SKY SAFETY

DA-42 EMERGENCY PROCEDURES Checklist

Items in BOLD FACED type are immediate action items and should be committed to memory.

ENGINE FIRE ON START

1. Fuel Selectors ..... OFF
2. Mixture ..... IDLE CUT-OFF
3. Throttle ..... MAX POWER
4. Cabin Heat & Defrost ..... OFF
5. Master Switch ..... OFF

When Engine has Stopped

6. Ignition Switch ..... OFF
7. Canopy ..... OPEN
8. Airplane ..... EVACUATE

ELEC. FIRE ON THE GROUND

1. Master Switch ..... OFF

If Engine is Running

2. Throttle(s) ..... IDLE
3. Mixture(s) ..... IDLE CUTOFF

When Engine(s) have stopped

4. Ignition Switch – OFF
5. Canopy – OPEN
6. Airplane - EVACUATE

STARTER RELAY FAILURE

Starter does not disengage after start

1. Throttle ..... IDLE
2. Mixture ..... IDLE CUTOFF
3. Ignition Switch ..... OFF
4. Master Switch ..... OFF

ABORT

1. Throttles ..... IDLE
2. Brakes ..... APPLY

ENGINE FIRE ON TAKEOFF

1. Abort
2. Cabin Heat & Defrost ..... OFF

After Stopping

3. Fuel Selector(s) ..... OFF
4. Mixture(s) ..... IDLE CUT-OFF
5. Throttle(s) ..... MAX
6. Master Switch ..... OFF

When Engine Stopped

7. Ignition Switches ..... OFF
8. Canopy ..... OPEN
9. Airplane ..... EVACUATE

(If Takeoff cannot be Abandoned)

1. Cabin heat & Defrost .. OFF
2. Engine ..... FEATHER
3. Perform Single Engine Landing

ENGINE FAILURE ON TAKEOFF

(Before Rotation V_R – 78)

1. Abort

If runway departure imminent

2. Fuel Selector(s) ..... OFF
3. Mixture(s) ..... IDLE CUT-OFF
4. Ignition Switch(es) ..... OFF
5. Master Switch ..... OFF

ENGINE FAIL AFTER TAKEOFF

(Before Gear Up)

1. Throttles ..... IDLE
2. Land Straight Ahead

(If Takeoff Continued)

1. Rudder ..... MAINTAIN DIRECTIONAL CONTROL
2. Airspeed ..... 90 V_{YSE}
3. Mixtures .. FULL FORWARD
4. Props ..... FULL FORWARD
5. Throttles .. FULL FORWARD
6. Flaps ..... UP
7. Gear ..... UP
8. Identify . DEAD FOOT-DEAD ENGINE
9. Verify ... CLOSE THROTTLE
10. Prop ..... FEATHER
11. Fuel Pump ..... OFF
12. Fuel Selector ..... OFF
13. Ignition Switch ..... OFF

ENGINE FIRE INFLIGHT

1. Cabin Heat & Defrost .. OFF
2. Engine ..... FEATHER

3. **Ignition Switch..... OFF**
4. **Fuel PUMP..... OFF**
5. **Fuel Selector..... OFF**
6. **Airspeed – INCREASE TO EXTINGUISH FIRE**
7. **Windows – OPEN if Required**
8. **Perform Single Engine Landing**

ENGINE FAILURE INFLIGHT

1. **Airspeed..... 90 V_{YSE} Min.**
2. **Mixture..... FULL RICH**
3. **Props..... FULL FORWARD**
4. **Throttles . FULL FORWARD**

Troubleshooting Checklist

Time & Circumstances Permitting

5. Alternate Air .....ON
6. Fuel Selectors.....CHECK ON
7. Fuel Pumps.....ON
8. Ignition Switch.... CHECK BOTH

If engine does not recover

9. Engine .....FEATHER

FEATHERING PROCEDURE

1. Airspeed .....90 V_{YSE} MINIMUM
2. Rudder..... MAINTAIN DIRECTIONAL CONTROL
3. Throttle ..... IDLE
4. Prop Lever .....FULL AFT
5. Mixture..... IDLE CUTOFF
6. Fuel Pump .....OFF
7. Ignition Switch.....OFF
8. Fuel Control .....OFF
9. Alternator.....OFF
10. Throttle .. Fwd Enough to silence Gear Horn

