

### Checklist for Diamond DA42 Twin Star

Edition #: **14.4** Edition date: **06.06.2009**

Please observe:

The file you are receiving hereby combines all three sections of the checklist: Normal Checklist, Emergency Checklist and Abnormal Checklist.

**All** pages of a new edition will have the same new "edition #" and "edition date", even if only one page was amended and all other pages still have the same, unchanged content.

Therefore the "List of Effective Pages" (LEP) is provided. It is here where you can see whether a particular page was amended. Pages which have been amended by a new edition will be marked yellow. For all other pages you will see which original "edition #" (and of course any higher "edition #") is still valid.

**Note:**

The system of assigning "Edition #" is as follows:

- if the revision affects all types, a new edition # (without a decimal figure) will be assigned to all of the checklists
- if the revision does not affect all types, the affected checklists will get subsequent "decimal figures" until a major revision affecting all checklists is issued.

Have a lot of nice flights and happy landings!

Peter Schmidleitner

**Comments explaining Edition # 14.4 are on page 2 of this document**

#### Checklist DA42 Twin Star - LEP

Page	Following Edition	Date (or any higher) is valid
<b>Section : Normal Checklist</b>		
1	14	01.12.2006
2	14.2	01.01.2009
3	14.1	01.07.2008
4	14	01.12.2006
5	14.1	01.07.2008
6	14.1	01.07.2008
7	14	01.12.2006
8	14	01.12.2006
9	14	01.12.2006
10	14	01.12.2006

<b>Section: Emergency Checklist</b>		
1	14.4	06.06.2009
2	14	01.12.2006
3	14	01.12.2006
4	14.3	05.03.2009
5	14.1	01.07.2008
6	14	01.12.2006
7	14	01.12.2006
8	14	01.12.2006
9	14.1	01.07.2008
10	14.4	06.06.2009
<b>Section: Abnormal Checklist</b>		
11	14	01.12.2006
12	14.4	06.06.2009
13	14	01.12.2006
14	14	01.12.2006
15	14	01.12.2006
16	14	01.12.2006

### Comments explaining Edition # 14.2

Changes according Revision 1 to AFM Supplement S03

**Normal Checklist**

Preflight Check:  
Ice Protection System check revised

**Emergency checklist:**

Page 10:  
"UNINTENTIONAL FLIGHT INTO ICING" and "ICE PROTECTION FAILURE" revised.

### Comments explaining Edition # 14.3

**Emergency checklist:**

Page 4:  
The line "Power lever (affected engine) .... IDLE" has been added, so that the checklist corresponds to the instructed "PPAA- Procedure", where verification of the engine to be shut down has to be made by retarding the power lever of the suspect engine.

### Comments explaining Edition # 14.4

**Emergency checklist:**

Page 10:  
Procedures improved in line with latest Supplement "ICE PROTECTION SYSTEM"

**Abnormal checklist:**

Page 12:  
L/R ALTN FAIL procedure improved in line with latest Supplement "ICE PROTECTION SYSTEM"

# NORMAL CHECKLIST



This checklist is compiled according the guidelines of GAMA Specification No.1, SECTION 3, para 3.5, SECTION 3A, para 3A.5 and SECTION 4, para 4.5. The "Amplified Normal Procedures", „Amplified Emergency Procedures" and „Amplified Abnormal Procedures" according GAMA Specification No. 1 are in the DA42 Airplane Flight Manual Chapters 4A, 3 and 4B.

This checklist is a Recommended Operator Checklist and for reference only. It is not a substitute for and does not supersede the current approved Airplane Flight Manual or any of its supplements or parts thereof, or any training or procedures required by any regulatory or advisory bodies.

This checklist may not contain all procedures shown in the Airplane Flight Manual. For a comprehensive listing of all procedures consult the Airplane Flight Manual.

Use of the checklist is at the user's sole risk and discretion.

Any possible liability of Diamond Aircraft for any damages, injury or death resulting from its use is excluded.

All such terms and conditions shall be deemed to be explicitly accepted in full by using the checklist. If you do not understand, or if you disagree with, any of the above terms and conditions and in any jurisdiction that does not give effect to all provisions of these terms and conditions any use of the checklist is not permitted.

### Use of the electronic checklist (if available):

**Before using the electronic checklist on the G1000 the following sections have to be completed using this paper checklist:**

- Preflight interior + exterior
- Preflight exterior
- Check before engine start items 1 to 21 (may be completed by heart).

**This checklist also serves as a back up for the electronic checklist in case the G1000 MFD is not available.**

### Attention!

For refuelling with JET A1 no additives (e.g. „Aerojet") are permitted.

- \* if optional ice protection is installed
- \*\* if optional AUX tanks are installed

### PREFLIGHT INTERIOR + EXTERIOR.

- 1 Check airplane documents
- 2 Remove pitot cover
- 3 Check interior for foreign objects
- 4 Check circuit breakers
- 5 Start key PULLED OUT
- 6 Gear selector CHECKED DOWN
- 7 Electric Master ON
- 8 Gear 3 greens CHECKED
- 9 Check fuel quantity + temp
- 10 \*\* Fuel transfer ON – if L/R  
AUX FUEL E caution ON:  
AUX tank(s) empty  
Fuel transfer OFF
- 11 External lights ON
- 12 Pitot heat ON
- 13 \* Check de-ice fluid quantity
- 14 \* Select de-ice pump 1
- 15 \* De-ice HIGH/MAX
- 16 \* Check DEIC PRES LO+HI out
- 17 \* Select de-ice pump 2
- 18 \* Check DEIC PRES LO+HI out
- 19 \* Ice lights ON
- 20 \* Check de-ice function
- 21 Check external lights
- 22 Check stall warning
- 23 Check pitot/static tube heat
- 24 Pitot heat OFF
- 25 External lights OFF
- 26 \* De-ice, ice lights OFF
- 27 Electric Master OFF

### PREFLIGHT EXTERIOR

Canopy left side

#### Left main gear

Strut (min 4cm bare piston) & downlock  
Tire condition, pressure (4,5 bar), position mark  
Brake, hydraulic line  
Gear door & linkage

#### Left engine nacelle

Drain cascolator  
3 air inlets / 2 air outlets  
Spinner, propeller  
Gearbox oil level  
Engine oil level  
Cowling  
Nacelle underside  
Venting pipe  
Exhaust  
\*\* Check AUX tank full ?

