



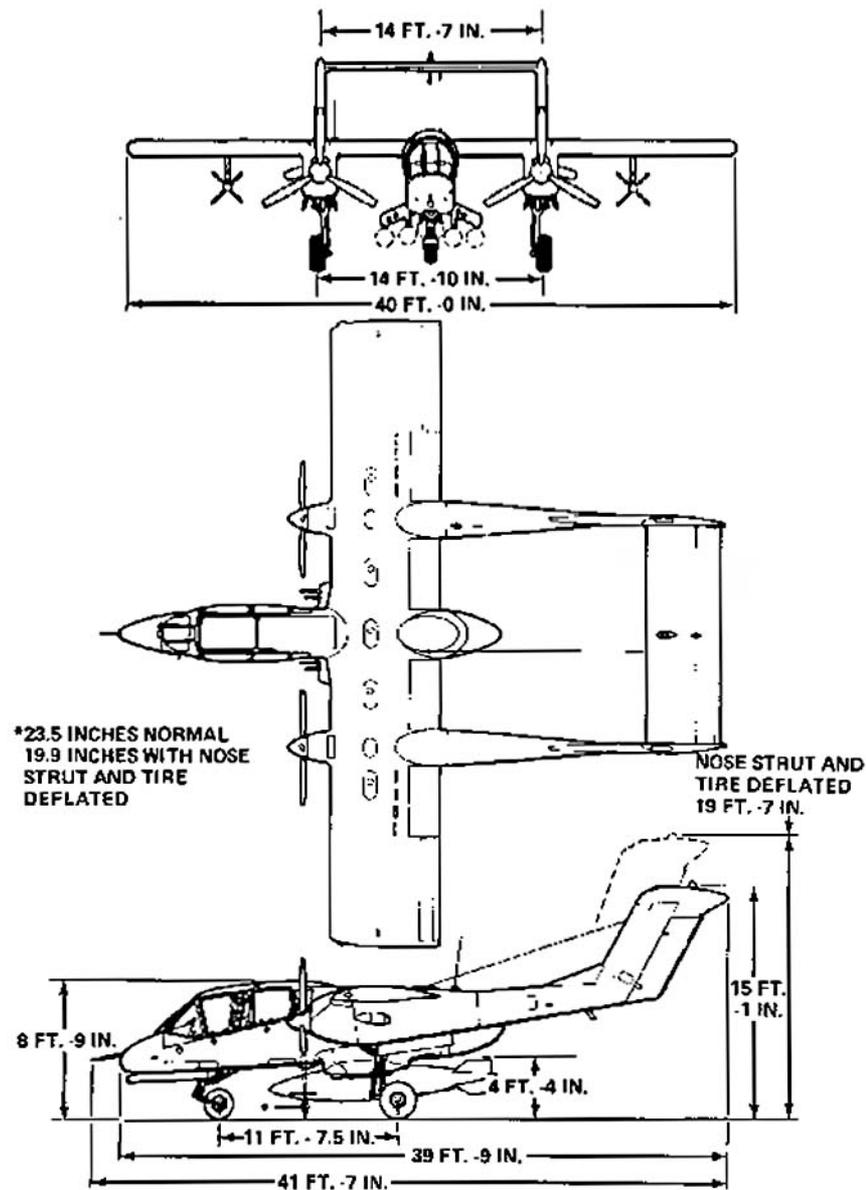
# STANDARD AIRCRAFT CHARACTERISTICS

## OV-10A

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

NAVAL AIR SYSTEMS COMMAND

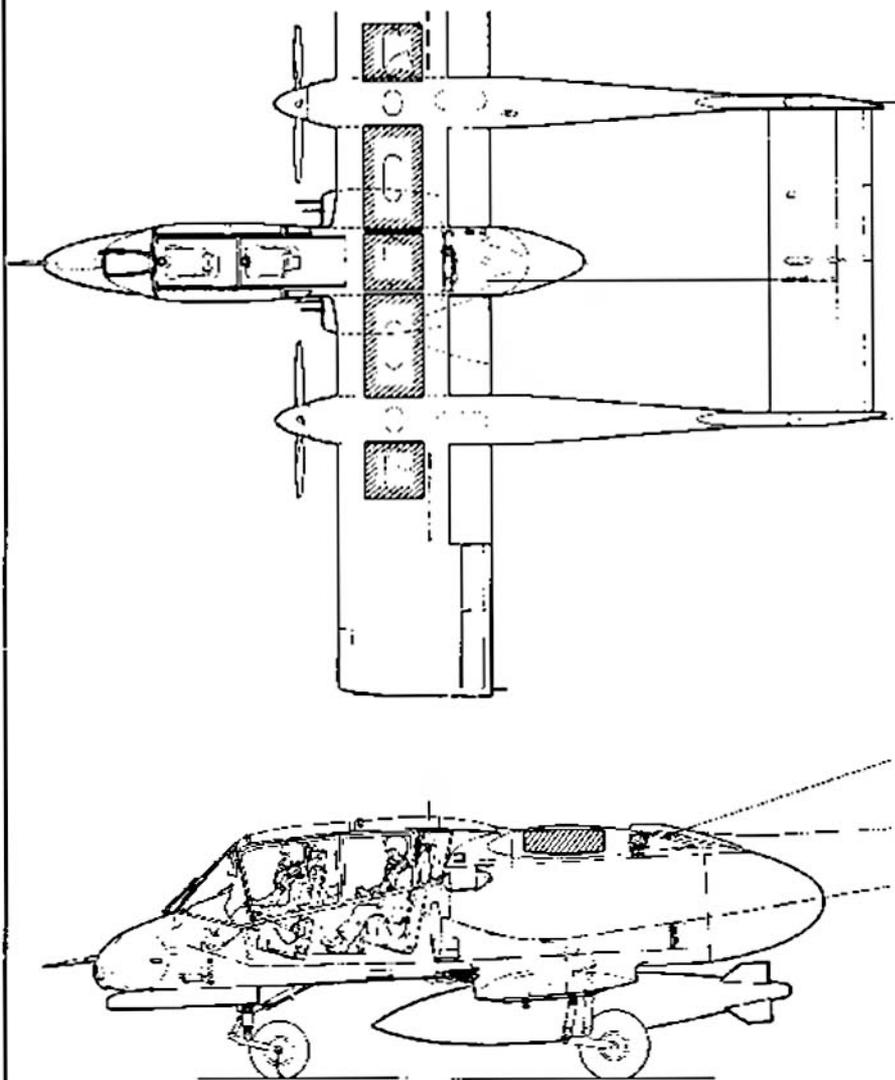
**OV-10A AIRCRAFT  
DESCRIPTIVE ARRANGEMENT  
AND ARMAMENT**



DESCRIPTIVE ARRANGEMENT

NAVAL AIR SYSTEMS COMMAND

**TANKAGE**



ARMAMENT AND TANKAGE

## POWER PLANT

## ENGINES

No. and Model .....(2) T-76-G-10/12  
 Manufacturer.....Airesearch Mfg Co.  
 Spec No.....SC 5715A  
 Type.....Turboprop  
 Reduction Gear Ratio.....20.865:1  
 Length.....44.04  
 Diameter.....27.07 In.  
 Power Management System  
 Manufacturer.....Hamilton-Standard  
 Spec. No.....5095A

## PROPELLERS

Manufacturer.....Hamilton Standard  
 Spec No.....5094A  
 No. Blades/Diameter.....3/8.5 Ft  
 Activity Factor/Design  $C_L$ .....109/0.5

## RATINGS

## ENGINE RATINGS

Rating	Power	TIT
Military	*715 SHP	1818°F
Normal	*650 SHP	1743°F

\*Static Sea Level, 100% RPM

## ELECTRONICS

HF-SSB Communication Set.....AN/ARC 120  
 Communication Set.....AN/ARC-51AX  
 VHF Communication Set.....AN/ARC-54  
 Intercom.....AN/AIC-18  
 Direction Finder.....AN/ARA-50  
 IFF.....AN/APX-64 (V)  
 TACAN.....AN/ARN 52 (V)  
 Speech Security System.....Juliet 28 (a)  
 Compass System.....AN/ASN-75

