Standard Aircraft Characteristics

NAVY MODEL
EA-3B
AIRCRAFT

(TITLE UNCLASSIFIED)

THIS PUBLICATION SUPERSEDES NAVAIR 00-110A-1 DATED
1 MAY 1955 IN PART AND ALL ADDENDA THERETO

This publication shall not be carried in aircraft on combat missions or when
there is a reasonable chance of its falling into the hands of an unfriendly
nation, unless specifically authorized by the "Operational Commander."

PUBLISHED BY DIRECTION OF THE
COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

NOTICE—This document contains information affecting the national defense
of the United States within the meaning of the Espionage Laws, Title 18,
U. S. C., Sections 793 and 794. The transmission or the revelation of its
contents in any manner to an unauthorized person is prohibited by law.

CLASSIFIED by NAVAIRSYSCOM
SUBJECT TO GENERAL DECLASSIFICATION
SCHEDULE OF EXECUTIVE ORDER 11652
AUTOMATICALLY DOWNGRADED AT TWO YEAR
INTERVALS
DECLASSIFIED ON DECEMBER 31, 1973

1 JULY 1967
Reproduction for non-military use of the information or illustrations contained in this publication is not permitted without specific approval of the issuing service (NAVAIR or USAF). The policy for use of Classified Publications is established for the Air Force in AFR 201-1 and for the Navy in Navy Regulations, Article 1509.

LIST OF CHANGED PAGES ISSUED

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the current change is indicated by a vertical line in the outer margins of the page.

* The asterisk indicates pages changed, added or deleted by the current change.

ADDITIONAL COPIES OF THIS PUBLICATION MAY BE OBTAINED AS FOLLOWS:

ASAF ACTIVITIES.—In accordance with Technical Order No. 00-1-2.

NAVY ACTIVITIES.—Use DD FORM 1348 and submit in accordance with the instructions contained in NAVSUP PUBLICATION 437—Military Standard Requisitioning and Issue Procedures.

For information on other available material and details of distribution refer to NAVSUP PUBLICATION 2002, SECTION VIII and NAVAIR 00-500A.
STANDARD AIRCRAFT CHARACTERISTICS

EA-3B SKYWARRIOR

DOUGLAS
### POWER PLANT

- **No. & Model**: (2) J57-P-10
- **Mfr. & Spec.**: Pratt & Whitney N-1700-A (2-2-55)
- **Type**: Turbojet
- **Compr.**: Dual rotor, Axial Flow
- **Length**: 140 in.
- **Diameter**: 41 in.
- **Na & Type Assists**: 12-52524/600 JATO Tail Pipe Nozzle
- **Sea Level Static**
  - **Thrust RPM**:
    - Maximum: 10500
    - Military: 10500
    - Normal: 9000
- **N1**: Speed of low pressure compressor
- **N2**: Speed of high pressure compressor

### MISSION AND DESCRIPTION

The principal mission of the A2D-2Q airplane is effective search for enemy radar. It can operate from land bases and from carriers.

The airplane is conventional with two turbo-jet engines in under-wing nacelles. Provisions are incorporated for crew of seven: a pilot, a navigator-assistant pilot, a gunner-radio operator, and four ECM operators including an evaluator.

The tricycle landing gear, arresting gear, wing-fold and tail-fold mechanisms, single-slotted wing flaps, fuselage speed brakes, and power mechanisms for rudder, elevator and ailerons are operated by hydraulic power. The horizontal stabilizer is electrically adjustable for trim in-flight. Leading edge slats are actuated automatically by aerodynamic loads.

### DEVELOPMENT

- **Contract**: NDAs 55-205 Five airplanes
- **NDAs 57-131**: Eight airplanes
- **NDAs 57-181 Amendment 82**: 14 May 1958
  - Twelve airplanes (cambered leading edge wing)

**First Flight**: 12-10-56

**First Fleet Delivery**: November 1959

### WEIGHTS

- **Empty**: 41,135 Lbs.
- **Basic**: 41,297 Lbs.
- **Design**: 55,942 Lbs.
- **Combat**: 61,593 Lbs.
- **Max. T.O. (Land)**: 78,000 Lbs.
- **Max. T.O. (Cat)**: 73,000 Lbs.
- **Max. Land (Land)**: 56,000 Lbs.
- **Max. Landing (Carrier)**: 49,000 Lbs.

