Chapter 4
Emergency Procedures

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General

This chapter contains the approved Bridgewater State College procedures for handling various emergencies while operating the PA-28R Arrow. The procedures are based and in some cases expand on the manufacturer's procedural recommendations. An emergency would be any event (action or inaction) that endangers the flight crew, passengers, and/or the aircraft. The procedures in this section are intended to address predictable but rare situations where immediate, precise, and accurate crew action is required to reduce or eliminate the risk.

Flight crews are expected to thoroughly familiarize themselves with the contents of this chapter prior to operating the aircraft. Although training attempts to accurately simulate emergency situations, true emergencies deliver a significant psychological and physiological impact on the flight crew.

WARNING

The first and most important priority of the flight crew during an in-flight emergency is maintaining aircraft control for as long as possible, through to a safe landing.

CAUTION

Any BSC aircraft involved in an in-flight emergency shall be grounded pending a complete inspection and approval for return to service, and can be released only with approval from the Chief Flight Instructor.

Use of the Checklist

When an emergency situation is encountered, flight crews shall follow the procedures within the **Emergency Checklist**. The **Emergency Checklist** is arranged by phase of operation (ground operations, takeoff, climb, cruise, descent, approach, landing) and contains the approved emergency procedures to be followed by flight crews and shall be carried onboard the aircraft, readily accessible to the flight crew *at all times*. The procedures are based upon flight crew knowledge of aircraft systems and system interrelation. As such, some checklist items may be a condensed version of the procedures contained within the approved Pilot's Operating Handbook / Aircraft Flight Manual. Situations presenting an immediate risk are identified on the **Emergency Checklist** for rapid and accurate action and must be accomplished from memory.

CAUTION

Flight crews shall execute the appropriate checklist procedures in response to an emergency situation. In the event of an emergency, the Pilot-In-Command may deviate from the Emergency Checklist procedures as necessary to ensure the safe outcome of the flight.

Checklists in this and all Bridgewater State College standards manuals are printed in a manner to indicate the desired method and sequence of execution. The checklist shall be initiated when the Pilot Flying (PF) calls for the appropriate checklist. Tasks on the checklist may be performed prior to reference to the physical checklist, *but the checklist tasks shall be verified with the checklist in-hand.*

In the event the completion of a checklist sequence is interrupted, flight crews shall return to the checklist as necessary, including starting from the beginning if required, and *ensure that checklist tasks have actually been completed* when the checklist is reported as "COMPLETE".

- **Immediate Action (Memory) Items**

Checklist tasks within the solid-boxed area at the beginning of a procedure denote immediate action items and *shall be accomplished from memory*. Remaining checklist tasks should be accomplished by reference to the printed checklist as the situation allows.

Directional Control	**MAINTAIN**
Throttle	**IDLE**
Brakes	**APPLY**
Stop	**STRAIGHT AHEAD**

All other checklist procedure methods (Challenge/Response, Verbal/Response, Non-Response, Conditional Response) shall be accomplished per instructions provided in Chapter 3A, Normal Procedures.

Flight Crew Conduct in Emergencies

This section delineates procedures to be followed by flight crews during various emergencies. Because of the rarity of actual emergency situations in the training environment, flight crews are encouraged to utilize lesson tasks that focus on emergency situations as opportunities to hone both single pilot and crew coordination procedures.

Ground Emergencies

- During ground emergencies, the Pilot Flying (**PF**) conducts the memory action items, and the Pilot Not Flying (**PNF**) assists as instructed by the **PF**. Crew coordination is essential. Tasks are to be completed in sequence, smoothly, accurately, and as rapidly as possible. Although the completion of tasks will follow a specified sequence, actions will be performed nearly simultaneously.

- Any flight crew conducting an emergency procedure checklist on the ground in response to an actual emergency shall return the aircraft to the ramp for maintenance action.

In-Flight Emergencies

During any in-flight emergency, the **PF** (if licensed and rated) will call for the appropriate emergency checklist. The **PNF** will perform the immediate action tasks from memory. The **PNF** will use the Challenge/Response method to accomplish the memory action tasks for any power or mixture control tasks, and fires.

CAUTION

BSC Flight Instructors are reminded that they are ultimately the PIC on any dual flight training event and are therefore responsible for the safe outcome of the flight. In any emergency, the PIC may request the flight controls from the PF if necessary.

The emergency checklists contained in this section provide flight crews with a list of the tasks to be accomplished in the aircraft. Those same checklists and associated tasks are explained in detail in the expanded section of the chapter. The checklists must be accomplished from memory, if appropriate, *and then verified with the checklist in-hand*.

Speed vs. Efficiency in Task Execution

The most important and sophisticated technology in the aircraft is the pilot's mind. His/her ability to analyze a rapidly changing situation, determine a desired outcome, select from available alternatives, act on the decision, evaluate the result and if necessary conduct that sequence several times over, presents the very best chance for a successful outcome. Where a pilot acts first, rushing through tasks and making mistakes, precious time is wasted by having to repeat previously missed steps in a procedure. In a true emergency situation, there is always time to *think first, then act efficiently and effectively*: The result prevents mistakes and the associated loss of time available to the flight crew.

All tasks in the approved Bridgewater State College Emergency Checklists are to be completed in sequence, smoothly, accurately, and as rapidly as possible. Although the completion of tasks will follow a specified sequence, actions will be performed nearly simultaneously. Instructors and students are expected to review and rehearse these procedures as necessary to achieve and maintain the expected level of proficiency.

During training operations, single-pilot execution of any emergency procedure listed in the chapter will be executed using the Verbal Response method.

Airspeeds for Emergency Operations

Best Angle of Climb (V_X)	
Gear Up, Flaps Up	96 MPH/83 KIAS
Gear Down, Flaps Up	85 MPH/74 KIAS
Best Rate of Climb at sea level (V_Y)	
Gear Up, Flaps Up	100 MPH/87 KIAS
Gear Down, Flaps Up	96 MPH/83 KIAS
Maneuvering Speed (V_A)	96 – 131 MPH/83-114 KIAS
Maximum Glide Speed	
Gear Up, Flaps Up	105 MPH/91 KIAS
Gear Down, Flaps Down	85 MPH/74 KIAS

Emergency Procedures Checklist

V/R	ENGINE FIRE DURING START

Ignition	**CONTINUE CRANKING**
Mixture	**IDLE CUT-OFF**
Throttle	**FULL FORWARD**
Fuel Pump	**OFF**
Fuel Selector	**OFF**
Ignition	**OFF**
Battery Master Switch	**OFF**
Fire Extinguisher	**OBTAIN**
Aircraft	**EVACUATE**
Fire Extinguisher	**USE**
Checklist	**COMPLETE**

WARNING

While exiting the aircraft, exit toward the rear if possible, checking that evacuation path is clear of other aircraft, spinning propellers, and other hazards.

