STALLING SPEEDS KIAS				
	1000kg	**1100kg**	**1200kg**	**1310kg**
Stalling speed (V_S) Flaps UP	58	61	64	66
Stalling speed (V_S) Flaps T/O	54	56	60	62
Stalling speed (V_{SO}) Flaps LDG	55	57	59	60

OPERATING SPEEDS KIAS					
	940kg	**1000kg**	**1100kg**	**1200kg**	**1280kg + above**
Rotation speed	56	58	61	65	67
V_X best climb angle **(FlapsT/O)**	72				
V_Y best rate of climb **(FlapsUP)**	88				
Cruise climb speed **(Flaps UP)**	100				

Max. cruising speed (VNO)	130
Never exceed speed (VNE)	172
Max. flap speed (V_{FE}) Flaps T/O	110
Max. flap speed (V_{FE}) Flaps LDG	98

	940kg	**1000kg**	**1100kg**	**1200kg**	**1216kg**	**1280kg +above**
Approach V_{REF} Flaps UP	71	73	78	82	82	83
Approach V_{REF} Flaps T/O	68	70	74	77	77	78
Approach V_{REF} Flaps LDG	66	68	72	76	76	77
Min. GA speed Flaps T/O	72					

	up to 1080 kg	1081-1180 kg	above 1180 kg
Maneuvering speed (V_O)	101	108	113

Best gliding Flaps UP, windmilling prop	88 Gliding ratio 1:9,7 1,59 NM / 1000 ft Without wheel fairings: Gliding ratio 1:9,4 1,54 NM / 1000 ft

Max demonstrated X-wind: 25 kt

MASS			
		Option "574"	Option "662"
Max. TKOF mass	1280 kg		1310 kg
Max ZF mass	1200 kg	1265 kg	
Max. LDG mass	1216 kg	1280 kg	
Empty mass	*940 kg*		
Max. baggage in FWD compartment	45 kg		
Max. baggage in AFT extension	18 kg		
Total in both	45 kg		

Available Power Check:

10 sec. power MAX, RPM 2200 – 2300 (min. 2100 below -10°C), min. load acc. table below

Altitude [ft]	OAT								
	-35°C -31°F	-20°C -4°F	-10°C 14°F	0°C 32°F	10°C 50°F	20°C 68°F	30°C 86°F	40°C 104°F	50°C 122°F
0	94%						95%	92%	90%
2000							95%	92%	
4000	96%						95%	92%	
6000							95%	92%	
8000						95%	94%	91%	
10000				94%	93%	91%	88%		

EMERGENCY + ABNORMAL CHECKLIST

For conditions to use this Emergency + Abnormal Checklist see page 1 of the Normal Checklist.
All such conditions are fully applicable also for this checklist.

G1000 WARNINGS

ENG TEMP	Pg. 6	**Coolant temperature high (red range)**
OIL TEMP	Pg. 6	**Oil temperature high (red range)**
OIL PRES	Pg. 6	**Oil pressure low (red range)**
GBOX TEMP	Pg. 7	**Gearbox temperature high (red range)**
L/R FUEL TEMP	Pg. 7	**Fuel temperature high (red range)**
FUEL PRESS	Pg. 7	**Fuel pressure low**
ALTN FAIL	Pg. 7	**Alternator failed**
ALTN AMPS	Pg. 8	**High Current (red range)**
STARTER	Pg. 8	**Starter not disengaging**
DOOR OPEN	Pg. 8	**Unlocked doors**

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

Abnormal Checklist starts at page 12

ENGINE FAILURE IN FLIGHT

1 Airspeed ..... 88 KIAS 1
2 Flaps ..... UP 2
Depending on remaining altitude consider:
RESTART (page 3) or
EMERGENCY LANDING (ENGINE OFF) (see ↓)

EMERGENCY LANDING (ENGINE OFF)

1 Gliding speed ..... 88 KIAS 1
2 ATC ..... INFORM 2
3 Adjustable backrests ..... UPRIGHT 3
4 Engine master ..... OFF 4
5 Fuel transfer pump ..... OFF 5
6 Fuel pumps ..... OFF 6
7 Fuel valve ..... OFF 7
8 Avionic master ..... OFF 8
9 Safety harness ..... TIGHT 9
On final:
10 Flaps ..... T/O or LDG 11

	Approach speed KIAS				
Flaps	**1000 kg**	**1080 kg**	**1160 kg**	**1216 kg**	**1280 kg**
T/O	70	73	76	77	78
LDG	69	72	74	76	77

