
normal engine indications with various condition lever & 5-13-2
power lever positions. Refer to AFM Chapter 2 "Instrument
Markings" for engine instrument indications.

If APU start is not required, proceed to 3:

2 APU.....DISCONNECT 5-24
3 Generator Switches
(main bus tie check).....EITHER LH OR
RH ON 5-25
4 Voltammeter
(main bus tie check).....CHECK 5-25

CAUTION

IF EITHER VOLTMETER INDICATES BATTERY 5-25
VOLTAGE (22 - 24 VOLTS) INSTEAD OF GENERATOR
VOLTAGE (28.5 + 1.0/-1.5 VOLTS), THE 200 AMP BUS
TIE CIRCUIT BREAKER IS OPEN AND MALFUNCTION
MUST BE CORRECTED PRIOR TO FLIGHT.

5 Generator Switches
(main bus tie check).....BOTH ON AND
CHECK 5-25
a Check Voltammeter.....27 TO 29.5 VDC 5-25

AFM
page

b Charge Rate.....	MONITOR	5-10/5-24
	(MAXIMUM 200AMPS)	
6 Radio Master Switches	ON	5-14
7 Battery Select Switch.....	PARALLEL	
8 Fuel Transfer.....	AUTO	5-13
9 Start Select Switch.....	AIR START	
	AND SAFE	5-11/5-25
10 Cabin Air.....	BOTH	5-13
11 De-ice/Anti-ice System Check	AS REQUIRED	
a PITOT AND STATIC ANTI-ICE SYSTEM		5-32
1) Pitot & Static Anti-ice Switches.....	ON	5-32
2) Loadmeter Select Switch.....	LH PITOT AND	
	STATIC POSITION	5-32
3) Loadmeter Operating Range50 TO .85	5-32
4) Loadmeter Select Switch.....	RH PITOT AND	
	STATIC POSITION	5-32
5) Loadmeter Operating Range50 TO .85	5-32
CAUTION		
MAXIMUM 10 SECONDS OPERATION DURING GROUND		5-32
PREFLIGHT.		
6) Pitot & Static Anti-ice Switches.....	OFF	5-32
b STALL WARNING ANTI-ICE SYSTEM		
1) Stall Vane Anti-ice Switch.....	ON	5-33
2) Loadmeter Select Switch.....	STALL VANE	5-33
3) Loadmeter Operating Range.....	.30 TO .70	5-33
CAUTION		
MAXIMUM 10 SECONDS OPERATION DURING GROUND		5-33
PREFLIGHT.		
ICE ACCUMULATION ON THE WING DEICE BOOT MAY		5-33
DISRUPT AIR FLOW OVER THE STALL VANE AND		
PREVENT THE SYSTEM FROM PROVIDING ACCURATE		
STALL WARNING.		
4) Stall Vane Anti-ice Switch.....	OFF	5-33
c PROPELLER ANTI-ICE SYSTEM		

CAUTION

- DO NOT CHECK PROPELLER ANTI-ICE SYSTEM UNTIL AFTER ENGINE START. 5-33
- 1) Propeller De-ice Switches.....ON 5-33
- 2) Loadmeter Select Switch.....POSITION TO LH PROP 5-33
- 3) Loadmeter Operating Range..... .85 TO 1.05 5-33
- 4) Loadmeter Select Switch.....POSITION TO RH PROP 5-33
- 5) Loadmeter Operating Range..... .85 TO 1.05 5-33

NOTE

The loadmeter will fluctuate in about 30 second cycles as power shifts to heater mats on other blades. 5-33

- 6) Propeller De-ice Switches.....OFF 5-33

d ENGINE INTAKE AND OIL COOLER AIR INTAKE ANTI-ICE SYSTEMS 5-33

CAUTION

- DO NOT CHECK UNTIL AFTER ENGINE START. 5-33
- 1) Engine Intake Anti-ice Switches.....ON 5-34
- 2) Indicator Lights.....ILLUMINATE 5-34
- 3) EGT.....SLIGHT INCREASE 5-34

CAUTION

MAXIMUM 10 SECONDS OPERATION FOR TEST PURPOSES WHEN THE OAT IS 10°C (50° F) OR HIGHER. 5-34

NOTE

This is true whether visible moisture is present or not. 5-34

- 4) Engine Intake Anti-ice Switches.....OFF
- 5) Indicator Lights.....EXTINGUISH
- 6) EGT.....SLIGHT DECREASE
- If valve closure not indicated and OAT is above 10°C, shut down engine:
- 7) Oil Cooler Inlet Anti-ice Switches.....ON 5-34

AFM
page

8) Indicator Lights.....ILLUMINATE 5-34



MAXIMUM 10 SECONDS OPERATION DURING GROUND PREFLIGHT. 5-34

9) Oil Cooler Anti-ice Switches.....OFF 5-34

e HEATED WINDSHIELD ANTI-ICE SYSTEM 5-34

Preflight check cannot be performed when OAT is above 38.5°C or if the windshields have been exposed to direct sunlight for extended periods. 5-34

1) Windshield Heat Low Switches.....ON 5-34

a) Overhead Panel Indicator LightsILLUMINATED 5-34

2) After Indicator Lights Cycle, High Heat Switches.....ON 5-34

a) Instrument Panel High Heat Indicator Lights.....ILLUMINATED 5-34

NOTE

Heating may be confirmed by touching windshield. 5-34
Windshield Heat Low Switches in the overhead panel must be ON for the High Heat switches in the control wheels to be operational. The overhead panel indicator light will cycle as the windshield reaches operational temperature for Low and High Heat modes. Instrument panel High Heat Indicator Lights do not cycle.

3) All Windshield Anti-ice Switches.....OFF 5-35

f WING AND EMPENNAGE DEICE SYSTEM 5-35

Have outside observer check inflation of all wing and tail de-ice boots. The boots will inflate for approximately 6 seconds and then deflate for approximately 2 minutes and 54 seconds. Check for wing de-ice indicator light illuminated during inflation. Turn wing de-ice switch off, then back on, if multiple cycles are required for the observer to check all boots. (Post SB 096/30-004) If indicator light not observed during inflation, check oil temperature above 55 degrees C, then advance condition levers to TAKEOFF LAND and recheck. After checks complete, turn boots off.

1) Wing De-ice Switch.....ON 5-35

2) Inflation and Deflation of Boots.....VISUAL CHECK 5-35

a) Wing De-ice Indicator Light.....ILLUMINATES (DURING INFLATION) 5-35

		AFM page
3) Wing De-ice Switch.....	OFF	5-35
<i>If overspeed governor check is not required, proceed to 13:</i>		
12 Overspeed Governor Check.....	AS REQUIRED	5-12
Perform prior to the first flight of the day and for any flight when air starts are anticipated. The overspeed governor must also be checked after control system adjustment, maintenance, and for indication of malfunction.		5-26
a Condition Lever.....	TAKEOFF LAND (PROPELLERS MUST BE ON LOCKS)	5-26
b Power Lever.....	FLIGHT IDLE	5-26
c Power Lever.....	SLOWLY ADVANCE TOWARD TAKEOFF POSITION UNTIL ENGINE SPEED IS STABILIZED	5-26
<div>NOTE</div>		
If torque , EGT and fuel flow increase , and RPM remains constant as power lever is advanced, propeller is not on the locks. Shutdown the engine and restart , carefully placing the power lever forward of the GROUND IDLE position to prevent start lock disengagement.		5-26
d Engine Speed.....	OVERSPEED GOVERNOR SHOULD REGULATE ENGINE SPEED BETWEEN 103.0% TO 105.0% RPM	5-26
<div>CAUTION</div>		
IF ENGINE SPEED REACHES 106% RPM, MOVE POWER LEVER TO FLIGHT IDLE POSITION IMMEDIATELY, THEN SHUT DOWN ENGINES AND ADJUST OVERSPEED GOVERNOR SETTING BEFORE PROCEEDING WITH FLIGHT. LIMIT OPERATION AT SPEEDS OVER 101% RPM TO THE MINIMUM NECESSARY TO MAKE OVERSPEED GOVERNOR CHECK.		5-26
DO NOT EXCEED 106% RPM AT ANY TIME.		5-26
e Repeat for other engine		5-26

AFM
page

- 13 Single Red Line (SRL)
/Delta P.....CHECK (PROPS
ON LOCKS) 5-12

NOTE

If torque, EGT and fuel flow increase, and RPM remains constant as power lever is advanced, propeller is not on the locks. Shutdown the engine and restart, carefully placing the power lever forward of the GROUND IDLE position to prevent start lock disengagement. 5-12

On Engine to be Checked: 5-12

- a Condition Lever.....TAKEOFF LAND 5-12
b Power Lever.....SET TO 100% RPM 5-12
c EGT.....STABILIZE
AND NOTE VALUE 5-12
d Delta P/P Test.....TEST (MOMENTARY) 5-12

CAUTION

EGT VALUES SHOULD INCREASE ABOUT 5°C IN TEST POSITION. IF EGT READINGS DO NOT CHANGE, THE DELTA P/P TRANSDUCER MUST BE CHECKED AND CORRECTED BEFORE FURTHER FLIGHT. 5-12

DO NOT INITIATE FLIGHT WITH SRL SYSTEM INOPERATIVE. 5-12

- e SRL Switch.....OFF, SRL
FAIL ANNUNCIATOR
ILLUMINATED
NOTE CHANGE
IN EGT VALUE 5-12
f SRL Switch.....ON, SRL
FAIL ANNUNCIATOR
EXTINGUISHES 5-12
g Power Lever.....GROUND IDLE 5-12
h Condition Lever.....TAXI 5-12
i Repeat steps "a" through "h" on opposite engine 5-12

CAUTION

THE CHANGE IN EGT NOTED FOR EACH ENGINE SHOULD BE THE SAME WITHIN 10°C TOLERANCE. IF NOT, THE SRL SYSTEM MUST BE CHECKED AND CORRECTED BEFORE FURTHER FLIGHT. 5-12

AFM
page

NOTE

The EGT indicators can be observed to suddenly change in value as the engines sweep through 80% RPM, which indicates a functioning SRL System. 5-12

- 14 Flaps.....SET FOR
TAKEOFF 5-14
Takeoff setting 5 ° or 20 ° (check weight limit for takeoff) 5-14
Obtain visual check as well as proper flap position indication.

WARNING

SINGLE ENGINE CLIMB CAPABILITY MUST BE CHECKED PRIOR TO TAKEOFF USING THE PERFORMANCE INFORMATION IN THE PILOTS OPERATING MANUAL. IF THE GEAR UP CLIMB CAPABILITY IS NOT SUFFICIENTLY POSITIVE, A REDUCTION IN TAKEOFF WEIGHT IS RECOMMENDED. IF THE TAKEOFF WEIGHT IS GREATER THAN THAT FOR POSITIVE CLIMB GRADIENT WITH THE GEAR DOWN AND AN ENGINE FAILS PRIOR TO GEAR RETRACTION OR 75 FT AGL, THE PILOT SHOULD CONSIDER LANDING STRAIGHT AHEAD. 5-14

- 15 Flight Controls.....FREE 5-8 & 5-14
Check for free movement to the stops
- 16 Autopilot.....CHECK
Perform preflight checks in accordance with the applicable AFM supplement. Setup flight director for departure.
- 17 Trim Tabs.....SET 5-8
Elevator 4° - 6° nose up , rudder 2° left and aileron 1° left.
- 18 Avionics.....CHECK & SET 5-14
Review departure procedures to ensure that all communications and navigation radios are set for departure. Note initial heading and level off altitude. If radar use is anticipated, check it according to AFM supplement. Set transponder code.
- 19 Start Locks.....DISENGAGE 5-13
a Condition Levers.....TAKEOFF LAND 5-13
b Power Levers.....MOVE SLOWLY 5-13
TOWARD REVERSE POSITION.

