SECTION III
EMERGENCY PROCEDURES

ENGINE INOPERATIVE PROCEDURES

ENGINE FAILURE DURING TAKEOFF - SPEED BELOW 90 KIAS (With Sufficient Runway Remaining)

(1) Throttles - CLOSE immediately.
(2) Brakes - AS REQUIRED.

> NOTE
>
> The distance required for the aircraft to be accelerated from a standing start to 90 KIAS on the ground, and then decelerate to a stop with heavy braking is presented in the Accelerate Stop Distance Chart in Section VI for various combinations of conditions.

ENGINE FAILURE AFTER TAKEOFF - SPEED ABOVE 90 KIAS (Without Sufficient Runway Ahead)

(1) Mixture - AS REQUIRED for altitude.
(2) Propellers - FULL FORWARD.
(3) Throttles - FULL FORWARD.
(4) Landing Gear - UP.
(5) Inoperative Engine:
  (a) Throttle - CLOSE.
  (b) Mixture - IDLE CUT-OFF.
  (c) Propeller - FEATHER.
(6) Establish Bank - 5° toward operative engine.
(7) Climb to Clear Obstacle - 90 KIAS.
(8) Climb at Best Single-Engine Climb Speed - 102 KIAS.
(9) Wing Flaps - UP (if extended) in small increments.

(10) Trim Tabs - ADJUST (5° bank toward operative engine).
(11) Inoperative Engine - SECURE as follows:
    (a) Fuel Selector - OFF.
    (b) Auxiliary Fuel Pump - OFF.
    (c) Magneto Switches - OFF.
    (d) Alternator Switch - OFF.
(12) As Soon as Practical - LAND.

SUPPLEMENTARY INFORMATION CONCERNING ENGINE-OUT DURING TAKEOFF

The most critical time for an engine-out conditon in a multi-engine aircraft is during a two or three second period late in the takeoff run while the aircraft is accelerating to a safe engine-failure speed. A detailed knowledge of recommended single-engine airspeeds, see Figure 3-1, is essential for safe operation of this aircraft.

The airspeed indicator is marked with a red radial line at the minimum single-engine control speed and a blue radial line at the best single-engine rate-of-climb speed to facilitate instant recognition. The following paragraphs present a detailed discussion of the problems associated with engine failures during takeoff.

SINGLE-ENGINE AIRSPEED NOMENCLATURE		KIAS
(1)	Minimum Single-Engine Control Speed (red radial) .	75
(2)	Recommended Safe Single-Engine Speed	90
(3)	Best Single-Engine Angle-of-Climb Speed	93
(4)	Best Single-Engine Rate-of-Climb Speed (Flaps Up) (blue radial)	102

Figure 3-1

MINIMUM SINGLE-ENGINE CONTROL SPEED. The multi-engine aircraft must reach the minimum control speed (75 KIAS) before full control deflections can counteract the adverse rolling and yawing tendencies associated with one engine inoperative and full power operation on the other engine. This speed is indicated by a red radial line on the airspeed indicator.

RECOMMENDED SAFE SINGLE-ENGINE SPEED. Although the aircraft is controllable at the minimum control speed, the aircraft performance is so far below optimum that continued flight near the ground is improbable. A more suitable recommended safe single-engine speed is 90 KIAS since at this speed, altitude can be maintained more easily while the landing gear is being retracted and the propeller is being feathered.

BEST SINGLE-ENGINE ANGLE-OF-CLIMB SPEED. The best single-engine angle-of-climb speed becomes important when there are obstacles ahead on takeoff. Once the best single-engine angle-of-climb speed is reached, altitude becomes more important than airspeed until the obstacle is cleared. The best single-engine angle-of-climb speed is approximately 93 KIAS with flaps up.

BEST SINGLE-ENGINE RATE-OF-CLIMB SPEED (FLAPS UP). The best single-engine rate-of-climb speed becomes important when there are no obstacles ahead on takeoff, or when it is difficult to maintain or gain altitude in single-engine emergencies. The best single-engine rate-of-climb speed is 102 KIAS with flaps up. This speed is indicated by a blue radial line on the airspeed indicator. The variation of flaps-up best rate-of-climb speed with altitude is shown in Section VI. For best climb performance, the wings should be banked 5° toward the operative engine.

Upon engine failure after reaching 90 KIAS on takeoff, the multi-engine pilot has a significant advantage over a single-engine pilot, for he has the choice of stopping or continuing the takeoff. This would be similar to the choice facing a single-engine pilot who has suddenly lost slightly more than half of his takeoff power. In this situation, the single-engine pilot would be extremely reluctant to continue the takeoff if he had to climb over obstructions. However, if the failure occurred at an altitude as high or higher than surrounding obstructions, he would feel free to maneuver for a landing back at the airport.

