Checklist for Diamond DA42 NG / -VI

Edition #: **19.1 NG / -VI** Edition date: **20.02.2019**

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 # 19.1 are on page 2 of this document

Checklist DA42 NG / -VI - LEP

Page	Following Edition (or any higher) is valid	Date
Section : Normal Checklist		
1	15.2	15.12.2011
2	17	01.03.2015
3	15.2	15.12.2011
4	17	01.03.2015
5	17.4	15.04.2017
6	17	01.03.2015
7	17.1	01.10.2015
8	17.2	15.03.2016
9	17.3	15.03.2017
10	16	15.02.2019
11	16.5	01.08.2014

Section: Emergency Checklist		
1	18	15.12.2017
2	18	15.12.2017
3	18	15.12.2017
4	18	15.12.2017
5	18	15.12.2017
6	18	15.12.2017
7	18	15.12.2017
8	18	15.12.2017
9	18.1	15.03.2018
10	18	15.12.2017
11	18	15.12.2017
12	18	15.12.2017
13	18	15.12.2017
14	18	15.12.2017
Section: Abnormal Checklist		
15	18	15.12.2017
16	18.1	15.03.2018
17	18	15.12.2017
18	19.1	15.02.2019
19	18	15.12.2017
20	19.1	15.02.2019

Comments explaining Edition # 18

Normal Procedures:
No change

Emergency Procedures:
Pages rearranged and renumbered

Major changes:

Page 5: L/R STARTER
Pages 6/7: Engine Fire
Page 9: Engine Restart

Abnormal Procedures:
Pages renumbered

Comments explaining Edition # 18.1

Normal Procedures:
No change

Emergency Procedures:
Page 9: Engine Restart speeds corrected

Abnormal Procedures:
Pages 16, 18, 20: Editorial correction

Comments explaining Edition # 19.1

Normal Procedures:
Page 10: (V_{YSE}) – ”In Ice” speeds added
Page 10: Min Flight Mass - Editorial correction

Emergency Procedures:
Editorial correction

Abnormal Procedures:
Editorial correction

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 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 - ENGINE	38
39	Fuel Quantity..... CHECKED, RESET/SET if requ.	39
40	Fuel temperature .....CHECKED	40
41	Total time in service ..... NOTED	41
42	* DEIC PRESS LO caution .....CHECKED ON	43
43	* De-ice ANNUN TEST.....OFF	44
44	Start key .....INSERTED	45
45	Power levers (2) .....IDLE	46
46	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 power .....DISCONNECT

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) ..... VERIFY STBY	8

FMS SETUP

***I** nitialize 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

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

Max power 50% until engine temperatures in green range

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	Normal TKOF: UP Short field TKOF: APP	12
13	Flight controls	CHECKED	13
14	Power levers (2)	IDLE	14
15	MFD	EIS – ENGINE	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

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
Gear ..... UP
Alternate air: OPEN in rain, snow, visible moisture
At safe altitude: Flaps ..... UP
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	MFD ..... EIS – ENGINE	4
5	MFD ..... 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:

10	Electric Master ..... OFF	10
11	Interior light.....CHECKED OFF	11
12	Start key ..... REMOVED	12

End of Checklist

SECURING THE AIRCRAFT

Use chocks, consider parking brake released.
Cover the pitot probe.
Consider 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"
STALLING SPEEDS KIAS for MTOM 1900 kg				
(V_{S0}) 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	**Short field TKOF with flaps APP**	
Min. control speed (V_{MCA}) Flaps APP	73	68		
Rotation speed	80	76	76	71
Best angle of climb (V_X)	--	--	82	77
Best rate of climb (V_Y)	90		85	
Best rate of climb 1-eng. (V_{YSE})	85			
(V_{YSE}) – In ice up to 1900kg	88			
(V_{YSE}) – In ice above 1900kg	90			
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			

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 -Min Flight Mass	*1450 kg*	
Max. baggage in NOSE	30 kg	
Max. baggage in COCKPIT	45 kg	45 kg
Max. baggage in rear EXTENSION	18 kg	

Available Power Check:

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

	OAT								
Altitude [ft]	**-35°C**	**-20°C**	**-10°C**	**0°C**	**10°C**	**20°C**	**30°C**	**40°C**	**50°C**
0	99%					97%	96%	93%	91%
2000						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_{S0}) Flaps LDG, gear down	64	64		
(V_S) Flaps APP, gear down	68	68		
(V_S) 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	**Short field TKOF with flaps APP**	
Min. control speed (V_{MCA}) Flaps APP	73	68		
Rotation speed	80	76	76	74
Best angle of climb (V_X)	--	--	82	77
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	1999 kg
Manoeuvring speed (V_O)	112	119	122

MASS		
Max. TKOF mass	1999 kg	
Max ZF mass	1835 kg	
Max. LDG mass	1999 kg	Ice: 1900 kg
Empty mass	*1450 kg*	
Max. baggage in NOSE	30 kg	
Max. baggage in COCKPIT	45 kg	45 kg
Max. baggage in rear EXTENSION	18 kg	

"Ice":
Ice accumulation and/or icing conditions

Available Power Check:

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

	OAT								
Altitude [ft]	**-35°C**	**-20°C**	**-10°C**	**0°C**	**10°C**	**20°C**	**30°C**	**40°C**	**50°C**
0	99%					97%	96%	93%	91%
2000						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%	-----	-----

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.