UNFEATHERING PROCEDURE

1. Airspeed ..... 90 V_{YSE} MINIMUM
2. Fuel Selectors.....ON
3. Fuel Pump .....CHECK ON
4. Throttle .....SET (1 inch)
5. Alternate Air .....AS REQ'D
6. Prop Lever .....FULL FWD
7. Mixture..... RICH
8. Ignition Switch..... BOTH
9. Alternator.....ON

(If engine does not Windmill)

10. Ignition Switch.....START

(If engine does not Start)

11. Mixture .....IDLE CUTOFF
12. Mixture ..... ADVANCE SLOWLY

SINGLE ENGINE LANDING

1. Seat Belts & Harnesses – TIGHT
2. Landing Light.....AS REQ'D
3. Gear Horn .....CHECK

Operative Engine

4. Fuel Selector .....CHECK ON/CROSSFEED
5. Failed Engine ..... SECURED
6. Airspeed.....V_{YSE}+10 KIAS
7. Gear.....DOWN

(3 Green, 1 in the Mirror)

8. Final Approach ..... 85 V_{REF}
9. Throttle.....AS REQ'D
10. Trim.....AS REQ'D

(When Landing Assured)

11. Flaps .....AS REQ'D
12. Touchdown..... NORMAL

LANDING GEAR SYSTEM FAILURES

LANDING GEAR UNSAFE

NOTE

Landing gear unsafe warning light illuminates when the gear is in transit & is normal.

(If light remains on longer than 20 secs.)

1. Airspeed..... V_{LO} 156
2. Landing Gear.....RECYCLE

(If Gear cannot be extended to down & Locked position)

3. Use Manual Gear Extension

MANUAL GEAR EXTENSION

1. Gear Test Button ..... PRESS
2. Master Switch.....CHECK ON
3. Bus Voltage.... CHECK NORMAL
4. Circuit Breaker.....CHECK
5. Landing Gear Selector ..... DOWN
6. Manual Gear Handle..... PULL

NOTE

If Gear Indicator Lights don't show green slow below 110 KIAS, gently yaw & pitch airplane to assist getting gear to locked position.

GEAR UP LANDING

1. Approach..... V_{REF} 85
2. Throttle..... IDLE
   (Time & Situation permitting)
3. Fuel Selectors.....OFF
4. Mixtures..... IDLE CUTOFF
5. Ignition Switches.....OFF
6. Master Switch .....OFF
7. Touchdown..... MIN AIRSPEED

LANDING W/FLAT MAIN TIRE

1. Advise ATC
2. Touchdown.....RUNWAY SIDE OPPOSITE BAD TIRE
3. Land.....WING LOW TOWARD GOOD TIRE
4. MAINTAIN DIRECTIONAL CONTROL

ROUGH ENGINE OPERATION

WARNING

A rough running engine can lead to catastrophic failure of the prop or other engine components.

1. Airspeed..... 90 KIAS
2. Fuel Selector .....CHECK ON
3. Fuel Pump.....ON
4. Engine Instruments .....CHECK
5. Throttle & Props.....CHECK
6. Mixture . ADJUST FOR SMOOTH OPERATION
7. Alternate Air.....ON
8. Fuel Pump Affected Engine....ON
9. Ignition Switches.. CHECK BOTH
10. Engine Settings..... VARY

WARNING

If problem does not clear immediately, & engine is no longer producing sufficient power, feather the engine & proceed with single engine landing. Land as soon as possible.

LOW FUEL FLOW OR PRESSURE

1. Fuel Pump.....ON
2. Mixture ..... ENRICHEN

CAUTION

*Operation at high altitudes (Above 5000 ft.) with fuel pump **OFF** may cause vapor bubbles, resulting in intermittent low fuel pressure indications, sometimes followed by high fuel flow indications*

NOTE

At 5000 ft. Density altitude or high ambient temps, full rich mixture can cause rough running engine or loss of performance. Mixture should be set for smooth running of the engine.

