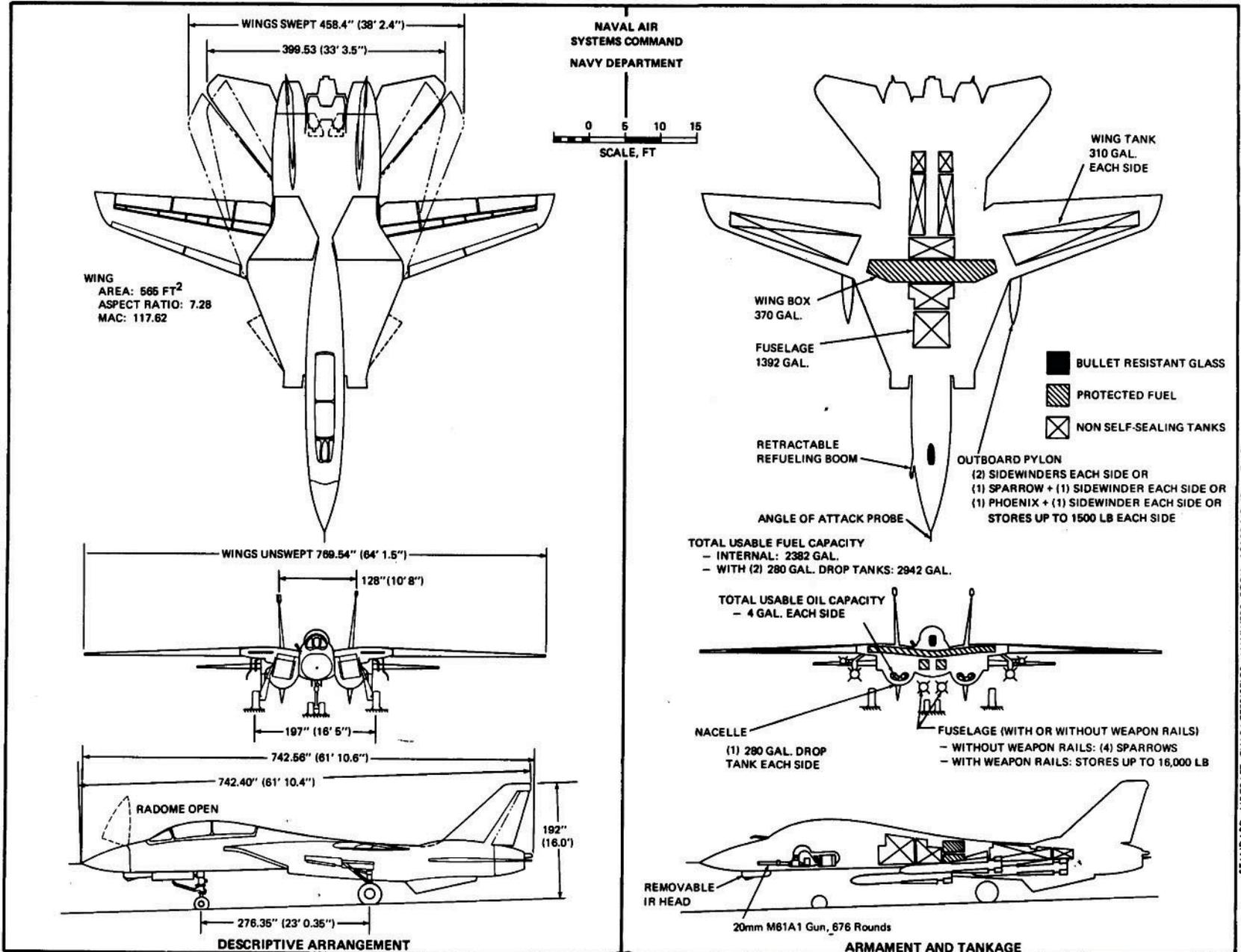


# STANDARD AIRCRAFT CHARACTERISTICS (U)

F-14A TOMCAT

GRUMMAN

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4A (Rev. 7-65)

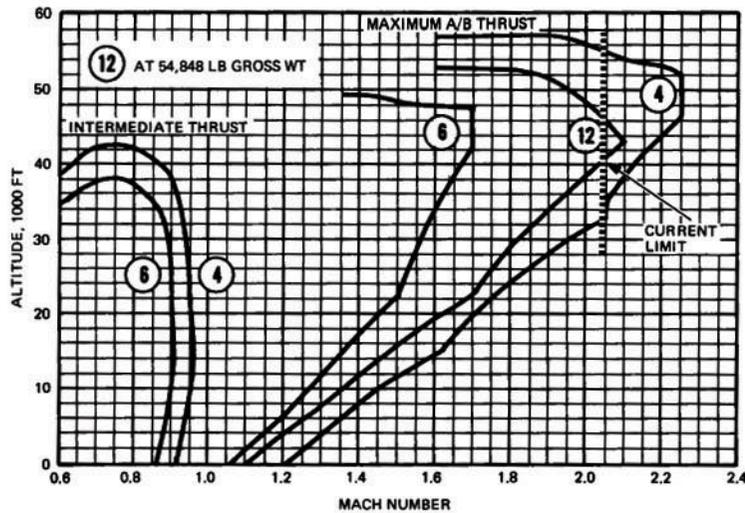


STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4B (Rev. 7-65)

