Standard Aircraft Characteristics

NAVY MODEL
F-10A
AIRCRAFT

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

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STANDARD AIRCRAFT CHARACTERISTICS
F-10A SKYNIGHT
POWER PLANT
NO. & MODEL............(2) J34-W2-36
MFB.................Westinghouse
TYP..............11 850 Axial Compr.
2 850, Turbine

RATINGS:
Lbs.  Epm  Alt.
T.O.  3,400  12,500  S.S.L.
MIL.  3,400  12,500  S.S.L.
NGRM. 3,000  11,930  S.S.L.
SPEC. NO. WAGT-25H445-2B

MISSION AND DESCRIPTION
The mission of the F3D-2 airplane is to search out and destroy enemy aircraft at night.

This twin-jet fighter is designed to operate from aircraft carriers with the aid of a catapult, or from land bases.

Side by side accommodations are provided for the pilot and a radar operator.

The airplane is conventional in structure with all-metal two-spar wing and semi-monocoque fuselage. Tricycle landing gear, slotted flaps and wing folding are hydraulically operated.

Hydraulically operated fuselage speed-reducing brakes with hand controls are provided. These may be used for maneuvering or to increase the angle of descent.

Pilot escape provisions are furnished both through the power operated escape hatch and through a special high speed bail-out chute on the bottom of the fuselage.

ORDNANCE
GUNS
No. Size Location Rds.
1 20 mm Nose 800
Mr. 20 Mod. 0 Gunsight

BOMBS AND ROCKETS
Type Size Location No.
Bomb 2,000# Inner Wing 2
Bomb 1,000# Inner Wing 2
Bomb 500# Inner Wing 2
A.E. 11.75" Inner Wing 2

MAX. BOMB CAP........4,000 lbs.

WEIGHTS
Loadings Lbs. L.F.
EMPTY..................14,989
BASIC..................15,500
DESIGN..................19,700 5.5
COMBAT..................21,734 5.1
MAX.T.O. (Field)......26,731* 4.0
MAX.LAND (Field)......24,500

All weights are actual.
*Maximum anticipated loading.

FUEL AND OIL
Gals. No. Tanks Location
550 1 (Selv.) Fuse, Fed.
290 1 (Selv.) Fuse, Str.
290 1 (Selv.) Fuse, Art.
300 2 Wing, Drop
FUEL GRADE...........115/145
FUEL SPEC. MIL-F-5572

OIL
CAPACITY (Gals.)........4.0
GRADE.................1010
SPEC...................MIL-O-5081

DIMENSIONS
WING AREA............495 sq. ft.
SPAN..................50' 6"
FOLDED SPAN...........26' 10"
LENGTH.................16' 5"
HEIGHT.................16' 1"
WEIGHT .................16' 6"
WEIGHT*...............10' 6"
M.A.O..................8' 4"

* Wings Folded

ELECTRONICS
VFH COMMAND...........(2) AN/ARG-1
VFH COMMAND...........AN/ARG-27
(With provisions for alternate installation of (1)
AN/ARG-1 VFH P.S.I.
(Replaces (2) AN/ARG-1)
INTERPHONES...........AN/AEC-6, -14
D.F. EQUIPMENT...........AN/AER-125
HOMINO.................AN/AER-21
(P.S.I., Repl. for AN/AER-2A
and AN/AER-2C)
HOMINO ESC..............AN/AER-2A
(Continued on NOTES sheet)
## PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>TAKE-OFF LOADING CONDITION</th>
<th>(1) FIGHTER Full Internal Fuel</th>
<th>(3) FIGHTER 2-150 Gallon External Tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAKE-OFF WEIGHT</td>
<td>lb.</td>
<td>lb.</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
<td>lb.</td>
</tr>
<tr>
<td>Payload (Ammunition)</td>
<td>lb.</td>
<td>lb.</td>
</tr>
<tr>
<td>Wing loading</td>
<td>lb./sq. ft.</td>
<td>lb./sq. ft.</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>km./hr.</td>
<td>km./hr.</td>
</tr>
<tr>
<td>Take-off run at S.L. - calms</td>
<td>ft.</td>
<td>ft.</td>
</tr>
<tr>
<td>Take-off run at S.L. 25 km./wind ft.</td>
<td></td>
<td>ft.</td>
</tr>
<tr>
<td>Take-off to clear 50 ft. - calms ft.</td>
<td></td>
<td>ft.</td>
</tr>
<tr>
<td>Max. speed/altitude (1) km./ft.</td>
<td>426/15,000</td>
<td>438/10,000</td>
</tr>
<tr>
<td>Rate of climb at S.L. (2) rpm</td>
<td>2,570</td>
<td>2,375</td>
</tr>
<tr>
<td>Time: S.L. to 20,000 ft. (2) min</td>
<td>9.9</td>
<td>13.7</td>
</tr>
<tr>
<td>Time: S.L. to 30,000 ft. (2) min</td>
<td>20.9</td>
<td>31.6</td>
</tr>
<tr>
<td>Service ceiling (100 fpm) (2) ft.</td>
<td>36,700</td>
<td>36,500</td>
</tr>
<tr>
<td>Combat range n.mi.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cruising speed km.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cruising altitude(s)</td>
<td>ft.</td>
<td></td>
</tr>
<tr>
<td>Combat radius n.mi.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average cruising speed km.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## COMBAT LOADING CONDITION

