

Checklist für Diamond DA40 TDI Diamond Star

Edition #: 17.1 Edition date: 15.04.2017

Please observe:

The file you are receiving hereby combines all three sections of the checklist: Normal Checklist, Emergency Checklist and Abnormal Checklist.

All pages of a new edition will have the same new "edition #" and "edition date", even if only one page was amended and all other pages still have the same, unchanged content.

Therefore the "List of Effective Pages" (LEP) is provided. It is here where you can see whether a particular page was amended. Pages which have been amended by a new edition will be marked yellow. For all other pages you will see which original "edition #" (and of course any higher "edition #") is still valid.

Note:

The system of assigning "Edition #" is as follows:

- if the revision affects all types, a new edition # (without a decimal figure) will be assigned to all of the checklists
- if the revision does not affect all types, the affected checklists will get subsequent "decimal figures" until a major revision affecting all checklists is issued.

Have a lot of nice flights and happy landings!

Peter Schmidleitner

Comments explaining Edition # 17.1 are on page 2 of this document

Checklist DA40 TDI - LEP

Page	Edition (or any is	owing Date y higher) valid	
Section	Section : Normal Checklist		
1	14	01.12.2006	
2	15.2	01.03.2015	
3	14	01.12.2006	
4	17.1	15.04.2017	
5	14	01.12.2006	
6	14	01.12.2006	
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8	15.2	01.03.2015	

Section: E	Emergency	Checklist	
1	15.1	20.03.2014	
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3	15	20.05.2010	
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Section:	Section: Abnormal Checklist		
7	14	01.12.2006	
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Comments explaining Edition # 15.1

Emergency Checklist:

Page 1: "Emergency Landing": Safety harnesses added Page 2: "Rough Engine and/or Power Loss" updated

Comments explaining Edition # 17

Preflight Procedures:

Page 2:

Parking brake, chocks, towbar added

Normal Procedures:

Page 8: Parking Check, item 3: Text of ELT check revised

Comments explaining Edition # 17.1

Normal Procedures:

Page 4: Engine Start Procedure: "Prop Area....CLEAR" placed on top



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 DA40 Airplane Flight Manual Chapters 4A, 3 and 4B.

This checklist is a Recommended Operator Checklist and for reference only.

It is not a substitute for and does not supersede the current approved Airplane Flight Manual or any of its supplements or parts thereof, or any training or procedures required by any regulatory or advisory bodies.

This checklist may not contain all procedures shown in the Airplane Flight Manual. For a comprehensive listing of all procedures consult the Airplane Flight Manual.

Use of the checklist is at the user's sole risk and discretion.

Any possible liability of Diamond Flight Training and/or Diamond Aircraft 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.

PREFLIGHT INTERIOR + EXTERIOR.

- 1 Check Aircraft papers
- 2 Remove pitot cover
- 3 Check interior for foreign objects
- 4 Check flight controls free
- 5 Check circuit breakers
- 6 Emergency Fuel Valve NORMAL
- 7 Engine Master OFF
- 8 ECU SWAP AUTO
- 9 Essential bus OFF
- 10 All avionics + all electrics OFF
- 11 Electric Master ON Check battery voltage
- 12 Check fuel quantity + temp
- 13 External lights ON
- 14 Pitot heat ON
- 15 Parking brake SET
- 16 Check stall warning
- 17 Check pitot heat
- 18 Check external lights
- 19 Electric Master OFF, key removed

PREFLIGHT EXTERIOR

Left main gear

Wheel fairing

Tire condition, pressure (2,5 bar), position mark

Brake, hydraulic line

Left wing

Wing leading edge, top- and bottom surface, stall strips

Drain fuel sump

Stall warning

Fuel vent

Fuel filler cap

Pitot, static probe (cover removed)

Landing/Taxi light

Wing tip, position light

Static dischargers

Aileron (freedom of movement,

hinges, control linkage, security)

Wing flap

Left fuselage

Canopy left side Rear door Fuselage left side Antennas

Tail

Elevator & rudder (freedom of movement, hinges)

Trim - tab

Tail skid + lower fin Static dischargers

Right fuselage

Fuselage right side Rear window

Canopy right side

Right wing

Wing flap

Aileron (freedom of movement, hinges, control linkage,

security)

Static dischargers

Wing tip, position light

Wing leading edge, top- and bottom

surface, stall strips

Fuel filler cap

Fuel vent

Drain fuel sump

Right main gear

Wheel fairing

Tire condition, pressure (2,5 bar), position mark

Brake, hydraulic line

Nose section

OAT sensor

Propeller surface

Spinner

Cowling, Air inlets (5)

