Standard Aircraft Characteristics

NAVY MODEL
A-1E
AIRCRAFT
(AD-5)

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

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

1 JULY 1967
NAVAIR 00-110AA1-1

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 205-1 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 DESTROY SUPERSEDED PAGES.*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:**

**NAVAIR**

**ASA F 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
A-1E SKYRAIDER
POWER PLANT

NO. & MODEL............. (1) B-250-36-MA
MFR................... Wright Aero
G-415SC................ Single Stage Two Speed
SPEED, 5000' RATING... 3375 hp
PROP. MFR.............. Aero Products
HUB DESIGN............. WEBO-2-A31
HUB. H/D. SIZE........... 7 x 3.5

RATINGS

RPM  @ RPM  @ ALT
T.G. 2,700 2,900 S.L.
MIL. 2,700 2,900 3,700
2,100 2,500 11,500
NORM. 2,300 2,600 6,200
1,900 2,500 11,000

Spec. No........... NSM-3-D

MISSION AND DESCRIPTION

The principal mission of the AD-5 is that of general purpose attack and ground support. It is also a torpedoes, mine layers or scout airplane capable of operating from all classes of carriers or from land bases. The AD-5 is a development of the AD series and incorporates side by side seating for an assistant pilot. The revised crew arrangement facilitates all-weather operation and permits utilization for long range navigation, radar search and spotting and observation, air support coordination, instrument training, pilot familiarization and other operations requiring a second crew member. Controls, armament, and tactical equipment are located for single pilot operation. A single dive brake is provided for dive bombing and maneuvering control.

The AD-5 can be converted rapidly aboard a carrier for operation as a passenger, cargo, ambulance or long range airplane by installation of appropriate conversion kits supplied as alternate equipment.

DEVELOPMENT

First Flights........... August 1951
Service Use............. April 1953

WEIGHTS

WEIGHTS

LOADING......... LBS.  L.F.
EMPTY........... 12,793
MAX. 512,933
DESIGN........... 17,000 6.6
GROSS........... 16,260 6.5
MAX.T. (WEIGHT)..... 25,000
MAX. 10-Hour (WEIGHT) 21,500
MAX. 10-Hour (ARREST) 17,500

ALL WEIGHTS ARE CALCULATED

FUEL AND OIL

FUEL AND OIL

GAL.  B.T.U. /GAL.  LOCATION
350............. Fuselage
150 or 300............ 0.3 B.T.U./gal
150 or 300............. Wing Drop
Fuel Grade............. 115/135
Fuel Spc.............. MIL-F-5571
Golf Sealing Task
Max. Usable Fuel 980 gal. (limited by oil cap.)

CAPACITY............. 39 gals.
SPC. ............. A.A-0-8
GRADING............. 1120

DIMENSIONS

DIMENSIONS

WING
WING AREA............. 200.3 sq. ft.
SPAN................ 35 ft.
MAC................. 4,080 lb.
LENGTH............. 35.0 ft.
WEIGHT............. 15.8 ft.
THICK................ 13.3 ft.
PROF. OREL. CLEARANCE........... 6 in.