#### Left wing

Wing leading edge, top- and bottom surface  
Tank drain  
Stall warning  
Tank air vent  
Fuel filler cap  
Pitot, static probe (cover removed)  
Wing tip, position light  
Static dischargers  
Aileron (freedom of movement, hinges, control linkage, security)  
Wing flap  
Fuel cooler air in- & outlet  
\*\* AUX tank vent  
\*\* Drain AUX tank

#### Left fuselage

Step  
Rear cabin door  
Fuselage left side  
Static source  
Antennas

**Tail**

Elevator & rudder (freedom of movement, hinges)  
 Elevator & rudder trim - tabs  
 Tail skid & lower fin  
 Static dischargers

**Right fuselage**

Fuselage right side  
 Static source  
 Rear window  
 Step

**Right wing**

Fuel cooler air in- & outlet  
 \*\* AUX tank vent  
 \*\* Drain AUX tank  
 Wing flap  
 Aileron (freedom of movement, hinges, control linkage, security)  
 Static dischargers  
 Wing tip, position light  
 Wing leading edge, top- and bottom surface  
 Fuel filler cap  
 Tank air vent  
 Tank drain

Canopy right side

**Right engine nacelle**

\*\* Check AUX tank full ?  
 3 air inlets / 2 air outlets  
 Spinner, propeller  
 Gearbox oil level  
 Engine oil level  
 Cowling  
 Nacelle underside  
 Venting pipe  
 Exhaust  
 Drain cascolator

Ventilation air inlet

**Right main gear**

Strut (min 4cm bare piston) & downlock  
 Tire condition, pressure (4,5 bar), position mark  
 Brake, hydraulic line  
 Gear door & linkage

**Nose section**

\* De-ice fluid tank  
 L + R front baggage door locked  
 OAT sensor  
 EPU connection  
 Landing / Taxi light

**Nose gear**

Strut (min 15cm bare piston) & lock  
 Tire condition, pressure (6 bar), position mark  
 Gear door & linkage

Chocks removed  
 Tow bar removed

**CHECK BEFORE ENGINE START**

1	Preflight check .....	COMPLETED	1
2	Baggage and tow bar .....	SECURED	2
3	Fuel selectors (2).....	ON	3
4	Power levers (2).....	IDLE	4
5	Parking brake.....	SET	5
6	Alternate Air .....	CLOSED	6
7	Manual gear extension handle .....	PUSHED	7
8	Gear selector .....	DOWN	8
9	Avionic master .....	OFF	9
10	Electric master .....	OFF	10
11	Engine masters (2) .....	OFF	11
12	Pitot heat .....	OFF	12
13	Alternate static.....	CLOSED	13
14	Alternators (2) .....	ON	14
15	ECU swap (2).....	AUTO	15
16	All light switches.....	OFF	16
17	Emergency switch.....	OFF/GUARDED	17
18	ELT.....	ARMED	18
19	Circuit breakers.....	CHECKED IN	19
20	Flap selector .....	UP	20

If starting with external power:

a	Prop area .....	CHECK CLEAR	a
b	External power.....	CONNECT	b

21	Electric master .....	ON	21
22	Rudder pedals .....	ADJUSTED	22
23	Flight controls .....	CHECKED	23
24	Trims .....	CHECKED	24
25	Gear warning, fire detector .....	TEST	25
26	* De-ice ANNUN TEST .....	ON	26
27	* DEICE LVL LO caution. CHECKED ON if applic.		27
28	* Windshield de-icing .... PUMP 1 + 2	CHECKED	28

Checklist continued next page

**CHECK BEFORE ENGINE START continued**

29	Flaps.....	LDG	29
30	Variable elevator backstop .....	CHECK	30
	Control stick .....	AFT and HOLD	
	Power levers.....	MAX	
	Check backstop limit decreasing		
	Power levers.....	IDLE	
	Check backstop limit increasing		
31	Flaps.....	UP	31
32	Passengers .....	INSTRUCTED	32
33	Seat belts .....	FASTENED	33
34	Rear door .....	CLOSED and LATCHED	34
35	Front Canopy .....	POS 1 or 2	35
36	G1000.....	POWERED, ACKNOWLEDGED	36
37	PFD/MFD .....	BACKUP MODE	37
38	MFD.....	ENGINE – FUEL	38
39	Fuel Quantity .....	CHECKED, RESET/SET if requ.	39
40	Fuel temperature.....	CHECKED	40
41	Total time in service.....	NOTED	41
42	MFD.....	ENGINE – SYSTEM	42
43	* DEIC PRESS LO caution .....	CHECKED ON	43
44	* De-ice ANNUN TEST .....	OFF	44
45	Start key .....	INSERTED	45
46	Power levers (2).....	IDLE	46
47	ACL (strobe) .....	ON	47

End of Checklist

**ENGINE START PROCEDURE****Normal sequence: first start LH engine**

Engine Master..... ON  
 Annunciations / Eng.Instr. .... CHECKED  
 Glow indication .....

OFF

Propeller area .....

CLEAR

Start key.....

START

Oil pressure.....

OUTSIDE RED within 3 sec

Voltage, Electrical load.....

CHECK INDICATION

Annunciations / Eng.Instr. ....