Both BETA RANGE annunciators should extinguish and re-illuminate. Increasing fuel flow, torque pressure and EGT indicate disengagement of propeller locks

		AFM page
c Power Levers.....	CHECK FOR TORQUE INCREASE AS POWER LEVERS ARE ADVANCED ABOVE FLIGHT IDLE	5-13
d Power Levers.....	GROUND IDLE	5-13
e Condition Levers.....	TAXI	5-13
20 Supplemental NTS.....	CHECK	5-26
a Condition Lever.....	TAXI	5-26/ 5-14
b Power Lever.....	ADVANCE UNTIL BETA RANGE ANNUNCIATOR EXTINGUISHES	5-26
<i>Supplemental NTS check is satisfactory if:</i>		5-26-1/ 5-26-2
1) Beta Range Annunciator.....	EXTINGUISHES	5-26-1/ 5-26-2
2) Torque.....	INCREASE	5-26-1/ 5-26-2
3) RPM Stabilizes	BELOW 96%	5-26-1/ 5-26-2
WARNING		
IF ENGINE FAILS ANY PART OF THE SUPPLEMENTAL NTS CHECK, CORRECT PRIOR TO FLIGHT PER ENGINE MANUAL.		5-26-1/ 5-26-2
A failed check will typically occur when the rpm stabilizes 6- 7% high (i.e., at 101 to 103% rpm).		
c Power Lever.....	RETARD TO GROUND IDLE	5-26-1/ 5-26-2 & 5-14
d Repeat for other engine		5-26-1/ 5-26-2
21 Annunciator Panel & Warning Lights.....	CLEAR	
a Landing Gear Unsafe Warning Light.....	CHECK	5-14
b Annunciator Panel.....	CHECK	5-14
Fire warning and other warning lights checked out		
22 Landing Lights/Taxi Lights.....	AS REQUIRED	5-14

PREFLIGHT OPERATION CHECK

5-13-1/2

ITEM	POWER LEVER	CONDITION LEVER	CHECK ITEMS
LOW SPEED TAXI	GROUND IDLE	TAXI	1. Engine Speed must be 76.5% - 78.5% RPM 2. BETA RANGE annunciator normally illuminated 3. Oil Pressure minimum 40 psi 4. Fuel Pressure minimum 15 psi 5. No Caution Lights illuminated
HIGH SPEED TAXI	GROUND IDLE	TAKEOFF LAND	1. Engine Speed must be 96% - 97% RPM 2. BETA RANGE annunciator must be illuminated
REVERSE	REVERSE	TAKEOFF LAND	1. Engine Speed must be above 94.5% RPM 2. BETA RANGE annunciator must be illuminated
TAKEOFF	TAKEOFF POWER POSITION	TAKEOFF LAND	1. Engine Speed must be 99.5% - 101% RPM 2. Oil Pressure must be 70 - 120 psi 3. BETA RANGE annunciator must be extinguished

TAXI

- 1 Brakes & Steering.....CHECK
- a Parking Brake.....OFF 5-14
- Release the parking brake. Leaving the chocks, momentarily depress both brake pedals and note proper brake actuation. Check proper steering response. Proper seat position can be confirmed by making a sharp turn with the rudder pedal to the stops.
- 2 Flight Instruments.....CHECK 5-14
- While taxiing, observe proper turn needle operation, both compasses slaved and indicating properly with no flags observed, both altimeters set and match within applicable regulations, airspeed and VSI indicate zero, and the attitude gyro is erect, testing properly, and no flags are observed.
- 3 Power.....SET AS REQUIRED
- (MAINTAIN
- MINIMUM
- 76.5% RPM) 5-14

AFM
page

BEFORE TAKEOFF

- Takeoff performance data is based on holding the brakes while advancing power to 100% Torque or 650 degrees EGT, whichever occurs first. Stabilize power setting. 5-15
- Once power is stabilized, check engine instruments normal and BETA lights extinguished.
- Release the brakes, accelerate to V_R and rotate to a normal takeoff pitch attitude, not to exceed 13 degrees pitch. 5-15
- As the aircraft accelerates, power will normally increase about 10%. Power lever position must normally be adjusted to prevent exceeding engine limits.

CAUTION

- WHEN MAKING A ROLLING TAKEOFF UNDER TEMPERATURE LIMITED CONDITIONS , ADVANCE POWER LEVERS NO HIGHER THAN 600°C EGT , SINCE EGT WILL INCREASE APPROXIMATELY 50°C DURING TAKEOFF ROLL DUE TO SYSTEM LAG. A ROLLING TAKEOFF SHOULD ONLY BE MADE IF RUNWAY LENGTH AND OBSTACLE CLEARANCE WILL PERMIT. 5-15

NOTE

- If temperature limited, the EGT system requires approximately 20 seconds to stabilize. 5-15
- 1 Lights.....AS REQUIRED
- a Landing Lights/Taxi Lights.....AS REQUIRED 5-14
- b Strobe Lights.....AS REQUIRED - OBSERVE PLACARD LIMITATION 5-14
- c Navigation Lights.....AS REQUIRED, ON FOR NIGHT FLIGHT
- 2 De-ice & Anti-ice.....AS REQUIRED
- a Pitot & Static Anti-ice.....ON 5-14
- b Windshield Heat.....LOW 5-14
- c Other Anti-ice Systems.....AS REQUIRED 5-14
- Other anti-ice systems as required. If icing conditions exist, ensure all anti-ice equipment on. Do not turn wing de-ice boots on until after takeoff.

AFM
page

CAUTION

- ALL ANTI-ICE SYSTEMS MUST BE ON PRIOR TO TAKEOFF IN VISIBLE MOISTURE IF OAT IS +10°C OR COLDER. 5-14
- 3 Transponder.....ON 5-14
Select #1 or #2 as desired.
- 4 Radar.....AS REQUIRED
- 5 Cabin Air.....AS REQUIRED 5-14
All takeoff performance data in the AFM is computed with bleed air in RAM. This is particularly important when engine temperature limits takeoff power.
- 6 Flaps.....SET FOR
TAKEOFF 5-14
Takeoff setting 5° or 20° (check weight limit for takeoff) 5-14
Obtain visual check as well as proper flap position

WARNING

- SINGLE ENGINE CLIMB CAPABILITY MUST BE CHECKED PRIOR TO TAKEOFF USING THE PERFORMANCE INFORMATION IN THE PILOTS OPERATING MANUAL. IF THE GEAR UP CLIMB CAPABILITY IS NOT SUFFICIENTLY POSITIVE, A REDUCTION IN TAKEOFF WEIGHT IS RECOMMENDED. IF THE TAKEOFF WEIGHT IS GREATER THAN THAT FOR POSITIVE CLIMB GRADIENT WITH THE GEAR DOWN AND AN ENGINE FAILS PRIOR TO GEAR RETRACTION OR 75 FT AGL, THE PILOT SHOULD CONSIDER LANDING STRAIGHT AHEAD. 5-14
- 7 Condition Levers.....TAKEOFF LAND 5-14 & 5-15
- 8 Friction.....SET 5-14
- 9 Ignition Switches.....AS REQUIRED 5-15

CAUTION

DO NOT USE IGNITION SWITCH IN AUTO POSITION WHEN THE CONDITION LEVER IS AT TAXI. (IF AUTO IGNITION INSTALLED) 5-15

AFM
page

CAUTION

- IGNITION SHALL BE SELECTED TO CONT (IF AUTO IGNITION INSTALLED) or ON (IF CONTINUOUS IGNITION INSTALLED) DURING TAKEOFF AND CLIMB OUT IN ACTUAL OR POTENTIAL ICING CONDITIONS OR WHERE THERE IS WATER, SLUSH OR SNOW ON THE RUNWAY. 5-15
- 10 Trim Tabs.....SET 5-14
Elevator 4° - 6° nose up , rudder 2° left and aileron 1° left.
- 11 Engine Instruments.....CHECK 5-14
Confirm all engine instruments are in the green range prior to takeoff. Note that extended ground operations on hot days may result in high oil temperatures. If oil temperatures approach the red line, turn the aircraft into the wind, set the parking brake, and advance the power levers to at least flight idle. This will ensure a positive propeller blade angle and provide cooling airflow over the oil coolers. The "Preflight Operation Check" table in the AFM contains some, but not all, normal engine indications for taxi and takeoff. 5-13-1/2
- 12 Annunciator Panel &
Warning Lights.....CLEAR
a Landing Gear Unsafe Warning Light.....CHECK 5-14
b Annunciator Panel.....CHECK 5-14
Fire warning and other warning lights checked out
- 13 Heading.....CHECK
Heading should be compared with assigned takeoff runway.

TAKEOFF SPEEDS

FLAPS 5°	V _R	V ₅₀	V _{XSE}	V _{YSE}
11,575 LBS	109	120	130	140
11,000 LBS	106	120	130	140
10,000 LBS	101	120	130	140
9,000 LBS	100	120	130	140

FLAPS 20°

11,575 LBS	105	113	125	135
11,000 LBS	103	113	125	135
10,000 LBS	100	113	125	135
9,000 LBS	100	113	125	135

AFTER TAKEOFF		5-15
Maintain pitch attitude (maximum 13 ° nose up).		5-15
1 Landing Gear.....UP		5-15
Landing gear should be selected up as soon as a positive rate of climb is established and the aircraft can no longer land on the remaining runway. Check single engine rate of climb data, before starting engines. Check all gear lights extinguished after retraction.		
<div>NOTE</div>		
If takeoff was made from a snow or slush covered runway, cycle the landing gear one or two times at a safe altitude to shed any ice accumulation.		5-16
2 Landing Light.....RETRACT		5-16
3 Flaps.....RETRACT ON SCHEDULE		5-16
After gear retraction complete, retract flaps. If flaps 20 takeoff was elected, retract flaps to 5 at 130 knots minimum, confirm proper flap indications, then select flaps up at 140 knots minimum.		5-16
4 Airspeed (normal climb).....155 KCAS		5-16

AFM
page

- 5 Power.....MAXIMUM
CONTINUOUS 5-16

NOTE

If takeoff was made with EGT at 650°C during visible moisture, reduce EGT to 630°C for normal or cruise climb only after gear and flaps are UP and all obstacles have been cleared. 5-16

- 6 Cabin Air.....BOTH 5-16
7 Ignition Switches.....AS REQUIRED 5-16/
5-18-1

Select CONT (auto ignition installed) or ON (auto ignition not installed) in icing conditions or heavy precipitation. 5-16/
Observe duty cycle limitations. 5-18-1

In other than these conditions, select AUTO (auto ignition installed) or OFF (auto ignition not installed) 5-16/
5-18-1

If duty cycle limits prevent operating with CONT during icing conditions, select AUTO.

CAUTION

5-16

1. IGNITION SHALL BE SELECTED TO CONT (AUTO IGNITION INSTALLED) OR ON (CONTINUOUS IGNITION INSTALLED), WHEN ICE IS VISIBLE ON, OR SHEDDING FROM PROPELLER(S), SPINNER(S), OR LEADING EDGE(S).

2. IGNITION SHALL BE SELECTED TO CONT (AUTO IGNITION INSTALLED) OR ON (CONTINUOUS IGNITION INSTALLED), BEFORE SELECTING ANTI-ICE, WHEN ICE HAS ACCUMULATED.

3. IGNITION SHALL BE SELECTED TO CONT (AUTO IGNITION INSTALLED) OR ON (CONTINUOUS IGNITION INSTALLED), IMMEDIATELY, ANYTIME ENGINE FLAMEOUT OCCURS AS A POSSIBLE RESULT OF ICE INGESTION.

AFM
page

- 8 De-ice & Anti-ice.....AS REQUIRED
(ADD 10% KCAS
IN ICING)

All anti-ice and de-ice systems should be on for operations in icing conditions. Wing de-ice should remain in AUTO, except in heavy icing conditions where more frequent ice removal may be required.

- a Wing De-ice.....AS REQUIRED 5-16
b Anti-ice Systems.....AS REQUIRED 5-17
c Pitot & Static Anti-ice.....ON 5-18-1
d Windshield Heat.....LOW 5-18-1
9 Cabin Pressurization.....SET 5-17
Set "Airplane Alt At Max Diff." window to cruise altitude plus 1000 feet. Adjust rate control for a comfortable climb.
10 Engine Instruments.....CHECK 5-17
11 Synchrophaser.....AS REQUIRED 5-17

VISIBLE MOISTURE ENCOUNTERS



DURING ALL OPERATIONS IN VISIBLE MOISTURE,
CAREFULLY MONITOR EGT. DO NOT ALLOW EGT TO
EXCEED 650°C. 5-18

AFM
page

FLIGHT IN ICING CONDITIONS

5-18

WARNING

PILOTS SHOULD BE AWARE THAT OPERATION OF THE AUTOPILOT'S VERTICAL MODES MAY RESULT IN AN UNSAFE AIRSPEED IF ICE ACCUMULATES ON THE AIRPLANE.

