

AIRCRAFT QUESTIONNAIRE (OPEN BOOK)

GULFSTREAM AEROSPACE GA-7 COUGAR (1/08)

1. The maximum gross weight is _____ lbs; the maximum usable fuel is _____ lbs; an intermediate fuel loading is _____ lbs: and the maximum landing weight is _____ lbs.

- a. 3800; 708; 600; 3600
- b. 3800; 684; 480; 3800
- c. 3800; 684; 480; 3600

2. Ascertain the correct airspeeds (KIAS) for the safe operation of the aircraft at 3800 pounds:

<p>a.</p> <table border="0" style="width: 100%;"> <tr><td>V_{SO}</td><td>61</td></tr> <tr><td>V_{SI}</td><td>70</td></tr> <tr><td>V_R</td><td>70-75</td></tr> <tr><td>V_X</td><td>81</td></tr> <tr><td>V_Y</td><td>95</td></tr> <tr><td>Cruise Climb</td><td>100</td></tr> <tr><td>V_{LO(RETRACT)}</td><td>115</td></tr> <tr><td>V_{LE}</td><td>146</td></tr> <tr><td>V_{A(MGW)}</td><td>121</td></tr> <tr><td>V_{A(3400 #)}</td><td>113</td></tr> <tr><td>V_{FE (10 DEG)}</td><td>146</td></tr> <tr><td>V_{FE (30 DEG)}</td><td>110</td></tr> <tr><td>V_{MCA}</td><td>59</td></tr> <tr><td>V_{YSE}</td><td>85</td></tr> <tr><td>V_{YSE(3400 #)}</td><td>80</td></tr> <tr><td>SE App</td><td>90</td></tr> <tr><td>Max XC</td><td>15</td></tr> <tr><td>V_{NO}</td><td>162</td></tr> <tr><td>V_{NE}</td><td>191</td></tr> </table>	V _{SO}	61	V _{SI}	70	V _R	70-75	V _X	81	V _Y	95	Cruise Climb	100	V _{LO(RETRACT)}	115	V _{LE}	146	V _{A(MGW)}	121	V _{A(3400 #)}	113	V _{FE (10 DEG)}	146	V _{FE (30 DEG)}	110	V _{MCA}	59	V _{YSE}	85	V _{YSE(3400 #)}	80	SE App	90	Max XC	15	V _{NO}	162	V _{NE}	191	<p>b.</p> <table border="0" style="width: 100%;"> <tr><td>V_{SO}</td><td>61</td></tr> <tr><td>V_{SI}</td><td>70</td></tr> <tr><td>V_R</td><td>70-75</td></tr> <tr><td>V_X</td><td>81</td></tr> <tr><td>V_Y</td><td>95</td></tr> <tr><td>Cruise Climb</td><td>100</td></tr> <tr><td>V_{LO(RETRACT)}</td><td>115</td></tr> <tr><td>V_{LE}</td><td>145</td></tr> <tr><td>V_{A(MGW)}</td><td>120</td></tr> <tr><td>V_{A(3400 #)}</td><td>113</td></tr> <tr><td>V_{FE (10 DEG)}</td><td>145</td></tr> <tr><td>V_{FE (30 DEG)}</td><td>110</td></tr> <tr><td>V_{MCA}</td><td>61</td></tr> <tr><td>V_{YSE}</td><td>85</td></tr> <tr><td>V_{YSE(3400 #)}</td><td>80</td></tr> <tr><td>SE App</td><td>90</td></tr> <tr><td>Max XC</td><td>15</td></tr> <tr><td>V_{NO}</td><td>160</td></tr> <tr><td>V_{NE}</td><td>188</td></tr> </table>	V _{SO}	61	V _{SI}	70	V _R	70-75	V _X	81	V _Y	95	Cruise Climb	100	V _{LO(RETRACT)}	115	V _{LE}	145	V _{A(MGW)}	120	V _{A(3400 #)}	113	V _{FE (10 DEG)}	145	V _{FE (30 DEG)}	110	V _{MCA}	61	V _{YSE}	85	V _{YSE(3400 #)}	80	SE App	90	Max XC	15	V _{NO}	160	V _{NE}	188	<p>c.</p> <table border="0" style="width: 100%;"> <tr><td>V_{SO}</td><td>63</td></tr> <tr><td>V_{SI}</td><td>71</td></tr> <tr><td>V_R</td><td>70-75</td></tr> <tr><td>V_X</td><td>81</td></tr> <tr><td>V_Y</td><td>95</td></tr> <tr><td>Cruise Climb</td><td>100</td></tr> <tr><td>V_{LO(RETRACT)}</td><td>115</td></tr> <tr><td>V_{LE}</td><td>146</td></tr> <tr><td>V_{A(MGW)}</td><td>121</td></tr> <tr><td>V_{A(3400 #)}</td><td>113</td></tr> <tr><td>V_{FE (10 DEG)}</td><td>146</td></tr> <tr><td>V_{FE (30 DEG)}</td><td>110</td></tr> <tr><td>V_{MCA}</td><td>59</td></tr> <tr><td>V_{YSE}</td><td>85</td></tr> <tr><td>V_{YSE(3400 #)}</td><td>80</td></tr> <tr><td>SE App</td><td>90</td></tr> <tr><td>Max XC</td><td>17</td></tr> <tr><td>V_{NO}</td><td>162</td></tr> <tr><td>V_{NE}</td><td>191</td></tr> </table>	V _{SO}	63	V _{SI}	71	V _R	70-75	V _X	81	V _Y	95	Cruise Climb	100	V _{LO(RETRACT)}	115	V _{LE}	146	V _{A(MGW)}	121	V _{A(3400 #)}	113	V _{FE (10 DEG)}	146	V _{FE (30 DEG)}	110	V _{MCA}	59	V _{YSE}	85	V _{YSE(3400 #)}	80	SE App	90	Max XC	17	V _{NO}	162	V _{NE}	191
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3. The fuel system consists of a main and sump tank in each wing containing _____ pounds of fuel; _____ pounds are usable. An electric fuel pump is provided in case of engine driven pump failure. The fuel selector has three positions: _____, _____, and _____.