CHECK

If external power was used:

External power..... DISCONNECT

**Start RH engine, procedure as above**

06.06.2009

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Page 5

Edition # 14.4

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DA42 Twin Star

NORMAL PROCEDURES

**CHECK AFTER ENGINE START**

1	Oil pressure .....	CHECKED	1
2	RPM 900 +/- 20.....	CHECKED	2
3	Warm up time .....	START	3
	Warm up:		
	Idle .....	2 minutes	
	1400RPM .....	until Oil > 50°C and Coolant > 60°C	
4	Fuel selectors (2).....	X-FEED	4
5	Pitot heat ....ON, annunciation + Amps checked		5
6	Pitot heat .....	OFF	6
7	PFD/MFD .....	NORMAL MODE	7
8	Avionics master .....	ON	8

**FMS SETUP**

**I** nitalize profile (AUX 4, MAP, MFD FPL, PFD FPL)

**F** light plan

**R** adios (COM, NAV, ADF, DME, CDI, BRG 1/2)

**P** erformance (speed bugs; Flight ID if applicable)

9	FMS setup .....	COMPLETED	9
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**AUTOPILOT TEST**

DISCONN press, check electric trim not working

AP ON, check overpowering servos

DISCONN press, check AP off

10	Autopilot test .....	COMPLETED	10
11	Flood light .....	CHECKED, ON as required	11
12	Position lights.....	ON as required	12
13	Fuel Selectors (2) .....	ON	13
14	Altimeters (3) .....	SET	14
15	Standby horizon .....	CHECKED	15
16	Transponder .....	CODE / MODE CHECKED	16
17	Parking brake.....	RELEASED	17

End of Checklist

**DURING TAXI**

Check Brakes

Check nose wheel steering

Check flight instruments

06.06.2009

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Page 6

Edition # 14.4

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**BEFORE TAKE OFF CHECK**

1	Parking brake.....	SET	1
2	Seat belts.....	FASTENED	2
3	Rear door.....	CLOSED + LATCHED	3
4	Front canopy.....	CLOSED + LATCHED	4
5	Front baggage doors.....	CHECKED CLOSED	5
6	Door warning light.....	OFF	6
7	Engine instruments.....	CHECKED	7
8	Fuel temperature (Diesel min. +5°)...	CHECKED	8
9	Circuit breakers.....	CHECKED	9
10	Electric elevator trim.....	CHECKED, T/O SET	10
11	Fuel selectors (2).....	CHECKED ON	11
12	Rudder trim.....	AS REQUIRED	12
13	Flaps.....	CHECKED UP	13
14	Flight controls.....	CHECKED	14
15	Power levers (2).....	IDLE	15
16	ECU test (2).....	PERFORM	16

**ECU TEST**

ECU test button..... press and hold  
 "L/R ECU A/B fail".....ON / RPM increasing / OFF  
 "L/R ECU B fail".....ON / prop cycling / OFF  
 "L/R ECU A fail".....ON / prop cycling / OFF  
 RPM..... decrease to idle  
 ECU test button..... release

17	ECU swap (2).....	ECU B, ENGINES CHECKED	17
18	ECU swap (2).....	AUTO	18
19	Pitot heat.....	AS REQUIRED	19
20	* Ice protection.....	AS REQUIRED	20
21	Transponder.....	CODE / MODE CHECKED	21
22	Parking brake.....	RELEASED	22

End of Checklist

**LINE UP PROCEDURE**

Landing light..... ON  
 Approach sector..... CLEAR  
 Runway..... IDENTIFIED  
 Power lever max (100% / 10 sec).....  
 CHECK LOAD / RPM / FUEL FLOW / OP

**AFTER TAKE-OFF PROCEDURE**

Brakes.....APPLY  
 Gear.....UP  
 Landing light.....OFF

**CLIMB TO CRUISE CHECK**

1	Gear.....	CHECKED UP	1
2	Flaps.....	CHECKED UP	2
3	Landing light.....	CHECKED OFF	3

End of Checklist

**PERIODICALLY DURING CRUISE**

Fuel Radio Engine Direction Altitude  
 Maximum fuel unbalance: 5 USG

**DESCENT / APPROACH CHECK**

1	Landing data.....	RECEIVED	1
2	Altimeters (3).....	SET	2
3	COM / NAV / FMS.....	SET	3
4	Seatbelts.....	FASTENED	4
5	Fuel selectors (2).....	CHECKED ON	5
6	Parking brake.....	CHECKED RELEASED	6
7	Gear warning horn.....	CHECKED	7

End of Checklist

**BEFORE LANDING PROCEDURE**

Downwind, latest base leg:  
 Flaps..... APP  
 Gear.....DOWN, CHECK 3 GREENS  
 Landing light..... ON

On final when landing assured:

**FINAL CHECK**

1	Flaps.....	LDG	1
2	Gear.....	3 GREENS CHECKED	2

**GO AROUND PROCEDURE**

Power ..... MAX  
 Flaps ..... APP  
 Positive rate of climb:  
 Gear ..... UP  
 Continue with take-off profile  
 At safe altitude:  
 Flaps ..... UP  
 Landing light ..... OFF

**AFTER LANDING CHECK**

When clear of runway

- |   |                         |             |   |
|---|-------------------------|-------------|---|
| 1 | Flaps.....              | UP          | 1 |
| 2 | Pitot heat .....        | OFF         | 2 |
| 3 | Alternate air.....      | CLOSED      | 3 |
| 4 | * De-ice systems.....   | OFF         | 4 |
| 5 | Landing/Taxi light..... | AS REQUIRED | 5 |

End of Checklist

**PARKING CHECK**

- |    |   |                       |    |
|----|---|-----------------------|----|
| 1  | Parking brake.....                          | SET                   | 1  |
| 2  | Power levers (2).....                       | IDLE for 2 min.       | 2  |
| 3  | ELT.....                                    | 121,5 CHECKED         | 3  |
| 4  | Engine / System page.....                   | CHECKED               | 4  |
| 5  | Engine / Fuel page.....                     | TTL TIME IN SVC NOTED | 5  |
| 6  | Avionic master.....                         | OFF                   | 6  |
| 7  | Electrical consumers except ACL (strobe)... | OFF                   | 7  |
| 8  | Engine Masters (2).....                     | OFF                   | 8  |
| 9  | ACL (strobe).....                           | OFF                   | 9  |
| 10 | Electric Master.....                        | OFF                   | 10 |
| 11 | Interior light.....                         | CHECKED OFF           | 11 |
| 12 | Start key.....                              | REMOVED               | 12 |

End of Checklist

**SECURING THE AIRCRAFT**

Release parking brake, use chocks.  
 Attach tie down ropes to mooring points.

