In Reply Refer To: U. S. NAVAL AIR TEST CENTER
PATUXENT RIVER, MD.

CONFIDENTIAL
NA83/VF6F-3/BIS 2116
FEE/vbs (FT)
Serial: C-443

To: Board of Inspection and Survey

Subj: TED No. BIS 2116 - Model F6F-3 Airplane - Production Inspection Trials - Supplementary Data.

Refs: (a) NAS Patuxent River, Md. conf. Final Flight Report of Production Inspection Trials of Model F6F-3 Airplane TED No. BIS 2116 dated 27 Nov 1944.
(b) BuAer conf. ltr. Aer-E-211-RC, C-90071 C11926 dated 8 June 1943.
(c) BuAer conf. ltr. Aer-E-211-RJ, C-90071 C14761 dated 13 July 1943.
(d) BuAer conf. ltr. Aer-E-211-RJ C-90071, C17360 dated 13 Aug 1943.
(e) FT Memo NA83 VF6F-3 for VF Design Desk, dated 29 June 1943.
(f) FT Memo NA83 VF6F-3 (FT) (44) for VF Design Desk, dated 30 Aug 1943.

1. Production Inspection Trials of the model F6F-3 airplane were conducted under TED No. BIS 2116. The final report of the Flight Test portion of these trials was submitted in reference (a). References (b), (c), and (d) requested that, as a part of the above mentioned trials, flight tests be conducted on the model F6F-3 airplane carrying various combinations of bombs and droppable fuel tanks and also when carrying a MK 13-2 torpedo. Reports of the results of these tests were made by references (e) and (f) and are also included in reference (a). These results, however, did not include maximum speed or maximum rate of climb data. These data have been determined by flight tests of model F6F-3 airplane No. 41588 and are herewith submitted to complete the subject tests.

2. Airplane No. 41588, photographs of which are included in enclosure 3, possessed a smooth dark blue finish and was a typical late production model F6F-3 airplane except that special elevator and rudder balance tabs were installed, and the plexiglass of the cockpit hatch was molded in a single
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piece instead of the normal type 5 piece framed hatch. The windshield was the flat front type as on later model F6F airplanes. The airplane was equipped with a Pratt and Whitney model R-2800-10 two-stage supercharged engine and a Hamilton Standard, constant-speed, three-blade propeller of 13'1" diameter, blade design No. 6501A-0. The ARC antenna installed was a wire leading from a mast on the vertical fin to a mast slightly aft of the cockpit. A lead-in extended from this mast to an insulator on the right upper portion of the fuselage slightly aft of the mast. An APX-1 wire mast antenna extended upward from the top of the fuselage at a point approximately midway between the cockpit and the fin. An electric outside air temperature element was mounted on the upper surface of the right wing at approximately the 60% chord station, midway between the side of the fuselage and the inboard edge of the aileron. The details discussed above may be clearly seen in the attached photographs of the airplane. The twin pylons shown in the enclosed photographs were not installed when the airplane was in the clean condition.

3. The basic loading of the airplane for all tests was that of an overload fighter and included full internal fuel, 250 gals., 16 gals. of oil, full ammunition, 2400 rds., and 6-50 cal. machine guns. The dummy MK 13-2 torpedo used was fitted with a nose drag ring and an air stabilizer mounted on its tail as shown in the photographs. The drop tank used was a standard F6F type, 165 gal. tank. The bombs used were 1,000 pound dummy G.P.

4. The results of the maximum speed and climb tests at military power are given by the curves of enclosure 2 and are summarized in the table of enclosure 1. All maximum speed runs were made with cowl, intercooler, and oil cooler flaps fully closed. All climbs were made with cowl flaps 1/3 open and oil and intercooler flaps closed. The climbing speed up to high blower critical altitude was 135 kts., Vi. All tests were run with mixture control in auto lean.

By direction of Commander, Naval Air Test Center:

G. E. GLIESE
Director of Flight Test
CONFIDENTIAL
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FEE/vbs (FT)
Serial: C-443

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cc: BuAer (VF Design Branch)
    BuAer (Design Coordination) (5)
    BuAer (Aerodynamics & Hydrodynamics Section, Engrg. Div.)
    AAF ATSC Liaison Office, Room 2242, Munitions Bldg.,

Encls: (HW)
2. Three (3) Performance Curves, Photo PTR Nos. 26770, 26768, and 26769.
3. Eight (8) Photographs, Photo PTR Nos. 22000, 21999, 22001, 22002, 22171, 22172, and 22170, 22173.
**Performance Characteristics of Model F6F-3 Airplane No. 41588**

**At Various Loadings = Military Power**

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<tbody>
<tr>
<td><strong>Gross weight - lbs.</strong></td>
<td>12,440</td>
<td>13,475</td>
<td>14,510</td>
<td>15,568</td>
</tr>
<tr>
<td><strong>Maximum speed at high blower a.c.a.-MPH.</strong></td>
<td>382</td>
<td>367</td>
<td>352</td>
<td>337</td>
</tr>
<tr>
<td><strong>High blower airplane crit. alt. - ft.</strong></td>
<td>22,400</td>
<td>22,100</td>
<td>21,800</td>
<td>21,600</td>
</tr>
<tr>
<td><strong>Service Ceiling - ft.</strong></td>
<td>37,700</td>
<td>35,500</td>
<td>33,200</td>
<td>30,500</td>
</tr>
<tr>
<td><strong>Maximum rate of climb at S.L. - ft.</strong></td>
<td>3040</td>
<td>2690</td>
<td>2340</td>
<td>2000</td>
</tr>
</tbody>
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Archives of M. Williams
MODEL F6F-3 AIRPLANE NO. 41586

EFFECT OF VARIOUS LOADINGS ON SPEED.

NO. CONFIGURATIONS GROSS WEIGHT
OVERLOAD FIGHTER (LBS)
1. CLEAN 12440
2. 1-1800 LB. BOMB 13475
3. 2-1000 LB. BOMBS 14510
4. 2-1000 LB. BOMBS 1-180 GAL. DROP TANK 15568
5. 1-TORPEDO AND DRAG RING 14222

2700 RPM
HIGH BLOWER

Www.aircraftperformance.org

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