



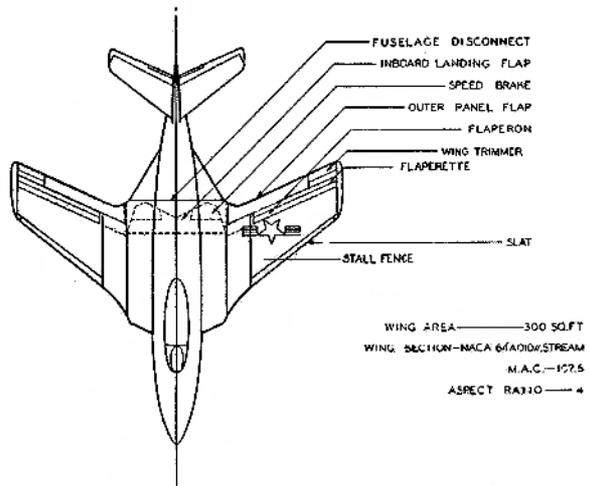
STANDARD AIRCRAFT CHARACTERISTICS

F9F-7 "COUGAR"

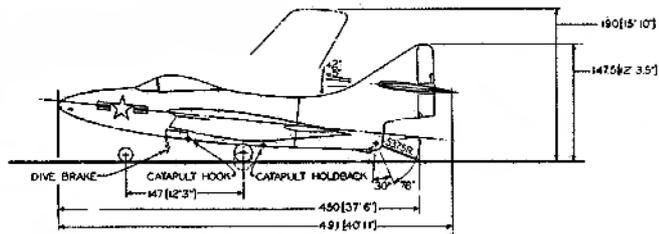
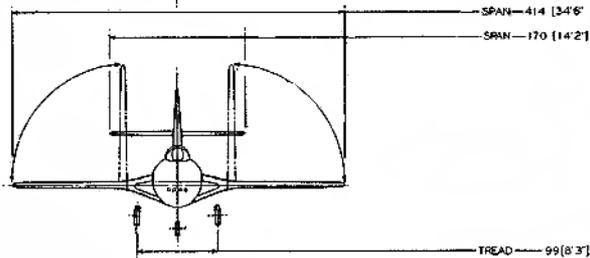
GRUMMAN

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-55)

BUREAU OF AERONAUTICS
NAVY DEPARTMENT



WING AREA — 300 SQ. FT.
WING SECTION — NACA 64A010X/STREAM
M.A.C. — 157.5
ASPECT RATIO — 4



DESCRIPTIVE ARRANGEMENT

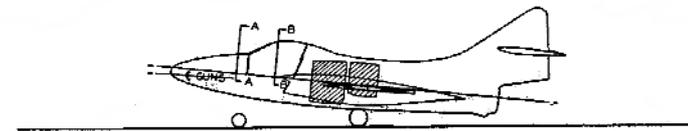
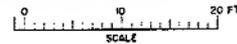
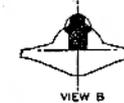
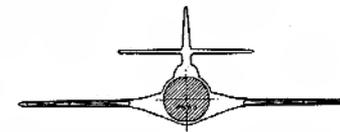
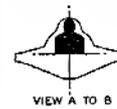
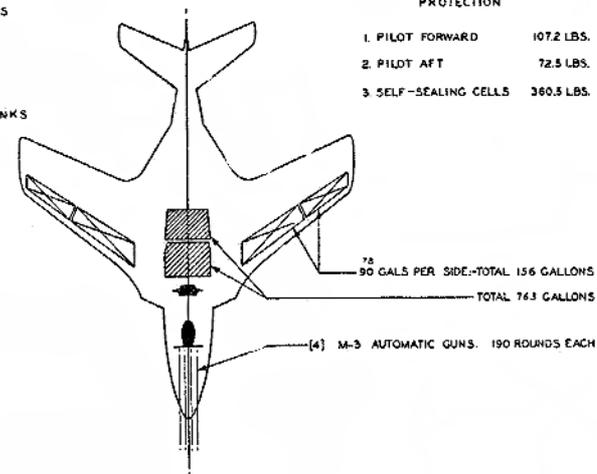
BUREAU OF AERONAUTICS
NAVY DEPARTMENT

