**TEMA:** 0645 COM-RTC - Aircraft Performance - Chap. 8

| COD PREG: | PREGUNTA: | RPTA: |
|---|---|---|
| PREG20098676 | (Refer to Figure 37)<br>GIVEN: WEIGHT MOMENT<br><br>Gyroplane basic weight (oil included) ..... 1,315 .....154.0<br>Pilot weight ..... 145 .....?<br>Passenger weight ..... 153 .....?<br>27 gal fuel ..... 162 ..... ?<br>The CG is located | B |
| **OPCION A:** | outside the CG envelope; the maximum gross weight is exceeded. | |
| **OPCION B:** | outside the CG envelope; but the maximum gross weight is not exceeded. | |
| **OPCION C:** | within the CG envelope; neither maximum gross weight nor gross-weight moment is exceeded. | |

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| PREG20098677 | (Refer to Figure 39)<br>GIVEN:<br>WEIGHT ARM (IN) MOMENT (IN-LBS)<br>Empty weight..... 1,700.....+ 6.0 .....+10,200<br>Pilot weight ..... 200 ..... -31.0 ..... ?<br>Oil (8 qt all usable) ..... ? ..... + 1.0 ..... ?<br>Fuel (50 gal. all usable) ..... ? ..... + 2.0 ..... ..... ?<br>Baggage ..... 30 ..... -31.0 ..... ?<br>TOTALS ? ? ?<br>If the datum is located at station 0, the CG is located approximately | A |
| **OPCION A:** | 1.64 inches aft of datum. | |
| **OPCION B:** | 1.64 inches forward of datum | |
| **OPCION C:** | 1.66 inches forward of datum. | |

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| PREG20098661 | At higher elevation airports the pilot shoud know that indicated airspeed | A |
| **OPCION A:** | will be unchanged, but groundspeed will be faster. | |
| **OPCION B:** | will be higher, but groundspeed will be unchanged. | |
| **OPCION C:** | should be increased to compensate for the thinner air. | |

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| PREG20098662 | The performance tables of an aircraft for takeoff and climb are based on | A |
| **OPCION A:** | pressure/density altitude. | |
| **OPCION B:** | cabin altitude | |
| **OPCION C:** | true altitude | |

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| PREG20098663 | What are the standard temperature and pressure values for sea level? | A |
| **OPCION A:** | 15°C and 29.92" Hg. | |
| **OPCION B:** | 50°F and 1013.2" Hg. | |

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| **OPCION C:** | 15°C and 29.92 Mb. | |

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| PREG20098664 | (Refer to Figure 31).<br>If the tower-reported surface wind is 010° at 18 knots, what is the crosswind component for a Rwy 08 landing? | C |
| **OPCION A:** | 7 knots. | |
| **OPCION B:** | 15 knots. | |
| **OPCION C:** | 17 knots. | |

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| PREG20098665 | (Refer to Figure 31).<br>The surface wind is 180° at 25 knots. What is the crosswind component for a Rwy 13 landing? | A |
| **OPCION A:** | 19 knots. | |
| **OPCION B:** | 21 knots. | |
| **OPCION C:** | 23 knots. | |

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| PREG20098667 | When computing weight and balance, the empty weight includes the weight of the airframe, engine (s), and all items of operating equipment permanently installed. Empty weight also includes | A |
| **OPCION A:** | the unusable fuel, full operating fluids, and full oil. | |
| **OPCION B:** | all usable fuel, maximum oil, hydraulic fluid, but does not include the weight of pilot, passengers, or baggage. | |
| **OPCION C:** | all usable fuel and oil, but does not include any radio equipment or instruments that were installed by someone other than the manufacturer. | |

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| PREG20098666 | (Refer to Figure 31).<br>What is the headwind component for a Rwy 13 takeoff if the surface wind is 190° at 15 knots? | A |
| **OPCION A:** | 7 knots. | |
| **OPCION B:** | 13 knots. | |
| **OPCION C:** | 15 knots. | |

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| PREG20098669 | The CG of an aircraft can be determined by which of the following methods? | C |
| **OPCION A:** | Dividing total arms by total moments. | |
| **OPCION B:** | Multiplying total arms by total weight. | |
| **OPCION C:** | Dividing total moments by total weights. | |

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| PREG20098670 | The CG of an aircraft may be determined by | B |
| **OPCION A:** | dividing total arms by total moments. | |
| **OPCION B:** | dividing total moments by total weight. | |
| **OPCION C:** | multiplying total weight by total moments. | |

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| PREG20098671 | GIVEN:<br>Weight A: 155 pounds at 45 inches aft of datum<br>Weight B: 165 pounds at 145 inches aft of datum<br>Weight C: 95 pounds at 185 inches aft of datum<br>Based on this information, where would the CG be located aft of datum? | B |
| **OPCION A:** | 86.0 inches. | |
| **OPCION B:** | 116.80 inches. | |
| **OPCION C:** | 125.0 inches. | |