V/R ENGINE FIRE DURING TAKEOFF (BEFORE V_R)

Directional Control ..... **MAINTAIN**
Throttle ..... **IDLE**
Brakes ..... **APPLY**
Mixture ..... **CUT-OFF**
Master Switch ..... **OFF**
Alternator Switch ..... **OFF**
Ignition Switch ..... **OFF**
Fuel Selector ..... **OFF**
Stop ..... **STRAIGHT AHEAD**
Fire Extinguisher ..... **OBTAIN**
Aircraft ..... **EVACUATE**
Checklist ..... **COMPLETE**

V/R ABORTED TAKEOFF (BEFORE V_R)

Directional Control ..... **MAINTAIN**
Throttle ..... **IDLE**
Brakes ..... **APPLY**
Stop ..... **STRAIGHT AHEAD**
Checklist ..... **COMPLETE**

V/R ENGINE FAILURE BEFORE V_R (USABLE RUNWAY)

Directional Control ..... **MAINTAIN**
Throttle ..... **IDLE**
Brakes ..... **APPLY**
Stop ..... **STRAIGHT AHEAD**
Shutdown ..... **EXECUTE**
Checklist ..... **COMPLETE**

V/R ENGINE FAILURE AFTER V_R (USABLE RUNWAY)

Airspeed ..... **ESTABLISH BEST GLIDE**
Directional Control ..... **MAINTAIN**
Mixture ..... **IDLE CUT-OFF**
Ignition Switch ..... **OFF**
Landing Gear ..... **DOWN**
Flaps ..... **AS REQUIRED**
Battery Master Switch ..... **OFF**
Alternator Switch ..... **OFF**
Fuel Selector ..... **OFF**
Land ..... **STRAIGHT AHEAD**
Stop ..... **STRAIGHT AHEAD**
Checklist ..... **COMPLETE**

V/R ENGINE FAILURE AFTER V_R (OUT OF USABLE RUNWAY)

Airspeed ..... **BEST GLIDE**
Directional Control ..... **MAINTAIN**
RESTART (Time Permitting) ..... **ATTEMPT**

If NO TIME / NO RESTART:
Mixture ..... **IDLE CUT-OFF**
Fuel Selector ..... **OFF**
All Switches (except Master & Avionics) ..... **OFF**
Radio ..... **MAYDAY ON CURRENT FREQUENCY OR 121.5**
Transponder ..... **SQUAWK 7700**
Landing Gear ..... **AS REQUIRED**
Flaps ..... **AS REQUIRED**
Master Switch ..... **OFF**
Door ..... **UNLATCH**
Seats/Belts/Harnesses ..... **SECURED**
Landing ..... **MINIMUM AIRSPEED**
Checklist ..... **COMPLETE**

V/R ENGINE POWER LOSS IN FLIGHT

Airspeed ..... **BEST GLIDE**
Heading ..... **NEAREST AIRPORT**
Throttle ..... **CHECK FULL FORWARD**
Mixture ..... **RICH**
Alternate Air ..... **OPEN**
Fuel Pump ..... **ON**
Fuel Selector ..... **SWITCH TANKS**
Ignition ..... **CHECK BOTH - ON**
Land ..... **AS SOON AS POSSIBLE**
Checklist ..... **COMPLETE**

V/R LOW OIL PRESSURE

Throttle ..... **MINIMUM REQUIRED**
Heading ..... **NEAREST AIRPORT**
Land ..... **AS SOON AS POSSIBLE**
Checklist ..... **COMPLETE**

V/R ENGINE FAILURE IN FLIGHT / AIR RESTART

Airspeed ..... **BEST GLIDE**
Fuel Selector ..... **SWITCH TANKS**
Fuel Pump ..... **ON**
Mixture ..... **RICH**
Alternate Air ..... **OPEN**
Engine Gauges ..... **CHECKED**
Ignition ..... **CHECK BOTH ON (Engage If Propeller Stopped)**
IF NO RESTART:
Forced Landing Checklist ..... **EXECUTE**
Checklist ..... **COMPLETE**

V/R ENGINE FIRE IN FLIGHT

Fuel Selector ..... **OFF**
Throttle ..... IDLE
Mixture ..... **CUT-OFF**
Fuel Pump ..... **OFF**
Heater/Defroster ..... **OFF**
If Fire Not Extinguished:
Emergency Descent ..... **EXECUTE**
Forced Landing Checklist ..... **EXECUTE**
Checklist ..... **COMPLETE**

V/R ELECTRICAL FIRE IN FLIGHT

Master Switches ..... **OFF**
All Other Switches (except Ignition) ..... **OFF**
Cabin Heat ..... **CLOSED**
Cabin Air Vents ..... **OPEN**
Fire Extinguisher (If Installed) ..... **ACTIVATE**
Cabin ..... **VENTILATE**
Land ..... **AS SOON AS POSSIBLE**
Checklist ..... **COMPLETE**

WARNING

If the aircraft is in instrument conditions, turn Battery and ALT Master Switches OFF. If possible, turn the Battery Master Switch ON. Power from the battery will keep the aircraft systems operational long enough to allow the flight crew to execute an immediate diversion.

V/R WING FIRE IN FLIGHT

Pitot Heat ..... **OFF**
Navigation Lights ..... **OFF**
Anti-Collision/Strobe Lights ..... **OFF**
Sideslip ..... **EXECUTE**
Land ..... **AS SOON AS POSSIBLE**
Checklist ..... **COMPLETE**

V/R PROPELLER OVERSPEED

Throttle ..... **RETARD**
Oil Pressure ..... **CHECKED**
Propeller ..... **FULL DECREASE**
Airspeed ..... **REDUCE**
Throttle ..... **BELOW 1700 RPM**
Land ..... **AS SOON AS PRACTICABLE**
Checklist ..... **COMPLETE**

V/R EMERGENCY LANDING GEAR EXTENSION

Battery Master Switch ..... **ON**
Alternator Switch ..... **ON**
Circuit Breakers ..... **CHECKED/IN**
Panel Lights (Daytime) ..... **CHECKED/OFF**
Landing Gear Indicator Bulbs ..... **CHECKED**
Airspeed ..... **SLOW BELOW 87 KIAS**
Landing Gear Selector ..... **DOWN**
Emergency Landing Gear Lever ..... **DOWN**
Landing Gear Lights ..... **3 / GREEN**
Checklist ..... **COMPLETE**