### ELECTRONICS

- **UHF Xtrn-Rec:** AN/ARC-17
- **IFF**: AN/ARX-66 & AN/ARX-67
- **Radar Altimeter**: AN/AR-22
- **TACAN**: AN/ARN-31
- **Radio Compass**: AN/ARN-6
- **Search Radar**: AN/AR-11
- **Video Omni-Range**: AN/ARX-146
- **UHF Xtrn-Rec**: AN/ARC-1
- **Pulse Analyzer**: AN/ALR-5
- **Countermeas. Rec**: AN/ALR-8
- **Radar Rec**: AN/AR-5
- **Direction Finder**: AN/ARX-58
- **Signal Analyzer**: AN/ARX-74
- **Radar Rec**: AN/AR-9
- **Radar Rec**: AN/AR-15
- **Range Rec**: AN/MRC-5
- **HP Xtrn-Rec**: AN/ARC-39
- **Radio Rec**: AN/MRC-41
- **Radio Direction Finder**: AN/MRC-25
- **I.C.S.-Transistorized I.C.S. [DAC]**
- **By retrofit**: Radar Set: AN/ARX-76
- **Comm. Set**: AN/ALR-14
- **EBM**: AN/ALR-35/41/51

### FUEL AND OIL

<table>
<thead>
<tr>
<th>Gal.</th>
<th>No. Tanks</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3114</td>
<td>2</td>
<td>Fuselage</td>
</tr>
<tr>
<td>1996</td>
<td>2</td>
<td>Wing</td>
</tr>
<tr>
<td>4412</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Self-sealing

### OIL

<table>
<thead>
<tr>
<th>Gal.</th>
<th>No. Tanks</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>2</td>
<td>Integral with eng.</td>
</tr>
</tbody>
</table>

### DIMENSIONS

- **Wing**: 779 sq. ft.
- **Span**: 76.5 ft.
- **M.A.C.**: 140.14 in.
- **Sweepback**: 36°
- **Length**: 76.4 ft.
- **Height**: 23.4 ft.
- **Tread**: 10.4 ft.

### ORDANCE

- **Guns/Amm**
  - 2-32mm (M5)/500 rds. per gun
  - Tail Turret System Aero 21B
### PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>TAKE-OFF CONDITION</th>
<th>T.O. Wt. High Alt</th>
<th>High Altitude Reconnaissance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TAKING-OFF WEIGHT (A)</strong></td>
<td>lb.</td>
<td>73,000</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
<td>22,518</td>
</tr>
<tr>
<td>Payload</td>
<td>lb.</td>
<td>1394</td>
</tr>
<tr>
<td>Wing loading</td>
<td>lb./sq.ft.</td>
<td>93.7</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>[n]</td>
<td>122</td>
</tr>
<tr>
<td>Take-off run at S.L. - calm</td>
<td>[ft]</td>
<td>4460</td>
</tr>
<tr>
<td>Take-off run at S.L. 25 kn. wind</td>
<td>[ft]</td>
<td>2340</td>
</tr>
<tr>
<td>Take-off to clear 50 ft. - calm</td>
<td>[ft]</td>
<td>6270</td>
</tr>
<tr>
<td>Max. speed/altitude</td>
<td>kn./ft.</td>
<td>559'/S.L.</td>
</tr>
<tr>
<td>Rate of climb at S.L.</td>
<td>fpm</td>
<td>5530</td>
</tr>
<tr>
<td>Time: S.L. to 30,000 ft.</td>
<td>min.</td>
<td>6.2</td>
</tr>
<tr>
<td>Time: S.L. to 30,000 ft.</td>
<td>min.</td>
<td>9.3</td>
</tr>
<tr>
<td>Service ceiling (100 fpm)</td>
<td>ft.</td>
<td>39,000</td>
</tr>
<tr>
<td>Combat range</td>
<td>n.mi.</td>
<td>2280</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>km./hr.</td>
<td>549.90</td>
</tr>
<tr>
<td>Cruising altitude</td>
<td>ft.</td>
<td>35,400 - 43,300</td>
</tr>
<tr>
<td>Combat radius /Mission Time</td>
<td>hr./n.mi.</td>
<td>1110/4.4</td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>kn./M.</td>
<td>549.90</td>
</tr>
<tr>
<td>IFR-Radius/Mission Time</td>
<td>n.mi./hr.</td>
<td>1510/6.9</td>
</tr>
<tr>
<td>IFR-Fuel Time / Distance</td>
<td>lb./n.mi.</td>
<td>10,630/600</td>
</tr>
</tbody>
</table>