Nose gear

Wheel fairing

Tire condition, pressure (2,0 bar), position mark

Engine bay

Engine oil level (4,5 – 6,0 l) Gearbox oil level

gearbox on leve

Drain fuel strainer

Chocks removed Towbar removed

CHECK BEFORE ENGINE START

1	Preflight checkCOMPLETED	1
2	Baggage and tow bar SECURED	2
3	Emergency fuel valveNORMAL	3
4	Power leverIDLE	4
5	Parking brakeSET	5
6	Alternate air	6
7	Circuit breakers CHECKED IN	7
8	Fuel transfer OFF	8
9	Avionic master OFF	9
10	Essential bus OFF	10
11	Electric Master OFF	11
12	All light switches OFF	12
13	Pitot heat OFF	13
14	Alternate static	14
15	Emergency switch OFF / GUARDED	15
16	ECU swapAUTO	16
17	Engine Master OFF	17
18	Instrument + flood light OFF	18
19	Gyro slave switchSLAVE	19
20	Flap selectorUP	20
21	Electric Master ON	21
22	Annunciator Panel/ Eng.instr CHECKED	22
23	Acknowledge button PRESS	23
24	Low coolant warning LightCHECKED OFF	24
25	Rudder pedals ADJUSTED	25
26	Passengers INSTRUCTED	26
27	Seat beltsFASTENED	27
28	Rear door CLOSED and LATCHED	28
29	Front canopyPOS 1 or 2	29
30	Fuel quantityCHECKED	30
31	Fuel temperature CHECKED	31
32	Hobbs meterNOTED	32
33	Power leverIDLE	33
34	ACL (strobe) ON	34
	End of Chapteliat	

End of Checklist

ENGINE START PROCEDURE

Propeller area Engine Master	
Annunciations / Eng.Instr	
Glow indication	OFF
Start key	START
Oil pressure OUTSID	E RED within 3 sec
Voltage, Electrical load C	CHECK INDICATION
Annunciations ACKNOWLEDGE ,	/ Eng.Instr. CHECK

CHECK AFTER ENGINE START

1	Oil pressure CHECKED	1
2	RPM 890 +/- 20 CHECKED	2
3	Warm up time START	3
	Warm up:	
	Idle 2 minutes	
	1400RPM until OT > 50 °C and CT > 60 °C	
4	Pitot heat ON, annunciation + Amps checked	4
5	Pitot heat OFF	5
_		_
6	Avionics masterON	6

AUTOPILOT TEST

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

	8	Autopilot testCOMPLETED	8
	9	Flood light CHECKED, ON as required	9
	10	Position lightsON as required	10
	11	Flapsfull travel CHECKED, then T/O	11
	12	Altimeters (3) SET	12
	13	Horizon / Directional gyroCHECKED / SET	13
	14	TransponderCODE / MODE CHECKED	14
	15	Parking brakeRELEASED	15

End of Checklist

DURING TAXI

Check Brakes Check flight instruments

DA40 TDI

1	Parking brakeSET	1
2		2
_	Seat beltsFASTENED	
3	Rear door CLOSED + LATCHED	3
4	Front canopy CLOSED + LATCHED	4
5	Door warning light OFF	5
6	Engine instruments CHECKED	6
7	Fuel Temperature (Diesel min. +5°) CHECKED	7
8	Circuit breakers CHECKED	8
9	Electric elevator trimCHECKED, T/O SET	9
10	FlapsCHECKED T/O	10
11	Flight controls CHECKED	11
12	Power leverIDLE	12
13	ECU test PERFORM	13

ECU TEST

ECU test button	press and hold
ECU backup unsafe light	flashing
ECU A, B, Caution lights	flashing
ECU B, Caution lights	flashing / prop cycling
ECU A, Caution lights	flashing / prop cycling
All ECU caution lights	extinguished
ECU backup unsafe light	extinguished
ECU test button	release

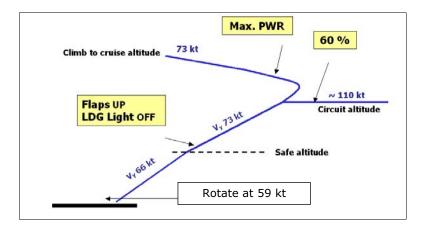
14	ECU swap ECU B, ENGINE CHECKED	14
15	ECU swapAUTO	15
16	Pitot heat AS REQUIRED	16
17	ECU swap	17
18	Parking brakeRELEASED	18

End of Checklist

For procedural items and take-off profile see next page

LINE UP PROCEDURE

Landing lightON
Approach sector CLEAR
RunwayIDENTIFIED
Power lever max (100% / 10 sec)
CHECK RPM /OP / LOAD / Fuel flow