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| PREG20098672 | GIVEN:<br>Weight A: 140 pounds at 17 inches aft of datum<br>Weight B: 120 pounds at 110 inches aft of datum<br>Weight C: 85 pounds at 210 inches aft of datum<br>Based on this information, the CG would be located how far aft of datum? | B |
| **OPCION A:** | 89.11 inches. | |
| **OPCION B:** | 96.89 inches. | |
| **OPCION C:** | 106.92 inches. | |

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| PREG20098673 | GIVEN:<br>Weight A: 135 pounds at 15 inches aft of datum<br>Weight B: 205 pounds at 117 inches aft of datum<br>Weight C: 85 pounds at 195 inches aft of datum<br>Based on this information, the CG would be located how far aft of datum? | A |
| **OPCION A:** | 100.2 inches. | |
| **OPCION B:** | 109.0 inches. | |
| **OPCION C:** | 121.7 inches. | |

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| PREG20098674 | GIVEN:<br>Weight A: 175 pounds at 135 inches aft of datum<br>Weight B: 135 pounds at 115 inches aft of datum<br>Weight C: 75 pounds at 85 inches aft of datum<br>The CG for the combined weights would be located how far aft of datum? | C |
| **OPCION A:** | 91.76 inches. | |
| **OPCION B:** | 111.67 inches. | |
| **OPCION C:** | 118.24 inches. | |

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| PREG20098668 | If all index units are positive when computing weight and balance, the location of the datum would be at the | B |
| **OPCION A:** | centerline of the main wheels. | |
| **OPCION B:** | nose, or out in front of the airplane. | |
| **OPCION C:** | centerline of the nose or tailwheel, depending on the type of airplane. | |

PREG20098684 (Refer to Figure 41) B

GIVEN:
Helicopter gross weight ..... 1,175 lb
Ambient temperature ..... 95°F
Determine the in-ground effect hover ceiling.

**OPCION A:** 5,000 feet.

**OPCION B:** 5,250 feet.

**OPCION C:** 6,250 feet.

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PREG20098683 (Refer to Figure 41) A

GIVEN:
Helicopter gross weight ..... 1,225 lb
Ambient temperature ..... 77°F
Determine the in-ground effect hover ceiling.

**OPCION A:** 6,750 feet.

**OPCION B:** 7,250 feet.

**OPCION C:** 8,000 feet.

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PREG20098680 A helicopter is loaded in such a manner that the CG is located aft of the aft allowable CG limit. Which is true about this situation? C

**OPCION A:** In case of an autorotation, sufficient aft cyclic control may not be available to flare properly.

**OPCION B:** This condition would become more hazardous as fuel is consumed, if the main fuel tank is located aft of the rotor mast.

**OPCION C:** If the helicopter should pitchup due to gusty winds during high-speed flight, there may not be sufficient forward cyclic control available to lower the nose.

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PREG20098681 A helicopter is loaded in such a manner that the CG is located forward of the allowable CG limit. Which is true about this situation? B

**OPCION A:** This condition would become less hazardous as fuel is consumed if the main fuel tank is located aft of the rotor mast.

**OPCION B:** In case of engine failure and the resulting autorotation, sufficient cyclic control may not be available to flare properly to land.

**OPCION C:** Should the aircraft pitchup during cruise flight due to gusty winds, there may not be enough forward cyclic control available to lower the nose.

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PREG20098679 GIVEN: C

| | WT | LNG. ARM. | LNG. MOM. | LAT. ARM. | LAT. MOM. |
|---|---|---|---|---|---|
| Empty weight | 1700 | 116.1 | ? | + 0.2 | --- |
| Fuel (75 gal at 6.8 ppg) | ? | 110.0 | ? | --- | --- |
| Oil | 12 | 179.0 | ? | --- | --- |
| Pilot (right seat) | 175 | 65.0 | ? | +12.5 | ? |
| Passenger (left seat) | 195 | 104.0 | ? | -13.3 | ? |
| TOTALS | ? | | ? | ? | ? |

| | | |
|---|---|---|
| **OPCION A:** | 109.35" and -.04" | |
| **OPCION B:** | 110.43" and +.02" | |
| **OPCION C:** | 110.83" and -.02" | |

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|---|---|---|
| PREG20098682 | With respect to using the weight information given in a typical aircraft owner's manual for computing gross weight, it is important toknow that if items have been installed in the aircraft in addition to the original equipment, the | A |
| **OPCION A:** | allowable useful load is decreased. | |
| **OPCION B:** | allowable useful load remains unchanged. | |
| **OPCION C:** | maximum allowable gross weight is increased. | |