V/R GEAR-UP LANDING

Flaps ..... **AS REQUIRED**
Battery Master Switch ..... **OFF**
Alternator Switch ..... **OFF**
Throttle ..... **IDLE**
Mixture ..... **IDLE CUT-OFF**
Fuel Selector ..... **OFF**
Ignition Switch ..... **OFF**
Seats/Belts/Harnesses ..... **SECURED**
Checklist ..... **COMPLETE**

V/R FUEL PRESSURE DROP/LOSS

Fuel Pump ..... **ON**
Fuel Selector ..... **AS REQUIRED**
Land ..... **AS SOON AS PRACTICABLE**
Checklist ..... **COMPLETE**

V/R ELECTRICAL FAILURE IN FLIGHT

Ammeter ..... **CHECK FOR BATTERY DISCHARGE**
ALT Circuit Breaker ..... **CHECK-IN**
If Ammeter Reads Zero:
- **Alternator Switch** ..... **OFF**
- **Electrical Load** ..... **REDUCE**
- **Alternator Switch** ..... **ON**

If Circuit Breaker IN ..... **CYCLE ALT SWITCH**
If Circuit Breaker OUT (Tripped):
- **Time** ..... **NOTE**
- **All Electrical Switches** ..... **OFF 15 SEC**
- **ALT Circuit Breaker** ..... **RESET**

If ALT Circuit Breaker Fails to Reset:
- **Electrical Load** ..... **REDUCE**
- **Alternator Switch** ..... **OFF**

Land ..... **AS SOON AS PRACTICABLE**
Checklist ..... **COMPLETE**

V/R ELECTRICAL OVERLOAD

Battery Master Switch ..... **OFF**
If No Ammeter Decrease:
- **Alternator Switch** ..... **OFF**

If Ammeter Decrease:
- **Battery Master Switch** ..... **ON**
- **Ammeter** ..... **MONITOR**

If No Ammeter Decrease w/in 5 minutes:
Battery Master Switch ..... **OFF**
If Ammeter Decrease ..... **MONITOR/PROCEED**
Checklist ..... **COMPLETE**

V/R LANDING W/ FLAT TIRE

Radio.....**TRANSMIT CONDITION/INTENTIONS**
Approach .....**FLY NORMAL APPROACH**
Flat Main Tire:
Land.....**SIDE OF RWY OPPOSITE FLAT TIRE**
Flat Nose Tire:
Land.....**CENTER OF RWY**
Directional Control .....**MAINTAIN**
Normal Shutdown.....**EXECUTE, DO NOT TAXI**
Checklist.....**COMPLETE**

NOTE

If a flat tire or tire separation occurs during takeoff and an aborted takeoff is not possible, land as soon as practicable.

V/R FORCED LANDING

If a flight crew has made sufficient attempts to restart the engine and determined that a forced landing is required, immediately survey the area and select a suitable field. Begin preparing for a forced landing.

First, the flight crew *must accept that they are going to conduct a forced landing, and that this is a real situation that is happening now.* Doing so in a decisive manner reduces the risk of denial of the situation, resultant poor planning, and an unsuccessful outcome, and clarifies the tasks at hand. The crew should select the intended landing area as early as possible to maximize available planning time, broadcast the situation ("squawk and talk") and enlist support from ATC or other aircraft, and execute the landing procedure correctly on the first attempt.

If engine power remains available, fly over the intended landing area at a low enough but safe altitude to survey the terrain for obstructions, surface and wind conditions.

If the landing will be conducted on rough or unimproved surfaces, use full flaps if possible to minimize aircraft speed at touchdown. Land on the main gear and hold the nose wheel off the ground as long as possible.

WARNING

All Bridgewater State College flight crews are reminded that in a situation where a forced landing is deemed the only available option, the FIRST AND ONLY PRIORITY IS THE SAFETY AND SURVIVABILITY OF THE OCCUPANTS.

Airspeed ..... **BEST GLIDE**
Mixture ..... **IDLE CUT-OFF**
Fuel Selector ..... **OFF**
Radio ..... **MAYDAY ON CURRENT FREQUENCY OR 121.5**
Transponder ..... **SQUAWK 7700**
ELT (If Off Airport) ..... **ACTIVATE**
All Electrical Switches (Except Master) ..... **OFF**
Flaps ..... **AS REQUIRED**
Master Switches ..... **OFF**
Seats/Belts/Harnesses ..... **SECURED**
Loose Items ..... **SECURED**
Door ..... **UNLATCH**
Approach to Landing Area ..... **STABILIZED**
Touchdown ..... **MINIMUM AIRSPEED**
Checklist ..... **COMPLETE**

V/R	DITCHING

Radio.....**MAYDAY**
CURRENT FREQUENCY OR 121.5
Transponder.....**SQUAWK 7700**
Loose Objects.....**SECURE, KEEP EXIT CLEAR**
Seats/Belts/Harnesses.....**SECURED**
Door.....**UNLATCHED**
Landing Gear.....**UP**
Flaps.....**FULL DOWN**
ELT.....**ACTIVATE**

Approach.....**PARALLEL SWELLS (If Possible)**
Touchdown.....**Landing Attitude, MIN. AIRSPEED**
Aircraft.....**EVACUATE**
Life Vests/Raft (If Installed).....**INFLATE**

Expanded Emergency Procedures

ENGINE FIRE DURING START

Ignition..... CONTINUE CRANKING

- Hold key in START position and continue cranking.

Mixture .....IDLE CUT-OFF

- Pull mixture control full aft to the OFF position to stop fuel from being fed to the power plant.

Throttle .....FULL FORWARD

- Advance the throttle control full forward to maximize airflow intake and hasten burn-off of remaining fuel inside the power plant.

Fuel Pump..... OFF

- Move fuel pump switch to the OFF position.

Ignition..... OFF

- Turn ignition key to the OFF position.

Battery Master Switch ..... OFF

- Turn battery master switch to the OFF position.

Fire Extinguisher (If Installed).....OBTAIN

- Obtain the crew fire extinguisher from the crew gear.

Aircraft..... EVACUATE

- Release seatbelts/shoulder harnesses, open door and exit the aircraft off the wing to the rear, away from the propeller area and fire. Ensure flight crew/passengers are all out of aircraft. The PIC should remain with the aircraft if possible and any remaining flight crew or passengers instructed to obtain immediate assistance from line personnel, other flight crews, or as available.

Fire Extinguisher.....USE

- If able, use the crew fire extinguisher on the affected area in accordance with manufacturer instructions. Do NOT attempt to continue fighting a fire with any extraneous equipment (i.e. clothing, tools, etc.) after the fire extinguisher material has been expended.

WARNING

All Bridgewater State College flight crews are reminded that in any operation involving a BSC aircraft, the FIRST AND ONLY PRIORITY IS THE SAFETY AND SURVIVABILITY OF THE OCCUPANTS. Flight crews shall not place themselves at greater than necessary risk by attempting to continue fighting a fire/salvaging equipment.

