Emergency Procedures/Performance Seneca I N4546T

ENGINE FAILURE (TAKE-OFF ROLL) LOSS OF CONTROL

- ✓ Throttles *Idle,* Brakes *Apply*
- ✓ Mixtures *Idle,* Magnetos/Master *Off*
- ✓ Fuel Selectors/Pumps *Off*

SINGLE/DUAL ENGINE FAILURE (IMMEDIATELY AFTER TAKE-OFF WITH SPEED BELOW 100 OR GEAR DOWN)

- ✓ Retard throttles, land straight ahead
- ✓ Mixtures *Cut-off*
- ✓ Fuel selectors/Pumps/Master *Off*
- ✓ Maximum braking—avoid obstacles

SINGLE ENGINE FAILURE (IMMEDIATELY AFTER T/O WITH SPEED ABOVE 100)

- ✓ If sufficient runway, land at once
- ✓ If not, maintain blue line/feather

SINGLE ENGINE FAILURE/FEATHERING

- ✓ Pitch to blue line—105
- ✓ Maintain directional control (CUT POWER IF NEEDED)
- ✓ Mixtures/props/throttles *Forward*
- ✓ Flaps/Gear *Retracted*
- ✓ Electric fuel pumps *On*
- ✓ Identify (dead foot)
- ✓ Verify (retard throttle)
- ✓ Feather CORRECT prop
- ✓ Raise the dead 5 deg. into good engine (ball half out on line of good engine)
- ✓ Close cowl flap on dead engine
- ✓ Cowl flaps *Closed/Open/Half-open* on good engine (depending upon OAT & climb rate)
- ✓ Ensure Vyse (blue line/105) exactly, ensure gear, flaps and cowl flaps handled, and make sure operating engine throttle is full forward
- ✓ Trim rudder (ball half-out)
- ✓ Mixture of DEAD engine *Cut-off*
- ✓ Fuel pump, Magnetos, Alternator, Fuel selector (dead engine) *Off*
- ✓ Reduce electric < 50 amperes
- ✓ X-feed fuel (level flight only)
- ✓ Fuel pump of good engine *Off*
- ✓ If holding altitude, reduce power

SINGLE ENGINE LANDING

- ✓ Flaps/Gear *Retracted* till landing assured
- ✓ AVOID GO-AROUND!!
- ✓ Neutralize rudder trim (watch for opposite yaw as power reduced)
- ✓ Fuel Selector (good engine) off X-feed to *On*
- ✓ Gumps *Check*

DUAL ENGINE FAILURE (CRUISE)

- ✓ Pitch to best glide speed (blue line)
- ✓ Retract flaps/gear
- ✓ Select landing site
- ✓ Get wind heading for landing site
- ✓ If sufficient altitude, attempt emergency restart procedures
- ✓ Communicate 121.5 or ATC
- ✓ Set transponder 7700
- ✓ Fasten/Tighten seatbelts/harnesses
- ✓ Fuel selectors, Mixtures, Master *Off*
- ✓ Crack doors *Ajar*
- ✓ Gather life vests/rafts (water landing parallel to swells)
- ✓ Flaps/Gear as needed
- ✓ Airspeed on final *95*

UNFEATHERING/EMERGENCY RESTART PROCEDURE

- ✓ Inoperative engine fuel selector *On*
- ✓ Throttle ¼", Mixture *Full Rich*
- ✓ Prop *Mid Range* or *Forward*
- ✓ Magnetos *On*
- ✓ Engage starter to begin wind milling or lower nose
- ✓ Keep throttle low until engine is warm
- ✓ If no start, repeat with fuel pump on for 3 seconds or as needed
- ✓ If no start, set fuel selector to *X-feed*
- ✓ If no restart, try L or R magnetos only
- ✓ If no restart, try cycling magnetos *on/off*
- ✓ If no restart, try alternate air
- ✓ Once started, Alternator *On*/Fuel Pump *Off*

