PERFORMANCE ANALYSIS

F-5E-2 Tiger II
Northrop Corporation
(J85-GE-21)

CAUTION STATEMENT: This document is to be use only for simulation. Do not try to apply the procedures and or advices contained in it if you have the opportunity to fly this plane in real life. By the way, if you had (or still have) flew this aircraft, your comments, criticism and more are welcome.

LICENSE: This document has been created by J.M. LANGERON / TOPOLO, (http://topolo.free.fr/) all the values used to model the aircraft behavior have been computed by him, like all performance charts presented here. If you want to use these data, or part of it, please contact the author by personal message to TOPOLO on check-six forum: (http://www.checksix-forums.com/)
Level Flight Envelope
DATA BASIS : ESTIMATED
CONDITIONS:
- Standard Day
- Max AB

Aircraft : NORTHROP F-5E-2
Engine : J85-GE-21

DATA BASIS : ESTIMATED
CONDITIONS:
- Standard Day
- MILL Power

Aircraft : NORTHROP F-5E-2
Engine : J85-GE-21

50% internal fuel
Clean A/C
GW = 13,320lbs

50% internal fuel
2xAIM-9 Wing Tip
GW = 13,600lbs

VNE : 710Kts

50% internal fuel
Clean A/C
GW = 13,320lbs

50% internal fuel
2xAIM-9 Wing Tip
GW = 13,600lbs

VNE : 710Kts
Turn Performance

Aircraft : NORTHROP F-5E-2
Engine : J85-GE-21

CONFIGURATIONS :
• DRAG INDEX = 18 (2xAIM-9)
• GW = 13,600 lbs

F-5E-2 do not have AutoFlaps capabilities, so flaps and slats are positioned according following rules:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Flaps</th>
<th>Slats</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 200Kts</td>
<td>+24</td>
<td>+20</td>
</tr>
<tr>
<td>[200Kts;250Kts]</td>
<td>+18</td>
<td>+16</td>
</tr>
<tr>
<td>[250Kts;550Kts]</td>
<td>+12</td>
<td>+8</td>
</tr>
<tr>
<td>&gt; 550Kts</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Turn Rate – Summary

DATA BASIS : ESTIMATED

Aircraft : NORTHRP F-5E-2
Engine : J85-GE-21

CONDITIONS:
• Standard Day
• Max AB

CONFIGURATIONS:
• DRAG INDEX = 18 (2xAIM-9)
• GW=13,600 lbs

Maximum Available Turn Rate

Maximum Sustained Turn rate (deg/s)
Load Factor – Summary

DATA BASIS: ESTIMATED

CONCLUSIONS:
- Standard Day
- Max AB

AIRCRAFT: NORTHROP F-5E-2
ENGINE: J85-GE-21

CONFIGURATIONS:
- DRAG INDEX = 18 (2xAIM-9)
- GW=13,600 lbs

![Graph of Maximum Available Load Factor](image)

![Graph of Maximum Sustained Load Factor](image)
**Turn Performance – Sea Level**

**DATA BASIS : ESTIMATED**

**CONDITIONS:**
- Standard Day
- Max AB

**Aircraft : NORTHROP F-5E-2**
**Engine : J85-GE-21**

**CONFIGURATIONS :**
- Drag Index = 18 (2xAIM-9)
- GW=13,600 lbs

Max. Sustained Turn = 15.4 deg/s

Quickest Turn = 22.6 deg/s

MAXIMUM AIR SPEED

Turn Rate (degree per second)

CAS (Kts)
**Turn Performance – 5,000 ft**

**DATA BASIS : ESTIMATED**

**CONDITIONS:**
- Standard Day
- Max AB

**AIRCRAFT:** NORTHRUP F-5E-2

**ENGINE:** J85-GE-21

**CONFIGURATIONS:**
- DRAG INDEX = 18 (2xAIM-9)
- GW = 13,600 lbs

**QUICKEST TURN** = 21 deg/s

**MAXIMUM AIR SPEED**

**MAXIMUM AIR SPEED**

**Turn Rate (degree per second)**

**CAS (Kts)**

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750

**DATA BASIS : ESTIMATED**

**CONDITIONS:**
- Standard Day
- Max AB

**AIRCRAFT:** NORTHRUP F-5E-2

**ENGINE:** J85-GE-21

**CONFIGURATIONS:**
- DRAG INDEX = 18 (2xAIM-9)
- GW = 13,600 lbs
**Turn Performance – 10,000 ft**

**DATA BASIS : ESTIMATED**

**CONDITIONS:**
- Standard Day
- Max AB

**Aircraft : NORTHROP F-5E-2**
**Engine : J85-GE-21**

**CONFIGURATIONS :**
- DRAG INDEX = 18 (2xAIM-9)
- GW=13,600 lbs

**Max. Sustained Turn = 11.6 deg/s**

**Quickest Turn = 19.1 deg/s**

**MAXIMUM AIR SPEED**

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**Turn Rate (degree per second)**