### COMBAT WEIGHT

| lb. | 61,593 | 62,483 |
| Engine power | MILITARY | MILITARY |
| lb. | 17,112 | 18,000 |
| Combat speed/combat altitude | km./ft. | 497/41,000 | 497/40,000 |
| Rate of climb/combat altitude | fpm./ft. | 234/41,000 | 234/40,000 |
| Combat ceiling (500 fpm) | ft. | 41,300 | 41,900 |
| Rate of climb at S.L. | fpm | 6130 | 6080 |
| Max. speed at S.L. | kn./M. | 559.94 | 557.94 |
| Max. speed at 35,000 ft. | kn./M. | 511.92 | 510.96 |

### LANDING WEIGHT

| lb. | 47,617 | 47,591 |
| Fuel | lb. | 3135 | 3209 |
| Stall speed - power-off/Appr. Flw. | kn./km. | 107/105 | 107/105 |
| Land. Dist. Gr. Run/Over 50 ft. | ft. | 5515/6200 | 5600/6200 |

(A) The limit catapult take-off weight of 73,000 pounds is consistent with current operating bulletins. Under emergency conditions increased take-off weights may be utilized.

(B) Full flaps.

(C) One refueling from A3D-2 cambered wing tanker.
(Tanker T.O. Wt. = 73,000 lb.)

(D) One refueling from A3D-2 cambered wing tanker.
(Tanker T.O. Wt. = 73,000 lb.)

(E) Without chute. With chute distance is decreased approximately 2400 ft.

(F) All loadings include IFR probe.


(H) Spotting: A total of 27 aircraft can be accommodated in the landing spot of the flight and hangar decks of a CVA-19 class angle-deck carrier.
CARRIER SUITABILITY

DECK WIND REQUIRED FOR CATAPULTING

<table>
<thead>
<tr>
<th>MINIMUM WIND OVER DECK-KNOTS</th>
<th>35</th>
<th>30</th>
<th>25</th>
<th>20</th>
<th>15</th>
<th>10</th>
<th>5</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT (1000 LB.)</td>
<td>50</td>
<td>55</td>
<td>60</td>
<td>65</td>
<td>70</td>
<td>75</td>
<td>80</td>
<td></td>
</tr>
</tbody>
</table>

DECK WIND REQUIRED FOR LANDING

<table>
<thead>
<tr>
<th>MINIMUM WIND OVER DECK-KNOTS</th>
<th>35</th>
<th>30</th>
<th>25</th>
<th>20</th>
<th>15</th>
<th>10</th>
<th>5</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANDING WEIGHT (1000 LB.)</td>
<td>35</td>
<td>40</td>
<td>45</td>
<td>50</td>
<td>55</td>
<td>60</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>

Catapult take-off speed is based on Launching Bulletin No. 6-49.

Approach speed is based on NRTC recommended minimums.

Catapult end speed limited by aircraft strength below 60,700 lbs. on C11 Catapult and below 64,200 lbs. on the C7 Catapult. Above these weights catapult end speed is limited by catapult capacity.

Engaging speed limited by airplane strength limit as determined by maximum rate of sink.
HIGH ALTITUDE RECONNAISSANCE MISSION

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.

CLIMB: With maximum thrust on course to cruise ceiling.

RUN IN: 15 minutes at normal thrust at combat altitude.

EVASIVE ACTION: 2 minutes at normal thrust at combat altitude (no distance gained)

ESCAPE: 8 minutes at normal thrust (assume escape ends at optimum cruise altitude)

CRUISE BACK: At altitudes and speeds for maximum range.

RESERVES: 20 minutes at sea level at speed for maximum endurance plus 5% of the initial fuel load

\[
\text{Combat Radius} = \text{climb} + \text{cruise out} + \text{climb} + \text{run in} = \text{escape} + \text{cruise back}
\]

\[
\text{Mission Time} = \text{time required for climb} + \text{cruise out} + \text{climb} + \text{run in} + \text{evasive action} + \text{escape} + \text{cruise back}
\]

Loading Condition 3

\[
\text{SEA LEVEL} \rightarrow 35,000 \text{ FT.} \rightarrow 36,200 \text{ FT.} \rightarrow 39,100 \text{ FT.} \rightarrow 40,800 \text{ FT.} \rightarrow 43,200 \text{ FT.}
\]

\[
\text{Radius} = 1150 \text{ N. Mi.}
\]
THIS PAGE INTENTIONALLY LEFT BLANK.