11 Electric master switch ..... OFF 10

ENGINE FIRE IN FLIGHT

1 Cabin heat ..... OFF 1
2 Canopy ..... UNLATCH as necessary 2
Select emergency landing area
When certain to reach landing area:
3 Fuel valve ..... OFF 3
4 Power lever ..... MAX 4
5 Emergency windows ..... OPEN as necessary 5
Carry out:
EMERGENCY LANDING (ENGINE OFF) (see ↑)

WINDMILL ENGINE START

Do not consider starter assisted restart if propeller has stopped

Max. altitude:
16.400 ft PA for immediate restart
10.000 ft PA for restart within 2 minutes

1	Airspeed	88 KIAS	1
2	Power lever	IDLE	2
3	VOTER switch	CHECKED AUTO	3
4	Fuel valve	CHECKED NORMAL	4
5	Alternate air	AS REQUIRED	5
6	Fuel quantity	CHECKED	6
7	Fuel transfer pump	AS REQUIRED	7
8	Electric master	CHECKED ON	8
9	Engine master	CHECKED ON	9

- If engine does not start:

10	Fuel valve	EMERGENCY	10

- If engine does not start:

11	Flaps	UP	11

Carry out:
EMERGENCY LANDING (ENGINE OFF) (page 2)

ENGINE TROUBLESHOOTING

1 Airspeed ..... 88 KIAS 1
2 Power lever ..... MAX 2

If

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**

3 POWER lever ..... IDLE for 1 second 3
4 POWER lever ..... slowly increase to 1975 RPM 4
- If engine shows power loss during the POWER lever increase

5 POWER lever ..... idle for 1 second 5
6 POWER lever ..... slowly increase 6
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

7 Land at nearest suitable airfield 7

End of Checklist

Otherwise:

3 Circuit breakers ..... CHECK/RESET 3
- If engine OK: continue, land ASAP End of Checklist

4 VOTER switch ..... SWAP between A and B 4
- If engine OK: continue, land ASAP End of Checklist

5 VOTER switch ..... AUTO 5
- If engine OK: continue, land ASAP End of Checklist

6 Fuel valve .....EMERGENCY 6
- If engine OK: continue, land ASAP End of Checklist

7 Fuel valve ..... NORMAL 7
8 Alternate air ..... OPEN 8
9 POWER lever..... apply power as required 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

OSCILLATING RPM

1 Power lever ..... CHANGE SETTING 1

- If no success:

2 VOTER switch .....SWAP between A and B 2

- If no success:

3 VOTER switch .....AUTO 3

Land at nearest suitable airfield

RPM OVERSPEED

1 Power lever .....ADJUST to max. 2300 RPM 1

2 Airspeed ..... 88 KIAS 2

3 Flaps .....UP 3

If RPM stabilized below 2300:

4 Airspeed .....AS REQUIRED 4

5 Power lever .....AS REQUIRED 5

but do not exceed 2300 RPM

If RPM still above 2300:

6 VOTER switch .....SWAP between A and B 6

- If no success:

7 VOTER switch .....AUTO 7

adjust RPM with power lever

Land at nearest suitable airfield

If increased climb rate required:

8 Flaps ..... T/O 8

9 Airspeed ..... 72 KIAS 9

10 Power lever .....ADJUST to max. 2300 RPM 10

RPM UNDERSPEED

1 Power lever .....AS REQUIRED 1

2 VOTER switch .....SWAP between A and B 2

- If no success:

3 VOTER switch .....AUTO 3

4 Power lever .....AS REQUIRED 4

Land at nearest suitable airfield

G1000 WARNINGS

ENG TEMP

COOLANT TEMPERATURE HIGH

- Check "COOL LVL" caution message
  - If "COOL LVL" OUT:
    - During climb:
      - ⇒ Reduce power 10%
      - ⇒ Increase airspeed 10 KIAS
      - ⇒ If not returning to green range within 60 seconds: reduce power as far as possible and increase airspeed
    - During cruise:
      - ⇒ Reduce power
      - ⇒ Increase airspeed, if necessary descend
      - ⇒ Check coolant temperature in green range
        - If not returning to green range:
          - ⇒ land at nearest suitable airfield
  - If "COOL LVL" ON:
    - ⇒ Reduce power
    - ⇒ Expect loss of coolant fluid
    - ⇒ Be prepared for emergency landing

OIL TEMP

OIL TEMPERATURE HIGH

- Check oil pressure
  - If too low:
    - ⇒ Reduce power
    - ⇒ Be prepared for loss of oil and engine fail; be prepared for emergency landing
  - If in green range:
    - ⇒ Reduce power
    - ⇒ Increase airspeed