AFTER TAKE-OFF PROCEDURE

After passing safe altitude:	
Flaps	UP
Landing light	OFF

DA40 TDI

NORMAL PROCEDURES

CLIMB TO CRUISE CHECK

1	Flaps CHECKED UP	1
2	Landing light CHECKED OFF	2

End of Checklist

PERIODICALLY DURING CRUISE

Fuel Radio Engine Direction Altitude
Fuel transfer....repeat as required

Maximum fuel unbalance - Long range tank: 9 USG

DESCENT / APPROACH CHECK

1	Landing data RECEIVED	1
2	Altimeters (3) SET	2
3	COM / NAV / GPS SET	3
4	Directional gyro SET	4
5	Seatbelts FASTENED	5
6	Fuel transfer AS REQUIRED	6

End of Checklist

BEFORE LANDING PROCEDURE

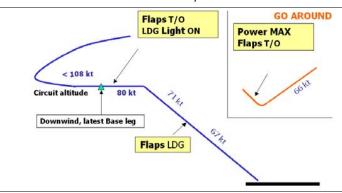
 Downwind, latest base leg:
 Flaps
 T/O

 Landing light
 ON

 On final:
 Flaps
 LDG

GO AROUND PROCEDURE

Power 1	ЧАХ
Flaps	T/O
Continue with take-off profile	



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AFTER LANDING CHECK

1	FlapsUP	1
2	Pitot heat OFF	2
	Alternate air	3
4	Landing/Taxi light AS REQUIRED	4
	Transponder AS REQUIRED	5

End of Checklist

PARKING CHECK

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1	Parking brakeSET	1
2	Power lever IDLE for 2 min.	2
3	ELTCHECK not activated	3
4	Hobbs meterNOTED	4
5	Avionic master OFF	5
6	Electrical consumers except ACL (strobe) OFF	6
7	Engine Master OFF	7
8	ACL (strobe) OFF	8
9	Electric Master OFF	9
10	Interior lightCHECKED OFF	10
11	Start keyREMOVED	11

End of Checklist

OPERATING SPEEDS KIAS			
	850 kg	1000 kg	1150 kg
Best gliding angle (Flaps UP	60	68	73
Best angle of climb (V _X)			
Best rate of climb (V _Y)	54	60	66
Cruising climb speed	60	68	73
Rotating speed	49	55	59
Max. flap speed (V _{FE}) T/O		108	
Max. flap speed (V _{FE}) LDG	V _{FE}) LDG 91		
Landing speed Flaps UP	60	68	73
Landing speed Flaps LDG	58	63	71
Stalling speed (V _{S0}) LDG	42	<-980kg->	49
Stalling speed (V _S) T/O	44	<-980kg->	51
Stalling speed (V _S) clean	47	<-980kg->	52
Max. cruising speed (V _{NO})		129	
Never exceed speed (V _{NE})		178	
Manoeuvring speed (V _A)	94	<-980kg->	108
Max. turbulence speed		129	
Weights	Empty we	eight	850

Max. TKOF weight 1150 kg Max. baggage weight 30 kg

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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.



Abnormal Checklist starts at page 7

WARNING LIGHTSpage 2
<u>Engine</u>
Rough engine and/or power losspage 2
Windmill engine startpage 3
Powered engine startpage 3
Fluctuating RPMpage 4
RPM overspeedpage 4
RPM underspeedpage 4
Electric System
Under/over voltagepage 6
Total electrical failpage 6
Smoke and Fire
Fire / smoke on groundpage 5
Fire / smoke in continued TKOFpage 5
Engine fire in flightpage 5
Electric fire / smoke in flightpage 6
Other Emergencies
Fuel transfer pump u/spage 3
Suspicion of carbon monoxidepage 6

EMEDGENCY I ANDING

	LITERGENCI LANDING	
1	Airspeed73/68/60 KIAS	1
2	ATCINFORM	2
3	Emergency fuel valve OFF	3
4	Engine MasterOFF	4
	On final:	
5	FlapsLDG	5
6	Safety harnessesTIGHT	6
7	Electric master switch OFF	7