6 of
SUPPLEM
ENT NO.
25

IN ORDER TO MINIMIZE ICE ACCUMULATIONS ON UNPROTECTED LOWER SURFACES , MAINTAIN A MINIMUM SPEED OF 180 KIAS DURING OPERATIONS IN SUSTAINED CRUISE IN ICING CONDITIONS.

5-18-1

IF UNABLE TO MAINTAIN 180 KIAS AT MAXIMUM CONTINUOUS POWER , A CHANGE OF ALTITUDE AND/OR COURSE MAY BE NECESSARY TO MAINTAIN MINIMUM AIRSPEED AND/OR EXIT THE ICING CONDITIONS.

DURING LANDING, DO NOT SELECT 40 ° FLAPS WHEN OPERATING IN ICING CONDITIONS.

CLIMB (18000') / CRUISE

5-18-1

- | | | | |
|---|---|-------------------|--------|
| 1 | Taxi Lights..... | OFF | 5-16 |
| 2 | Cabin Sign..... | AS REQUIRED | 5-16 |
| | Normally, OFF for cruise. However, in turbulence, cabin sign should remain ON. | | |
| 3 | Altimeters..... | SET | 5-18-1 |
| | Local altimeter setting, or 29.92, as appropriate. | | |
| 4 | Cabin Pressurization..... | CHECK | 5-18-1 |
| 5 | Fuel Balance and Transfer..... | CHECK | 5-18-1 |
| | Maintain fuel balance within 150 pounds. A faster feeding fuel tank may be turned off to allow the slow tank to catch up. After tip tanks and outer tanks are empty, turn fuel transfer switches off. | | |
| 6 | Generator Load..... | CHECK | 5-18-1 |
| 7 | Anti-ice/De-ice Systems..... | AS REQUIRED | |
| | | (180 KIAS | |
| | | MINIMUM IN ICING) | 5-18-1 |
| a | Pitot & Static Anti-ice..... | ON | 5-18-1 |
| b | Windshield Heat..... | LOW | 5-18-1 |
| 8 | Oxygen/Crew Mask..... | CHECK | 5-18-1 |

AFM
page

- 9 Power.....SET AS REQUIRED
(96% RPM TO
98% RPM) 5-18-1

CAUTION

DO NOT MOVE CONDITION LEVER BELOW MIN
CRUISE DURING FLIGHT EXCEPT TO FEATHER A
FAILED ENGINE . 5-18-1

- 10 Engine Instruments.....MONITOR 5-18-1

DESCENT 5-18-2

- 1 Cabin Altitude.....SET 5-18-2
Set Cabin Pressure Controller pointer to field elevation plus
1000'. Adjust rate control knob so that the airplane will be
fully depressurized prior to landing. Generally, a 300 to 500
fpm cabin descent rate will be comfortable and ensure
proper depressurization.

- 2 Fuel Transfer Control Switches.....TIP MANUAL
OR OFF 5-18-2

CAUTION

Select TIP MANUAL or OFF to prevent operation of outer
fuel transfer pumps during-descent. 5-18-2

- 3 Altimeters.....SET 5-18-2

- 4 Windshield Defog.....AS REQUIRED 5-18-2

- 5 Ignition SwitchesAS REQUIRED 5-18-2

Select CONT (auto ignition installed) or ON (continuous
ignition installed) in icing conditions or heavy precipitation.
Observe duty cycle limitations.

In other than these conditions, select AUTO (auto ignition
installed) or OFF (continuous ignition installed.)

CAUTION

IGNITION SHALL BE SELECTED TO CONT (IF AUTO
IGNITION INSTALLED) OR ON (IF CONTINUOUS
IGNITION INSTALLED) DURING APPROACH AND
LANDING WHILE IN OR SHORTLY FOLLOWING FLIGHT
IN ACTUAL OR POTENTIAL ICING CONDITIONS. 5-18-2

	AFM page
6 Anti-ice/De-ice.....AS REQUIRED (ADD 10% KCAS IN ICING)	5-18-2 & 5-19
a Pitot & Static Anti-ice.....ON	5-18-2
b Windshield Heat.....LOW If descent through icing conditions is anticipated, turn on all anti-ice and de-ice equipment.	5-18-2
7 Taxi Lights.....AS REQUIRED Recommended on for descent.	

APPROACH		5-18-2
1 Landing Data.....COMPUTED Recommended landing flap setting is flap 20° although flap 40° is available. Compute landing weight, V_{REF} for selected flap position, and landing distance. Other landing data may be required depending upon the circumstances. Refer to the performance section of the AFM. For landing with a crosswind, adjust V_{REF} by one half the steady state wind plus all of the gusts, not to exceed V_{REF} plus 10 knots. When landing with any ice accumulation on the wing, increase the computed V_{REF} by 15 knots. When landing with an asymmetric fuel condition, increase computed V_{REF} by 10 knots. Approach speeds should not be below V_{REF} (adjusted) until landing flare.		5-18-2
2 Fuel Quantity/Balance.....CHECK - IN LIMITS Tip fuel must be below 400 pounds or an overweight landing inspection will be required. Balance within 150 pounds.		5-18-2
3 Synchrophaser.....OFF		5-18-2
4 Differential Pressure.....ZERO Confirm cabin will be depressurized prior to landing.		5-18-2
5 Condition Levers.....TAKEOFF LAND Provides maximum thrust in the event of a go-around.		5-18-2/ 5-19
6 Power.....AS REQUIRED		5-18-2
7 Flaps5 ° (BELOW 175 KCAS)		5-18-2
8 Airspeed140 KCAS MINIMUM		5-18-2
9 Cabin Sign.....ON Brief passengers.		5-18-2

AFM
page

- 10 Anti-ice System.....AS REQUIRED
(ADD 10% KCAS
IN ICING) 5-18-2
- a Pitot & Static Anti-ice.....ON 5-18-2
- b Windshield HeatLOW 5-18-2
- 11 Landing Lights.....AS REQUIRED
(BELOW 175KCAS) 5-18-2

LANDING THRESHOLD SPEED (V _{REF})		
WEIGHT	FLAPS 20°	FLAPS 40°
11025 LBS	110	119
10500 LBS	108	116
10000 LBS	105	114
9500 LBS	102	111
9000 LBS	100	108

BEFORE LANDING

5-18-3/
5-18-4

WARNING

USE OF 40 ° FLAPS FOR LANDING CONSIDERABLY
RESTRICTS THE GO AROUND CAPABILITY SHOULD
AN ENGINE FAILURE OCCUR IN THE APPROACH OR
LANDING PHASE. 5-18-3/
5-18-4

DURING LANDING, DO NOT SELECT 40 ° FLAPS WHEN
OPERATING IN ICING CONDITIONS. THE FAA HAS
DETERMINED THAT ICE ACCUMULATIONS ON THE
TAIL PLANE OF MANY AIRCRAFT MAY RESULT IN A
REDUCED DOWN FORCE ON THE HORIZONTAL
STABILIZER WHEN FULL FLAPS ARE USED. THIS
REDUCED DOWN FORCE MAY RESULT IN THE
AIRCRAFT PITCHING NOSE DOWN. 5-18-3/
5-18-4

AFM
page

NOTE

It is strongly recommended that the airplane be established on a stable approach for the last 1000 feet of descent in IMC conditions (or for the complete final approach segment of a non precision approach if that segment is less than 1000 feet above the field) or the last 500 feet of descent in VMC conditions. A stable approach means that the airplane is configured for landing, all checklists have been completed, power is established at a setting to maintain an airspeed of V_{REF} to V_{REF} plus 20 knots, the airspeed is steady at V_{REF} to V_{REF} plus 20 knots, the proper glide path is being maintained, the airplane is trimmed, and no unusual maneuvering is required to accomplish the landing. A missed approach is recommended if deviation from any of these parameters occurs.

- 1

Landing Gear.....DOWN

5-18-2
- Ensure 3 green landing gear position lights illuminated and the red unsafe light extinguished. If a gear malfunction occurs, emergency extension may be required. Maximum speed for normal extension is 175 KCAS.
- 2

Brakes.....CHECK
- Depress brake pedals, check firm pressure.
- 3

FlapsAS REQUIRED

5-18-3/5-18-4

NOTE

It is recommended to set the flap switch at 5° position and confirm the 5° indication light illuminates before going to 20° position.

Recommended landing is with flap 20° although flap 40° is available.

- 4

Ignition SwitchesAS REQUIRED

5-18-3/5-18-4

AFM
page

CAUTION

IGNITION SHALL BE SELECTED TO CONT (IF AUTO IGNITION INSTALLED) OR ON (IF CONTINUOUS IGNITION INSTALLED) WHERE THERE IS WATER, SLUSH OR SNOW ON THE RUNWAY. 5-18-3/
5-18-4

CONT or ON if runway is contaminated, raining, or in icing conditions. Also, CONT or ON shortly following exit from icing conditions whenever ice remains forward of the engine nacelle. (Observe ignition duty cycle limits). Otherwise, for aircraft with auto ignition installed, AUTO.

- 5 Wing De-ice.....OFF 5-19

NOTE

If wing deice system is in Automatic mode during approach , cycle system OFF then ON to allow one additional cycle , then select the system OFF prior to landing. 5-19

- 6 Autopilot/Yaw Damper.....OFF
Refer to Autopilot supplement in AFM.

AFTER LANDING 5-20

Maintain directional control by rudder pedals and differential braking if necessary 5-20

Recommend that the pilot does not begin the following checklist until clear of the runway and established at normal taxi speed.

- 1 Power LeversGROUND IDLE 5-20
2 Beta Range AnnunciatorsILLUMINATED 5-20

CAUTION

Ensure that both BETA RANGE annunciators are illuminated before selecting reverse after touchdown or asymmetrical reverse thrust may result. The nose wheel must be on the ground and airspeed below 90 KCAS before selecting reverse. 5-20

- 3 Power LeversREVERSE
(AS REQUIRED) 5-20

AFM
page

- 4 Power LeversGROUND IDLE
WHEN REVERSING
COMPLETED 5-20



DO NOT RETARD CONDITION LEVERS BELOW
TAKEOFF LAND POSITION UNLESS POWER LEVERS
ARE OUT OF REVERSE. 5-20

- 5 Ignition Switches.....OFF 5-20



DO NOT RETARD CONDITION LEVERS BELOW
TAKEOFF AND LAND UNLESS IGNITION SWITCHES
ARE OFF. 5-20

- 6 Condition Levers.....TAXI 5-20
After completion of landing ground roll. Recommend
starting the clock in order to time 3 minute cool down.

- 7 Anti-ice.....OFF 5-20

- 8 Lights.....AS REQUIRED 5-20

- a Landing Lights/Taxi Lights.....AS REQUIRED 5-20

- b Strobe Lights.....OFF 5-20
Do not operate strobe lights in the vicinity of other aircraft.

- 9 Rader & Transponder.....STANDBY

- 10 FlapsAS REQUIRED 5-20
Flaps should be in the up position if airplane is to be parked
overnight. Otherwise, pilot may elect to set next anticipated
takeoff flap position.

- 11 Trim Tabs.....RESET

STOPPING ENGINES

- 1 Power LeversGROUND IDLE 5-20
2 Radio Masters.....OFF 5-20
3 Engine Shutdown.....ACCOMPLISH
a Run-Crank-Stop Switches.....STOP AND HOLD
UNTIL 50% RPM 5-20

AFM
page

NOTE

- Engine rpm and EGT will increase momentarily after placing Run-Crank-Stop Switch to STOP. 5-20
- b Power Levers.....MOVE POWER LEVERS TO REVERSE POSITION AS ENGINE RPM DECELERATES TO 50% TO POSITION PROPELLERS ON LOCKS 5-20
- 4 Parking BrakeAS REQUIRED 5-20
If brakes are hot, do not set parking brake. However, if parking brake not set, ensure the aircraft is properly chocked.
- 5 Overhead Switch Panel.....OFF
- a Cabin Sign.....OFF 5-20
- 6 Oxygen Outlet Valve.....CLOSED 5-21
- 7 Cabin Air Selector.....OFF 5-20
- 8 Fuel Transfer Switch.....OFF
- 9 DC Generator Switches.....OFF 5-21
- 10 Inverter Switch.....OFF 5-21
- 11 Other Switches.....OFF (EXCEPT MAIN FUEL VALVES AND SRL) 5-21
- 12 Battery Key Switch.....OFF
- 13 Flight Control LockINSTALL 5-21
- 14 Oxygen Cylinder Valve.....CLOSED 5-21

AFM
page

SECURING

- 1 Chocks.....INSTALL
- 2 Nose Gear Torque Link.....DISCONNECT

NOTE

The torque link must be disconnected for towing. However, if towing is completed, the torque link may be reconnected to provide rudder gust lock protection.

