

**CHAPTER 15**

**QUESTIONS RELATED TO GLIDING**

*This pot-pourri of Questions and Answers was prepared as an aid to studying for the GPL Exams and should also serve as a useful refresher for all pilots.*

*( A. L-du T/ March 1999)*

**QUESTIONS**

1. What is the mnemonic for, and what are the Pre-Landing vital actions?
2. What is the formulae for airspeed on approach which takes into account the wind and gust speed?
3. Radio calls should be brief – What should you use (a) on downwind, (b) on base (c) on final approach. Also if landing on the Winch strip.
4. What are the duties of the Tug Signaler?
5. What is the mnemonic for, and what are the Pre-Take off vital actions?
6. What is the “Abort Launch” action the tug signaler should take?
7. What is the mnemonic for, and what are the vital actions on releasing from an aerotow?
8. The tug aircraft (a) waggles wings and (b) waggles rudder. What action should the glider pilot take?
9. What are the CGC height restrictions for thermalling and aerobatics respectively?
10. What radio frequencies are used at Worcester?
11. What height restrictions should be observed at FAWC?
12. What is “adverse yaw “ and explain the aerodynamic reasons for it occurring? How is it counteracted?
13. What is the difference between an elevator and a stabilizer and why does a glider have these?
14. Define ‘glide ratio’ of a glider and how can it be expressed in terms of the forces acting on a glider?
15. What is meant by the ‘attitude’ of a glider?
16. What is meant by the ‘aspect ratio’ of a glider wing?
17. What is the difference between the fin and the rudder.
18. What avoiding action should you take when two aircraft approach head-on?
19. What rules apply for two gliders both in the landing circuit together?
20. What rule applies if two gliders are approaching each other on a converging course?
21. Describe two methods of landing in a strong crosswind?
22. Discuss the pros and cons of the low aerotow position?
23. Discuss the pros and cons of the normal aerotow position?
24. What is meant by ‘hypoxia’ and what are the symptoms? Describe the early signs and the progressive development of this condition.
25. What is known as ‘parasitic drag’?
26. The total drag on a wing is made up of what three different forms of drag?
27. What are the forces acting on a glider when it is in straight and level flight?
28. Profile drag is made up of what two forms of drag?
29. What are the forces acting on a glider in a turn?
30. How do ‘Frise ailerons’ counteract adverse yaw?
31. What is meant by the ‘angle of attack’ of a wing?
32. State Bernoulli’s theorem.
33. When does a wing stall?

34. What effect has turning got on the stall speed?
35. What is meant by an incipient spin?
36. Describe the mechanism of a full spin?
37. Describe how you would recover from a spin.
38. What is meant by the 'polar curve' of a glider?
39. Define the 'minimum sink' of a glider and how is it read from the polar curve?
40. Define 'best glide angle' and what are its implications?
41. What are some common sub-scale settings on an altimeter and what do they indicate?
42. At what rate does air pressure decrease with height?
43. An air speed indicator can be described as a differential pressure gauge – what does it measure?
44. What does a variometer measure and what does it indicate?
45. How does a compensated variometer work?
46. What does a 'Netto ' variometer indicate?
47. Name three types of oxygen systems.
48. What effect does an inversion have on thermals?
49. What is meant by 'compass variation'?
50. What are 'isobars' and what can be deduced from their spacing?
51. What is a "geostrophic" force ( also referred to as a Coriolis Force) ?
52. Define the 'Tropopause' in terms of temperature
53. What is known as "Insolation"?
54. State the 'Buys Ballot" law as applied in the southern hemisphere.
55. Describe various types of lapse rate.
56. What is meant by the relative humidity of the air?
57. What are 'Katabatic winds'?
58. To what is air pressure due?
59. What is the 'Rectified Air Speed' - (RAS)?
60. What is 'True Air Speed' – ( TAS).?
61. When , in terms of lapse rates, is an air mass stable?
62. When is a air mass unstable?
63. What , in the southern hemisphere, is the direction of rotation of the wind in a 'low' or 'Depression'?
64. What , in the southern hemisphere, is the direction of rotation of the wind in a 'high' or 'Anticyclone'?
65. What causes a 'wind gradient'?
66. How does the wind direction vary with height?
67. What are the standard colours for glider controls.?
68. What action should a glider pilot take if he looses sight of the tug aircraft while on aerotow?
69. In an emergency situation what procedures should be taken and what is correct priority?
70. What is the difference between Vne and Vm.?
71. Name some situations in which you would release from the tug at the start of the launch?
72. On what factors does the lift generated by a wing depend ?
73. Define the Centre of Gravity (CofG) of an aircraft?

74. What is the effect of ‘G’ force on the stalling speed of a glider?
75. How can the lift of a wing be changed in flight?
76. What is the effect of reducing the cross section of an airflow – (also known as the Venturi effect)
77. What is known as ‘Induced Drag’?
78. What is the effect of a positive flap setting on the stalling speed of a glider?
79. What happens to both lift and drag at the stall?
80. What is the effect of using the airbrakes on the stalling speed of a glider?
81. Why should you fly at a higher speed in a turn?
82. What is the effect of the position of the C of G on the spinning characteristics of an aircraft?
83. What precautions should you take when handling oxygen?
84. What do the colour markings on an airspeed indicator mean?
85. What are the operating airspeed limits for the ASK13 and the CS Astir?
86. Why is two-way radio communication necessary?
87. What are an aerodrome traffic limits in terms of height and distance?
88. Explain what FL 380 / 1500 GND means?
89. What action should one take if the winch launch speed is too low?
90. What action should one take if the winch launch speed is too fast?
91. When must a glider LS1 inspection be undertaken?
92. What is the minimum visibility requirement for flying VFR if under 1000 ft agl.
93. What are the minimum requirements for gliders to fly in cloud?
94. How often does the SSSA require that a GPL is renewed and by whom is it renewed?
95. Having obtained a Silver ‘C’ what are the flight requirements for a GPL?
96. The SSSA has laid down certain minimum annual flight requirements – what are they?
97. The CGC requires that aerobatics should be completed at what height?
98. If two gliders are on finals how should they land relative to each other?
99. Why should a soft cushion not be used on a winch launch?
100. If the rope breaks on aerotow and a portion remains attached to the glider what should the pilot do?
101. What is the action sequence in an emergency parachute jump?
102. What is the mnemonic and what are the vital actions prior to executing aerobatics?
103. Name the five S’s when choosing a field to outland in?
104. Describe the recovery action from a spiral dive?
105. How does a spiral dive differ from a spin in terms of speed and rotation?
106. What is a tephigram and what can be read from it?
107. How is a tephigram constructed?
108. What radio communication is permitted on release?
109. How should you actuate the release mechanism in the glider?
110. Describe how you would remove a glider from the hangar.
111. What is meant by “High Key” when planning a circuit pattern?
112. Describe Tom Knauf’s “TLAR” method of flying a circuit pattern.

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Cape Gliding Club's Blanik flying Betty's Wave – 16000 ft. - c1960 (photo by Johan Liebetrau)

**NOTES:-**