EMERGENCY PROCEDURES

SGAC APPROVED

ENGINE FAILURE

DURING TAKE-OFF

(a) Throttle - Idle.
(b) Apply brakes.
(c) Flaps - Retract.
(d) Mixture - Idle cut-off.
(e) Ignition Switch - "OFF".
(f) Master Switch - "OFF".

AFTER TAKE-OFF

(a) Glide Speed - 113 km/h - 61 kts - 70 MPH.
(b) Mixture - Idle cut-off.
(c) Fuel Shutoff Valve - "OFF".
(d) Ignition Switch - "OFF".
(e) Master switch is to be left "ON" so that wing flaps may be extended.

CAUTION

Perform the landing straight ahead, making only small changes in heading to avoid obstructions. Never attempt to turn back to the landing strip.

DURING FLIGHT

(a) Glide Speed - 113 km/h - 61 kts - 70 MPH (optimum glide angle with propeller windmilling).
(b) Fuel - Verify that fuel shutoff valve handle is "ON".
(c) Mixture - Rich.
(d) Throttle - Craked one inch (2.5 cm).
(e) Ignition Switch - "BOTH".

If the propeller is allowed to stop windmilling, the engine will have to be turned with the starter. If the engine will not start, select an unobstructed area to land in and secure the engine as follows :

(a) Mixture - Idle cut-off.
(b) Throttle - Closed.
(c) Ignition Switch - "OFF".
(d) Fuel Shutoff Valve Handle - "OFF".
(e) Leave master switch "ON" so that wing flaps can be extended and to keep use of the radio.

NOTE

Full flaps are recommended for emergency landings on unpaved surfaces.

FIRES

ENGINE FIRE ON GROUND

In case of fire in the intake duct during ground operations, proceed as follows :

(a) Starter - Crank.
(b) Mixture - Idle cut-off.
(c) Throttle - Full open.
(d) Fuel Shutoff Valve Handle - "OFF".

NOTE

If fire occurs in intake duct during engine run-up, keep engine running for about 15 to 30 seconds. If fire persists, perform above steps (b), (c) and (d).

ENGINE FIRE IN FLIGHT

(a) Cabin Heat Control - "CLOSED".
(b) Mixture - Idle cut-off.
(c) Fuel Shutoff Valve Handle - "OFF".
(d) Ignition Switch - "OFF".
(e) Master Switch - "OFF".

NOTE

Do not attempt to restart the engine. Execute a forced landing.

CABIN FIRE

(a) Master Switch - "OFF".
(b) Cabin Heating and Ventilation Controls - Closed.

NOTE

Use a portable extinguisher if available.

WING FIRE

(a) Master Switch - "OFF".
(b) Ventilating Controls - Closed.

NOTE

Perform a sideslip on the side opposite to the wing in fire in an attempt to extinguish the flames. Land the aircraft as soon as possible with flaps retracted.

ELECTRICAL FIRE

(a) Master Switch - "OFF".
(b) All other switches - "OFF".
(c) Master Switch - "ON".

NOTE

Select switches "ON" successively, permitting a short time delay to elapse after each switch is turned on until the short circuit is localized.

LANDING

LANDING WITH ONE FLAT TIRE

Lower the flaps normally and land the airplane with nose up and wing tilted to hold the flat tire off the ground as long as possible. At touchdown, use rudder and the brake on the good wheel to maintain directional control, and shut down the engine.

LANDING WITHOUT PITCH CONTROL

Trim for horizontal flight (with an airspeed of approximately 97 km/h - 52 kts - 60 MPH and flaps lowered to 20°) by using throttle and

elevator trim controls. Control the glide angle by adjusting power exclusively.

At flareout, the nose-down moment resulting from power reduction is an adverse factor and the aircraft may hit on the nose wheel.

Consequently, at flareout, the control should be set at the full nose-up position and the power adjusted so that the aircraft will rotate to the horizontal attitude for touchdown. Close the throttle at touchdown.

FORCED LANDINGS

PRECAUTIONARY LANDING WITH ENGINE POWER

(1) Drag over selected field with flaps 20° and 113 km/h - 61 kts - 70 MPH airspeed.
(2) Seat belts - Adjust and lock.
(3) Turn off all switches except the ignition and master switches.
(4) Approach with flaps 40° at 104 km/h - 57 kts - 65 MPH.
(5) Unlatch cabin doors.
(6) Turn fuel shutoff valve to "OFF".
(7) Land in a slightly tail-low attitude.

EMERGENCY LANDING WITHOUT ENGINE POWER

(1) Pull mixture control to idle cut-off position.
(2) Turn fuel shutoff valve to "OFF".
(3) Turn all switches "OFF" except master switch.
(4) Approach at 113 km/h - 61 kts - 70 MPH.
(5) Extend wing flaps.
(6) Turn master switch "OFF".
(7) Unlatch cabin doors.
(8) Land in a slightly tail-low attitude.
(9) Apply heavy braking.

DITCHING

(1) Prepare for ditching by securing or jettisoning heavy objects.
(2) Transmit Mayday message on 121.5 MHz .
(3) Plan approach into wind if winds are high and seas are heavy. With heavy swells and light wind, land parallel to swells.
(4) Approach with flaps 40° and sufficient power for a 300 ft. /min. rate of descent at 104 km/h - 57 kts - 65 MPH.
(5) Unlatch the cabin doors.
(6) Maintain a continuous descent until touchdown in level attitude.
(7) Place folded coat or cushion in front of face at time of touchdown.
(8) Evacuate airplane through cabin doors. If necessary, open window to flood cabin compartment for equalizing pressure so that door can be opened.
(9) Inflate life vests and raft (if available) after evacuation of cabin. The aircraft can not be depended on for floatation for more than a few minutes.