- 3 Plugs & Covers.....INSTALL 5-21
- 4 Parking Brake.....OFF
After the airplane is properly chocked.
- 5 Bag & Cabin Lights.....OFF
Ensure all lights are off in order to not deplete the batteries.

TURNAROUND

If engine restarts are anticipated in 10 to 45 minutes: 5-21

- 1 Park airplane into wind if possible 5-21
- 2 Manually turn engine rotating group in direction of normal rotation occasionally to minimize thermal distortion. 5-21

NOTE

One blade width movement turns rotating group about 180 °. 5-21

- 3 Continue these procedures until engine restart required 5-21

CAUTION

DO NOT ATTEMPT TO START AN ENGINE WITH THERMAL DISTORTION. ACCELERATION MAY STAGNATE BETWEEN THE 18% to 28% RPM RANGE ACCOMPANIED BY A RAPID INCREASE IN EGT. ENGINE ROTATING GROUP DAMAGE MAY OCCUR. 5-21

		AFM page
<hr/> CRANKING <hr/>		
		5-26-1/ 5-26-2
<i>Complete BEFORE STARTING ENGINES Checklist before using this procedure:</i>		5-26-1/ 5-26-2
1	Battery Select SwitchPARALLEL OR SERIES	5-26-1/ 5-26-2
2	Main Fuel Valve Switches.....OPEN	5-26-1/ 5-26-2
3	Run-Crank-Stop SwitchCRANK	5-26-1/ 5-26-2
4	Start Selector SwitchLH GND START OR RH GND START	5-26-1/ 5-26-2
5	Engine Start SwitchPRESS AND HOLD	5-26-1/ 5-26-2
<i>When RPM stagnates:</i>		
6	Engine Start Switch.....RELEASE	5-26-1/ 5-26-2
<div>NOTE</div>		
Release starter when rpm stagnates. Allow rotation to stop before attempting another cranking.		5-26-1/ 5-26-2
<div>CAUTION</div>		
DO NOT EXCEED STARTER DUTY CYCLE LIMITS.		5-26-1/ 5-26-2

AFM
page

INFLIGHT NTS CHECK (FEATHERING OPERATION)

5-26-1/
5-26-2

CAUTION

IF PRACTICE ENGINE SHUTDOWNS AND
AIRSTARTS ARE PLANNED , OVERSPEED GOVERNOR
(OSG) AND NEGATIVE TORQUE SENSOR (NTS)
CHECKS MUST BE ACCOMPLISHED PRIOR TO FLIGHT.

5-26-1/
5-26-2

WARNING

INTENTIONAL SIMULATED ENGINE FAILURES
SHOULD NOT BE ACCOMPLISHED AT SPEEDS LESS
THAN 125 KCAS.

5-26-1/
5-26-2

This check required after certain maintenance functions by
the engine maintenance manual. Check with maintenance
prior to flight. The pilot should be thoroughly familiar with
the procedure or request assistance from a pilot familiar
with the procedure.

On Engine to be Shutdown:

5-27

- 1 Recommended Airspeed.....150-180 KCAS
- 2 Recommended Altitude.....5000 FT AGL MIN,
DAY - VFR ONLY
- 3 Synchrophaser.....OFF 5-27
- 4 Power Lever.....FLIGHT IDLE 5-27
Zero thrust for 1 minute. Establish power on other engine
and trim to maintain desired airspeed.
- 5 DC Generator Switch.....OFF 5-27
- 6 Amperage.....CHECK
If more than 200 amps on remaining generator, reduce load
within limits before shutting engine down.
- 7 Bleed Air (engine to shutdown).....OFF
- 8 Ignition (engine to shutdown).....OFF

AFM
page

- 9 Run-Crank-Stop SwitchSTOP (HOLD
TO 50% RPM) 5-27

Start a timer. A properly functioning NTS will reduce engine rpm to 35% within 60 seconds. If the aircraft yaws excessively, feather the propeller immediately with the condition lever and set the power lever fully forward (Beta follow up position) to minimize propeller drag. Do not restart the engine. Complete engine shutdown and single engine landing procedure.

- 10 Condition Lever.....EMERGENCY
STOP
(AT 30% RPM) 5-27

NOTE

The feathered propeller should not rotate any significant amount between 120 KCAS and 180 KCAS. If windmilling exceeds 5% RPM reduce airspeed (if feasible). If windmilling is in a reverse direction reduce airspeed (if feasible). 5-27

CAUTION

DO NOT ALLOW FEATHERED ENGINE TO ROTATE IN A REVERSE DIRECTION. 5-27

If a prolonged shutdown is anticipated, some propeller windmilling (below 5% RPM) is desirable to equalize cooling if EGT is above 200 degrees C. The following is permissible if propeller is not rotating:1) Place condition lever to the Minimum Cruise Detent, and 2) press the unfeather switch as required to achieve minimum windmill (maximum 5% until EGT is below 200 degrees C. Once the EGT is below 200 degrees C or the rpm exceeds 5%, place the condition lever to Emergency Stop. 5-27

CAUTION

AVOID OPERATION BETWEEN 18% AND 28% RPM EXCEPT FOR TRANSIENTS OCCURING DURING ENGINE START AND SHUTDOWN. 5-27

AFM
page

WARNING

PLACE SHUTDOWN ENGINE POWER LEVER AND
CONDITION LEVER IN CORRECT POSITION FOR
AIRSTART AS SOON AS POSSIBLE SHOULD AN
IMMEDIATE RESTART BE REQUIRED. 5-27

11 Airstart.....ACCOMPLISH 5-27

SYSTEM OPERATION 5-28

(1) SYNCHROPHASER 5-28

NOTE

Do not operate synchrophaser during takeoff and landing 5-28

1 EnginesSYNCHRONIZE
MANUALLY
(99.5% MAXIMUM) 5-28

2 Synchrophaser Control Switch.....ON 5-28

3 To Change Blade Relationship
Between Propellers.....ADJUST PHASE
SELECT
AS NECESSARY 5-28

CAUTION

TURN SYNCHROPHASER OFF PRIOR TO MOVING
CONDITION LEVERS TO PREVENT RPM SURGE ON
BOTH ENGINES. TO CHANGE RPM SETTING, MOVE
CONDITION LEVERS AND SYNCHRONIZE MANUALLY,
THEN TURN SYNCHROPHASER ON. 5-28

NOTE

Failure to maintain synchronization indicates trim has
reached its limit. When the switch is OFF, the trim will
return to the center position. The phase select allows
changes of blade relationship, for noise control, between
propellers while synchronized. 5-28

	AFM page
(2) ENGINE CONTINUOUS IGNITION SYSTEM	5-28
(If Auto Ignition System is not installed)	5-28
The continuous ignition system, which operates engine ignition manually, shall be selected to ON during takeoff, landing or flight in severe weather conditions, especially all operations in actual or potential icing conditions described herein and where there is water, slush or snow on the runway.	5-28
CONTINUOUS IGNITION SWITCHES SHOULD BE ON:	5-28
1. During takeoff and climb out in actual or potential icing conditions.	5-28
2. When ice is visible on, or shedding from propeller(s), spinner(s), or leading edge(s).	5-28
3. Before selecting ANTI-ICE, when ice has accumulated.	5-28
4. Immediately, anytime engine flameout occurs as a possible result of ice ingestion.	5-28
5. During approach and landing while in or shortly following flight in actual or potential icing conditions or where there is water, slush or snow on the runway.	5-28
<div>NOTE</div>	
Potential icing conditions in precipitation or visible moisture meteorological conditions;	5-28
1. Begin when the OAT is plus 10 degrees C (plus 50 degrees F) or colder, and	5-28
2. End when the OAT is plus 10 degrees C (plus 50 degrees F) or warmer.	5-28
OPERATION:	5-29
1 Continuous Ignitions.....ON	5-29
2 Both Indicator Lights.....ILLUMINATED	5-29
RECOMMENDED DUTY CYCLES	5-29

	AFM page
Applicable to 868962-1/-2 Ignition Unit:	5-29
(Engine not modified by GTEC S/B TPE/TSE 331-74-0003)	5-29
1 Minute Cycles	5-29
First Cycle.....	1 MINUTE ON - 1 MINUTE OFF
	5-29
Repetitive Cycles.....	1 MINUTE ON - 1 MINUTE OFF
	5-29
2 Minute Cycles	5-29
First Cycle.....	2 MINUTES ON - 2 MINUTES OFF
	5-29
Repetitive Cycles.....	2 MINUTES ON - 23 MINUTES OFF
	5-29
5 Minute Cycles	5-29
First Cycle.....	5 MINUTES ON - 55 MINUTES OFF
	5-29
Repetitive Cycles.....	5 MINUTES ON - 55 MINUTES OFF
	5-29
Applicable to 868962-3 Ignition Unit:	5-29
(Engine modified by GTEC S/B TPE/TSE 331-74-0003 and not modified by GTEC S/B TPE/TSE 331-75-0004)	5-29
Up to one hour continuous duty. The total ON cannot exceed one hour without one hour OFF. The one hour ON can be either continuous or intermittent.	5-29
(Engine modified by GTEC S/B TPE/TSE 331-74-0003 and GTEC S/B TPE/TSE 331-75-0004)	5-29
Above +50 degrees F (+10°C) ambient temperature.	5-29
Up to one hour continuous duty. The total ON cannot exceed one hour without one hour OFF. The one hour ON can be either continuous or intermittent.	5-29
Below +50 degrees F (+10°C) ambient temperature.	5-29
Continuous.	5-29



OPERATIONAL TIMES IN EXCESS OF THE DUTY
CYCLE WILL DECREASE THE LIFE OF IGNITERS AND
IGNITION UNIT. 5-29

AFM
page

(3) AUTO IGNITION SYSTEM

(If Auto Ignition System is installed)

5-30

1. The Ignition System is activated by a torque pressure switch sensing the high pressure output of the hydraulic torque sensor. If the engine flames out, the torque pressure drops rapidly below the torque switch set point, thus turning on the ignition. Following relight, the ignition is deactivated as the torque pressure goes above the switch set point pressure. The system is deactivated unless the CRANK-RUN-STOP switch is in the "RUN" position.

2. During ignition operation, the yellow LH IGNITION or RH IGNITION annunciator is illuminated.

3. The Auto Ignition System shall be placed in AUTO for all normal flight conditions.

4. The Auto Ignition System shall be placed in CONT (within duty cycle limitations) for all flight in icing conditions. This operation shall be conducted prior to turning on the engine intake anti-ice switch especially if inadvertent icing is encountered.

AUTOMATIC OPERATION:

5-30

1 Ignition Switches.....AUTO

2 Annunciator LightsEXTINGUISHED

NOTE

The ignition annunciators may illuminate under some low power conditions. Increase power as required to extinguish the annunciators.

CONTINUOUS OPERATION:

5-30

1 Ignition Switches.....CONT

2 Annunciator LightsILLUMINATED

CAUTION

OPERATIONAL TIMES IN EXCESS OF THE DUTY CYCLE WILL DECREASE THE LIFE OF IGNITERS AND IGNITION UNIT.

AFM
page

(4) FUEL TRANSFER SYSTEM

AUTO FUEL FEED

- 1 L and R Fuel Transfer SwitchesAUTO 5-30

NOTE

If the tip and outer tanks contain fuel, all fuel will automatically feed to the main tank. When the tip tanks and the outer tanks are empty, the LH and RH OUTER FUEL EMP lights will illuminate. 5-30

Both tip tanks must be empty before the outer tanks will begin to transfer.