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|---|---|---|
| PREG20098685 | (Refer to Figure 41)<br>GIVEN:<br>Helicopter gross weight ..... 1,275 lb<br>Ambient temperature ..... 9°F<br>Determine the in-ground effect hover ceiling. | B |
| **OPCION A:** | 6,600 feet. | |
| **OPCION B:** | 7,900 feet. | |
| **OPCION C:** | 8,750 feet | |

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|---|---|---|
| PREG20098687 | (Refer to Figure 42)<br>Departure is planned for a flight from a heliport with a pressure altitude of 3,800 feet. What rate of climb could be expected in this helicopter during departure if the ambient temperature is 70°F? | A |
| **OPCION A:** | 330 ft/min. | |
| **OPCION B:** | 360 ft/min. | |
| **OPCION C:** | 400 ft/min. | |

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|---|---|---|
| PREG20098688 | (Refer to Figure 43)<br>GIVEN:<br>Ambient temperature ..... 60°F<br>Pressure altitude ..... 2,000 ft<br>What is the rate of climb? | B |
| **OPCION A:** | 480 ft/min. | |
| **OPCION B:** | 515 ft/min. | |
| **OPCION C:** | 540 ft/min. | |

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|---|---|---|
| PREG20098689 | (Refer to Figure 43)<br>GIVEN:<br>Ambient temperature ..... 80°F<br>Pressure altitude ..... 2,500 ft<br>What is the rate of climb? | B |
| **OPCION A:** | 350 ft/min. | |
| **OPCION B:** | 395 ft/min. | |
| **OPCION C:** | 420 ft/min. | |

| | | |
|---|---|---|
| PREG20098690 | (Refer to Figure 44)<br>GIVEN:<br>Ambient temperature ..... 40°F<br>Pressure altitude ..... 1,000 ft<br>What is the rate of climb? | C |
| **OPCION A:** | 810 ft/min. | |
| **OPCION B:** | 830 ft/min. | |
| **OPCION C:** | 860 ft/min. | |
| PREG20098691 | (Refer to Figure 44)<br>GIVEN:<br>Ambient temperature ..... ....60°F<br>Pressure altitude ..... 2,500 ft<br>What is the rate of climb? | A |
| **OPCION A:** | 705 ft/min. | |
| **OPCION B:** | 630 ft/min. | |
| **OPCION C:** | 755 ft/min. | |
| PREG20098692 | (Refer to Figures 45 and 46)<br>GIVEN:<br>Pressure altitude ..... 4,000 ft<br>Ambient temperature ..... 80°F<br>To clear a 50-foot obstacle, a jump takeoff would require | A |
| **OPCION A:** | more distance than a running takeoff. | |
| **OPCION B:** | less distance than a running takeoff. | |
| **OPCION C:** | the same distance as a running takeoff. | |
| PREG20098693 | (Refer to Figures 45 and 46)<br>GIVEN:<br>Pressure altitude ..... 4,000 ft<br>Ambient temperature ..... 80°F<br>The takeoff distance to clear a 50-foot obstacle is | C |
| **OPCION A:** | 1,225 feet for a jump takeoff. | |
| **OPCION B:** | 1,440 feet for a running takeoff. | |
| **OPCION C:** | less for a running takeoff than for a jump takeoff. | |
| PREG20098686 | (Refere to Figure 42)<br>Departure is planned from a heliport that has a reported pressure altitude of 4,100 feet. What rate of climb could be expected in this helicopter if the ambient temperature is 90°F? | B |
| **OPCION A:** | 210 ft/min. | |
| **OPCION B:** | 250 ft/min. | |
| **OPCION C:** | 390 ft/min. | |

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|---|---|---|
| PREG20098678 | (Refer to Figure 40.)<br>GIVEN:<br>Basic weight (oil is included) ..... 830 lb<br>Basic weight moment (1,000/in-lb) ..... 104.8<br>Pilot weight ..... 175 lb<br>Passenger weight ..... 160 lb<br>Fuel ..... 19.2 gal<br>The CG is located | A |
| **OPCION A:** | well aft of the aft CG limit. | |
| **OPCION B:** | within the CG envelope. | |
| **OPCION C:** | forward of the forward CG limit | |

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|---|---|---|
| PREG20098675 | (Refer to Figure 37)<br>GIVEN: WEIGHT MOMENT<br>Gyroplane basic weight (oil included) ..... 1,315 .....150.1<br>Pilot weight ..... 140 ..... ?<br>Passenger weight ..... 150 ..... ?<br>27 gal fuel ..... 162 ..... ?<br>The CG is located | C |
| **OPCION A:** | outside the CG envelope; the maximum gross weight is exceeded. | |
| **OPCION B:** | outside the CG envelope; the maximum gross weight and the gross-weight moment are exceeded. | |
| **OPCION C:** | within the CG envelope; neither maximum gross weight nor gross-weight moment is exceeded. | |