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

❖ Gear DOWN landing

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

G1000 WARNINGS

L/R ALTN AMPS	Pg. 3	High Current (red range)
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 STARTER	Pg. 5	Starter not disengaging
DOOR OPEN	Pg. 5	Unlocked doors
L/R ENG FIRE	Pg. 6	Engine fire on ground, during take-off, in flight

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

Abnormal Checklist starts at page 15

L/R ALTN AMPS

HIGH CURRENT

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

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

- 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 STARTER

STARTER NOT DISENGAGING

On ground:

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

In flight:

- ⇒ Pull LDG LT/START CB (RH Main Bus; push again when LDG light needed)
- ⇒ Watch engine cowling and instruments
- ⇒ Land at nearest suitable airfield

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

G1000 WARNING

L/R ENG FIRE OR ENGINE FIRE OBSERVED

❖→ **On ground:**

1	Engine masters (2)	OFF	1
2	Fuel selectors (2)	OFF	2
3	Mayday call	CONSIDER	3
4	Electric master	OFF	4
	When engine and aircraft stopped:		
5	Canopy	OPEN	5
	Evacuate		

❖→ **During Take-off**

1	Cabin heat & defrost.....	OFF	1
2	Emergency windows (2).....	OPEN	2
3	Proceed according		
	ENGINE FAILURE DURING TAKE-OFF → page 7…		3

G1000 WARNING

L/R ENG FIRE

- **In flight:**
  - ⇒ Evaluate the situation
    - If Engine Fire observed:
      - ⇒ Proceed according
        ENGINE FIRE IN FLIGHT → page 7

ENGINE FAILURE DURING TAKE-OFF

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

ENGINE FAILURE DURING FLIGHT AND ENGINE SHUTDOWN

If airspeed below Vmca:

Perform Vmc recovery procedure

Airspeed above Vmca:

1	Power	INCREASE up to MAX	1
2	Airspeed	min BLUE LINE	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

ENGINE FIRE IN FLIGHT

1	Cabin heat & defrost	OFF	1
2	Canopy	UNLATCH if necessary	2
	Max airspeed 117 KIAS		
3	Shut down the engine according		

⇧ **ENGINE SHUT DOWN**-procedure ⇧

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

	With starter	***Windmilling*** ***(demonstration and training not approved)***
15.000 ft PA - 10.000 ft PA	***Immediate restart Max 100 KIAS or stationary prop, whichever is lower. Do not engage starter when prop is windmilling.***	***Immediate restart Min 125 KIAS Max 145 KIAS***

Up to 10.000 ft PA	OAT below –15°C: max. engine OFF time 2 minutes	
	OAT -15 to -5°C: max. engine OFF time 5 minutes	
	OAT above -5°C: max. engine OFF time 10 minutes	
	Max 100 KIAS or stationary prop, whichever is lower. Do not engage starter when prop is windmilling.	***Min 125 KIAS Max 145 KIAS***

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 Starter ..... ENGAGE 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 switch ..... unaffected 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 switch ..... unaffected 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 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 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 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

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

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

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"

If Oxygen System is installed

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..... INTITIATE 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

EMERGENCY DESCENT

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

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

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

G1000 CAUTION LIGHTS

L/R FUEL LOW	Page 15	**Main tank fuel qty low**
L/R AUX FUEL E	Page 15	**L/R auxiliary fuel tank empty**
L/R ECU A FAIL	Page 16	**Fault in ECU A**
L/R ECU B FAIL	Page 16	**Fault in ECU B**
L/R VOLTS LOW	Page 17	**Bus voltage too low**
L/R ALTN FAIL	Page 17	**Alternator failed**
L+R ALTN FAIL	Page 17	**Both Alternators failed**
STICK LIMIT	Page 17	**Stick limiting system failed**
L/R COOL LVL	Page 18	**Engine coolant level low**
PITOT FAIL	Page 18	**Pitot heating system failed**
PITOT HT OFF	Page 18	**Pitot heating system OFF**
STALL HT FAIL	Page 18	**Stall warning heating failed**
STALL HT OFF	Page 18	**Stall warning heating OFF**
DEICE LVL LO	Page 18	**De-icing fluid level low**
DEIC PRES LO	Page 18	**De-icing pressure low**
DEIC PRES HI	Page 18	**De-icing pressure high**

Engine instrument indications outside of green range

Other abnormal situations

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 termimate 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..... Min. 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 8 ENGINE TROUBLESHOOTING**

L OR R ECU A FAIL and ECU B FAIL SIMULTANEOUSLY

➢ **Go to Emergency Ckl page 8 ENGINE TROUBLESHOOTING**

L/R VOLTS 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 20**

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 +
R ALTN FAIL

BOTH ALTERNATORS FAILED

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 V_{REF} 86 KIAS**

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 see page 19

PITOT FAIL

PITOT HT OFF

STALL HT FAIL

STALL HT OFF

- check pitot heat ON, if in icing conditions

⇒ expect loss of airspeed indication

⇒ expect loss of aural stall warning

- leave area with icing conditions (see Emergency Checklist page 14, "Unintentional flight into icing")

DEICE LVL LO

DE-ICING FLUIS LEVEL LOW

- Maximum duration of ice protection in NORMAL mode: 30 min, in HIGH mode: 15 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 14 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 faiure; 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 17

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 10 "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