**OPERATING SPEEDS KIAS for MTOM 1785**

	1400 kg	1785 kg
Stalling speed (V <sub>S0</sub> ) Flaps LDG	49	57
Stalling speed (V <sub>S</sub> ) Flaps APP	53	61
Stalling speed (V <sub>S</sub> ) clean	56	64
In Ice: + 4 Kt		
Best gliding angle (Flaps UP)	82	
Best angle of climb (V <sub>X</sub> )	79	
Best rate of climb (V <sub>Y</sub> )	79	
Best rate of climb 1-eng. (V <sub>YSE</sub> )	82	
Min. control speed (V <sub>MCA</sub> )	68	
Min. control speed for TRG(V <sub>SSF</sub> )	82	
Min. control speed (V <sub>MCA</sub> ) in ice	72	
Operating speed in ice	121 - 160	
Cruising climb speed	86	
Rotation speed	72	
Max. flap speed (V <sub>FE</sub> ) Flaps APP	137	
Max. flap speed (V <sub>FE</sub> ) Flaps LDG	111	
Max. LG extension (V <sub>LOE</sub> )	194	
Max. LG extended (V <sub>LE</sub> )	194	
Max. LG retraction (V <sub>LOR</sub> )	156	
	1700 kg	1785 kg
Approach V <sub>REF</sub> Flaps UP	85	86
Approach V <sub>REF</sub> Flaps APP	82	82
Approach V <sub>REF</sub> Flaps LDG	76	78
Min. Go-around speed Flaps UP	82	82
Max. cruising speed (V <sub>NO</sub> )	155	
Never exceed speed (V <sub>NE</sub> )	194	
	up to 1542 kg	above - 1542 kg
Manoeuvring speed (V <sub>A</sub> )	120	126

**MASS**

Max. TKOF mass	1785 kg	
Max ZF mass	1650 kg	
Max. LDG mass	1700 kg	
Empty mass	1295 kg	
Max. baggage in NOSE	30 kg	
Max. baggage in COCKPIT	45 kg	45 kg
Max. baggage in rear EXTENSION	18 kg	

# EMERGENCY + ABNORMAL CHECKLIST

For conditions to use this Emergency + Abnormal Checklist see page 1 of the Normal Checklist.

All such conditions are fully applicable also for this checklist.



*G1000 Warnings* .....page 2

*Engine*

*Engine fire / failure during take-off* .....page 4

*Engine fire / failure in flight* .....page 4

*Engine troubleshooting* .....page 5

*Engine restart*.....page 5

*Oscillating RPM* .....page 6

*RPM overspeed* .....page 6

*Landing Gear*

*Landing with defective main gear tire*.....page 6

*Landing with defective brakes* .....page 6

*Landing gear unsafe warning* .....page 7

*Manual extension of landing gear* .....page 7

*Landing gear up landing*.....page 7

*Smoke and fire*

*Engine fire on ground* .....page 8

*Electrical fire on ground* .....page 8

*Electrical fire in flight*.....page 8

**If Oxygen System is installed**

*Cabin smoke, cabin fire, loss of oxygen pressure above 10.000 ft* .....page 9

*Other Emergencies*

*Oxygen pressure loss above 10.000 ft*.....page 9

*Emergency descent* .....page 9

*Suspicion of carbon monoxide*.....page 9

*Unintentional flight into icing, Inadvertent icing encounter & excessive ice accumulation* .... page 10

*Ice protection failure* .....page 10

*Electrical System*

*Complete electrical failure* .....page 10

## G1000 WARNINGS

L/R OIL PRES	Pg. 2	Oil pressure low (red range)
L/R OIL TEMP	Pg. 2	Oil temperature high (red range)
L/R GBOX TEMP	Pg. 2	Gearbox temperature high (red range)
L/R ENG TEMP	Pg. 3	Coolant temperature high (red range)
L/R FUEL TEMP	Pg. 3	Fuel temperature high (red range)
L/R ALTN AMPS	Pg. 3	High Current (red range)
L/R STARTER	Pg. 3	Starter not disengaging
DOOR OPEN	Pg. 3	Unlocked doors
L/R ENG FIRE	Pg. 4 Pg. 4 Pg. 8	Engine fail/fire during take-off Engine fail/fire in flight Engine fire on ground

For other parameters "out of green range" see Abnormal Checklist

Abnormal Checklist starts at page 11

### L/R OIL PRES

### OIL PRESSURE LOW

- Reduce power on affected engine
- Be prepared for loss of oil and an engine failure; land ASAP

### L/R OIL TEMP

### OIL TEMPERATURE HIGH

- Check oil pressure
  - ❖ If oil pressure too low (outside green range):
    - ⇒ Reduce power on affected engine
    - ⇒ Expect loss of engine oil
    - ⇒ Be prepared for an engine failure
  - ❖ If oil pressure in green range
    - ⇒ Reduce power on affected engine
    - ⇒ Increase airspeed
      - ❖ If oil temperature not returning to green range:
        - ⇒ Be prepared for an engine failure; land ASAP

### L/R GBOX TEMP

### GEARBOX TEMPERATURE HIGH

- Reduce power on affected engine
- Increase airspeed
  - ❖ If not returning to green range:
    - ⇒ Be prepared for an engine failure; land ASAP

**L/R ENG TEMP**

**COOLANT TEMPERATURE HIGH**

- Check G1000 for **LOW COOL LVL** caution light
  - ❖ If **LOW COOL LVL** caution light OFF
    - ❖ During climb:
      - ⇒ Reduce power on affected engine by 10% or more as reqd
      - ⇒ Increase airspeed by 10 KIAS or more as required
      - ⇒ If coolant temp. not returning to green range within 60": reduce power on affected engine as much as possible and increase airspeed
    - ❖ During cruise:
      - ⇒ Reduce power on affected engine
      - ⇒ Increase airspeed
      - ⇒ If coolant temp. not returning to green range: Be prepared for an engine failure; land ASAP
  - ❖ If **LOW COOL LVL** caution light ON
    - ⇒ Reduce power on affected engine
    - ⇒ Expect loss of coolant fluid
    - ⇒ Be prepared for an engine failure