## MISSION AND DESCRIPTION

The primary missions of the OV-10A are visual armed reconnaissance, target marking, battlefield illumination, escort and protection of helicopters, destruction of enemy helicopters, adjustment of ground fire, tactical air co-ordination (airborne), close-air support, and liaison. Secondary missions are transportation of personnel and cargo.

The OV-10A is a two-place, tandem, twin-engine, turbo-propeller-driven, lightweight, multipurpose, armed reconnaissance aircraft capable of operating from short, unimproved fields and aircraft carriers. Distinctive features are a twin-boom and twin vertical tail arrangement and a fuselage seating the two crew members forward of the propellers. Armament consists of a centerline store station of 1200-pound capacity with a 14- or 30-inch suspension and sponsons mounted on the fuselage. The sponsons house four 7.62mm machine guns with 500 rounds each and four external store stations of 600-pound capacity and 14-inch suspension. Cargo space is provided aft of the pilot's cockpit which can accommodate five fully-equipped paratroopers or up to 3200 pounds of cargo. An all-manual control system links conventional elevators and rudders to provide longitudinal and directional control and a combination of ailerons and spoilers to provide roll control. Aileron and elevator controls are equipped with spring and geared tabs which provide stick forces comparable to power-assisted systems. The high-lift system consists of hydraulic-power-operated, double-slotted trailing edge flaps provided with electric motor back-up actuation.

This aircraft is designed to operate up to a maximum mach number of .70 above 4,000 feet and a maximum speed of 430 knots below 4,000 feet.

## DEVELOPMENT

Navy designation.....OV-10A  
 NAA designation.....NA-305  
 Descriptive designation.....BRONCO  
 Contract approval.....Oct., 1966  
 Mock-up.....Jan., 1965  
 First flight prototype No. 1.....Mar., 1967  
 Preliminary NPE.....Apr., 1967  
 First flight prototype No. 2.....July, 1967  
 Phase II preliminary NPE.....Sept., 1967  
 BIS trials.....Aug., 1968

## DIMENSIONS

Wing Area.....291 sq. ft.  
 Span.....40.4 ft.  
 MAC.....7.3 ft.  
 Length (overall).....41.6 ft.  
 Height (overall).....15.1 ft.  
 Tread.....14.8 ft.  
 Wheel base.....11.6 ft.  
 Propeller ground clearance.....23.5 in.

## WEIGHTS

Loading	Lbs	Load Factor
Empty.....	6921	
Take-off (basic mission) (guaranteed).....	11122	7.1
Combat (basic mission).....	9427	8.0
Design (basic flight).....	9390	8.0
Maximum take-off (overload).....	14444	5.2
Smooth field Maximum landing.....	14444	5.2

NA66H-939 and NR66H-125

## FUEL AND OIL

Location	No. of Tanks	Gal.
Wing tanks outboard (self-sealing) (38 gal each).....	2	76
Wing tank inboard (self-sealing) (69 gal each).....	2	138
Wing tank center (self-sealing) (38 gal).....	1	38
Total internal fuel.....	5	252
External center-line tank.....	1	150

## OIL

Oil capacity (usable).....2.....3.5

## ORDNANCE

Guns - (4) M60C7.62MM  
 Missiles - AIM-9D Sidewinder  
 Rockets - LAU-3A/A, LAU-10A/A, LAU-33A/A, LAU-32A  
 Bombs - MK81 MOD 1, MK82 MOD 1, MK83 MOD 3, MK86, CBU55/B  
 NAPALM - MK77 MOD 2, and MOD 4,  
 "Eye" Series - SNAKEYE (MK81)  
 Miscellaneous - SUU 11A/A, SUU 12/A  
 MK 2 MOD 0 SMOKE TANK (PADEYE),  
 MK 4 MOD 0 GUN POD  
 Multiple Suspension - A/A37B-3 Practice Rack, with (6) MK 76 or (6) MK 106,  
 (6) MK 45, or (6) MK 5  
 Fuel Tanks - AERO 1C  
 SUU 40/A (8) MK 24, (8) MK 45  
 SUU 44/A (8) MK 24, (8) MK 45

