Standard Aircraft Characteristics

NAVY MODEL
EA-1F
AIRCRAFT

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STANDARD AIRCRAFT CHARACTERISTICS
EA-1F SKYRAIDER
MISSI0N AND DESCRIPTION

The AD-39 is a dual purpose airplane, capable of two distinct missions: one, that of a radar reconnaissance airplane, detecting enemy radar installations and, secondly, that of a radar countermeasures airplane that jams enemy radar during an attack mission by a group of bombers.

The AD-39 is a kit-modification to the AD-3Q airplane. Crew consists of four: a pilot and navigator in the cockpit and two ECM operators in a rear compartment. The airplane is designed to operate from all classes of aircraft carriers or land bases.

The airplane is conventional in design and structure incorporating a single reciprocating engine, folding wings, conventional landing gear and catapult and arrested landing equipment. Provisions are incorporated for the carrying of fuel tanks and various stores required for the missions on the bomb racks, and for installation of 3-20mm guns in the inner wings.

DEVELOPMENT

First Flight: October 1956
Service Use: July 1957

WEIGHTS
LOADING
LBS.
Lb/Ft.
EMPTY
12,297
N/A
N.A.
13,013
N.A.
13,919
N.A.
MAX.
17,000
6.4
MAX. T.O. (FIELD)
25,000
N/A
CAT.
25,000
N/A
MAX. T.O. (FIELD)
31,000
N/A
ARREST
17,500
N/A

FUEL AND OIL

GAL.
N.T.
LOCATION
300.0
Fuel tanks
150 or 300.0
Str. Drop
150 or 300.0
Wing Drop
Fuel Grade
115/125
Fuel Speed
N.T.
N.T.
SELF-Sealing Tank
Max. usable fuel 900 gal. (limited by oil cap.)

CAPACITY
39 gal.
SPEL
82-0-8
GRADE
1520

DIMENSIONS

ARD:
200.0 sq. ft.
SPAN:
50.0 ft.
MAC:
8.8 ft.
LENGTH:
60.0 ft.
HEIGHT:
12.8 ft.
THD:
13.0 ft.
PROF. O.R.
6.0 in.

ELECTRONICS

USF Trans.—Dec.
AN/KRO-27A
MF Trans.—Dec.
AN/ARC-2
Radio Altimeter
AN/AFQ-22
Mark T. Bechel
AN/ARS-12
IFF
AN/APS-6
IFF Opeater
AN/APS-6
L.F. AIR.
AN/APS-6
USF AD.
AN/AQS-25
INTERPHONE
AN/AO-4
Radar Search
AN/AFQ-30
L.B. Radar Boffight
AN/AFQ-16
L.B. Boffight Adapter
AN/AFQ-16
Scrammer Role
AN/AU-26
Searchlight
AN/AO-21
SON Rec.
AN/AO-28
SON DP.
AN/AO-28
SON Rec.
AN/AO-29
Provisions
AN/AO-1
VHF Trans.—Dec.
AN/ARC-1

POWER PLANT

NO. & MODEL
(N12-125A-26-AN)
WPR
Wright Aero
SUPERCH.
Single Stage Two Speed
ALTERNATE RATED
1570 hp
PROP. WPR
Aero Products
BLADE ENG. NO.
(MOD. 1-3-60)
W. & HLD. /MA.
1/13/16
RATINGS

BHP @ RPM @ ALT.
T.O.
2,700 @ 2,900 @ 5.1
MIL.
2,700 @ 2,900 @ 3,700
NORMAL
2,300 @ 2,600 @ 12,500
NORMAL
1,900 @ 2,600 @ 17,000

SERVICE

ALL WEIGHTS ARE CALCULATED

ORDNANCE

Does not normally carry ordnance.
Provisions for a total of 12 Aero LA bomb racks on outer wings and 4-20mm wing guns with 200 rounds of ammunition each.
# Performance Summary