Fortunately the aircraft accelerates through this "area of decision" in just a few seconds. However, to make an intelligent decision in this type of an emergency, one must consider the field length, obstruction height, field elevation, air temperature, headwind, and the gross weight. The flight paths illustrated in Figure 3-2 indicate that the "area of decision" is bounded by: (1) the point at which 90 KIAS is reached and (2) the point where the obstruction altitude is reached. An engine failure in this area requires an immediate decision. Beyond this area, the aircraft, within the limitations of single-engine climb performance shown in Section VI, may be maneuvered to a landing back at the airport.

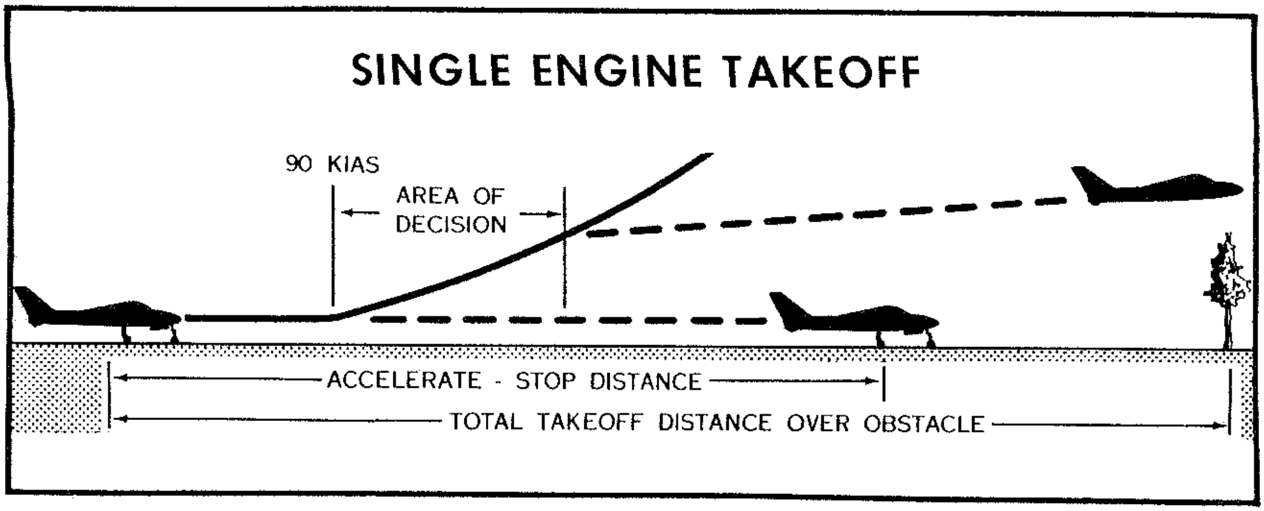
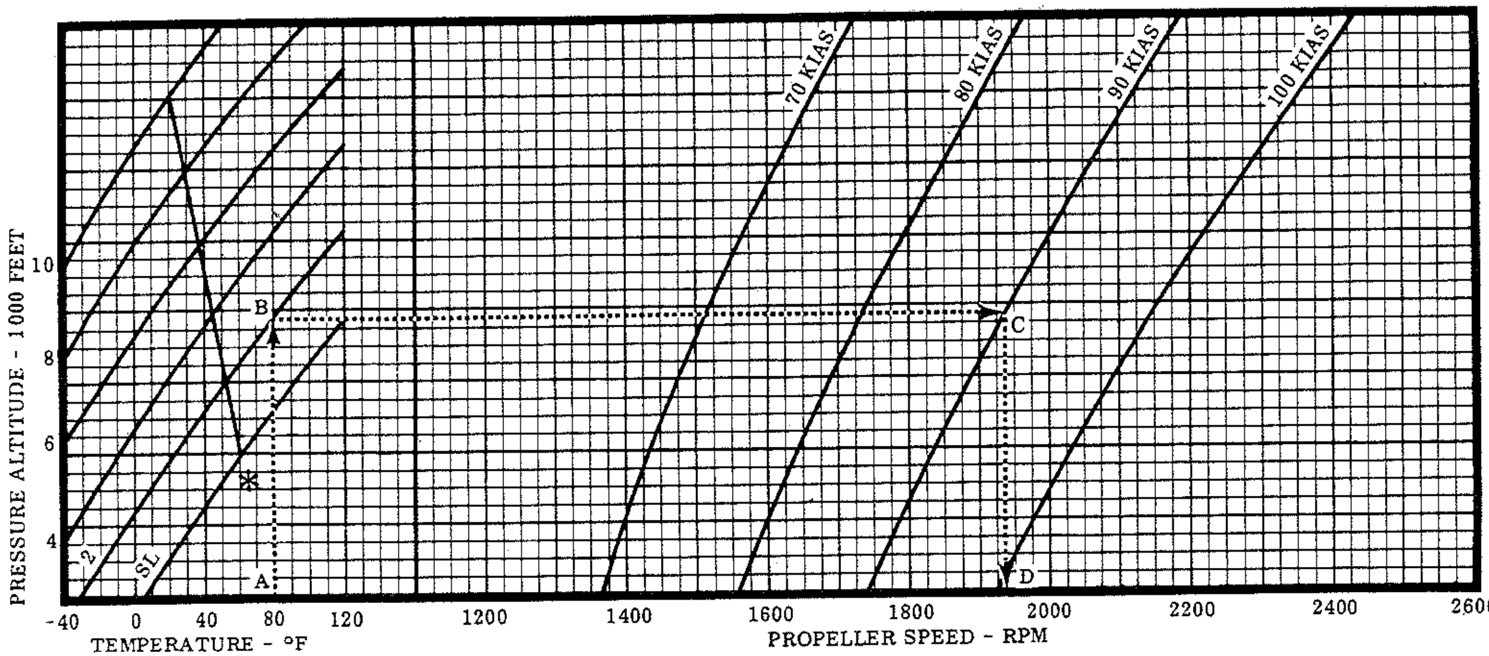