## PERFORMANCE SUMMARY

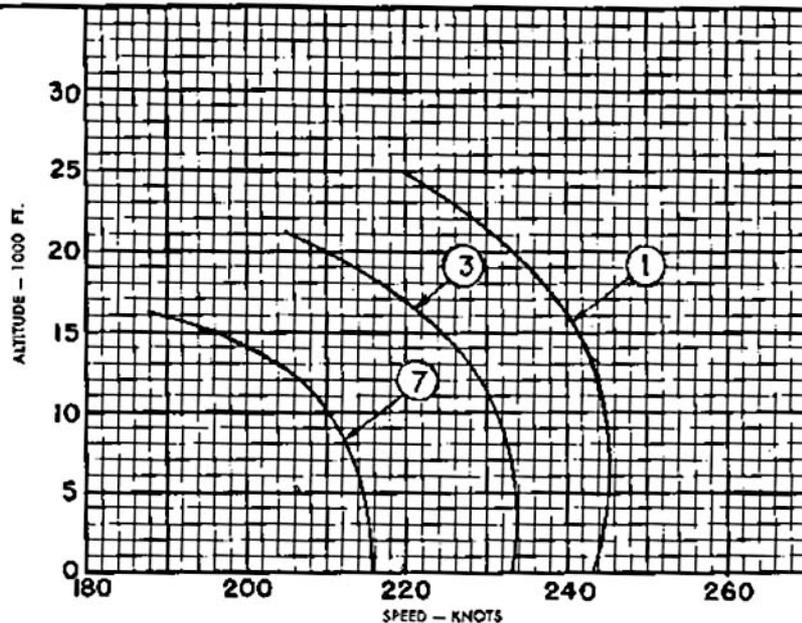
TAKE-OFF LOADING CONDITION		(1) H1-H1-H1 Clean	(3) Design Mission Guns + 4 MK 8" LDGP	(5) Reconnaissance Guns + 2 LAU 69/A	(7) Close Air Support Guns + 5 MK 82 SE (E)	(9) Paratrooper % Paratroops (F)	(11) Ferry
TAKE-OFF WEIGHT	lb.	9,467	11,122	11,068	13,752	9,997	10,232
Fuel internal/external (JP-5)	lb./lb.	1,638/0	1,638/0	1,638/0	1,638/0	1,638/0	1,629/975
Payload	lb.	0	1,040	986	3,469	1,000	0
Wing loading	lb./sq. ft.	37.5	38.3	38	47.3	24.3	35.8
Stall speed—power-off/take-off power 20° Flaps	kn.	75/58	84.4/66.8	84.1/65.5	99.4/78.7	78.1/60.7	79.4/61.8
Take-off run at S.L.— Normal/STOL	ft.	870/620	1,280/1,030	1,265/1,010	2,380/1,800	970/740	1,020/790
Take-off to clear 50 ft.— Normal/STOL	ft.	1,180/760	1,660/1,470	1,640/1,450	3,040/2,500	1,290/1,100	1,350/1,190
Max. effort take-off — calm (B) 20° Flaps	ft.	620	880	870	1,480	690	730
Max. speed/altitude	kn./ft.	245/5,000	234/3,000	229/SL	215/51	244/5,000	244/5,000
Rate of climb at S.L.	fpm.	2,910	2,220	2,190	1,400	2,690	2,570
Time: S.L. to 20,000 ft.	min.	10.7	18.8	20.2	---	13.3	14.5
Time: S.L. to 30,000 ft.	min.	---	---	---	---	---	---
Service ceiling (100 fpm)	ft.	28,700	23,600	23,000	15,500	27,600	26,700
Combat range	n.mi.	780	425 (SL)	409 (SL)	428	438 (SL)	1,311
Average cruising speed	kn.	205	180	180	206	178	199
Cruising altitude(s)	ft.	25,500/28,900	SL	SL	11,000/14,000	SL	23,000/30,000
Combat radius/mission time	n.mi./hr.	385/4.23	50/3.26	0/3.42	152/2.95	224/2.87	---
Average cruising speed	kn.	205	179	112 (Loiter)	209	177	---
Loiter time on target	---	---	2.42	3.09	1.0	---	---
COMBAT LOADING CONDITION		(2) H1-F1-H1 Clean	(4) Design Mission Stores Retained	(6) Reconnaissance Stores Retained	(8) Close Air Support Stores Retained	(10) Paratrooper Paratroops On Board	
COMBAT WEIGHT	lb.	8,812	10,467	10,413	13,098	9,342	
Engine power		Military	Military	Military	Military	Military	
Fuel	lb.	983	983	983	983	983	
Combat speed/combat altitude	kn./ft.	220/26,400	234/SL	230/SL	215/5,000	244/SL	
Rate of climb/combat altitude	fpm/ft.	500/26,400	2,430/SL	2,400/SL	1,210/5,000	2,810/SL	
Combat ceiling (500 fpm)	ft.	26,400	20,650	20,150	12,300	23,800	
Rate of climb at S.L.	fpm.	3,340	---	---	1,610	---	
Max. speed at S.L.	kn.	227	---	---	216	---	
Max. Speed/altitude	kn./ft.	229/5,000	235/3,000	230/SL	217/SL	246/4,000	
LANDING WEIGHT		lb.	8,652	8,652	8,954	7,562	7,190
Fuel	lb.	193	208	208	212	203	246
Stall speed—power-off/approach power, 40° Flaps	kn./kn.	55.8/51	60.4/51.3	60.4/51.3	62/56	54.2/48.6	55.4/49.7
Landing distance—groundroll/over 50 ft. obst.	ft./ft.	350/1,000	410/1,100	410/1,100	440/1,100	320/930	350/930

