Flight Training Division

Checklist for Diamond DA42 Twin Star

Edition #: **16** Edition date: **01.12.2012**

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 # 16 are on page 2 of this document

Checklist DA42 Twin Star - LEP

Page	Following Edition (or any higher) is valid	Date
Section : Normal Checklist		
1	14	01.12.2006
2	15.2	15.02.2012
3	14.1	01.07.2008
4	15.2	15.02.2012
5	16	01.12.2012
6	16	01.12.2012
7	14	01.12.2006
8	15.2	15.02.2012
9	14	01.12.2006
10	15.2	15.02.2012

Section: Emergency Checklist		
1	15.2	15.02.2012
2	15.2	15.02.2012
3	15.2	15.02.2012
4	15.2	15.02.2012
5	15.2	15.02.2012
6	15.2	15.02.2012
7	15.2	15.02.2012
8	15.2	15.02.2012
9	15.2	15.02.2012
10	15.2	15.02.2012
11	15.2	15.02.2012
12	15.2	15.02.2012
13	15.2	15.02.2012
Section: Abnormal Checklist		
14	15.2	15.02.2012
15	15.2	15.02.2012
16	15.2	15.02.2012
17	15.2	15.02.2012
18	15.2	15.02.2012
19	15.2	15.02.2012

Comments explaining Edition # 15.2

Normal Checklist:

Page 2:
Check of structural temp. indicator added

Page 4:
"Lights" added in gear warning test

Page 8:
"Lights" added in gear warning test

Page 10:
"Increased mass" options added

Emergency Procedures and Abnormal Procedures:

General:
in conformity with the AFM "Land ASAP" (land as soon as possible) changed to "land at nearest suitable airfield" in most procedures.

"Landing gear up landing" modified

Graphic layout for both checklists updated

Comments explaining Edition # 16

Normal Checklist:

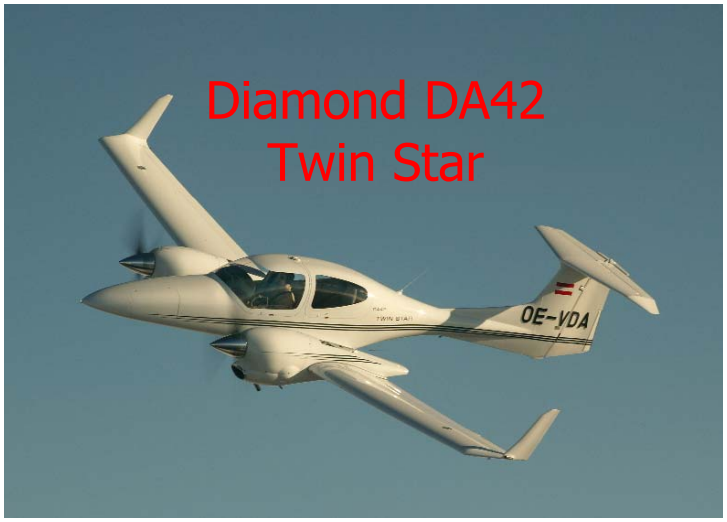
Page 5,6:
EIS setting for engine starting procedure revised.

The SOPs developed for our TRTO when the G1000 was introduced called for selecting "reversionary mode" before engine start.
The idea was to have two engine instrument displays (one on the PFD, the other on the MFD), so that both the oil pressure rise and the electrical data (volts, amperes) could be watched on an analogue scale.
Display mode was then switched back to "normal mode" during the check after engine start.

Experience, however, did show that this procedure frequently caused trainees to expect engine data display on the PFD even later, and they expressed their "disappointment" not to see these data on the PFD.

We now abandoned this procedure, and (in normal operation) we use the EIS display on the MFD only, also during engine start.
By selecting SYSTEM display all engine parameters can be monitored. Reaching minimum oil pressure is easily recognized when the red indication extinguishes, and this display also provides gearbox temperature.

