SECTION 12.3 INSPECTION AFTER A HEAVY LANDING, ABNORMAL FLIGHT LOAD, OR LIGHTNING STRIKE

Useful reference:
CASA CAAP 42L-1(n) Inspection of aircraft after abnormal flight loads, heavy landing, or lightning strike.

12.3.1 INTRODUCTION

Aircraft are designed to withstand flight and landing loads within specified limits. If design limits are exceeded the structural integrity of the aircraft structure may be jeopardised and safety could be impaired. Any report, or evidence on the aircraft which suggests that the design limits have been exceeded or equipment has been damaged, including damage by lightning strike, must be listed in the aircraft's MR and the maintenance logbook, followed by a careful inspection appropriate to the nature of the occurrence and in accordance with the aircraft manufacturer's inspection requirements, approved data (if any), CASA CAAP 42L-01v *(current)* and this Tech Manual.

It is not possible to detail every inspection procedure to be used because of the wide variation in aircraft structure and the loads exerted on those structures. Manufacturer's manuals and inspection requirements should be used if available. Should any doubt exist regarding serviceability, the structure / component must be disassembled and inspected for damage.

Inspections may be carried out by Maintenance Authority holders appropriate to the aircraft type and use.

12.3.2 ALIGNMENT AND GEOMETRY CHECKS

In instances where the airframe has been exposed to unusually high loading, either in flight or during landing, or transportation, or storm damage while tied down, structural distortion may have occurred. There may not be visual evidence of structural distortion such as skin wrinkling, cracking of paint at the joints of structural members or loose rivets.

When there is no visual evidence of structural distortion an alignment and geometry checks should be carried out.

If the aircraft has been damaged by impact with an object e.g. ground handling, misalignment and distortion of the structure may have occurred in areas remote from the initial impact point in addition to the damage which may or may not be visible at the point of impact.

The control and structural integrity of an aircraft is dependent on the correct alignment of its separate components, not only in themselves but in their relationship and connection to one another.

Misalignment may result in the imposition of stresses of such magnitude that a premature structural failure could occur and accordingly, it is essential that alignment is checked. These alignment checks are in addition to the normal inspection of all airframe components for structural integrity, engine and propellor security.

Where a manufacturer's schedule exists for the conduct of a heavy landing inspection, that schedule must be followed. Where such a schedule is not available, guidance provided in the RAAus RAAP specific to a heavy landing inspection should be referenced.

The heavy landing inspection or excessive in-flight loading inspection is to be recorded in the aircraft maintenance logbook along with the name, signature, date and RAAus membership number of the person inspecting.

12.3.3 REPORT THE EVENT

SUBMIT AN OCCURRENCE REPORT using the RAAus Occurrence Management System (OMS) at https://reporting.raaus.com.au

12.3.4 MAINTENANCE RELEASE (IF USED) AND MAINTENANCE LOGBOOK

a) Record the event, in detail

b) If obviously damaged or suspected damage, record the event and suspected damage in the MR and aircraft logbook,

c) ground the aircraft immediately and placard as such.

d) Seek expert advice and assistance if required;

e) Arrange for repair/replacement of damaged components;

f) Record repairs and other rectification work including the record of any flight test conducted in the aircraft logbook;

g) Clear the entry in the aircraft MR to return the aircraft to service.