## NOTES

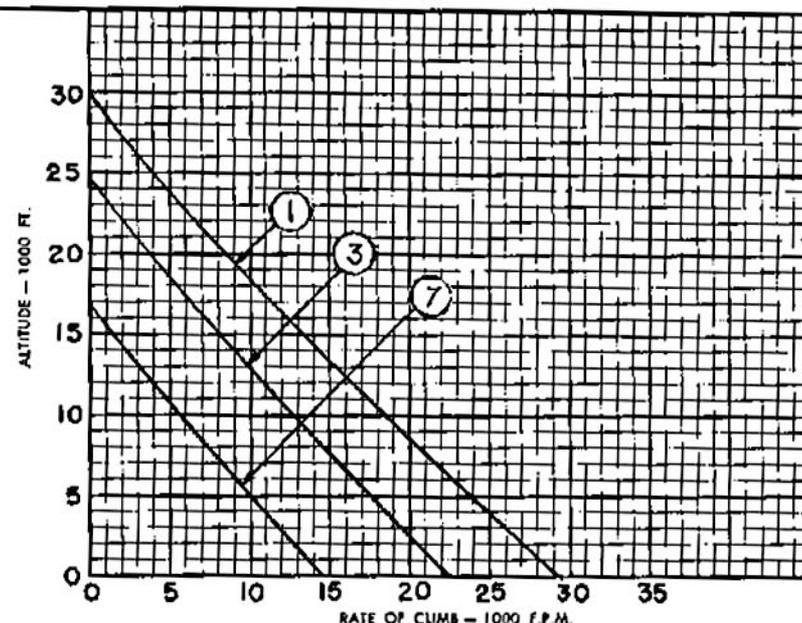
- (A) STOL Take-off - Lift off at  $V_{MC}$  (Single engine minimum control speed)  
Normal Take-off - Lift off at  $V_{MC} + 8$  knots  
(B) Limited by nose wheel lift off, below  $V_{MC}$   
(C) 40° Flaps, touchdown at  $V_{MC}$   
(D) LAU 69/A with cones off