Figure 3-2

At sea level standard day with zero wind and 5300 pounds gross weight, the distance to accelerate to 90 KIAS and stop is 3400 feet, while the total unobstructed area required to takeoff and climb over a 50 foot obstacle after an engine failure at 90 KIAS is 4600 feet. This total distance over an obstacle can be reduced slightly under more favorable conditions of gross weight, headwind, or obstruction height. However, it is recommended that in most cases it would be better to discontinue the takeoff, since any slight mismanagement of the single-engine procedure would more than offset the small distance advantage offered by continuing the takeoff. The advantage of discontinuing the takeoff is even more obvious at higher altitudes where the corresponding distances are 3850 and 8340 respectively, at 2000 feet. Still higher field elevations will cause the single-engine takeoff distance to lengthen disproportionately until an altitude is reached where a successful takeoff is improbable unless the airspeed and height above the runway at engine failure are great enough to allow a slight deceleration and altitude loss while the aircraft is being prepared for a single-engine climb.

During single-engine takeoff procedures over an obstacle, only one condition presents any appreciable advantage; this is headwind. A decrease of approximately 1% in ground distance required to clear a 50 foot obstacle can be gained for each 1 knot of headwind. Excessive speed above best single-engine climb speed at engine failure is not nearly as advantageous as one might expect since deceleration is rapid and ground distance is used up quickly at higher speeds while the aircraft is being cleaned up for climb. However, the extra speed is important for controllability.

RPM TO SIMULATE CRITICAL (LEFT) ENGINE FEATHERED



* STANDARD TEMPERATURE

CONDITIONS

1. Propeller Control Full High RPM - Full Low Pitch
2. Manifold Pressure Adjust to Obtain Proper RPM

EXAMPLE

A. Temperature - 80°F
B. Pressure Altitude - 2000 Feet
C. Airspeed - 90 KIAS
D. Propeller Speed - 1935 RPM

Figure 3-3

The following facts should be used as a guide at the time of engine failure: (1) discontinuing a takeoff upon engine failure is advisable under most circumstances; (2) altitude is more valuable to safety after takeoff than is airspeed in excess of the best single-engine climb speed since excess airspeed is lost much more rapidly than is altitude; (3) climb or continued level flight at moderate altitude is improbable with the landing gear extended and the propeller windmilling; (4) in no case should the airspeed be allowed to fall below the engine-out best angle-of-climb speed, even though altitude is lost, since this speed will always provide a better chance of climb, or a smaller altitude loss, than any lesser speed. The single-engine best rate-of-climb speed will provide the best chance of climb or the least altitude loss, and is preferable unless there are obstructions which make a steep climb necessary.

Single-engine procedures should be practiced in anticipation of an emergency. This practice should be conducted at a safe altitude, with full power operation on both engines, and should be started at a safe speed of at least 105 KIAS. As recovery ability is gained with practice, the starting speed may be lowered in small increments until the feel of the aircraft in emergency conditions is well known. Practice should be continued until: (1) an instinctive corrective reaction is developed, and the corrective procedure is automatic; and (2) airspeed, altitude, and heading can be maintained easily while the aircraft is being prepared for a climb. In order to simulate an engine failure, set both engines at full power operation, then at a chosen speed, pull the mixture control of one engine into IDLE CUT-OFF, and proceed with single-engine emergency procedures. Simulated single-engine procedures can also be practiced by setting propeller RPM to simulate critical engine inoperative as shown in Figure 3-3.

