

STANDARD AIRCRAFT CHARACTERISTICS

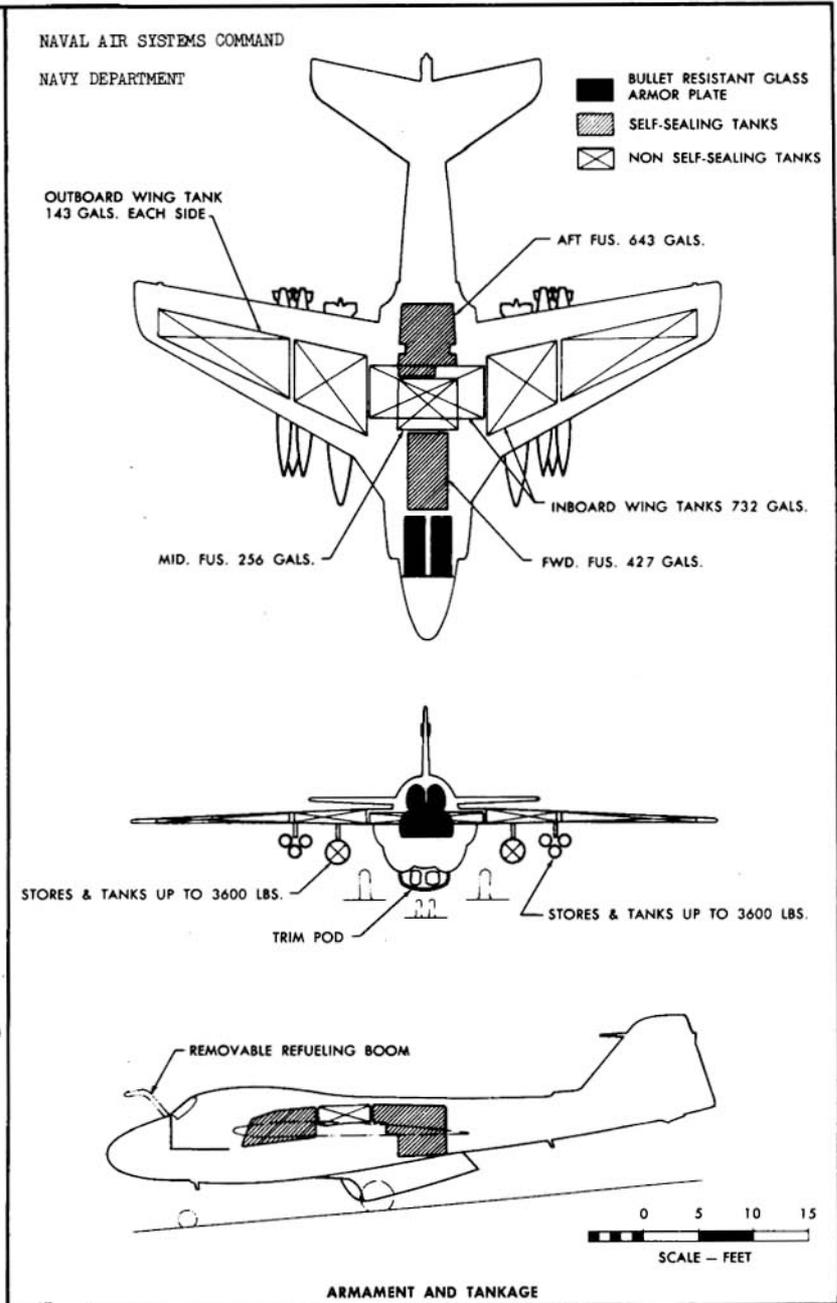
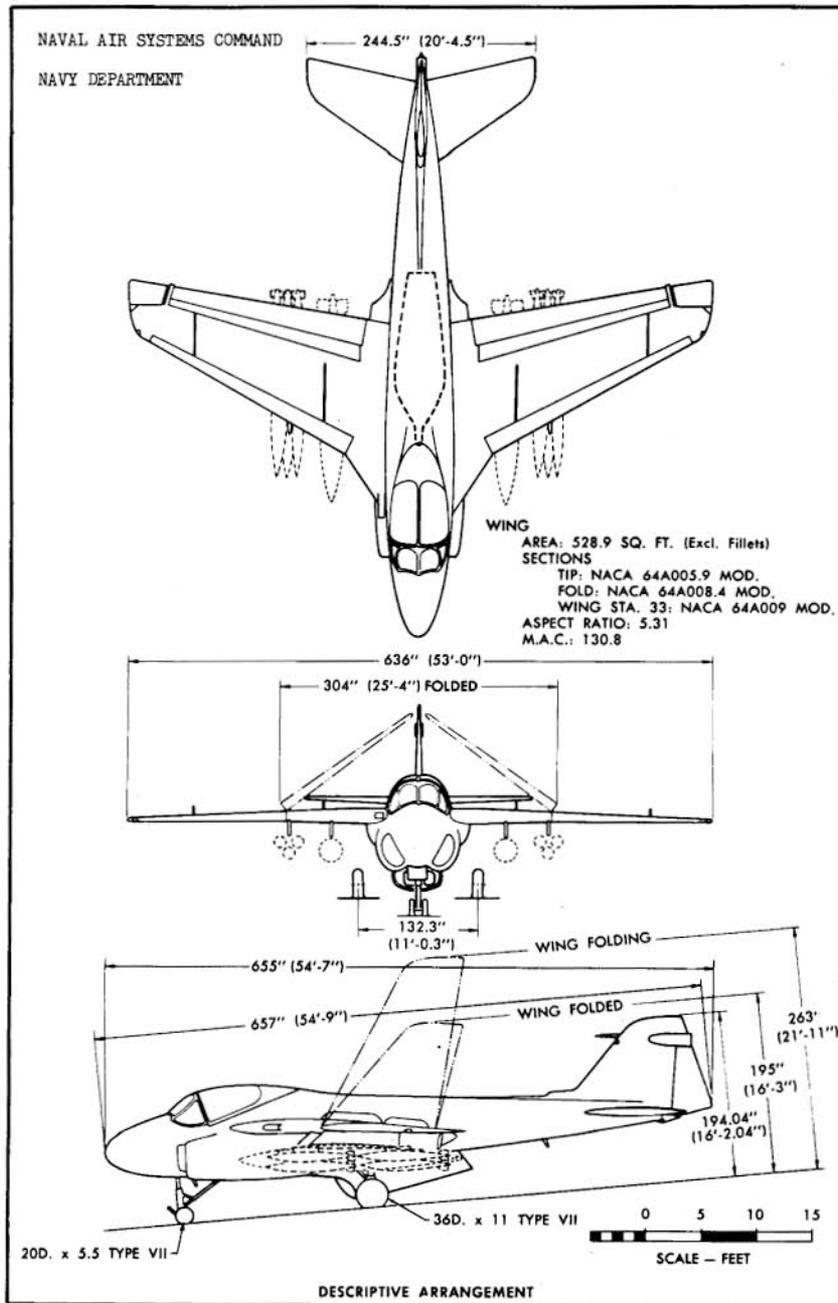
A-6C TRIM

