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DEPARTMENT OF CIVIL AVIATION  
**Airworthiness Notices**

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**FATIGUE LIVES**

1. For fatigue reasons the major components (e.g. wings and centre-sections) of certain types of aircraft have lives restricted to a specific number of flying hours, flights or landings. These restrictions have, in the main, been confined to large transport type aircraft but more recently it has been found necessary to introduce similar restriction on certain smaller types of aircraft, some of which are operated in the private category.
2. The "Lifing" of components is intended to prevent structural failure under the action of repeated air and ground loads experienced in service, the lives being based on the results of test carried out by the manufacturer of the aircraft. If the specified fatigue life of a critical component is exceeded, the possibility arises of a catastrophic structural failure. Where fatigue lives have been imposed full details have been published by individual manufacturers in their service bulletins and compliance with such information is required by the DCA. Structural life limitations are determined for likely average utilization of a type of aircraft. Any operations which depart substantially from the typical require assessment of the structural life limitations for those specified operations and may require alterations in the safe fatigue lives. Examples of operations in this category are low level flights in a maritime surveillance, or geographical survey role (particularly using pressurized aircraft), or long endurance operations.
3. For the purpose of establishing structural life limitations a landing is defined as an occasion when the main undercarriage wheels make contact with the airfield surface and lift is significantly destroyed. A flight is associated with each landing and therefore the total number of flights pressurized and un-pressurized is equal to the total number of landings. A pressurized flight is one in which the aircraft's pressurization system is operated at a pressure differential of 14 KN/M<sup>2</sup> (2 psi) or above.
4. Because of the transfer of components from one aircraft to another, it has in some instances been impossible to establish the remaining safe life of individual components. For this reason it is necessary to ensure that when a component in this category is installed in an aircraft, a record is kept with the aircraft documents showing, as applicable, the hours flown and number of flights or landings already sustained by the component at the time of installation. In the case of pressurized flights the applicable pressure differential may be significant. Certificates of release to service may not be signed until the signatory is satisfied that the required history of the component has been established.
5. Failure to comply with the above procedure may, due to the absence of evidence showing that the components in question have any remaining safe life, result in owners or operators being required to replace such components prematurely.

Note: In addition to recording operating hours of engines, APUs and propellers, the DCA requires on most engines, APUs and propellers that a record be kept of the cycles completed. Cycles are defined by the manufacturers of each engine, APU and propeller.

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