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EMERGENCY PROCEDURES

WARNING LIGHTS

STAR	STARTER NOT DISENGAGING	
2 1	Power lever	1 2 3
DOOF	DOOR(S) OPEN OR UNLOCKED	
	Airspeed	1 2
TRIM	FAIL AUTOPILOT TRIM FAIL	
	AP DISC switch (red button)	1 2
	ROUGH ENGINE AND/OR POWER LOSS	
2 1	Airspeed	1 2 3
4 /	Alternate airin icing conditions: OPEN	4
	Main tank fuel quantityCHECK	5
	Fuel transfer pump ON Emergency fuel valve CHECK NORMAL	6 7
	ECU swap ECU B	8
9 1	In case of power loss: ECU reset: Engine masterOFF – ON	9
10	If no success: ECU swapAUTO If no success and insufficient power: Land ASAP	10
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WINDMILL ENGINE START

1	Airspeed	1
	Pressure Altitudemax 6000 ft	2
3	Power lever IDLE	3
4	Emergency fuel valve CHECK NORMAL	4
5	Alternate air OPEN	5
6	Fuel transfer pump ON	6
7	Avionic master OFF	7
8	Electric masterON	8
9	Engine masterOFF, then ON	9
10	Avionic master ON	10

POWERED ENGINE START

1	Gliding airspeed73/68/60 KIAS	1
2	Pressure Altitudemax 6000 ft	2
3	Engine master OFF	3
4	Power lever IDLE	4
5	Emergency fuel valve CHECK NORMAL	5
6	Alternate airOPEN	6
7	Fuel transfer pump ON	7
8	Avionic master OFF	8
9	Electric masterON	9
10	Engine master ON	10
11	Glow indication CHECK ON, wait for OFF	11
12	Electric master START	12
13	Avionic masterON	13

FUEL TRANSFER PUMP U/S

1	Emergency fuel valve EMERG. TRANSFER	1
2	AUX fuel quantity CHECK min 1 USG	2
3	MAIN fuel quantityCHECK max 15 USG	3
4	Emergency fuel valve reset to NORMAL	4

FLUCTUATING R	PM
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	I ESCISATING KIT	
1	Power lever CHANGE SETTING • If no success:	1
2	ECU swap ECU B	2
3	If no success:ECU swapAUTOIf no success:	3
	Land ASAP	
	RPM OVERSPEED	
1 2 3 4 5	Power lever	1 2 3 4 5
7 8 9	If increased climb rate required: Flaps	7 8 9
	RPM UNDERSPEED	
1 2	Power lever AS REQUIRED ECU swap ECU B	1 2
3	• If no success: ECU swapAUTO	3

Land ASAP

6 Electric master...... OFF 6 When engine stopped:

7 Canopy OPEN 7

Evacuate

FIRE / SMOKE DURING CONTINUED TKOF

1	Cabin heat OFF	1

Land ASAP
When landing assured:

	When falling assured:	
2	Emergency fuel valve OFF	2
3	Fuel transfer pump OFF	3
4	Engine master OFF	4
5	Electric master OFF	5
6	Emergency window OPEN as necessary	6
7	CanopyUNLATCH as necessary	7

	ENGINE FIRE IN FLIGHT	
1	Cabin heat OFF	1
2	Emergency landing PREPARE	2
3	Airspeed73/68/60 KIAS	3
4	ATCINFORM	4
5	Emergency window OPEN as necessary	5
6	CanopyUNLATCH as necessary	6
	When landing assured:	
7	Emergency fuel valve OFF	7
8	Power lever MAX	8
9	Engine Master OFF	9
	On final:	
10	FlapsLDG	10
11	Electric master switch OFF	11

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	ELECTRIC FIRE / SMOKE IN FLIGHT	
1 2 3 4 5 6	Emergency switch	1 2 3 4 5 6
	SUSPICION OF CARBON MONOXIDE	
1 2 3 4 5	Cabin heat & defrost OFF Ventilation OPEN Emergency windows OPEN Airspeed max 120 KIAS Canopy UNLATCH Push up and lock in cooling gap position	1 2 3 4 5
1	UNDER / OVER VOLTAGE Essential bus	1
	TOTAL ELECTRIC FAIL	
1	Circuit breakers	1

2 Essential bus ON
If no success:

3 Emergency switch ON 3
4 Flood light, if necessary ON

according power lever position and/or engine noise 6 FlapsVERIFY POSITION 6

Land ASAP

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ABNORMAL PROCEDURES

CAUTION LIGHTS

ENGINE	Page 7	Eng. parameter(s) out of green range
PITOT	Page 7	Pitot heating system failed or OFF
LOW FUEL	Page 7	LH tank fuel quantity low
ECU A	Page 8	Engine ECU A malfunction
ECU B	Page 8	Engine ECU B malfunction
LOW VOLTS	Page 8	Bus voltage too low
ALTERNATOR	Page 8	Alternator failure