GRUMMAN

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

MARCH 1972

A-6C



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

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

POWER PLANT		
No. & Model	(2) J52-P-8A	
Manufacturer	Pratt & Whitney	
Type	Twin Spool Axial Flow	
Length	117 in.	
Diameter	31 in.	
Augmentation	none	
RATINGS		
	LBS.	RPM
Maximum	9300	12,060
Take-Off & Military	9300	12,060
Normal	8200	11,660
Sea Level Static		
Spec No.	N-1844-A	

ELECTRONICS	
ATTACK-NAVIGATION INSTRUMENTS	
Indicator, Analog Display	IP-1000/AVA-1B
Indicator, Azimuth Range, Multisensor	IP-691 A/A
MA-1 Compass System	
Air Data Computer	CP957/A
Digital Computer (DIANE)	AN/ASQ-61
Search Radar	AN/APQ-92
Track Radar	AN/APQ-112
Doppler Radar	AN/APN-153
Inertial Platform	AN/ASN-31
Radar Altimeter	AN/APN-141
Bullpup Transmitter	AN/ARW-73
Bullpup System	AGM-12B/12C
Shrike Missile System	AGM-45A
Integrated Display Subsystem	
AFCS	AN/ASW-16
Radar Recorder	AN/ASH-18
Optical Sight Head	MX-3146A/A
Weapon Fusing	AWW-1
Approach Power Compensator	AN/ASN-54

COMMUNICATIONS	
CNI Package	AN/ASQ-57B
UHF Transceiver	RT-542ASQ
IFF Transponder	KY-533ASQ
ANX Receiver	AN/ARR-40
TACAN	KY-409ASQ/RT-541NSQ
Amplifier Power Supply	AM-2310-ASQ
ICS	AN/AIC-14
Coder	KY-28
Beacon Radar	AN/APN-154
Data Link	AN/ARW-67

COUNTERMEASURES	
Repeater Jammer	AN/ALQ-41
Repeater Jammer	(2) AN/ALQ-100
Chaff Dispenser	AN/ALE-18
Radar Warning Set	AN/APR-25
Radar Warning	AN/APR-27

TRIM EQUIPMENT	
Beacon Receiver (Direction Finder Set)	AN/ASD-4
Television Camera Set	AN/ADX-4
Infra-Red Detecting Set	AN/AAS-28
Optical Sensor System Group Housing	AN/AJA-9