**L/R FUEL TEMP**

**FUEL TEMPERATURE HIGH**

- Reduce power on affected engine
- Increase airspeed
- Transfer fuel from AUX to MAIN tank if applicable
  - ❖ If not returning to green range: land ASAP

**L/R ALTN AMPS**

**HIGH CURRENT**

- Check circuit breakers
- Reduce electrical load and land ASAP

**L/R STARTER**

**STARTER NOT DISENGAGING**

- Affected power lever IDLE
- Affected engine master OFF
- Electric master OFF

**DOOR OPEN**

**UNLOCKED DOORS**

- Reduce Airspeed
- Check canopy and rear door visually
  - ❖ If unable to latch: land ASAP
- Check front baggage doors visually
  - ❖ If one or both open: land ASAP

**Never unlatch rear door during flight**

**ENGINE FAILURE**

**DURING TAKE-OFF**

**ENGINE FIRE**

**REJECTED TAKE-OFF OR EMERGENCY RE-LANDING**

- |   |                            |        |   |
|---|----------------------------|--------|---|
| 1 | Power .....                | OFF    | 1 |
| 2 | Brakes .....               | APPLY  | 2 |
| 3 | ATC .....                  | INFORM | 3 |
|   | If necessary:              |        |   |
| 4 | Engine Masters (2) .....   | OFF    | 4 |
| 5 | Fuel selectors (2) .....   | OFF    | 5 |
| 6 | Electric Master .....      | OFF    | 6 |
|   | In case of fire:           |        |   |
| 7 | Cabin heat & defrost ..... | OFF    | 7 |

**ENGINE FAILURE**

**IN FLIGHT**

**ENGINE FIRE**

**If airspeed below 68 KIAS:**  
 Perform Vmca recovery procedure

- | Airspeed above 68 KIAS: |                                       |                      |    |
|-------------------------|---------------------------------------|----------------------|----|
| 8                       | Power .....                           | INCREASE up to MAX   | 1  |
| 9                       | Airspeed.....                         | min Vyse 82 KIAS     | 2  |
| 10                      | Landing gear .....                    | UP                   | 3  |
| 11                      | Flaps .....                           | UP                   | 4  |
| 12                      | Power lever (affected engine).....    | IDLE                 | 5  |
| 13                      | Engine Master (affected engine) ..... | OFF                  | 6  |
| 14                      | Alternator (dead engine) .....        | OFF                  | 7  |
| 15                      | Fuel selector (dead engine).....      | OFF                  | 8  |
|                         | In case of fire:                      |                      |    |
| 16                      | Cabin heat & defrost .....            | OFF                  | 9  |
| 17                      | Canopy .....                          | UNLATCH if necessary | 10 |
- Max airspeed 120 KIAS*

**ENGINE TROUBLESHOOTING**

- |   |  |   |
|---|--|---|
| 1 | Power lever (good engine) INCREASE up to MAX | 1 |
| 2 | Power lever (affected engine)..... IDLE      | 2 |

If in icing conditions:

- |   |                                      |              |   |
|---|--------------------------------------|--------------|---|
| 3 | Alternate air .....                  | OPEN         | 3 |
| 4 | Fuel quantity .....                  | CHECK        | 4 |
| 5 | AUX transfer (affected engine) ..... | CONSIDER     | 5 |
| 6 | Fuel selector (affected engine) .... | ON or X-FEED | 6 |
| 7 | ECU swap (affected engine) .....     | ECU B        | 7 |

If successful: land ASAP

If unsuccessful:

- |   |                                  |               |   |
|---|----------------------------------|---------------|---|
| 8 | ECU swap (affected engine) ..... | AUTO          | 8 |
| 9 | Circuit breakers.....            | CHECK / RESET | 9 |

If successful: land ASAP

If all unsuccessful:

continue with ENGINE FAILURE IN FLIGHT checklist

**ENGINE RESTART**

- |   |                                       |                                |   |
|---|---------------------------------------|--------------------------------|---|
| 1 | Airspeed.....                         | 110 (80 *) KIAS - max 120 KIAS | 1 |
| 2 | Pressure Altitude .....               | max 8000 (6000 *) ft           | 2 |
| 3 | Power (affected engine) .....         | IDLE                           | 3 |
| 4 | Fuel selector (affected engine) ..... | ON                             | 4 |
| 5 | Alternate air .....                   | AS REQUIRED                    | 5 |
| 6 | Alternator (affected engine) .....    | ON                             | 6 |
| 7 | Engine Master (affected engine) ..... | ON                             | 7 |
| 8 | Starter.....                          | if necessary ENGAGE            | 8 |

If engine started:

- |    |                               |                   |    |
|----|-------------------------------|-------------------|----|
| 9  | Power (affected engine) ..... | MODERATE          | 9  |
| 10 | Engine instruments.....       | check GREEN RANGE | 10 |

\*) TAE 125-01 Centurion 1.7 engine

**OSCILLATING RPM**

- |   |                   |                |   |
|---|-------------------|----------------|---|
| 1 | Power lever ..... | change setting | 1 |
|   |                   | If no success: |   |
| 2 | ECU swap.....     | ECU B          | 2 |
|   |                   | If no success: |   |
| 3 | ECU swap.....     | AUTO           | 3 |

Land ASAP

**RPM OVERSPEED**

- |   |                    |                |   |
|---|--------------------|----------------|---|
| 1 | Power setting..... | REDUCE         | 1 |
|   |                    | If no success: |   |
| 2 | ECU swap.....      | ECU B          | 2 |
|   |                    | If no success: |   |
| 3 | ECU swap.....      | AUTO           | 3 |

Land ASAP

Be prepared for ENGINE FAILURE IN FLIGHT

**LANDING WITH DEFECTIVE MAIN GEAR TIRE**

- |   |          |          |   |
|---|----------|----------|---|
| 1 | ATC..... | INFORMED | 1 |
|---|----------|----------|---|

For landing:

- Land on RWY side with "good" tire
- Keep wing on "good" side low
- Support directional control with brake

**LANDING WITH DEFECTIVE BRAKES**

After touchdown (if necessary):

