Checklist for Diamond DA42 – GFC700

Edition #: 18.1  Edition date: 08.05.2018

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 # 18.1 are on page 2 of this document

<table>
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Section: Normal Checklist

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Section: Abnormal Checklist

<table>
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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

Abnormal Procedures:
Pages renumbered

Comments explaining Edition # 18.1

Normal Procedures:
No change

Emergency Procedures:
No change

Abnormal Procedures:
Page 15: Directory corrected
Pages 16, 17, 18, 20: editorial correction (reference page numbers)
Page 18: New values for maximum duration of ice protection when DEICE_LVL LOW indicated
NORMAL CHECKLIST

Diamond DA42 Twin Star GFC700

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 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.

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 22 (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. 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 stall warning
23. Check pitot tube heat
24. Pitot heat OFF
25. External lights OFF
26. ** AUX tank vent
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
- ** 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 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
### DA42 Twin Star GFC700 PREFLIGHT PROCEDURES

**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
- 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 casculator

**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

### CHECK BEFORE ENGINE START

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

**If starting with external power:**

- Prop area ............... CHECK CLEAR
- External power .......... CONNECT

22. Electric master ......................... ON
23. Rudder pedals ......................... ADJUSTED
24. Flight controls ......................... CHECKED
25. Trims ................................. CHECKED
26. Gear warning + lights, fire detector TEST
27. * De-ice ANNUN TEST .......... ON
28. * DEICE LVL LO caution. CHECKED ON if applic.
29. * Windshield de-icing ...... PUMP 1 + 2 CHECKED

Checklist continued next page
CHECK BEFORE ENGINE START continued

30 Flaps.....................................................LDG 30
31 Variable elevator backstop .......... CHECK 31
   Control stick ................................. AFT and HOLD
   Power levers .................................... MAX
   Check backstop limit decreasing
   Power levers .................................... IDLE
   Check backstop limit increasing

32 Flaps.......................................................UP 32
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, do not release below 500 RPM
Oil pressure ............................... OUTSIDE RED within 3 sec
Voltage, Electrical load ............... CHECK INDICATION
Annunciations / Eng.Instr. ......................... CHECK

If external power was used:
External power ......................... DISCONNECT

Start RH engine, procedure as above

CHECK AFTER ENGINE START

1 Oil pressure .......................................... CHECKED 1
2 RPM 900 +/- 20 ................................ CHECKED 2
3 Warm up time .................................. START 3
   Warm up:
   Idle ..................................... 2 minutes
   1400RPM ................................. until Oil > 50°C and Coolant > 60°C

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

FMS SETUP

I nitialize profile (AUX 4, MAP)
P 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 annunciations and FD
DISCONN press, check AP off
GA button press, check FD commands climb, FD 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 (2) ................................. 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 A/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. MFD........................................EIS – DEFAULT 22
23. Parking brake .......................... RELEASED 23

## 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

## PERIODICALLY DURING CRUISE

- Fuel
- Radio
- Engine
- Direction
- Altitude

Maximum fuel unbalance: 5 USG

## DESCENT / APPROACH CHECK

1. Landing data ............................... RECEIVED 1
2. Altimeters (2) .......................... 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. Rudder trim ............................ AS REQUIRED 7
8. Gear warning + lights ............................TEST 8

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
Continue with take-off profile
At safe altitude:
Flaps .............................................................. UP
Landing light .............................................. OFF

**AFTER LANDING CHECK**

When clear of runway

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

End of Checklist

**PARKING CHECK**

1. Parking brake ......................................... SET
2. Power levers (2) ...................................... IDLE for 2 min.
3. ELT ...................................................... CHECK not activated
4. Engine / System page .......................... CHECKED
5. Engine / Fuel page ............ TTL TIME IN SVC NOTED
6. Avionic master ........................................ OFF
7. Electrical consumers except ACL (strobe) ... OFF
8. Engine Masters (2) ................................. OFF
9. ACL (strobe) ............................................ OFF
10. Electric Master ....................................... OFF
11. Interior light ........................................... CHECKED
12. Start key ............................................... REMOVED

End of Checklist

**SECURING THE AIRCRAFT**

Release parking brake, use chocks.
Cover the pitot probe.
Attach tie down ropes to mooring points.