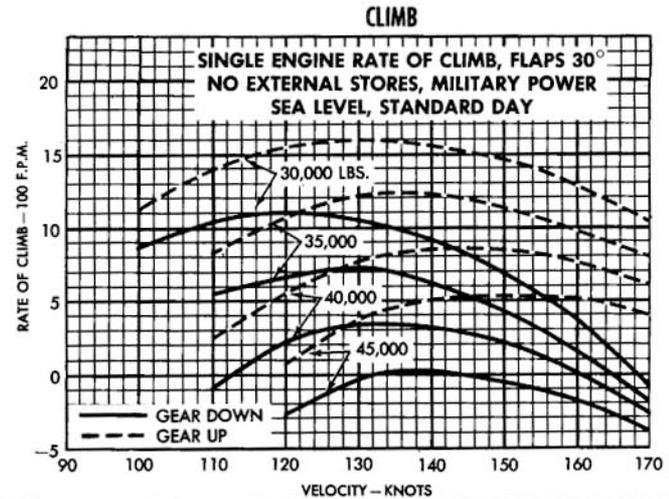
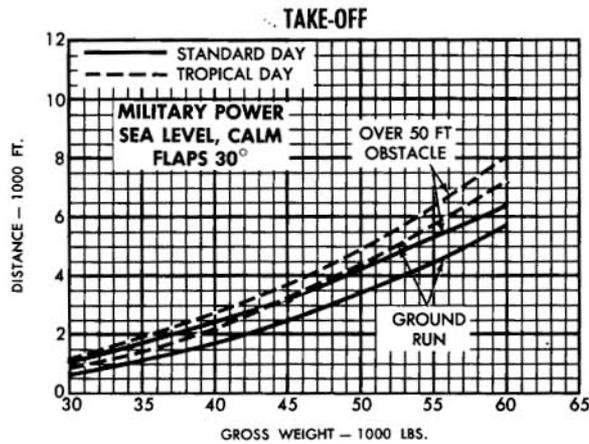
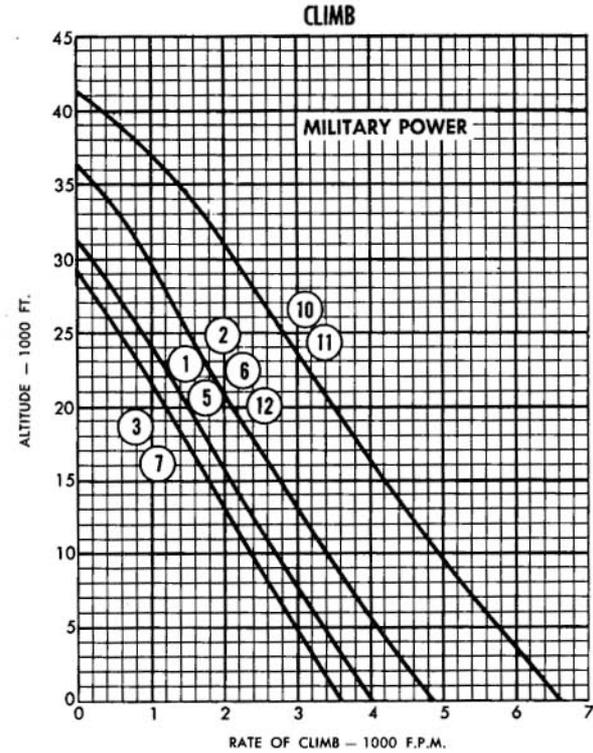
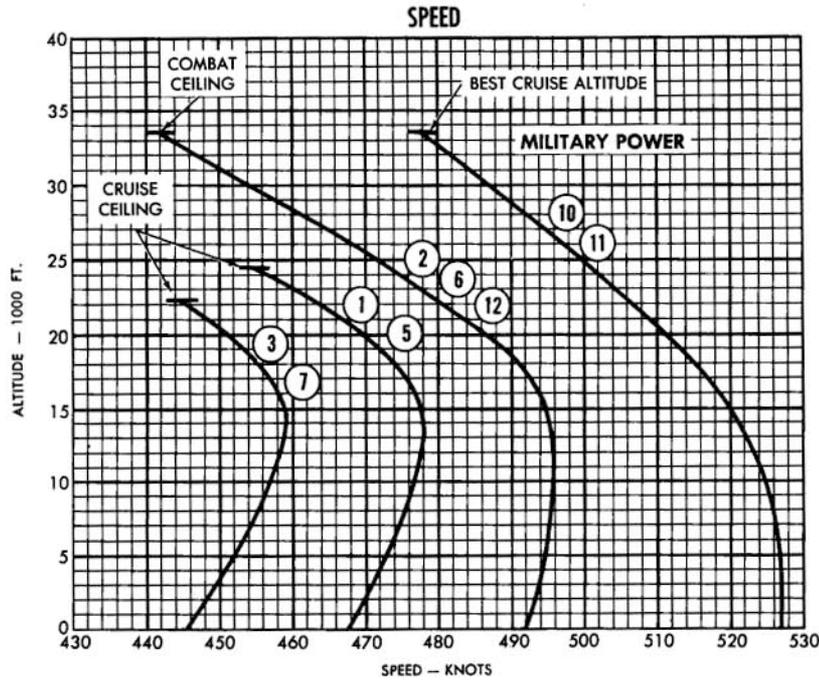
MISSION AND DESCRIPTION	
<p>The A-6C is an A-6A Aircraft equipped with special electronic Trails-Roads Interdiction Multi-Sensor (TRIM) equipment to enhance its all-weather low altitude night attack capability. Installation of the TRIM Sensor Equipment, Forward Looking Infrared (FLIR), Low Light Level Television (LLTV), and the Black Crow Receiver give the A-6C additional low light level night detection capabilities with high speed, low altitude penetration.</p> <p>In the expected TRIM operational environment, that of non-permissive combat area operations, the prime use of FLIR & LLTV sensors will be to detect such targets as slow moving ground objects of opportunity and non-radar significant river traffic. Their signatures are characterized by either the heat emitted by the object or by visual contrast with the background.</p> <p>It can operate without restriction from CVA-19 class and superior class carriers with C11-1 catapults and from temporary airfields.</p> <p>An integrated attack-navigation and central digital computer system is provided to locate, track and destroy small moving targets or fixed targets in all weather conditions, and at night. Pilot displays provide contact analog, terrain clearance, attack and horizontal situation information in integrated form. Four store stations are provided, inboard of the wing fold joint.</p> <p>Irreversible hydraulic flight controls are provided. Longitudinal control is effected by an all movable stabilizer. Lateral control is provided by flaperons while a conventional rudder is used for directional control.</p> <p>High lift devices are slotted flaps, and leading edge slats. Anti-skid brakes on main wheels are provided. Nose wheel tow catapulting is used. Speed brakes are located on the aft portion of each wing tip. Side by side ground level ejection seats are provided for the pilot and bombardier/navigator.</p> <p>Power wing folding is provided. The engines are serviced by removal of fuselage fairing panels. Engines may be removed by dropping the pod that houses the TRIM equipment.</p>	
DEVELOPMENT	
First Flight	December 1968
Service Use	Spring 1970

DIMENSIONS	
Wing	
Area	528.9 sq ft
Span	53 ft 0 in.
MAC	130.8 in.
Sweepback (1/4 chord)	25°
Length	54 ft 9 in.
Height	16 ft. 2.040 in.
Tread	11 ft 0.3 in.

