EMERGENCY AIRSPEEDS

One Engine Inoperative Best Angle of Climb (V_{XSE}) - 96 kts
One Engine Inoperative Best Rate of Climb (V_{YSE}) - 100 kts
Air Minimum Control Speed (V_{MCA}) - 81 kts
One Engine Inoperative Enroute Climb - 100 kts
Emergency Descent - 152 kts
One Engine Inoperative Landing:
    Maneuvering to Final Approach - 100 kts
    Final Approach (flaps down) - 100 kts
Intentional One Engine Inoperative Speed (V_{SSE}) - 86 kts
Maximum Glide Range - 120 kias

ENGINE FAILURE ON TAKEOFF ON GROUND

1. Throttles - CLOSED
2. Braking - MAXIMUM

If insufficient runway remains for stopping:

3. Fuel Selector Valves - OFF
4. Battery, Alternator, and Magneto/Start Switches - OFF

ENGINE FAILURE AFTER LIFT-OFF AND IN FLIGHT

WARNING: ***An immediate landing is advisable regardless of weight. Continued flight cannot be assured in all conditions.***

NOTE: The most important aspect of engine failure is the necessity to maintain lateral and directional control. If airspeed is below 81 kts, reduce power on the operative engine as required to maintain directional control.

1. Mixtures - FULL RICH
2. Propellers - HIGH RPM
3. Throttles - FULL INCREASE
4. Flaps - UP
5. Landing Gear - UP
6. Throttle (inoperative engine) - CLOSED
7. Propeller (inoperative engine) - FEATHER
8. Airspeed - 100 KTS

When positive control of the airplane is established and time permits:

9. Inoperative engine:
   - Mixture Control - IDLE CUTOFF
   - Fuel Selector - OFF
   - Auxiliary Fuel Pump - OFF
   - Magneto/Start Switch - OFF
   - Alternator Switch - OFF
   - Cowl Flap - CLOSED
10. Electrical Load - MONITOR (maximum load of 1.0 on operating engine)
11. Cowl Flap (operating engine) - AS REQUIRED

AIR START

CAUTION: ***The pilot should determine the reason for engine failure before attempting an air start.***

1. Fuel Selector Valve (affected engine) - ON
2. Throttle (affected engine) - SET APPROXIMATELY 1/4 TRAVEL
3. Mixture Control (affected engine) - FULL RICH (below 5,000 ft) or ½ TRAVEL (above 5,000 ft)
4. Aux Fuel Pump (affected engine) - LOW
5. Magnetos (affected engine) - CHECK ON BOTH
6. Propeller:

   WITH UNFEATHERING ACCUMULATORS:
   - Move propeller control of affected engine full forward to accomplish unfeathering. Use starter momentarily, if necessary.
   - Return propeller control of affected engine to high pitch (low RPM) position, when windmilling starts, to avoid overspeed.
   - If propeller does not unfeather or engine does not turn, proceed to WITHOUT UNFEATHERING ACCUMULATORS procedure, below.

   WITHOUT UNFEATHERING ACCUMULATOR
   - Move propeller control of affected engine forward of the feathering detent to midrange.
   - Engage starter of affected engine to accomplish unfeathering.
   - If engine fails to run, clear engine by allowing it to windmill with affected engine mixture in IDLE CUTOFF. When engine fires, advance affected engine mixture to FULL RICH.

7. When engine starts - ADJUST THROTTLE, PEOPELLER, AND MIXTURE CONTROLS
8. Aux Fuel Pump (affected engine) - OFF when reliable power has been regained.
9. Alternator Switch (affected engine) - ON
10. Oil Pressure (affected engine) - CHECK
11. Warm Up Affected Engine (approximately 1200 rpm and 15 in. Hg)
12. Set power as required and trim.

STARTER ENERGIZED WARNING LIGHT ILLUMINATED IN FLIGHT AFTER AIR START

1. Battery and both Alternator Switches - OFF
2. Land as soon as practical.

ENGINE FIRE ON GROUND

1. Mixture Controls - IDLE CUTOFF
2. Continue to crank affected engine.
3. Fuel Selector Valves - OFF
4. Battery and Alternator Switches - OFF
5. Extinguish with Fire Extinguisher

ENGINE FIRE IN FLIGHT

NOTE: Shut down the affected engine according to the following procedure and land immediately. Follow the applicable single-engine procedures.

