

Checklist for Diamond DA42 NG

Edition #: **17.4 NG** Edition date: **15.04.2017**

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 # 17.4 are on page 2 of this document

Checklist DA42 NG - LEP

Page	Following	
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(or any higher) is valid		
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Section: Abnormal Checklist		
14	16.5	01.08.2014
15	17.1	01.10.2015
16	16.5	01.08.2014
17	16.5	01.08.2014
18	16.5	01.08.2014
19	16.5	01.08.2014

Comments explaining Edition # 17.2

Normal Procedures:

Page 8:
Approach items for 1-eng approach added
Editorial correction

Emergency Procedures:

Pages 5, 6, 7, 10:
Editorial corrections

Abnormal Procedures

No change

Comments explaining Edition # 17.3

Normal Procedures:

Page 9:
SECURING THE AIRCRAFT: Pitot cover added

Emergency Procedures:

No change

Abnormal Procedures

No change

Comments explaining Edition # 17.4

Normal Procedures:

Page 5:
Engine Start Procedure: "Propeller area ... CLEAR" placed on top

NORMAL CHECKLIST

Diamond DA42 NG



This checklist is compiled according to 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 to 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 Flight Training and/or Diamond Aircraft Industries 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 23 (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 use of fuel additives see AFM

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

PREFLIGHT INTERIOR + EXTERIOR.

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

Vortex generators
Wing leading edge, top- and bottom surface
Tank drain
Stall warning
Tank air vent
Fuel filler cap
Pitot 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
 Cabin air vent inlet
 Vortex generators

 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 gascolator

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	**AUX PUMPS (2)	OFF	3
4	Fuel selectors (2)	ON, safety guard closed	4
5	Power levers (2)	IDLE	5
6	Parking brake	SET	6
7	Alternate Air	CLOSED	7
8	Fuel pumps (2)	OFF	8
9	Manual gear extension handle.....	PUSHED	9
10	Gear selector	DOWN	10
11	Avionic master.....	OFF	11
12	Electric master.....	OFF	12
13	Engine masters (2).....	OFF	13
14	Pitot heat	OFF	14
15	Alternate static	CLOSED	15
16	Alternators (2).....	ON	16
17	VOTER switches (2)	AUTO	17
18	All light switches	OFF	18
19	Emergency switch	OFF/GUARDED	19
20	ELT	ARMED	20
21	Circuit breakers	CHECKED IN	21
22	Flap selector.....	UP	22

If starting with external power:

a	Prop area.....	CHECK CLEAR	a
b	External power	CONNECT	b
23	Electric master.....	ON	23
24	Rudder pedals	ADJUSTED	24
25	Flight controls.....	CHECKED	25
26	Trims.....	CHECKED	26
27	Gear warning + lights, fire detector	TEST	27
28	* De-ice ANNUN TEST.....	ON	28
29	* DEICE LVL LO caution ...	CHECKED ON if applic.	29
30	* Windshield de-icing.....	PUMP 1 + 2 CHECKED	30

Checklist continued next page

CHECK BEFORE ENGINE START continued

31	Flaps full travel -->LDG -->UP	CHECKED	31
32	Variable elevator stop	CHECK	32
	Control stick	AFT and HOLD	
	Power levers	MAX	
	Check stop limit decreasing		
	Power levers	IDLE	
	Check stop limit increasing		
33	Passengers	INSTRUCTED	33
34	Seat belts	FASTENED	34
35	Rear door	CLOSED and LATCHED	35
36	Front Canopy	POS 1 or 2	36
37	G1000	POWERED, ACKNOWLEDGED	37
38	MFD	EIS - 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	EIS - 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**

Propeller area CLEAR
 Engine Master ON
 Annunciations / Eng.Instr. CHECKED
 Glow indication OFF
 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 powerDISCONNECT