- |   |                          |     |   |
|---|--------------------------|-----|---|
| 1 | Engine Masters (2) ..... | OFF | 1 |
| 2 | Fuel selectors (2) ..... | OFF | 2 |
| 3 | Electric Master .....    | OFF | 3 |

**LANDING GEAR UNSAFE WARNING**

If on for more than 20 seconds:

- |   |                             |   |
|---|-----------------------------|---|
| 1 | Airspeed.....max 156 KIAS   | 1 |
|   | In cold temperature:        |   |
| 2 | Airspeed.....max 110 KIAS   | 2 |
| 3 | Gear selector ..... RECYCLE | 3 |

If landing gear **extension** unsuccessful:  
Continue with MANUAL EXTENSION

If landing gear **retraction** unsuccessful:  
Consider flight with landing gear down

**MANUAL EXTENSION OF LANDING GEAR**

- |   |  |   |
|---|--|---|
| 1 | Airspeed.....max 156 KIAS                  | 1 |
| 2 | Gear indicator lights .....TEST            | 2 |
| 3 | Electric master .....CHECK ON              | 3 |
| 4 | Bus voltage ..... CHECK NORMAL             | 4 |
| 5 | Circuit breaker ..... CHECK                | 5 |
| 6 | Gear selector ..... DOWN                   | 6 |
| 7 | Manual extension handle .....PULL          | 7 |
|   | If necessary                               |   |
| 8 | Airspeed.....max 110 KIAS                  | 8 |
|   | Apply moderate yawing                      |   |
| 9 | Gear indicator lights ..... CHECK 3 GREENS | 9 |

**LANDING GEAR UP LANDING**

(Landing gear completely retracted)

- |   |                              |   |
|---|------------------------------|---|
| 1 | Approach .....NORMAL         | 1 |
|   | Just before touchdown:       |   |
| 2 | Power lever ..... IDLE       | 2 |
|   | After touchdown:             |   |
| 3 | Engine Masters (2) ..... OFF | 3 |
| 4 | Fuel selectors (2) ..... OFF | 4 |
| 5 | Electric Master ..... OFF    | 5 |

**ENGINE FIRE ON GROUND**

- |   |                                   |   |
|---|-----------------------------------|---|
| 1 | Power levers (2)..... IDLE        | 1 |
| 2 | Engine masters (2)..... OFF       | 2 |
| 3 | Fuel selectors (2) ..... OFF      | 3 |
| 4 | Mayday call .....CONSIDER         | 4 |
| 5 | Electric master..... OFF          | 5 |
|   | When engine and aircraft stopped: |   |
| 6 | Canopy ..... OPEN                 | 6 |
|   | Evacuate                          |   |

**ELECTRICAL FIRE ON GROUND**

- |   |                                   |   |
|---|-----------------------------------|---|
| 1 | Mayday call .....CONSIDER         | 1 |
| 2 | Electric Master ..... OFF         | 2 |
| 3 | Power levers (2)..... IDLE        | 3 |
| 4 | Engine Masters (2) ..... OFF      | 4 |
| 5 | Fuel selectors (2) ..... OFF      | 5 |
|   | When engine and aircraft stopped: |   |
| 6 | Canopy ..... OPEN                 | 6 |
|   | Evacuate                          |   |

**ELECTRICAL FIRE IN FLIGHT**

- |   |   |   |
|---|---|---|
| 1 | Emergency switch ..... ON                 | 1 |
| 2 | Mayday call .....CONSIDER                 | 2 |
| 3 | Avionic master ..... OFF                  | 3 |
| 4 | Electric master ..... OFF                 | 4 |
| 5 | Cabin heat & defrost ..... OFF            | 5 |
| 6 | Emergency windows ..... OPEN as necessary | 6 |
| 7 | Canopy ..... UNLATCH if necessary         | 7 |

Max airspeed 120 KIAS

Land ASAP

**CABIN SMOKE ABOVE 10.000 FT**

- |   |                         |          |   |
|---|-------------------------|----------|---|
| 1 | Oxygen .....            | CHECK ON | 1 |
| 2 | Emergency descent ..... | INITIATE | 2 |
|   | When passing 10.000 ft  |          |   |
| 3 | Oxygen .....            | OFF      | 3 |
|   | Land ASAP               |          |   |

**CABIN FIRE ABOVE 10.000 FT**

- |   |                         |          |   |
|---|-------------------------|----------|---|
| 1 | Oxygen .....            | PUSH OFF | 1 |
| 2 | Emergency descent ..... | INTITIAE | 2 |
|   | Land ASAP               |          |   |

**OXYGEN PRESSURE LOSS ABOVE 10.000 FT**

- |   |  |                    |   |
|---|--|--------------------|---|
| 1 | Oxygen .....                                       | PUSH OFF           | 1 |
| 2 | Oxygen pressure .....                              | CHECKED, note down | 2 |
| 3 | Emergency descent .....                            | INTIATE            | 3 |
|   | When passing 10.000 FT:                            |                    |   |
| 4 | Oxygen pressure .....                              | CHECK AGAIN        | 4 |
|   | • If oxygen pressure constant: ... Continue flight |                    |   |
|   | • If oxygen pressure dropped: ..... Land ASAP      |                    |   |

**EMERGENCY DESCENT**

- |   |                    |             |   |
|---|--------------------|-------------|---|
| 1 | Flaps .....        | UP          | 1 |
| 2 | Landing Gear ..... | DOWN        | 2 |
| 3 | Power levers ..... | IDLE        | 3 |
| 4 | Airspeed.....      | AS REQUIRED | 4 |

**SUSPICION OF CARBON MONOXIDE**

- |   |                            |              |   |
|---|----------------------------|--------------|---|
| 1 | Cabin heat & defrost ..... | OFF          | 1 |
| 2 | Ventilation.....           | OPEN         | 2 |
| 3 | Emergency windows .....    | OPEN         | 3 |
| 4 | Airspeed.....              | max 120 KIAS | 4 |
| 5 | Canopy .....               | UNLATCH      | 5 |

