

Checklist für Diamond DA42 Twin Star

Edition #: **14** Edition date: **01.12.2006**

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 are on page 2 of this document

Checklist DA42 Twin Star - LEP

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Comments explaining Edition # 12

This new edition is the result of a major exercise to streamline the checklists for all the 5 Diamond aircraft types (DA40-180, DA40 TDI, DA40-180 G1000, DA40 TDI G1000 and DA42) and to bring them to a common layout and standard.

In addition:

Emergency Checklist

All references to "12.500 ft" in the "Oxygen System" checklists have been changes to "10.000 ft" in order to comply with a revision of the relevant AFM supplement S04.

Comments explaining Edition # 12.1

Emergency Checklist

Page 5, ENGINE TROUBLESHOOTING:

Procedure clarified

Comments explaining Edition # 14

There is no change to Edition 12.1, except to the preamble (terms and conditions of use, disclaimer), and adding the "maximum fuel unbalance" (both in the Normal Checklist and in the "AUX fuel XFER FAIL procedure").

So why Edition # 14?

Publication of the checklists has been taken over by "Diamond Aircraft Flight Training Division". This goes together with the publication of electronic checklist for Diamond aircraft equipped with the G1000.

In the future publication will be through the Diamond Web-site, where checklists can be found for download.

Paper checklists will be published in 2 formats:

- single-page A4: this will give you more flexibility to arrange the printout according your preferences (shrinking, duplex etc.);
- 2 A5-pages placed on one A4 sheet.

Edition # 13 was skipped for obvious reasons: many of you will not like the figure "13".

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 * Check de-ice fluid quantity
- 12 * De-ice HIGH (if required)
- 13 External (* ice) lights ON
- 14 Pitot heat ON
- 15 Check external lights
- 16 Check stall warning
- 17 Check pitot/static tube heat
- 18 * Check de-ice function
- 19 Pitot heat OFF
- 20 External lights OFF
- 21 * De-ice, ice lights OFF
- 22 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

Antennas

Tail

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

Right fuselage

Fuselage right side
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
	<i>Control stick AFT and HOLD</i>		
	<i>Power levers..... MAX</i>		
	<i>Check backstop limit decreasing</i>		
	<i>Power levers.....IDLE</i>		
	<i>Check backstop limit increasing</i>		
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	Power levers (2)	IDLE	45
46	ACL (strobe)	ON	46

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

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 heatON, annunciation + Amps checked		5
6	Pitot heat	OFF	6
7	PFD/MFD	NORMAL MODE	7
8	Avionics master	ON	8

FMS SETUP

I nitialize 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)

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

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

BrakesAPPLY
GearUP
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:

FlapsAPP
GearDOWN, 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_{S0}) Flaps LDG	49	57
Stalling speed (V_S) Flaps APP	53	61
Stalling speed (V_S) clean	56	64
In Ice: + 4 Kt		
Best gliding angle (Flaps UP)	82	
Best angle of climb (V_X)	79	
Best rate of climb (V_Y)	79	
Best rate of climb 1-eng. (V_{YSE})	82	
Min. control speed (V_{MCA})	68	
Min. control speed for TRG(V_{SSE})	82	
Min. control speed (V_{MCA}) in ice	72	
Operating speed in ice	121 - 160	
Cruising climb speed	86	
Rotation speed	72	
Max. flap speed (V_{FE}) Flaps APP	137	
Max. flap speed (V_{FE}) Flaps LDG	111	
Max. LG extension (V_{LOE})	194	
Max. LG extended (V_{LE})	194	
Max. LG retraction (V_{LOR})	156	
	1700 kg	1785 kg
Min. Landing speed Flaps UP	85	86
Min. Landing speed Flaps APP	82	82
Min. Landing speed Flaps LDG	76	78
Min. Go-around speed Flaps UP	82	82
Max. cruising speed (V_{NO})	155	
Never exceed speed (V_{NE})	194	
	up to 1542 kg	above - 1542 kg
Manoeuvring speed (V_A)	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

Cabin smoke, cabin fire abv 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 icingpage 10

Ice protection failurepage 10

Electrical System

Complete electrical failurepage 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 rqr'd
 - ⇒ 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:

- | | | | |
|---|----------------------------------|----------------------|---|
| 1 | Power | INCREASE up to MAX | 1 |
| 2 | Airspeed..... | min Vyse 82 KIAS | 2 |
| 3 | Landing gear | UP | 3 |
| 4 | Flaps | UP | 4 |
| 5 | Engine Master (dead engine)..... | OFF | 5 |
| 6 | Alternator (dead engine) | OFF | 6 |
| 7 | Fuel selector (dead engine)..... | OFF | 7 |
| | In case of fire: | | |
| 8 | Cabin heat & defrost | OFF | 8 |
| 9 | Canopy | UNLATCH if necessary | 9 |

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

If engine started:

- | | | | |
|----|------------------------------------|-------------------|----|
| 8 | Power (affected engine) | MODERATE | 8 |
| 9 | Engine instruments..... | check GREEN RANGE | 9 |
| 10 | Alternator (affected engine) | ON | 10 |

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 lightsTEST 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 lightsCHECK 3 GREENS 9

LANDING GEAR UP LANDING

(Landing gear completely retracted)

- 1 ApproachNORMAL 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 callCONSIDER 4
- 5 Electric master..... OFF 5
- When engine and aircraft stopped:
- 6 Canopy OPEN 6
- Evacuate

ELECTRICAL FIRE ON GROUND

- 1 Mayday callCONSIDER 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 callCONSIDER 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 INTITIATE 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

- 1 Pitot heat ON 1
 - 2 Cabin heat & defrost ON 2
 - 3 Power INCREASE 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

ICE PROTECTION FAILURE

- 1 Airspeed..... MIN 121 KIAS 1
- 2 Flaps MAX APP 2
- 3 Approach with residual ice 82 KIAS 3
- 4 Landing distance x 1,4 4

COMPLETE ELECTRICAL FAILURE

- 1 Circuit breakers.....CHECK all IN 1
- If no success:
- 2 Emergency switch ON 3
 - 3 Flood light ON 4
 - 4 Power SET 5
- according power lever position and/or engine noise
- 5 FlapsVERIFY POSITION 6

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

- 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

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

ENGINE COOLANT LEVEL LOW**PITOT FAIL****STALL HT FAIL****PITOT HT OFF****STALL HT OFF**

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

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**
 - ❖ 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:

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