Start RH engine, procedure as above**CHECK AFTER ENGINE START**

1	Oil pressure	CHECKED	1
2	RPM 710 +/- 30	CHECKED	2
3	Fuel pumps (2)	check OFF	3
4	Fuel selectors (2)	X-FEED	4
5	Pitot heat	ON, annunciation + Amps checked	5
6	Pitot heat	OFF	6
7	Avionics master	ON	7
8	WX radar (if installed)	SBY	8

FMS SETUP**I** nitalize profile (AUX 4, MAP)**F** light plan**R** adios (COM, NAV, ADF, DME, CDI, BRG ½)**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 annunciations and FD

DISCONN press, check AP off

GA button press, check FD commands climb

FD 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 (2)	SET	14
15	Standby horizon	CHECKED	15
16	Transponder	CODE / MODE CHECKED	16
17	Engine temperatures	CHECKED	17
18	Parking brake	RELEASED	18

19	Taxi Light	Max power 50% until engine temperatures in green range	
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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	Adjustable backrest	..... UPRIGHT	3
4	Rear door	.....CLOSED + LATCHED	4
5	Front canopy	.....CLOSED + LATCHED	5
6	Front baggage doors	.....CHECKED CLOSED	6
7	Door warning light	..... OFF	7
8	Circuit breakers	..... CHECKED	8
9	Electric elevator trim	..... CHECKED, T/O SET	9
10	Fuel selectors (2)	.....CHECKED ON	10
11	Rudder trim	.....AS REQUIRED	11
12	Flaps	..... Short field TKOF: APP Normal TKOF: UP	12
13	Flight controls	..... CHECKED	13
14	Power levers (2)	.....IDLE	14
15	MFD	.....EIS – SYSTEM	15
16	Engine instruments	.....CHECKED	16

Engine temperatures must be in green range before performing ECU test.
(For gearbox min.38° recommended). For warm up max power 50%.

17	VOTER switches (2) A, AUTO, B, AUTO	17
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ECU TEST

ECU test buttons (2) press and hold
 "L/R ECU A/B fail"..... ON
 Props cycling
 "L/R ECU A/B fail"..... OFF
 ECU test button..... release

18	ECU test (2)	..... PERFORMED	18
19	Pitot heat	.....AS REQUIRED	19
20	* Ice protection	.....AS REQUIRED	20
21	Transponder	..... CODE / MODE CHECKED	21
22	Fuel pumps (2)	..... ON	22
23	MFD	..... EIS – DEFAULT	23
24	Parking brake	.....RELEASED	24

End of Checklist

LINE UP PROCEDURE

Landing light..... ON
 Approach sector CLEAR
 Runway..... IDENTIFIED

Available power check (see pg.10)..... PERFORMED

AFTER TAKE-OFF PROCEDURE

Brakes APPLY
 GearUP

Alternate air: OPEN in rain, snow, visible moisture

At safe altitude: FlapsUP

Climb power 92%

CLIMB TO CRUISE CHECK

1	Gear	..... CHECKED UP	1
2	Flaps	..... CHECKED UP	2
3	Fuel pumps (2)	..... OFF	3
4	Climb power	..... SET	4
5	Alternate air	.....AS REQUIRED	5
6	Landing light	..... OFF	6

End of Checklist

DESCENT / APPROACH CHECK

1	Landing data	..... RECEIVED	1
2	Altimeters (2)	..... SET	2
3	COM / NAV / FMS	..... SET	3
4	Safety harnesses	.....FASTENED	4
5	Adjustable backrests	..... UPRIGHT	5
6	Parking brake	..... CHECKED RELEASED	6
7	Rudder trim	.....AS REQUIRED	7
8	Gear warning + lights	..... TEST	8
9	Landing light	..... ON	9

❖ **Normal Approach:**

10	Fuel selectors (2)	.....CHECKED ON	10
11	Fuel pumps (2)	..... ON	11

End of Checklist

1 engine out Approach:

10	Fuel selector (good engine)	.....CHECKED ON	10
11	Fuel pumps (good engine)	..... ON	11

End of Checklist

FINAL CHECK

1	Flaps	..... LDG	1
2	Gear	.....3 GREENS CHECKED	2
3	Rudder trim	..... NEUTRAL	3

GO AROUND PROCEDURE

Power MAX
 Flaps APP
 Positive rate of climb:
 Gear UP
 Flaps UP
 Continue with take-off profile
 At safe altitude:
 Climb power 92%

AFTER LANDING CHECK

When clear of runway

- | | | | | |
|---|--------------------|-------|-------------|---|
| 1 | Alternate air | ..... | CLOSED | 1 |
| 2 | Pitot heat | ..... | OFF | 2 |
| 3 | Flaps | ..... | UP | 3 |
| 4 | Fuel pumps (2) | ..... | OFF | 4 |
| 5 | * De-ice systems | ..... | OFF | 5 |
| 6 | Landing/Taxi light | ..... | AS REQUIRED | 6 |

End of Checklist

PARKING CHECK

- | | | | | |
|---|--|-------|-----------------------|---|
| 1 | Parking brake | ..... | SET | 1 |
| 2 | Power levers (2) | ..... | max 10% for 1 min. | 2 |
| 3 | ELT | ..... | CHECK not activated | 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 |

When engine indications x-ed out red:

- | | | | | |
|----|-----------------|-------|-------------|----|
| 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.
 Cover the pitot probe.
 Attach tie down ropes to mooring points.

All masses and speeds are for ACFT without increase of MTOM, MZFM, MLM

"NG"	"Dash-6"	"NG"	"Dash-6"
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STALLING SPEEDS KIAS for MTOM 1900 kg		
(V _{SO}) Flaps LDG, gear down	62	62
(V _S) Flaps APP, gear down	66	65
(V _S) clean, gear up	69	68
In Ice: + 4-6 KIAS		

OPERATING SPEEDS KIAS for MTOM 1900 kg			
Min. control speed (V _{MCA})	Flaps UP	76	71
	Flaps APP	73	68
Rotation speed	80	76	
Best angle of climb (V _X)	--	--	
Best rate of climb (V _Y)	90		
Best rate of climb 1-eng. (V _{YSE})	85		
Operating speed in ice	118 - 156		
Max. flap speed (V _{FE}) Flaps APP	133		
Max. flap speed (V _{FE}) Flaps LDG	113		
Max. LG extension (V _{LOE})	188		
Max. LG extended (V _{LE})	188		
Max. LG retraction (V _{LOR})	152		
Approach V _{REF} Flaps UP	86	in ice: 94	
Approach V _{REF} Flaps APP	84	in ice: 90	
Approach V _{REF} Flaps LDG	84	in ice: prohib.	
Min. Go-around speed Flaps UP	90		
Max. cruising speed (V _{NO})	151		
Never exceed speed (V _{NE})	188		

Short field TKOF with flaps APP	
76	71
82	77
85	

	up to 1700 kg	1800 kg	1900 kg
Manoeuvring speed (V _O)	112	119	122

MASS	
Max. TKOF mass	1900 kg
Max ZF mass	1765 kg
Max. LDG mass	1805 kg
Empty mass	1450 kg
Max. baggage in NOSE	30 kg
Max. baggage in COCKPIT	45 kg
Max. baggage in rear EXTENSION	18 kg

Available Power Check:

10 sec. power MAX, RPM 2250 – 2300, min. load acc. table below

Altitude [ft]	OAT								
	-35°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C
0						97%	96%	93%	91%
2000	99%					97%	96%	93%	-----
4000						97%	96%	93%	-----
6000						97%	96%	93%	-----
8000				98%	98%	98%	96%	95%	92%
10000	98%	97%	97%	95%	94%	92%	89%	-----	-----

All masses and speeds are for ACFT with increased MTOM, MZFM, MLM

"NG" "Dash-6" "NG" "Dash-6"

STALLING SPEEDS KIAS for MTOM 1999 kg		
(V ₅₀) Flaps LDG, gear down	64	64
(V ₅) Flaps APP, gear down	68	68
(V ₅) clean, gear up	72	72
In Ice: + 4-6 KIAS		