- a. 354; 342; OFF, ON, CROSS FEED
- b. 708; 684; ON, OFF, CROSS FEED
- c. 354; 342; LEFT, RIGHT, OFF

4. The landing gear is a fully retractable tricycle system utilizing an electric powered hydraulic power pack. The landing gear are held down by _____ and held up by _____. The amber NOT SAFE light illuminates whenever the gear is _____ or _____. The emergency extension releases the _____ allowing the gear to free-fall.

- a. down locks; up locks; intransit; not down and locked; uplocks
- b. down locks; hydraulic pressure; intransit; not down and locked; hydraulic pressure
- c. over center braces and lock pins; hydraulic pressure, intransit; not down and locked; hydraulic pressure

5. The landing gear warning horn actuates whenever the throttle is closed below _____ inches MAP and the landing gear is not down and locked or the wing flaps are extended beyond _____ degrees with the gear up.
 - a. 15; 11⁰ or more
 - b. 13; 15⁰ or more
 - c. 13; second notch

6. The wing flaps are _____ operated by a three-position switch. The switch is _____ from the _____ to the _____ position and _____ position.
 - a. hydraulically; spring loaded; down; off; held in the up
 - b. electrically; spring loaded; down; neutral; held in the up
 - c. electrically; spring loaded; down; neutral; must be held in the up

7. The environmental system provides heating ventilating and defrosting to the cabin. The heating and defrosting systems obtain their air flow from a _____. _____ hot air valves control the temperature and volume of air.
 - a. exhaust mufflers; left and right
 - b. gas heater; left and right
 - c. gas heater; cabin and defrost

8. There are individual trim systems for the ailerons, elevator and rudder. Movement of each trim system control will reposition the aileron _____; elevator _____; and rudder _____.
 - a. tab; tab; tab;
 - b. itself; tab; itself
 - c. itself; tab; tab;

9. The gyros are part of a _____ system that consists of filters, regulators and a gauge.
 - a. pressure
 - b. vacuum
 - c. electric

10. During engine start, use _____. Press the engine starter button and activate the electric primer for the appropriate engine _____, or as required. When the engine starts, place the _____.
 - a. The LEFT magneto ONLY; one to two seconds; RIGHT magneto and alternator switches to the ON position
 - b. The RIGHT magneto ONLY; one or two seconds; LEFT magneto and alternator switches to the ON position
 - c. BOTH magnetos ON; five seconds; alternator switch to the ON position

11. The stall speed of a 3450 lbs. aircraft in a 20⁰ bank, no flaps is:
 - a. 70
 - b. 71
 - c. 72

12. With an empty weight of 2678 pounds and a moment of 247,478 inch-pounds, include a full fuel load and 400 pounds of pilot and copilot. The aircraft center of gravity is at or near its:

- a. forward limit
- b. middle of envelope
- c. aft limit

13. Complete the following:

	Weight (pounds)	Arm (inches)	Moment (in-lbs/1000)
Aircraft Basic Empty Weight	2678?	96.14?	257.478?
Pilot & Copilot	400	91.0	
Passenger(s)	170	128.0	
Forward Baggage		26.0	
Aft Baggage	30	160.0	
Zero Fuel Weight			
Fuel (max useable 114 gal)		112.0	
Ramp Weight			
Start, Taxi & Runup		112.0	
Take-Off Weight			

How much fuel is available for the flight?

