



## SENIOR PARACHUTE TECHNICIAN EXAM INSTRUCTIONS AND SAMPLE QUESTIONS

### INSTRUCTIONS

- The exam is a closed book exam and must be done in accordance with NZPIA procedures, particularly chapter 2.7 of the Documents, Standards and Procedures Manual.
- The Examiner will select at least 30 questions from the list that follows for the candidate to answer. The Examiner may choose to supplement these with questions from the Basic PT exam.
  - **NOTE:** For candidates cross crediting from a non-NZPIA Senior PT rating, the Examiner will choose at least 20 of these questions; a further 10 or more questions will be selected from the Basic PT exam, with particular emphasis on requirements that may differ from those of the non-NZPIA rating (e.g. Regulations, Privileges, Records, Defect/Incident Reporting).
- There is no time limit for this exam.
- The passing grade is 70%.
- In the event a passing grade is not achieved, the candidate may retake the exam up to two more times without penalty. If the exam is failed three times the candidate may not re-take the exam again for a period of at least three months.

### SAMPLE QUESTIONS

#### Regulations & Privileges of Certification

- 1 During the inspection of a parachute intended for emergency use, if a Senior Parachute Technician finds a canopy section which shows evidence of weakness or damage, what procedure should be followed?
- 2 What are the privileges of a certificated Senior Parachute Technician?
- 3 According to NZPIA procedures, what are the currency requirements for Senior Parachute Technicians?
- 4 What are the knowledge requirements for the issue of a Senior Parachute Technician Certificate?
- 5 Is a Senior Parachute Technician permitted to alter the length of the bridle line that attaches the pilot chute to the apex of the canopy?
- 6 Is a Senior Parachute Technician permitted to replace worn or damaged harness webbing if the necessary equipment is available?
- 7 What kinds of repairs may be performed by a Senior Parachute Technician?
- 8 What kinds of repairs may NOT be performed by a Senior Parachute Technician?

#### Packing & Maintenance

- 9 During the inspection of a parachute canopy, an area is found where a number of warp yarns are not properly interlaced. What is this condition is best described as?

## **Sewing**

- 10 Warp threads are those that run – ?
- 11 Why is zigzag stitching used to complete the attachment of suspension lines to the riser links?
- 12 Canopy construction style in which the top and bottom surfaces are joined to each other at the seams with the loaded ribs?
- 13 Which component of the sewing machine used for parachute repair work prevents the thread from becoming split by the needle as it travels through the material?
- 14 If the bobbin is threaded incorrectly, what is the most likely malfunction to occur while operating a sewing machine?
- 15 A properly adjusted sewing machine will produce a stitch that locks where?
- 16 Which type of stitch is used most frequently in the repair and maintenance of parachutes?
- 17 When starting to sew a seam with a lockstitch sewing machine, the operator should hold...?
- 18 What are the advantages of zigzag stitching?
- 19 What are some possible consequences of machine sewing with a bent needle?
- 20 What is used to determine the size of the sewing machine needle to be used for a particular job?
- 21 True or False: A sewing machine will not feed properly if the feed dog is set too low, and too little pressure on the presser foot of a sewing machine will result in staggered stitches.
- 22 When stitching a finger trap loop, where should bar tacking be placed?
- 23 What two types of stitching are normally used in the manufacture and maintenance of parachutes?
- 24 Identify the type of stitch formed when two needle threads pass through the material in the same perforation from opposite directions without interlacing or interlooping.
- 25 When operating a sewing machine, what can occur if the feed dog is positioned too high?

## **Repairs & Alterations**

- 26 Is re-tying/replacing pilot chute bridles considered a minor repair?
- 27 Is slipping lines off a quick removal link and replacing them in the proper sequence considered minor repair?
- 28 Are replacing canopy panels or suspension lines on a reserve parachute considered minor repairs?
- 29 In what order should repair of a canopy with both fabric and line damage be accomplished?
- 30 If a tear continued across a radial seam of an auxiliary canopy, who is authorized to make the repair?
- 31 What kind of repair/alteration is the installation of an automatic opening device on a reserve parachute?
- 32 When describing canopies the angle of trim is formed between the trim line and what?
- 33 From the list, identify the repairs that may NOT be approved by a Senior Parachute Technician.
  - Place suspension lines in proper sequence on a removable connector link.
  - Replace a damaged suspension line on a reserve parachute.
  - Replace a canopy panel.
  - Replace reserve safety stow

- Replace D-rings on the parachute harness.
- Replace pack cones or grommets.

### **Fittings, Fasteners, Etc.**

- 34 What pull forces on nylon hook and pile fastener installation is the strongest?
- 35 Removal of a grommet is accomplished principally by which operation?

### **Canopy**

- 36 What is the reason for leaving slack in the fabric between attachment points of suspension lines on a block-constructed canopy?
- 37 How should warp and filler threads of a patch be oriented to the material being patched?
- 38 Which type of stitch should be used for sewing a tear in a parachute container in preparation for patching?
- 39 What is the reason for matching the weave of the patch material with that of the canopy being repaired?
- 40 True or False: Filler yarns of parachute canopy materials run crosswise of the cloth as it comes from the loom; and when applying a patch, the patch material filler yarns must be matched with those of the canopy
- 41 When repairing a broken stitch in a canopy seam, what action should be taken?
- 42 What size thread is used to sew nylon canopy radial seams when making a repair?

### **Lines & Knots**

- 43 Traditionally in square parachutes, how do the warp yarns run?
- 44 What is the correct procedure for measuring replacement Spectra line?
- 45 When preparing braided line for a fingertrap loop, how should the line be cut?
- 46 What technique is used to assure uniformity in the length of nylon suspension lines for a given model parachute during their manufacture and/or replacement?

### **Seams**

- 47 What affects the strength of a sewn seam?
- 48 The elasticity of a properly constructed seam or stitching depends on what?
- 49 Should the elasticity of a seam or stitching be more or less than the material which it joins?
- 50 What does the elasticity of a seam or stitching depend on?