OIL PRES

OIL PRESSURE LOW

- Reduce power
- Expect loss of oil
- Land at nearest suitable airfield
- Be prepared for engine fail

GBOX TEMP

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

L/R FUEL TEMP

FUEL TEMPERATURE HIGH

- Reduce power
- Increase airspeed
- Consider fuel transfer from AUX to MAIN tank
  - If fuel temperature **not returning** to green range:
    - ⇒ Land at nearest suitable airfield

FUEL PRESS

FUEL PRESSURE LOW

- Check fuel quantity
- Check fuel valve NORMAL
- Switch fuel pumps ON
  - If FUEL PRESS warning remains:
    - ⇒ Fuel valve to EMERGENCY
    - ⇒ Switch fuel pumps OFF
      - If FUEL PRESS warning still remains
        - ⇒ Be prepared for engine fail

ALTN FAIL

ALTERNATOR FAILED

Batteries will last for about 30 minutes

- Check circuit breakers
- ESSENTIAL BUS: ON
- Switch off unnecessary electrical equipment
- Land at nearest suitable airfield
- Be prepared for engine fail;
  be prepared for emergency landing

ALTN AMPS

HIGH CURRENT

Consumption of electrical power is too high

Possible reason: fault in wiring or equipment

- Switch OFF electrical equipment as necessary and possible to reduce electric load
  - If problem not cleared:
    Land at nearest suitable airfield

STARTER

STARTER NOT DISENGAGING

- Power lever IDLE
- Engine master OFF
- Electric master OFF

DOOR OPEN

UNLOCKED DOORS

- Reduce airspeed
- Check canopy and rear door visually
  - If canopy and/or rear door unlocked:
    ⇒ Airspeed below 140 KIAS
    ⇒ Land at nearest suitable airfield

Do not try to lock the rear door in fligh

UNINTENTIONAL FLIGHT INTO ICING

Leave icing area, inform ATC

1	Pitot heat	ON	1
2	Cabin heat	ON	2
3	Cabin air	DEFROST	3
4	RPM	INCREASE, change periodically	4
5	Alternate air	OPEN	5
6	Emergency windows	OPEN as required	6

HIGH CURRENT

Refer to Emergency Checklist page 8 "ALTN AMPS"

TOTAL ELECTRIC FAIL

1	Circuit breakers	CHECK ALL IN	1
2	Essential bus	ON	2
	● If no success:		
3	Emergency switch	ON	3
4	Flood light, if necessary	ON	4
5	Power	SET	5
	according power lever position and/or engine noise		
6	Flaps	VERIFY POSITION	6

Land at nearest suitable airfield

ELECTRIC FIRE / SMOKE IN FLIGHT

1	Emergency switch	ON	1
2	Avionic master	OFF	2
3	Electric master	OFF	3
4	Cabin heat	OFF	4
5	Emergency window	OPEN as necessary	5
6	Canopy	UNLATCH as necessary	6

Land immediately

Consider:

EMERGENCY LANDING (ENGINE OFF) (page 2)

FIRE / SMOKE ON GROUND

1	Power lever ..... IDLE	1
2	Cabin heat ..... OFF	2
3	Brakes ..... apply –airplane to stop	3
4	Fuel valve ..... OFF	3
5	Fuel transfer pump ..... OFF	4
6	Engine master ..... OFF	5
7	Fuel pumps ..... OFF	6
8	Electric master ..... OFF	7
	After standstill and when engine stopped:	
9	Canopy ..... OPEN	8
	Evacuate	

FIRE / SMOKE DURING CONTINUED TKOF

1	Cabin heat ..... OFF	1
	If possible climb to safe height and land ASAP	
	When landing assured:	
2	Fuel valve ..... OFF	2
3	Fuel transfer pump ..... OFF	3
4	Engine master ..... OFF	4
5	Fuel pumps ..... OFF	5
6	Electric master ..... OFF	6
7	Emergency window ..... OPEN as necessary	7
8	Canopy ..... UNLATCH as necessary	8
9	Flaps ..... Verify Flap position	9

	Approach speed KIAS				
Flaps	**1000 kg**	**1080 kg**	**1160 kg**	**1216 kg**	**1280 kg**
T/O	70	73	76	77	78
LDG	69	72	74	76	77

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

Preferably land on grass.