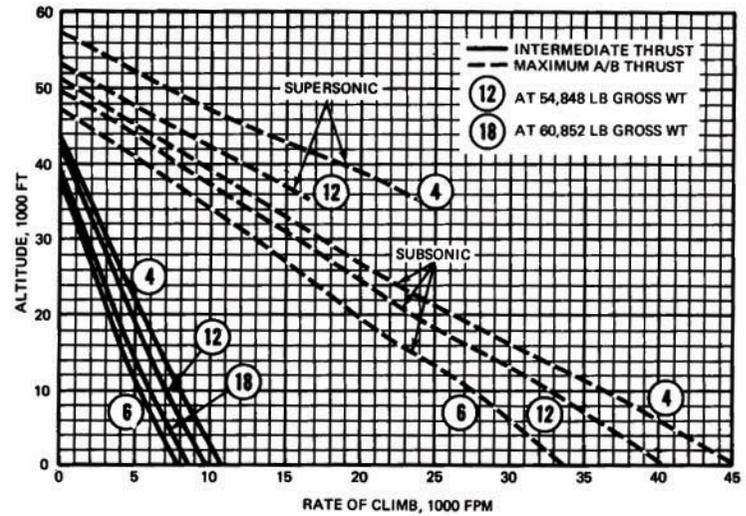


PERFORMANCE SUMMARY						
TAKEOFF LOADING CONDITION	①	③	⑤	⑦	⑨	
	HI-HI-HI (1) M61A1 20MM GUN	FIGHTER ESCORT (4) SPARROWS + (1) M61A1 20MM GUN	FLEET AIR DEFENSE (6) PHOENIX + (1) M61A1 20MM GUN + (2) 280-GAL. DROP TANKS	DECK LAUNCHED INTCP (4) SPARROWS + (1) M61A1 20MM GUN + (2) 280-GAL. DROP TANKS	FERRY RANGE (1) M61A1 20MM GUN + (2) 280-GAL. DROP TANKS	
TAKEDOFF WEIGHT	lb	57,648	59,649	70,700	64,076	62,076
Fuel internal/external (JP-5)	lb/lb	16,200	16,200	16,200/3,800	16,200/3,800	16,200/3,800
Payload	lb	378	2,378	6,288	2,378	378
Wing loading (Based on Ref. area)	lb/sq ft	102.0	105.6	125.1	113.4	109.9
Stall speed - power off	kn	115	117	127	121	119
Takeoff run at S.L. - calm (A)	ft	2,290	2,400	3,170	2,690	2,560
Takeoff run at S.L. - 25 kn wind (A)	ft	1,490	1,560	2,130	1,760	1,670
Takeoff to clear 50 ft - calm (A)	ft	3,070	3,210	4,100	3,560	3,400
Max speed/altitude (A)	kn/ft	610/S.L.	607/S.L.	562/10,000	590/S.L.	595/S.L.
Rate of climb at S.L. (A)	fpm	10,000	9,600	6,550	8,500	8,850
Time: S.L. to 20,000 ft (A)/(B)	min	2.6/0.52	2.7/0.57	4.5/0.82	3.1/0.62	3.0/-
Time: S.L. to 30,000 ft (A)/(B)	min	5.1/0.96	5.5/0.98	9.6/1.47	6.1/1.08	6.0/-
Service ceiling (100 fpm) (A)	ft	41,600	40,700	35,100	38,800	39,400
Combat range	n mi	1,556	1,483	1,381(C)	1,830(C)	1,914(C)
Average cruising speed	kn	407	408	405	409	408
Cruising altitude(s)	ft	35,400/40,100	34,800/39,200	31,100/35,600	33,400/39,000	33,900/39,800
Combat radius/mission time	n mi/hr	739/3.71	447/2.23	150/2.42	167/0.62	-----
Average cruising speed	kn	407	408	406	407/1,033	-----
Ferry Range	n mi	-----	-----	-----	-----	1,831(D)
Loiter time @ 35,000 ft	hr	-----	-----	1.60	-----	-----
COMBAT LOADING CONDITION	②	④	⑥	⑧	⑩	
		MISSILES RETAINED	TANKS OFF MISSILES RETAINED	TANKS OFF MISSILES RETAINED	TANKS RETAINED	
COMBAT WEIGHT	lb	51,166	53,166	62,240	55,616	54,076
Engine power		MAX A/B	MAX A/B	MAX A/B	MAX A/B	MAX A/B
Fuel	lb	9,720	9,720	12,000	12,000	12,000
Combat speed/combat altitude (B) (E)	kn/ft	1,176/35,000	926/10,000	934/35,000	1,170/45,000	-----
Rate of climb/combat altitude (B)	fpm/ft	28,000/35,000	36,200/10,000	10,300/35,000	11,200/45,000	-----
Combat ceiling (500 fpm)/speed (B)	ft/kn	58,500/1,030	56,800/1,030	48,400/803	55,400/1,030	52,600/1,030
Rate of climb at S.L. (B)	fpm	47,400	45,300	33,500	43,100	43,300
Max speed at S.L. (B)	kn	794	792	701	781	662
Max speed/altitude (B) (E)	kn/ft	1,170/40,000	1,170/50,000	975/45,000	1,170/50,000	1,038/35,000
Time: S.L. to 40,000 FT (B)	min	1.56	1.62	2.16	1.71	-----
LANDING WEIGHT	lb	43,341	45,387	52,637	45,757	44,206
Fuel	lb	1,895	1,941	2,397	2,141	2,130
Stall speed - power off/approach power	kn/kn	101/95	103/97	110/105	103/98	101/96
Landing distance - ground roll/over 50 ft obstacle	ft/ft	2,500/3,450	2,600/3,550	2,900/3,900	2,600/3,550	2,530/3,500
NOTES						
SPOTTING: A total of 94 airplanes can be accommodated in a safe parking area on the flight & hangar decks of a CVA-59 class angled deck carrier.			(A) Intermediate Thrust			
			(B) Max A/B Thrust			
			(C) Drop Tanks Symmetrically Dropped When Empty			
			(D) Drop Tanks Retained			
PERFORMANCE BASIS: Flight Test			(E) Current Limit, Maximum Mach = 2.04			