*Push up and lock in cooling gap position*

**UNINTENTIONAL FLIGHT INTO ICING**

Leave icing area, continue with item 1

**\* INADVERTENT ICING ENCOUNTER & EXCESSIVE ICE ACCUMULATION**

- |   |  |                       |   |
|---|--|-----------------------|---|
| 1 | Pitot heat .....   | ON                    | 1 |
| 2 | Cabin heat & defrost .....   | ON                    | 2 |
| 3 | Power .....  | INCREASE PERIODICALLY | 3 |
| 4 | * De-ice systems.....  | USE as appropriate    | 4 |
| 5 | Alternate air .....  | OPEN as required      | 5 |
| 6 | Emergency windows .....  | OPEN as required      | 6 |
|   | • When pitot heat fails:   |                       |   |
| 7 | Alternate static valve .....   | OPEN                  | 7 |
| 8 | Emergency windows .....  | CLOSED                | 8 |
|   | • * When de-ice system does not work properly:<br>Continue with ICE PROTECTION FAILURE |                       |   |

**\* ICE PROTECTION FAILURE**

- |   |                                  |              |   |
|---|----------------------------------|--------------|---|
| 1 | Airspeed.....                    | MIN 118 KIAS | 1 |
| 2 | Flaps .....                      | UP           | 2 |
| 3 | Slip angle .....                 | MINIMIZE     | 3 |
| 4 | Approach with residual ice ..... | 91 KIAS      | 4 |
| 5 | Landing distance .....           | x 1,4        | 5 |

**COMPLETE ELECTRICAL FAILURE**

\* Leave icing area

- |   |  |                 |   |
|---|--|-----------------|---|
| 1 | Circuit breakers.....                              | CHECK all IN    | 1 |
|   | If no success:                                     |                 |   |
| 2 | Emergency switch .....                             | ON              | 2 |
| 3 | Flood light .....                                  | ON              | 3 |
| 4 | Power .....  | SET             | 4 |
|   | according power lever position and/or engine noise |                 |   |
| 5 | Flaps .....  | VERIFY POSITION | 5 |

Land ASAP

Landing gear may slowly extend

For landing apply "Manual extension of landing gear"

**G1000 CAUTION LIGHTS**

L/R ECU A FAIL	Page 12	ECU A failed
L/R ECU B FAIL	Page 12	ECU B failed
L/R ALTN FAIL	Page 12	Alternator failed
L/R VOLTS LOW	Page 12	Bus voltage too low
L/R COOL LVL	Page 13	Engine coolant level low
PITOT FAIL	Page 13	Pitot heating system failed
PITOT HT OFF	Page 13	Pitot heating system OFF
STALL HT FAIL	Page 13	Stall warning heating failed
STALL HT OFF	Page 13	Stall warning heating OFF
L/R FUEL LOW	Page 13	Main tank fuel qty low
L/R AUX FUEL E	Page 13	L/R auxiliary fuel tank empty
STICK LIMIT	Page 13	Stick limiting system failed
DEICE LVL LO	Page 14	De-icing fluid level low
DEIC PRES LO	Page 14	De-icing pressure low
DEIC PRES HI	Page 14	De-icing pressure high

**Engine instrument indications outside of green range**

COOLANT temperature high/low .....	page 15
OIL temperature high/low.....	page 15
OIL pressure high/low.....	page 15
FUEL temperature high/low.....	page 15
VOLT low.....	page 16
RPM high.....	page 16

**Other abnormal situations**

Both Alternators failed .....	page 16
Hydraulic pump fail or continuous ops...	page 16
AUX fuel transfer fail .....	page 16

**CAUTION ALERTS ON THE G1000****L/R ECU A OR B FAIL ON GROUND**

- Discontinue operation, terminate flight preparation

**L/R ECU A FAIL DURING FLIGHT**

Remark: in case of ECU A fail the system automatically switches to ECU B

- Press ECU TEST button for more than 2 seconds
  - ❖ If ECU A caution message re-appears or cannot be reset:
    - ⇒ Land ASAP
  - ❖ If ECU A caution message can be reset
    - ⇒ Continue flight. Engine must be serviced after LDG

**L/R ECU B FAIL DURING FLIGHT**

- Press ECU TEST button for more than 2 seconds
  - ❖ If ECU B caution message re-appears or cannot be reset:
    - ⇒ Land ASAP
  - ❖ If ECU B caution message can be reset
    - ⇒ Continue flight. Engine must be serviced after LDG

**L/R ALTN FAIL ALTERNATOR FAILED**

- ❖ If in icing conditions:
  - ⇒ Leave icing area as soon as practicable
- Alternator on affected side OFF
- Monitor bus voltage
- Reduce electrical consumers
  - ❖ If both alternators failed:
    - ⇒ See Abnormal Checklist "Both Alternators failed", page 16

**L/R VOLTS LOW BUS VOLTAGE TOO LOW**

Remark: possible reasons are  
- fault in the electrical power supply  
- RPM too low

- Continue with "Engine instrument indications outside of green range"  
- VOLTS low, page 16

**L/R COOL LVL****ENGINE COOLANT LEVEL LOW**

- Monitor annunciations / engine instruments
- Check coolant temperature
- See "Engine instrument indications outside of green range" – COOLANT TEMPERATURE

**PITOT FAIL****STALL HT FAIL****PITOT HT OFF****STALL HT OFF**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>➤ check pitot heat ON, if in icing conditions           <ul style="list-style-type: none"> <li>⇒ expect failure of the pitot-static-system</li> <li>⇒ alternate static valve: OPEN</li> </ul> </li> <li>➤ leave area with icing conditions (see <b>Emergency Checklist page 10</b> "Unintentional flight into icing")</li> </ul> | <ul style="list-style-type: none"> <li>⇒ expect loss of aural stall warning</li> </ul> |
|---|--|

**L/R FUEL LOW****MAIN TANK FUEL QTY LOW**

- Check fuel quantity
  - ❖ If LH & RH quantities show remarkable difference:
    - ⇒ Expect loss of fuel on side with lower indicator
    - ⇒ Use x-feed: Fuel selector to x-feed on side with LOW FUEL indication