**OPERATING SPEEDS KIAS for MTOM 1785**

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<th>1400 kg</th>
<th>1785 kg</th>
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<td>62</td>
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<tr>
<td>Stalling speed (V\textsubscript{\text{S}}) Flaps APP</td>
<td>59</td>
<td>64</td>
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<tr>
<td>Stalling speed (V\textsubscript{\text{S}}) clean</td>
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<table>
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<td>Best gliding angle (Flaps UP)</td>
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<td>Best angle of climb (V\textsubscript{\text{L}})</td>
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<tr>
<td>Best rate of climb (V\textsubscript{\text{L}})</td>
<td>82</td>
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<tr>
<td>Best angle of climb 1-eng. (V\textsubscript{\text{SE}})</td>
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<td>Min. control speed (V\textsubscript{\text{MC}})</td>
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<td>Min. control speed for TRG (V\textsubscript{\text{MC}}) in ice</td>
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<td>Operating speed in ice</td>
<td>118 - 156</td>
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<tr>
<td>Cruising climb speed</td>
<td>88</td>
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<tr>
<td>Rotation speed</td>
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<td>Max. flap speed (V\textsubscript{\text{FE}}) Flaps APP</td>
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**MASS**

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<tr>
<td>Max. TKOF mass</td>
<td>1785 kg</td>
</tr>
<tr>
<td>Max. ZF mass</td>
<td>1650 kg</td>
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<tr>
<td>Max. LDG mass</td>
<td>1700 kg</td>
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<tr>
<td>Empty mass</td>
<td>1295 kg</td>
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<tr>
<td>Max. baggage in NOSE</td>
<td>30 kg</td>
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<tr>
<td>Max. baggage in COCKPIT</td>
<td>45 kg</td>
</tr>
<tr>
<td>Max. baggage in rear EXTENSION</td>
<td>18 kg</td>
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<tr>
<td>Max. total of COCKPIT + EXTENSION</td>
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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 .................................... page 2
G1000 Warnings ........................................ page 3

Engine
Engine failure during take-off ............... page 7
Engine failure, engine shutdown in flight . . . page 7
Engine troubleshooting ....................... page 8
Engine restart ........................................ page 9
Oscillating RPM ..................................... page 10
RPM overspeed .................................... page 10

Landing Gear
Landing with defective main gear tire .... page 10
Landing with defective brakes ............... page 10
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Electrical fire on ground ...................... page 12
Electrical fire in flight ....................... page 12
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Cabin smoke, cabin fire, above 10,000 ft . . page 13
Oxygen pressure loss above 10,000 ft .... page 13

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Unintentional flight into icing, Inadvertent icing encounter & excessive ice accumulation . . . . page 14
Ice protection failure ....................... page 14
Suspicion of carbon monoxide ........ page 14

Electrical System
Complete electrical failure ................ page 12

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
9  Power levers (2) ...................... IDLE  9

Gear UP landing
After touchdown:

10  Electric master ........................ OFF 10

Gear DOWN landing

10  Gear ...................... DOWN, 3 GREENS CHECKED 10
11  Electric master ........................ OFF 11
**G1000 WARNINGS**

<table>
<thead>
<tr>
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<th>Condition</th>
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<td>L/R ALTN AMPS</td>
<td>3</td>
<td>High Current</td>
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<tr>
<td>L/R OIL PRES</td>
<td>3</td>
<td>Oil pressure low</td>
</tr>
<tr>
<td>L/R OIL TEMP</td>
<td>3</td>
<td>Oil temperature high</td>
</tr>
<tr>
<td>L/R GBOX TEMP</td>
<td>4</td>
<td>Gearbox temperature high</td>
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<tr>
<td>L/R ENG TEMP</td>
<td>4</td>
<td>Coolant temperature high</td>
</tr>
<tr>
<td>L/R FUEL TEMP</td>
<td>4</td>
<td>Fuel temperature high</td>
</tr>
<tr>
<td>L/R FUEL PRES</td>
<td>5</td>
<td>Fuel pressure low</td>
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<tr>
<td>L/R STARTER</td>
<td>5</td>
<td>Starter not disengaging</td>
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<tr>
<td>DOOR OPEN</td>
<td>5</td>
<td>Unlocked doors</td>
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<tr>
<td>L/R ENG FIRE</td>
<td>6</td>
<td>Engine fire on ground, during take-off, in flight</td>
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</tbody>
</table>

*For other parameters “out of green range” see Abnormal Checklist*  
Abnormal Checklist starts at page 15

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**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**
  - 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 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 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...