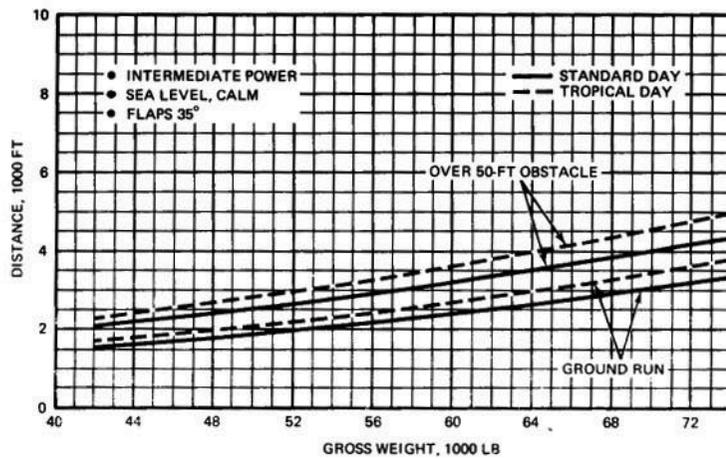
**SPEED**



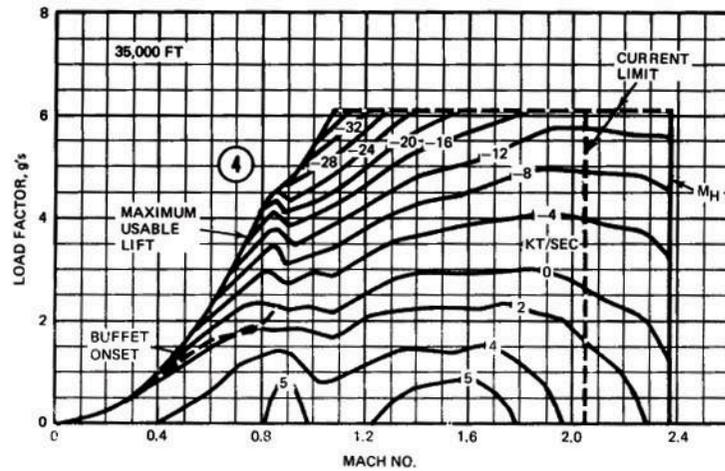
**CLIMB**



**TAKEOFF**



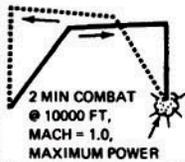
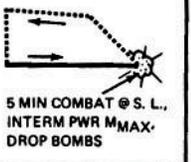
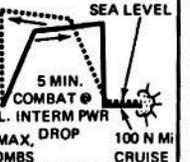
**MANEUVERABILITY**



○ LOADING CONDITION COLUMN NUMBER

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4G (REV. 7-65)