Indications outside of green range

RPM highpage 9
OIL pressure high/lowpage 9
OIL temperature high/ lowpage 9
FUEL temperature high/lowpage 9
COOLANT temperature high/low page 10
GEAR temperature high page 10
GENERATOR yellow range page 10
VOLT low/highpage 10

ENGINE

ENG. PARAMETER(S) OUT OF GREEN RANGE

- Check Compact Engine Display CED 125
- Check Auxiliary Engine Display AED 125
- Press "Acknowledge" button
 - If an indication is outside of green range:
 - ⇒ continue with appropriate INDICATIONS OUTSIDE OF GREEN RANGE procedure

PITOT

PITOT HEATING SYSTEM FAILED OR OFF

- Check pitot heat ON
 - If in icing conditions:
 - ⇒ Expect failure of the pitot-static-system
 - ⇒ Alternate static valve: OPEN
 - ⇒ Leave area with icing conditions

LOW FUEL

LH TANK FUEL QTY LOW

- Fuel transfer pump: ON
- Check fuel quantity
 - ❖ If light still ON:
 - ⇒ Expect fuel leak
 - ⇒ Be prepared for emergency landing

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ECU A OR B

ON GROUND

> Discontinue operation, terminate flight preparation

ECU A

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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 ASAP
 - If ECU A caution message can be reset:
 - ⇒ Continue flight. Engine must be serviced after LDG

ECU B

DURING FLIGHT

- Press ECU TEST button for more than 2 seconds
 - If ECU B caution message re-appears or cannot be reset:
 - \Rightarrow Land ASAP
 - If EDU B caution message can be reset:
 - ⇒ Continue flight. Engine must be serviced after LDG

LOW VOLTS

BUS VOLTAGE TOO LOW

Remark: possible reasons are

- malfunction of electrical supply
- RPM too low
- Check circuit breakers
 - On ground
 - ⇒ Increase RPM
 - If light still ON:
 - ⇒ Terminate flight preparation
 - ❖ In flight
 - ⇒ Switch off unnecessary electrical equipment
 - ❖ If light still ON:
 - ⇒ Apply "ALTERNATOR"-caution procedure

ALTERNATOR

ALTERNATOR FAILURE

- Check circuit breakers
 - ❖ If all CBs OK:
 - ⇒ ESSENTIAL BUS: ON
- > Switch off unnecessary electrical equipment
- Land ASAP
- Be prepared for engine fail; be prepared for emergency landing

INDICATIONS OUTSIDE OF GREEN RANGE

RPM high

- Reduce power
- > Keep RPM in green range with appropriate power lever setting
 - ❖ If power not sufficient: land ASAP

Oil pressure (OP) high

- Check oil temperature
- Check coolant temperature
 - If within green range
 - ⇒ Oil pressure indication may be faulty; watch temperatures
 - ❖ If outside of green range
 - ⇒ Reduce power
 - ⇒ Be prepared for engine fail; be prepared for emergency landing

Oil pressure (OP) low

- Reduce power
- Be prepared for loss of oil and engine fail; be prepared for emergency landing

Oil temperature (OT) 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 temperature (OT) low

- > Increase power
- > Reduce airspeed

Fuel temperature high

- Reduce power
- Increase airspeed

Fuel temperature low

- > Increase power
- > Reduce airspeed

Coolant temperature (CT) high

- Check WATER LEVEL caution light
 - ❖ If "WATER LEVEL" OUT

DA40 TDI

- During climb:
 - ⇒ Reduce power 10%
 - ⇒ Increase airspeed 10 KIAS
 - ⇒ If not returning to green range within 60 seconds: reduce power as much as possible and increase airspeed
- During cruise:
 - ⇒ Reduce power
 - ⇒ Increase airspeed
 - ⇒ Check coolant temperature in green range
 - ⇒ If not returning to green range: land ASAP
- ❖ If "WATER LEVEL" ON
 - ⇒ Reduce power
 - ⇒ Expect loss of coolant fluid
 - ⇒ Be prepared for emergency landing

Coolant temperature (CT) low

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

- Check WATER LEVEL caution light
 - **❖** If "WATER LEVEL" ON
 - ⇒ Reduce power
 - Expect loss of coolant fluid
 - ⇒ Be prepared for emergency landing

Gear temperature (GT) high

- > Reduce power
- > Increase airspeed

GENERATOR yellow range

- Switch off unnecessary electrical equipment
 - If indication still outside of green range:
 - \Rightarrow Land ASAP

VOLT low

- Check circuit breakers
- > Switch off unnecessary electrical equipment
 - If light still ON
 - ⇒ Apply "ALTERNATOR"-caution procedure

VOLT high

Land ASAP