ENGINE FIRE (GROUND—ENGINE NOT STARTED)

- ✓ Mixtures idle, Throttles *Full forward*
- ✓ Fuel selectors off/Crank starter
- ✓ If no go, extinguish by external means

ENGINE FIRE (GROUND—ENGINE RUNNING)

- ✓ If engine running, allow it to continue in order to extinguish
- ✓ If no go, fuel selectors/pumps/mixtures *Cut off* and extinguish by external means

ENGINE FIRE (MID-FLIGHT)

- ✓ Fuel selector (affected engine) *Off*
- ✓ Throttle (affected engine) *Closed*
- ✓ Feather affected prop
- ✓ Pull mixture to *Cut-off*
- ✓ Heater/Defroster *Off*
- ✓ Cowl Flap *Open*
- ✓ Open vents/windows if required
- ✓ Increase Airspeed to extinguish
- ✓ If flaming towards windscreen, side slip to divert
- ✓ If fire doesn't extinguish, find landing site and follow both engines out emergency landing procedures

ELECTRICAL FIRE (MID-FLIGHT)

- ✓ Master switch off
- ✓ Extinguish fire/Vent smoke as needed
- ✓ Check which breaker is out
- ✓ Master *On,* Required electric (one at a time) *On*

ENGINE VIBRATION

- ✓ Mixture *lean,* prop to minimum vibration, Land ASAP

PROPELLER OVERSPEED/SURGING

- ✓ Close throttle of over-speeding prop
- ✓ Maintain blue line speed
- ✓ Maintain directional control
- ✓ Pull prop to low RPM
- ✓ Slowly increase prop until governor is engaged
- ✓ Slowly increase prop and throttle
- ✓ Continue flight at reduced power and land ASAP

PITOT STATIC SYSTEM INSTRUMENT FAILURES

- ✓ Pitot heat *On,* use Alt static source

VACUUM FAILURE

- ✓ Increase RPM if possible
- ✓ Descend to lower altitude (if possible) that will raise pressure above 4.5

ICING

- ✓ Cabin temperature *Full hot,* Pitot heat *On,* Defrost *On,* Alternate air *On*
- ✓ Power *Increased*/Vary RPMs (to minimize prop ice)
- ✓ Turn 180 deg away from icing

- ✓ Raise/lower altitude (warmer air to melt)
- ✓ Prepare forced landing (note higher stall speed)

EMERGENCY GEAR EXTENTION

- ✓ Check bulbs/breakers/alternators
- ✓ Master *On*
- ✓ Nav lights *On*? (cause dim bulbs)
- ✓ Recycle gear—ensure *Down/locked*
- ✓ Check nose gear using mirror
- ✓ Reduce speed to 100
- ✓ Ensure gear switch *Down/locked*
- ✓ Emergency gear knob *Pulled*
- ✓ Check for 3 green lights

GEAR-UP LANDING (NOSE GEAR NOT LOCKED)

- ✓ Verify problem (ground confirmation)
- ✓ Burn up maximum fuel
- ✓ Communicate (121.5 or other)
- ✓ Set transponder to 7700
- ✓ Passengers *Brief*
- ✓ Fasten/Tighten seatbelts/harnesses
- ✓ Flaps—*Landing* (fully extended)
- ✓ Short final approach speed 95
- ✓ Close throttles
- ✓ Master *Off*, Mixtures *Cut-off,* Fuel selectors *Off,* Magnetos *Off*
- ✓ Crack doors ajar
- ✓ Keep nose high without braking
- ✓ Upon nose contacting ground, brake smoothly

GEAR-UP LANDING (MAIN GEAR NOT LOCKED)