FLIGHT IN ICING CONDITIONS

Although flying in known icing conditions is prohibited, an unexpected icing encounter should be handled as follows :

(1) Turn pitot heat switch "ON".
(2) Change altitude to obtain an outside air temperature that is less conducive to icing.
(3) Pull cabin heat control full out for maximum defroster heat and air flow.
(4) Open the throttle to increase engine speed to minimize ice buildup.
(5) Apply carburetor heat.
(6) Plan a landing at the nearest airport.
(7) With an important ice accumulation, be prepared for significantly higher stall speed.
(8) Leave wing flaps retracted since wing flap extension could result in a loss of elevator effectiveness.

(9) Open left window and, if practical, scrape ice from a portion of the windshield for visibility in the landing approach.
(10) Perform a landing approach using a forward slip, if necessary, for improved visibility.
(11) Approach at 113 to 129 km/h - 61 to 69 kts - 70 to 80 MPH, depending upon the amount of ice accumulation.
(12) Avoid sharp bank in the landing approach.
(13) Perform a landing in level attitude.

RECOVERY FROM A SPIRAL DIVE

If a spiral is encountered, proceed as follows :

(1) Close the throttle.
(2) Stop the turn by using coordinated aileron and rudder control to align the symbolic airplane in the turn coordinator with the horizon reference line.
(3) Cautiously apply elevator back pressure to slowly reduce the indicated airspeed to 129 km/h - 69 kts - 80 MPH.
(4) Adjust the elevator trim control to maintain a 129 km/h - 69 kt - 80 MPH glide.
(5) Keep hands off the control wheel, using rudder control to hold a straight heading.
(6) Apply carburetor heat.
(7) Upon breaking out of clouds, apply normal cruising power and resume flight.

ELECTRICAL SYSTEM FAILURES

COMPLETE ELECTRICAL FAILURE

A complete electrical failure causes the loss of the turn coordinator, the fuel quantity indicators and the wing flaps.

Turn the master switch to "OFF" and land as soon as possible.

ALTERNATOR OR VOLTAGE REGULATOR FAILURE

The battery keeps supplying the aircraft electrical system.
Turn to "OFF" all equipment that is not essential for flight.
If applicable, wait 2 to 3 minutes and reset the alternator circuit-breaker.
In case it pops out again, do not insist and land as soon as possible.

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

Malfunctions in the electrical power supply system can be detected by periodic monitoring of the ammeter and over-voltage warning light.
If the ammeter indicates a continuous discharge rate in flight, turn the alternator switch to "OFF" and land as soon as possible.
If the charging rate were to remain above the normal value, the over-voltage sensor will automatically shut down the alternator and the over-voltage warning light will illuminate. Turn the master switch off and then on again. If the light comes on again, the flight should be terminated as soon as practical.
If the emergency occurs at night, turn the alternator switch back on for use of the landing light and flaps.

ROUGH ENGINE OPERATION OR LOSS OF POWER

CARBURETOR ICING

A gradual loss of RPM and eventual engine roughness may result from the formation of carburetor ice. To clear the ice, apply full throttle

and pull the carburetor heat knob full out until the engine runs smoothly; then remove carburetor heat and readjust the throttle.

If conditions require the continued use of carburetor heat in cruise flight, use the minimum amount of heat necessary to prevent ice from forming and lean the mixture slightly for smoothest engine operation.

SPARK PLUG FOULING

A slight engine roughness in flight may be caused by one or more spark plugs becoming fouled by carbon or lead deposits. This may be verified by turning the ignition switch momentarily from "BOTH" to either "L" or "R" position. An obvious power loss in single ignition operation is evidence of spark plug or magneto trouble. Assuming that spark plugs are the more likely cause, lean the mixture to the normal lean setting for cruising flight. If the problem does not clear up in several minutes, determine if a richer mixture setting will produce smoother operation. If not, proceed to the nearest airport for repairs using the "BOTH" position of the ignition switch unless extreme roughness dictates the use of a single ignition position.

MAGNETO MALFUNCTION

A sudden engine roughness or misfiring is usually evidence of magneto problems. Switching from "BOTH" to either "L" or "R" ignition switch position will identify which magneto is malfunctioning. Select different power settings and enrichen the mixture to determine if continued operation on "BOTH" magnetos is practicable. If not, switch to the good magneto and proceed to the nearest airport for repairs.

LOW OIL PRESSURE

If low oil pressure is accompanied by normal oil temperature, there is a possibility the oil pressure gage or relief valve is malfunctioning. A leak in the line to the gage is not necessarily cause for an immediate precautionary landing because an orifice in this line will prevent a sudden loss of oil from the engine sump. However, a landing at the nearest airport would be advisable to inspect the source of trouble.

If a total loss of oil pressure is accompanied by a rise in oil temperature, there is good reason to suspect an engine failure is imminent. Reduce engine power immediately and select a suitable forced landing field. Leave the engine running at low power during the approach, using only the minimum power required to reach the desired touchdown spot.