In flight:

- Evaluate the situation
  ● If Engine Fire observed:
    ⇒ Proceed according
      ENGINE FIRE IN FLIGHT ➔ page 7

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Edition # 18.1 GFC700 Does not replace the Airplane Flight Manual

08.05.2018 Diamond Flight Training Page 6
Edition # 18.1 GFC700 Does not replace the Airplane Flight Manual
DA42 Twin Star GFC700  EMERGENCY PROCEDURES

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 selector (dead engine) ............ OFF 9

ENGINE FIRE IN FLIGHT
1. Cabin heat & defrost ...................... OFF 1
2. Canopy .......................... UNLATCH if necessary 2
   Max airspeed 120 KIAS
3. Shut down the engine according
   ENGINE SHUT DOWN-procedure ✅

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

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ENGINE RESTART

Engine restart is possible up to 8000 (6000) ft pressure altitude

1. Airspeed
   - For starter assisted restart: ........ below 90 KIAS 1
   - For windmilling restart: ............ 125 – 145 KIAS 1
2. Power (affected engine) ................ IDLE 2
3. Fuel selector (affected engine) ........ ON 3
4. Alternate air ......................... AS REQUIRED 4
5. Alternator (affected engine) .......... ON 5
6. Engine Master (affected engine) ...... ON 6
   - For starter assisted restart:
   7. Starter .................................. ENGAGE 7
      until 500 RPM or prop windmills

If engine started:

8. Power (affected engine) ............ MODERATE 8
9. Engine instruments........... check GREEN RANGE 9
10. Circuit breakers.................. CHECKED 10

If engine did not start (re-feathering procedure):

One attempt only, expect altitude loss of up to 800 (500) ft

8. Airspeed............................. 85 KIAS 8
9. Power lever (affected engine)......... MAX 9
10. Engine Master (affected engine) ...... CHECK ON 10
11. Airspeed.............. INCREASE to achieve 1800 RPM 11
12. Engine Master (affected engine) ...... OFF 12
13. Airspeed............................. REDUCE to 85 KIAS 13
14. Propeller .......................... CHECK FEATHERED 14
15. Alternator (dead engine) ........... OFF 15
16. Fuel selector (dead engine) .......... OFF 16

OSCILLATING RPM

17. Power lever ......................... change setting 1
   - If no success:
18. ECU swap............................ ECU B 2
   - If no success:
19. ECU swap............................ AUTO 3

   Land at nearest suitable airfield

RPM OVERSPEED

20. Power setting ......................... REDUCE 1
   - If no success:
21. ECU swap............................ ECU B 2
   - If no success:
22. 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

23. Engine Masters (2) .................. OFF 1
24. Fuel selectors (2) .................... OFF 2
25. Electric Master ....................... OFF 3

After touchdown (if necessary):
LANDING GEAR UNSAFE WARNING
If on for more than 20 seconds:
1. Airspeed..........................max 152 KIAS
   In cold temperature:
2. Airspeed..........................max 110 KIAS
3. Gear selector.....................RECYCLE
   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
2. Gear indicator lights ..............TEST
3. Electric master.....................CHECK ON
4. Bus voltage..........................CHECK NORMAL
5. Circuit breaker.....................CHECK
6. Gear selector.......................DOWN
7. Manual extension handle ..........PULL
   If necessary
8. Airspeed..........................max 110 KIAS
   Apply moderate yawing
9. Gear indicator lights ..............CHECK 3 GREENS

LANDING GEAR UP LANDING
(Landing gear completely retracted)
1. Approach .........................NORMAL
   If time/situation allows: just before touchdown:
2. Power lever.........................IDLE
3. Engine Masters (2)..................OFF
4. Fuel selectors (2)....................OFF
   Immediately after touchdown:
5. Electric Master.....................OFF

ELECTRICAL FIRE ON GROUND
1. Mayday call ......................CONSIDER
2. Electric Master.....................OFF
3. Power levers (2)....................IDLE
4. Engine Masters (2)..................OFF
5. Fuel selectors (2)....................OFF
   When engine and aircraft stopped:
6. Canopy ................................OPEN

ELECTRICAL FIRE IN FLIGHT
1. Emergency switch ..................ON
2. Mayday call ......................CONSIDER
3. Avionic master .....................OFF
4. Electric master .....................OFF
5. Cabin heat & defrost ................OFF
6. Emergency windows ..............OPEN as necessary
7. Canopy ..........................UNLATCH if necessary
   Max airspeed 120 KIAS
   Land at nearest suitable airfield

COMPLETE ELECTRICAL FAILURE
* Leave icing area
1. Circuit breakers...................CHECK all IN
   • If no success:
2. Emergency switch ..................ON
3. Flood light, if necessary ..........ON
4. Power ............................SET
   according power lever position and/or engine noise
5. Flaps .................................VERIFY POSITION
   Land at nearest suitable airfield
   Landing gear may slowly extend
   For landing apply “Manual extension of landing gear”
**DA42 Twin Star GFC700  EMERGENCY PROCEDURES**