1. Fuel Selector Valve (affected engine) - OFF
2. Mixture Control (affected engine) - IDLE CUTOFF
3. Propeller (affected engine) - FEATHERED
4. Aux Fuel Pump (affected engine) - OFF
5. Magneto/Start Switch (affected engine) - OFF
6. Alternator Switch (affected engine) - OFF

STARTER ENERGIZED WARNING LIGHT ILLUMINATED ON GROUND

1. Battery and both Alternator Switches - OFF
2. Do not take off.

EMERGENCY DESCENT

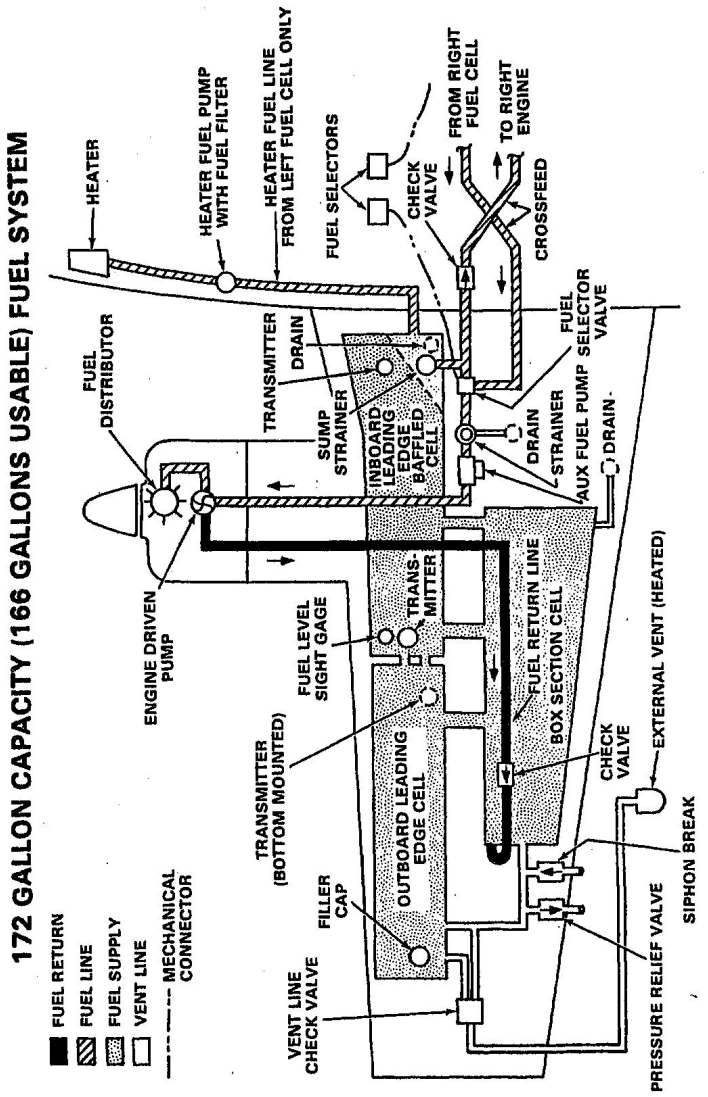
1. Propellers - 2700 RPM
2. Throttles - CLOSED
3. Airspeed - 152 KTS
4. Landing Gear - DOWN
5. Flaps - APPROACH (15°)

GLIDE

1. Propellers - FEATHER
2. Flaps - UP
3. Landing Gear - UP
4. Cowl Flaps - CLOSED

NOTE: The glide ratio in this configuration is approximately 2 nautical miles of gliding distance for each 1,000 feet of altitude above the terrain at an airspeed of 120 kts.

BE-58 FUEL SYSTEM



ONE ENGINE INOPERATIVE OPERATION ON CROSSFEED

NOTE: The fuel crossfeed system is to be used only during emergency conditions in level flight.