ENGINE FAILURE DURING FLIGHT

(1) Inoperative Engine - DETERMINE (idle engine same side as idle foot).
(2) Power - INCREASE as required.
(3) Mixture - ADJUST for altitude.

Before securing inoperative engine:

(4) Fuel Flow - CHECK, if deficient, position auxiliary fuel pump switch to ON.

NOTE

If fuel selector valve is in AUXILIARY TANK position, switch to MAIN TANK and feel for detent.

(5) Fuel Quantity - CHECK, and switch to opposite MAIN TANK if necessary.
(6) Oil Pressure and Oil Temperature - CHECK, shutdown engine if oil pressure is low.
(7) Magneto Switches - CHECK.

If proper corrective action was taken, engine will restart. If it does not, secure as follows:

(8) Inoperative Engine - SECURE.
 (a) Throttle - CLOSED.
 (b) Mixture - IDLE CUT-OFF.
 * (c) Propeller - FEATHER.
 (d) Fuel Selector - OFF.
 (e) Auxiliary Fuel Pump - OFF.
 (f) Magneto Switches - OFF.
 (g) Alternator Switch - OFF.
(9) Operative Engine - ADJUST.
 (a) Power - AS REQUIRED.
 (b) Mixture - ADJUST for power.
 (c) Fuel Selector - MAIN TANK (feel for detent).
 (d) Auxiliary Fuel Pump - ON.
(10) Trim Tabs - ADJUST (5° bank toward operative engine).
(11) Electrical Load - DECREASE to minimum required.
(12) As Soon as Practical - LAND.

ENGINE RESTARTS IN FLIGHT (After Feathering)

AIRCRAFT WITHOUT OPTIONAL PROPELLER UNFEATHERING SYSTEM INSTALLED

(1) Magneto Switches - ON.
(2) Fuel Selector - MAIN TANK (feel for detent).
(3) Throttle - FORWARD approximately one inch.
(4) Mixture - FULL RICH.

(5) Propeller - FORWARD of detent.
(6) Starter Button - PRESS.
(7) Primer Switch - ACTIVATE.
(8) Starter and Primer Switch - RELEASE when engine fires.
(9) Power - INCREASE slowly until cylinder head temperature reaches 200°F.

NOTE

If start is unsuccessful, turn magneto switches OFF retard mixture to IDLE CUT-OFF, open throttle fully, and engage starter for several revolutions. Then repeat air start procedures.

AIRCRAFT WITH OPTIONAL PROPELLER UNFEATHERING SYSTEM INSTALLED

(1) Magneto Switches - ON.
(2) Fuel Selector - MAIN TANK (feel for detent).
(3) Throttle - FORWARD approximately one inch.
(4) Mixture - FULL RICH.
(5) Propeller - FULL FORWARD.

NOTE

The propeller will automatically windmill when the propeller lever is moved out of the FEATHER position.

(6) Propeller - RETARD to detent when propeller reaches 1000 RPM.
(7) Power - INCREASE slowly until cylinder head temperature reaches 200°F.

FIRE PROCEDURES

FIRE ON THE GROUND (Engine Start, Taxi, and Takeoff with Sufficient Distance Remaining to Stop)

(1) Throttles - CLOSE.
(2) Brakes - AS REQUIRED.

(3) Mixtures - IDLE CUT-OFF.
(4) Battery - OFF (use gang bar).
(5) Magnetos - OFF (use gang bar).
(6) Evacuate aircraft as soon as practical.

IN FLIGHT WING OR ENGINE FIRE

(1) Both Auxiliary Fuel Pumps - OFF.
(2) Appropriate Engine - SECURE.
    (a) Mixture - IDLE CUT-OFF.
    (b) Propeller - FEATHER.
    (c) Fuel Selector - OFF.
    (d) Alternator - OFF.
    (e) Magnetos - OFF.
(3) Cabin Heater - OFF.
(4) Land and evacuate aircraft as soon as practical.

IN FLIGHT CABIN FIRE OR SMOKE

(1) Electrical Load - REDUCE to minimum required.
(2) Attempt to isolate the source of fire or smoke.
(3) Wemacs - OPEN.
(4) Cabin Air Controls - OPEN (all vents including windshield defrost)
    If intensity of smoke increases - CLOSE.

> **CAUTION**
>
> Opening the foul weather window or cabin door will create a draft in the cabin and may intensify a fire.