## MISSION SUMMARY — ALTERNATE LOADINGS

		FIGHTER ESCORT		FLEET AIR DEFENSE		LO - LO - LO		LO - LO - HI		HI - LO - LO - HI		CLOSE SUPPORT	
													
EXTERNAL STORE LOADING	TOWG	COMBAT RADIUS, n mi	MISSION TIME, hr	LOITER TIME AT 35,000 FT, hr	MISSION TIME, hr	COMBAT RADIUS, n mi	MISSION TIME, hr	COMBAT RADIUS, n mi	MISSION TIME, hr	COMBAT RADIUS, n mi	MISSION TIME, hr	COMBAT RADIUS, n mi	MISSION TIME, hr
⑪ (4) Sparrows + (1) M61A1 20MM Cannon + (2) 280 Gallon Drop Tanks	64,076	630	3.12										
⑫ (4) Sparrows + (1) M61A1 20MM Cannon + (4) Sidewinders	61,328	389	1.96										
⑬ (4) Sparrows + (4) Sidewinders + (1) M61A1 20MM Cannon + (2) 280 Gallon Drop Tanks	65,758	554	2.77										
⑭ (4) Phoenix + (1) M61A1 20MM Cannon	63,456			1.34	2.14								
⑮ (4) Phoenix + (1) M61A1 20MM Cannon + (2) 280 Gallon Drop Tanks	67,886			2.10	2.90								
⑯ (6) MK-82 Snakeyes + (1) M61A1 20MM Cannon	62,588					317	2.57	395	2.57	441	2.54	441	3.17
⑰ (6) MK-82 Snakeyes + (1) M61A1 20MM Cannon + (2) 280 Gallon Drop Tanks	67,018					408	3.25	516	3.31	616	3.39	610	4.00
⑱ (14) MK-82 Snakeyes + (1) M61A1 20MM Cannon	67,332					306	2.46	377	2.43	413	2.40	393	2.94
⑲ (14) MK-82 Snakeyes + (1) M61A1 20MM Cannon + (2) 280 Gallon Drop Tanks	71,762					394	3.12	493	3.13	577	3.20	552	3.72
⑳ (8) MK-83 Lo Drag + (1) M61A1 20MM Cannon + (2) 280 Gallon Drop Tanks	71,508					405	3.18	511	3.21	645(A) 576 (B)	3.38(A) 2.85(B)	580	3.84

## Notes:

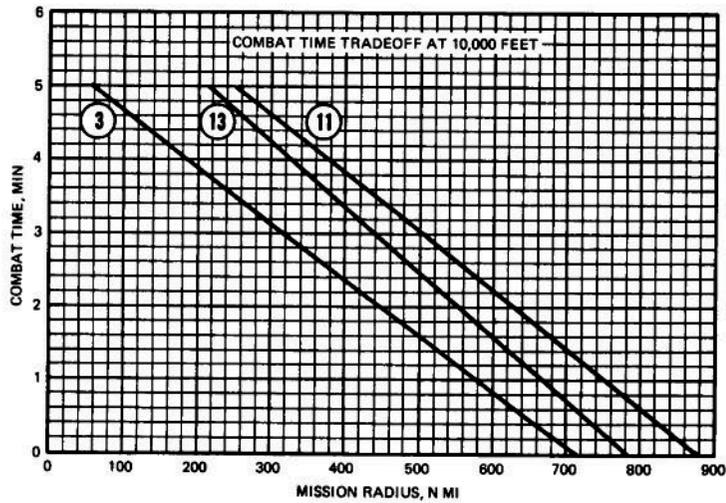
Drop tanks symmetrically dropped when empty

(A) 50 N Mi S.L. Cruise

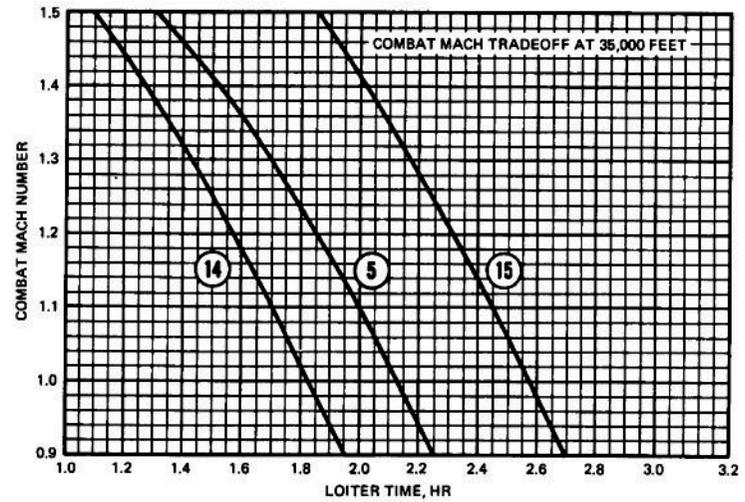
(B) 50 N Mi S.L. MACH = .8 Dash

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100-41 (Rev. 7-65)

