

BAK Assessment Module 10d Working File. LOADING CHARLIE



Q1.

Refer Load System "CHARLIE" in work booklet.

If the aircraft is operated in the Normal category, and the fuel load is 130 litres, the loaded Centre of Gravity position is closest to ?

Station	Item	Arm	IU
Basic Empty GW	687 kg		19522
Oil Quantity (8 US Quarts)	7 kg		86
Pilot and front passenger Row 1	130 kg		3572
2 Passengers in Row 2	120 kg		4320
Aft baggage area	50 kg		2105
ZFW	994 kg	2978	29605
Fuel 130 L	92		2714
Total	1086 kg	2976	32319

└─ Answer !

Q2.

Q11. Refer Load System "CHARLIE" in work booklet.

If the aircraft is operated in the Normal category, and the fuel load is 150 litres, the ZFW Centre of Gravity position is closest to ?

Station	Item	Arm	IU
Basic Empty GW	690 kg		19607
Oil Quantity (7 US Quarts)	6 kg		74
Pilot and front passenger Row 1	140 kg		3850
2 Passengers in Row 2	130 kg		4680
Aft baggage area	30 kg		1263
ZFW	996 kg	2959	29474

└─ Answer !

Q3.

(2 marks)

Refer Load System "CHARLIE" in the Day VFR work booklet.

ZFW 1000 kg/2842 mm aft of datum.

Adding 140 Litres means the TOW C of G is closest to ?

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Station	Item	Arm	IU
ZFW	1000 kg	2978	28420
Fuel 140 L	100 kg	2950	2950
Total	1100	2852	31370


Answer !
Q4.

(2 marks)


TOW/CG is 1050 kg/3016 mm aft of datum.

The minimum passenger weight to transfer from Row 2 to Row 1 is closest to ?

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Rear envelope limit is 3004 mm aft of datum- we have to bring the C of G forward 12 mm (3016-3004).

$$\frac{\text{Aircraft Gross Weight (kg)} \times \text{Diff in C of G (mm)}}{\text{Difference in arms of shifting}} = \frac{1050 \text{ kg} \times 12 \text{ mm}}{(3600 - 2750)} = 14.8 \text{ kg}$$


Round up to 15 kg
Answer !

Q5.**WORKING**

(2 marks)

Refer Load System "CHARLIE" in the Day VFR work booklet.

ZFW 950 kg/3020 mm aft of datum.

The weight to remove from the baggage area to get the ZFW on the aft envelope limit is closest to ?

Weight to remove =
$$\frac{\text{Aircraft Gross Weight (kg)} \times \text{Diff in C of G (mm)}}{\text{Difference between desired C of G and arm of unloading}}$$

$$= \frac{950 \text{ kg} \times 16 \text{ mm}}{(4210 - 3004)} = \frac{15200}{(1206)} = 12.6 \text{ kg}$$

Round up to 13 kg

Answer !

Q6.**WORKING**

(2 marks)

Refer Load System "CHARLIE" in the Day VFR work booklet.

ZFW 900 kg/2980 mm aft of datum.

The maximum baggage weight that can be loaded into the baggage area is closest to ?

Weight to add =
$$\frac{\text{Aircraft Gross Weight (kg)} \times \text{Diff in C of G (mm)}}{\text{Difference between desired C of G and arm of unloading}}$$

$$= \frac{900 \text{ kg} \times 24 \text{ mm}}{(4210 - 3004)} = \frac{21600}{(1206)} = 17.9 \text{ kg}$$

Round up to 18 kg



Answer !

End of BAK Assessment Module 10d Working File.
LOADING CHARLIE