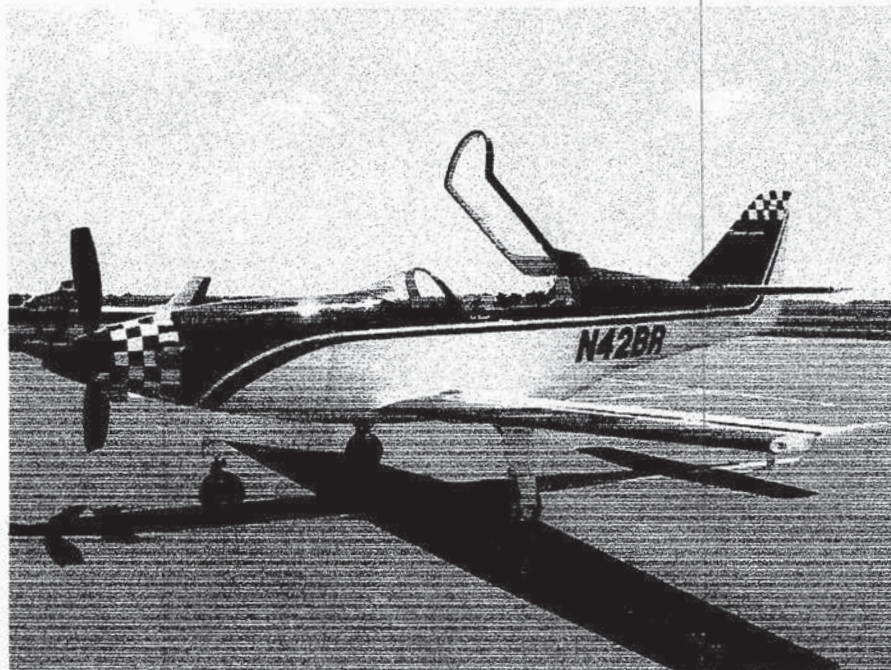


**Turbine Legend**  
**N42BR**  
**Pilot Information Handbook**



**Revision A**  
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**Winnsboro, Louisiana**

**Phone**

# SECTION 3

## EMERGENCY PROCEDURES

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### General

General procedures for coping with various types of emergencies and critical situations are presented in this section. These procedures should be refined and, or added to by the individual builder to reflect the equipment installed in the aircraft as well as the results of flight testing.

The first portion of this section consists of an abbreviated emergency checklist which supplies an action sequence for critical situations, with little emphasis on the operation of systems.

The remainder of the section is devoted to amplified emergency procedures containing additional information to provide the pilot with a more complete understanding of the procedures.

These procedures are suggested as a course of action for coping with the particular condition described, but are not a substitute for sound judgement and common sense. Pilots should familiarize themselves with the procedures given in this section and be prepared to take appropriate action should an emergency arise.

Most basic emergency procedures are a normal part of pilot training. Although these emergencies are discussed here, this information is not intended to replace such training, but only to provide a source of reference and review, and to provide information on procedures which are not the same for all aircraft. It is suggested that pilots review standard emergency procedures periodically to remain proficient in them.

### Airspeeds for Safe Operation

Stall Speeds    3300 pounds (Gear up, 0 degrees flaps).....79 KIAS  
                    3300 pounds (Gear down, flaps full down).....67 KIAS

Never Exceed Speed.....348 KIAS

Power Off Glide Speed 3300 pounds (Gear up, 0 degrees flaps).....130 KIAS



## **EMERGENCY PROCEDURES CHECKLIST**

### **Engine Fire During Start**

Start/motor switch.....continue to crank engine  
FCL (Fuel Control Lever).....OFF  
ECL (Engine Control Lever).....Flight idle  
Electric fuel pumps.....OFF  
Fuel Sump Shut-off Valve.....OFF

If the fire continues, activate on-board fire suppression system (if installed).  
Abandon aircraft if fire continues.

### **Engine Power Loss During Take-off**

If sufficient runway remains for a normal landing, leave gear down and land straight ahead.

If area ahead is rough, or it is necessary to clear obstructions:  
Gear selector switch.....UP

### **Engine Flame-out In Flight**

PCL (Prop Control Lever).....Feather  
ECL (Engine Control Lever).....Flight Idle  
FCL (Fuel Control Lever).....Closed

If at low altitude:

Airspeed.....Maintain 130 KIAS (Minimum)  
Prepare for power-off landing.

If altitude permits:

Fuel Sump Shut-off Valve .....Confirm ON  
Electric fuel pump(s).....ON

At pilot's option:

Attempt normal restart (at or below 13,123 Ft. MSL and at or below 162 KIAS)  
Use caution when moving PCL out of feather (to avoid prop overspeed)

-or-

Attempt restart using Emergency Circuit:

FCL .....Closed  
Emergency Circuit Switch.....ON  
Start / Motor Switch.....Start

When Ng = 16.5% or more:

FCL.....To emergency circuit start position  
FCL.....Advance to 60% Ng while monitoring ITT

If sufficient runway remains to complete a normal landing, leave the landing gear down and land straight ahead.

If the area ahead is rough, or if it is necessary to clear obstructions, move the gear selector switch to the UP position.