WEIGHTS		
LOADINGS	LBS.	L.F.
Empty:	28,744	
Design:	36,526	6.5/5.8*
Combat: HI-LO-LO-HI	53,546	
Maximum Take-Off, overload:	58,612	
Maximum Take-Off, normal:		
(Basic catapulting design gross weight)	54,049	
Maximum Landing, field:		
(Basic landing design gross weight)	36,000	
Maximum Landing, arrested:		
(Basic arresting design gross weight)	36,000	
All weights are based on A-6C Weapon System Specification SD-534-3.		
*Wing tip brakes extended.		

FUEL AND OIL			
NO. TANKS	GALS.	LBS.	LOCATION
3	1326	9016	fuselage
5	1018	6923	wings
4 (300 gal.)	1182	8036	drop tanks
Fuel Grade			JP-5
Fuel Spec. (applicable)			MIL-F-5624C-1
OIL			
Capacity		5 gals./engine	
Spec. (applicable)			MIL-L-23699

ORDNANCE	
Maximum Bomb Capacity: 11,440 lbs.	
Bombs LDGP: MK 81, MK 82, MK 83, MK 84 / MK 81 Snakeye, MK 82 Snakeye / GP: AN-M57, AN-M64, AN-M65, AN-M66 / Fragmentation: AN-M81, AN-M88 / Demolition: M-117 / Destructor: MK 36, MK 40 / Firebomb: MK 77, MK 79, BLU-27/B / Chemical: MK 94 / Cluster: CBU-1A/A, CBU-9 Mods, CBU-24 Mods, CBU-29 Mods, CBU-49 Mods, MK 20 Mod O Rockete.	
Special Weapons: MK 28, MK 43, MK 57, B-61.	
Rocket Pods: 7 Round 2.75 FFAR, 19 Round 2.75 FFAR, 4 Round 5.0 ZUNI.	
Guided Missiles: AGM-12B Bullpup A, AGM-12C Bullpup B, AGM-45A Shrike, AIM-9B Sidewinder 1A, AIM-9D Sidewinder 1C.	
Mines: MK 25, MK 36, MK 50, MK 52, MK 53, MK 55, MK 56.	
Pyrotechnics Flare: MK 6 Mod-6, MK 24 Mod-2A, -3, -4 / Flare Pod: SUU-40/A, SUU-44/A / Marker: MK 58.	
Practice Bombs and Training Shapes: MK 76, MK 86, MK 87, MK 88, MK 89, MK 106, MK 124, Aero 8A-1 Container, MK 104, BDU-6E, BDU-8/B, BDU-11/E, BDU-12B, BDU-20C.	
Bomb Racks, Launchers, and Adapters: Aero 7A-1 EBR, A/A37B-3 PMBR, A/A37B-5 TER, A/A37B-6 MER / Missile Launcher: Aero 5A-1, LAU-7/A / Adapter: ADU-299/E, ADU-315 or -316, Aero 1A.	

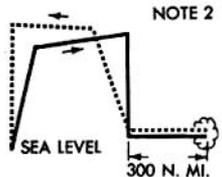
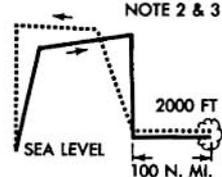
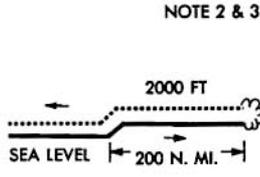
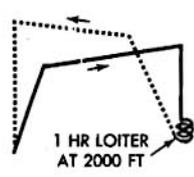