MODEL F9F-6

PROTECTION

- BULLET RESISTANT GLASS ARMOR PLATE
- SELF-SEALING TANKS
- NON SELF-SEALING TANKS

- 1. PILOT FORWARD 107.2 LBS.
- 2. PILOT AFT 72.5 LBS.
- 3. SELF-SEALING CELLS 360.5 LBS.



ARMAMENT & TANKAGE

919619

Standard Aircraft Characteristics NAVIER 1335B (Rev. 1-55)

POWER PLANT

NO. & MODEL.....(1) J-33-A-16
 MFR.....Allison
 TYPE.....Centrifugal Compressor
 ENG. LENGTH.....99.5"
 ENG. DIAMETER.....49.7"

RATINGS

| | LBS. | @ | RPM | @ | ALT. |
|--------|-------|---|--------|---|--------|
| T.O. | 6,250 | | 11,800 | | S.S.L. |
| MIL. | 6,250 | | 11,800 | | S.S.L. |
| NORMAL | 5,125 | | 11,200 | | S.S.L. |

SPEC. NO. 285-E

MISSION AND DESCRIPTION

The F9F-7 is a swept wing, single place, carrier based airplane whose primary mission is the destruction of enemy aircraft.

The major difference from the F9F-6 airplane is a change from the Pratt & Whitney J-48-P-6A engine to the Allison J33-A-16 turbo-jet engine.

Leading edge slats, under-fuselage split flaps, wing slotted flaps and wing stall fences are fitted. A pressurized cabin with temperature control and Grumman ejection seat are installed. The guns and radio are accessible through a forward sliding nose. The engine is serviced by removal of tail fuselage section. The engine is not equipped with water injection.

Lateral control is provided by hydraulically actuated flap-erons and flapperettes. Longitudinal trimming is accomplished by means of an electrically actuated stabilizer. Dive brakes are located under the fuselage.

DEVELOPMENT

First flight.....March 1953
 Service use.....July 1953

WEIGHTS

| LOADINGS | LBS | L.F. |
|-----------------------|--------|------|
| EMPTY..... | 11,483 | |
| BASIC..... | 12,090 | |
| DESIGN..... | 13,800 | 7.5 |
| COMBAT..... | 16,244 | |
| MAX.T.O. (Field)..... | 21,000 | *5.5 |
| (Cat.)..... | 20,000 | |
| MAX.LAND (Field)..... | 16,000 | |
| (Arrest)..... | 14,000 | |

All weights are actual.

*Maximum Anticipated Loading.

FUEL AND OIL

| GAL. | NO. TANKS | LOCATION |
|------|-----------|------------|
| 763 | 2 | Fuse., SS. |
| 156 | 2 | Wing |

FUEL GRADE.....JP-4
 FUEL SPEC.....MIL-F-5624A

OIL

CAPACITY (Gals).....3.25
 GRADE.....1010
 SPEC.....MIL-C-6081A

ORDNANCE

GUNS

| NO. | SIZE | LOCATION | RDS. |
|-----|------|----------|------|
| 4 | 20mm | Fuselage | 760 |

FIRE CONTROL

A.F.C.S.....Mk. 6, Mod 0
 Radar Ranging Equipment.....AN/APG-30

DIMENSIONS

WING
 AREA.....300 sq.ft.
 SPAN.....34' -6"
 MAC.....9' -0"
 SWEEPBACK (c/4).....35°
 LENGTH.....40' 11"
 HEIGHT.....12' -4"
 TREAD.....8' -3"