(5) Land and evacuate aircraft as soon as practical.

SUPPLEMENTARY INFORMATION CONCERNING AIRCRAFT FIRES

With the use of modern installation techniques and material the probability *of an aircraft fire occuring in your aircraft is extremely remote. However, in* the event a fire is encountered, the following information will be helpful in dealing with the emergency as quickly and safely as possible.

The preflight checklist is provided to aid the pilot in detecting conditions which could contribute to an aircraft fire. As a fire requires both fuel and an ignition source, close preflight inspection should be given to the engine compartment and wing leading edge and lower surfaces. Leaks in the fuel system, oil system, or exhaust system can lead to a ground or airborne fire.

> NOTE
>
> Flight should not be atempted with known fuel, oil, or exhaust leaks. The presence of fuel, unusual oil or exhaust stains may be an indication of system leaks and should be carefully investigated prior to flight.

If an aircraft fire is discovered on the ground or during takeoff, but prior to committed flight, the aircraft is to be landed and/or stopped and the passengers and crew evacuated as soon as practical.

Fires originating inflight must be controlled as quickly as possible in an attempt to prevent major structural damage. Both auxiliary fuel pumps should be turned off to reduce pressure on the total fuel system (each auxiliary pump pressurizes a crossfeed line to the opposite fuel selector). The engine on the wing in which the fire exists should be shut down and its fuel shut off even though the fire may not have originated in the fuel system. The cabin heater draws fuel from crossfeed system and should also be turned off. Descent for landing should be initiated immediately.

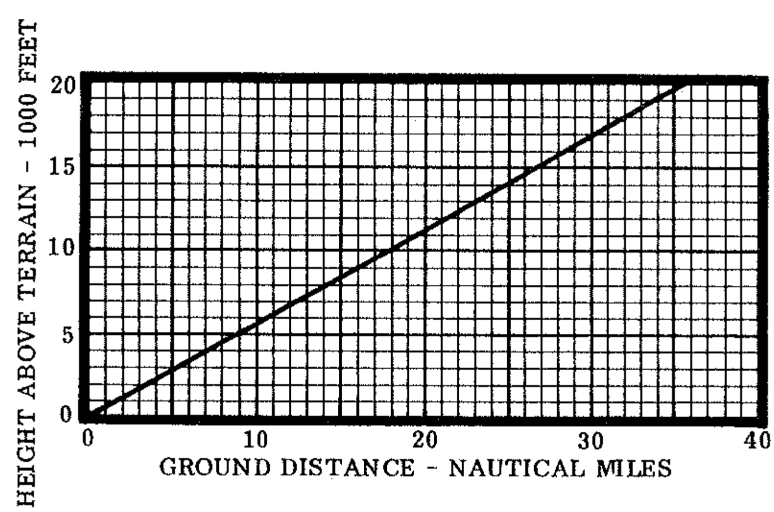
An open door or foul weather window produces a low pressure in the cabin. To avoid drawing the fire into the cabin, the door and foul weather windows should be kept closed. This condition is aggravated with the landing gear and flaps extended. Therefore, the pilot should lower the gear as late in the landing approach as possible. A no-flap landing should also be attempted if practical.

A fire or smoke in the cabin should be controlled by identifying and shutting down the faulty system. Smoke may be removed by opening the cabin air controls and wemacs. If the smoke increases in intensity when the air controls are opened they should be closed as this indicates a possible fire in the heater or nose compartment. When the smoke is intense, the pilot may choose to expell the smoke through the foul weather window. The foul weather window should be closed immediately if the fire becomes more intense when the window is opened.

MAXIMUM GLIDE

In the event of a double-engine failure condition, maximum gliding distance can be obtained by feathering both propellers, and maintaining approximately 96 KIAS with the landing gear and wing flaps up. Refer to Maximum Glide, Figure 3-4, for maximum glide data.

MAXIMUM GLIDE



WING FLAPS UP LANDING GEAR UP FEATHERED PROPELLERS ZERO WIND	
BEST GLIDE SPEED	
WEIGHT POUNDS	KIAS
4500	89
4900	94
5300	96

Figure 3-4

SINGLE-ENGINE APPROACH AND LANDING

(1) Mixture - FULL RICH.
(2) Propeller - FULL FORWARD.
(3) Approach at 94 KIAS with excessive altitude.
(4) Landing Gear - DOWN within glide distance of field.
(5) Wing Flaps - DOWN when landing is assured.
(6) Decrease speed below 89 KIAS only when landing is assured.
(7) Minimum Single-Engine Control Speed - 75 KIAS.