OPERATING SPEEDS KIAS for MTOM 1999 kg			
Min. control speed (V _{MCA})	Flaps UP	76	71
	Flaps APP	73	68
Rotation speed		80	76
Best angle of climb (V _X)		--	--
Best rate of climb (V _Y)		92	85
Best rate of climb 1-eng. (V _{YSE})		85	
Operating speed in ice		118 - 156	
Max. flap speed (V _{FE}) Flaps APP		133	
Max. flap speed (V _{FE}) Flaps LDG		113	
Max. LG extension (V _{LOE})		188	
Max. LG extended (V _{LE})		188	
Max. LG retraction (V _{LOR})		152	
Approach V _{REF} Flaps UP	92	in ice: 97	
Approach V _{REF} Flaps APP	88	in ice: 93	
Approach V _{REF} Flaps LDG	86	in ice: prohib.	
Min. Go-around speed Flaps UP	92		
Max. cruising speed (V _{NO})	151		
Never exceed speed (V _{NE})	188		
	up to	1700 kg	1800 kg
Manoeuvring speed (V _O)		112	119
			1999 kg
			122

Short field TKOF with flaps APP	
76	74
82	77
85	

MASS	
Max. TKOF mass	1999 kg
Max ZF mass	1835 kg
Max. LDG mass	1999 kg
Empty mass	1450 kg
Max. baggage in NOSE	30 kg
Max. baggage in COCKPIT	45 kg
Max. baggage in rear EXTENSION	18 kg

Ice: 1900 kg

"Ice":
Ice accumulation and/or icing conditions

Available Power Check:

10 sec. power MAX, RPM 2250 - 2300, min. load acc. table below

Altitude [ft]	OAT									
	-35°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	
0						97%	96%	93%	91%	
2000	99%					97%	96%	93%	-----	
4000						97%	96%	93%	-----	
6000						97%	96%	93%	-----	
8000				98%	98%	98%	96%	95%	92%	-----
10000	98%	97%	97%	95%	94%	92%	89%	-----	-----	

FMS Initialization - AUX 4 page
Recommended and compulsory settings

TIME FORMAT	UTC
NAV ANGLE	MAGNETIC
DIS. SPD	NAUTICAL
ALT. VS	FEET
TEMP	CELSIUS
FUEL	GALLONS
POSITION	HDDD°MM.MM'
AIRSPACE ALERTS	As desired
ARRIVAL ALERT	As desired
VOICE	As desired

MFD DATA BAR FIELDS	1 GS
	2 DIS
	3 ETE
	4 TRK
GPS CDI	
SELECTED	AUTO
COM CHANNEL SPACING	25,0 KHZ
NEAREST APT	
RWY SURFACE	As desired
MIN LENGTH	As desired

Compulsory:

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

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.



2 engines out landingpage 2

G1000 Warningspage 3

Engine

Engine fire / failure during take-off.....page 6

Engine fire / failure in flightpage 6

Engine troubleshootingpage 7

Engine restart.....page 8

Oscillating RPMpage 9

RPM overspeedpage 9

Landing Gear

Landing with defective main gear tire.....page 9

Landing with defective brakespage 9

Landing gear unsafe warningpage 10

Manual extension of landing gearpage 10

Landing gear up landing.....page 10

Smoke and fire

Engine fire on groundpage 11

Electrical fire on groundpage 11

Electrical fire in flight.....page 11

If Oxygen System is installed

Cabin smoke, cabin fire, loss of oxygen pressure
 above 10.000 ftpage 12

Other Emergencies

Oxygen pressure loss above 10.000 ft.....page 12

Emergency descentpage 12

Suspicion of carbon monoxide.....page 12

Unintentional flight into icing, Inadvertent icing
 encounter & excessive ice accumulationpage 13