Checklist..... COMPLETE
- Verify the Engine Fire During Start checklist has been completed.

ENGINE FIRE DURING TAKEOFF (BEFORE V_R)

Directional Control..... MAINTAIN
- Use rudder and brakes as necessary to keep the aircraft on the runway centerline.

Throttle.....IDLE
- Pull throttle full aft to reduce power and slow the aircraft.

Brakes.....AS REQUIRED
- Apply brakes as required to slow and stop the aircraft as safely and rapidly as possible.

Mixture..... IDLE CUT-OFF
- Pull mixture control full aft to the IDLE CUT-OFF position.

Master Switch .....OFF
- Place the BAT master switch in the OFF position.

Alternator Switch.....OFF
- Place the ALT master switch in the OFF position.

Ignition Switch .....OFF
- Turn the ignition key to the OFF position to disable the magnetos.

Fuel Selector .....OFF
- Turn the fuel selector lever to OFF position.

Stop.....STRAIGHT AHEAD
- Bring the aircraft to a full stop on the runway.

Fire Extinguisher ..... OBTAIN
- Obtain the crew fire extinguisher from the crew gear.

Aircraft..... EVACUATE

- Release seatbelts/shoulder harnesses, open door and exit the aircraft off the wing to the rear, away from the propeller area and fire. Ensure flight crew/passengers are all out of aircraft.

Fire Extinguisher.....USE

- If able, use the crew fire extinguisher on the affected area in accordance with manufacturer instructions. Do NOT attempt to continue fighting a fire with any extraneous equipment (i.e. clothing, tools, etc.) after the fire extinguisher material has been expended.

WARNING

All Bridgewater State College flight crews are reminded that in any operation involving a BSC aircraft, the FIRST AND ONLY PRIORITY IS THE SAFETY AND SURVIVABILITY OF THE OCCUPANTS. Flight crews shall not place themselves at greater than necessary risk by attempting to continue fighting a fire/salvaging equipment.

Checklist.....COMPLETE

- Verify the Engine Fire During Takeoff (Before V_R) checklist has been completed.

ABORTED TAKEOFF (BEFORE V_R)

Directional Control .....MAINTAIN

- Use rudder and brakes as necessary to keep the aircraft on the runway centerline.

Throttle ..... IDLE

- Pull throttle full aft to reduce power and slow the aircraft.

Brakes ..... AS REQUIRED

- Apply brakes as required to slow and stop the aircraft as safely and rapidly as possible.

Stop .....STRAIGHT AHEAD

- Bring the aircraft to a full stop on the runway.

Checklist.....COMPLETE

- Verify the Aborted Takeoff (Before V_R) checklist has been completed.

ENGINE FAILURE BEFORE V_R (USABLE RUNWAY)

Directional Control ..... MAINTAIN
- Use rudder and brakes as necessary to keep the aircraft on the runway centerline.

Throttle ..... IDLE
- Pull throttle full aft to reduce power and slow the aircraft.

Brakes ..... AS REQUIRED
- Apply brakes as required to slow and stop the aircraft as safely and rapidly as possible.

Stop ..... STRAIGHT AHEAD
- Bring the aircraft to a full stop on the runway.

Shutdown ..... EXECUTE
- Complete the Normal Procedures Parking and Securing checklist, as appropriate. Contact ATC (if applicable) to inform of situation and obtain assistance.

Checklist ..... COMPLETE
- Verify the Engine Failure Before V_R (Usable Runway) checklist has been completed.

ENGINE FAILURE AFTER V_R (USABLE RUNWAY)

Airspeed ..... BEST GLIDE
- Immediately establish aircraft pitch attitude to maintain105 MPH/91 KIAS (Gear Up, Flaps Up) or 85 MPH/74 KIAS (Gear Down, Flaps Down) flying airspeed.

Directional Control ..... MAINTAIN
- Maintain control coordination and directional control of the aircraft, flying straight ahead to utilize the remaining runway landing surface and overrun area, as necessary.

Mixture ..... IDLE CUT-OFF
- Pull mixture control full aft to the CUT-OFF position.

Ignition Switch ..... OFF
- Turn ignition key to the OFF position.

Landing Gear ..... DOWN
- Place the gear handle in the DOWN position or, if gear is already down, verify the gear indicator lights by calling “Three green, gear is down.”

Flaps ..... AS REQUIRED
- Set flaps as required to ensure a safe touchdown at minimum airspeed.

Battery Master Switch ..... OFF
- Place the battery master switch in the OFF position.

Alternator Switch ..... OFF
- Place the ALT switch in the OFF position.

Fuel .....SelectorOFF
- Place the fuel selector lever in the OFF position.

Land .....STRAIGHT AHEAD
- Use normal or short-field technique as necessary to land straight ahead on the remaining runway landing surface or overrun area, as necessary.

Stop .....STRAIGHT AHEAD
- Apply brakes and bring the aircraft to a full stop on the runway.

Checklist .....COMPLETE
- Verify the Engine Failure After V_R (Usable Runway) checklist has been completed.

ENGINE FAILURE AFTER V_R (OUT OF USABLE RUNWAY)

Airspeed.....BEST GLIDE
- Immediately establish aircraft pitch attitude to maintain 105 MPH/91 KIAS (Gear Up, Flaps Up), or 85 MPH/74 KIAS (Gear Down, Flaps Down) flying airspeed.

Directional Control .....MAINTAIN
- Maintain control coordination and directional control of the aircraft, and fly toward a suitable landing area.
- DO NOT attempt a gliding turn back to the departure runway below 1000' AGL *and safe landing is reasonably assured.*

RESTART (Time Permitting) ..... ATTEMPT
- If time permits, attempt to restart the aircraft using the Engine Failure In Flight/Air Restart checklist.

If NO TIME / NO RESTART:
- The PIC is the final authority as to the operation of the aircraft. It is the PIC's choice to attempt an engine restart or bypass that attempt as conditions and time demand. The ultimate goal is the safest possible outcome in an extremely difficult and demanding situation.

Mixture .....IDLE CUT-OFF
- Pull mixture control full aft to the CUTOFF position to minimize risk of fire after landing.

Fuel Selector .....OFF

- Place fuel selector lever in the OFF position to minimize risk of fire after landing.

All Switches (except Master and Avionics) .....OFF

- Place all electrical switches except Master and Avionics in the OFF position.

Radio .....MAYDAY ON CURRENT FREQUENCY OR 121.5

- Broadcast: "Mayday-Mayday-Mayday, Tail #, Engine Failure/ Forced Landing, Location, # of Souls Aboard" on current frequency (Tower, CTAF) or on 121.5, as appropriate.

Transponder .....SQUAWK 7700

- Set squawk code to 7700 and IDENT.