FORCED LANDING

(Precautionary Landing with Power)

(1) Drag over selected field with flaps 15° and 90 KIAS noting type of terrain and obstructions.
(2) Plan a wheels-down landing if surface is smooth and hard.
(3) Execute a normal landing, keeping nosewheel off ground until speed is decreased.
(4) If terrain is rough or soft, plan a wheels-up landing as follows:
 (a) Select a smooth grass-covered runway, if possible.
 (b) Landing Gear Switch - UP.
 (c) Approach at 89 KIAS with flaps down only 15°.
 (d) All Switches Except Magneto Switches - OFF.
 (e) Unlatch cabin door prior to flare-out.

> NOTE
>
> Be prepared for a mild tail buffet as the cabin door is opened.

 (f) Mixtures - IDLE CUT-OFF (both engines).
 (g) Magneto Switches - OFF.
 (h) Fuel Selectors - OFF.
 (i) Land in a slightly tail-low attitude.

> NOTE
>
> Aircraft will slide straight ahead about 500 feet on smooth sod with very little damage.

FORCED LANDING (Complete Power Loss)

(1) Mixtures - IDLE CUT-OFF.
(2) Propellers - FEATHER then rotate to HORIZONTAL position with starter if time permits.
(3) Fuel Selectors - OFF.
(4) All Switches Except Battery Switch - OFF.
(5) Approach at 94 KIAS.
(6) If field is smooth and hard, plan a landing as follows:
  (a) Landing Gear - DOWN within glide distance of field.
  (b) Wing Flaps - EXTEND as necessary when within glide distance of field.
  (c) Battery Switch - OFF.
  (d) Make a normal landing, keeping nosewheel off the ground as long as practical.
(7) If field is rough or soft, plan a wheels-up landing as follows:
  (a) Select a smooth, grass-covered runway if possible.
  (b) Landing Gear - UP.
  (c) Approach at 90 KIAS with flaps down only 15°.
  (d) Battery Switch - OFF.
  (e) Unlatch cabin door prior to flare-out.

> NOTE
>
> Be prepared for a mild tail buffet as cabin door is opened.

  (f) Land in a slightly tail-low attitude.

> NOTE
>
> Aircraft will slide straight ahead about 500 feet on smooth sod with very little damage.

GO-AROUND (SINGLE-ENGINE)

(1) If absolutely necessary and speed is above 90 KIAS, increase engine speed to 2625 RPM and apply full throttle.
(2) Landing Gear - UP.
(3) Wing Flaps - UP (if extended).
(4) Climb at 102 KIAS (93 KIAS with obstacles directly ahead).
(5) Trim aircraft for single-engine climb.

SYSTEM EMERGENCY PROCEDURES

FUEL SYSTEM

ENGINE DRIVEN FUEL PUMP FAILURE

(1) Fuel Selector - MAIN TANK (feel for detent).
(2) Auxiliary Fuel Pump - ON.
(3) Mixture - ADJUST for smooth engine operation.
(4) As Soon as Practical - LAND.
(5) Fuel in auxiliary and opposite main tank is unusable.

NOTE

If both an engine-driven fuel pump and an auxiliary fuel pump fail on the same side of the aircraft, the failing engine cannot be supplied with fuel from the opposite MAIN tank since that auxiliary fuel pump will operate on the low pressure setting as long as the corresponding engine fuel pump is operative.

ELECTRICAL SYSTEM

ALTERNATOR FAILURE (SINGLE)
(Indicated by illumination of failure light)

(1) Electrical Load - REDUCE.
(2) If Circuit Breaker is Tripped:
  (a) Shut off affected alternator.
  (b) Reset affected alternator circuit breaker.
  (c) Turn on affected alternator switch.

(d) If circuit breaker reopens, turn off alternator.

(3) If Circuit Breaker does not Trip:

(a) Select affected alternator on voltammeter and monitor output.

(b) If output is normal and failure light remains on, disregard fail indication and have indicator checked after landing.

(c) If output is insufficient, turn off alternator and reduce electrical load to one alternator capacity.

(d) If complete loss of alternator output occurs, check field fuse and replace if necessary. Spare fuses are located in the glove box.

(e) If an intermittent light indication accompanied by ammeter fluctuation is observed, shut off affected alternator and reduce load to one alternator capacity.

ALTERNATOR FAILURE (DUAL)
(Indicated by illumination of failure lights)

(1) Electrical Load - REDUCE.

(2) If Circuit Breakers are Tripped:

(a) Shut off alternators.

(b) Reset circuit breakers.

(c) Turn on left alternator and monitor output on voltammeter.

(d) If alternator is charging, leave it on (disregard failure light if still illuminated).

(e) If still inoperative, shut off left alternator.