Ice protection failurepage 13

Electrical System

Complete electrical failurepage 13

ENGINES OUT LANDING

1	Mayday call	CONSIDER	1
2	Engine masters (2)	OFF	2
3	Alternators (2)	OFF	3
4	Fuel pumps (2)	OFF	4
5	Fuel selectors (2)	OFF	5
6	Avionic master	OFF	6
7	Safety harnesses.....	FASTENED and TIGHT	7

When sure of making landing area:

8	Flaps	APP or LDG, as required	8
9	Approach speed	min 84 KIAS	9
10	Power levers (2).....	IDLE	10

❖ → Gear UP landing

After touchdown:

11	Electric master	OFF	11
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❖ ↓ Gear DOWN landing

11	Gear	DOWN, 3 GREENS CHECKED	11
12	Electric master	OFF	12

G1000 WARNINGS

L/R OIL PRES	Pg. 3	Oil pressure low (red range)
L/R OIL TEMP	Pg. 3	Oil temperature high (red range)
L/R GBOX TEMP	Pg. 4	Gearbox temperature high (red range)
L/R ENG TEMP	Pg. 4	Coolant temperature high (red range)
L/R FUEL TEMP	Pg. 4	Fuel temperature high (red range)
L/R FUEL PRES	Pg. 5	Fuel pressure low
L/R ALTN AMPS	Pg. 5	High Current (red range)
L/R STARTER	Pg. 5	Starter not disengaging
DOOR OPEN	Pg. 5	Unlocked doors
L/R ENG FIRE	Pg. 6 Pg. 6 Pg. 11	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 14

L/R OIL PRES**OIL PRESSURE LOW**

- Reduce power on affected engine
- Be prepared for loss of oil and an engine failure; land at nearest suitable airfield

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 at nearest suitable airfield

L/R GBOX TEMP**GEARBOX TEMPERATURE HIGH**

- Reduce power on affected engine
- Increase airspeed
 - If gearbox temperature still in red range:
 - ⇒ Land at nearest suitable airfield
 - ⇒ Be prepared for an engine failure

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 required
 - ⇒ 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 at nearest suitable airfield
 - ❖ 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 at nearest suitable airfield

L/R FUEL PRES**FUEL PRESSURE LOW**

- Check fuel quantity
- FUEL SELECTOR of affected engine: check ON
- FUEL PUMPS of affected engine: ON
 - If warning remains:
 - ⇒ FUEL PUMPS of affected engine: OFF
 - ⇒ FUEL SELECTOR of affected engine: CROSSFEED
 - If warning still remains:
 - ⇒ Be prepared for an engine failure

L/R ALTN AMPS**HIGH CURRENT**

- Check circuit breakers
- Reduce electrical load and land at nearest suitable airfield

L/R STARTER**STARTER NOT DISENGAGING**

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

DOOR OPEN**UNLOCKED DOORS**

- Reduce airspeed immediately
- Check canopy visually
 - If open:
 - ⇒ airspeed below 140 KIAS, land at nearest suitable airfield
- Check rear door visually
 - If open:
 - ⇒ airspeed below 140 KIAS, land at nearest suitable airfield
 - ⇒ do not try to lock door in flight
- Check front baggage doors visually
 - If one or both open:
 - ⇒ reduce airspeed to keep door(s) in stable position, land at nearest suitable airfield

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 Vmca:**

Perform Vmc recovery procedure

Airspeed above Vmca:

- | | | | |
|---------------------|---------------------------------------|----------------------|----|
| 1 | Power | INCREASE up to MAX | 1 |
| 2 | Airspeed..... | min Vyse 85 KIAS | 2 |
| 3 | Landing gear | UP | 3 |
| 4 | Flaps | UP | 4 |
| 5 | Power lever (affected engine).. | REDUCE TO VERIFY | 5 |
| 6 | Engine Master (affected engine) | OFF | 6 |
| Above safe altitude | | | |
| 7 | Power (life engine) | up to MAX CONTINUOUS | 7 |
| 8 | Alternator (dead engine) | OFF | 8 |
| 9 | Fuel pumps (dead engine) | OFF | 9 |
| 10 | Fuel selector (dead engine)..... | OFF | 10 |
| In case of fire: | | | |
| 11 | Cabin heat & defrost | OFF | 11 |
| 12 | Canopy | UNLATCH if necessary | 12 |