3. If fuel flow/pressure in green arc with alert – sensor needs service
   (If Fuel Pressure Not Restored)
4. LAND AT NEAREST SUITABLE AIRPORT
5. PREPARE FOR ENGINE FAILURE & SINGLE ENGINE LANDING

HIGH FUEL PRESSURE

1. Fuel Pump..... OFF
2. Power.....REDUCE
3. Fuel Quantity.....MONITOR

LOSS OF OIL PRESSURE

1. Oil Pressure Warning Light & Oil Pressure Gauge .....CHECK
2. Oil Temperature.....CHECK

(Pressure below green temp normal)

3. Oil Pressure Warning Light..... MONITOR
4. Oil & CHTs .....MONITOR
5. Land as soon as possible.

Oil pressure below green; Temps rising, or flashing Pressure Light

6. Throttle.....MIN REQUIRED
7. LAND AS SOON AS POSSIBLE
8. Prepare for Single Engine Landing

Oil pressure dropping or zero with engine vibration, loss of oil, unusual metallic noise &/or smoke

9. Engine – SHUTDOWN IMMEDIATELY
10. EXECUTE SINGLE ENGINE LANDING

HIGH OIL PRESSURE

1. Oil Temp.....CHECK

If temp normal, suspect erroneous oil pressure indication.

HIGH OIL TEMPERATURE

1. CHT & EGT Gauges .....CHECK

If CHTs or EGTs High

2. Oil Pressure.....CHECK

If oil pressure Low

3. Throttle.. REDUCE TO MIN REQ.
4. LAND AS SOON AS PRACTICABLE
5. PREPARE FOR SINGLE ENGINE LANDING

If oil pressure the green

6. Mixture ..... CHECK, enrichen if necessary
7. Power..... REDUCE

If no improvement

8. LAND AS SOON AS POSSIBLE

HIGH CHT

1. Mixture – CHECK (Enrichen)
2. Oil Temp – CHECK

If oil temp High

3. Oil Pressure – CHECK

If oil pressure Low

4. Throttle. REDUCE TO MIN, REQ.
5. LAND AS SOON AS PRACTICABLE
6. PREPARE FOR ENGINE FAILURE & SINGLE ENGINE LANDING

If oil pressure normal (Green Arc)

7. Power – REDUCE

If no Improvement

8. LAND AS SOON AS PRACTICABLE

HIGH RPM

1. Prop Control ..... REDUCE

Propeller Overspeed

2. Throttle..... REDUCE AS REQ'D
3. Control RPM with Throttle
4. Land as soon as practicable

DEFECTIVE PROP CONTROL

Oscillating RPM

5. Oil Pressure.....CHECK
6. Throttle .....CHANGE SETTING

NOTE

If problem does not clear itself, land at nearest suitable airfield.

Propeller Overspeed

7. Throttle..... REDUCE AS REQ'D
8. Control RPM with Throttle
9. Land as soon as practicable

LOSS OF RPM

1. Oil Pressure.....CHECK
2. Electric Fuel Pump.....ON
3. Fuel Selector Valve(s).....CHECK
4. Throttle Friction.....ADJUST
5. Prop Control .....HIGH RPM

If no rise in RPM governor may be defective

6. Control RPM with Throttle
7. Land as soon as practicable

SPIN RECOVERY

1.Throttle.....IDLE

2.Rudder ..... FULL OPPOSITE DIRECTION OF SPIN

3.Stick .....FULL FORWARD

4.Ailerons .....NEUTRAL

5. Flaps..... UP

Once rotation has stopped –

6. Rudder ..... NEUTRAL
7. Recover.....SMOOTHLY

EMERGENCY DESCENT

1. Flaps..... UP
2. Landing Gear..... DOWN
3. Throttles..... IDLE
4. Airspeed.....AS REQ'D

WARNING

V_{NO} =155 KIAS

V_{NE} =194 KIAS

WARNING

EMERGENCY DESCENT PROCEDURE MAY IMPOSE "SHOCK COOLING" THAT COULD CAUSE DAMAGE TO THE ENGINES.

NOTE

Prop Levers might be set full FWD to increase drag as long as RPM Limits are not exceeded.

ELEC./CABIN FIRE INFLIGHT

1. **Emergency Switch..... ON**
2. **AV Master ..... OFF**
3. **Master Switch..... OFF**
4. **Cabin Heat & Defrost .....OFF**
5. **Vents & Windows... AS REQ'D**
6. **Fire Extinguisher.... AS REQ'D**
7. **Land as soon as possible**

LOW VOLTAGE INFLIGHT

1. Circuit Breakers .....CHECK
2. Alternators.....CHECK ON
3. Electrical Equipment ..... OFF
4. Voltage still Low.....RUN BOTH ALTERNATOR FAIL CHECKLIST

TOTAL ELECTRICAL FAILURE

5. Circuit Breakers .....CHECK
6. Emergency Switch .....ON
7. Flood Light.....ON AS REQ'D
8. Engine Controls .....SET (Audible noise & Lever Position)
9. Prepare for landing with flaps in present position.
10. Land at nearest suitable airfield

NOTE

Gear Uplock no longer ensured. Landing gear may slowly extend. Extend Gear manually.