- 2 Appropriate Fuel Transfer Control Switch.....OFF 5-30-1

NOTE

Extended cruise above 25,000 feet may result in a small amount of residual fuel in the tip tanks. This is due to the nose up pitch attitude associated with high altitude flight. To recover the fuel, place the Tip Tank Manual switches ON during descent at near level attitude. 5-30-1

(5) AIR CONDITIONING AND PRESSURIZATION SYSTEM

HEATING/COOLING/PRESSURIZATION: 5-30-1

- 1 Manual Pressure Control Valve.....FULL INCREASE 5-30-1
2 Auto-Manual Selector Switch.....AUTO 5-30-1
3 Cabin Supply Air Temperature Selector.....AS DESIRED 5-30-1
4 Cabin Air Selector SwitchBOTH (LH OR RH AS DESIRED) 5-30-1
5 Cabin Altitude Selector Knob.....AS DESIRED 5-30-1
6 Cabin Rate Control Knob.....AS DESIRED 5-30-1
7 Cabin Air Outlet Select Switch.....AS DESIRED (CEILING OR FLOOR) 5-30-1
8 Forward Conditioned Air Outlet KnobNORMAL 5-30-1

MAXIMUM COOLING: 5-30-1

- 1 Cabin Supply Air Temperature Selector.....FULL COLD 5-30-1
or Auto-Manual Selector Switch.....MANUAL COLD 5-30-1
2 Air Outlets.....OPEN 5-30-1

AFM
page

MAXIMUM HEATING: 5-30-2

- 1 Cabin Supply Air Temperature
Selector.....FULL HOT 5-30-2
or Auto-Manual Selector Switch.....MANUAL HOT 5-30-2
- 2 Air Outlets.....OPEN 5-30-2

FORCED VENTILATION: 5-30-2

- 1 Cabin Air Selector SwitchBOTH 5-30-2
- 2 Manual Pressure Control Valve.....DECREASE 5-30-2

NOTE

Cabin differential pressure will reduce in proportion to the position of the control valve. 5-30-2

RAM AIR VENTILATION: 5-30-2

- 1 Manual Pressure Control Valve.....DECREASE 5-30-2
UNTIL CABIN
DIFFERENTIAL
PRESSURE
IS ZERO
- 2 Auto-Manual Selector Switch.....OFF 5-30-2
- 3 Cabin Air Selector Switch.....RAM 5-30-2

CAUTION

USE OF OXYGEN IS RECOMMENDED ABOVE 10,000 FEET PRESSURE ALTITUDE. 5-30-2

WINDSHIELD DEFOG SYSTEM: 5-31

- 1 Cabin Air Selector Switch.....BOTH 5-31
- 2 Forward Conditioned Air Outlet
Knob.....DEFOG 5-31

If sufficient defogging cannot be obtained: 5-31

- 3 Cabin Supply Air Temperature
Selector.....FULL HOT 5-31
or Auto-Manual Selector Switch.....MANUAL HOT 5-31

AFM
page

(6) OXYGEN SYSTEM

5-31

PILOT, COPILOT, 9-PASSENGERS MAXIMUM

5-31

WARNING

IF THE VALVE ON THE OXYGEN CYLINDER IS CLOSED,
NO OXYGEN CAN BE SUPPLIED TO THE MASK
OUTLETS. PRESSURE MAY BE INDICATED ON THE
REGULATOR GAUGE IN THE COCKPIT WITH THE
OXYGEN VALVE CLOSED. CHECK PRIOR TO FLIGHT.

5-31

SYSTEM USAGE:

5-31

- 1 Cockpit Outlet ValveFULL OPEN
- 2 Oxygen Mask.....INSERT HOSE
IN OUTLET,
ROTATE 1/4 TURN
CLOCKWISE TO
DETENT POSITION
AND DON MASK
- 3 Flow Indicator.....CONFIRM OXYGEN
FLOW BY
ABSENCE OF RED
LINE INDICATOR
IN HOSE

5-31

5-31

5-31

CAUTION

IF THE RED LINE INDICATOR IS VISIBLE, OXYGEN IS
NOT BEING SUPPLIED.RECHECK VALVES AND HOSE
CONNECTIONS. ENSURE NO IGNITION SOURCES ARE
PRESENT DURING OXYGEN USE (I.E. SMOKING
MATERIALS, OILY RAGS AND/OR CLOTHES, OPEN
FLAMES).

5-31

AFTER USING:

5-31

- 1 Cockpit Outlet ValveCLOSE
- 2 Oxygen Mask.....DISCONNECT
- 3 Oxygen Cylinder Shutoff Valve.....CLOSE
(AFTER LANDING)

5-31

5-31

5-31

AFM
page

OXYGEN DURATION CHART - 22CU.FT.CYLINDER (622 LITERS)	5-32
TIME TABLE	5-32

OXYGEN DURATION CHART - 22 CU. FT. CYLINDER (622 LITERS)

PERSONS USING	DURATION IN HRS. AND MIN. AT FOLLOWING ALTITUDES			
	15,000 FT	20,000 FT	25,000 FT	31,000 FT
1	4 hr. 13 min.	3 hr. 22 min.	2 hr. 50 min.	2 hr. 27 min.
2	2 hr. 6 min.	1 hr. 41 min.	1 hr. 25 min.	1 hr. 13 min.
3	1 hr. 24 min.	1 hr. 7 min.	56 min.	49 min.
4	1 hr. 3 min.	50 min.	42 min.	36 min.
5	50 min.	40 min.	34 min.	29 min.
6	42 min.	33 min.	28 min.	24 min.
7	36 min.	28 min.	24 min.	21 min.
8	31 min.	25 min.	21 min.	18 min.
9	29 min.	22 min.	18 min.	16 min.
10	25 min.	20 min.	17 min.	14 min.
11	23 min.	18 min.	15 min.	13 min.

(7) PITOT AND STATIC ANTI-ICE SYSTEM 5-32

Inflight Operation - Prior to Flight Into Known Icing 5-32

Conditions:

- | | | |
|---|---------------------------------|------|
| 1 Pitot & Static Anti-ice Switches..... | ON | 5-32 |
| 2 Loadmeter Select Switch..... | LH PITOT AND
STATIC POSITION | 5-32 |
| 3 Loadmeter Operating Range | .50 TO .85 | 5-32 |
| 4 Loadmeter Select Switch..... | RH PITOT AND
STATIC POSITION | 5-32 |
| 5 Loadmeter Operating Range..... | .50 TO .85 | 5-32 |
| 6 Pitot & Static Anti-ice Switches..... | ON | 5-32 |

(8) STALL WARNING ANTI-ICE SYSTEM 5-33

Inflight Operation - Prior to Flight Into Known Icing 5-33

Conditions:

- | | | |
|-----------------------------------|------------|------|
| 1 Stall Vane Anti-ice Switch..... | ON | 5-33 |
| 2 Loadmeter Select Switch..... | STALL VANE | 5-33 |
| 3 Loadmeter Operating Range..... | .30 TO .70 | 5-33 |

CAUTION

ICE ACCUMULATION ON THE WING DEICE BOOT MAY DISRUPT AIR FLOW OVER THE STALL VANE AND PREVENT THE SYSTEM FROM PROVIDING ACCURATE STALL WARNING. 5-33

- 4 Stall Vane Anti-ice Switch.....AS REQUIRED 5-33

(9) PROPELLER ANTI-ICE SYSTEM 5-33

Inflight Operation - Prior to Flight Into Known Icing 5-33

Conditions:

- 1 Propeller De-ice Switches.....ON 5-33
- 2 Loadmeter Select Switch.....POSITION TO
LH PROP 5-33
- 3 Loadmeter Operating Range..... .85 TO 1.05 5-33
- 4 Loadmeter Select Switch.....POSITION TO
RH PROP 5-33
- 5 Loadmeter Operating Range..... .85 TO 1.05 5-33

NOTE

The loadmeter will fluctuate in about 30 second cycles as power shifts to heater mats on other blades. 5-33

- 6 Propeller De-ice Switches.....AS REQUIRED 5-33

(10) ENGINE INTAKE AND OIL COOLER AIR INTAKE ANTI-ICE SYSTEM 5-33

Inflight Operation - Prior to Flight Into Known Icing 5-34

Conditions:

- 1 Engine Intake Anti-ice Switches.....ON 5-34
- 2 Indicator Lights.....ILLUMINATE 5-34

CAUTION

MAXIMUM 10 SECONDS OPERATION FOR TEST PURPOSES WHEN THE OAT IS 10°C (50° F) OR HIGHER. 5-34

NOTE

This is true whether visible moisture is present or not. 5-34

- 3 Oil Cooler Inlet Anti-ice
Switches.....ON 5-34
- 4 Indicator Lights.....ILLUMINATE 5-34
- 5 Engine Intake and Oil Cooler
Anti-Ice Switches.....AS REQUIRED 5-34

(11) HEATED WINDSHIELD ANTI-ICE SYSTEM 5-35

INFLIGHT OPERATION: 5-35

Windshield heat shall be on LOW for all normal flight operations. 5-35

AFM
page

- | | | | |
|--|---|----------------------------|------|
| 1 | Windshield Heat Low Switches,
LH and RH..... | ON | 5-35 |
| 2 | If Ice Forms, High Heat
Switches..... | ON (L OR
R AS REQUIRED) | 5-35 |
| 3 | When Ice is Removed, High
Heat Switches..... | OFF | 5-35 |
| When clear of icing conditions: | | | 5-35 |
| 1 | Windshield Heat Low Switches
LH and RH..... | ON | 5-35 |

CAUTION

WINDSHIELD HI HEAT FOR ICE REMOVAL ONLY. 5-35
STANDBY COMPASS INDICATION IS NOT CORRECT
WHEN THE WINDSHIELD HEAT IS ON.

(12) WING AND EMPENNAGE DEICE SYSTEM 5-35

INFLIGHT OPERATION: 5-35

- | | | | |
|---|--|-----------------------------------|------|
| 1 | Wing Ice Light Switch..... | ON (AT NIGHT) | 5-35 |
| | At the first sign of ice formation anywhere on the aircraft, or
upon annunciation from an ice detector system, whichever
occurs first, | | 5-35 |
| 2 | Wing De-ice Switch..... | ON | 5-35 |
| a | Indicator Light..... | ILLUMINATES
(DURING INFLATION) | 5-35 |

NOTE

System will cycle at approximately three minute intervals,
with indicator light illuminating during boots inflation. 5-35

- | | | | |
|---|---|---|------|
| 3 | Ice Accumulation on Wing
Leading Edge..... | MONITOR | 5-35 |
| 4 | Wing De-ice Switch..... | OFF AFTER
LEAVING
ICING CONDITIONS
AND AIRCRAFT
IS CLEAR OF
ACCUMULATED
ICE | 5-35 |

SEVERE ICING CONDITIONS: 5-36

- | | | | |
|---|-------------------------|---|------|
| 1 | Wing De-ice Switch..... | MANUALLY CYCLE
- 6 SECONDS ON,
10 SECONDS OFF | 5-36 |
|---|-------------------------|---|------|

NOTE

Manual cycles more frequent than above will decrease
deice boot capability. 5-36

	AFM page
2 Wing De-ice Switch.....OFF AFTER LEAVING ICING CONDITIONS AND AIRCRAFT IS CLEAR OF ACCUMULATED ICE	5-36 5-36
BLENDING ANTI-ICE ADDITIVE TO FUEL	5-36
Approved fuel system icing inhibitor conforming to MIL-I-27686 must be added to the fuel in all tanks, unless fuel is premixed. The icing inhibitor must be added during refueling to be soluble in the fuel, but not in excess of 0.15% maximum by volume.	5-36
Premixed fuel containing icing inhibitor is available and caution must be exercised so that additional icing inhibitor is not added. When using premixed fuel, disregard the following procedures.	5-36
BLENDING PROCEDURES:	5-36
<div>CAUTION</div>	
JP-4 FUEL PER MIL-T-5624 HAS ANTI-ICING ADDITIVE PER MIL-I-27686 BLENDED IN THE FUEL AT THE REFINERY AND NO FURTHER TREATMENT IS NECESSARY. SOME FUEL SUPPLIERS BLEND ANTI-ICING ADDITIVE IN THEIR STORAGE TANKS. PRIOR TO REFUELING, CHECK WITH THE FUEL SUPPLIER TO DETERMINE WHETHER OR NOT THE FUEL HAS BEEN BLENDED. TO ASSURE PROPER CONCENTRATION BY VOLUME OF FUEL ON BOARD, BLEND ONLY ENOUGH ADDITIVE FOR THE UNBLENDED FUEL.	5-36

WARNING

HI-FLO PRIST MAY BE HARMFUL IF INHALED OR SWALLOWED. USE ADEQUATE VENTILATION. AVOID CONTACT WITH SKIN AND EYES. IF SPRAYED INTO EYES, FLUSH WITH LARGE AMOUNTS OF WATER AND CONTACT A PHYSICIAN IMMEDIATELY.