○ LOADING CONDITION COLUMN NUMBER

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	HI-LO-LO-HI TRIM DASH		HI-LO-LO-HI TRIM DASH		LO-LO-LO TRIM DASH		LO-LO-LO TRIM DASH		FERRY	
	①	(12) MK-82 Snakeye I (2) 300 Gal. Tanks	③	(20) MK-82 Snakeye I	⑤	(12) MK-82 Snakeye I (2) 300 Gal. Tanks	⑦	(20) MK-82 Snakeye I	⑨	(4) 300 Gal. Tanks
TAKE-OFF WEIGHT	lb.	57,980		58,612		57,980		58,612		55,105
Fuel internal/external (JP-5)	lb./lb.	15,939/4018		15,939/0		15,939/4018		15,939/0		15,939/8036
Payload	lb.	6864		11,440		6864		11,440		0
Wing loading	lb./sq. ft.	109.2		110.9		109.2		110.9		104.2
Stall speed—power-off	kn.	132.5		133.1		132.5		133.1		129.1
Take-off run at S.L.—calm	ft.	5120		5290		5120		5290		4480
Take-off run at S.L.—25 kn. wind	ft.	3890		4010		3890		4010		3380
Take-off to clear 50 ft.—calm	ft.	5850		6000		5850		6000		5150
Max. speed/altitude (A)	kn./ft.	478/13,500		459/15,000		478/13,500		459/15,000		505/10,000
Rate of climb at S.L. (A)	fpm.	3990		3620		3990		3620		4900
Time: S.L. to 20,000 ft. (A) (B)	min.	7.7		8.7		7.7		8.7		5.8
Time: S.L. to 30,000 ft. (A) (B)	min.	19.0		29.5		19.0		29.5		11.9
Service ceiling (100 fpm) (A)	ft.	30,700		28,200		30,700		28,200		35,300
Combat range (C)	n.mi.	1108		701		687		474		1901
Average cruising speed cr. distance/cr. time	kn.	399		386		257		258		405
Cruising altitude(s)	ft.	26,500—34,800		24,000—31,900		S.L.		S.L.		30,300—39,700
Combat radius/mission time (C)	n.mi./hr.	500/2.53		314/1.63		345/2.14		246/1.38		—
Average cruising speed	kn.	403		400		251		241		—
COMBAT LOADING CONDITION	②	TANKS DROPPED STORES RETAINED	④	STORES RETAINED	⑥	TANKS DROPPED STORES RETAINED	⑧	STORES RETAINED	⑩	TANKS DROPPED
COMBAT WEIGHT	lb.	53,546		52,236		53,546		52,236		46,237
Engine power		Military		Military		Military		Military		Military
Fuel	lb.	15,939		9563		15,939		9563		15,939
Combat speed/combat altitude	kn./ft.	493/2000		449/2000		493/2000		449/2000		527/2000
Rate of climb/combat altitude	fpm/ft.	4540/2000		4000/2000		4540/2000		4000/2000		6280/2000
Combat ceiling (500 fpm)	ft.	33,500		29,400		33,500		29,400		39,400
Rate of climb at S.L.	fpm.	4860		4300		4860		4300		6660
Max. speed at S.L.	kn.	492		447		492		447		527
Max. speed/altitude	kn./ft.	496/11,500		462/15,000		496/11,500		462/15,000		527/5000
LANDING WEIGHT (stores & tanks off)	lb.	32,931		33,252		32,931		33,252		32,647
Fuel	lb.	2188		2019		2188		2019		2349
Stall speed—power-off/approach power	kn./kn.	96.8/90.8		97.1/91.2		96.8/90.8		97.1/91.2		96.3/90.3
Landing distance-ground roll/over 50 ft. obst.	ft./ft.	1745/2395		1760/2410		1745/2395		1760/2410		1730/2380
NOTES						(A) Military rated thrust.				
PERFORMANCE BASIS: Contractor flight test. SPOTTING: A total of 63 airplanes can be accommodated in the safe parking area on the flight and hangar decks of a CVA-19 class angled deck carrier.						(B) Take-off gross weight, minus fuel for warm-up, taxi, take-off and climb.				
						(C) Tanks retained throughout mission. Mission performance is based on reserves using five percent of total take-off fuel, plus 20 minutes maximum endurance at sea level.				

MISSION SUMMARY - ALTERNATE LOADINGS

		HI-LO-LO-HI		HI-LO-LO-HI TRIM Dash		LO-LO-LO TRIM Dash		CLOSE SUPPORT	
									
EXTERNAL STORE LOADINGS	Take-Off Gross Weight	Combat Radius n. mi.	Mission Time hours	Combat Radius n. mi.	Mission Time hours	Combat Radius n. mi.	Mission Time hours	Combat Radius n. mi.	Mission Time hours
① ⑤ (12) MK 82 Snakeye I (2) 300 Gal. Drop Tanks	57,980	—	—	500	2.53	345	2.14	400	3.03
③ ⑦ (20) MK 82 Snakeye I	58,612	—	—	314	1.63	246	1.38	204	2.10
⑨ (4) 300 Gal. Drop Tanks	55,105	608	3.66	786	3.89	473	3.14	697	4.41
⑪ Clean Configuration	46,227	—	—	534	2.36	331	2.02	447	3.18
⑫ (12) MK 82 Snakeye I	53,541	—	—	407	2.04	288	1.69	308	2.54

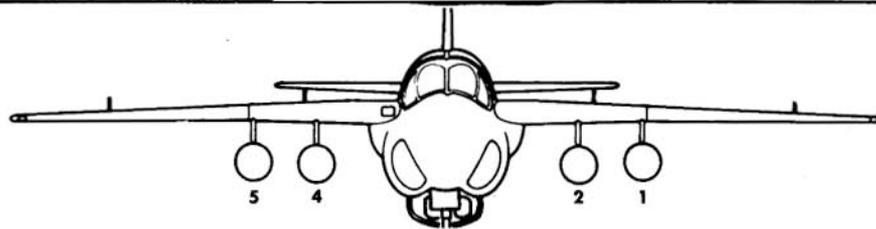
NOTES

- (1) Mission performance reflects the effects of mission reserves computed with five percent of total take-off fuel, plus 20 minutes maximum endurance at sea level. Tanks retained throughout mission.
- (2) For variation of low altitude radius, refer to graphs.
- (3) Maximum speed for TRIM operations is 400 knots.

