Characteristics Summary

**FIGHTER (INTERCEPTOR) .......... F-89D**

*SCORPION*  
NORTHROP

<table>
<thead>
<tr>
<th>Wing Area (Includes tip pods)</th>
<th>650 sq ft</th>
<th>Length</th>
<th>53.8 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Span</td>
<td>59.7 ft</td>
<td>Height</td>
<td>17.5 ft</td>
</tr>
</tbody>
</table>

**AVAILABILITY**

<table>
<thead>
<tr>
<th>Number available</th>
<th><strong>PROCUREMENT</strong></th>
<th>Number to be delivered in fiscal years</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE</td>
<td>RESERVE</td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

**STATUS**

1. First Flight (YF-89D): Oct 51
2. Contract Date: Jul 52
3. First Flight (F-89D): Jan 53
4. First Acceptance: Jul 53
5. Production Status: Completed
6. The F-89D is similar to the F-89C except for improved high-altitude afterburner engines, increased internal fuel capacity, type of armament, rocket-fuel wing tip pods and additional radar equipment.

Navy Equivalent: None

**POWER PLANT**

† (2) J35-A-35
Allison

**ENGINE RATINGS**

- S.L.S. LB - RPM - MIN
- Max: 7200 - 8000 - 5
- Mil: 5440 - 8000 - 30
- Nor: 4855 - 7680 - Cont

*With afterburner operating
Note: Values are for engines with inlet screens retracted.
†See note (3)

**FEATURES**

- Crew (normal) .......... 2
- Pilot, Radar Operator
- All-Weather Interception Radar
- Instrument Landing System
- Full Power Control System
- Sideslip Stability Augmenter
- Thermal Anti-Icing
- E-11 Auto-Pilot
- E-0 Fire Control System
- Cabin Press. & Refrigeration
- E-9 Fire Control System (prov)
- A-1 Flight Computer System
- Rocket-Fuel Wing Tip Pods
- Ejection Seats
- Split Aileron Speed Brakes
- Anti-G Suit Provisions
- Single-Point Refueling
- Max Fuel Cap: ..... * 2369 gal
†See note (4)

**ARMAMENT**

- Guns .......... None
- Rockets: *104 x 2.75” FFAR
- Bombs .......... None

*Provisions for replacing the FFAR rockets with guided aircraft rockets (GAR-1) are incorporated.

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UNCLASSIFIED SEP 15 1958 F-89D

57102-7922
Characteristics Summary Basic Mission

<table>
<thead>
<tr>
<th>POINT-INTERCEPT</th>
<th>AREA-INTERCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>46,500 FT</td>
<td>46,850 FT</td>
</tr>
</tbody>
</table>

**PERFORMANCE**

<table>
<thead>
<tr>
<th>POINT</th>
<th>FERRY RANGE</th>
<th>SPEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Mission Time for Interception at 46,500 ft.</td>
<td>1188 naut. mi. with 2372 gal.fuel</td>
<td>COMBAT 454 knots at 46,500 ft.alt, max.power</td>
</tr>
<tr>
<td>Equals 114 minutes</td>
<td>at 395 knots avg. in 3.03 hours</td>
<td>MAX 552 knots at 10,600 ft.alt, max.power</td>
</tr>
<tr>
<td>332 AREA Nautical Miles at 406 Knots Average in 1.71 hours</td>
<td>at 44,756 lb.T.O. wt.</td>
<td>BASIC 485 knots at 40,000 ft.alt, max.power</td>
</tr>
</tbody>
</table>

**CLIMB CEILING TAKE-OFF**

<table>
<thead>
<tr>
<th>POINT (2)</th>
<th>POINT</th>
<th>TAKE-OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440 fpm. at S.L. Take-Off Weight, Max. Power</td>
<td>49,200 ft. at 100 fpm, Take-Off Weight, Max. Power</td>
<td>ground run 3400 ft. no assist assisted</td>
</tr>
<tr>
<td>POINT (2)</td>
<td>POINT</td>
<td>AREA</td>
</tr>
<tr>
<td>8360 fpm. at S.L. Combat Wt., Max.Pow.</td>
<td>46,500 ft at 500 fpm, Combat Weight, Max. Power</td>
<td>over 50 ft.height AREA 4640 ft. no assist assisted</td>
</tr>
</tbody>
</table>

**LOAD WEIGHTS STALLING SPEED**

| ROCKETS: 104x2.75” FFAR | Empty 25,194 lb. | AREA 118 knots power-off, landing configuration, take-off weight |
| Fuel 1772 gal. 1772 gal. | limited by mission |
| protected 26.5% 26.5% | |
| droppable 0% 0% | |
| external 34.5% 34.5% | |

**NOTES**

1. Performance Basis:
   (a) Flight tests
   (b) Includes 1.9 min for take-off and acceleration to best climb speed

2. Below 20,000 ft limit IAS is 470 kn or 0.9 Mach whichever is less.

3. Early airplanes equipped with J35-A-33A or J35-A-41 engines are being converted to -47's. Performance with -47's is essentially the same as -35 engines.

4. Single-Point refueling increases fuel capacity by 47.7 gal and the capabilities are improved accordingly.

5. Revision Basis: To reflect changes in fuel capacity and security classification.