Standard Aircraft Characteristics

NAVY MODEL
F-14A
AIRCRAFT
(TITLE UNCLASSIFIED)

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NAVAIR 00-110AF14-1

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STANDARD AIRCRAFT CHARACTERISTICS

F-14A TOMCAT

GRUMMAN
POWERPLANT

Number and Model: (2) TF30-P-412A
Manufacturer: Pratt & Whitney
Engine Specification Number: N6151, 30 May 1972
Type: Twin Spool Axial Flow Turbine
Augmentation: Modulated A/B
Length x A/B: 223.5 in
Diameter (Operating Temp): 50.5 in
Dry Weight Set: 3371 lb
Nozzle Type: Translating C/D Iris

RATINGS

STATIC THRUST AT SEA LEVEL

THRUST: 20,000 LB
SFC (N2): 14,700 RPM
TIME: 45 min
Continuous: 10,000 LB
None

ELECTRONICS

WEAPONS CONTROL
Airborne Missle Control System: AN/AWG 9/A
Fire Control System: AN/AVG 15

ELECTRONIC WARFARE
Radar Warning System: AN/ALR 50, AN/ALR 45(V)
Defensive Electronic Countermeasures: AN/ALQ 105
Chaff/Fuse Dispenser: AN/ALQ 39

FLIGHT CONTROL
Automatic Flight Control Set: AN/ASW 72
Approach Power Control Set: AN/ASU 75
AICS Programmer: C 8804/A

COMMUNICATION
Intercommunication System: LSK 460/AIC
IFF Transponder: AN/APS 72
IFF Transponder: AN/APS 76(V)
Cryptographic System: JULIETT B
UHF Communication: AN/ARC 51A
Interference Blanket: AN/ARC 57(A)
Digital Data Link: AN/ADW 27B
UHF Auxiliary Receiver Set: AN/ARC 69(v)
Beacon Receiver: AN/APS 72(A)
RADAR Beacon: AN/APN 54(V)
Receiver/Decoder Group: AN/AEA 03

NAVIGATION
Radar Altimeter: AN/APS 72(A)
Inertial Navigation System: AN/ASG 20(V)
Attitude Heading Reference: AN/ARC 27A
TACAN Set: AN/AN 84(V)
UHF Auto Direction Finder: AN/ARC 60
Central Air Data Computer: CP 1146/0
Signal Data Converter: CP 1030/A

MISSILES

WEIGHTS

SERVICES

LOADINGS
Empty (Actual Weight): 38,188 lb
Basic Fighter Escort: 39,576 lb
Flight Gross Weight: 40,548 lb
Max Takeoff: 72,566 lb
Max Landing: 51,100 lb

WEIGHTS

FLYING

NO. OF TANKS

LOCATION

1

FUEL AND OIL

GUN

Vulcan: M61A1 (676 rounds)

MISSILES

Spew: AIM 7E/A, AIM 7F
Sidewinder: AIM 9(A), AIM 9D
Python: AIM 9A

ORDNANCE

BOMBS

Gen Purpose: MK 61, MK 82, MK 83, MK 84
MK 81/WMK 14, MK 82/WMK 15
MK 46 (W/MK 59A)
MK 20 Mod 2, CBU 59/8
Practice: MK 76

ROCKET PACKAGES: LAU 10A/A
FLARES: MK 45

FUEL TANKS

LAUNCHERS: LAU 59/2, LAU 75/3

SMB RACKS: A/37 B
MULTI ADAPTERS: A/37B 5

FUEL TANK JETTISON MECHANISM: MXU 611/A

DIMENSIONS

WING

Area (Reference): 565 sq ft
Unwetted Leading Edge: 20°
Span: 61.8 ft
MAC: 117.7 in
Incidence at B L: 9.3°
Dihedral: +1.5°
Swept Leading Edge: 68°
Edge Swept: 38.2°
Overwetted Leading Edge: 75°
Span: 53.7 in
LENGTH: 16 ft
HEIGHT: 16 ft
TREAD: 16,142 ft

DEVELOPMENT

Contract Date: Feb 1969
First Flight: Dec 1970
Initial NPE: Dec 1971
Initial Carrier Suitability Trials Completed: Nov 1973
Field Introduction: Sept 1974

JULY 1974
## PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>TAKEOFF LOADING CONDITION</th>
<th>1</th>
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## COMBAT LOADING CONDITION

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<td>Combat speed/altitude</td>
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<td>Rate of climb/altitude</td>
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<td>ft/mi</td>
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<tr>
<td>Combat ceiling (5000 fps)</td>
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<td>Rate of climb at S.L.</td>
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<tr>
<td>Max speed at S.L.</td>
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## LANDING WEIGHT

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<td>Fuel</td>
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<td>Stall speed – power off</td>
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<td>Landing distance – ground roll/over 50 ft obstacle</td>
<td>ft</td>
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### NOTES

- (A) Interim Normal Thrust
- (B) Max A/B Thrust
- (C) Drop Tanks – Symmetrically Dropped When Empty
- (D) Drop Tanks – Returned
- (E) Mission Time Excludes Time for Warmup
- (F) Landing Time Includes Time for Warmup

