

**Civil Aviation Authority
Safety Notice (SN-2020/005)**

**Ageing Aircraft Component Reliability & Associated Acceptance
of Replacement Parts.**

The UK CAA have recently issued a Safety Notice (SN-2020/005) which has been published to raise awareness of the reliability challenges relating to parts fitted to older aircraft types. The SN gives advice about the Release to Service and acceptance criteria engineers (and aircraft owners) should adopt when sourcing components for their engines and airframes.

It is recognised that, as time passes, many of the components we use in our Permit aircraft are operating beyond their predicted lives. The LAA system allows for this with some components, by introducing focussed inspections and ongoing performance monitoring – this practice is termed operating ‘On-Condition’.

Eventually, a component will reach a point where natural degradation in performance, or perhaps because it has reached a pre-defined fatigue-life limit, will mean that it must be withdrawn from service and replaced with a new or overhauled part.

Naturally, as stocks of parts diminish and specific overhaul expertise is lost, it becomes increasingly difficult to keep much of the old equipment operational. The LAA enjoys a well-established modification system which gives members the opportunity of introducing replacement components into existing assemblies.

The specific issue that led to the publication of the SN was that the CAA became aware that there was a history of intermittent magneto failures on the Vedeneyev M-14P nine cylinder radial engine. The magneto failures were found to be caused by the breakdown of aging coils and capacitors, particularly when hot. These failures had been tolerated for many years by operators, though some had fitted automotive capacitors as replacement parts.

The advice, given in the CAA Safety Notice, is pertinent and important to operators of older engine and airframe types, many of which operate under an LAA administered Permit. The SN stresses the importance of following established modification, approval, and release to service procedures, when considering a change to a more modern replacement.

Often, as in the case of the M-14P Magneto, a release to service requirement will include a bench test before it can be fitted to an aircraft and this will, almost certainly, require specialist equipment.

SN-2020/005 can be downloaded [HERE](#).

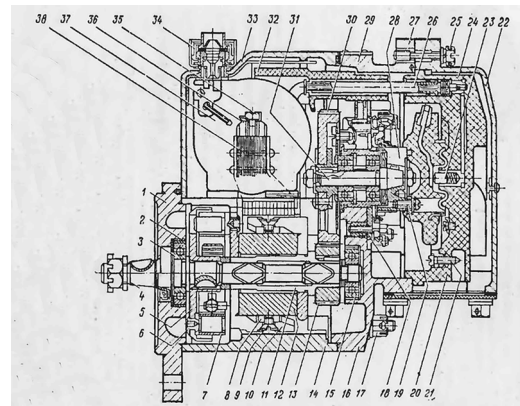


Fig 1. Here’s a cutaway drawing of the Russian-made magneto from a Ivchenko Vedeneyev M-14P engine. As you will note, though the basic concept of operation of a magneto is straightforward, the detail, in engineering terms, is rather more complex.



Fig 2. This picture shows the rewound (modified) coil as fitted to the M-14P magneto: note the modern metallised polyester film capacitor bonded to the side of the coil-winding end plate, this replaces the troublesome varnished paper type originally used. This minor modification, which effectively employs automotive technology, is now approved by the UK CAA and, in turn, EASA.