## Take-Off Loading Condition

<table>
<thead>
<tr>
<th></th>
<th>(1) PATHFINDER 1-30 gal, Aero 1A Fuel tank (B) and (P)</th>
<th>(2) PATHFINDER 2-30 gal, Aero 1A Fuel tank (B) and (C)</th>
<th>(3) RECONNAISSANCE 3-100 gal, Aero 1A Fuel tank (B) and (C)</th>
<th>(4) RECONNAISSANCE 2-100 gal, Aero 1A Fuel tank (C)</th>
<th>(5) RECONNAISSANCE 1-100 gal, Aero 1A Fuel tank (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Take-Off Weight</strong></td>
<td>lb. 21,351</td>
<td>lb. 21,352</td>
<td>lb. 20,590</td>
<td>lb. 22,596</td>
<td>lb. 22,596</td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td>lb. 4,980</td>
<td>lb. 6,380</td>
<td>lb. 4,080</td>
<td>lb. 5,880</td>
<td>lb. 5,880</td>
</tr>
<tr>
<td><strong>Payload</strong></td>
<td>lb. none</td>
<td>lb. none</td>
<td>lb. none</td>
<td>lb. none</td>
<td>lb. none</td>
</tr>
<tr>
<td><strong>Wing Loading</strong></td>
<td>lb/ft&lt;sup&gt;2&lt;/sup&gt;</td>
<td>lb/ft&lt;sup&gt;2&lt;/sup&gt;</td>
<td>lb/ft&lt;sup&gt;2&lt;/sup&gt;</td>
<td>lb/ft&lt;sup&gt;2&lt;/sup&gt;</td>
<td>lb/ft&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Stall Speed</strong></td>
<td>km/h 91.5</td>
<td>km/h 95.7</td>
<td>km/h 85.4</td>
<td>km/h 90.4</td>
<td>km/h 90.4</td>
</tr>
<tr>
<td><strong>Take-off run at S.L.</strong></td>
<td>ft. 1,300</td>
<td>ft. 1,600</td>
<td>ft. 930</td>
<td>ft. 1,000</td>
<td>ft. 1,000</td>
</tr>
<tr>
<td><strong>Take-off run at S.L. 25 km wind</strong></td>
<td>ft. 690</td>
<td>ft. 875</td>
<td>ft. 455</td>
<td>ft. 615</td>
<td>ft. 800</td>
</tr>
<tr>
<td><strong>Take-off to 2500 ft.</strong></td>
<td>ft. 5,260</td>
<td>ft. 7,800</td>
<td>ft. 2,429</td>
<td>ft. 2,080</td>
<td>ft. 2,080</td>
</tr>
<tr>
<td><strong>Max. Speed/Altitude</strong></td>
<td>(A) 792/11,200</td>
<td>(A) 857/11,200</td>
<td>(A) 116/14,700</td>
<td>(A) 26/17,200</td>
<td>(A) 25/17,200</td>
</tr>
<tr>
<td><strong>Rate of Climb at S.L.</strong></td>
<td>(A) 1,510</td>
<td>(A) 1,510</td>
<td>(A) 1,510</td>
<td>(A) 1,070</td>
<td>(A) 1,070</td>
</tr>
<tr>
<td><strong>Time to 30,000 ft.</strong></td>
<td>(A) min. 6.7</td>
<td>(A) min. 6.7</td>
<td>(A) min. 7.3</td>
<td>(A) min. 6.4</td>
<td>(A) min. 8.1</td>
</tr>
<tr>
<td><strong>Time to 20,000 ft.</strong></td>
<td>(A) min. 11.2</td>
<td>(A) min. 8.4</td>
<td>(A) min. 12.8</td>
<td>(A) min. 16.0</td>
<td>(A) min. 21.6</td>
</tr>
<tr>
<td><strong>Service Ceiling (100 rpm)</strong></td>
<td>ft. 21,100</td>
<td>ft. 21,100</td>
<td>ft. 21,500</td>
<td>ft. 21,500</td>
<td>ft. 22,300</td>
</tr>
<tr>
<td><strong>Combat Range</strong></td>
<td>n.mi. 1,180</td>
<td>n.mi. 1,180</td>
<td>n.mi. 1,285</td>
<td>n.mi. 1,800</td>
<td>n.mi. 1,800</td>
</tr>
<tr>
<td><strong>Average Cruise Speed</strong></td>
<td>km/h 165</td>
<td>km/h 165</td>
<td>km/h 165</td>
<td>km/h 165</td>
<td>km/h 165</td>
</tr>
<tr>
<td><strong>Combat Radius</strong></td>
<td>n.mi. 385</td>
<td>n.mi. 385</td>
<td>n.mi. 520</td>
<td>n.mi. 725 (E)</td>
<td>n.mi. 725 (E)</td>
</tr>
<tr>
<td><strong>Max. Cruise Speed</strong></td>
<td>km/h 165</td>
<td>km/h 165</td>
<td>km/h 165</td>
<td>km/h 165</td>
<td>km/h 165</td>
</tr>
<tr>
<td><strong>Mission Time</strong></td>
<td>hrs. 6.2</td>
<td>hrs. 6.2</td>
<td>hrs. 3.0</td>
<td>hrs. 6.7</td>
<td>hrs. 9.8</td>
</tr>
</tbody>
</table>