Landing Gear .....AS REQUIRED

- Position landing gear as appropriate to the conditions. If gear has been retracted, flight crews are reminded that the normal operational cycle is approximately 6 – 9 seconds, emergency cycle is approximately 2 – 3 seconds, and they should take this into consideration when planning the landing approach.

NOTE

The choice to extend the landing gear or land gear-up should be based on the local conditions. If landing on a firm or rough surface, the landing gear can be extended to provide increased shock absorption. Although the landing gear may be sheared off in a rough area (e.g. a furrowed or rocky field), forward momentum can be dissipated further from the flight crew/passengers via the landing gear rather than through the airframe. If landing on a very soft, marshy surface or on water, landing with the gear up reduces the risk of the aircraft "digging in" and possibly overturning during touchdown.

Flaps .....AS REQUIRED

- Set flaps as required, full down preferred to minimize airspeed.

Master Switch .....OFF

- Place Master Switch in the OFF position.

Door..... UNLATCH

- Unlatch and open the cabin door before landing to prevent it from being jammed closed as a result of ground impact.

Seats/Belts/Harnesses..... SECURED

- Ensure all flight crew/passengers are secured in their seatbelt/shoulder harnesses.

Landing ..... MINIMUM AIRSPEED

- Maintain minimum landing airspeed appropriate for the conditions. Attempt to avoid obstacles as able, and touch down as slow as possible.

Checklist.....COMPLETE
- Verify the Engine Failure After V_R (Out of Usable Runway) checklist has been completed.

ENGINE POWER LOSS IN FLIGHT

Airspeed.....BEST GLIDE
- Establish best glide airspeed in anticipation of complete engine failure. ASSUME that complete engine failure is imminent and act accordingly to minimize risk.

Heading.....NEAREST AIRPORT
- Determine and divert to the nearest usable airport.

Throttle.....CHECK FULL FORWARD
- Check throttle position and push full forward to develop maximum available power.

Mixture.....RICH
- Set mixture control to full rich to maximize fuel flow to the power plant. If power loss worsens, decrease mixture accordingly to optimize performance.

Alternate Air.....OPEN
- Whether icing is suspected for the power loss, pull the alternate air lever to the OPEN position to provide an additional air source to the power plant.

Fuel Pump.....ON
- Place fuel pump switch in the ON position to maximize fuel pressure to the fuel system.

Fuel Selector.....SWITCH TANKS
- Switch the fuel selector from the present tank to the other fuel tank to eliminate risk of blockage or fuel contamination from a single tank.

Ignition.....CHECK BOTH - ON
- Verify ignition is set to BOTH/ON position. Test magnetos one at a time. If a failed magneto is causing the power loss, operate the good magneto for the rest of the flight.

Land.....AS SOON AS POSSIBLE
- Fly a normal approach and land as soon as possible.

Checklist.....COMPLETE
- Verify the Engine Power Loss in Flight checklist has been completed.

LOW OIL PRESSURE

Throttle ..... MINIMUM REQUIRED
- Reduce throttle to the minimum power setting required to maintain level flight.

Heading .....NEAREST AIRPORT
- Determine and divert to the nearest usable airport.

Land..... AS SOON AS POSSIBLE
- Fly a normal approach and land as soon as possible.

Checklist..... COMPLETE
- Verify the Low Oil Pressure checklist has been completed.

ENGINE FAILURE IN FLIGHT / AIR RESTART

Airspeed .....BEST GLIDE
- Establish best glide airspeed 105 MPH/91 KIAS (Gear Up, Flaps Up) or 85 MPH/74 KIAS (Gear Down, Flaps Down).

Fuel Selector ..... SWITCH TANKS
- Switch tanks by adjusting the fuel selector to reduce or eliminate risk of blockage or fuel contamination from a single tank.

Fuel Pump ..... ON
- Place the fuel pump switch in the ON position to increase fuel pressure to the power plant.

Mixture ..... RICH
- Set mixture control to full rich to maximize fuel flow to the power plant.

Alternate Air ..... OPEN
- Whether icing is suspected for the engine failure, pull the alternate air lever to the OPEN position to provide an additional air source to the power plant.

Engine Gauges .....CHECKED
- Check engine gauges to verify condition and note any changes resulting from previous fuel or airflow control changes.

Ignition .....CHECK BOTH ON (Engage If Propeller Stopped)
- Verify ignition is set to BOTH/ON position. Test magnetos one at a time. If propeller is stopped, engage the starter to restart the engine.

IF NO RESTART:
Forced Landing Checklist.....EXECUTE
- Execute the Forced Landing checklist.

Checklist.....COMPLETE
- Verify the Engine Failure In Flight / Air Restart checklist has been completed.

ENGINE FIRE IN FLIGHT

Fuel Selector..... OFF
- Place fuel selector in the OFF position to stop fuel from flowing to the fuel pump.

Throttle ..... IDLE
- Pull throttle full aft to the IDLE position to reduce the airflow to the fire.

Mixture .....IDLE CUT-OFF
- Pull mixture full aft to the cutoff position to cut off the fuel supply to the power plant.

Fuel Pump..... OFF
- Place fuel pump switch in the OFF position to reduce fuel flow to the fire.

Heater/Defroster..... OFF
- Place heater/defroster controls in the OFF position to reduce introduction of smoke into the cabin.

If Fire Not Extinguished:

Emergency Descent .....EXECUTE
- Execute an immediate emergency descent at an airspeed not to exceed V_{NO} to attempt blowing out the fire with excessive airflow.

Forced Landing Checklist.....EXECUTE
- Execute the Forced Landing checklist and land as soon as possible.

Checklist.....COMPLETE
- Verify the Engine Fire In Flight checklist has been completed.

ELECTRICAL FIRE IN FLIGHT

Master Switches.....OFF

- Place ALT and Battery master switches in the OFF position.

All Other Switches (except Ignition) .....OFF

- Turn all electrical switches OFF, leaving ignition ON.

Cabin Air Vents ..... OPEN

- Open the cabin vents to maximize air ventilation available from outside the cabin.

Cabin Heat .....CLOSED

- Close the cabin heat vents to reduce air available to the cabin from the power plant.

Fire Extinguisher (If Installed) ..... ACTIVATE

- If installed, use the fire extinguisher on the fire, in accordance with operating instructions printed on the side of the extinguisher canister. Avoid aiming the extinguisher at any person in the cabin.

Cabin Air Vents (After Fire Extinguished)..... VENTILATE

- If the fire is extinguished, open the cabin air vents to bring in fresh air and ventilate the cabin. Even if the fire is not extinguished, it may be necessary to provide breathable air. Open the cabin door if necessary.