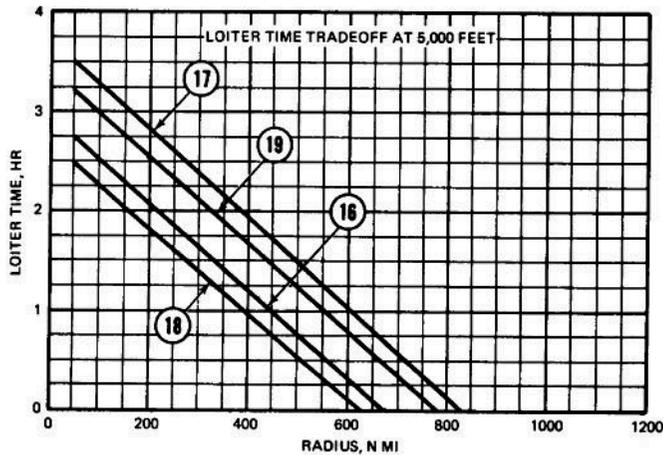
**FIGHTER ESCORT**



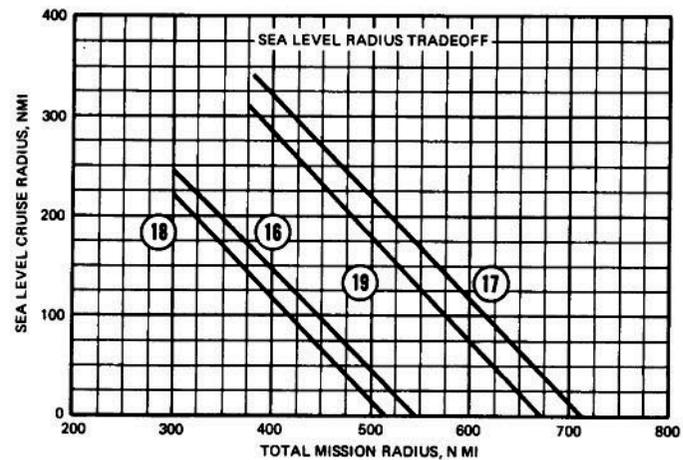
**FLEET AIR DEFENSE**



**CLOSE SUPPORT**

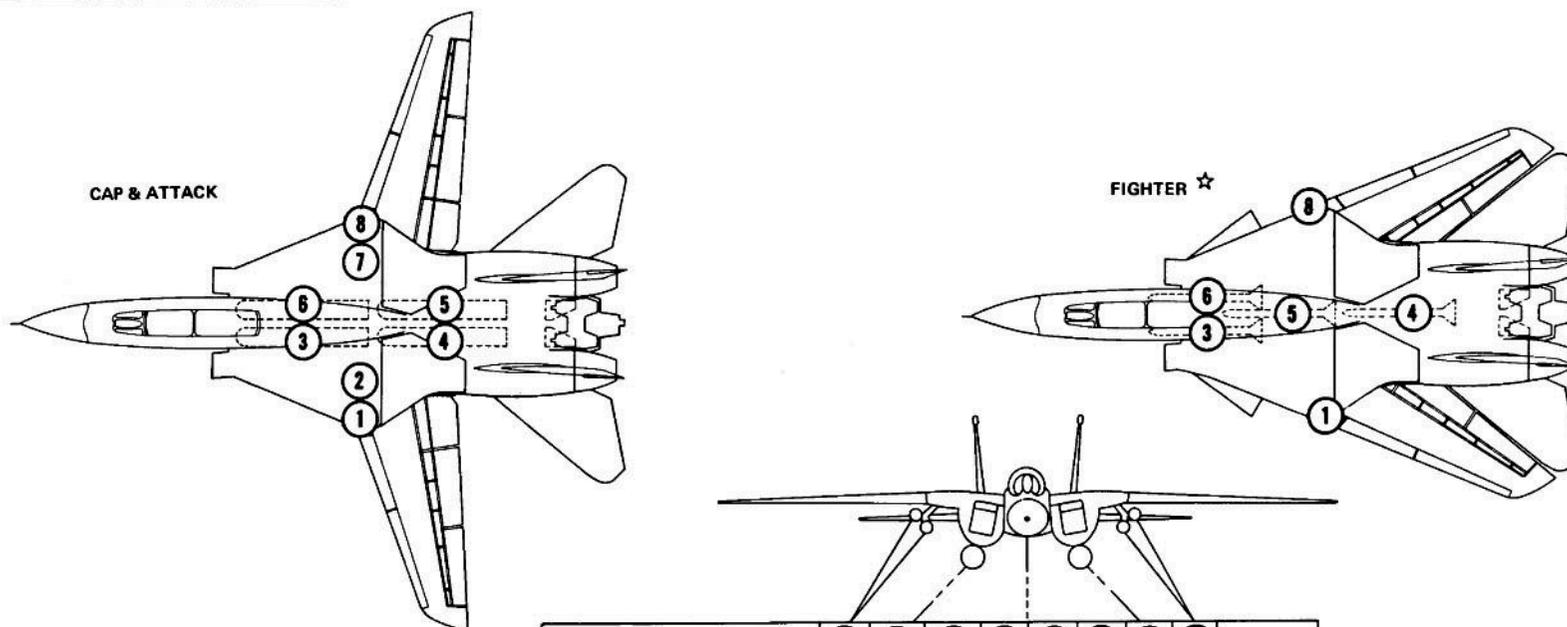


**HI-LO-LO-HI**



○ LOADING CONDITION COLUMN NUMBER

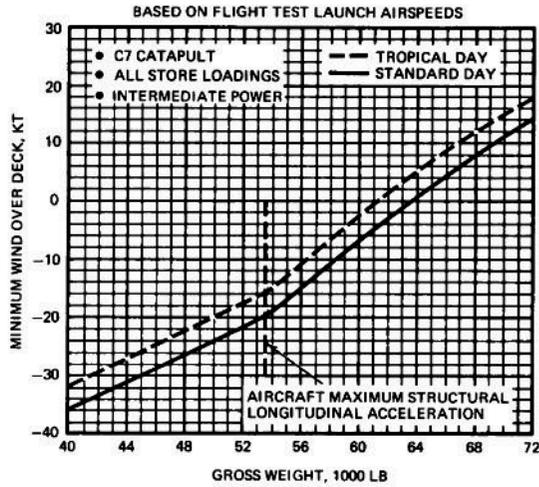
STANDARD AIRCRAFT CHARACTERISTICS, NAVMPS FORM 13100/4G (REV. 7-65)



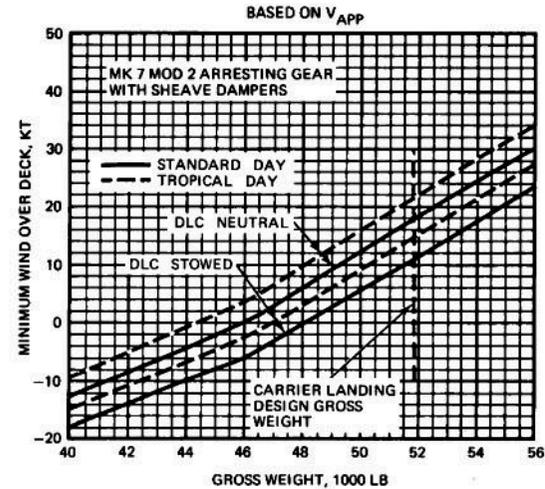
STORE STATION	8	7	6	5	4	3	2	1	TOTAL
<b>MISSILES</b>									
AIM-7E/F (Sparrow) ☆	1		1	1	1	1		1	6
AIM-9D,G,H (Sidewinder)	2							2	4
AIM-54/A (Phoenix)	1		1	1	1	1		1	6
<b>BOMBS</b>									
MK-81 (Lo & Hi Drag)			4	3	3	4			14
MK-82 (Lo & Hi Drag)			4	3	3	4			14
MK-83 (Lo Drag)			3	1	2	3			9
MK-84 (Lo Drag)			1	1	1	1			4
MK-40 (Destructor)			2	1	1	2			6
MK-20 (Rockeye)			2	1	1	2			6
CBU-59/B (APAM)			2	1	1	2			6
MK-76 (Practice)			4	4	4	4			16
<b>FLARES</b>									
MK-45			3	4	4	3			14
<b>ROCKETS</b>									
LAU-10A/A			1			2			3
<b>FUEL TANKS</b>									
FPU-1/A (280 Gal.)		1					1		2
<b>MULTI-ADAPTER</b>									
A/A37B-6(TER-7)			1			1			2