After touchdown (if necessary):

1 Fuel valve ..... OFF 1
2 Engine master ..... OFF 2
3 Fuel pumps ..... OFF 3
4 Electric master ..... OFF 4

FUEL TRANSFER PUMP U/S

1 Fuel valve ..... EMERGENCY 1
2 Fuel pumps ..... OFF 2
3 AUX fuel quantity ..... CHECK min 1 USG 3
4 MAIN fuel quantity ..... CHECK max 14 USG 4
5 Fuel valve ..... Reset to NORMAL 5

SUSPICION OF CARBON MONOXIDE

1 Cabin heat ..... 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

ECU A FAIL	Page 13	**Fault in ECU A**
ECU B FAIL	Page 13	**Fault in ECU B**
FUEL LOW	Page 14	**Main tank fuel qty low**
VOLTS LOW	Page 14	**Bus voltage too low**
PITOT FAIL	Page 14	**Pitot heating system failed**
COOL LVL	Page 14	**Engine coolant level low**
PITOT HT OFF	No procedure	**Pitot heating system OFF**

Indications outside of green range

Other abnormal situations

ECU A OR B FAIL — ON GROUND

1 Fuel pumps ..... OFF 2
2 VOTER switch ..... check AUTO 3
3 Other ECU caution ..... check OFF 4

Clearing procedure:

4 VOTER switch ..... set to failed ECU 5
Wait 5 seconds
5 Voter switch ..... AUTO 6

- If ECU caution persists termimate flight preparation

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 ..... ON 2
3 Circuit breakers ..... CHECK/RESET if necessary 3
4 VOTER switch ..... check AUTO 4

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

Remark: after landing the clearing procedure for "ECU FAIL ON GROUND" may be used.

ECU A AND B FAIL SIMULTANEOUSLY — DURING FLIGHT

➢ Go to Emergency Ckl page 4 ENGINE TROUBLESHOOTING

FUEL LOW

- Fuel transfer pump: ON
- Check fuel quantity
- Avoid uncoordinated flight
  - If light still ON:
  - ⇒ Expect fuel leak
  - ⇒ Fuel valve to EMERGENCY
  - ⇒ Fuel transfer pump OFF
  - ⇒ Be prepared for emergency landing

VOLTS LOW

BUS VOLTAGE TOO LOW

Remark: possible reason is a fault in the electrical power supply

- On ground
  - ⇒ Terminate flight preparation
- In flight
  - ⇒ Check circuit breakers
  - ⇒ Switch off unnecessary electrical equipment
    - If light still ON:

    Apply "ALTERNATOR FAIL"-emergency procedure
    (Emergency Checklist page 7)

PITOT FAIL

PITOT HEATING SYSTEM FAILED

- check pitot heat ON
  - If in icing conditions
  - ⇒ expect loss of airspeed indication
  - ⇒ leave area with icing conditions

COOL LVL

ENGINE COOLANT LEVEL LOW

- Monitor annunciations and instruments
- Check „Coolant temperature" procedure, page 16

INDICATIONS OUTSIDE OF GREEN RANGE

RPM high

Yellow range is permitted for up to 5 minutes if required

- Reduce power
- Keep RPM in green range using the power lever
  - If problem not solved
  - ⇒ Go to „RPM overspeed" procedure, Emergency Checklist page 5
  - ⇒ Land at nearest suitable airfield

OIL pressure high

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

Oil pressure low

- Refer to Emergency Checklist page 6, "OIL PRES"

Oil temperature high

- Refer to Emergency Checklist page 6, "OIL TEMP"

Oil temperature low

- Increase power
- Reduce airspeed

Fuel temperature high

➢ Refer to Emergency Checklist page 7, "L/R FUEL TEMP"

FUEL temperature low

➢ Monitor fuel temperature
- If fuel temperature decreases to red range (< -25°C):

⇒ Increase power

⇒ Reduce airspeed
- If not returning to yellow range:

⇒ Land at nearest suitable airfield

Coolant temperature high

➢ Refer to Emergency Checklist page 6, "ENG TEMP"

Coolant temperature low

Remark: During low power descent from high altitude coolant temperature may decrease

➢ Check "COOL LVL" caution light
- If ON

⇒ Reduce power

⇒ Expect loss of coolant fluid

⇒ Be prepared for engine failure

Gearbox temperature high

➢ Refer to Emergency Checklist page 7, "GBOX TEMP"

Alternator load yellow range

➢ Switch off unnecessary electrical equipment
- If indication still outside of green range:

⇒ Land at nearest suitable airfield

Flap failure

➢ Check flaps visually, recheck all flap switch positions

➢ Approach speeds with abnormal flap setting:

Approach speed KIAS						
Flaps	**940 kg**	**1000 kg**	**1100 kg**	**1200 kg**	**1216 kg**	**1280 kg + above**
T/O	68	70	74	77	77	78
UP	71	73	78	82	82	83