SERVICE

NAVAIR OO-II0AA6-4

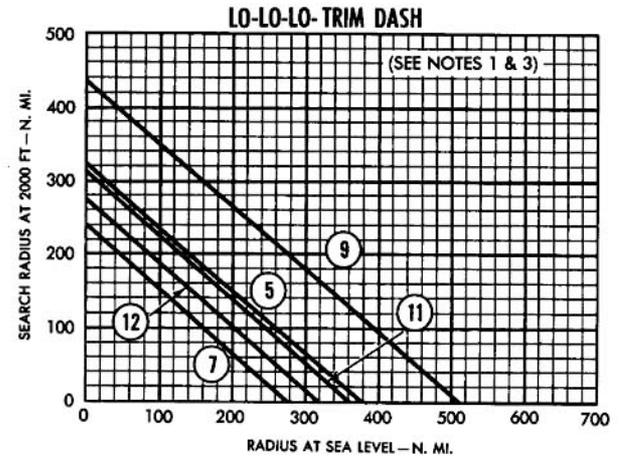
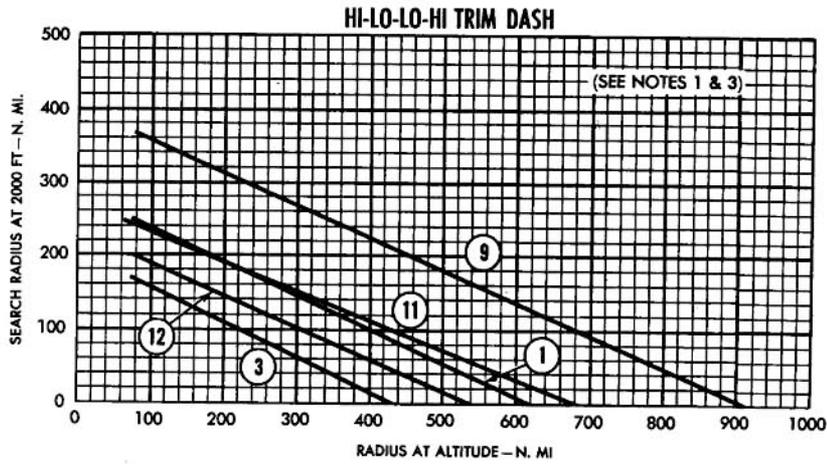
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Abstracted from NAVAIR 01-85ADA-IT(C)



		STATION 5	STATION 4	STATION 2	STATION 1			STATION 5	STATION 4	STATION 2	STATION 1				
		Outboard	Inboard	Inboard	Outboard			Outboard	Inboard	Inboard	Outboard				
		WEIGHT Lbs							WEIGHT Lbs						
BOMB RACKS LAUNCHERS AND ADAPTERS	52	Aero 7A-1 EBR	1	1	1	1	GUIDED MISSILES	570	AGM-12B Bullpup A	1	1	1	1		
	87	A/A37B-3 PMBR	1	1	1	1		1785	AGM-12C Bullpup B	1	1	1	1		
	96	A/A37B-5 TER	1	1	1	1		400	AGM-45A Shrike	2	2	2	2		
	215	A/A37B-6 MER	1	1	1	1		160	AIM-9B Sidewinder 1A	1	1	1	1		
	90	Aero 5A-1 Missile	1	1	1	1		195	AIM-9D Sidewinder 1C	1	1	1	1		
	90	LAU-7/A Launcher	1	1	1	1		ROCKET PODS	200	7 Round 2.75 FFAR	3	2	2	3	
	20	ADU-299/E Adapter	1	1	1	1			540	19 Round 2.75 FFAR	3	2	2	3	
	87	ADU-315 or Dual Adapter	1	1	1	1			540	4 Round 5.0 ZUNI	3	2	2	3	
	10	Aero 1A Adapter	1	1	1	1			MINES	2000	MK 25	1	1	1	1
	BOMBS	260	MK 81 LDGP	6	4	4				6	1260	MK 36	1	1	1
295		MK 81 Snakeye	6	4	4	6	580	MK 50		1	1	1	1		
530		MK 82 LDGP	6	4	4	6	1200	MK 52		1	1	1	1		
570		MK 82 Snakeye	6	4	4	6	385	MK 53		1	1	1	1		
985		MK 83 LDGP	3	2	2	3	2130	MK 55		1	1	1	1		
1970		MK 84 LDGP	1	1	1	1	2200	MK 56		1	1	1	1		
290		AN-M57 GP	6	4	4	6	PARAFLARES AND MARINE LOCATION MARKER	30	MK 6 Mod-6 Flare	6	4	4	6		
585		AN-M64 GP	1	1	1	1		27	MK 24 Mod-2A,3,4 Flare	6	4	4	6		
800		M-117 Demolition	4	4	4	4		340	SUU-40/A Flare Pod	2	not authorized	not authorized	2		
1200		AN-M65 GP	1	1	1	1		340	SUU-44/A Flare Pod	2	authorized	authorized	2		
2275	AN-M66 GP	1	1	1	1	-		MK 58 Marine Marker	4	4	4	4			
275	AN-M81 Fragmentation	6	4	4	6	PRACTICE BOMBS AND TRAINING SHAPES		25	MK 76	6	4	4	6		
230	AN-M88 Fragmentation	6	4	4	6			217	MK 86	6	4	4	6		
572	MK 36 Destructor	6	4	4	6			333	MK 87	6	4	4	6		
1045	MK 40 Destructor	2	2	2	2			783	MK 88	3	2	2	3		
520	MK 77 Firebomb	2	2	2	2			57	MK 89	3	2	2	3		
912	MK 79 Firebomb	1	1	1	1		5	MK 106	6	4	4	6			
868	BLU-27/B Firebomb	2	-	-	2		527	MK 124	6	4	4	6			
440	MK 94 Chemical	1	1	1	1		465	Aero 8A-1 Container	1	1	1	1			
CLUSTER BOMBS	780	CBU-1A/A	1	not authorized	not authorized		1	2100	MK 104	↑	1	1	↑		
	860	CBU-9 Mods	1	authorized	authorized		1	2100	BDU-6E	not authorized	1	1	not authorized		
	830	CBU-24 Mods	3	2	2	3	1970	BDU-8/B	1	1	1	1			
	830	CBU-29 Mods	3	2	2	3	500	BDU-11/E	1	1	1	1			
	830	CBU-49 Mods	3	2	2	3	500	BDU-12/B	1	1	1	1			
	470	MK 20 Mod-0 Rockeye	6	4	4	6	515	BDU-20C	↓	1	1	↓			
SPECIAL WEAPONS	2040	MK 28	not authorized	1	1	not authorized									
	2060	MK 43	not authorized	1	1	not authorized									
	500	MK 57	not authorized	1	1	not authorized									
	715	B-61	not authorized	1	1	not authorized									