(f) Repeat steps (c) thru (e) for right alternator.

(f) If circuit breakers reopen, prepare to terminate flight.

(3) If Circuit Breakers have not Tripped:

(a) Shut off alternators.

(b) Check field fuses and replace as required. Spare fuses are located in the glove box.

(c) Turn on left alternator and monitor output on voltammeter.

(d) If alternator is charging, leave it on (disregard failure light if still illuminated).

(e) If still inoperative, shut off left alternator.

(f) Repeat steps (c) thru (e) for right alternator.

(g) If both still inoperative, shut off alternators and turn on emergency alternator field switch.

(h) Repeat steps (c) thru (e) for each alternator.

(i) If still inoperative, shut off alternators and prepare to terminate flight.

FLIGHT INSTRUMENTS

OBSTRUCTION OR ICING OF STATIC SOURCE

(1) Alternate Static Source - OPEN.
(2) Excess Altitude and Airspeed - MAINTAIN to compensate for change in calibration. Increase indicated airspeed approximately 10 knots and altitudes approximately 80 feet.

NOTE

- Refer to Pilot's Checklist for accurate airspeed and altimeter corrections with alternate static source OPEN.
- Be sure the alternate static source is closed for all normal operations.

VACUUM PUMP FAILURE (Attitude and Directional Gyros)

(1) Red indicator on gage will show failure.
(2) Automatic valve will select operative source.

ELECTRIC DIRECTIONAL GYRO

If optional electric gyro is installed:

(1) If gyro power fail light illuminates, position gyro power switch to STANDBY.
(2) If light does not go out, check gyro circuit breaker - IN.

LANDING GEAR SYSTEM

LANDING GEAR WILL NOT EXTEND ELECTRICALLY

When the landing gear will not extend electrically, it may be extended manually in accordance with the following steps:

> NOTE
>
> The handcrank handle must be stowed in its clip before the gear will operate electrically. When the handle is placed in the operating position, it disengages the landing gear motor from the actuator gear.

(1) Before proceeding manually, check landing gear circuit breakers with landing gear switch DOWN. If circuit breakers are tripped, allow 3 minutes for them to cool before resetting.
(2) If Circuit Breaker is Not Tripped - PULL.
(3) Landing Gear Switch - NEUTRAL (center).
(4) Pilot's Seat - TILT full aft (std) or RAISE (opt).
(5) Hand Crank - EXTEND and LOCK. (See Figure 2-6.)
(6) Rotate Crank - CLOCKWISE four turns past point where gear down lights come on (approximately 52 turns).

> NOTE
>
> During manual extension of the gear, never release the hand crank to let it turn freely of its own accord.

(7) Gear Down Lights - CHECK.
(8) Gear Unlocked Light - CHECK.
(9) Gear Warning Horn - CHECK with throttle retarded.
(10) Hand Crank - PUSH BUTTON and STOW.
(11) As Soon as Practical - LAND.

LANDING GEAR WILL NOT RETRACT ELECTRICALLY

(1) Do not try to retract manually.

> NOTE
>
> The landing gear should never be retracted with the manual system, as undue loads will be imposed and cause excessive wear on the cranking mechanism.

(2) Landing Gear - DOWN.
(3) Gear-Down Lights - CHECK.
(4) Gear Unlocked Light - CHECK.
(5) Gear Warning Horn - CHECK.
(6) As Soon as Practical - LAND.

AIR INLET OR FILTER ICING

(1) Alternate Air Controls - PULL OUT.
(2) Propellers - INCREASE (2550 RPM for normal cruise).
(3) Mixtures - LEAN as required.

LANDING EMERGENCIES

LANDING WITH FLAT MAIN GEAR TIRE

If a blowout occurs during takeoff, and the defective main gear tire is identified, proceed as follows:

(1) Landing Gear - UP.
(2) Fuel Selectors - Turn to main tank on same side as defective tire and feel for detent. Proceed to destination to reduce fuel load.

> NOTE
>
> Fuel should be used from this tank first to lighten the load on this wing prior to attempting a landing, if inflight time permits. However, an adequate supply of fuel should be left in this tank so that it may be used during landing.

(3) Fuel Selectors - Left Engine - LEFT MAIN (feel for detent).
Right Engine - RIGHT MAIN (feel for detent).

(4) Select a runway with a crosswind from the side opposite the defective tire, if a crosswind landing is required.

(5) Landing Gear Switch - DOWN (below 140 KCAS).

(6) Check landing gear down indicator lights (green) for indication and gear unlocked light (red) out.

(7) Wing Flaps - DOWN. Extend flaps to 35°.

(8) In approach, align aircraft with edge of runway opposite the defective tire, allowing room for a mild turn in the landing roll.