Land.....AS SOON AS POSSIBLE

- Execute a landing in a suitable area as soon as possible.

Checklist..... COMPLETE

- Verify the Electrical Fire In Flight checklist has been completed.

WARNING

If in instrument conditions, turn Battery and ALT Master Switches OFF. If possible, turn the Battery Master Switch ON. Power from the battery will keep aircraft systems operational long enough to allow the Flight Crew to execute an immediate diversion.

WING FIRE IN FLIGHT

Pitot Heat ..... OFF
- Place pitot heat switch in the OFF position.

Navigation Lights ..... OFF
- Turn off navigation lights.

Anti-Collision/Strobe Lights ..... OFF
- Turn off wing strobe lights (leave tail beacon on, if possible).

Sideslip ..... EXECUTE
- Execute a side slip placing the affected wing downwind, and the flames away from the cabin and occupants. Perform as necessary.

Land ..... AS SOON AS POSSIBLE
- Any wing fire poses great risk that the flames will weaken the internal wing framing or exterior skin, and/or reach the wing-mounted fuel tank. It is vital that a landing be made, including off airport if necessary, before the flames weaken the wing structure or reach the fuel tank.

Checklist ..... COMPLETE
- Verify that the Wing Fire In Flight checklist has been completed.

PROPELLER OVERSPEED

Throttle ..... RETARD
- Reduce throttle to decrease MP and avoid overstressing the propeller.

Oil Pressure ..... CHECKED
- Check oil pressure for decrease.

Propeller ..... FULL DECREASE
- Pull propeller control aft to the FULL DECREASE position to minimize propeller RPM.

Airspeed ..... REDUCE
- Reduce airspeed to decrease airflow over the propeller.

Throttle ..... SET BELOW 1700
- Set throttle to maintain RRM below 1700, if possible. If there is any control authority with the propeller, adjust as necessary to avoid further overspeed.

Land.....AS SOON AS PRACTICABLE

- Although the aircraft remains flyable, the flight crew should make every attempt to locate a suitable airport or landing site (as appropriate) and execute a normal landing as soon as practicable.

Checklist..... COMPLETE

- Verify that the Propeller Overspeed checklist has been completed.

EMERGENCY LANDING GEAR EXTENSION

This checklist should be executed as a Challenge and Response checklist whenever possible. A flight crew should coordinate their interaction to ensure the procedure is conducted in a systematic and thorough manner. For solo pilot operations, the pilot should verbalize and verify each step in the procedure as it is conducted.

CAUTION

In any situation where a flight crew detects a problem with the landing gear, the flight crew shall terminate the training event and trouble-shoot the problem. The crew shall contact the appropriate resources (BSC Dispatch if available by direct or relay communication, then ATC/Tower facility) prior to attempting a landing. This will ensure that the flight crew receives maximum available assistance prior to landing the aircraft.

CAUTION

DO NOT RUSH THIS PROCEDURE.
In nearly all situations involving problems with the landing gear, it is important to first realize that the airplane remains completely flyable to the limits of its fuel load. Although any problem with the landing gear is to be considered serious, it is NOT grounds for hurrying a procedure and possibly missing a step that, if properly executed, would have resulted in correcting a previous mechanical problem and extending the landing gear. Conduct the procedure carefully and systematically as a coordinated crew (when applicable) in combination with assistance received from outside sources.

Battery Master Switch..... ON

- Verify the Battery master switch is in the ON position.

Alternator Switch..... ON

- Verify the Alternator master switch is in the ON position.

Circuit Breakers ..... CHECKED - IN

- Verify that all appropriate circuit breakers are in and not tripped. If the landing gear pump circuit breaker has tripped, attempt to reset once. Do NOT attempt additional resets.

Panel Lights (Daytime)..... CHECKED/OFF

- Verify that the panel light switch is set for daytime operation to maximize illumination levels of the green landing gear indicator lights.

Landing Gear Indicator Bulbs..... CHECKED

- Check to ensure that any unlit bulb is functioning properly. If a bulb is not lit, switch the bulb to test it in different socket. Execute this step deliberately and carefully to avoid dropping either landing gear bulb. If a "down" indication is received for one bulb and not another, the bulb is likely the problem.

Airspeed.....SLOW BELOW 100 MPH

- Slow the aircraft to an airspeed below 100 MPH, to facilitate use of the emergency landing gear extension system.

Landing Gear Selector .....DOWN

- Place the landing gear selector in the DOWN position.

Emergency Landing Gear Lever .....DOWN

- Push and hold the red emergency landing gear lever, mounted on the center console between the pilot/co-pilot seat and forward of the stabilator trim wheel, in the most downward position until the landing gear extends (approx. 2 -3 seconds).

Landing Gear Lights 3/GREEN

- Verify that all three landing gear lights show proper gear-down indications. Switch bulbs if necessary to verify all three indications (nose and L/R main gear). The use of the emergency landing gear system also produces a pronounced physical "jolt" as the gear reaches its full down/locked position.

Checklist .....COMPLETE

- Verify the Emergency Landing Gear Extension checklist has been completed.

GEAR-UP LANDING

This checklist should be executed as a Challenge and Response checklist whenever possible. A flight crew should coordinate their interaction to ensure the procedure is conducted in a systematic and thorough manner. In a solo pilot operation, the pilot should verbalize and verify each step in the procedure as it is conducted. This checklist sequence assumes that all possible options for extending the landing gear have been exhausted, and that BSC and ATC assistance has been obtained and is standing by, as appropriate or applicable. The checklist is intended to be conducted during the final phase of the landing approach.

WARNING

All Bridgewater State College flight crews are reminded that in any operation involving a BSC aircraft, the FIRST AND ONLY PRIORITY IS THE SAFETY AND SURVIVABILITY OF THE OCCUPANTS.

Because of the unavailability of power after the execution of this procedure, it should be conducted only after the flight crew has committed to the landing.

Flaps .....AS REQUIRED

- Set flaps as required for the approach and landing. Full flaps are preferred to ensure minimum landing speed.

Battery Master Switch.....OFF

- Place the battery master switch in the OFF position.itch, disabling the trim motor.

Alternator Switch.....OFF

- Place the alternator switch in the OFF position.

Throttle .....IDLE

- Retard the throttle to the full IDLE position. Establish as normal an approach as possible.

CAUTION

For aircraft equipped with an operative back-up gear extender (BGE), the gear will drop automatically when the throttle is retarded and the landing gear selector is UP, or when airspeed slows to approximately 105 KIAS.
Use the BGE Override to hold the gear in the UP position as necessary.

Mixture ..... IDLE CUT-OFF

- Pull the mixture control full aft to the IDLE CUT-OFF position.

Fuel Selector..... OFF
- Place the fuel selector lever in the OFF position.