**L/R AUX FUEL E****AUXILIARY FUEL TANK EMPTY**

- ⇒ L/R auxiliary fuel pump OFF

**STICK LIMIT****VARIABLE ELEVATOR BACKSTOP SYSTEM FAILED**

- ❖ 1 or 2 power levers set for MORE than 20% load:
  - ⇒ Elevator variable backstop is INOP
  - ⇒ Do not stall in any configuration!
- ❖ 2 power levers set for LESS than 20% load:
  - ⇒ Elevator variable backstop always ACTIVE
  - ⇒ Reduced elevator capacity
  - ⇒ For approach min VREF 76/78 KIAS

**DEICE LVL LO****DE-ICING FLUIDS LEVEL LOW**

- Maximum duration of ice protection in NORMAL mode: 45 min, in HIGH mode: 22 min

**DEIC PRES LO****DE-ICING PRESSURE LOW**

- Switch DE-ICE to HIGH
  - ❖ If DEIC PRES LO light still ON
    - ⇒ PUMP1 / PUMP2: select other pump
    - ⇒ If necessary prime pump by activating windshield pump
    - ❖ If DEIC PRES LO light still ON
      - ⇒ Activate ALTERNATE switch
      - ❖ If DEIC PRES LO light still ON
        - ⇒ Go to **Emergency Checklist page 10** ICE PROTECTION FAILURE
  - ❖ If DEIC PRES LO light OFF
    - ⇒ Continue flight (de-icing fluid flow: 30 lt/hr)
    - ⇒ Monitor ice protection system operation
    - ⇒ Check de-icing fluid level periodically

**DEIC PRES HI****DE-ICING PRESSURE HIGH**

- Possible reduced system performance
- Filter cartridge to be replaced at next scheduled maintenance

## ENGINE INSTRUMENT INDICATIONS OUTSIDE OF GREEN RANGE

### COOLANT temperature high

- Refer to **Emergency Checklist page 3**, "L/R ENG TEMP"

### COOLANT temperature low

*Remark: During low power descent from high altitude coolant temperature may decrease. Consider increasing power.*

- Check G1000 for LOW COOLANT LVL caution light
- ❖ If "LOW COOLANT LVL caution light" ON
  - ⇒ Reduce power on affected engine
  - ⇒ Expect loss of coolant fluid
  - ⇒ Be prepared for an engine failure

### OIL temperature high

- Refer to **Emergency Checklist page 2**, "L/R OIL TEMP"

### OIL temperature low

- Increase power
- Reduce airspeed

### OIL pressure high

- Check oil temperature and coolant temperature
  - ❖ If within green range
    - ⇒ Oil pressure indication may be faulty; watch temperatures
  - ❖ If outside of green range
    - ⇒ Reduce power on affected engine;
    - ⇒ Be prepared for an engine failure; Land ASAP

### OIL pressure low

- Refer to **Emergency Checklist page 2**, "L/R OIL PRES"

### FUEL temperature high

- Refer to **Emergency Checklist page 3**, "L/R FUEL TEMP"

### FUEL temperature low

- Increase power on affected engine
- Reduce airspeed
  - ❖ If not returning to green range:
    - ⇒ Be prepared for an engine failure; Land ASAP

### VOLTS low

- ❖ On ground:
  - ⇒ Check circuit breakers
  - ⇒ Increase RPM
    - ❖ If LOW VOLTS CAUTION still indicated on the G1000:
      - ⇒ Discontinue operation; terminate flight preparation
- ❖ In flight:
  - ⇒ Check circuit breakers
  - ⇒ Switch off unnecessary electrical equipment
    - ❖ If LOW VOLTS CAUTION still indicated on the G1000:
      - ⇒ Apply L/R ALTN FAIL caution procedure, page 12

### RPM high

- Reduce power on affected engine
- Keep RPM in green range with appropriate power lever setting
  - ❖ If problem not solved:
    - ⇒ Refer to **Emergency Checklist page 6** "RPM overspeed"
    - ⇒ Land ASAP

## OTHER ABNORMAL SITUATIONS

### Both alternators failed

- Avionic Master: OFF
- LH/RH Alternator: OFF
- Transponder: STBY
- Gear: DOWN
  - ❖ When down and locked:
    - ⇒ Pull manual gear extension handle
- Stall/Pitot heat: OFF
- All lights: OFF
  - ⇒ Expect battery power to last for 30 minutes
  - ⇒ Expect engine stoppage after this time
    - ⇒ Land ASAP

### Hydraulic pump: failure or continuous operation

- Check gear indication lights
- Prepare for manual landing gear extension

### L/R Auxiliary fuel XFER FAIL

- Both x-fer pumps OFF
- Check fuel quantity
- Use X-feed to keep main tank fuel unbalance within 1 USG
- Switch remaining x-fer pump ON
- Use X-feed to keep main tank fuel unbalance within 1 USG
- Amend flight plan to allow for reduced amount of available fuel

**FMS Initialization – AUX 4 page  
Recommended and compulsory settings**

TIME FORMAT	UTC
NAV ANGLE	AUTO
DIS. SPD	NAUTICAL
ALT. VS	FEET
PRESSURE	HECTOPASCAL
TEMP	CELSIUS
FUEL, FF	GALLONS
POSITION	HDDD°MM.MM'
MAP DATUM	WGS 84
AIRSPACE ALERTS	As desired
ARRIVAL ALERT	As desired
VOICE	As Desired

MFD DATA BAR FIELDS	1 GS
	2 DIS
	3 ETE
	4 MSA
GPS CDI	
SELECTED	AUTO
ILS CDI CAPTURE	If coupled ILS APCH planned: MANUAL
COM CHANNEL SPACING	25,0 KHZ
NEAREST APT	
RWY SURFACE	As desired

Compulsory:

PFD Flight Plan	ETA	ESA

MFD Flight Plan	DTK	DIS

**ARINC 424 Distance Coding:**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>K</b>	<b>L</b>	<b>M</b>	<b>N</b>	<b>O</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>
<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>U</b>	<b>V</b>	<b>W</b>	<b>X</b>	<b>Y</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>