Max airspeed 117 KIAS

ENGINE TROUBLESHOOTING

❖ If

L OR **R**
ECU A AND B FAIL
 simultaneously

and ALL of the following conditions exist:
 ○ indicated **LOAD** unchanged
 ○ perceived **thrust is reduced**
 ○ engine **noise level changes or engine running rough**

- 1 POWER lever IDLE for 1 second 1
- 2 POWER lever slowly increase to 1975 RPM 2
 - If engine shows power loss during the POWER lever increase
- 3 POWER lever idle for 1 second 3
- 4 POWER lever slowly increase 4
 - **stop prior to the RPM where former engine power loss was observed**

Do not increase the POWER lever past the propeller speed of 1975 RPM or the setting determined in step 4. An increase of engine power beyond this setting leads into another power loss. With this power setting the engine can provide up to 65% at the maximum propeller speed of 1975 RPM

- 5 Land at nearest suitable airfield..... 5

End of Checklist

❖ Otherwise:

- 1 Power lever (good engine). INCREASE up to MAX 1
- 2 Circuit breakers..... CHECK/RESET 2
 - If engine OK: continue, land ASAP End of Checklist
- 3 VOTER switch SWAP between A and B 3
 - If engine OK: continue, land ASAP End of Checklist
- 4 VOTER switch AUTO 4
 - If engine OK: continue, land ASAP End of Checklist
- 5 Fuel pumps (affected engine)..... CHECK OFF 5
- 6 Fuel selector (affected engine) CROSSFEED 6
 - If engine OK: continue, End of Checklist
- 7 Fuel selector (affected engine) ON or CROSSFEED 7
- 8 Alternate air OPEN 8
 - If engine OK: land as soon as practicable End of Checklist
 - If engine still not OK: Be prepared for ENGINE FAILURE IN FLIGHT, land ASAP End of Checklist

ENGINE RESTART

Reason for shutdown must be ascertained

Maximum restart altitude:
18.000 ft PA for immediate restart
10.000 ft PA for restart within 2 minutes
NO restart:
If engine shut down for more than 2 minutes

❖

Windmilling restart

(only possible if unfeathering accumulator is installed)

Airspeed min 125 KIAS - max 145 KIAS

❖

Restart with starter motor:

Airspeedmax 100 KIAS
 or prop stationary, whichever is lower

- 1 Power (affected engine) IDLE 1
- 2 Fuel selector (affected engine)ON 2
- 3 Alternate air AS REQUIRED 3
- 4 Alternator (affected engine)ON 4
- 5 Engine Master (affected engine)ON 5

For restart with starter motor:

- 6 StarterENGAGE when prop stationary 6
- 7 Circuit breakers.....CHECK/RESET if necessary 7

If engine started:

- 8 Power (affected engine) MODERATE 8
- 9 Engine instruments.....check GREEN RANGE 9

OSCILLATING RPM

- 1 Power lever change setting 1
 - If no success:
 - Check G1000 for ECU FAIL caution
 - If ECU FAIL caution indicated:
- 2 VOTER switchunaffected ECU 2
 - If no success:
- 3 VOTER switch AUTO 3
 - Land at nearest suitable airfield

RPM OVERSPEED

- 1 Power setting REDUCE 1
 - If no success:
 - Check G1000 for ECU FAIL caution
 - If ECU FAIL caution indicated:
- 2 VOTER switchunaffected ECU 2
 - If no success:
- 3 VOTER switch AUTO 3
 - Land at nearest suitable airfield
 - Be prepared for ENGINE FAILURE IN FLIGHT