ELECTRONICS

ELECTRONICS

UHF COMM............. AN/ARC-27A
UFH DIR. PINDAR........... AN/AAR-22
ANGU ALT. LXTERE............ AN/APS-22
NAV. RECEPTOR........... AN/ARC-2A
MARKER BEACON........... AN/ASR-12
FIRE CONTROL........... AN/APS-6
SEARCH RADAR........... AN/APS-10C
INTEGRATION........... AN/ARC-4
TACAN............. AN/ARC-23
(Alternate to AN/ARC-6)
## PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>TAKE-OFF LOADING CONDITION</th>
<th>(1) ATTACK 1-2000 lb. Bomb</th>
<th>(2) ATTACK 1-2000 lb. Bomb</th>
<th>(3) ATTACK 1-150 gal. Tanks 12-5&quot; Hydr</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>19.672</td>
<td>23.156</td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td>2,080</td>
<td>2,080</td>
<td></td>
</tr>
<tr>
<td>Payload</td>
<td>2,000</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Wing loading</td>
<td>1.92</td>
<td>58.4</td>
<td></td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>87.4</td>
<td>99.1</td>
<td></td>
</tr>
<tr>
<td>Take-off run at S.L. - calm</td>
<td>1,070</td>
<td>1,060</td>
<td></td>
</tr>
<tr>
<td>Take-off run at S.L. - wind</td>
<td>53</td>
<td>880</td>
<td></td>
</tr>
<tr>
<td>Take-off to clear 50 ft. - 0</td>
<td>2,870</td>
<td>2,870</td>
<td></td>
</tr>
<tr>
<td>Max. speed/altitude (A) km/hr</td>
<td>272/272</td>
<td>286/35,000</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at S.L. (A) fpm</td>
<td>1,820</td>
<td>1,720</td>
<td></td>
</tr>
<tr>
<td>Time: S.L. to 10,000 ft. A</td>
<td>31,7</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>Time: S.L. to 30,000 ft. A</td>
<td>46,1</td>
<td>29,3</td>
<td></td>
</tr>
<tr>
<td>Service ceiling (100 fpm) A</td>
<td>24,400</td>
<td>21,200</td>
<td></td>
</tr>
<tr>
<td>Combat range</td>
<td>65%</td>
<td>1,945</td>
<td></td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>210</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>Cruising altitude (A)</td>
<td>5,000</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>Combat radius</td>
<td>30%</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>Average cruising speed</td>
<td>210</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>Mission time</td>
<td>1,4</td>
<td>1,5</td>
<td></td>
</tr>
</tbody>
</table>

### COMBAT LOADING CONDITION

| COMBAT WEIGHT               | 19.672                   | 23.156                   |                                   |
| Engine power                | Military                  | Military                  |                                   |
| Fuel                        | 2,080                    | 2,080                    |                                   |
| Combat speed/Combat altitude (A) km/hr | 269/Sea level | 290/Sea level |                                   |
| Rate of climb/Combat altitude (A) fpm | 2,990/Sea level | 2,990/Sea level |                                   |
| Combat ceiling (100 fpm) A | 26,400                   | 26,400                   |                                   |
| Rate of climb at S.L. (A) fpm | 1,820                    | 1,820                    |                                   |
| Max. speed at S.L. A       | 286                      | 286                      |                                   |
| Max. speed/altitude km/hr  | 286/35,000               | 286/35,000               |                                   |

| LANDING WEIGHT             | 19.672                   | 23.156                   |                                   |
| Fuel                        | 230                      | 230                      |                                   |
| Stall speed - power-off     | 78.2                      | 78.2                     |                                   |
| Stall speed - with approach | 73.6                      | 73.6                     |                                   |

### NOTES

- Normal rated power.
- Maximum speed and rate of climb at sea level are 283 knots and 3,670 fpm, respectively, with combat power (3150 BHP).
- Installation of water injection system, including 128 gal. All fluid, increases airplane weight by 55 lb.
- PERFORMANCE BASES: Performance is calculated and based on contractor's flight tests of models AD-4, AD-5, and AD-6.
- COMBAT RANGE AND RADIUS are based on fuel consumption data from AD-4, AD-5 and AD-6 flight tests increased by 5%.
- All loadings include centerline and two inner wing racks, two Aero 11 racks, external armor plate, and four 20mm guns.
NOTES

SPOTTING: A total of 85 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVN-69 Class Angled Deck Carrier.

LOW ALTITUDE ATTACK COMBAT RADIUS PROBLEM (RECIPROCATING ENGINE)

WARNING: 10 minutes at normal power.

CLIMB: On course to 5,000 feet with normal power.

CRUISE-OUT: At 5,000 feet at velocity for long range. (If external fuel tanks are carried drop when empty.)

DECOY: To sea level. (No fuel used - no distance gained.)

DEEP DIVE, FIRE ROCKETS:

CUTOUT: 15 minutes at sea level. (5 minutes at military power and 10 minutes of normal power)

CLIMB: On course to 5,000 feet with normal power.

CRUISE-BACK: At 5,000 feet at velocity for long range.

RESERVE: 20 minutes at velocity for long range 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