- (E) LAU 33/A on wing pylons, cannot be jettisoned. Landing weight includes empty LAU 33  
(F) Paratrooper configuration - cargo door removed

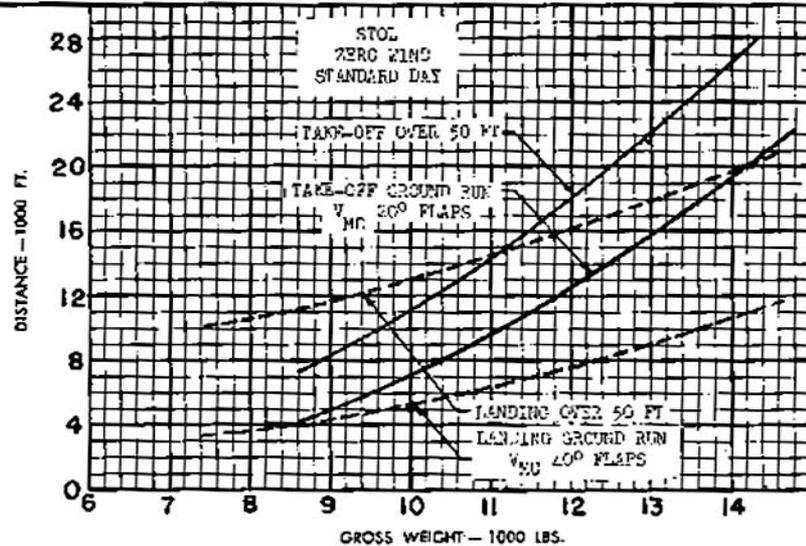
**SPEED**



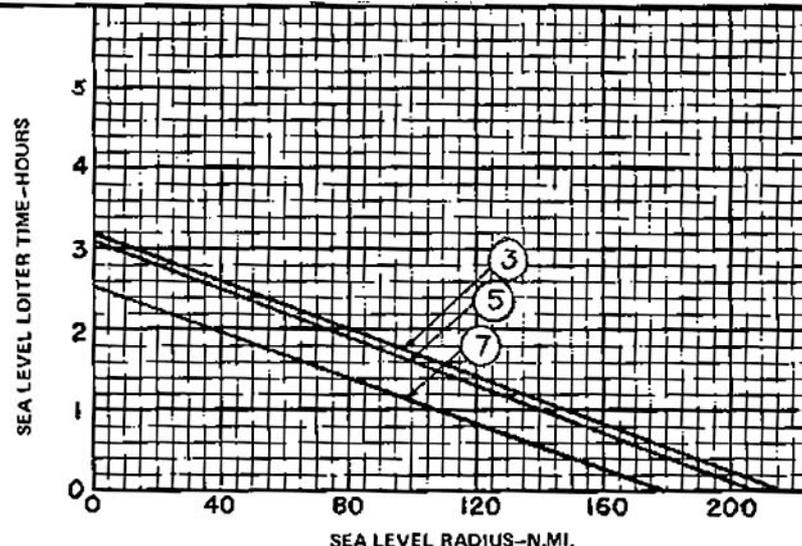
**CLIMB**



**TAKE-OFF**

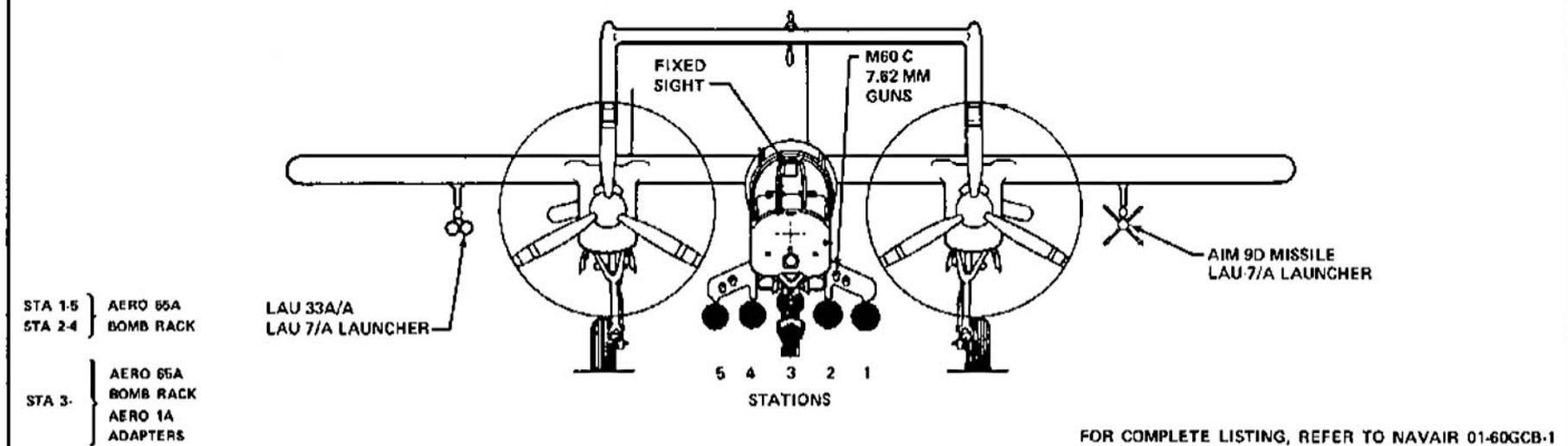


**COMBAT RADIUS AT SEA LEVEL**



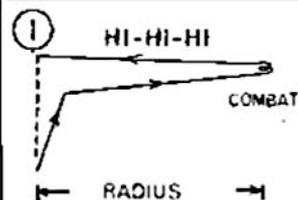
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# EXTERNAL STORES LOADING CHARTS

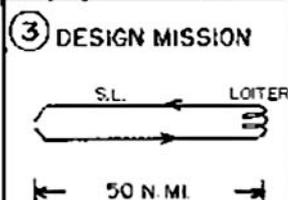


FOR COMPLETE LISTING, REFER TO NAVAIR 01-60GCB-1

EXTERNAL STORE CAPABILITY	WT LBS (EACH)	STA 3 1200 LB CAP	STA 2-4 600 LB CAP	STA 1-5 600 LB CAP	CONFIGURATION	EXTERNAL STORE CAPABILITY	WT LBS (EACH)	STA 3 1200 LB CAP	STA 2-4 600 LB CAP	STA 1-5 600 LB CAP	CONFIGURATION
<b>CONVENTIONAL BOMBS GENERAL PURPOSE (GP)</b>						<b>ROCKET/MISSILE PACKAGE</b>					
MK.81 MODS (LOW DRAG) (OR SNAKEYE)	260.0 305.0	• •	• •	• •		LAU-32 A/A (AERO 6A-2)	160.0	•	•	•	