PLUS INTERNAL M61A1 20-MM GUN/676 RDS

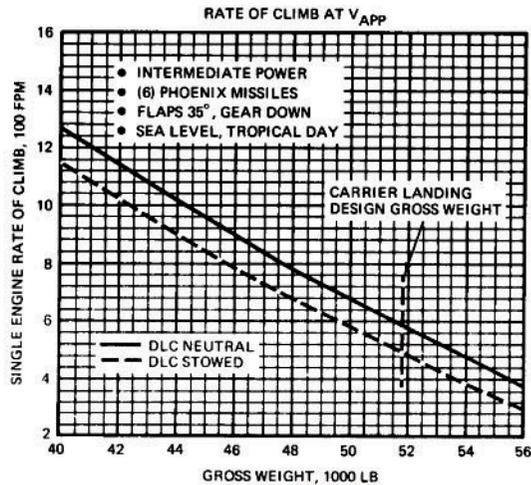
MINIMUM WIND OVER DECK FOR CATAPULTING



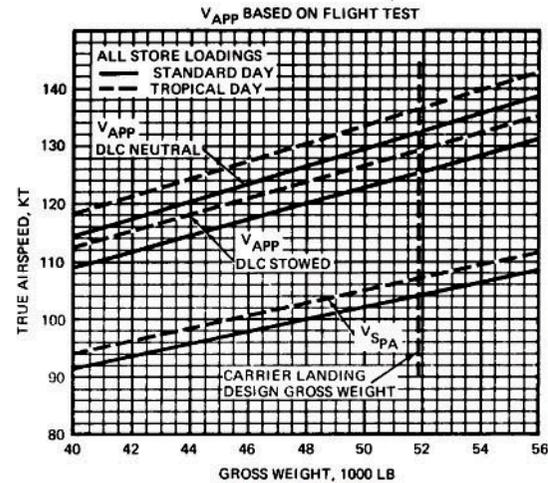
MINIMUM WIND OVER DECK FOR ARRESTING



SINGLE ENGINE RATE OF CLIMB



CARRIER APPROACH SPEEDS

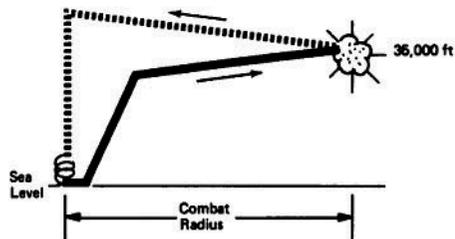


(A) These curves should be used for planning purposes only. Actual catapult and arresting gear operation should be in accordance with applicable Aircraft Technical Orders, and Catapult and Arresting Gear Bulletins.

(B) Flap deflection for catapulting and landing = 35°.  
(C) DLC = Direct Lift Control.

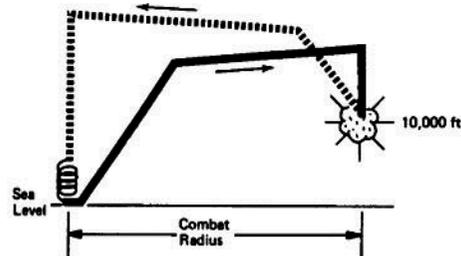
STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4G (REV. 7-65)

## HI-HI-HI



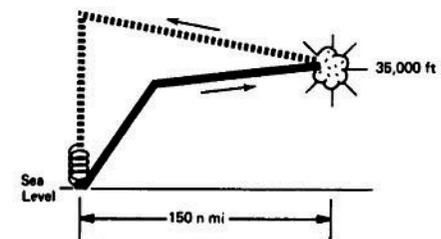
- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power
- Climb on course to optimum cruise altitude with intermediate power
- Cruise out at maximum-range speed at optimum cruise altitude (drop external fuel tanks when empty)
- Combat: 5 min at 35,000 ft altitude intermediate power  $M_{max}$ . (stores 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



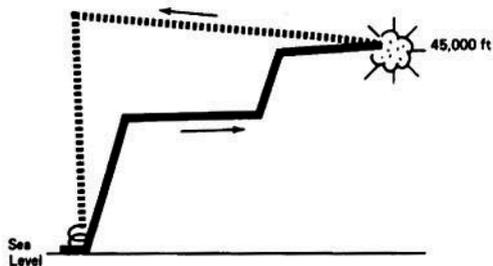
- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power
- Climb on course to optimum cruise altitude with intermediate power.
- Cruise out at maximum range speed at optimum cruise altitude (drop external fuel tanks when empty)
- Descend to 10,000 ft: No distance gained or fuel used
- Combat: 2 min at max A/B power at  $M = 1.0$ .
- Climb at intermediate power climb 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



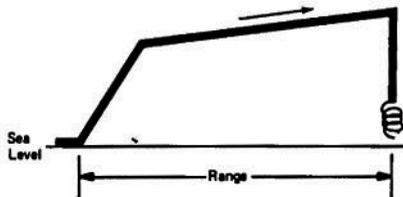
- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power
- Climb on course to optimum cruise altitude with intermediate power
- Cruise out at maximum range speed at optimum cruise altitude (drop external fuel tanks when empty)
- Loiter at maximum endurance speed at 35,000 ft (no distance gained)
- Accelerate at 35,000 ft from maximum endurance speed to  $M = 1.35$  at max A/B power (no distance gained)
- Combat: 2 min at  $M = 1.35$  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



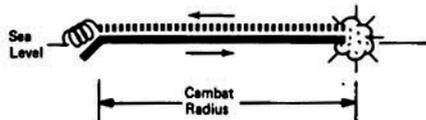
- Warmup, taxi, takeoff: 5 min with max continuous power and 1 minute max A/B power at sea level static
- Climb with max A/B  $M=1.8$  and 45,000 ft altitude. (Drop external fuel tanks when empty)
- Dash: Dash out at  $M=1.8$  and 45,000 ft
- Combat: 2 min at  $M = 1.8$  and 45,000 ft
- Cruise back at 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