A-6C

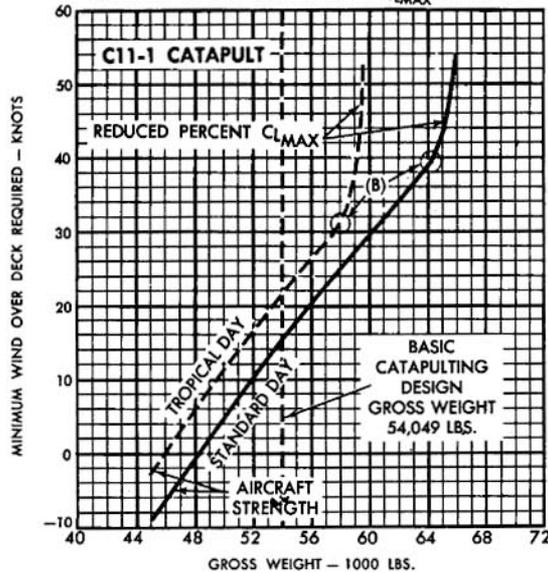
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○ LOADING CONDITION COLUMN NUMBER

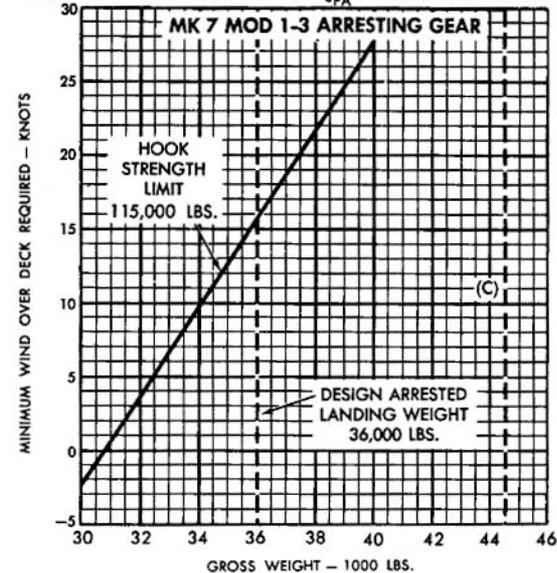
MINIMUM WIND OVER DECK REQUIRED FOR CATAPULT.

BASED ON TAKE-OFF ATTITUDE OF 0.8 C_{LMAX} POWER OFF



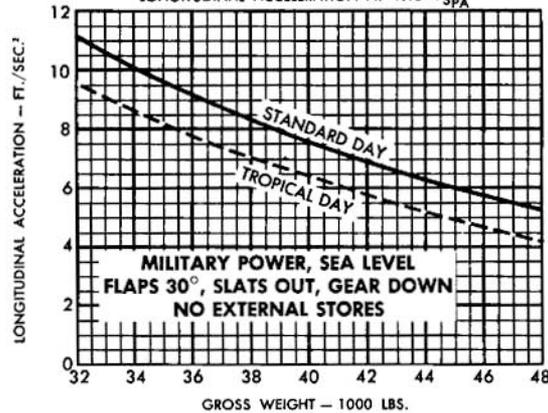
MINIMUM WIND OVER DECK REQUIRED FOR ARRESTING

BASED ON APPROACH SPEED OF 1.3 (V_{SPA}) POWER APPROACH STALL SPEED



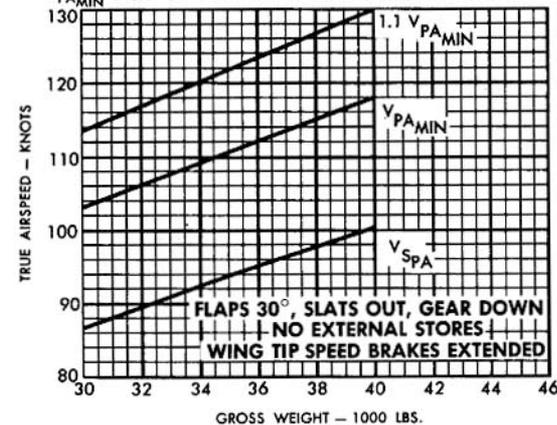
WAVE-OFF ACCELERATION

LONGITUDINAL ACCELERATION AT 1.15 V_{SPA}



MINIMUM CARRIER APPROACH SPEEDS

V_{PAMIN} BASED ON 5 SECONDS TIME TO CLIMB 50 FEET AT SEA LEVEL



NOTES

- (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) Maximum weight for tropical day longitudinal acceleration of 2.1 ft/sec² for C11-1 catapult at take-off.
- (C) Maximum weight, 44,500 lbs, for tropical day longitudinal acceleration of 5.0 ft/sec² at 1.15 V_{SPA} (speed brakes retracted).
- (D) Flap deflection: for catapulting $\delta_r = 30^\circ$, for landing $\delta_r = 30^\circ$.