### **Engine Flame-Out In Flight**

In-flight flame-out is indicated by a decrease in the interturbine temperature and decay of Ng (gas generator) speed below normal Idle speed. (approximately 60%). Flame-out may be caused by interrupted fuel supply or unstable operation of the engine.

Move the PCL (Propeller Control Lever) to feather, Move the ECL (Engine Control Lever) to flight idle, and move the FCL (Fuel Control Lever) to the closed position.

If at low altitude, maintain a safe airspeed (130 KIAS for best glide) and prepare for a power-off landing.

If sufficient altitude has been gained to attempt a restart, confirm that the Fuel sump shut-off valve is on, and turn on the electric fuel pump(s). Restarts should only be attempted below 13123 ft MSL and below 162 KIAS. The pilot can opt to attempt a normal restart by moving the FCL to the normal run position and engaging the start switch, or attempt a restart using the emergency circuit: Close the FCL, turn the emergency circuit switch ON, engage the starter and when Ng = 16.5% or more, move the FCL to the emergency circuit start position. Once the engine lights (ITT will begin to increase) the FCL can be carefully advanced to achieve 60% Ng.

For altitudes up to 6560 ft MSL, use the FCL to set Ng to a minimum of 60%. Above 6560 ft MSL, set Ng at a minimum of 75%.

#### **NOTE:**

With the emergency circuit engaged, the limiter system and the FCU automatic starting circuit and minimum flow metering valve (For flight idle rating) will not operate.

Limits with regard to engine speed (Ng), torque, and ITT must be respected with the emergency circuit engaged.

#### **CAUTION:**

With the emergency circuit in operation, BETA control must not be used.



### **In Flight Power (Gas Generator Speed) Drop**

Switch on the emergency circuit, move the ECL to Flight Idle, and try to set the desired power using the FCL.

### **Compressor Surge In Flight**

Compressor surging in flight manifests itself by a characteristic sound and possibly by fluctuation of Ng and ITT indications.

Surging is unacceptable and indicates an out-of-adjustment condition or damage to the engine.

If surging is detected, use the ECL to reduce the power setting.

### **Fire In flight**

The presence of fire is noted through smoke, smell and heat in the cockpit. It is essential that the source of the fire be promptly identified through instrument readings, character of smoke, or other indications since the action to be taken differs somewhat in each case.

Check for the source of the fire first.

If an electrical fire is indicated, turn the battery master and generator switches off. Open the cabin vents and turn the cabin heat off. Land as soon as practical.

If an engine fire is present, shut down the engine, turn the electric fuel pump(s) off, and close the fuel sump shut-off valve.

Activate the on-board fire suppression system, if installed.

### **Power Off Landing**

If a loss of power occurs at altitude, feather the propeller, trim the aircraft for best glide speed (130 KIAS) and look for a suitable landing field. If measures taken to restore power are not effective, and if time permits, check your charts and GPS database for the location of nearby airports. If possible, use the radio to broadcast your position, difficulty and intentions. If another pilot or passenger is aboard, let them help.

When you have located a suitable field, establish a spiral pattern around it. Try to be 1000 ft above the field at the downwind position opposite the desired

touchdown point. When the field can easily be reached, extend full flaps for the shortest landing. Excess altitude may be lost by widening your pattern, using flaps or slipping, or a combination of these.

Whether to attempt a landing with the landing gear up or down depends on many factors. If the field chosen is obviously smooth and firm, and long enough to bring the plane to a stop, the gear should be down. (When factoring in the length of field required to stop the aircraft, it is important to remember that the feathered propeller will greatly reduce the drag available in the landing flare, causing the aircraft to float more than usual. In addition, BETA range / reverse thrust will not be available.) If there are large obstacles in the field, such as rocks or stumps, having the gear in the down position will better protect the occupants of the aircraft. However, if the field is suspected to be excessively soft or short, or when landing in water of any depth, a wheels-up landing will normally be safer and do less damage to the airplane.

Touch-down should normally be made at the lowest possible airspeed with the flaps fully extended.

When committed to landing, verify gear selected up or down, as required by field conditions. Lower the flaps as desired. Move the ECL to Flight Idle, and the FCL to Closed. Turn off the generator and battery master switches, move the fuel sump shut-off valve to Off and tighten seat belts and shoulder harnesses.

**NOTE:**

If the battery master switch is OFF, the gear cannot be retracted and the gear position lights and flaps will not operate.

**Engine Torching After Shutdown**

If remaining fuel is still burning in the combustion chamber or exhaust duct after engine shut-down, the result may be dark smoke or fire coming from the exhaust pipe. To protect the engine components from heat related damage, immediately move the Start / Motor switch to MOTOR, thus initiating a dry motoring run cycle.

**Loss of Oil Pressure**

Loss of oil pressure may either be partial or complete, and may be due to oil exhaustion or a faulty gauge. IN either case, proceed to the nearest airport and be prepared for a forced landing. Maintain altitude until such time that a deadstick landing can be accomplished.

Depending on the circumstances, it may be advisable to make an off-airport landing while power is still available, particularly if other indications of actual oil pressure loss, such as an accompanying increase in oil temperature, or oil smoke are apparent, and an airport is not close.