

## Human Factors: Mock exam

### Gliding New Zealand Qualified Glider Pilot Certificate Human Factors Examination

Note: In this mock exam, the questions largely follow the order of the syllabus to aid looking up the relevant text after you have sat the exam.

- 1) Exposure to stress for a long time leaves us fatigued. Recovery from fatigue requires:
  - a) Eating high protein food and using caffeine based drinks to help stay awake longer.
  - b) Rest and sleep.
  - c) Working harder and adapting to less rest time.
  - d) All of the above.
  
- 2) Approaching to land on sloping ground can create the illusion that:
  - a) your speed is too high for the angle of approach.
  - b) you are low if the slope is uphill so you get too high on final approach.
  - c) you are too high if the slope is uphill so you may end up too low and undershoot.
  - d) you are too high if the slope is downhill so you get too low and undershoot.
  
- 3) The minimum time necessary to avoid a collision once another aircraft enters your field of vision may be:
  - a) two seconds.
  - b) five seconds.
  - c) over four seconds.
  - d) over seven seconds.
  
- 4) The blind spot is:
  - a) a circular portion of the visual field of which only one eye forms an image.
  - b) behind and directly below your glider.
  - c) where an object is invisible to both eyes.
  - d) interesting, but of no practical importance to glider pilots.
  
- 5) Landing with water droplets on the canopy is hazardous because:
  - a) the eyes focus on the droplets which reduces your depth perception and this often leads to heavy landings.
  - b) the eyes cross focus on the droplets causing possible double or blurred vision.
  - c) droplets magnify the prismatic colour displacement which may induce flicker vertigo.
  - d) the streaming droplets create a false peripheral horizon which can induce the leans.
  
- 6) What is the most important body system for keeping the pilot orientated?
  - a) The balance organs of the inner ear that provide our sense of balance.
  - b) The visual system that provides our horizon reference.
  - c) The nervous system that allows us to fly "by the seat of the pants".
  - d) The intestinal system that allows us to fly according to "the gut feeling".

- 7) Orientation when flying:
- a) is based largely on sight, aided by the vestibular apparatus.
  - b) improves once you are more experienced, e.g. a Qualified Glider Pilot.
  - c) requires you to disregard what you see.
  - d) is simple when gyro instruments are fitted even if you are not very familiar with them.
- 8) You may fly into cloud if in a suitable area:
- a) if in stable flight (speed and direction constant).
  - b) in a glider suitably equipped and if you are trained and current in instrument flying.
  - c) if it is small (just a few hundred metres across/deep horizontally and vertically).
  - d) from beneath to capitalise on good lift.
- 9) The 'Oxygen paradox' is:
- a) feeling worse on 100% oxygen via a mask than when breathing air because too much oxygen is poisonous.
  - b) feeling worse briefly when commencing supplemental oxygen and thus suspecting impurities, or making inappropriate actions immediately after commencing supplemental oxygen.
  - c) that nasal cannulae are better than a mask despite what you may suppose.
  - d) the fact that using oxygen below 9,000' tends to make accurate flying harder.
- 10) The symptoms of hyperventilation may include:
- a) rapid breathing, dizziness, faintness, tremors, clumsiness and anxiety.
  - b) over confidence, loss of self criticism, decrease in colour vision and peripheral vision.
  - c) pain in the middle ear and possible stomach cramps.
  - d) all of the above.
- 11) If you have an oxygen system:
- a) your local welding firm should have supplies of pressurised oxygen.
  - b) you should carry the manual so you can refer to it if you think you have a problem.
  - c) it must be refilled only with certified aviation oxygen.
  - d) a dive centre can refill your bottles to the required pressure.
- 12) What warning do you have as you approach your threshold of tolerance to positive 'g'?
- a) You start "greying out" as the blood flow to the eyes is reduced and your peripheral vision diminishes.
  - b) None, unless you have a G meter fitted to your glider.
  - c) You start "redding out" as excess blood rushes to the head and engorges the eyes with blood.
  - d) You get a tingling in your toes as the nerve endings are compressed.
- 13) Negative 'g':
- a) is harmless, as you never become unconscious.
  - b) causes the brain to be starved of blood supply.
  - c) does not occur in a spin.
  - d) is unpleasant and may cause inappropriate action.

- 14) If a pilot becomes excessively cold (hypothermic) on a long, high flight:
- recovery is slow, and he should not fly again that day.
  - a hot drink laced with rum will see him fit to fly again if dressed more warmly.
  - then with a run around to warm up plus warmer clothing he can fly again the same day.
  - he is not suited to gliding and should find another sport.
- 15) Hypoglycaemia (low blood sugar level) can be a problem when flying:
- Diabetics are forbidden to fly.
  - You should carry snacks of complex carbohydrates and 'graze'.
  - You should carry a supply of glucose sweets; these raise the blood sugar level rapidly.
  - You should eat a large meal before you launch. This keeps the sugar level up for hours.
- 16) If you 'fail' the IMSAFE self-test, then:
- take it easy whilst others get in a launch or two (maybe take a couple of paracetamol) and re-assess yourself in an hour or so.
  - cancel any personal piloting for that day.
  - evaluate the others around and see if you are actually worse than they appear to be.
  - discuss it with the Duty Instructor; he can clear you to fly if he is happy.
- 17) Why is flying with an upper respiratory tract infection not recommended?
- Because you may damage your middle ear or aggravate sinus disorders because of an inability to equalise the pressure in these cavities.
  - Because a blocked nose may cause hyperventilation and possibly the chokes.
  - Because a cold will impair your hearing and radio calls may be missed.
  - because subtle pressure changes that help you detect lift and sink are not detected.
- 18) Chest pain prevents a person acting as pilot-in-command:
- unless he has been symptom free for a month.
  - unless he can carry out everyday activities whilst experiencing the pain.
  - unless cleared by a doctor with experience in Aviation Medicine.
  - ever again.
- 19) During a landout, the following are usually good ways to estimate the height at which to commence the circuit:
- The altimeter, as you set it before take-off.
  - Barns and trees.
  - The overall picture of trees, buildings, vehicles and livestock.
  - The angle to the aiming point.
- 20) "Constant angle, constant danger" is a reminder that:
- if you keep a constant angle of bank in a thermal for too long, you can become disorientated when finally levelling the wings.
  - if another aircraft is on a collision course with you, there is no relative movement in your visual field and you are less likely to see it.
  - as you approach the ground, you must begin to raise the nose.

- d) in the circuit if you keep a constant angle to your aiming point you will climb and possibly stall towards the end of the downwind leg.

Correct answers, GNZ Human Factors mock exam:

1	2	3	4	5	6	7	8	9	10
B	C	D	A	A	B	A	B	B	A

11	12	13	14	15	16	17	18	19	20
C	A	D	A	B	B	A	C	C	B