(9) Land slightly wing-low on side of inflated tire and lower nosewheel to ground immediately, for positive steering.

(10) Use full aileron in landing roll, to lighten load on defective tire.

(11) Apply brake only on the inflated tire, to minimize landing roll and maintain directional control.

(12) Stop aircraft to avoid further damage, unless active runway must be cleared for other traffic.

LANDING WITH FLAT NOSE GEAR TIRE

If a blowout occurs on the nose gear tire during takeoff, prepare for a landing as follows:

(1) Landing Gear - Leave DOWN.

> NOTE
>
> Do not attempt to retract the landing gear if a nose gear tire blowout occurs. The nose gear tire may be distorted enough to bind the nosewheel strut within the wheel well and prevent later gear extension.

(2) Move disposable load to baggage area and passengers to available rear seat space.

(3) Flaps - DOWN. Extend flaps from 0° to 15°, as desired.

(4) Land in a nose-high attitude with or without power.

(5) Maintain back pressure on control wheel to hold nosewheel off the ground in landing roll.

(6) Use minimum braking in landing roll.
(7) Throttles - RETARD in landing roll.
(8) As landing roll speed diminishes, hold control wheel fully aft until aircraft is stopped.
(9) Avoid further tire damage by holding additional taxi to a minimum.

LANDING WITH DEFECTIVE MAIN GEAR

Reduce the fuel load in the tank on the side of the faulty main gear as explained in paragraph Landing With Flat Main Gear Tire. When fuel load is reduced, prepare to land as follows:

(1) Fuel Selectors - Left Engine - LEFT MAIN (feel for detent).
Right Engine - RIGHT MAIN (feel for detent).
(2) Select a wide, hard surface runway, or if necessary a wide sod runway. Select a runway with crosswind from the side opposite the defective landing gear, if a crosswind landing is necessary.
(3) Landing Gear - DOWN.
(4) Wing Flaps - DOWN 35°.
(5) In approach, align aircraft with edge of runway opposite the defective landing gear, allowing room for a ground-loop in landing roll.
(6) Battery Switch - OFF.
(7) Land slightly wing-low toward the operative landing gear and lower the nosewheel immediately, for positive steering.
(8) Start moderate ground-loop toward defective landing gear until aircraft stops.
(9) Mixtures - IDLE CUT-OFF (both engines).
(10) Use full aileron in landing roll to lighten the load on the defective landing gear.
(11) Apply brake only on the operative landing gear to maintain directional control and minimize the landing roll.
(12) Fuel Selectors - OFF.
(13) Evacuate the aircraft as soon as it stops.

LANDING WITH DEFECTIVE NOSE GEAR

Sod-Runway—Main Gear Retracted

This procedure will produce a minimum amount of aircraft damage on smooth runways. This procedure is also recommended for short, rough, or uncertain field conditions where passenger safety, rather than minimum aircraft damage, is the prime consideration.

(1) Select a smooth, grass-covered runway, if possible.
(2) Landing Gear - UP.
(3) Approach at 94 KIAS with wing flaps down only 15°.
(4) All Switches Except Magneto Switches - OFF.
(5) Unlatch cabin door prior to flare-out.

> NOTE
>
> Be prepared for mild tail buffet as the cabin door is opened.

(6) Land in a slightly tail-low attitude.
(7) Mixtures - IDLE CUT-OFF (both engines).
(8) Magneto Switches - OFF.
(9) Fuel Selectors - OFF.

Smooth Hard Surface Runway—Main Gear Extended

(1) Move disposable load to baggage area, and passengers to available rear seat space.
(2) Select a smooth, hard surface runway.
(3) Landing Gear - DOWN.
(4) Approach at 94 KIAS with wing flaps down only 15°.
(5) All Switches Except Magneto Switches - OFF.
(6) Land in a slightly tail-low attitude.
(7) Mixtures - IDLE CUT-OFF (both engines).
(8) Magneto Switches - OFF.
(9) Hold nose off throughout ground roll. Lower gently as speed dissipates.

DITCHING

(1) Plan approach into wind, if winds are high and seas are heavy. With heavy swells and light wind, land parallel to swells, being careful not to allow wing tip to hit first.
(2) Approach with landing gear retracted, wing flaps 35°, and enough power to maintain approximately 300 ft/min. rate-of-descent at approximately 95 KIAS at 4600 pounds gross weight.

(3) Maintain a continuous descent until touchdown, to avoid flaring and touching down tail-first, pitching forward sharply, and decelerating rapidly. Strive for initial contact at fuselage area below rear cabin section (point of maximum longitudinal curvature of fuselage).