

Percival Vega Gull Series Aeroplanes

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**AD/GULL/4**

**Airframe Structure - Inspection**

**1/73**

Applicability: All models.

- Requirement:
1. Preparation: Prepare the aeroplane for inspection by removing all removable equipment, cabin linings, seats, inspection access panels, fairings, fabric patches, tape sealing and sufficient fabric and secondary structure to enable an inspection of the airframe in accordance with these requirements.
  2. Inspection Procedure:
    - 2.1 Inspect all fabricated structural components such as box spars, wooden ribs, bulkheads and braces, and all glued connections between these components for the following defects:
      - (a) Cracks, cuts, splits, bruises, compression shakes, warping contamination by foreign matter such as oil, attack by fungus in the wood, shrinkage of the timber at bolt holes.
      - (b) Separation or sponginess in the glued joints and plywood. A 0.005 in. feeler gauge should be used to determine separation of glued joints and the depth of glue failure.
    - 2.2 Inspect all plywood skin for the following defects:
      - (a) Cracks, splits, cuts, bruises and shakes in the surface of the wood, deterioration and contamination by foreign matter.
      - (b) Separation of the glue where skin connects to the skeletal structure beneath. Particular attention should be paid to the flaps since they are exposed to moisture, and also subject to contamination by oil.

*Note: Load carrying wooden skin becomes inefficient and the complete structure loses strength when adhesion to the structure beneath has failed. Consequently, all structural connections and joints must be thoroughly inspected for deterioration and defects. When carrying out an inspection the following may prove helpful in detecting defects.*

SCHEDULE OF AIRWORTHINESS DIRECTIVES

*Separation from the structure is often detectable from the exterior in several ways. It is likely to appear as a local discontinuity in the skin contour which can be pressed down without the immediate firm resistance anticipated. When the structure is flexed the skin will tend to take up waves. If these waves do not pass across the lines of gluing to the structure beneath, adhesion may be taken as sound. Oblique lighting of the surface will be found helpful in studying surface waves and contour discontinuities. Timber shakes appear as thin lines across the timber on the varnish layer. By sponging ink on the varnish and subsequently wiping off, a line where the shake exists should be apparent. Where there are signs of failure in the protective coating it should be removed to inspect the wood beneath. Special attention is to be paid to points in the structure where liquids can collect or oil contamination can occur. Casein glue deteriorates if repeatedly exposed to moisture or oil. Where possible, the inspection should be made from the interior. However, for wings, initial inspection may be made from the exterior. When inspecting the interior structure of the wings it may be necessary to cut holes in load carrying covering. In these instances reference should be made to the Secretary for an approved scheme for the incorporation of inspection holes.*

- Compliance:
1. Within 12 months of last inspection in accordance with AD/GENERAL/29 and thereafter at intervals not exceeding 12 months.
  2. For aircraft which have not been inspected in accordance with AD/GENERAL/29 in the 12 months prior to 31 January 1973 - inspect within three months after 31 January 1973 and there- after at intervals not exceeding 12 months.