**CABIN SMOKE ABOVE 10,000 FT**
1. Oxygen ........................................... CHECK ON  
2. Emergency descent ......................... INITIATE  
   When passing 10,000 ft  
3. Oxygen ........................................... OFF  
   Land at nearest suitable airfield

**CABIN FIRE ABOVE 10,000 FT**
1. Oxygen ........................................... PUSH OFF  
2. Emergency descent ......................... INITIATE  
   Land at nearest suitable airfield

**OXYGEN PRESSURE LOSS ABOVE 10,000 FT**
1. Oxygen ........................................... PUSH OFF  
2. Oxygen pressure ......................... CHECKED, note down  
3. Emergency descent ......................... INITIATE  
   When passing 10,000 FT:  
4. Oxygen pressure ......................... CHECK AGAIN  
   ✗ If oxygen pressure constant: ..... Continue flight  
   ❇ If oxygen pressure dropped: .... Land at nearest suitable airfield

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

**UNINTENTIONAL FLIGHT INTO ICING**
Leave icing area, continue with item 1  

* INADVERTENT ICING ENCOUNTER & EXCESSIVE ICE ACCUMULATION*
1. Pitot heat ........................................... ON  
2. Cabin heat & defrost ............................ ON  
3. Power ................................................. INCREASE PERIODICALLY  
4. * De-ice systems ................. USE as appropriate  
5. Alternate air ............................ OPEN as required  
6. Emergency windows .................. OPEN as required  
   • When pitot heat fails:  
   7. Alternate static valve .................... OPEN  
   8. Emergency windows ................... CLOSED  
   • * When de-ice system does not work properly: 
     Continue with ICE PROTECTION FAILURE

* ICE PROTECTION FAILURE*
1. Airspeed ............................................... min 118 KIAS until final  
2. Flaps ................................................ UP  
3. Slip angle ........................................ MINIMIZE  
4. Approach with residual ice ................ 92 KIAS  
5. Landing distance ............................. x 1.4

**SUSPICION OF CARBON MONOXIDE**
1. Cabin heat & defrost ............................ OFF  
2. Ventilation ........................................ OPEN  
3. Emergency windows .................. OPEN  
4. Airspeed ........................................ max 117 KIAS  
5. Canopy ........................................... UNLATCH  
   Push up and lock in cooling gap position
### G1000 CAUTION LIGHTS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Page</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L/R ECU A FAIL</td>
<td>16</td>
<td>ECU A failed</td>
</tr>
<tr>
<td>L/R ECU B FAIL</td>
<td>16</td>
<td>ECU B failed</td>
</tr>
<tr>
<td>L/R VOLTS LOW</td>
<td>16</td>
<td>Bus voltage too low</td>
</tr>
<tr>
<td>L/R ALTN FAIL</td>
<td>16</td>
<td>Alternator failed</td>
</tr>
<tr>
<td>L/R ALTN FAIL</td>
<td>17</td>
<td>Both Alternators failed</td>
</tr>
<tr>
<td>L/R COOL_LVL</td>
<td>17</td>
<td>Engine coolant level low</td>
</tr>
<tr>
<td>PITOT FAIL</td>
<td>17</td>
<td>Pitot heating system failed</td>
</tr>
<tr>
<td>PITOT HT OFF</td>
<td>17</td>
<td>Pitot heating system OFF</td>
</tr>
<tr>
<td>STALL HT FAIL</td>
<td>17</td>
<td>Stall warning heating failed</td>
</tr>
<tr>
<td>STALL HT OFF</td>
<td>17</td>
<td>Stall warning heating OFF</td>
</tr>
<tr>
<td>L/R FUEL LOW</td>
<td>17</td>
<td>Main tank fuel qty low</td>
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<tr>
<td>L/R AUX FUEL E</td>
<td>17</td>
<td>L/R auxiliary fuel tank empty</td>
</tr>
<tr>
<td>STICK LIMIT</td>
<td>18</td>
<td>Stick limiting system failed</td>
</tr>
<tr>
<td>DEICE_LVL_LO</td>
<td>18</td>
<td>De-icing fluid level low</td>
</tr>
<tr>
<td>DEICE_PRESS_LO</td>
<td>18</td>
<td>De-icing pressure low</td>
</tr>
<tr>
<td>DEICE_PRESS_HI</td>
<td>18</td>
<td>De-icing pressure high</td>
</tr>
</tbody>
</table>

**Engine instrument indications outside of green range**
- COOLANT temperature high/low page 19
- OIL temperature high/low page 19
- OIL pressure high/low page 19
- FUEL temperature high/low page 19
- VOLT low page 20
- RPM high page 20

