Standard Aircraft Characteristics

NAVY MODEL

TA-3B

AIRCRAFT

(TITLE UNCLASSIFIED)

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1 May 1955 in part and all addenda thereto.

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1 JULY 1967
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NAVAIR 00-110AA3-7

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POWER PLANT

No. & Model: (2) J57-P-10
MFR.: Pratt & Whitney
Type: Turbojet
Comp.: Dual Rotor Axial Flow
Length: 158 in.
Diameter: 41 in.
No. & Type Assistant: 12-3K54500
Tail Pipe No.: 22LE
Constant Exit Area

RATINGS

SEA LEVEL STATIC
THUST RPM
LB. N1 N2

Maximum 10500 6450 9900
Military 10500 6150 9900
Normal 9000 5900 9600

N1 Speed of Low Pressure Compressor
N2 Speed of High Pressure Compressor
Eng. Spec. No. N-1700-A

MISSION AND DESCRIPTION

The primary mission of the A3D-2T airplane is that of a trained for bombardiers and navigators. The airplane is designed to operate from land bases and from CVA-19 and CVA-59 carrier ships.

The airplane has a conventional swept wing and swept tail arrangement. Two turbo-jet engines are pylon-mounted in underlying nacelles. Provisions are made for a crew of eight men, consisting of a pilot, an instructor and six bomb-ardier-navigator trainees.

The basic structure is nearly identical to the A3D-2Q. The wing has a cambered leading edge and full-span slats. One bomb rack is located under each wing to carry practice bomb dispensers. The rear compartment floor is adaptable to carrying cargo or transport type seats.

DEVELOPMENT

First Flight: May 1959
Service Use (Estimated): October 1959

DIMENSIONS

WING
AREA: 812 sq. ft.
SPAN: 72.5 ft.
MAC: 145.2 in.
SWEETBACK: 36°
LENGTH: 74.4 ft.
HEIGHT: 22.8 ft.
TREAD: 10.4 ft.

*All aerodynamic coefficients are based on the original wing area of 779 square feet and MAC of 140.14 inches

WEIGHTS

LOADING LBS. LF.
Empty 3993
Basic 40579
Design 55942
Combat 59990
Max T.O. (Land) 78000
Max T.O. (Cat.) 73000
Catapult Design 70000
Max. Landing (Land) 65000
Max. Landing (Carrier) 49000

FUEL AND OIL

GAL. NO. TANKS LOCATION
1925 1 Fwd. Fuselage
1958 1 Aft Fuselage
666.5 ea. 2 Wing

Self Sealing Total Fuel Capacity 5116 Gals.
Fuel Grade: JP-5
Fuel Spec: MIL-F-5624

OIL

GAL. NO. TANKS LOCATION
11 2 Integral with Engine
Oil Spec: MIL-L-7808

ELECTRONICS

Radio Rec. (VOR) AN/ARN-14-E
Radio Compass AN/ARN-6
Tacan AN/ARN-21
Direction Finder AN/AR-A25
Radio Altimeter AN/APN-22
VF Transponder AN/APX-6B
Coder Group AN/AP-A9

(without video coder)
Trans-Receiver (UHF) AN/ARC-27A
Communication Radio AN/ARC-38
Radio Receiver (VHF) AN/ARN-40
Radar Bomb Director AN/RS-11A
Antenna Couple AN/50X/AR
# PERFORMANCE SUMMARY

## TAKE-OFF LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>(1) HIGH ALTITUDE</th>
<th>(2) HIGH ALTITUDE</th>
<th>(3) HIGH ALTITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ATTACK 2 ARDO</td>
<td>ATTACK 2 ARDO</td>
<td>ATTACK 2 ARDO</td>
</tr>
<tr>
<td></td>
<td>OA DISPERSED</td>
<td>OA DISPERSED</td>
<td>OA DISPERSED</td>
</tr>
<tr>
<td><strong>TAKING-OFF WEIGHT</strong></td>
<td>1 lb.</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td><strong>Fuel</strong> (27-2)</td>
<td>1 lb.</td>
<td>25,781</td>
<td>13,788</td>
</tr>
<tr>
<td><strong>Payload</strong></td>
<td>1 lb.</td>
<td>12,500</td>
<td>12,500</td>
</tr>
<tr>
<td><strong>Wing loading</strong></td>
<td>1 lb./sq.ft</td>
<td>95.2</td>
<td>95.2</td>
</tr>
<tr>
<td><strong>Stall speed - power-off</strong></td>
<td>115.7</td>
<td>115.7</td>
<td>115.7</td>
</tr>
<tr>
<td><strong>Take-off run at S.L. - calms</strong></td>
<td>(4) ft.</td>
<td>4,600</td>
<td>9,900</td>
</tr>
<tr>
<td><strong>Take-off to 50 ft. - calms</strong></td>
<td>(4) ft.</td>
<td>4,600</td>
<td>6,200</td>
</tr>
<tr>
<td><strong>Take-off to clear 50 ft. - JATO</strong></td>
<td>(8) ft.</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Max. speed/altitude</strong></td>
<td>(0) km./hr</td>
<td>533/5,174</td>
<td>533/5,174</td>
</tr>
<tr>
<td><strong>Rate of climb at S.L.</strong></td>
<td>(2) fpm</td>
<td>4,800</td>
<td>4,800</td>
</tr>
<tr>
<td><strong>Time: S.L. to 20,000 ft.</strong></td>
<td>(0) min</td>
<td>5.4</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Time: S.L. to 30,000 ft.</strong></td>
<td>(0) min</td>
<td>9.2</td>
<td>9.2</td>
</tr>
<tr>
<td><strong>Service ceiling (500 fpm)</strong></td>
<td>(0) ft.</td>
<td>4,150</td>
<td>7,400</td>
</tr>
<tr>
<td><strong>Combat range</strong></td>
<td>n.m.</td>
<td>2,265</td>
<td>26,750</td>
</tr>
<tr>
<td><strong>Average cruising speed</strong></td>
<td>n.m.</td>
<td>430</td>
<td>430</td>
</tr>
<tr>
<td><strong>Armament altitude(s)</strong></td>
<td>ft.</td>
<td>3760/4000</td>
<td>3760/4000</td>
</tr>
<tr>
<td><strong>Cruising altitude</strong></td>
<td>n.m.</td>
<td>1150</td>
<td>1,605</td>
</tr>
<tr>
<td><strong>Torpedo range</strong></td>
<td>n.m.</td>
<td>430</td>
<td></td>
</tr>
<tr>
<td><strong>Mission Time</strong></td>
<td>hr</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td><strong>Low Altitude Attack (Radius/Mission Time) n.m./hr</strong></td>
<td></td>
<td>1,270/5.2</td>
<td></td>
</tr>
</tbody>
</table>

## COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th></th>
<th>(2) 60S FUEL WITH STORES</th>
<th>(4) 60S FUEL WITH STORES</th>
<th>(6) 60S FUEL WITH STORES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMBAT WEIGHT</strong></td>
<td>1 lb.</td>
<td>59,685</td>
<td>64,685</td>
</tr>
<tr>
<td><strong>Engine power</strong></td>
<td>MILITARY</td>
<td>MILITARY</td>
<td>MILITARY</td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td>1 lb.</td>
<td>12,469</td>
<td>20,272</td>
</tr>
<tr>
<td><strong>Combat speed/altitude</strong></td>
<td>ft./sec</td>
<td>466/12,000</td>
<td>467/11,000</td>
</tr>
<tr>
<td><strong>Rate of climb/altitude</strong></td>
<td>ft./sec</td>
<td>466/11,000</td>
<td>467/10,000</td>
</tr>
<tr>
<td><strong>Combat ceiling (500 fpm)</strong></td>
<td>ft.</td>
<td>4,150</td>
<td>7,400</td>
</tr>
<tr>
<td><strong>Rate of climb at S.L.</strong></td>
<td>fpm</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td><strong>Max. speed at S.L.</strong></td>
<td>km./hr</td>
<td>573</td>
<td></td>
</tr>
<tr>
<td><strong>Max. speed/altitude</strong></td>
<td>km./hr</td>
<td>502/35,000</td>
<td></td>
</tr>
</tbody>
</table>

## LANDING WEIGHT

<table>
<thead>
<tr>
<th></th>
<th>1 lb.</th>
<th>46,292</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fuel</strong></td>
<td>1 lb.</td>
<td>28,582</td>
</tr>
<tr>
<td><strong>Stall speed - power-off</strong></td>
<td>km./hr</td>
<td>97.2</td>
</tr>
<tr>
<td><strong>Stall speed - with approach power</strong></td>
<td>km./hr</td>
<td>97.2</td>
</tr>
</tbody>
</table>

## NOTES

- **PERFORMANCE RADIUS:** Flight Test of AJ-1, wind tunnel tests of AJ-2 (camber wing) and calculations.
- **RANGE AND RADIUS** are based on engine spec. fuel consumption increased by 5%.
- **SPOTTING:** A total of 27 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CB-19 class angled deck carrier.

(4) **HALF FLAPS**
(8) **HALF FLAPS 12 JATO UNITS INCREASE TAKE-OFF WEIGHT SHOWN BY 717.2 LBS.
(8) **MILITARY SPECIFIC**
(2) **WITH ONE REFLUG ON THE OUTBOUND LEG, THE HIGH ALTITUDE ATTACK RADIUS IS INCREASED TO 2076 R.M. (WITH A MISSION TIME OF 9.74 HOURS)**
NOTES

HIGH ALTITUDE ATTACK

WARM-UP, TAKE-OFF AND ACCELERATE: 5 minutes at normal thrust at sea level
CLIMB: On course to optimum cruise altitude with military thrust
CRUISE-OUT: 4% altitudes and speeds for maximum range
CLIMB: With maximum thrust on course to cruise ceiling
BOMB RUN: 15 minutes at normal thrust at combat altitude
DROP BOMBS:
REACTIVE ACTION: 2 minutes with normal thrust at combat altitude (no distance gained)
ESCAPE: 8 minutes with normal thrust (assum escape ends at optimum cruise back altitude)
CRUISE-BACK: At altitudes and speeds for maximum range
RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5% of initial fuel load

Combat Radius = Climb + Cruise-Out + Climb + Run-In + Escape + Cruise-Back
Mission Time = Time Required for Climb + Cruise-Out + Climb + Bomb Run + Reserve
Action + Escape + Cruise-Back

LOW ALTITUDE ATTACK AND GROUND SUPPORT

WARM-UP, TAKE-OFF AND ACCELERATE: 5 minutes at normal thrust at sea level
CLIMB: On course to optimum cruise altitude with military thrust
CRUISE-OUT: At altitudes and speeds for maximum range
DROP BOMBS: No fuel consumed, no distance gained
COMBAT: 5 minutes at military thrust at sea level (no distance gained)
CLIMB: On course to optimum cruise altitude with military thrust
CRUISE-BACK: At altitudes and speeds for maximum range
RESERVE: 20 minutes at speed for maximum endurance at sea level plus 5% of initial fuel load

Combat Radius = Climb + Cruise-Out + Climb + Cruise-Back
Mission Time = Time Required for Climb + Cruise-Out + Combat + Climb + Cruise-Back

LOADING CONDITION COLUMN NUMBER