ELECTRONICS

VHF.....AN/ARC-27
 VHF.....AN/ARC-1, 1A
 (Alternate Prov. for ARC-27)
 ALTIMETER, RADIO.....AN/APN-1
 (First 90 A/C)
 A.D.F.....AN/ARN-6
 VHF HOMING.....AN/ARR-2A
 UHF D.F.....AN/ARA-25
 RADAR.....AN/APG-30
 IFF.....AN/APX-6
 PLANNED SERVICE INSTALLATION:
 HOMING.....AN/ARN-21
 (Will replace AN/ARN-6 and AN/ARR-2A)
 SELECTIVE IDENTIFICATION
 FEATURE.....AN/APA-89

PERFORMANCE SUMMARY

| TAKE-OFF LOADING CONDITION | | (1) General Purpose Fighter | | | |
|-----------------------------------|------------|-----------------------------|--|--|--|
| TAKE-OFF WEIGHT | lb. | 18,905 | | | |
| Fuel | lb. | 5,970 | | | |
| Payload (Ammunition) | lb. | 427 | | | |
| Wing loading | lb./sq.ft. | 63.0 | | | |
| Stall speed - power-off | kn. | 113.2 | | | |
| Take-off run at S.L. - calm | ft. | 3,350 | | | |
| Take-off run at S.L. 25 kn. wind | ft. | 2,200 | | | |
| Take-off to clear 50 ft. - calm | ft. | - | | | |
| Max. speed/altitude (A) | kn./ft. | 543/S.L. | | | |
| Rate of climb at S.L. (A) | fpm. | 4,300 | | | |
| Time: S.L. to 20,000 ft. (A) | min. | 6.2 | | | |
| Time: S.L. to 30,000 ft. (A) | min. | 11.6 | | | |
| Service ceiling (100 fpm) | ft. | 40,200 | | | |
| Combat range | n.mi. | 1,005 | | | |
| Average cruising speed | kn. | 442 | | | |
| Cruising altitude(s) | ft. | 34,300/39,000 | | | |
| Combat radius | n.mi. | 390 | | | |
| Average cruising speed | kn. | 442 | | | |
| Mission Time | hrs. | 2.12 | | | |
| COMBAT LOADING CONDITION | | (2) | | | |
| COMBAT WEIGHT | lb. | 16,517 | | | |
| Engine power | | Military | | | |
| Fuel | lb. | 3,582 | | | |
| Combat speed/combat altitude | kn./ft. | 486/35,000 | | | |
| Rate of climb/combat altitude | fpm/ft. | 1,100/35,000 | | | |
| Combat ceiling (500 fpm) | ft. | 39,000 | | | |
| Rate of climb at S.L. | fpm. | 5,100 | | | |
| Max. speed at S.L. | kn. | 545 | | | |
| Max. speed/altitude | kn./ft. | 545/S.L. | | | |
| LANDING WEIGHT | lb. | 13,942 | | | |
| Fuel | lb. | 1,007 | | | |
| Stall speed - power-off | kn. | 96.0 | | | |
| Stall speed - with approach power | kn. | 92.7 | | | |