## Combat Loading Condition

<table>
<thead>
<tr>
<th></th>
<th>(C) CLEAN Full Internal Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Combat Weight</strong></td>
<td>lb. 32,359</td>
</tr>
<tr>
<td><strong>Engine Power</strong></td>
<td>Military</td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td>lb. 2,780</td>
</tr>
<tr>
<td><strong>Combat Speed/Combat Altitude</strong></td>
<td>km/h 250/sea level</td>
</tr>
<tr>
<td><strong>Rate of Climb/Combat Altitude</strong></td>
<td>ft/mi 2,120/sea level</td>
</tr>
<tr>
<td><strong>Combat Ceiling (100 rpm)</strong></td>
<td>ft. 22,000</td>
</tr>
<tr>
<td><strong>Rate of Climb at S.L.</strong></td>
<td>ft/mi 2,120</td>
</tr>
<tr>
<td><strong>Max. Speed at S.L.</strong></td>
<td>km/h 250</td>
</tr>
<tr>
<td><strong>Max. Speed/Altitude</strong></td>
<td>km/h 26/5,100</td>
</tr>
</tbody>
</table>

## Landing Weight

<table>
<thead>
<tr>
<th></th>
<th>lb. 17,436</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fuel</strong></td>
<td>lb. 337</td>
</tr>
<tr>
<td><strong>Stall Speed</strong></td>
<td>km/h 92.5</td>
</tr>
<tr>
<td><strong>Stall Speed - with approach power</strong></td>
<td>km/h 77.6</td>
</tr>
</tbody>
</table>

## Notes

(A) Normal rated power.

(B) Pathfinder configuration includes following external antennas: AN/APS-69 radome, AN/APS-33

(C) Reconnaissance configuration includes following external antennas: AN/APS-69 radome, AN/APS-33

(D) The combat radius with the extended APA-69 is 513 n.mi. If the radome is extended for two hours and
   the 1,000-gallon fuel tank is retained...
NOTES

Continued from PERFORMANCE SUMMARY Page

(E) The combat radius shown is based on retaining the external fuel tanks during the combat period. If
the tanks and 1639 lbs. of fuel are dropped prior to the combat period, the combat radius is
576 n.mi. and the mission time is 6.6 hours.

(F) Includes two AN/ALT-2 Stereo, MK-900A and AN/APS-11P.

(G) Includes two AN/ALT-2 Stereo, AN/APS-31P.

PERFORMANCE BASES: Performance is calculated and is based on estimates and contractor's flight tests of
models AD-6B, AD-5 and AD-6.

COMBAT RADIUS AND RANGE is based on fuel consumption data from AD-6B, AD-5 and AD-6 flight tests and is
increased 5%.

All loadings include centerline and inner wing bomb racks, 12 Aero 24 racks and no guns.

SPOTTING: A total of 6 (3) airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class
angled deck carrier.

LOW ALTITUDE ATTACK AND GROUND SUPPORT NUMBER MISSION-COMBAT RADIUS PROBLEM

WARM-UP, TAKT, TAKE-OFF: 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. (Drop external fuel tank when empty)
DROPS: To sea level. (No fuel used = no distance gained)
DROP BOMBS, FIRE ROCKETS.
COMBAT: 15 minutes at sea level (5 minutes at military power and 10 minutes at 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

[Diagram of a combat radius]