<table>
<thead>
<tr>
<th>COMBAT WEIGHT</th>
<th>(2) CLEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine power</td>
<td>Military</td>
</tr>
<tr>
<td>Fuel</td>
<td>lb.</td>
</tr>
<tr>
<td>Combat speed/combat altitude km./ft.</td>
<td>428/35,000</td>
</tr>
<tr>
<td>Rate of climb/combat altitude fpm/ft.</td>
<td>590/35,000</td>
</tr>
<tr>
<td>Combat ceiling (500 fpm) ft.</td>
<td></td>
</tr>
<tr>
<td>Rate of climb at S.L. fpm</td>
<td></td>
</tr>
<tr>
<td>Max. speed at S.L. km.</td>
<td></td>
</tr>
<tr>
<td>Max. speed/altitude km./ft.</td>
<td></td>
</tr>
</tbody>
</table>

## LANDING WEIGHT

<table>
<thead>
<tr>
<th>LANDING WEIGHT</th>
<th>lb.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>lb.</td>
</tr>
<tr>
<td>Stall speed - power-off</td>
<td>km.</td>
</tr>
<tr>
<td>Stall speed - with approach power</td>
<td>km.</td>
</tr>
</tbody>
</table>
NOTES

Spotting: 200 ft. length is required to spot 17 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 class carriers.

GENERAL PURPOSE AND ESCORT FIGHTER COMBAT RADIUS PROBLEM (GAS TURBINE)

WARM-UP, TAXI, TAKE-OFF: 5 minutes at normal power.

CLIMB: To cruising ceiling at military power. (Cruising ceiling = altitude for 300 ft./min. at normal power.)

CRUISE-OUT: At V for long range at cruising ceiling.

DESCEND: To 35,000 ft. (No fuel used, no distance gained.)

COMBAT: At 35,000 ft. for 20 minutes at military power. (Assume combat concluded at initial cruise-back altitude.)

CRUISE-BACK: At V for long range at cruising ceiling.

RESERVE: 20 minutes at V for maximum endurance at Sea Level plus 5% of initial fuel load.

\[
\text{COMBAT RADIUS} = \text{CLIMB} + \text{CRUISE-OUT} - \text{CRUISE-BACK}
\]

Based on F-5 problem, combat radius would increase to 885 n.mi. for Condition (1) and 585 n.mi. for Condition (3).

ELECTRONICS (Continued):

- UHF D/F: AN/ARA-25 (P, S, I)
- UHF EQUIPMENT: AN/AFL-6
- RADIO ALTIMETER: AN/APE-1
- IFF EQUIPMENT: AN/AFL-1
- IFF (I-R UNIT): AN/AFL-17
- RADAR SYSTEM: AN/APQ-35A, 35B
- (Planned Service Installation)
CARRIER SUITABILITY

WIND OVER DECK REQUIRED FOR CATAPULTING VS. GROSS WEIGHT
Based on Minimum Safe Take-Off Speed

WIND OVER DECK REQUIRED FOR LANDING VS. GROSS WEIGHT
Based on Approach Speed of 1.2 Power-Off Stall Speed

TAKE-OFF GROSS WEIGHT = 1,000 LBS.

LANDING GROSS WEIGHT = 1,000 LBS.

NOTE: No wind required for Mk. 7 arresting gear

F-10A