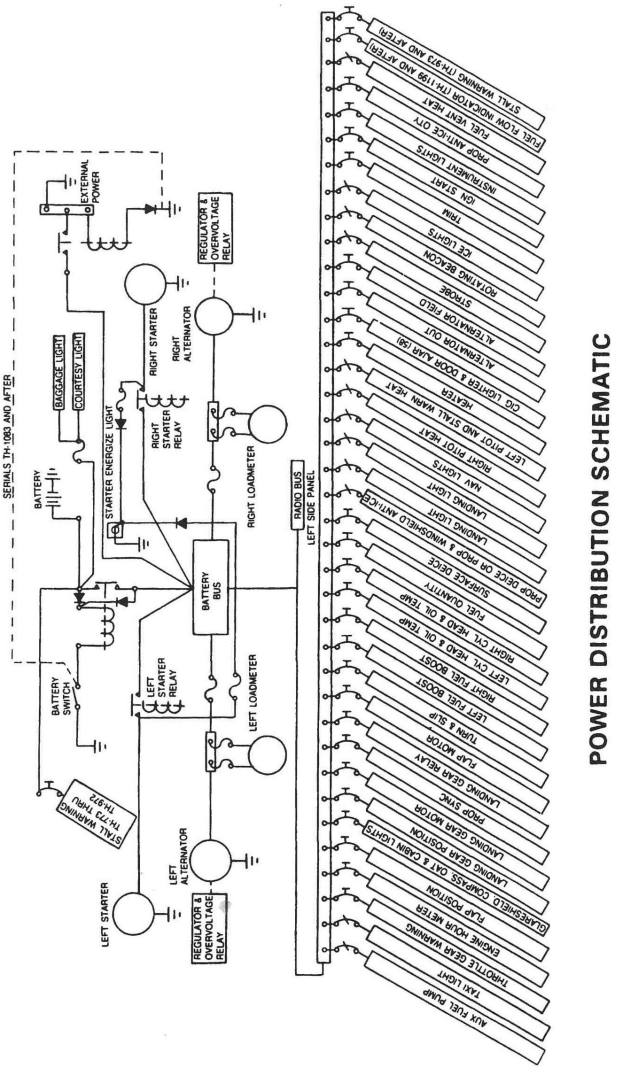
LEFT ENGINE INOPERATIVE:

1. Right Aux Fuel Pump - LOW
2. Left Fuel Selector Valve - OFF
3. Right Fuel Selector Valve - CROSSFEED
4. Right Aux Fuel Pump - LOW OR OFF (as required)

RIGHT ENGINE INOPERATIVE:

1. Left Aux Fuel Pump - LOW
2. Right Fuel Selector Valve - OFF
3. Left Fuel Selector Valve - CROSSFEED
4. Left Aux Fuel Pump - LOW OR OFF (as required)

BE-58 ELECTRICAL SYSTEM
Serial TH 773 and After



POWER DISTRIBUTION SCHEMATIC

ELECTRICAL SMOKE OR FIRE

NOTE: Action to be taken must consider existing conditions and equipment installed.

1. Battery and Alternator Switches - OFF
2. Oxygen - AS REQUIRED
3. All Electrical Switches - OFF
4. Fire Extinguisher - AS REQUIRED
5. Pilot's Storm Window - OPEN AS REQUIRED
6. All Circuit Breakers - PULL

WARNING: ***The remainder of this checklist is a procedure to determine the source of electrical smoke or fire. Wait at least 60 seconds after performing each item to determine if smoke or fire resumes. If smoke or fire resumes, return the last-reset switch/circuit breaker to the OFF/PULLED position and do not reset.***

7. Battery Switch - ON
8. Left Alternator Switch - ON
9. Right Alternator Switch - ON
10. Essential Circuit Breakers - RESET ONE AT A TIME
11. Essential Electrical Equipment - ON ONE AT A TIME

ILLUMINATION OF SINGLE ALTERNATOR OUT LIGHT

1. Loadmeter (affected side) - CHECK

Affected side loadmeter indicates no load:

2. Affected side Alternator Switch - OFF
3. Regulate electrical load on remaining alternator

Affected side loadmeter indicates load:

2. Both sides loadmeters - MONITOR
3. Monitor electrical loads.

ILLUMINATION OF BOTH ALTERNATOR OUT LIGHTS

1. Loadmeters - CHECK

Loadmeters indicate no load:

2. Voltage regulators - SWITCH

NOTE: System should return to normal. Monitor voltmeter and loadmeters.

