

Questionnaire for final test DA42

Name: _____
Licence No. _____
Date: _____

Note:

All questions related to the aircraft version equipped with GFC700 A/P and maximum take off mass of 1785 kg.

Limitations				
1	What type of engine is in the DA42?		1	
2	What is the maximum take off power produced?		1	
3	What is specified maximum continuous power?		1	
4	What are the specified maximum and minimum quantities of oil to be used?		1	
5	What is the wingspan of the DA42?		1	
6	Normal oil pressure range?		1	
7	Maximum oil pressure		1	
8	Minimum oil pressure		1	
9	Maximum oil temperature		1	
10	Minimum oil temperature		1	
11	Maximum gearbox temperature		1	
12	Maximum fuel temperature		1	
13	Minimum fuel temperature		1	
14	Maximum coolant temperature		1	
15	Maximum voltage		1	
16	Minimum voltage		1	
17	Normal voltage range		1	
			17	

18	Maximum takeoff mass?		1	
19	Maximum ramp mass?		1	
20	Maximum landing mass?		1	
21	Maximum allowable load in the nose baggage compartment?		1	
22	Maximum allowable load in the cabin baggage extension?		1	
23	Maximum allowable combined load in the cabin baggage and extension baggage compartment?		1	
24	Define the centre of gravity limits Forward: _____ m up to _____ kg then increasing to: _____ m		1	
	Aft: _____ m increasing to: _____ m at _____ kg		1	
25	What is the fuel capacity of the DA42 (Main tanks only)?	Total: _____ gal Usable: _____ gal	1 1	
26	What is the maximum allowable difference between the two main tanks?		1	
27	What are the approved fuel types for the DA42?		1	
28	If installed, what is the maximum usable fuel capacity in the AUX tanks?		1	
			Total Seite 3	13
			Übertrag Seite 2	17
			Total	30

Emergency and Abnormal Procedures

Note:

To answer the emergency and abnormal procedure questions it is advisable to refer to the checklist of the AFM, which makes answering much easier.

29	Airspeeds for emergency procedures? Engine failure after takeoff (flaps up): Engine failure during cruise:		1 1	
30	Airspeeds for emergency landing(e.g. flaps failed or engine failed)? Flaps UP: Flaps APP: Flaps LDG:		1 1 1	
31	While attempting to start the right engine, you notice smoke and flames around the cowling.	Explain the correct procedure to safe the problem:	3	
32	In cruise at 7000 ft, your left engine RPM begin to oscillate.	What do you do?	3	
33	On a normal cockpit check at cruising altitude, you observe that your oil pressure indicator is reading 6.0 bar.	What is the correct procedure?	3	
Total Seite 4			14	
Übertrag Seite 3			30	
Total			44	

34	You are cruising at 5500 ft when you notice a strange smell and observe smoke originating from under the instrument panel.	Which checklist is appropriate and what do you do?	3	
35	What is the procedure if you suspect carbon monoxide is entering the cabin?		3	
36	If necessary, how do you use the rear emergency exit?		3	
37	Because of an empty or weak battery an EPU is used for engine start. The correct statement is:	<ul style="list-style-type: none"> a) Both engines shall be started with the EPU to conserve battery power b) One engine only shall be started with the EPU, the second engine shall be started with aircraft electrical power c) Night VFR or IFR flights are not permitted d) Both b) and c) is correct 	1	
38	When after an EPU start of the LH engine the RH engine will be started afterwards with the aircraft electrical power system. What is the correct answer?	<ul style="list-style-type: none"> a) It will result in a overheat condition of the main battery b) This will damage the excitation battery c) The battery status is checked, because if the battery is not on line or too weak it will not "buffer" the load of the RH starter motor, the LH alternator voltage will drop considerably, the ECU will fail and the LH engine will stop d) It will be not possible to switch the avionics buss to ON 	1	
Total Seite 5			11	
Übertrag Seite 4			44	
Total			55	

Airplane Systems (no AUX tanks and de-icing system)				
39	When an External Power Unit (EPU) is connected	<ul style="list-style-type: none"> a) The electrical system is powered even with the electric master switch OFF b) The electrical system is powered only if the electric master switch is ON c) The electrical system is powered if the EPU switch on the instrument panel is ON d) The electrical system is powered if the avionic switch is in the ON position 	1	
40	How do you operate the alternate air supply?		1	
41	The air intakes on the cowlings of the DA42 supply air for the following systems:		5	
42	How many fuel tanks are there in the DA42		1	
43	How many fuel pumps are there in the DA42?		1	
44	What is the specific purpose of each fuel pump?		2	
45	How many fuel vents are there and where are they located?		1	
46	To transfer fuel from the LH to the RH main tank?	<ul style="list-style-type: none"> a) The LH fuel control lever must be put to "crossfeed" position b) The RH fuel control lever must be put to "crossfeed" position c) Fuel transfer from one main tank to the other is not possible d) The red lever on the left side of the pedestal must be pulled 	1	
		Total Seite 6 Übertrag Seite 5	13 55	
		Total	68	