- ✓ Verify problem (ground confirmation)
- ✓ Burn up maximum fuel
- ✓ Communicate (121.5 or other)
- ✓ Set transponder to 7700
- ✓ Passengers *Brief*
- ✓ Fasten/Tighten seatbelts/harnesses
- ✓ Crack doors ajar
- ✓ Emergency gear, *Push*
- ✓ Gear lever *Up* (make gear-up landing)
- ✓ Land on grass if possible
- ✓ Flaps—*Landing* (fully extended)
- ✓ Short final approach speed 95
- ✓ Close throttles
- ✓ Master *Off*, Mixtures *Cut-off,* Fuel selectors *Off,* Magnetos *Off*

SPINS

- ✓ Retard throttles to idle
- ✓ Apply full rudder opposite spin
- ✓ Release back pressure—if nose doesn't drop, push down
- ✓ Keep ailerons neutral
- ✓ Maintain until spin stops, then neutralize rudder pressure
- ✓ Slowly apply back pressure to pull up

LANDING WITHOUT STABILATOR

- ✓ Use trim and throttle (if stabilator is stuck, trim has opposite effect)
- ✓ Flaps—*Landing* (fully extended)
- ✓ GUMPS check
- ✓ Maintain descent below 500 FPM
- ✓ Reduce throttle only after landing

LANDING WITHOUT FLAPS

Approach Speed *Increase*

ELECTRICAL EQUIPMENT FAILURE

- ✓ Circuit breakers *Check*
- ✓ Popped breaker *Close* (only once)

ALTERNATOR TROUBLE (BOTH OVERVOLTAGE LIGHTS LIT)

- ✓ Turn off all loads except master
- ✓ Both alternator switches *Off*, to extinguish lights
- ✓ Both alternators *On* and leave on only one showing lowest output
- ✓ Electrical *On*—keep <50 amperes
- ✓ If both alternators output equal, leave both on but don't exceed 50 on either
- ✓ IF BOTH ALTERNATORS FAILED, REDUCE LOAD, LAND ASAP, DEPLOY GEAR AT ONCE

ALTERNATOR TROUBLE (ONE OVERVOLTAGE LIGHT LIT)

- ✓ Turn off all loads except master
- ✓ Observe bad alternator and verify excessive load—turn off
- ✓ Electric *On*, <50 amperes

ALTERNATOR TROUBLE (NO OVERVOLTAGE LIGHTS LIT)

- ✓ Electric *Off* till both <50

COMPLETE ELECTRICAL FAILURE

- ✓ Turn off electrical loads except Master
- ✓ Check alternator breakers
- ✓ Cycle alternator switches on/off while observing ammeter output
- ✓ If this fails, cycle Master on/off
- ✓ Once power returns, turn loads back on—<40 until battery charged

LOSS OF OUTPUT—ONE ALTERNATOR

- ✓ Reduce electrical load on operating alternator below 50
- ✓ Reset any blown breakers
- ✓ Cycle inoperative alternator on/off while observing ammeter output
- ✓ If no-go, <50 on operating alternator

RADIO FAILURE

- ✓ Frequency, volume, squelch, headset
- ✓ Set transponder to 7600
- ✓ Make cell phone call if possible
- ✓ Enter pattern and look for light signals

ATC LIGHT SIGNALS

Steady green—cleared for take-off/landing
Flashing green—cleared for taxi (ground) or return for landing (air)
Steady red—Give way to traffic
Flashing red—Taxi off runway (ground) or airport not safe for landing (air)
Flashing white—return to starting point (ground)
Alternately flashing red/green—caution

GO-AROUND

- ✓ Throttle/props full power
- ✓ Retract gear (positive rate of climb)
- ✓ Maintain blue line speed (105)
- ✓ Retract flaps/open cowl flaps

DOORS OPEN

- ✓ Maintain Vyse 105 (blue line)
- ✓ Open storm window, try to close door
- ✓ Land ASAP

EMERGENCY DESCENT

- ✓ Throttles *Closed*
- ✓ Props *Full Forward*
- ✓ Mixtures *As Required*
- ✓ Gear *Extend* (<150)
- ✓ Airspeed *150 Max*