**CAS (Kts)**
Turn Performance – 15,000 ft

DATA BASIS: ESTIMATED

CONDITIONS:
• Standard Day
• Max AB

CONFIGURATIONS:
• Drag Index = 18 (2xAIM-9)
• GW = 13,600 lbs

Aircraft: NORTHROP F-5E-2
Engine: J85-GE-21

Quickest Turn = 17.3 deg/s
Max. Sustained Turn = 9.9 deg/s

MAXIMUM AIR SPEED

MAXIMUM AIR SPEED
Turn Performance – 20,000 ft

DATA BASIS: ESTIMATED

CONDITIONS:
• Standard Day
• Max AB

CONFIGURATIONS:
• Drag Index = 18 (2xAIM-9)
• GW=13,600 lbs

Aircraft: NORTHROP F-5E-2
Engine: J85-GE-21

Quickest Turn = 16.0 deg/s
Max. Sustained Turn = 8.5 deg/s
Turn Performance – 25,000 ft

DATA BASIS : ESTIMATED

Aircraft : NORTHROP F-5E-2
Engine : J85-GE-21

CONDITIONS:
• Standard Day
• Max AB

CONFIGURATIONS:
• Drag Index = 18 (2xAIM-9)
• GW=13,600 lbs

Quickest Turn = 14.7 deg/s
Max. Sustained Turn = 7.1 deg/s

MAXIMUM AIR SPEED
**Turn Performance – 30,000 ft**

**DATA BASIS : ESTIMATED**
**CONDITIONS:**
- Standard Day
- Max AB

**Aircraft : NORTHPROP F-5E-2**
**Engine : J85-GE-21**

**CONFIGURATIONS :**
- Drag Index = 18 (2xAIM-9)
- GW=13,600 lbs

![Graph showing turn performance with CAS (Kts) on the x-axis and Turn Rate (degree per second) on the y-axis.](image)

- **Quickest Turn = 13.5 deg/s**
- **Max. Sustained Turn = 5.8 deg/s**
- **Maximum Air Speed**
Turn Performance – 35,000 ft

DATA BASIS : ESTIMATED
Aircraft : NORTHPROP F-5E-2
Engine : J85-GE-21

CONDITIONS:
• Standard Day
• Max AB

CONFIGURATIONS:
• DRAG INDEX = 18 (2xAIM-9)
• GW=13,600 lbs

Quickest Turn = 11 deg/s
Max. Sustained Turn = 4.6 deg/s
Climb Performance
Climb Rate

DATA BASIS: ESTIMATED

CONDITIONS:
- Standard Day
- Max AB

CONFIGURATIONS:
- DRAG INDEX = 18 (2xAIM-9)
- GW=13,600 lbs

Aircraft: NORTHROP F-5E-2
Engine: J85-GE-21

Climb Angle

Excess Specific Power (ft/s)

Mach

Constant Speed Climb Rate

Mach

Constant Speed Climb Angle

Mach

Climb Angle (deg)
DATA BASIS: ESTIMATED

CONDITIONS:
• Standard Day
• MIL Power

CONFIGURATIONS:
• DRAG INDEX = 18 (2xAIM-9)
• GW=13,600 lbs

Climb Rate

Climb Angle
Acceleration Performances
Acceleration Diagram

DATA BASIS: ESTIMATED

CONDITIONS:
- Standard Day
- Max AB

CONFIGURATIONS:
- DRAG INDEX = 18 (2xAIM-9)
- GW = 13,600 lbs

Aircraft: NORTHROP F-5E-2
Engine: J85-GE-21

Acceleration (Max Thrust AB)

Sea Level

10,000 ft

20,000 ft

30,000 ft

36,000 ft