**Performance Basis:** Flight Test

**JULY 1974**
<table>
<thead>
<tr>
<th>EXTERNAL STORE LOADING</th>
<th>TGW</th>
<th>COMBAT RADIUS, n mi</th>
<th>MISSION TIME, hr</th>
<th>COMBAT RADIUS, n mi</th>
<th>MISSION TIME, hr</th>
<th>COMBAT RADIUS, n mi</th>
<th>MISSION TIME, hr</th>
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<th>COMBAT RADIUS, n mi</th>
<th>MISSION TIME, hr</th>
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<td>(2) 267 Gallon Drop Tanks</td>
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<td>(4) Phoenix</td>
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<td>(26.7 Gallon Drop Tanks)</td>
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<td>(6) MK 82 Sweaters +</td>
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Note: Drop tanks symmetrically dropped when empty
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PLUS INTERNAL M61A1 20 MM GUN/6781 2 RDS

JULY 1974
MINIMUM WIND OVER DECK FOR CATAPULTING

MINIMUM WIND OVER DECK FOR ARRESTING

SINGLE ENGINE RATE OF CLIMB

CARRIER APPROACH SPEEDS

(A) These curves should be used for planning purposes only. Actual catapult and arresting gear operation should be in accordance with applicable Aircraft Technical Orders and Catapult and Arresting Gear Bulletins.

(B) Flap deflection for catapulting and landing = 35°.

(C) DLC = Direct Lift Control.
**Hi-Hi-Hi**
- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise at maximum range speed at optimum cruise altitude.
- Combat: 5 min at 35,000 ft altitude intermediate power M_{max}, tires on, no distance gained.
- Cruise back at maximum range speed at optimum cruise altitude.
- Descend to sea level: No distance gained or fuel used.
- Reserve: 5% of initial fuel plus 20 min at maximum endurance speed at sea level.

**Fighter Escort**
- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise at maximum range speed at optimum cruise altitude.
- Descend to 10,000 ft: No distance gained or fuel used.
- Combat: 2 min at max A/B power at M = 1.0.
- Cruise at intermediate power climbs from 10,000 ft to best cruise altitude.
- Cruise back at maximum range speed at optimum cruise altitude.
- Descend to sea level: No distance gained or fuel used.
- Reserve: 5% of initial fuel plus 20 min at maximum endurance speed at sea level.

**Fleet Air Defense**
- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise out at maximum range speed at optimum cruise altitude (drop external fuel tanks when empty).
- Descend to 10,000 ft: No distance gained or fuel used.
- Combat: 2 min at M = 1.3 at max A/B power.
- Accelerate at 35,000 ft from maximum endurance speed to M = 1.3 at max A/B power.
- Combat: 2 min at M = 1.3 at max A/B power.
- Cruise back at maximum range speed at optimum cruise altitude.
- Descend to sea level: No distance gained or fuel used.
- Reserve: 5% of initial fuel plus 20 min at maximum endurance speed at sea level.
DECK-LAUNCHED INTERCEPT

- Warmup, taxi, takeoff: 5 min with max continuous power and 1 minute max A/B power at sea level static
- Climb to max A/B M = 1.8 and 45,000 ft altitude
- (Drop external fuel tanks when ready)
- Dash: Dash out at M = 1.8 and 45,000 ft
- Combat: 2 min at M = 1.8 and 45,000 ft
- Cruise back at max range speed at optimum cruise altitude
- Descend to sea level; no distance gained or fuel used
- Reserve: 5% of initial fuel plus 20 min at max endurance speed at sea level

FERRY OR COMBAT RANGE

- Warmup, taxi, takeoff: 5 min at sea level static with max continuous power
- Climb on course to optimum cruise altitude with intermediate power
- Cruise out at max range speed at optimum cruise altitude
- Descend to sea level; no distance gained or fuel used
- Reserve: 5% of initial fuel plus 20 min at max endurance speed at sea level

LO-LO-LO

- Warmup, taxi, takeoff: 5 min at sea level static with max continuous power
- Cruise out at max range speed at sea level (Drop external fuel tanks when empty)
- Combat: 5 min at sea level intermediate power. M_{max} (Stores on, no distance gained.) Stores dropped after combat
- Cruise back at max range speed at sea level
- Reserve: 5% of initial fuel plus 20 min at max endurance speed at sea level
**LO-LO-HI**

- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power.
- Cruise out at maximum range speed at sea level (drop external fuel tanks when empty).
- Combat: 5 min at sea level, intermediate (M_max), stores dropped after combat.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise back at maximum range speed at optimum cruise altitude.
- Descend to sea level, no distance gained or fuel used.
- Reserve: 5% of initial fuel plus 20 min at maximum endurance speed at sea level.

**HI-LO-LO-HI**

- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise out at maximum range speed at optimum cruise altitude (drop external fuel tanks when empty).
- Descend to sea level when 100 n mi from target (no fuel used, no distance gained).
- Cruise out at sea level at maximum range speed to target.
- Combat: 5 min at sea level, intermediate (M_max), stores on, no distance gained. Stores dropped after combat.
- Cruise back at sea level at maximum range speed to a point 100 n mi from target.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise back at maximum range speed at optimum cruise altitude.
- Descend to sea level, no distance gained or fuel used.
- Reserve: 5% of initial fuel plus 20 min at maximum endurance speed at sea level.

**CLOSE SUPPORT**

- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise out at maximum range speed at optimum cruise altitude (drop external fuel tanks when empty).
- Descend to 5000 ft (no fuel used, no distance gained).
- Escape: 1 hr at maximum endurance speed at 5000 ft (stores on, no distance gained). Stores dropped at end of latter.
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise back at maximum range speed at optimum cruise altitude.
- Descend to sea level, no distance gained or fuel used.
- Reserve: 5% of initial fuel plus 20 min at maximum endurance speed at sea level.