LANDING WITH DEFECTIVE MAIN GEAR TIRE

- 1 ATCINFORMED 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 152 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 152 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 selectorDOWN 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
 - If time/situation allows: just before touchdown:
- 2 Power lever IDLE 2
- 3 Engine Masters (2) OFF 3
- 4 Fuel pumps (2) OFF 4
- 5 Fuel selectors (2) OFF 5
 - Immediately after touchdown:
- 6 Electric Master OFF 6

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 117 KIAS*
Land at nearest suitable airfield

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 at nearest suitable airfield

CABIN FIRE ABOVE 10.000 FT

- 1 Oxygen PUSH OFF 1
- 2 Emergency descent INTITIAE 2
- Land at nearest suitable airfield

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 at nearest suitable airfield

If Oxygen System is installed

If Oxygen System is installed

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 117 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 | De-ice system..... | HIGH +MAX | 1 |
| 2 | Pitot heat | ON | 2 |
| 3 | Cabin heat & defrost | ON | 3 |
| 4 | Alternate air | OPEN | 4 |
| 5 | Windshield de-ice | USE AS APPROPRIATE | 5 |
| 6 | Emergency windows | OPEN as required | 6 |

- * When de-ice system does not work properly:
Continue with ICE PROTECTION FAILURE

*** ICE PROTECTION FAILURE**

- | | | | |
|---|----------------------------------|-----------------------------|---|
| 1 | Airspeed..... | 118 to 156 KIAS until final | 1 |
| 2 | Flaps | limited to APP position | 2 |
| 3 | Approach with residual ice | min 90/93 KIAS | 3 |
| 4 | Landing distance | flaps LDG value + 20% | 4 |

COMPLETE ELECTRICAL FAILURE

* Leave icing area

- | | | | |
|---|--|-----------------|---|
| 1 | Circuit breakers..... | CHECK all IN | 1 |
| | ● If no success: | | |
| 2 | Emergency switch | ON | 2 |
| 3 | Flood light, if necessary..... | ON | 3 |
| 4 | Power | SET | 4 |
| | according power lever position and/or engine noise | | |
| 5 | Flaps | VERIFY POSITION | 5 |
| | Land at nearest suitable airfield | | |
| | Landing gear may slowly extend | | |
| | For landing apply "Manual extension of landing gear" | | |

G1000 CAUTION LIGHTS

L/R FUEL LOW	Page 14	Main tank fuel qty low
L/R AUX FUEL E	Page 14	L/R auxiliary fuel tank empty
L/R ECU A FAIL	Page 15	Fault in ECU A
L/R ECU B FAIL	Page 15	Fault in ECU B
L/R VOLTS LOW	Page 16	Bus voltage too low
L/R ALTN FAIL	Page 16	Alternator failed
L+R ALTN FAIL	Page 16	Both Alternators failed
STICK LIMIT	Page 16	Stick limiting system failed
L/R COOL LVL	Page 17	Engine coolant level low
PITOT FAIL	Page 17	Pitot heating system failed
PITOT HT OFF	Page 17	Pitot heating system OFF
STALL HT FAIL	Page 17	Stall warning heating failed
STALL HT OFF	Page 17	Stall warning heating OFF
DEICE LVL LO	Page 17	De-icing fluid level low
DEIC PRES LO	Page 17	De-icing pressure low
DEIC PRES HI	Page 17	De-icing pressure high

Engine instrument indications outside of green range

- COOLANT temperature high/low page 18
- OIL temperature high/low..... page 18
- OIL pressure high/low..... page 18
- FUEL temperature high/low..... page 18
- VOLT low..... page 19
- RPM high..... page 19

Other abnormal situations

- Hydraulic pump fail or continuous ops... page 19
- AUX fuel transfer fail page 19

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

- Check fuel quantity
- Avoid uncoordinated flight
- If LH & RH quantities show remarkable difference:
 - ⇒ Expect loss of fuel on side with lower indicaton
 - ⇒ Check fuel pumps OFF
 - ⇒ 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

L/R ECU A or B FAIL ON GROUND

- 1 VOTER switch.....check AUTO 1
- 2 Other ECU caution check OFF 2

Clearing procedure:

- 3 VOTER switch..... set to failed ECU 3
Wait 5 seconds
- 4 Voter switch AUTO 4
 - If ECU caution persists terminate flight preparation

L/R ECU A or B FAIL DURING FLIGHT

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

- 1 Alternate Air OPEN 1
- 2 Fuel pumps LH/RH..... ON 2
- 3 Circuit breakers CHECK/RESET if necessary 3
- 4 VOTER switch check AUTO 4

- If ECU caution persists:

⇒ ECU caution clearing procedure may be used:

BUT: In case of negative 1-eng climb rate only if a suitable landing site is available within gliding distance. Be prepared for loss of engine power.

- 5 Safe altitude..... CHECK 5
- 6 Airspeed 85 KIAS 6
- 7 Flaps check UP 7
- 8 Landing gear check UP 8
- 9 Other ECU caution check OFF 9
- 10 VOTER switch set to failed ECU 10
Wait 5 seconds
- 11 Voter switch AUTO 11

- If ECU caution persists:

- Land at nearest suitable airfield
- If additional engine problems are observed:
 - Go to **Emergency Checklist page 4 ENGINE TROUBLESHOOTING**

L OR R**ECU A FAIL and ECU B FAIL****SIMULTANEOUSLY**

- Go to **Emergency Ckl page 4 ENGINE TROUBLESHOOTING**

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

Remark: possible reasons are
- fault in the electrical power supply
- Alternators OFF

- Continue with "Engine instrument indications outside of green range" – VOLTS low, page 19

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", ↓

L ALTN FAIL +**BOTH ALTERNATORS FAILED****R ALTN FAIL**

Reduce all electrical equipment to a minimum:

- 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

STICK LIMIT**VARIABLE ELEVATOR STOP****SYSTEM FAILED**

- ❖ → 1 or 2 power levers set for MORE than 20% load:
 - ⇒ Elevator variable stop is INOP
 - ⇒ Do not stall in any configuration!
- ❖ → 2 power levers set for LESS than 20% load:
 - ⇒ Elevator variable stop always ACTIVE
 - ⇒ Reduced elevator capacity
 - ⇒ For approach min VREF 86 KIAS

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 ⇒ expect loss of airspeed indication | <ul style="list-style-type: none"> ⇒ expect loss of aural stall warning |
|---|--|
- leave area with icing conditions (see **Emergency Checklist page 13**, "Unintentional flight into icing")

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 13** 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 4**, "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 3**, "L/R OIL TEMP"

OIL temperature low

- Increase power
- Reduce airspeed

OIL pressure high

- ❖ → On ground during warm up with low oil temperature
 - Reduce power until oil press. green, continue warm up at reduced power
- ❖ → During flight
 - Check oil temperature
 - Check coolant temperature
 - ❖ → If temperatures within green range
 - ⇒ Oil press. indication may be faulty; watch temperatures
 - ❖ → If temperatures outside of green range
 - ⇒ Reduce power on affected engine;
 - ⇒ Land at nearest suitable airfield, be prepared for engine fail

OIL pressure low

- Refer to **Emergency Checklist page 3**, "L/R OIL PRES"

FUEL temperature high

- Refer to **Emergency Checklist page 4**, "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 at nearest suitable airfield

VOLTS low

❖ On ground:

- ⇒ Check alternators ON
- ⇒ Check circuit breakers
 - If LOW VOLTS CAUTION still indicated on the G1000:
 - ⇒ Discontinue operation; terminate flight preparation

❖ In flight:

- ⇒ Check alternators ON
- ⇒ 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 16

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 9** "RPM overspeed"
 - ⇒ Land at nearest suitable airfield

OTHER ABNORMAL SITUATIONS**Hydraulic pump: failure or continuous operation**

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

L/R Auxiliary fuel XFER FAIL

- Both AUX PUMPS: OFF
- Check fuel pumps OFF
- Check fuel quantity
- Use X-feed to keep main tank fuel unbalance within 1 USG
- Switch remaining AUX 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