Ignition Switch..... OFF
- Place the ignition switch/key in the OFF position.

Seats/Belts/Harnesses .....SECURED
- Verify that all seats are locked in position. Verify that all occupants are secured in their seatbelts and shoulder harnesses, as applicable.

Checklist .....COMPLETE
- Verify the Gear-Up Landing checklist has been completed.

FUEL PRESSURE DROP/LOSS

Fuel Pump.....ON
- Place the fuel pump switch in the ON position to maximize fuel pressure to the power plant.

Fuel Selector..... AS REQUIRED
- Consider switching tanks to verify that a line blockage is not the cause of the pressure drop. If improved fuel flow results from the tank switch, remain on the new tank and calculate remaining fuel in the operative tank to ensure safe arrival at the destination or a diversion airport, as necessary.

Land ..... AS SOON AS PRACTICABLE
- Select and fly to a suitable landing site as soon as practicable. Continue to monitor fuel flow. Execute a normal approach and landing.

Checklist .....COMPLETE
- Verify the Fuel Pressure Drop/Loss checklist has been completed.

ELECTRICAL FAILURE IN FLIGHT

Ammeter .....CHECK FOR DISCHARGE
- In the event the ALT annunciator light comes on, or communication or navigation radio reception begins to fade, the pilot should check the ammeter for a discharge indication. There could be as little as 30 minutes of remaining electrical power.

ALT Circuit Breaker..... CHECK – IN
- Verify the ALT circuit breaker is in and has not tripped (“popped”).

If Circuit Breaker IN .....CYCLE ALT SWITCH

- Turn the alternator switch off and then back on once. Check ammeter for indication.

If Ammeter Reads Zero:
Alternator Switch.....OFF

- Place the alternator switch in the OFF position.

Electrical Load.....REDUCE

- Minimize the electrical drain on the system by turning off any unnecessary equipment as appropriate for the flight requirements (communications, navigation) and environment (interior or exterior lighting).

Alternator Switch..... ON

- Place the alternator switch in the ON position to determine operational status.

If Circuit Breaker OUT (Tripped):
Time .....NOTE

- Note the present time. The flight crew should now assume less than 30 minutes available electrical power from the battery.

All Electrical Switches .....OFF 15 SEC

- Turn OFF all electrical switches. In night flying conditions, ensure that the flight crew is prepared with flashlights prior to completing this checklist task.

ALT Circuit Breaker ..... RESET

- Reset the alternator circuit breaker ONCE. Do NOT attempt to reset the breaker a second time.

If ALT Circuit Breaker Fails to Reset:
Electrical Load.....REDUCE

- Minimize the electrical drain on the system by turning off any unnecessary equipment as appropriate for the flight requirements (communications, navigation) and environment (interior or exterior lighting).

Alternator Switch.....OFF

- Place the alternator switch in the OFF position.

Land.....AS SOON AS PRACTICABLE

- Select and fly to a suitable landing location that will, if possible, allow for arrival and landing with electrical power remaining.

Checklist..... COMPLETE

- Verify that the Electrical Failure In Flight checklist has been completed

ELECTRICAL OVERLOAD

Battery Master Switch ..... OFF

- Place battery master switch in the OFF position.

If No Ammeter Decrease:

Alternator Switch ..... OFF

- If the ammeter shows no decrease after the battery is taken off line, the alternator is likely the source of the overload and must be shut down before damage occurs. Place the alternator switch in the OFF position.

If Ammeter Decrease:

Battery Master Switch ..... ON

- An ammeter decrease following alternator shutdown indicates a normal reduction in electrical power available to the system. Place the battery master switch in the ON position.

Ammeter ..... MONITOR

- Monitor the ammeter for increases or decrease indications. Adjust electrical load as necessary for the flight conditions and to maintain electrical output within normal limits.

If No Ammeter Decrease Within 5 Minutes:

Battery Master Switch ..... OFF

- The system is not operating properly and may again become overloaded. Place the battery master switch in the OFF position.

If Ammeter Decrease ..... MONITOR/PROCEED

- Monitor the ammeter and proceed with the flight as able to a suitable landing location.

Checklist ..... COMPLETE

- Verify that the Electrical Overload checklist has been completed.

LANDING W/ FLAT TIRE

Radio .....TRANSMIT CONDITION/INTENTIONS

- Transmit aircraft condition and flight crew intentions to ATC, Tower, CTAF or UNICOM frequency, as appropriate.

Approach.....FLY NORMAL APPROACH

- Conduct a normal landing approach. Complete all appropriate checklist items.

Flat Main Tire:

Land.....SIDE OF RWY OPPOSITE FLAT TIRE

- Land the aircraft on the side of the runway OPPOSITE the flat tire. This will allow for maximum available runway surface during rollout when the aircraft yaws toward the flat tire.

Touchdown ..... GOOD MAIN TIRE FIRST

- Touch the good tire down first, then gently lower the flat tire to the runway. Anticipate an immediate yawing motion toward the flat tire.

Flat Nose Tire:

Land.....CENTER OF RWY

- Land on runway centerline to maximize available runway surface.

Directional Control..... MAINTAIN

- Use rudder and brake inputs as necessary to keep the aircraft rolling straight ahead on the runway, to the degree possible.

Normal Shutdown.....EXECUTE, DO NOT TAXI

- Once the aircraft comes to a stop, communicate as necessary with Tower, CTAF, or UNICOM frequency, as appropriate. Perform the normal shutdown procedure for the aircraft. Do not attempt to taxi the aircraft on the flat tire.

Checklist..... COMPLETE

- Verify that the Landing With Flat Tire checklist has been completed.

NOTE

If a flat tire or tire separation occurs during takeoff and an aborted takeoff is not possible, land as soon as practicable.

FORCED LANDING

If a Flight Crew has made sufficient attempts to restart the engine and determined that a forced landing is required, immediately survey the area and select a suitable field. Begin preparing for a forced landing.

First, the Flight Crew *must accept that they are going to conduct a forced landing, and that this is a real situation that is happening now.* Doing so in a decisive manner reduces the risk of poor planning and an unsuccessful outcome, and clarifies the tasks at hand. The crew should select the intended landing area as early as possible to maximize available planning time, broadcast their situation and enlist support from ATC or other aircraft, and execute the landing procedure.

If engine power remains available, fly over the intended landing area at a low enough but safe altitude to survey the terrain for obstructions, surface and wind conditions.

If the landing will be conducted on rough or unimproved surfaces, use full flaps if possible to minimize aircraft speed at touchdown. Land on the main gear and hold the nose wheel off the ground as long as possible.

This checklist should be executed as a Challenge and Response checklist whenever possible. A flight crew should coordinate their interaction to ensure the procedure is conducted in a systematic and thorough manner. For solo pilot operations, the pilot should verbalize and verify each step in the procedure as it is conducted.