If condition recurs:

3. Voltage regulators - SWITCH BACK TO ORIGINAL

NOTE: If system returns to normal, it is an indicaton of overload causing malfunction.

4. Electrical load - REDUCE

If neither Voltage Regulator selection brings either Alternator online:

3. Both Alternator Switches - OFF
4. Electrical load - MINIMIZE

WARNING: Aircraft electrical system is powered ONLY by battery.

UNSCHEDULED ELECTRIC ELEVATOR TRIM

1. Airplane Attitude - MAINTAIN MANUALLY
2. Trim Release - HOLD IN DEPRESSED POSITION
3. Trim - MANUALLY RE-TRIM AIRPLANE
4. Electric Trim - OFF
5. Trim Release - RELEASE
6. Electric Trim Circuit Breaker - PULL

SURFACE DEICE SYSTEM MALFUNCTION - FAILURE OF AUTO OPERATION

1. Surface Deice Switch - MANUAL FOR 8 SECONDS MAXIMUM

CAUTION: ***The boots will inflate only as long as the switch is held in the MANUAL position. When the switch is released the boots will deflate.***

SURFACE DEICE SYSTEM MALFUNCTION - FAILURE TO DEFLATE

1. Surface Deice Circuit Breaker - PULL (Pilot's side)

ELECTROTHERMAL PROPELLER DEICE SYSTEM MALFUNCTION

1. Propeller Deice Ammeter - CHECK

Ammeter indicates Zero amps:

2. Prop Deice Switch/Circuit Breaker- CHECK
   - If popped, wait 30 seconds before resetting.
   - If the ammeter reads 0 and the circuit breaker has not tripped or if the ammeter still reads 0 after the circuit breaker has been reset, turn the switch off and consider the prop deice system inop.

Ammeter indicates Zero to 14 amps:

2. Monitor system
   - Operation can continue unless serious propeller imbalance results from irregular ice shedding.

Ammeter indicates 18 to 23 amps:

2. Operation can continue unless serious propeller imbalance results from irregular ice shedding.

Ammeter indicates more than 23 amps:

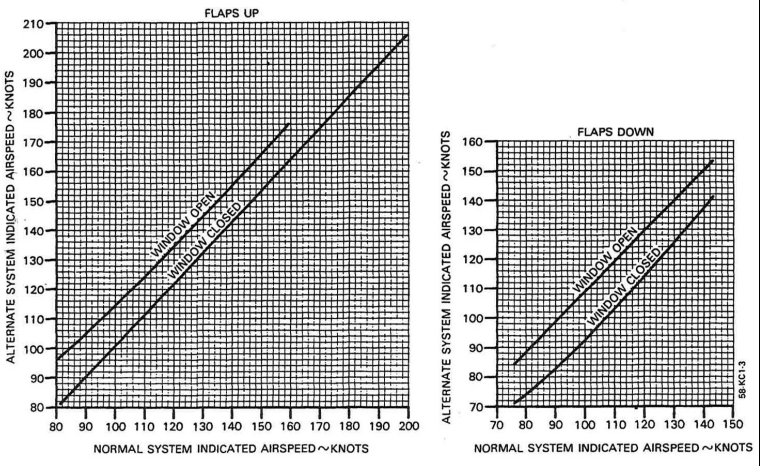
2. If the prop deice system occasionally or regularly indicates more than 23 Amps, the system should not be operated unless the need for prop deicing is urgent.