47	The Ammeter shows	<ul style="list-style-type: none"> a) the intensity of current supplied by the alternator b) Whether the battery is charged or discharged c) The current flow from the hot battery bus to the battery bus d) The current flow from the RH main bus to the hot battery bus 	1	
Normal operating procedures				
48	<p>Airspeeds for normal operation (1785 kg and GFC 700 Autopilot)</p> <p style="text-align: right;">V_{so}:</p> <p style="text-align: right;">V_s (clean):</p> <p style="text-align: right;">V_x:</p> <p style="text-align: right;">V_y:</p> <p style="text-align: right;">V_{no}:</p> <p style="text-align: right;">V_{fe}:</p> <p style="text-align: right;">V_{ne}:</p> <p style="text-align: right;">V_a (lower mass):</p> <p style="text-align: right;">V_a (higher mass):</p> <p style="text-align: right;">Approximate mass where V_a changes:</p> <p style="text-align: right;">V_{app} (flaps LDG, 1785 kg)</p>		<p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">1</p> <p style="text-align: center;">2</p> <p style="text-align: center;">1</p> <p style="text-align: center;">2</p> <p style="text-align: center;">1</p>	
Total Seite 7 Übertrag Seite 6			12 68	
Total			80	

Performance and mass and balance

Flight from A (RWY 15) to B (RWY 14)

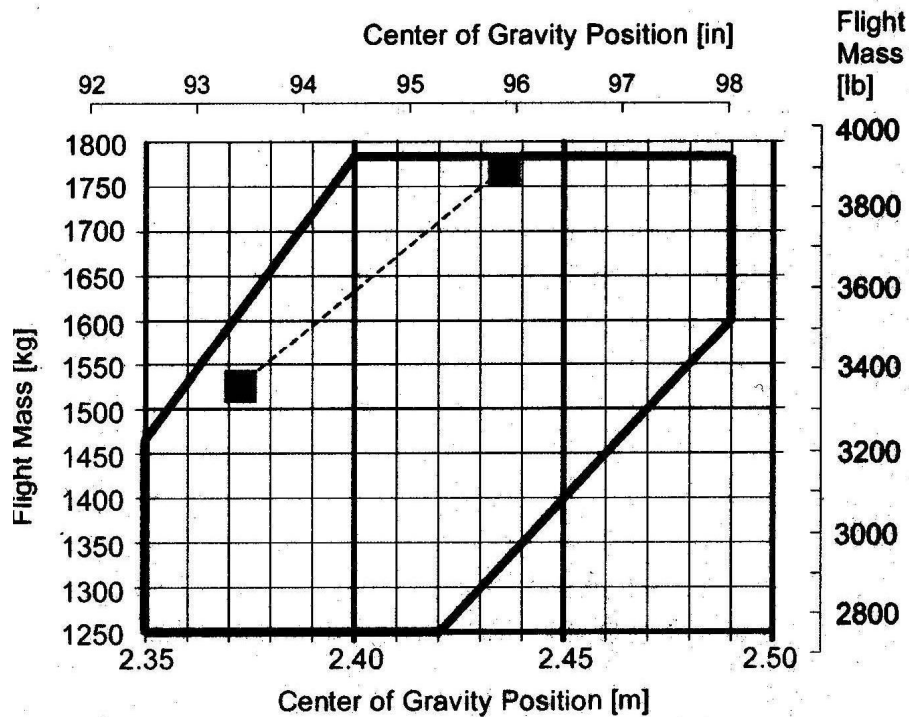
Magnetic track from A to B: 080°
 Distance: 270 NM
 Pressure altitude: 7000 ft
 Temperature at 7000 ft: + 5° C
 Wind at 7000 ft: 260/35 kts
 Airport A: SL, OAT 15°, wind 150/11 kts
 Airport B: Elv. 2000 ft, OAT 20° C, wind 320/05 kts
 Empty mass: 1250 kg
 Empty moment: 3032.5 kg/m
 Pilot: 80 kg
 Passenger 1 Copi seat 70 kg
 Passenger 2 rear seat 75 kg
 Baggage nose compartment: 20 kg

49	Take off distance at A:	_____ m	2	
50	Average rate of climb to 7000 ft:	_____ ft/min	1	
51	Total fuel flow for 70%:	_____ gal	1	
52	TAS and GS at 7000 ft:	TAS: _____ kts GS: _____ kts	1	
53	Fight time to B:	_____ hr:min	1	
54	Minimum fuel to B with 45' reserve:	_____ gal	2	
55	Landing distance at B:	_____ m	2	
Total Seite 8			10	
Übertrag Seite 7			80	
Total			90	

Complete mass and balance on the following page

	Arm	Mass (kg)	Moment (kg/m)
Empty mass	2.426	1250	3032.5
Front seats	2.3		
Rear seats	3.25		
Nose baggage			
Cockpit baggage	3.89		
Baggage extension	4.54		
Zero fuel mass			
Fuel	2.63		
Total T/O mass			

1 USG	3.78 ltr
1 ltr	0.8 kg
1 USG	3.024 kg



Result of final test	
Score brought forward form page 8:	_____
Score for this page: (possible score for this page is 10)	_____
Total score: (Total possible score is 100)	_____