WARNING

All Bridgewater State College Instructors and students are reminded that in a situation where a forced landing is deemed the only available option, the FIRST AND ONLY PRIORITY IS THE SAFETY AND SURVIVABILITY OF THE OCCUPANTS.

Airspeed..... BEST GLIDE

- Establish and maintain best glide airspeed 105 MPH/91KIAS (Gear Down, Flaps Down) or 85 MPH/74 KIAS (Gear and Flaps Up).

Mixture ..... IDLE CUT-OFF

- Pull mixture control full aft to IDLE CUT-OFF position, cutting fuel to the power plant.

Fuel Selector..... OFF

- Place fuel selector lever to the OFF position.

Radio..... MAYDAY ON CURRENT FREQUENCY OR 121.5

- Broadcast: “Mayday-Mayday-Mayday, Tail #, Forced Landing, Location, # of Souls Aboard” on current frequency (Tower, CTAF) or on 121.5, as appropriate. Continue transmitting and listening for a response as long as time permits.

Transponder .....SQUAWK 7700
- Set transponder to 7700 and IDENT.

ELT (If Off Airport) ..... ACTIVATE
- Engage the remote ELT switch.

All Electrical Switches (Except Master) .....OFF
- Turn off all electrical switches except master switch.

Flaps .....AS REQUIRED
- Set flaps as required, preferably full down to minimize landing speed.

Master Switches.....OFF WHEN LANDING ASSURED
- When the landing is assured in the intended area, place the master switches in the OFF position.

Seats/Belts/Harnesses..... SECURED
- Ensure all occupants are secured in their seatbelts and shoulder harnesses.

Loose Items ..... SECURED
- Verify that loose items have been secured. This will reduce the risk of injury by any items affected by impact forces during an off-airport landing.

Door..... UNLATCH
- Unlatch and open door before landing to prevent it from being jammed closed as a result of ground impact.

Approach to Landing Area..... STABILIZED
- Establish the aircraft on a stabilized approach to the intended landing area. Avoid distractions, and attempt to land in the most hospitable area available.

Touchdown ..... MINIMUM AIRSPEED
- Land at minimum airspeed as conditions permit to minimize aircraft groundspeed during the rollout.

Checklist..... COMPLETE
- Verify the Forced Landing checklist has been completed.

DITCHING

If a Flight Crew has determined that a forced landing/ditching is required, immediately survey the area and select a suitable area in the water. Begin preparing for a ditching.

As with a forced landing on land, the Flight Crew *must first accept that they are going to conduct a forced landing in the water, and that this is a real situation that is happening now.* Doing so in a decisive manner reduces the risk of poor planning and an unsuccessful outcome, and clarifies the tasks at hand. A successful water ditching depends on sea conditions and wind, the type of aircraft, and the skill/technique of the pilot.

The Aeronautical Information Manual highlights the following as important for any flight crew planning to ditch the aircraft:

- It is vital to determine the condition of the water, and remember that the direction of the swells may not follow the direction of the wind. Landing into the wind without consideration of swell direction or directions (with multiple swell systems) greatly increases the risk of aircraft damage and loss of the occupants.
- Flight crews should avoid landing on the "face" of a swell, which is the side facing the observer regardless of swell direction. Doing so in a high-wing aircraft may result in the aircraft being rapidly swamped or thrown into the air, only to drop into the next swell.

The crew should select the intended landing area as early as possible (only about 500' will be necessary when landing in the water) to maximize available planning time, broadcast their situation and enlist support from ATC or other aircraft, and execute the landing procedure.

If engine power remains available, fly over the intended landing area at a low enough but safe altitude to survey the sea surface and wind conditions.

- If landing parallel to the swells, there is little difference whether the aircraft lands on top of the crest or in the trough. Attempt to land at the top or on the backside of the swell, and select the heading that allows the greatest into-the-wind component.
- If landing in a confused sea (multiple swell systems moving in various directions) select the direction of the primary swell as the determining factor, and attempt to land on the backside of the secondary swell, if possible.
- If power is not available, conduct the approach so as to arrive over the water with enough airspeed to break the glide earlier and more gradually before the aircraft touches down.
- Once the pilot sees a stretch of water that appears favorable, cut power or, if power is not available, pitch up slightly to induce the stall and touch down at the best recommended speed as fully stalled as possible.

WARNING

"The use of power in ditching is so important that when it is certain that the coast cannot be reached, the pilot should, if possible, ditch before fuel is exhausted."
AIM 6-3-3 Ditching Procedures

Radio .....MAYDAY ON CURRENT FREQUENCY OR 121.5

- Broadcast: "Mayday-Mayday-Mayday, Tail #, Ditching, Location (include body of water and land reference), # of Souls Aboard" on current frequency (Approach, Tower, etc.) or on 121.5, as appropriate. Continue transmitting and listening for a response as long as time permits.

Transponder .....SQUAWK 7700

- Set transponder to 7700 and IDENT.

Loose Objects ..... SECURE, KEEP EXITS CLEAR

- Secure loose objects to prevent their becoming projectiles when the aircraft impacts the water. Objects must be kept clear of the exit doors.

Safety Belt & Shoulder Harness..... SECURE

- Ensure all occupants are secured in their seatbelts and shoulder harnesses.

Door.....UNLATCHED

- Unlatch and open doors and windows before landing to prevent them from being jammed closed as a result of water impact.

Landing Gear .....UP

- Maintain the landing gear in the up/stowed position to provide the smoothest possible touchdown. Landing with the gear up also reduces the risk of the aircraft nosing over upon impact with the water.

CAUTION

For aircraft equipped with an operative back-up gear extender (BGE), the gear will drop automatically when the throttle is retarded and the landing gear selector is UP, or when airspeed slows to approximately 105 KIAS.
Use the BGE Override to hold the gear in the UP position as necessary.

Flaps .....FULL DOWN, if possible

- Set flaps as required, preferably full down to minimize landing speed.

ELT .....ACTIVATE

- Engage the remote ELT switch in the upper right corner of the instrument panel.

Approach .....PARALLEL SWELLS (If Possible)

- Set approach in accordance with sea direction and swell height/type. Accept a higher crosswind component and avoid flying approach into a swell system if possible.

Touchdown.....Landing Attitude @ MIN. AIRSPEED

- Set attitude according to sea, not horizon, and land at minimum recommended airspeed as close as possible to a full stall.

Aircraft.....EVACUATE

- Release seatbelts/shoulder harnesses and evacuate the aircraft immediately.

Life Vests/Raft (If Installed) ..... INFLATE

- If installed, life vests/raft shall be donned and inflated by the occupants as soon as possible after they have exited the aircraft.