NOTES

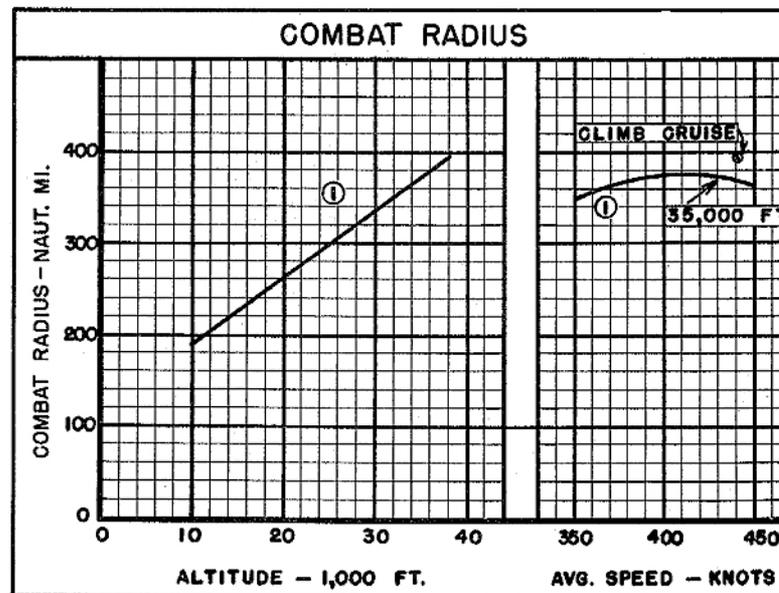
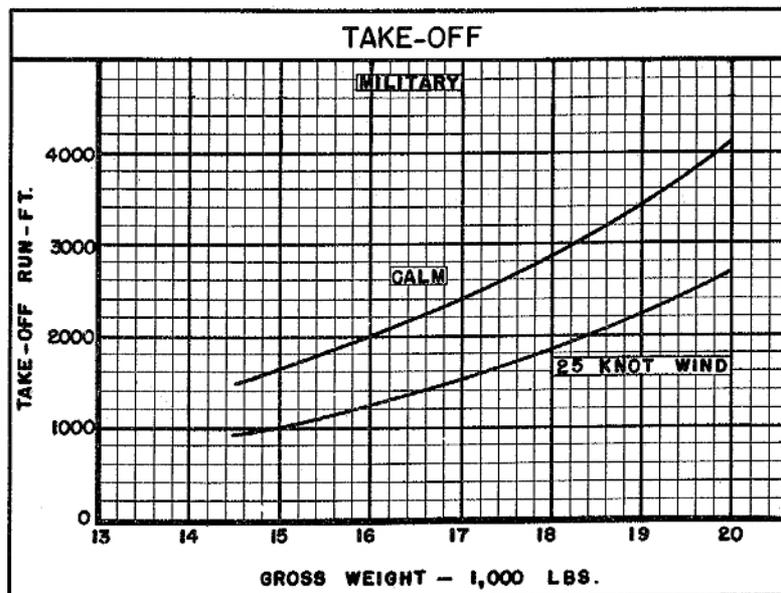
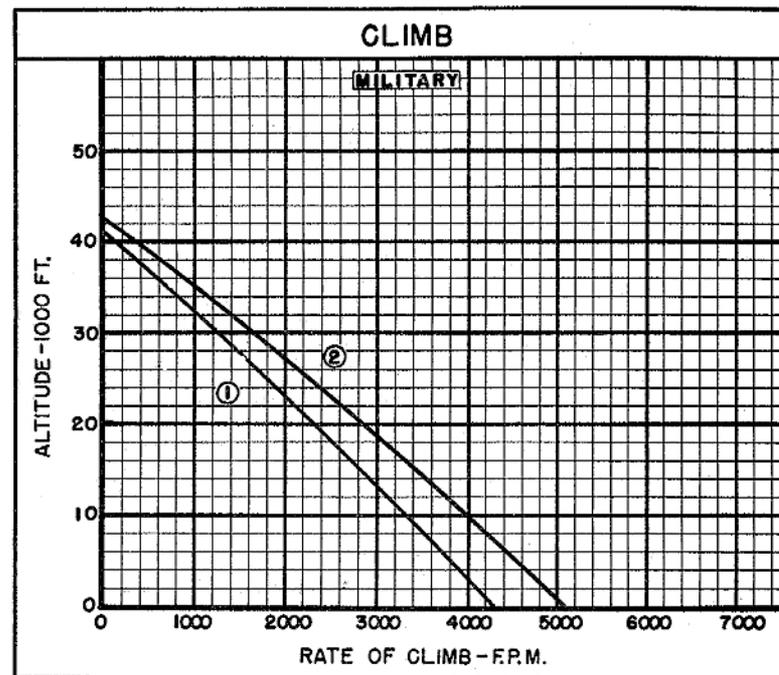
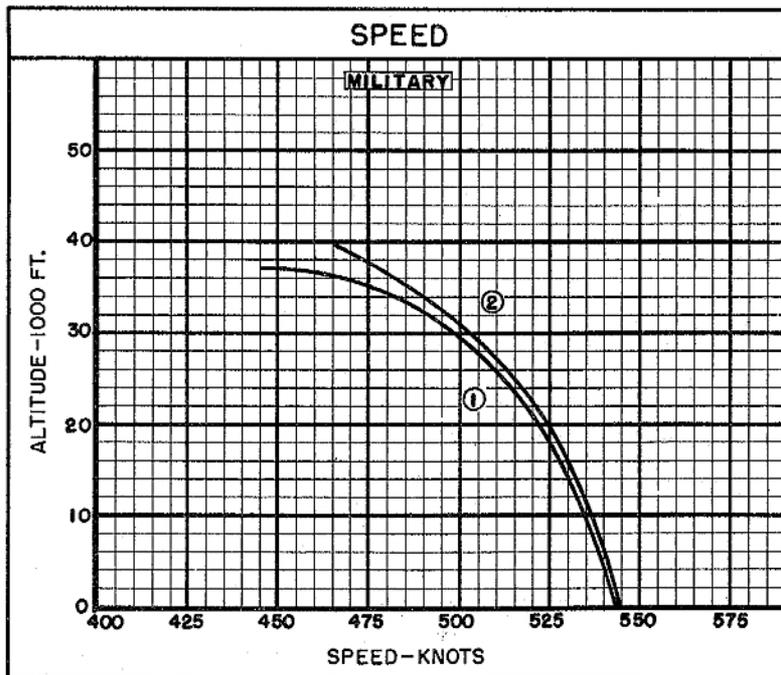
(A) Military Rated Thrust

