1. TECHNICAL

1.1 ENGINES

The TF30P-3 growth version of the TF30 ducted turbofan engine is in production at United Aircraft's Pratt and Whitney plant in East Hartford, Connecticut. Six engines have been received at the Fort Worth Division. Two are being flown in TAC 14 and two in TAC 16. Effective on TAC 31 and on, the P-3 will power operational F-111A, C, and K aircraft.

The new power plant operates at a higher turbine inlet temperature than the P-1, and offers more maximum non-after-burning thrust during subsonic operation at altitude. It also offers lower specific fuel consumption during sea level supersonic operation.

The following is a summary of the major changes from the TF30P-1 engine that are incorporated in the TF30P-3 engine:

N1 COMPRESSOR - The N1 compressor has been strengthened and modified with a series of minor angle bends on stators and blades which constitute the H41 configuration. This configuration yields a 6 percent improvement in stall line and a 12 percent increase in flow capacity of the Low Pressure compressor which results in an 18 percent reduction in bypass ratio.
N2 COMPRESSOR - An over-lapped and sealed N2 compressor has been incorporated. The inside diameter wall pressure losses were reduced by optimizing the rotor-to-stator overlap. The blade root clearances along with the blade tip clearances and airseal clearances have been reduced, thereby effectively sealing most inter-stage air leakage in the N2 compressor. These changes resulted in improvements in low speed surge margin, high speed flow capacity, and compressor efficiency.

BURNER SECTION - The single nozzle fuel manifold was replaced by a four nozzle manifold. The burner cans are four nozzle type with provisions for positive locking. A louvered transition duct is provided with separate inner and outer walls, louvered cooling to withstand higher P-3 temperatures.

TURBINE SECTION - The nozzle case has been redesigned to allow the low turbine package, including vanes, to be installed and removed as an assembly. This eliminates teardown after final balance of the low turbine assembly.

Ninth stage air is utilized for cooling the low turbine and turbine shaft instead of twelfth stage air. This also provides an improved environment for the No. 4½ and No. 5 bearings due to lower pressure, and lowers the low turbine shaft operating temperature.

BEARINGS - Changes were made to main engine bearings to insure compatibility with the higher loadings due to increased speed in the P-3.

AFTERBURNER DIFFUSER - The flow divider Z-1 manifold has been split into primary and secondary spray rings.

AFTERBURNER DUCT AND EJECTOR - The afterburner duct has a louvered liner and the duct has been extended eight inches.

PLUMBING, GEARBOX, AND EXTERNAL - The compressor, diffuser and burner ducts have been changed from waffle aluminum to smooth titanium. The main fuel pump drive gear ratio changes to provide adequate fuel at the sea level dash condition; in turn, the N2 tach gear ratio also changed.
1.2 **BORON COMPOSITE PROOF TEST CONDUCTED**

A Boron Composite Main Landing Gear Aft Door proof test was completed during week of 6-10 March. The door withstood 100 percent of design limit load without failure or any apparent damage. The door was tested for the most critical airload condition.

1.3 **TIME COMPLIANCE TECHNICAL ORDERS**

<table>
<thead>
<tr>
<th>RECORD TYPE</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 MARCH 1967</td>
<td></td>
</tr>
<tr>
<td>IF-111A-590</td>
<td>Modify Upper Glove Seal Area - F-111A Aircraft</td>
</tr>
<tr>
<td>3 MARCH 1967</td>
<td></td>
</tr>
<tr>
<td>IF-111A-631</td>
<td>Inspect and Rework Aircraft Emergency Oxygen System Pressure Reducer Valve Assy. Firewell Part No. F17302-5 - F-111A Aircraft</td>
</tr>
<tr>
<td>17 MARCH 1967</td>
<td></td>
</tr>
<tr>
<td>43E24-3-4-530</td>
<td>Revision of Ignition System Wiring in F-111 Electrical System Trainer - MTU-1</td>
</tr>
<tr>
<td>24 MARCH 1967</td>
<td></td>
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</tbody>
</table>

2. **GENERAL**

2.1 **FACTS AND FIGURES**

2.1.1 **FLIGHT SUMMARIES**

For three weeks ending 12 March 1967:

<table>
<thead>
<tr>
<th></th>
<th>Total Flts</th>
<th>Total Hrs</th>
<th>S/S Flts</th>
<th>S/S Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-111A:</td>
<td>75</td>
<td>145.1</td>
<td>22</td>
<td>4.5</td>
</tr>
<tr>
<td>F-111B:</td>
<td>23</td>
<td>25.2</td>
<td>6</td>
<td>1.0</td>
</tr>
<tr>
<td>Total:</td>
<td>98</td>
<td>170.3</td>
<td>28</td>
<td>5.5</td>
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</table>
Cumulative through 12 March 1967:

<table>
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<tr>
<th></th>
<th>Total Flts</th>
<th>Total Hrs</th>
<th>S/S Flts</th>
<th>S/S Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-111A:</td>
<td>1359</td>
<td>2329.4</td>
<td>500</td>
<td>92.9</td>
</tr>
<tr>
<td>F-111B:</td>
<td>249</td>
<td>364.5</td>
<td>52</td>
<td>8.3</td>
</tr>
<tr>
<td>Grand Total:</td>
<td>1608</td>
<td>2693.9</td>
<td>552</td>
<td>101.2</td>
</tr>
</tbody>
</table>

2.1.2 AIRCRAFT LOCATIONS

Edwards AFB: TAC 1, 3, 4, 6, and 17
Eglin AFB: TAC 7
Hughes: NAVY 2 and 3
Grumman: NAVY 1, 4, and 5

Fort Worth: TAC 5, 8, 10, 12, 13, 14, 15, 16, and 19
11 (Held for Recon DT&E; now in Final Assembly)
18 (Assigned to FB-111 Program; now in Final Assembly)

Grumman-Peconic
Pratt and Whitney Test: TAC 2

2.2 NEW TAPES, CARDS AND MANUALS

The following checkout tapes, cards, and manuals were distributed during the period 20 February - 10 March 1967 for use in the field:

24 FEBRUARY 1967

5N1-3-11-8-1 (S-2) Checkout Instructions (Tape)
21 FEBRUARY 1967 Navigational Computer.
5N1-3-11-8-1CT-1 Dated 21 February 1967
11F1-ASG23-8-2 (S-2)  Checkout Instructions (Tape)
21 FEBRUARY 1967  Lead and Launch Computing Amplifier Dated 21 February 1967
11F1-ASG23-8-2CT-1

12P2-2APQ110-8-6 (C)  Checkout Instructions (Tape)
23 JANUARY 1967  Terrain Following Indicator Dated 30 November 1966
12P2-2APQ110-8-6CT-1

12P2-2APQ113-8-3 (D)  Checkout Instructions (Tape)
20 JANUARY 1967  Modulator Receiver Transmitter Dated 20 January 1967
12P2-2APQ113-8-3CT-1

12P2-2APQ113-8-6 (S-4)  Checkout Instructions (Card)
24 FEBRUARY 1967  Antenna Control Unit Dated 24 February 1967
12P2-2APQ113-8-6CT-1

33D3-9-107-8-2 (A-5)  Maintenance Test Instructions (Tape)
27 JANUARY 1967  Indicators and Controls Test Station Dated 27 January 1967
33D3-9-107-8-2CT-1

33D3-9-111-8 (S-4)  Checkout Instructions (Card)
24 FEBRUARY 1967  Servo and Indicators Test Station Dated 24 February 1967
33D3-9-111-8CT-1

33D5-8-130-8-2 (A-9)  Maintenance Test Instructions (Tape)
17 FEBRUARY 1967  RTM Test Station Dated 17 February 1967
33D5-8-130-8-2CT-1

3. SPECIAL

3.1 F-111 FLIGHT TEST PROGRAM HIGHLIGHTS

SUPersonic flights:  To date of 12 March 1967, 552.
Of this number, 144 at Mach 2.0 or above.

LONGEST SUSTAINED FLIGHT:  On 8 March 1967, TAC 10 was ferried from Eielson AFB to Carswell AFB. The flight duration was the longest of the F-111 Flight Test Program. The initial part of the flight included a scheduled mission, after which the aircraft took on 24,600 pounds of fuel during one contact with a tanker over Eielson AFB.
3.2 SOLE MARCH MEETING

The second meeting of the North Texas Chapter, Society of Logistics Engineers (SOLE), will be held Tuesday, 28 March 1967, at the Holiday Inn, Arlington, Texas. The social hour will start at 6:30 P.M. and a buffet dinner will follow at 7:30 P.M.

Following the dinner, Colonel Eugene C. Parkerson, Dean of the School of Systems and Logistics - Air Force Institute of Technology, will discuss Maintenance Engineering and Air Force Training of the Logistician, including highlights about the operation of the School of Systems and Logistics.

Tickets will go on sale the week of 13-17 March and may be obtained in the Logistic Projects Section, Department 180-1, General Dynamics Corporation or by calling PE2-4811, Extension 4382. Anyone interested in Logistics or related fields is invited to attend.