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
*** with option 'increased ZFM' and actual ZFM > 1650 kg

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
Check battery voltage
8 Gear 3 greens CHECKED
9 Check fuel quantity + temp
10 ** Fuel transfer ON – if L/R AUX FUEL E caution ON:
AUX tank(s) empty
Fuel transfer OFF
11 External lights ON
12 Pitot heat ON
13 * Check de-ice fluid quantity
14 * Select de-ice pump 1
15 * De-ice HIGH/MAX
16 * Check DEIC PRES LO+HI out
17 * Select de-ice pump 2
18 * Check DEIC PRES LO+HI out
19 * Ice lights ON
20 * Check de-ice function
21 Check external lights
22 Check stall warning
23 Check pitot/static tube heat
24 Pitot heat OFF
25 External lights OFF
26 * De-ice, ice lights OFF
27 Electric Master OFF

PREFLIGHT EXTERIOR

Canopy left side

Left main gear
Strut (min 4cm bare piston) & downlock
Tire condition, pressure (4,5 bar), position mark
Brake, hydraulic line
Gear door & linkage
*** structural temp.indicator: no "red 55"

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

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

Left fuselage
Step
Rear cabin door
Fuselage left side
Static source
Antennas

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

Right fuselage
Fuselage right side
Static source
Rear window
Step

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

Canopy right side

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

Ventilation air inlet

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

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

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

Chocks removed
Tow bar removed

CHECK BEFORE ENGINE START

1	Preflight check	COMPLETED	1
2	Baggage and tow bar	SECURED	2
3	Fuel selectors (2)	ON, safety guard closed	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 + lights, fire detector	TEST	25
26	* De-ice ANNUN TEST	ON	26
27	* DEICE LVL LO caution	CHECKED ON if applic.	27
28	* Windshield de-icing	PUMP 1 + 2 CHECKED	28

Checklist continued next page

CHECK BEFORE ENGINE START continued

29	Flaps	LDG	29
30	Variable elevator backstop	CHECK	30

Control stick ..... AFT and HOLD
Power levers ..... MAX
Check backstop limit decreasing
Power levers ..... IDLE
Check backstop limit increasing

31	Flaps	UP	31
32	Passengers	INSTRUCTED	32
33	Seat belts	FASTENED	33
34	Rear door	CLOSED and LATCHED	34
35	Front Canopy	POS 1 or 2	35
36	G1000	POWERED, ACKNOWLEDGED	36
37	MFD	EIS – FUEL	37
38	Fuel Quantity	CHECKED, RESET/SET if requ.	38
39	Fuel temperature	CHECKED	39
40	Total time in service	NOTED	40
41	MFD	EIS – SYSTEM	41
42	* DEIC PRESS LO caution	CHECKED ON	42
43	* De-ice ANNUN TEST	OFF	43
44	Start key	INSERTED	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
Max 1400RPM ..... until Oil > 50°C and Coolant > 60°C

4	Fuel selectors (2)	X-FEED	4
5	Pitot heat	....ON, annunciation + Amps checked	5
6	Pitot heat	OFF	6
7	Avionics master	ON	7

FMS SETUP

***I** nitialize profile (AUX 4, MAP)*
***F** light plan*
***R** adios (COM, NAV, ADF, DME, CDI, BRG 1/2)*
***P** erformance (speed bugs; Flight ID if applicable)*

8	FMS setup	COMPLETED	8

AUTOPILOT TEST

DISCONN press, check electric trim not working
AP ON, check overpowering servos
DISCONN press, check AP off

9	Autopilot test	COMPLETED	9
10	Flood light	CHECKED, ON as required	10
11	Position lights	ON as required	11
12	Fuel Selectors (2)	ON	12
13	Altimeters (3)	SET	13
14	Standby horizon	CHECKED	14
15	Transponder	CODE / MODE CHECKED	15
16	Parking brake	RELEASED	16

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

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

CLIMB TO CRUISE CHECK

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

End of Checklist

PERIODICALLY DURING CRUISE

***F**uel **R**adio **E**ngine **D**irection **A**ltitude*

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 + lights	TEST	7

End of Checklist

BEFORE LANDING PROCEDURE

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

On final when landing assured:

FINAL CHECK

1	Flaps	LDG	1
2	Gear	3 GREENS CHECKED	2

GO AROUND PROCEDURE

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

AFTER LANDING CHECK

When clear of runway

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

End of Checklist

PARKING CHECK

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

End of Checklist

SECURING THE AIRCRAFT

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

OPERATING SPEEDS KIAS for MTOM 1785

	1400 kg	1785 kg
Stalling speed (V_{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**
Approach V_{REF} Flaps UP	85	86
Approach V_{REF} Flaps APP	82	82
Approach V_{REF} 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

		Increased		
		LM	ZFM	LM + ZFM
Max. TKOF mass	1785 kg			
Max. ZF mass	1650 kg		1674 kg	1730 kg
Max. LDG mass	1700 kg	1785 kg		1785 kg
Empty mass	*1295 kg*			
Max. baggage in NOSE	30 kg			
Max. baggage in COCKPIT	45 kg			
Max. baggage in rear EXTENSION	18 kg			
Max. total of COCKPIT + EXTENSION	45 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.