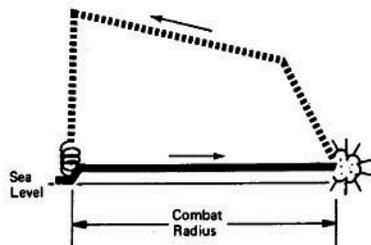
- Warmup, taxi, takeoff: 5 min at sea level static with max continuous power
- Climb on course to optimum cruise altitude with intermediate power
- Cruise out at max range speed at optimum cruise altitude.
- Descend to sea level; no distance gained or fuel used
- Reserve: 5% of initial fuel plus 20 min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

## LO-LO-LO



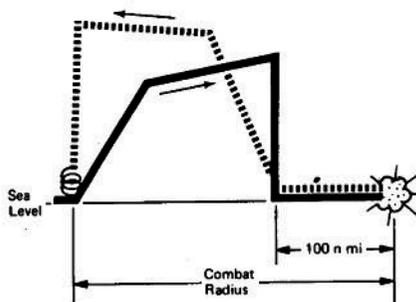
- Warmup, taxi, takeoff: 5 min at sea level static with max continuous power
- Cruise out at max range speed at sea level (Drop external fuel tanks when empty)
- Combat: 5 min at sea level intermediate power.  $M_{max}$  (Stores on, no distance gained.) Stores dropped after combat
- Cruise back at max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

## LO-LO-HI



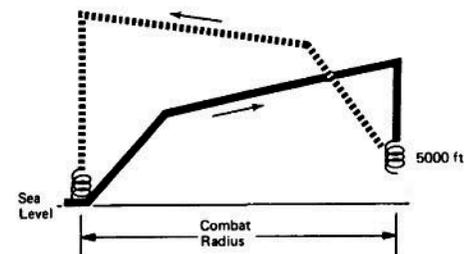
- Warmup, taxi, takeoff: 5 min at sea level static with maximum continuous power
- Cruise out at maximum range speed at sea level (drop external fuel tanks when empty)
- Combat: 5 min at sea level intermediate power  $M_{max}$ . Stores dropped after combat
- Climb on course to optimum cruise altitude 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 power  $M_{max}$ . (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

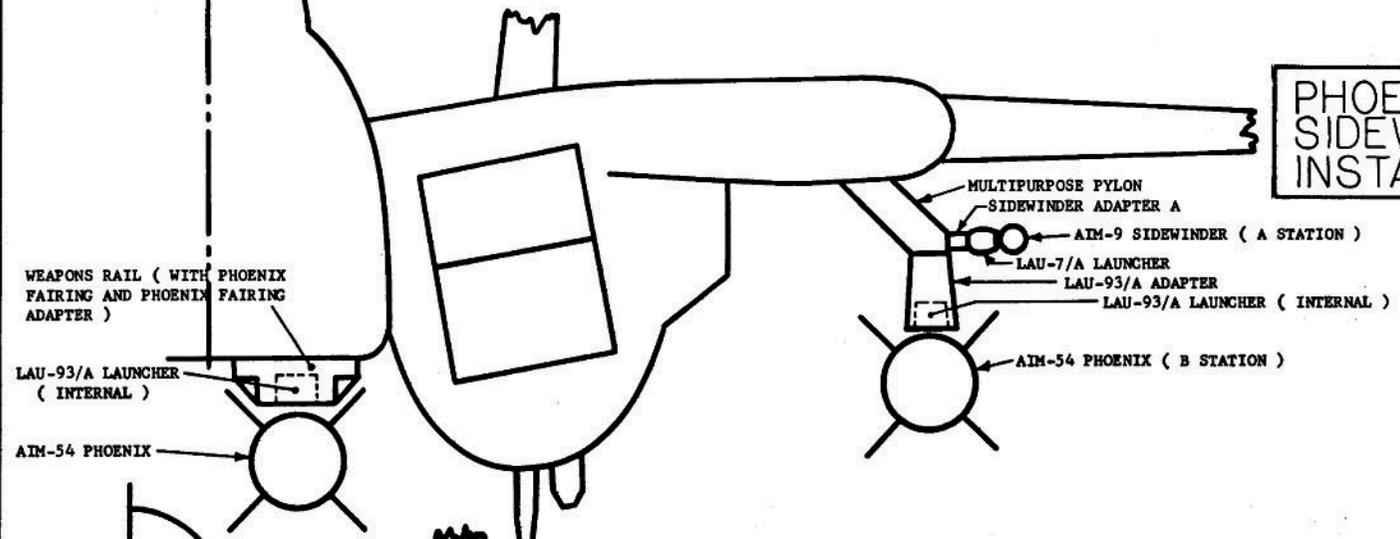
## CLOSE SUPPORT



- 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)
- Loiter 1 hr at maximum endurance speed at 5000 ft (stores on no distance gained) Stores dropped at end of loiter
- 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

F-14 AIR TO AIR LOADINGS

PHOENIX AND SIDEWINDER INSTALLATION



SPARROW AND SIDEWINDER INSTALLATION