EMERGENCY STATIC AIR SOURCE SYSTEM

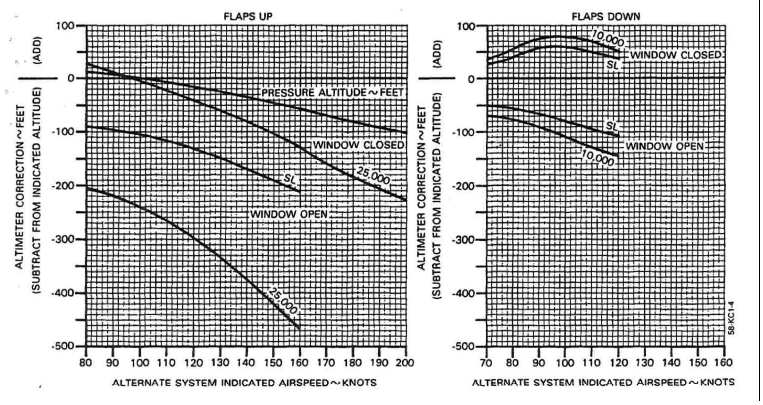
1. Emergency Static Air Source (Lower side wall adjacent to pilot) - ON EMERGENCY
2. For Airspeed Calibration and Altimeter Corrections, refer to the graphs on page E-15.

CAUTION: ***The emergency static air valve should remain in the OFF NORMAL position when the system is not needed.***

AIRSPEED CALIBRATION - ALTERNATE SYSTEM



ALTIMETER CORRECTION - ALTERNATE SYSTEM



EMERGENCY EXITS

1. Cover placarded EMERGENCY EXIT - REMOVE
2. Red Handle - ROTATE UP AS INDICATED, BREAKING SAFETY WIRE
3. Window - PUSH OUT

NOTE: Any time the window has been opened by breaking the safety wire on the red emergency latch, the window must be reattached and wired by a qualified mechanic using QQ-W-343, Type S, .020 diameter copper wire prior to further airplane operation.

UNLATCHED DOOR IN FLIGHT

1. Return for normal landing.

NOTE: Flight characteristics will not be affected, except for a reduction in performance. If practicable, during the landing flare-out have a passenger hold the door to prevent it from swinging open.

GEAR-UP LANDING

NOTE: If possible, choose firm sod or foamed runway. When assured of reaching landing site:

1. Cowl Flaps - CLOSED
2. Wing Flaps - AS DESIRED
3. Throttles - CLOSED
4. Fuel Selectors - OFF
5. Mixture Controls - IDLE CUTOFF
6. Battery, Alternator, and Magneto/Start Switches - OFF
7. Keep wings level during touchdown.
8. Get clear of the airplane as soon as possible after it stops.

NOTE: The gear-up landing procedures are based on the best available information and no actual tests have been conducted.

ONE ENGINE INOPERATIVE LANDING

On final approach and when it is certain that the field can be reached:

1. Landing Gear - DOWN
2. Flaps - APPROACH (15°)
3. Airspeed - 100 KTS
4. Power - AS REQUIRED TO MAINTAIN 800 FT/MIN RATE OF DESCENT

When there is no possibility of go-around:

5. Flaps - FULL DOWN (30°)
6. Execute normal landing.

ONE ENGINE INOPERATIVE GO-AROUND/MISSED APPROACH

WARNING: ***Level flight may not be possible for certain combinations of weight, temperature, and altitude. In any event, DO NOT attempt a one engine inoperative go-around after flaps have been fully extended.***

1. Power - MAX ALLOWABLE
2. Landing Gear - UP
3. Flaps - UP (0°)
4. Airspeed - MAINTAIN 100 KTS

LANDING GEAR MANUAL EXTENSION

NOTE: Reduce airspeed before attempting manual extension of landing gear.

1. LDG GR MOTOR Circuit Breaker - PULL
2. Landing Gear Handle - DOWN
3. Remove cover from handcrank at rear of front seats. Engage handcrank and turn counterclockwise as far as possible (approximately 50 turns). Stow handcrank.
4. If electrical system is operative, check landing gear position lights and warning horn (check LDG GR RELAY circuit breaker engaged).

CAUTION: ***The manual extension system is designed only to lower the landing gear; do not attempt to retract the gear manually.***

Warning: ***Do not operate the landing gear electrically with the handcrank engaged, as damage to the mechanism could occur.***

After emergency landing gear extension, do not move any landing gear controls or reset any switches or circuit breakers until airplane is on jacks, as failure may have been in the gear-up circuit and the gear may retract with the airplane on the ground.

LANDING GEAR RETRACTION AFTER PRACTICE MANUAL EXTENSION

After practice manual extension of the landing gear, the gear may be retracted electrically, as follows:

1. Handcrank - CHECK, STOWED
2. Landing Gear Motor Circuit Breaker - IN
3. Landing Gear Handle - UP