MK.82 MODS (LOW DRAG) (OR SNAKEYE)	525.0 589.0	• •	• •	• •		LAU-3 A/A (AERO 7D)	431.0	•	•	•	
MK.83 MOD.3 (LOW DRAG)	985.0	•	•	•		LAU-10A (AERO 10 D)	533.0	•	•	•	
MK 86	217.0	•	•	•		LAU 33/A (LAU 7/A LAUNCHER) ON WING	262 - ROCKET LOADED 83 - LAUNCHER 19 - PYLON				
						AIM-9D MISSILE (LAU-7/A LAUNCHER) ON WING		187			
<b>AUXILIARY FUEL TANKS</b>						<b>FLARE DISPENSER/FLARES</b>					
AERO 1C (150 GAL. JP-4)	1110.0	•				A/A37B-3					
						MK 45 MOD 0	27.0	•	•	•	
						MK 6 MOD 3	16.0	•	•	•	
						SUU 40/A (8) MK 24, (8) MK 45	345	•	•	•	
<b>A/A37B-3 PRACTICE RACK WITH</b>						SUU 44/A (8) MK 24 (8) MK 45	350	•	•	•	
6 MK.106 PRACTICE BOMBS	399	•	•	•							
6 MK.76 PRACTICE BOMBS	276	•	•	•		<b>MISCELLANEOUS STORES</b>					
						SUU 11A/A MINIGUN	325	•	•	•	
						SUU-12/A	465	•	•	•	
						CBU 55/B (BOMB CLUSTER) (CANNOT BE CARRIED ADJACENT)	519	•	•	•	
<b>NAPALM BOMBS</b>						MK 4 MOD 0 20MM (MK11) GUN POD	1200	•	•	•	
MK 77 MOD. 2 AND 4	520.0	•	•	•		MK 12 MOD.0 SMOKE TANK	1000	•	•	•	