**Other abnormal situations**
- Hydraulic pump fail or continuous ops... page 20
- AUX fuel transfer fail page 20

### CAUTION ALERTS ON THE G1000

#### L/R ECU A OR B FAIL

**ON GROUND**
- Discontinue operation, terminate flight preparation

**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 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 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
- Alternate on affected side OFF
- Monitor bus voltage
- Reduce electrical consumers
- If both alternators failed:
  - See Abnormal Checklist "Both Alternators failed", page 17
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

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

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

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 indication
    ➢ Use x-feed: Fuel selector to x-feed on side with LOW FUEL indication

L/R AUX FUEL E

AUXILIARY FUEL TANK EMPTY

- L/R auxiliary fuel pump OFF

STICK LIMIT

VARIABLE ELEVATOR BACKSTOP SYSTEM FAILED

1 or 2 power levers set for MORE than 20% load:
- Elevator variable backstop is INOP
- Do not stall in any configuration!

2 power levers set for LESS than 20% load:
- Elevator variable backstop always ACTIVE
- Reduced elevator capacity
- For approach min VREF 79/82 KIAS

DEICE LVL LO

DE-ICING FLUID LEVEL LOW

- Maximum duration of ice protection in
  NORMAL mode: 30 min, in HIGH mode: 15 min

DEISC 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

DEISC 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 failure

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

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 x-fer pumps OFF
- Check fuel quantity
- Use X-feed to keep main tank fuel unbalance within 1 USG
- Switch remaining x-fer pump ON
- Use X-feed to keep main tank fuel unbalance within 1 USG
- Amend flight plan to allow for reduced amount of available fuel
FMS Initialization – AUX 4 page
Recommended and compulsory settings

<table>
<thead>
<tr>
<th>Time Format</th>
<th>UTC</th>
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<tbody>
<tr>
<td>Nav Angle</td>
<td>Auto</td>
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<tr>
<td>Dis. Spd</td>
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<tr>
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<tr>
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<tr>
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MFD Data Bar Fields

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<td>TRK</td>
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<td>GPS CDI</td>
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Select Channel

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<th>Spacing</th>
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Nearest APT

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MIN LENGTH

| Setting | As desired |

Compulsory:

ARINC 424 Distance Coding:

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<td>X</td>
<td>24</td>
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<tr>
<td>Y</td>
<td>25</td>
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</tbody>
</table>

#1 Reason GA aircraft are intercepted: Entering restricted airspace and not talking to ATC

Interception Procedures

- Typically two fighters approach from the stern -- you may only see one
- Fighter rocks wings to signal intercept
- Fighter responsible for safe separation

Your Actions

- Remain predictable – Altitude, heading, airspeed, don't descend
- Acknowledge fighter with wing rock
- Talk to ATC
- Talk to fighter on 121.5

Post Intercept

- Comply with instructions
- Land where directed

Interceptor Signals

<table>
<thead>
<tr>
<th>Signals</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fighter slow turn to desired heading</td>
<td>FLY THIS WAY</td>
</tr>
<tr>
<td>Fighter abrupt turn across nose to desired heading and may dispense flares</td>
<td>WARNING: TURN NOW (DIRECTION OF FIGHTER)</td>
</tr>
<tr>
<td>Fighter circles airport, lowers landing gear, overflies runway in direction of landing</td>
<td>LAND HERE</td>
</tr>
</tbody>
</table>

Day Intercept Signals

<table>
<thead>
<tr>
<th>Interceptor Signals</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash navigation lights</td>
<td>You have been intercepted</td>
</tr>
<tr>
<td>Turn on landing lights</td>
<td>Land here</td>
</tr>
</tbody>
</table>

NIGHT INTERCEPT SIGNALS

<table>
<thead>
<tr>
<th>Interceptor Signals</th>
<th>Meaning</th>
<th>Your Signal</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash navigation lights</td>
<td>You have been intercepted</td>
<td>Flash navigation lights</td>
<td>I will comply</td>
</tr>
<tr>
<td>Turn on landing lights</td>
<td>Land here</td>
<td>Turn on landing light</td>
<td>I will land</td>
</tr>
<tr>
<td>Flash landing light</td>
<td>Airport inadequate</td>
<td>Flash landing light</td>
<td></td>
</tr>
<tr>
<td>Flash all lights regular</td>
<td>Can not comply</td>
<td>Flash all lights regular</td>
<td></td>
</tr>
<tr>
<td>Flash all lights irregular</td>
<td>Distress</td>
<td>Flash all lights irregular</td>
<td></td>
</tr>
</tbody>
</table>