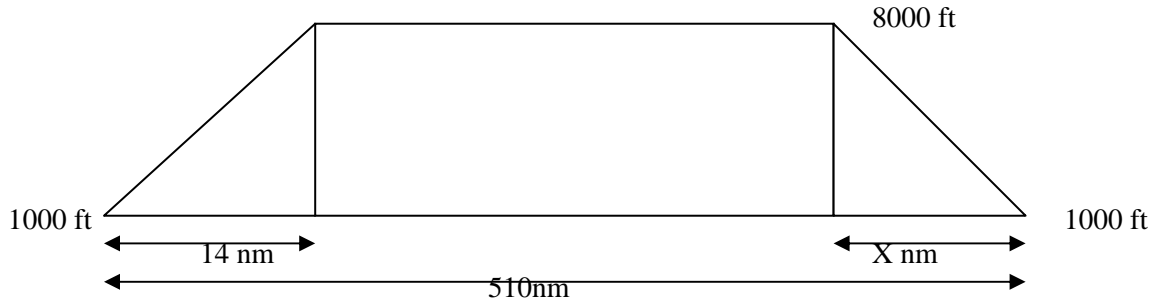
- a. 684 pounds
- b. 544 pounds
- c. 480 pounds

14. What is the take-off weight and arm?

- a. 3778 pounds; 99.75 inches
- b. 3800 pounds; 99.73 inches
- c. 3822 pounds; 99.78 inches

Using the following information, plan a flight of 510 nautical miles, make an approach, then direct to an alternate 80 nautical miles away.

- Use the information in question 12.
- Take-off at 1000 feet pressure altitude, OAT 25° C with 10 knots headwind. Climb at 100 knots.
- Cruise at 8000 feet pressure altitude, standard temperature, 65 % power setting, leaned to best power. Destination airport is at 1000 feet pressure altitude, OAT 25° C.
- Cruise to the alternate at 4000 feet pressure altitude, standard temperature, 65 % power setting, leaned to best economy. Alternate airport is at 1000 feet pressure altitude.



15. What is the time to the destination?

- 3+16 hours
- 3+25 hours
- 3+32 hours

16. How many miles are traveled during the descent?

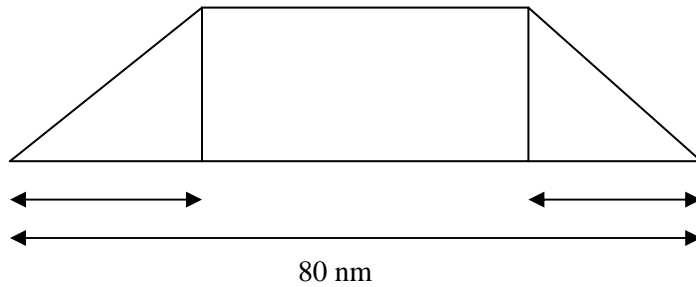
- 44 nautical miles
- 40 nautical miles
- 38 nautical miles

17. What is the total fuel used to the destination?

- 368 pounds
- 354 pounds
- 349 pounds

18. What is the time to the alternate?

- 0+28 hours
- 0+31 hours
- 0+35 hours



19. Total fuel used to the alternate?

- 45 pounds
- 51 pounds
- 61 pounds

20. Is there sufficient fuel remaining at the alternate to satisfy Aero Club requirements?
- True
 - False
21. The normal procedure take-off distance over a 50 foot barrier for a 3450 pound aircraft, at 1000 feet pressure altitude, standard temperature, no wind is _____ feet; the lift off speed is _____ KIAS and the barrier speed is _____ KIAS.
- 1559; 61; 73
 - 1609; 62; 74
 - 2015; 65; 76
22. The maximum climb performance for a 3500 pound aircraft, at 1000 foot pressure altitude, 20⁰ C, with both engines operating is _____ feet per minute and with one engine inoperative is _____ feet per minute. The airspeed to achieve each of these rates is _____ KIAS and _____ KIAS respectfully.
- 790; 290; 100; 85
 - 1200; 220; 90; 85
 - 1220; 290; 92; 82
23. The single engine climb rate for a 3700 pound aircraft at 1000 feet pressure altitude, 25⁰ C is _____ feet per minute versus a cruise climb rate of _____ feet per minute. This represents a _____ percent lost of performance.
- 200; 660; 70
 - 200; 690; 71
 - 180; 650; 72
24. The normal landing distance for a 3400 pound aircraft, 1000 feet pressure altitude, 20⁰ C, with 10 knots of headwind, is _____ feet to clear the 50 foot obstacle with _____ feet of ground roll using a _____ KIAS approach speed.
- 1270; 778; 74
 - 1158; 625; 73
 - 1233; 660; 72
25. Maintain at least _____ when practicing _____. This also is applicable to single engine demonstration maneuvers.
- 2,500 feet AGL; slow flight
 - 5,000 feet AGL; stalls
 - 1,500 feet AGL; ground reference maneuvers