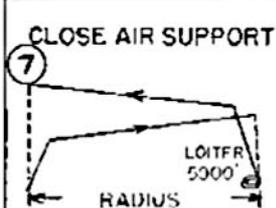
1. Warm-Up and Take-Off: 5 minutes normal rated power at sea level.
2. Climb: On course to cruise ceiling at military rated power.
3. Cruise Out: At cruise ceiling, speed for 99% of maximum range.
4. Combat: 5 minutes at maximum speed with military rated power.
5. Cruise Back: At cruise ceiling, speed for 99% of maximum range.
6. Descent: No distance credit.
7. Reserve on Landing: 5% of initial fuel plus 20 minutes loiter at sea level.



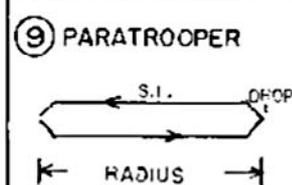
1. Warm-Up and Take-Off: 5 minutes normal rated power at sea level.
2. Cruise Out: 50 n.m.i. at sea level, speed for 99% of maximum range.
3. Loiter: At sea level, speed for minimum fuel flow.
4. Drop stores.
5. Cruise Back: 50 n.m.i. at sea level, speed for 99% of maximum range.



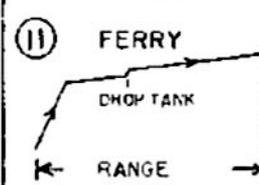
1. Warm-Up and Take-Off: 5 minutes normal rated power at sea level.
2. Cruise at Loiter Speed: Speed for minimum fuel flow at sea level. No distance credit.
3. Reserve on Landing: 5% of initial fuel plus 20 minutes loiter at sea level.



1. Warm-Up and Take-Off: 5 minutes normal rated power at sea level.
2. Climb: On course to cruise ceiling at military rated power.
3. Cruise Out: At cruise ceiling, speed for 99% of maximum range.
4. Descent: At target to 5000 feet. No distance credit.
5. Loiter: One hour at 5000 feet. Speed for minimum fuel flow.
6. Climb Back: On course to cruise ceiling at military rated power.
7. Cruise Back: At cruise ceiling, speed for 99% of maximum range.
8. Descent: No distance credit.
9. Reserve on Landing: 5% of initial fuel plus 20 minutes loiter at sea level.



1. Warm-Up and Take-Off: 5 minutes normal rated power at sea level.
2. Cruise Out: At sea level, speed for 99% of maximum range.
3. Drop Paratroops.
4. Cruise Back: At sea level, speed for 99% of maximum range.
5. Reserve on Landing: 5% of initial fuel plus 20 minutes loiter at sea level.



1. Warm-Up and Take-Off: 5 minutes normal rated power at sea level.
2. Climb: On course to cruise ceiling at military rated power.
3. Cruise Out: At cruise ceiling, speed for 99% of maximum range. Drop tank when empty.
4. Descent: No distance credit.
5. Reserve on Landing: 5% of initial fuel plus 20 minutes loiter at sea level.



LOADING CONDITION COLUMN NUMBER