Performance basis: NATC flight test of the F9F-7 airplane.

Range and radius are based on NATC flight test fuel consumption data increased by 5%.

Reason for reissue: Change from gasoline to JP-4 and final NATC flight test performance data on the F9F-7 airplane.

Standard Aircraft Characteristics NAVAER 1335E (Rev. 1-55)



○ LOADING CONDITION COLUMN NUMBER

NOTES

SPOTTING: 30 airplanes (wings folded) can be spotted in a rectangular area 200 ft. by 96 ft.

COMBAT RADIUS PROBLEM - GENERAL PURPOSE FIGHTER (GAS TURBINE)

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

CLIMB: To cruising ceiling at military thrust.

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

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

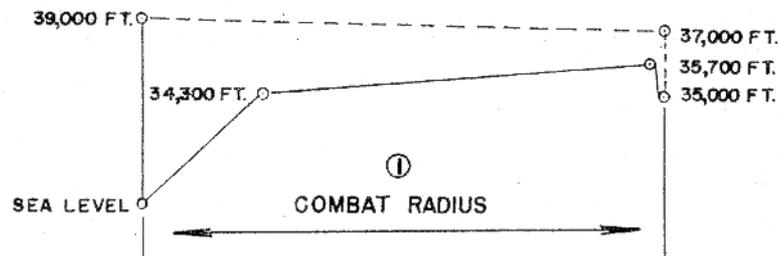
COMBAT: At 35,000 feet for 20 minutes at military thrust. (Assume combat concluded at initial cruise-back altitude.)

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

RESERVE: 20 minutes at velocity for maximum endurance at sea level plus 5% of initial fuel load.

MISSION TIME INCLUDES CLIMB + CRUISE-OUT + COMBAT + CRUISE BACK

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



Radius is reduced approximately 6.0 nautical miles for each additional minute of combat.

○ LOADING CONDITION COLUMN NUMBER