

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

**COD PREG:** PREG20098676 **PREGUNTA:** (Refer to Figure 37) **RPTA:** B

GIVEN:	WEIGHT	MOMENT
Gyroplane basic weight (oil included) .....	1,315	154.0
Pilot weight .....	145	?
Passenger weight .....	153	?
27 gal fuel .....	162	?
The CG is located		

**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.

PREG20098677 (Refer to Figure 39) **RPTA:** A

GIVEN:	WEIGHT	ARM (IN)	MOMENT (IN-LBS)
Empty weight.....	1,700	+ 6.0	+10,200
Pilot weight .....	200	-31.0	?
Oil (8 qt all usable) .....	?	+ 1.0	?
Fuel (50 gal. all usable) .....	?	+ 2.0	?
Baggage .....	30	-31.0	?
<b>TOTALS</b> .....	?	?	?

If the datum is located at station 0, the CG is located approximately

**OPCION A:** 1.64 inches aft of datum.

**OPCION B:** 1.64 inches forward of datum

**OPCION C:** 1.66 inches forward of datum.

PREG20098661 At higher elevation airports the pilot should know that indicated airspeed **RPTA:** 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.

PREG20098662 The performance tables of an aircraft for takeoff and climb are based on **RPTA:** A

**OPCION A:** pressure/density altitude.

**OPCION B:** cabin altitude

**OPCION C:** true altitude

PREG20098663 What are the standard temperature and pressure values for sea level? **RPTA:** 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). C

If the tower-reported surface wind is 010° at 18 knots, what is the crosswind component for a Rwy 08 landing?

**OPCION A:** 7 knots.

**OPCION B:** 15 knots.

**OPCION C:** 17 knots.

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PREG20098665 (Refer to Figure 31). A

The surface wind is 180° at 25 knots. What is the crosswind component for a Rwy 13 landing?

**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 A

weight of the airframe, engine (s), and all items of operating equipment permanently installed. Empty weight also includes

**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). A

What is the headwind component for a Rwy 13 takeoff if the surface wind is 190° at 15 knots?

**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 C

methods?

**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:      B  
Weight A: 155 pounds at 45 inches aft of datum  
Weight B: 165 pounds at 145 inches aft of datum  
Weight C: 95 pounds at 185 inches aft of datum  
Based on this information, where would the CG be located aft of datum?

**OPCION A:**      86.0 inches.  
**OPCION B:**      116.80 inches.  
**OPCION C:**      125.0 inches.

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PREG20098672      GIVEN:      B  
Weight A: 140 pounds at 17 inches aft of datum  
Weight B: 120 pounds at 110 inches aft of datum  
Weight C: 85 pounds at 210 inches aft of datum  
Based on this information, the CG would be located how far aft of datum?

**OPCION A:**      89.11 inches.  
**OPCION B:**      96.89 inches.  
**OPCION C:**      106.92 inches.

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PREG20098673      GIVEN:      A  
Weight A: 135 pounds at 15 inches aft of datum  
Weight B: 205 pounds at 117 inches aft of datum  
Weight C: 85 pounds at 195 inches aft of datum  
Based on this information, the CG would be located how far aft of datum?

**OPCION A:**      100.2 inches.  
**OPCION B:**      109.0 inches.  
**OPCION C:**      121.7 inches.

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PREG20098674      GIVEN:      C  
Weight A: 175 pounds at 135 inches aft of datum  
Weight B: 135 pounds at 115 inches aft of datum  
Weight C: 75 pounds at 85 inches aft of datum  
The CG for the combined weights would be located how far aft of datum?

**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.

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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.

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.

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

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

PREG20098679 GIVEN: C

	LNG.	LNG.	LAT.	LAT.
	WT	ARM.	MOM.	ARM.
	MOM.	MOM.	MOM.	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
<b>TOTALS</b>	?	?	?	?

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- 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) B  
GIVEN:  
Helicopter gross weight ..... 1,275 lb  
Ambient temperature ..... 9°F  
Determine the in-ground effect hover ceiling.
- OPCION A:** 6,600 feet.  
**OPCION B:** 7,900 feet.  
**OPCION C:** 8,750 feet
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- PREG20098687 (Refer to Figure 42) A  
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?
- OPCION A:** 330 ft/min.  
**OPCION B:** 360 ft/min.  
**OPCION C:** 400 ft/min.
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- PREG20098688 (Refer to Figure 43) B  
GIVEN:  
Ambient temperature ..... 60°F  
Pressure altitude ..... 2,000 ft  
What is the rate of climb?
- OPCION A:** 480 ft/min.  
**OPCION B:** 515 ft/min.  
**OPCION C:** 540 ft/min.
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- PREG20098689 (Refer to Figure 43) B  
GIVEN:  
Ambient temperature ..... 80°F  
Pressure altitude ..... 2,500 ft  
What is the rate of climb?
- OPCION A:** 350 ft/min.  
**OPCION B:** 395 ft/min.  
**OPCION C:** 420 ft/min.

PREG20098690 (Refer to Figure 44) C  
GIVEN:  
Ambient temperature ..... 40°F  
Pressure altitude ..... 1,000 ft  
What is the rate of climb?  
**OPCION A:** 810 ft/min.  
**OPCION B:** 830 ft/min.  
**OPCION C:** 860 ft/min.

PREG20098691 (Refer to Figure 44) A  
GIVEN:  
Ambient temperature ..... 60°F  
Pressure altitude ..... 2,500 ft  
What is the rate of climb?  
**OPCION A:** 705 ft/min.  
**OPCION B:** 630 ft/min.  
**OPCION C:** 755 ft/min.

PREG20098692 (Refer to Figures 45 and 46) A  
GIVEN:  
Pressure altitude ..... 4,000 ft  
Ambient temperature ..... 80°F  
To clear a 50-foot obstacle, a jump takeoff would require  
**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) C  
GIVEN:  
Pressure altitude ..... 4,000 ft  
Ambient temperature ..... 80°F  
The takeoff distance to clear a 50-foot obstacle is  
**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 (Refer to Figure 42) B  
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?  
**OPCION A:** 210 ft/min.  
**OPCION B:** 250 ft/min.  
**OPCION C:** 390 ft/min.

PREG20098678 (Refer to Figure 40.) A

GIVEN:

Basic weight (oil is included) ..... 830 lb

Basic weight moment (1,000/in-lb) ..... 104.8

Pilot weight ..... 175 lb

Passenger weight ..... 160 lb

Fuel ..... 19.2 gal

The CG is located

**OPCION A:** well aft of the aft CG limit.

**OPCION B:** within the CG envelope.

**OPCION C:** forward of the forward CG limit

PREG20098675 (Refer to Figure 37) C

GIVEN:

	WEIGHT	MOMENT
Gyroplane basic weight (oil included) .....	1,315	150.1

Pilot weight .....	140	?
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Passenger weight .....	150	?
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27 gal fuel .....	162	?
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The CG is located

**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.