5-36

- 1 Using HI-FLO PRIST blender manufactured by PPG INDUSTRIES, INC., remove actuator cap. 5-37
- 2 Press valve button (attached to tube and clip assembly) into valve on top of can. 5-37
- 3 Reattach actuator cap by positioning onto can. 5-37
- 4 Place clip with tubing onto fuel nozzle. 5-37
- 5 To start flow, press actuator down fully. To stop flow, press tilt to side and return to normal position. 5-37
- 6 Use can upright and start flow of PRIST after refueling begins (refueling should be at a minimum rate of 30 gal/min. to a maximum of 60 gal/min.). A rate of less than 30 gal/min. may be used when topping off tanks. 5-37
- 7 Stop flow of PRIST a moment before refueling stops. 5-37

CAUTION

ASSURE THAT THE ADDITIVE IS DIRECTED INTO AND BLENDS WITH FLOWING FUEL FROM FUELING NOZZLE. DO NOT ALLOW CONCENTRATED ADDITIVE TO CONTACT INTERIOR OF FUEL TANKS OR AIRCRAFT PAINTED SURFACES. USE NOT LESS THAN 20 FL. OZ. OF ADDITIVE PER 260 GALLONS OF FUEL OR MORE THAN 20 FL. OZ. OF ADDITIVE PER 104 GALLONS OF FUEL.

5-37

ALTERNATE BLENDERS:

5-37

If alternate blenders must be used such as PRIST proportioner Model PRB-101 or AP-2, use instructions furnished with blender.

5-37

	AFM page
LANDING GEAR AND FLAP SYSTEMS - EXTEND/RETRACT CYCLES	5-37
The following approximate extension and retraction cycle times should be taken into consideration when making configuration changes:	5-37
Landing Gear	5-37
Extension or Retraction17 SECONDS	5-37
Flap Extension	5-37
Up to 5°.....17 SECONDS	5-37
5°to 20°.....10 SECONDS	5-37
20°to 40°.....6 SECONDS	5-37
Flap Retraction	5-37
40°to 20°.....4 SECONDS	5-37
20°to 5°.....10 SECONDS	5-37
5° to Up21 SECONDS	5-37

Intentionally Left Blank

NORMAL

MU-2B-60 NORMAL PROCEDURES TABLE OF CONTENTS

PREFLIGHT CHECK (COCKPIT and CABIN)	N-1
PREFLIGHT CHECK (Exterior)	N-2
BEFORE STARTING ENGINES	N-7
STARTING ENGINES	N-7
AFTER STARTING ENGINES	N-8
TAXI	N-9
BEFORE TAKEOFF	N-9
AFTER TAKEOFF	N-10
VISIBLE MOISTURE ENCOUNTERS	N-10
FLIGHT IN ICING CONDITIONS	N-11
CLIMB (18000') / CRUISE	N-11
DESCENT	N-12
APPROACH	N-12
BEFORE LANDING	N-13
AFTER LANDING	N-13
STOPPING ENGINES	N-13
SECURING	N-14
TURNAROUND	N-14
CRANKING	N-14
INFLIGHT NTS CHECK (FEATHERING OPERATION)	N-15
SYSTEM OPERATION	N-15
SYNCHROPHASER	N-15
ENGINE CONTINUOUS IGNITION SYSTEM (If Auto Ignition System is not installed)	N-15
AUTO IGNITION SYSTEM (If Auto Ignition System is installed)	N-15
FUEL TRANSFER SYSTEM	N-16
AIR CONDITIONING AND PRESSURIZATION SYSTEM	N-16
OXYGEN SYSTEM	N-17
PITOT AND STATIC ANTI-ICE SYSTEM	N-18
STALL WARNING ANTI-ICE SYSTEM	N-18
PROPELLER ANTI-ICE SYSTEM	N-18

ENGINE INTAKE AND OIL COOLER AIR INTAKE ANTI-ICE SYSTEMS	N-18
HEATED WINDSHIELD ANTI-ICE SYSTEM	N-19
WING AND EMPENNAGE DEICE SYSTEM	N-19
BLENDING ANTI -ICE ADDITIVE TO FUEL	N-20
LANDING GEAR AND FLAP SYSTEMS - EXTEND/RETRACT CYCLES	N-20

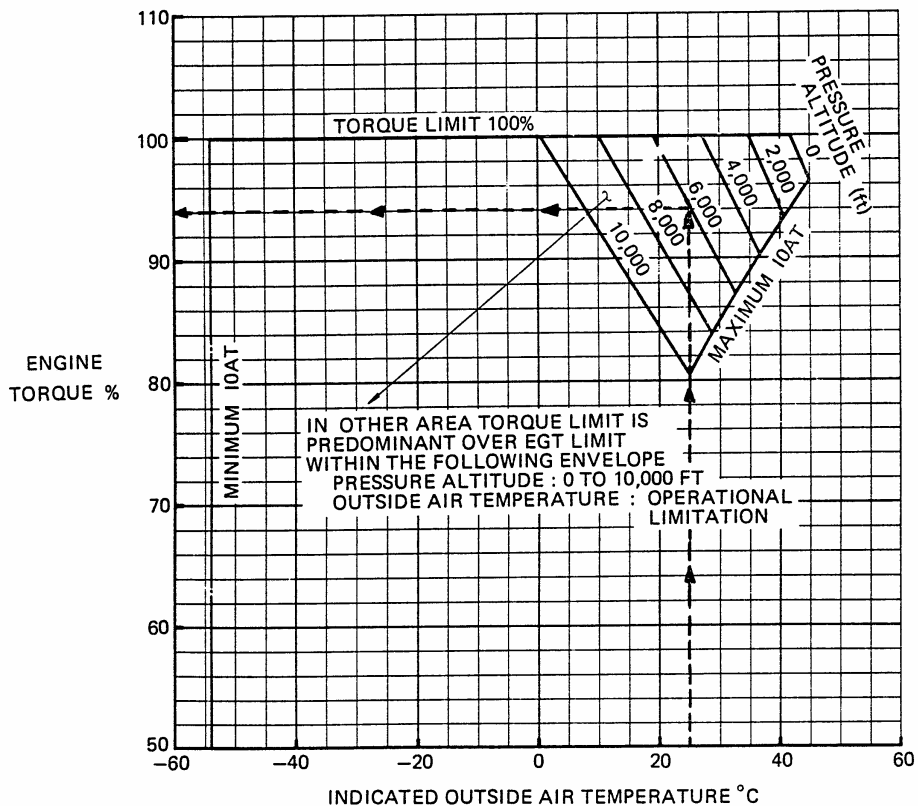
Intentionally Left Blank

POWER ASSURANCE CHART-TAKEOFF

AIRSPEED: 0 KT
 IOAT: INSTRUMENT ERROR ZERO
 RECOVERY FACTOR 0.8
 EGT: 650°C
 RPM: 100%
 BLEED AIR: OFF

EXAMPLE:
 OAT 25°C
 Pressure Altitude 6,000 Ft
 Engine Torque 94%

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-19



TAKEOFF SPEEDS – FLAPS 5° AND 20°

FLAPS 5°

TAKEOFF WEIGHT - POUNDS	TAKEOFF SPEED - KCAS	
	ROTATION	50 FT
11,575	109	120
11,000	106	120
10,000	101	120
9,000	100	120

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-9

FLAPS 20°

TAKEOFF WEIGHT - POUNDS	TAKEOFF SPEED - KCAS	
	ROTATION	50 FT
11,575	105	113
11,000	103	113
10,000	100	113
9,000	100	113

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-10

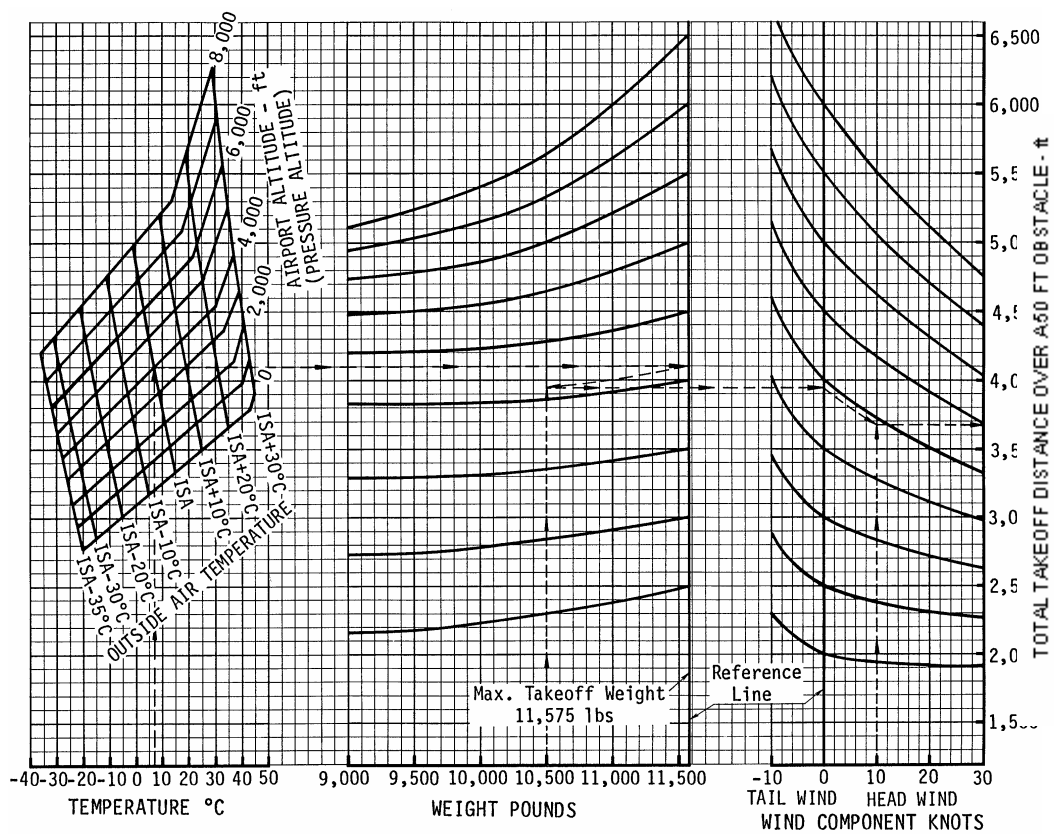
TAKEOFF DISTANCE – FLAPS 5°

ENGINES:	TAKEOFF POWER
FLAPS:	5°
RUNWAY CONDITIONS:	PAVED, LEVEL & DRY SURFACE
BLEED AIR:	OFF

EXAMPLE:

OAT:	7° C
Pressure Altitude:	4,000 Ft
Airplane Weight:	10,500 Lbs.
Wind Condition:	10 Kts Head Wind
Takeoff Speed:	Rotation 104KCAS 50 Ft 120 KCAS
Takeoff Distance:	3,670 Ft