BOTH ALTERNATORS FAIL

WARNING

IF BOTH ALTERNATORS FAIL, REDUCE ELECTRICAL EQUIPMENT TO A MINIMUM. EXPECT BATTERY POWER TO LAST 30 MINUTES. LAND AS SOON AS POSSIBLE

1. ATC ..... ADVISE
2. LH/RH Alternators..... OFF
3. XPDR..... STBY
4. Landing Gear..... DOWN
   When down & locked pull Emergency Release
5. Pitot Heat ..... OFF
6. Non-Essential Electrical ..... OFF
7. Emergency Switch .....ON
8. AV Master ..... OFF
9. Land within 30 Minutes

OVERVOLTAGE (above 32 Volts)

If voltage in upper red sector with both alternators on

1. LH Alternator ..... OFF

If voltage still in upper red sector

2. LH Alternator .....ON
3. RH Alternator..... OFF

If voltage still in upper red sector

4. LH Alternator ..... OFF
5. Non-Essential electrical..... OFF
6. Land as Soon as Practical

AHRS Failure

1. Use STBY AI & Mag Compass
2. Set Course using Digital Window

ADC Failure

1. Use STBY Airspeed & Altimeter

ICING

1. Leave Icing Area
2. Pitot Heat .....ON
3. Cabin Heat & Defrost .....ON
4. Prop RPM ..... INCREASE
5. Alternate Air.....ON
6. Land at the nearest airfield

PFD of MFD Failure

1. Display Backup Button – PUSH

POSSIBLE CARBON MONOXIDE

1. Cabin Heat & Defrost ..... OFF
2. Ventilation ..... OPEN
3. Emergency Windows ..... OPEN

4. Forward Canopy ..... UNLATCH & lock in “cooling-gap” position

CAUTION

In case of possible carbon monoxide in the cabin, the front canopy may be unlatched inflight. This allows it to partially open to improve ventilation. Flight characteristics will not be affected significantly.

Maximum demonstrated airspeed for Emergency Opening of the Front Canopy is 120 KIAS

‘DOOR’-WARNING LIGHT ON

WARNING

DO NOT TRY TO LATCH THE PASSENGER DOOR INFLIGHT. THE SAFETY HOOK MAY DISENGAGE; THE DOOR OPEN & SEPARATE FROM THE AIRPLANE.

1. Airspeed ..... REDUCE
2. Canopy.....CHECK VISUALLY
3. Rear Door.....CHECK VISUALLY
4. Front Baggage Doors.....CHECK

Canopy of Passenger Door Unlatched

5. Airspeed .....BELOW 140
6. Land at next Suitable Airfield

ABNORMAL OPERATING PROCEDURES

PRECAUTIONARY LANDING

1. Select appropriate landing area
2. Consider wind
3. Approach Normal to ID Obstacles
4. ATC..... ADVISE
5. Touchdown..... Lowest possible Airspeed
6. Engines .....SHUTDOWN
7. Airplane.....SECURE

CANOPY IN COOLING GAP POSITION

If Takeoff inadvertently done with canopy in Position 2

1. Airplane.....LAND
2. Runway..... TAXI CLEAR
3. Canopy..... CLOSE & LATCH

CONTINUOUS HYDRAULIC PUMP OPERATION

1. Landing Gear Lights..... CHECK
2. Gear Circuit Breaker ..... PULL
3. Prepare for Manual Gear Extension

HYDRAULIC PUMP FAILURE

1. Landing Gear Lights..... CHECK
2. Gear Circuit Breaker ..... CHECK
3. Prepare for Manual Gear Extension

L/R AUX FUEL XFER FAIL

If fuel quantity in main tank does not increase during transfer:

1. Both XFER Pumps..... OFF
2. Fuel Imbalance ..... CHECK
3. Crossfeed ..... ON to maintain Balance
4. Remaining XFER Pump ..... ON
5. Crossfeed ..... ON to maintain Balance