2 ENGINES OUT LANDING

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

When sure of making landing area:

7	Flaps	APP or LDG, as required	7
8	Approach speed	min (APP)82/(LDG)78 KIAS	8

❖→ Gear UP landing

After touchdown:

9	Electric master	OFF	9

❖ Gear DOWN landing

9	Gear	DOWN, 3 GREENS CHECKED	9
10	Electric master	OFF	10

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 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 rqrd
      - ⇒ 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 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
ENGINE FIRE

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
	In case of fire:		
7	Cabin heat & defrost	OFF	7

ENGINE FAILURE
ENGINE FIRE

IN FLIGHT

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	Power lever (affected engine)	IDLE	5
6	Engine Master (affected engine)	OFF	6
	Above safe altitude		
7	Alternator (dead engine)	OFF	7
8	Fuel selector (dead engine)	OFF	8
	In case of fire:		
9	Cabin heat & defrost	OFF	9
10	Canopy	UNLATCH if necessary	10

Max airspeed 120 KIAS

ENGINE TROUBLESHOOTING

1	Power lever (good engine) INCREASE up to MAX	1
2	Power lever (affected engine)..... IDLE	2
	• If in icing conditions:	
3	Alternate air ..... OPEN	3
4	Fuel quantity ..... CHECK	4
5	AUX transfer (affected engine) .....CONSIDER	5
6	Fuel selector (affected engine) .... ON or X-FEED	6
7	ECU swap (affected engine) ..... ECU B	7

→ If successful: land ASAP

If unsuccessful:

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

→ If successful: land ASAP

If unsuccessful:
continue with ENGINE FAILURE IN FLIGHT checklist

ENGINE RESTART

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

→ If engine started:

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

**) TAE 125-01 Centurion 1.7 engine*

→ If engine did not start (re-feathering procedure):
(One attempt only, expect altitude loss of up to 500 ft)

9	Airspeed..... 82 KIAS	9
10	Power lever (affected engine)..... MAX	10
11	Engine Master (affected engine) .....CHECK ON	11
12	Airspeed..... INCREASE to achieve 1800 RPM	12
13	Engine Master (affected engine) ..... OFF	13
14	Airspeed..... REDUCE to 82 KIAS	14
15	Propeller .....CHECK FEATHERED	15
16	Alternator (dead engine) ..... OFF	16
17	Fuel selector (dead engine)..... OFF	17

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 at nearest suitable airfield

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 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 156 KIAS 1

In cold temperature:

2 Airspeed ..... max 110 KIAS 2
3 Gear selector ..... RECYCLE 3

❖→ If landing gear **extension** unsuccessful:

Continue with MANUAL EXTENSION

❖ If landing gear **retraction** unsuccessful:

Consider flight with landing gear down

MANUAL EXTENSION OF LANDING GEAR

1 Airspeed ..... max 156 KIAS 1
2 Gear indicator lights ..... TEST 2
3 Electric master ..... CHECK ON 3
4 Bus voltage ..... CHECK NORMAL 4
5 Circuit breaker ..... CHECK 5
6 Gear selector ..... DOWN 6
7 Manual extension handle ..... PULL 7

If necessary

8 Airspeed ..... max 110 KIAS 8

Apply moderate yawing

9 Gear indicator lights ..... CHECK 3 GREENS 9

LANDING GEAR UP LANDING

(Landing gear completely retracted)

1 Approach ..... NORMAL 1

If time/situation allows: just before touchdown:

2 Power lever ..... IDLE 2
3 Engine Masters (2) ..... OFF 3
4 Fuel selectors (2) ..... OFF 4

Immediately after touchdown:

5 Electric Master ..... OFF 5

ENGINE FIRE ON GROUND

1	Power levers (2)	IDLE	1
2	Engine masters (2)	OFF	2
3	Fuel selectors (2)	OFF	3
4	Mayday call	CONSIDER	4
5	Electric master	OFF	5