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-9

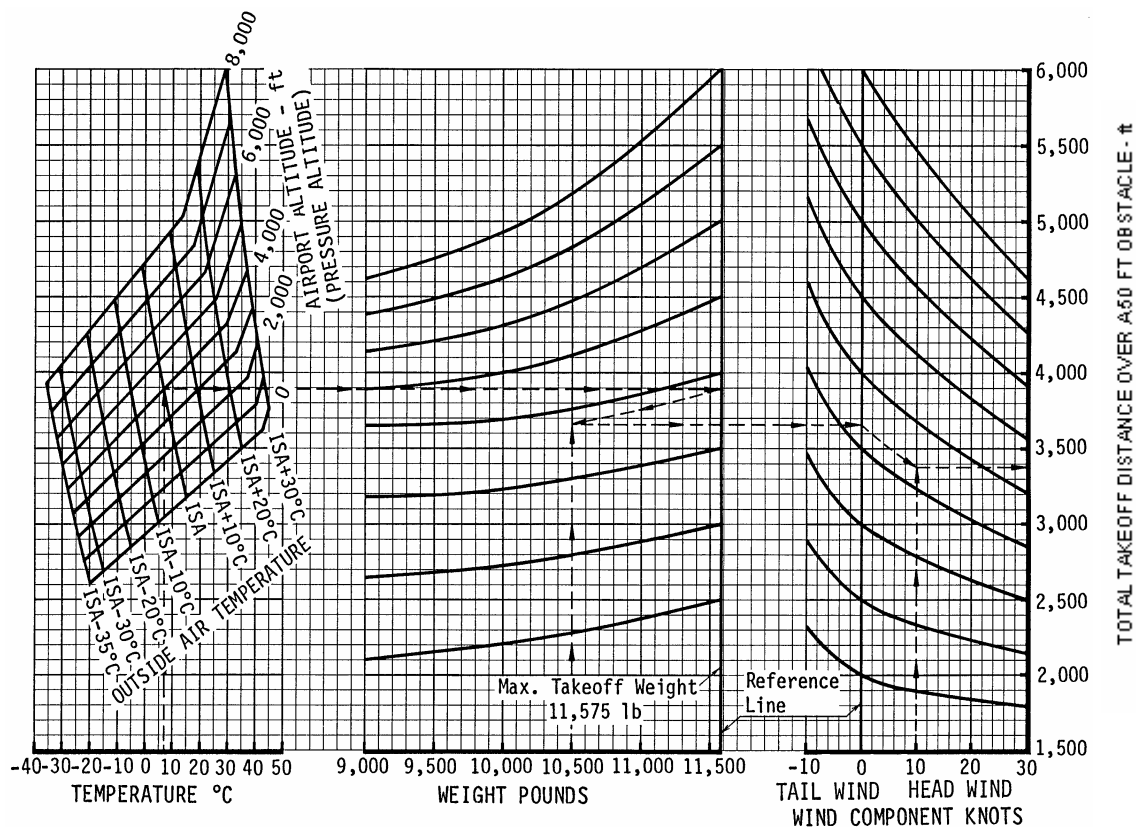


TAKEOFF DISTANCE – FLAPS 20°

ENGINES: TAKEOFF POWER
FLAPS: 20°
RUNWAY CONDITIONS: PAVED, LEVEL &
BLEED AIR: DRY SURFACE
OFF

EXAMPLE:
OAT: 7°C
Pressure Altitude: 4,000 Ft
Airplane Weight: 10,500 Lbs
Wind Condition: 10 Kts Head Wind
Takeoff Speed: Rotation 102KCAS
50 Ft 113 KCAS
Takeoff Distance: 3,380 Ft

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-10



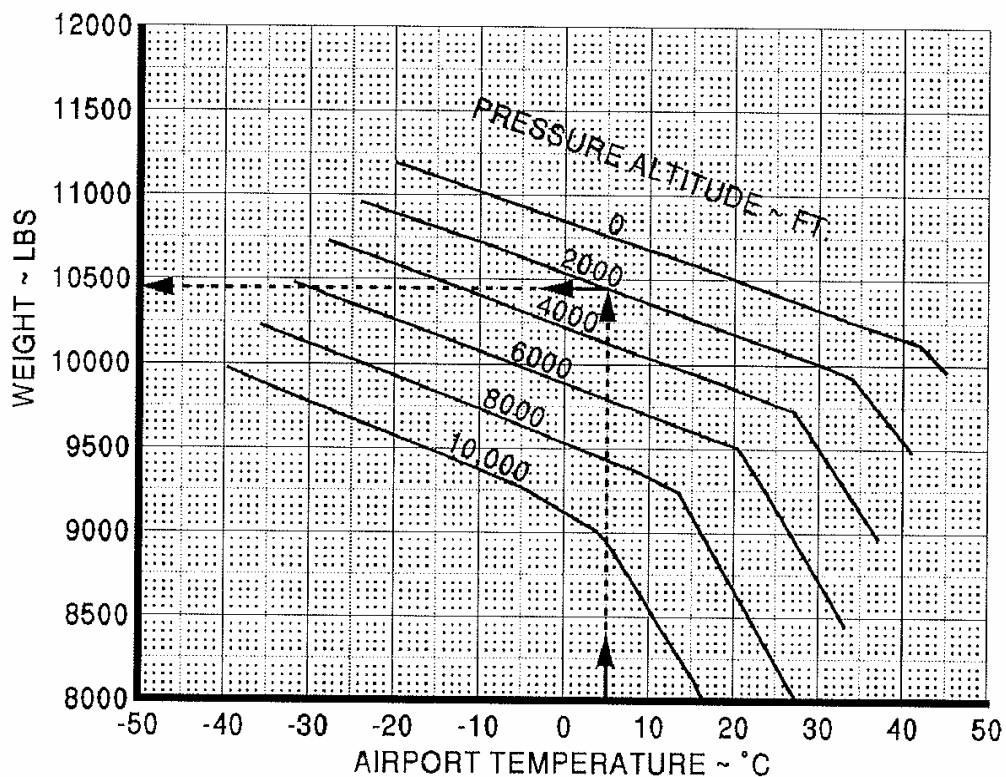
WEIGHT FOR POSITIVE GRADIENT AFTER LIFTOFF – FLAPS 5°

OPERATING ENGINE:	TAKEOFF POWER
INOPERATIVE ENGINE:	PROPELLER FEATHERED
CLIMB SPEED:	120 KCAS (V _{50FT})
LANDING GEAR:	EXTENDED
FLAPS:	5°
BLEED AIR SELECTOR:	OFF

EXAMPLE

OUTSIDE AIR TEMPERATURE.....5°C
 AIRPORT PRESSURE ALTITUDE. 2000 FT
 WEIGHT.....10,450 LB

Chart Source: MU-2B-60 POM (MR-0338-1) Temp. Rev. 4-1 page 4/6



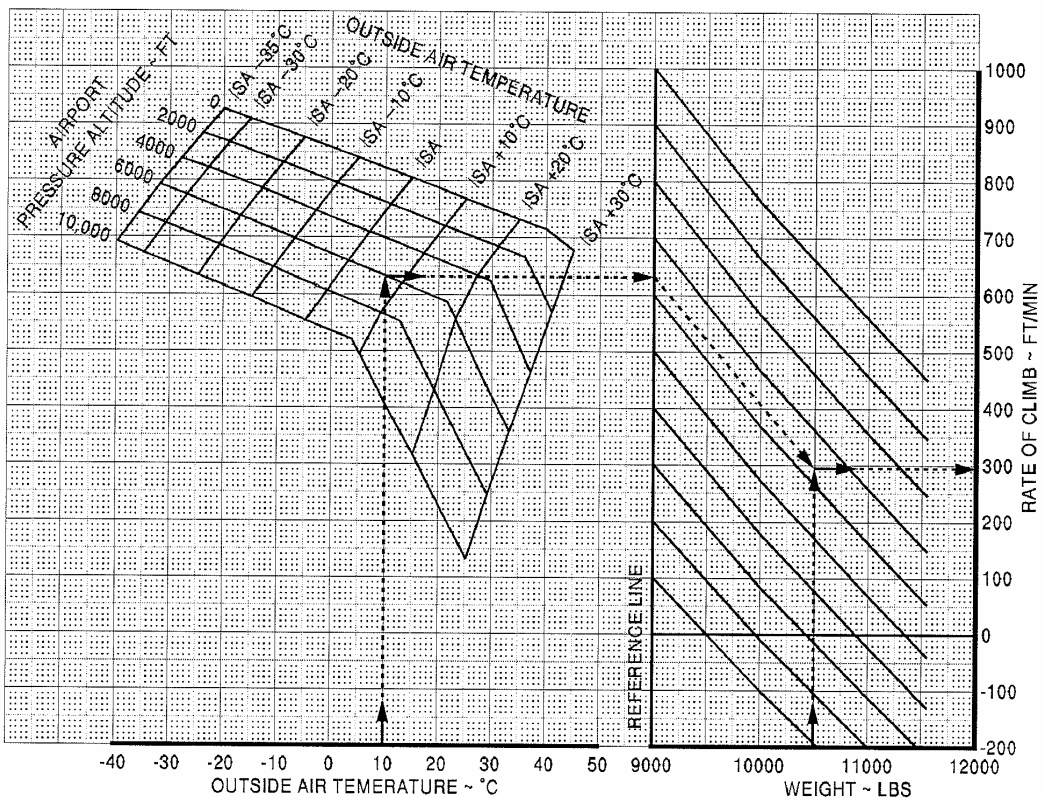
SINGLE ENGINE RATE OF CLIMB – FLAPS 5°

OPERATING ENGINE:	TAKEOFF POWER
INOPERATIVE ENGINE:	PROPELLER FEATHERED
CLIMB SPEED:	140 KCAS (V _{YSE})
LANDING GEAR:	RETRACTED
FLAPS:	5°
BLEED AIR SELECTOR:	OFF

EXAMPLE

OUTSIDE AIR TEMPERATURE.....10°C
AIRPORT PRESSURE ALTITUDE...6000 FT
WEIGHT.....10,500 LB
SINGLE ENGINE RATE OF CLIMB...295 FT/MIN

Chart Source: MU-2B-60 POM (MR-0338-1) Temp. Rev.4-1 page 3/6



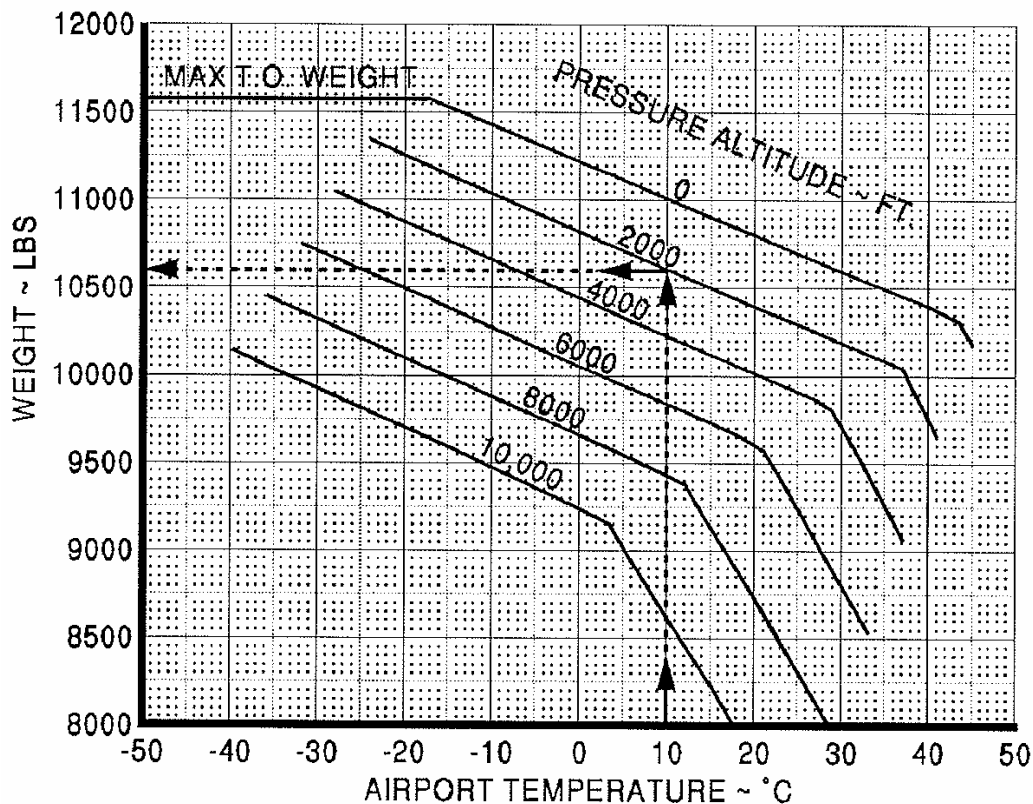
WEIGHT FOR POSITIVE GRADIENT AFTER LIFTOFF – FLAPS 20°

OPERATING ENGINE:	TAKEOFF POWER
INOPERATIVE ENGINE:	PROPELLER FEATHERED
CLIMB SPEED:	113 KCAS (V ₅₀ FT)
LANDING GEAR:	EXTENDED
FLAPS:	20°
BLEED AIR SELECTOR:	OFF

