

SERVICING MODERN AIRCRAFT

BY

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The Service is frequently being attacked for not producing enough fighting units in the Fleet and for indulging in excessive overheads. Therefore we must be confident, in the Fleet Air Arm, that we are achieving the utmost utilization of our material—the naval aircraft. We probably are, within the present maintenance regulations ; but I suggest that our timing of minor inspections—now known as Mainchecks 4 and 5—are not sufficiently elastic to allow the maximum use or availability of aircraft. I do not wish to imply any relaxation in our present high standards of inspection.

I maintain that the availability of modern jet aircraft would be increased if Maincheck 4s were done on a flying-hour basis and not on the present rigid weekly or calendar principle.

The Present Policy

Under calendar servicing, an aircraft must have a Maincheck 4 every 24 weeks, whether the aircraft has flown 200 hours or none. There are many occasions, often beyond our control, when aircraft are left in a hangar in a fully serviceable condition :—

- (a) During very bad flying weather
- (b) A fortnight three times a year, during main leave periods
- (c) At most weekends.

Nevertheless, the time to the next Maincheck 4 approaches at the same rate.

It has also not been unknown for an aircraft in a second line squadron (with a low stores priority) to be grounded for an item in short supply, e.g., an oxygen demand regulator. During this period the aircraft still approaches its next Maincheck 4 at the same rate as the other aircraft in the squadron which, in the meantime, have probably been flying at a greater intensity than usual.



A SEA HAWK LANDING ON THE FLIGHT DECK OF AN AIRCRAFT CARRIER

Phasing Inspections

To a front line Sea Hawk squadron at sea, a Maincheck 4 presents less trouble and can be done quicker than any of the following :—

- (i) An engine change — due at 300 hours
- (ii) A flame-tube change — due at 70, 110 or 200 hours, depending on the modification state
- (iii) A change of exhaust unit transition section and jet pipes — due at 300 hours

all of which are ' lifed ' components and involve removal of the engine.

A Maincheck 4 is usually due between these major servicing periods, but for convenience the Maincheck 4 is done at the same time as (i), (ii) or (iii) at the expense either of anticipating the Maincheck 4, or not utilizing the flame-tubes or engines to the full extent of their lives. The latter alternative is to be deplored in the interests of economy, and how much more important is it to see that this does not happen when fewer and more expensive aircraft, the D.H. 110 and N. 113, enter the Service.

Introduction to New Aircraft

For new aircraft entering the Service, I would suggest we start on a basic 100/600-hour servicing policy. The Maincheck 4 would occur at 100-hours flying. At 600 hours the aircraft would go through the normal reconditioning process at an aircraft yard before being reissued for a further 600-hours flying. This is standard practice in the R.A.F.

As soon as experience is gained with the aircraft, the 100-hour servicing can then be reduced or, more usually, extended, for example, a Sea Hawk Mark 3 or 4 could easily do 150 hours. The flying-hour alteration can often be made to coincide with the life of a major component. For a front line aircraft, I suggest this is more elastic than starting at 12 weeks, increasing to 16 weeks and finally 24 weeks, which is our usual custom.

This scheme may appear reasonable for an aircraft which will be flown intensively, but what happens to a modern fighter in a second line unit ?

It may happen that up to two years elapse before the hours, say 150, are flown, and the Maincheck 4 becomes due. There is then a risk that deterioration, due to weather and moisture, has occurred without being discovered. The R.A.F. get round this problem by allowing each Command the latitude to cater for its own flying intensity, for example, Meteor Mark 7, July, 1956 :—

	<i>Fighter</i>	<i>Bomber</i>	<i>Transport</i>	<i>Malta</i>
<i>Minor</i> ..	200 hours	150 hours	6 months	150 hours
<i>Major</i> ..	800 hours	600 hours	24 months	600 hours

I feel our Maincheck 3 (at 12 weeks), composed of anti-deterioration inspection items, such as glued joints on a Sea Venom, fits the bill for the F.A.A. and should be compulsory for all units. Embarked squadrons, with a high flying intensity, still have to combat the deleterious effect of salt water. This is more likely to become an important point in war-time when, with more aircraft on board, a number are permanently on deck in all weather.

The Carrier Cycle

At present a squadron aircraft will have a Maincheck 4 in the 6-month period before being embarked and another shortly before the squadron disbands. Next, the aircraft will probably go to an aircraft yard for a refurbish which will consist of bringing the aircraft up to the latest modification standard and a Maincheck 4. The aircraft will then be reissued for a second front line tour. On completion it will have done about 34 months service, and would be allotted to an aircraft yard for reconditioning. Probably five Mainchecks 4 or 5 have been done on that aircraft before reconditioning.

If a Maincheck 4 was carried out at, say, 150-hours flying time on a Sea Hawk, the number of Maincheck 4s between reconditioning would be three, working on the assumption that about 450/500-hours flying would be done on that aircraft during its period in two squadrons. The aircraft yard then reconditions the aircraft to fit in with the carrier cycle, although another 100 flying hours are available.

From the above, it can be seen that, if serviced on a flying-hour basis, an aircraft may be available for flying anything up to an extra two months during two tours. Thus servicing, based on flying hours, is more realistic, facilitates planning, and is more economical but, above all, it ensures the maximum use of the naval aircraft.