When engine and aircraft stopped:

6	Canopy	OPEN	6

Evacuate

ELECTRICAL FIRE ON GROUND

1	Mayday call	CONSIDER	1
2	Electric Master	OFF	2
3	Power levers (2)	IDLE	3
4	Engine Masters (2)	OFF	4
5	Fuel selectors (2)	OFF	5

When engine and aircraft stopped:

6	Canopy	OPEN	6

Evacuate

ELECTRICAL FIRE IN FLIGHT

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

Max airspeed 120 KIAS

Land at nearest suitable airfield

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

SUSPICION OF CARBON MONOXIDE

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

Push up and lock in cooling gap position

UNINTENTIONAL FLIGHT INTO ICING

Leave icing area, continue with item 1

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

1	Pitot heat	ON	1
2	Cabin heat & defrost	ON	2
3	Power	INCREASE PERIODICALLY	3
4	* De-ice systems	USE as appropriate	4
5	Alternate air	OPEN as required	5
6	Emergency windows	OPEN as required	6

- When pitot heat fails:

7	Alternate static valve	OPEN	7
8	Emergency windows	CLOSED	8

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

* ICE PROTECTION FAILURE

1	Airspeed	MIN 121 KIAS	1
2	Flaps	UP	2
3	Slip angle	MINIMIZE	3
4	Approach with residual ice	91 KIAS	4
5	Landing distance	x 1,4	5

COMPLETE ELECTRICAL FAILURE

* Leave icing area

1	Circuit breakers	CHECK all IN	1

- If no success:

2	Emergency switch	ON	2
3	Flood light, 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 ECU A FAIL	Page 15	**ECU A failed**
L/R ECU B FAIL	Page 15	**ECU B failed**
L/R ALTN FAIL	Page 15	**Alternator failed**
L/R VOLTS LOW	Page 15	**Bus voltage too low**
L/R COOL LVL	Page 16	**Engine coolant level low**
PITOT FAIL	Page 16	**Pitot heating system failed**
PITOT HT OFF	Page 16	**Pitot heating system OFF**
STALL HT FAIL	Page 16	**Stall warning heating failed**
STALL HT OFF	Page 16	**Stall warning heating OFF**
L/R FUEL LOW	Page 16	**Main tank fuel qty low**
L/R AUX FUEL E	Page 16	**L/R auxiliary fuel tank empty**
STICK LIMIT	Page 16	**Stick limiting system failed**
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

Other abnormal situations

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 at nearest suitable airfield
  - 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 at nearest suitable airfield
  - If ECU B caution message can be reset
    - ⇒ Continue flight. Engine must be serviced after LDG

L/R ALTN FAIL — ALTERNATOR FAILED

- If in icing conditions:
  - ⇒ Leave icing area as soon as practicable
- Alternator on affected side OFF
- Monitor bus voltage
- Reduce electrical consumers
- If both alternators failed:
  - ⇒ See Abnormal Checklist "Both Alternators failed", page 19

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 COOL LVL — ENGINE COOLANT LEVEL LOW

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

PITOT FAIL / PITOT HT OFF — STALL HT FAIL / STALL HT OFF

- check pitot heat ON, if in icing conditions
  - ⇒ expect failure of the pitot-static-system
  - ⇒ alternate static valve: OPEN
  - ⇒ expect loss of aural stall warning
- leave area with icing conditions (see Emergency Checklist page 13 "Unintentional flight into icing")

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 indicaton
    - ⇒ 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 V_{REF} 76/78 KIAS

DEICE LVL LO

DE-ICING FLUIS 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

- 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 faiure;
      Land at nearest suitable airfield

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 (JET Fuel operation)

- Monitor fuel temperature
  - If fuel temperature decreases to red range (< 30°C):
    - ⇒ Increase power on affected engine
    - ⇒ Reduce airspeed
      - If not returning to yellow range:
        - ⇒ Land at nearest suitable airfield

FUEL temperature low (Diesel Fuel operation)

- Increase power on affected engine
- Reduce airspeed
  - If not returning to green range:
    - ⇒ 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 15

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

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 Intitialization – AUX 4 page
Recommended and compulsory settings

TIME FORMAT	UTC
NAV ANGLE	AUTO
DIS. SPD	NAUTICAL
ALT. VS	FEET
TEMP	CELSIUS
FUEL, FF	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 LENGHT	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