EXAMPLE

OUTSIDE AIR TEMPERATURE..... 10°C
AIRPORT PRESSURE ALTITUDE. 2000 FT
WEIGHT..... 10,600 LB

Chart Source: MU-2B-60 POM (MR-0338-1) Temp. Rev.4-1 page 6/6

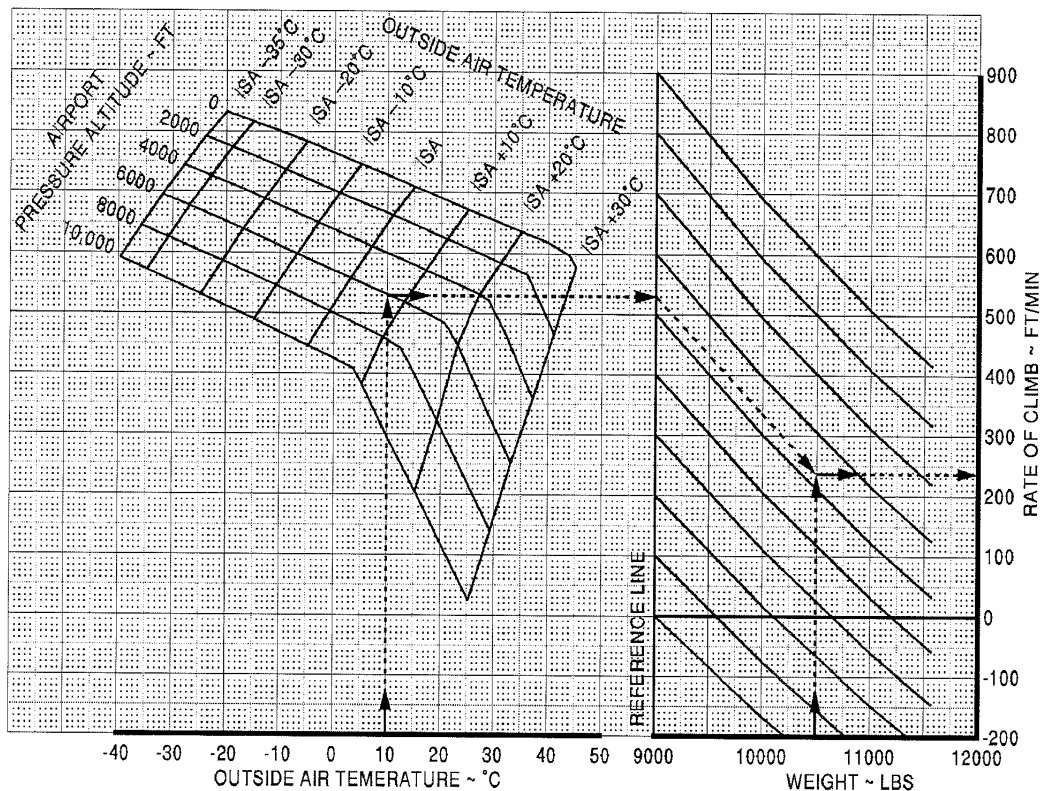


SINGLE ENGINE RATE OF CLIMB – FLAPS 20°

OPERATING ENGINE:	TAKEOFF POWER
INOPERATIVE ENGINE:	PROPELLER FEATHERED
CLIMB SPEED:	135 KCAS (V _{YSE})
LANDING GEAR:	RETRACTED
FLAPS:	20°
BLEED AIR SELECTOR:	OFF

EXAMPLE
OUTSIDE AIR TEMPERATURE.... 10°C
AIRPORT PRESSURE ALTITUDE. 6000 FT
WEIGHT..... 10,500 LB
SINGLE ENGINE RATE OF CLIMB. 237 FT/MIN

Chart Source: MU-2B-60 POM (MR-0338-1) Temp. Rev.4-1 page 5/6



LANDING APPROACH SPEEDS – FLAPS 20° AND 40°

FLAPS 20°

Note: Minimum single engine approach speed is 110 KCAS.

LANDING WEIGHT Lbs	LANDING APPROACH SPEED KCAS
11,025	110
10,500	108
10,000	105
9,500	102
9,000	100
8,500	99

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-15

FLAPS 40°

Note: Minimum single engine approach speed is 115 KCAS.

LANDING WEIGHT Lbs	LANDING APPROACH SPEED KCAS
11,025	119
10,500	116
10,000	114
9,500	111
9,000	108
8,500	105

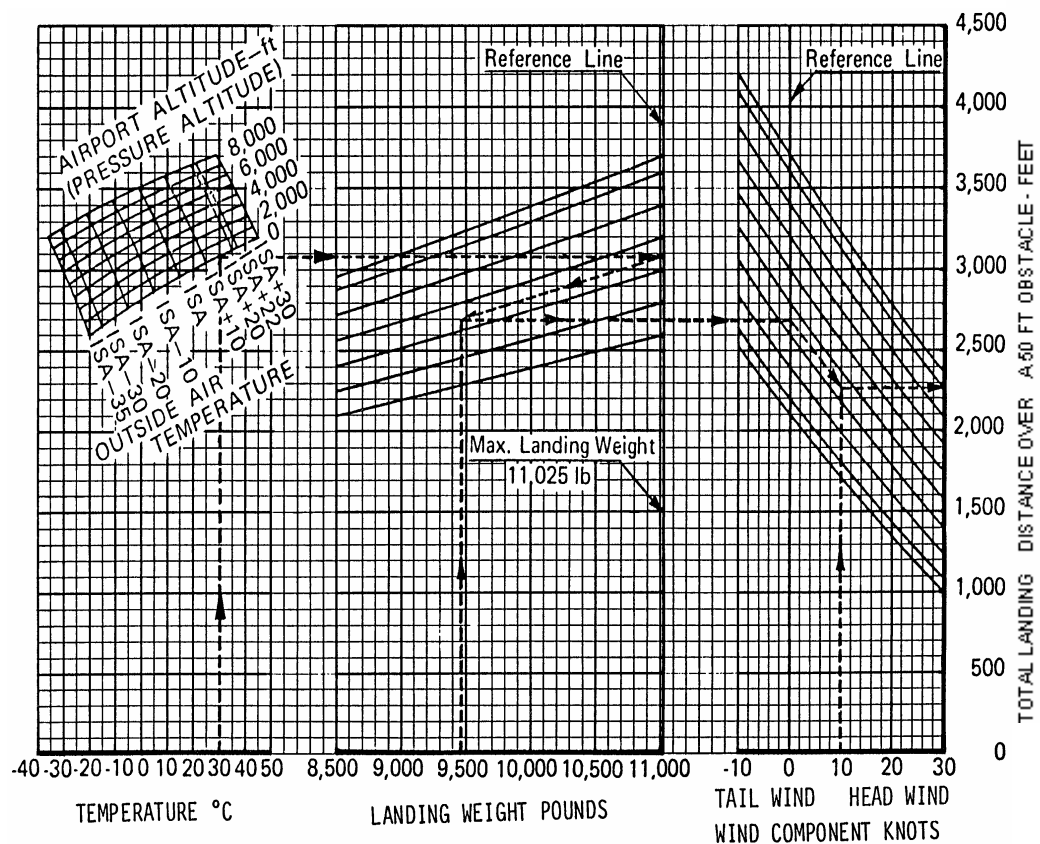
Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-16

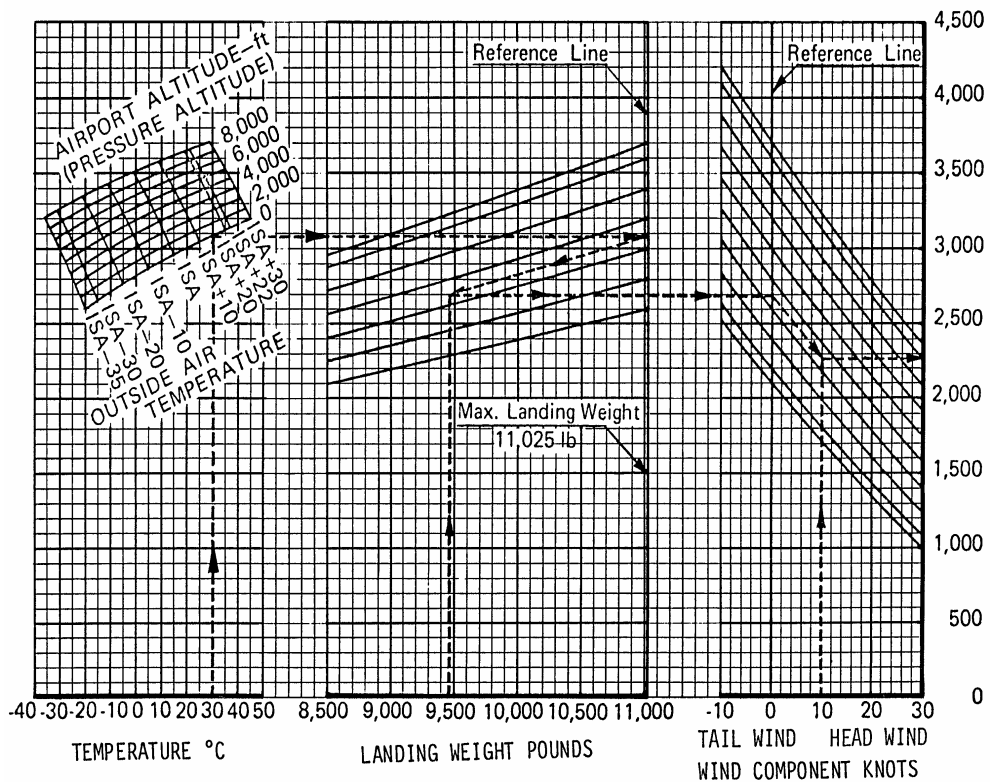
LANDING DISTANCE – FLAPS 20°

FLAPS: 20°
 LANDING GEAR: DOWN
 APPROACH SPEED: SEE LANDING APPROACH SPEED CHART
 POWER LEVERS: GROUND IDLE ON TOUCHDOWN
 RUNWAY CONDITIONS: PAVED, LEVEL, DRY SURFACE
 BRAKING: HARD, NO REVERSE PITCH
 EXAMPLE:
 OAT 30°C
 Pressure Altitude 0 Ft
 Airplane Weight 9,470Lbs
 Wind Condition 10 Kts Head Wind
 Landing Distance Approximately 2,270 Ft

Note: Landing distances are predicated on a V_{REF} of $1.3V_S$.
 CAUTION: V_{REF} FOR SINGLE ENGINE LANDING IS $1.3V_S$ OR 110 KIAS WHICHEVER IS GREATER. ADD 10% TO LANDING DISTANCE FOR SINGLE ENGINE LANDINGS.

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-17





LANDING DISTANCE – FLAPS 40°

FLAPS:	40°
LANDING GEAR:	DOWN
APPROACH SPEED:	SEE LANDING APPROACH SPEED CHART
POWER LEVERS:	GROUND IDLE ON TOUCHDOWN
RUNWAY CONDITIONS:	PAVED, LEVEL, DRY SURFACE
BRAKING:	HARD, NO REVERSE PITCH
EXAMPLE:	
OAT	30°C
Pressure Altitude	0 Ft
Airplane Weight	9,470 Lbs.
Wind Condition	10 Kts Head Wind
Landing Distance	Approximately 2,270 Ft

Note: Landing distances are predicated on a V_{REF} of $1.5V_S$
CAUTION: V_{REF} FOR SINGLE ENGINE LANDING IS $1.5V_S$ OR 115 KIAS WHICHEVER IS GREATER. ADD 20% TO LANDING DISTANCE FOR SINGLE ENGINE LANDINGS.

Chart Source: MU-2B-60 AFM (MR-0273-1) Rev. 14, page 6-18

Intentionally Left Blank

PERFORMANCE

MU-2B-60 PERFORMANCE

TABLE OF CONTENTS

POWER ASSURANCE CHART - TAKEOFF	P1
TAKEOFF SPEEDS - FLAPS 5° AND 20°	P2
TAKEOFF DISTANCE - FLAPS 5°	P3
TAKEOFF DISTANCE - FLAPS 20°	P4
WEIGHT FOR POSITIVE GRADIENT AFTER LIFTOFF - FLAPS 5°	P5
SINGLE ENGINE RATE OF CLIMB - FLAPS 5°	P6
WEIGHT FOR POSITIVE GRADIENT AFTER LIFTOFF - FLAPS 20°	P7
SINGLE ENGINE RATE OF CLIMB - FLAPS 20°	P8
LANDING APPROACH SPEEDS - FLAPS 20° AND 40°	P9
LANDING DISTANCE - FLAPS 20°	P10
LANDING DISTANCE - FLAPS 40°	P11
BLANK	P12