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NOTES

HI-LO-LO-HI

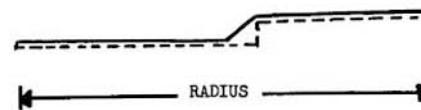
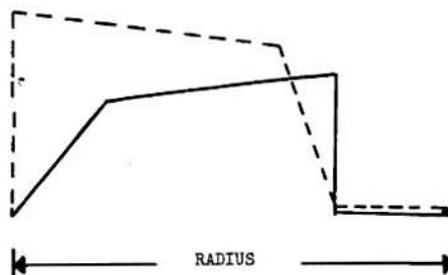
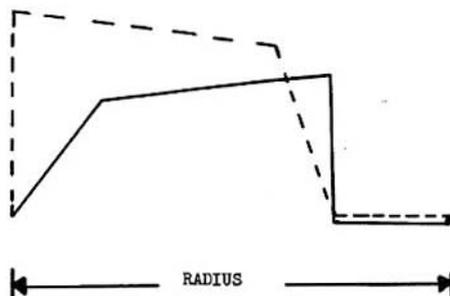
- (1) Warm-up, Taxi, Take-off: 5 Min. S.L. NRP
- (2) Climb: On Course To Opt Cruise Alt With Mil Thrust
- (3) Cruise Out: At Speed For Max Range at Opt Cruise Alt. (Drop Fuel Tanks When Empty)
- (4) Descend: To S.L. When 100/200/300 N.Mi. From Target (No Fuel Used, No Dist. Gained)
- (5) Cruise: At Max Range Speed at S.L.
- (6) Combat: 5 Min. MRT (Stores on, No Dist. Gained)
- (7) Drop Stores
- (8) Cruise: At Max Range Speed At S.L. To a Point 100/200/300 N.Mi. From Target
- (9) Climb: On Course To Opt Cruise Alt With Mil Thrust
- (10) Cruise Back: At Max Range Speed at Opt Alt.
- (11) Reserve: 5% of Initial Fuel Plus 20 Min. at Max Endurance Speed at S.L.

HI-LO-LO-HI TRIM "DASH" MISSION

- (1) Warm-up, Taxi, Take-off: 5 Min. S.L. NRP
- (2) Climb: On Course To Opt Cruise Alt With Mil Thrust
- (3) Cruise Out: At Speed For Max Range at Opt Cruise Alt. (Drop Fuel Tanks When Empty)
- (4) Descend: To 2,000 Ft. When 100/200/300 N.Mi. From Target (No Fuel Used, No Dist. Gained)
- (5) Run In: At 400 Kts at 2,000 Ft. Altitude
- (6) Combat: 5 Min. MRT (Stores on, No Dist. Gained)
- (7) Drop Stores
- (8) Run Out: At 400 Kts at 2,000 Ft. Altitude To a Point 100/200/300 N.Mi. From Target
- (9) Climb: On Course To Opt Cruise Alt With Mil Thrust
- (10) Cruise Back: At Max Range Speed at Opt Alt.
- (11) Reserve: 5% of Initial Fuel Plus 20 Min. at Max Endurance Speed at S.L.

LO-LO-LO TRIM "DASH" MISSION

- (1) Warm-up, Taxi, Take-off: 5 Min. S.L. NRP
- (2) Cruise Out: At Speed For Max Range at S.L. (Drop Fuel Tanks When Empty)
- (3) Climb: On Course To 2,000 Ft. With Mil Thrust When 100/200/300 N.Mi. From Target
- (4) Run In: At 400 Kts at 2,000 Ft. Altitude
- (5) Combat: 5 Min. MRT (Stores on, No Dist. Gained)
- (6) Drop Stores
- (7) Run Out: At 400 Kts at 2,000 Ft. Altitude To a Point 100/200/300 N.Mi. From Target
- (8) Descend: To S.L. (No Fuel Used, No Dist. Gained)
- (9) Cruise Back: At Max Range Speed at Sea Level
- (10) Reserve: 5% Initial Fuel Plus 20 Min. at Max Endurance Speed at S.L.



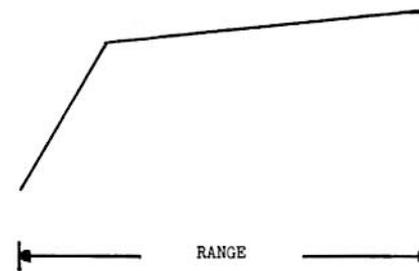
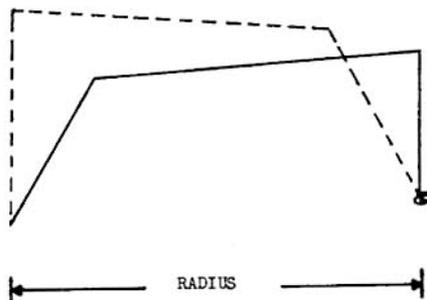
LOADING CONDITION COLUMN NUMBER

CLOSE SUPPORT

- (1) Warm-up, Taxi, Take-off: 5 Min. S.L. NRP
- (2) Climb: On Course To Opt Cruise Alt With Mil Thrust
- (3) Cruise Out: At Speed For Max Range at Opt Cruise Alt. (Drop Fuel Tanks When Empty)
- (4) Descend: To 2,000 Ft. (No Fuel Used, No Dist. Gained)
- (5) Loiter: One Hour at Max Endurance Speed at 2,000 Ft. (Stores On, No Dist. Gained)
- (6) Drop Stores
- (7) Climb: On Course To Opt Cruise Alt With Mil Thrust
- (8) Cruise Back: At Max Range Speed at Opt Alt
- (9) Reserve: 5% of Initial Fuel Plus 20 Min. at Max Endurance Speed at S.L.

FERRY

- (1) Warm-up, Taxi, Take-Off: 5 Min. S.L. NRP
- (2) Climb: On Course To Cruise Alt With Mil Thrust
- (3) Cruise Out: Speed For Max Range at Opt Cruise Alt
- (4) Reserve: 5% of Initial Fuel Plus 20 Min. at Max Endurance Speed at S.L.



○ LOADING CONDITION COLUMN NUMBER