

D.D./R.D.A.

SPITFIRE - SMOOTH FINISH

35A

A meeting was held at Hursley Park on 7.8.42 with Design, Production, and Inspection representatives from the firm and M.A.P. present. Aero Dept. and Chemistry Dept. R.A.E. were also represented.

Briefly, the results of the meeting were as follows :-  
(The formal Minutes of the Meeting are being prepared by the R.T.O.)

1. It was agreed that the application of glossy paint as such, need not be used to achieve the desired standard of aerodynamic smoothness.
2. Various samples of improved paint finish were inspected on Spitfire aircraft and components at Worthy Down and Southampton, and it was finally agreed after discussion to adopt the firm's proposal to use D.T.D. 517 (a matt S type paint), with an undercoat and a filling coat.
3. It was agreed that rubbing down the undercoat was equally important to rubbing down the final coat, to achieve the desired smoothness, in view of the general conditions under which the paint spraying processes are carried out at Supermarines.
4. Flight tests carried out by the firm have indicated that smoothing the surfaces of wings and fuselage by rubbing down will give a gain in the order of 5 miles an hour on speed.
5. It was pointed out that smoothness of surface as far back as 20% of the chord of the wing, was the most important factor and that great care should therefore at the same time be taken to fill up the plating joints, indentations at rivet heads, etc., in this region and in particular the butt joint which traverses the whole of the leading edge spanwise. The firm will include this filling at the same time as introducing the scheme for smoother paint finish.
6. The Inspector-in-Charge, A.I.D., raised the point of difficulty in determining the standard to be adopted for the smoothness of the paint finish. It was agreed that the firm make up samples (1 yd. x 1 yd.) which would be checked by Chemistry Dept. R.A.E. before being used, as the standard for inspection.

7. The effect on production output was discussed and it was agreed that this would be negligible if the rubbing down processes were put in hand immediately on the existing D.T.D.308 paint and the revised D.T.D.517 paint scheme introduced as soon as possible. This was despite the fact that an additional 50 man hours (one-quarter skilled) would be necessary to achieve this result.

8. In view of the stated negligible effect on production, it was agreed that this revised scheme of painting, be put in hand forthwith by modification action, with the aim that in two weeks' time aircraft would start coming out with the existing paint scheme, with rubbed down surfaces, and in about eight weeks' time aircraft would start coming out with the improved D.T.D.517 paint scheme,

These estimates refer only to the work directly controlled by Supermarines, and although details of the improved scheme will be passed on as soon as possible by Supermarines to Castle Bromwich, Westlands, etc., it was recommended that direct instructions should be given by M.A.P. to the firms concerned to ensure that this improvement in aircraft finish will in a reasonably short time be generally applied to Spitfires.

9. It was stressed that the Service maintenance on Spitfires as far as the care of painted surfaces was concerned had not so far been very good, due presumably to the difficult conditions under which the R.A.F. have been working. It was recommended, in view of the greater attention now being paid by the makers to finish, that a corresponding improvement in maintenance of Spitfires in service use should also be insisted on.

R.D.L. 1.

10/8/42.

*S. J. Bluff*