

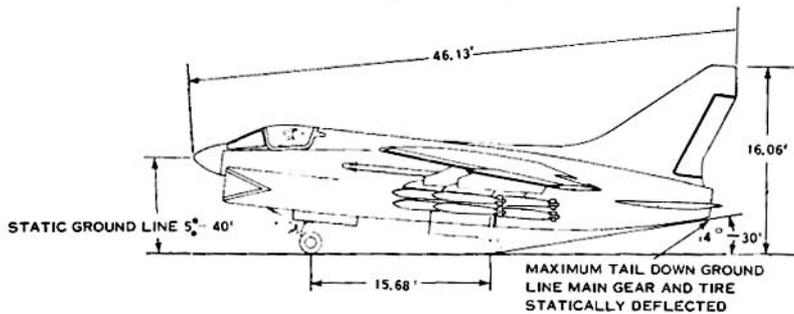
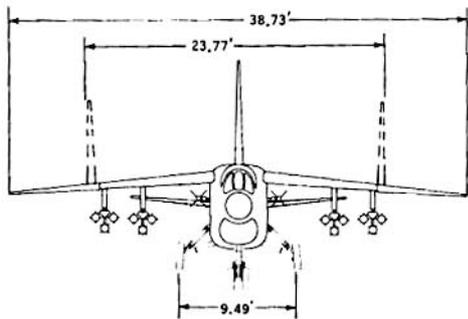
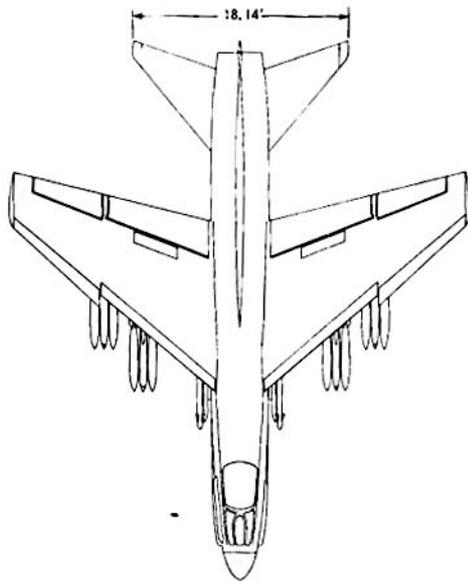
# STANDARD AIRCRAFT CHARACTERISTICS

A-7B

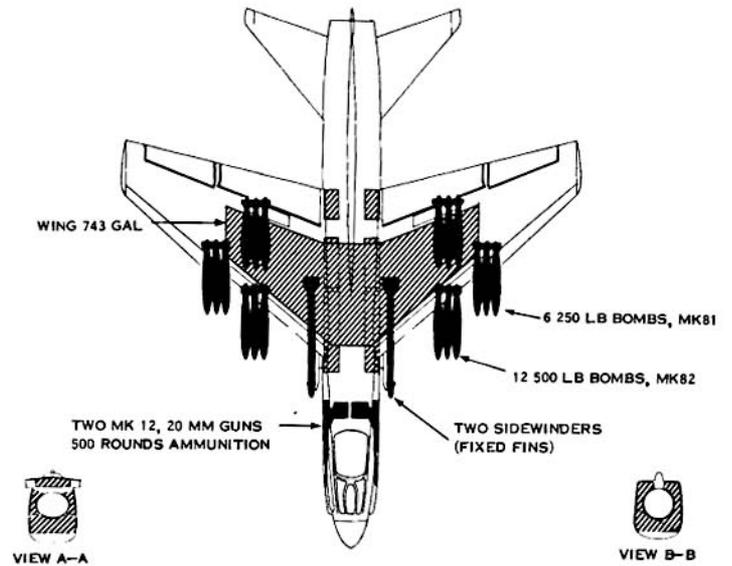
*VOUGHT AERONAUTICS DIVISION  
LTV AEROSPACE CORPORATION  
DALLAS, TEXAS*

**SERVICE**

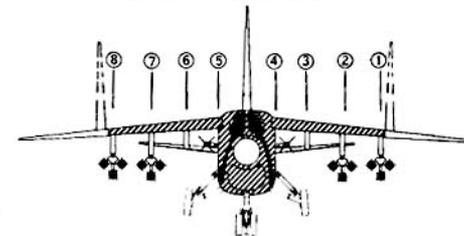
DESCRIPTIVE ARRANGEMENT



ARMAMENT & TANKAGE

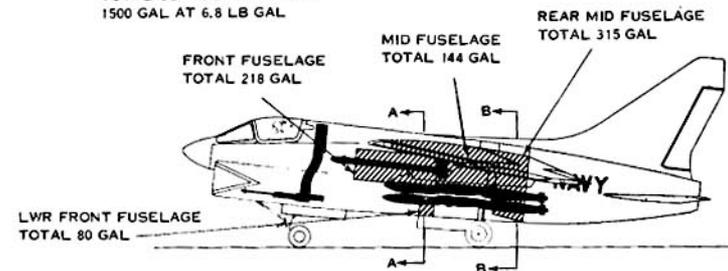


WET PYLONS - 1 & 3, 6 & 8



ARMAMENT

FUEL CELLS  
TOTAL USEABLE CAPACITY  
1500 GAL AT 6.8 LB GAL



**A-7B**

ELECTRONICS		MISSION AND DESCRIPTION	WEIGHTS																																																														
Radar	AN/APQ-116	<p>The A-7B is a single-place, carrier-based, turbo-fan, light attack airplane. The airplane is designed to provide high attack utility and flexibility for close support and interdiction missions by virtue of a large number of external store stations to provide ordnance loading capacity and freedom of ordnance choice, a large internal fuel capacity to make external fuel unnecessary for most missions, while retaining a maximum number of stations for armament, an excellent overload capability in terms of wind-over-deck requirements, flying qualities, and structural integrity. Features to expedite maintenance and airplane turnaround are important A-7B design characteristics.</p> <p>The A-7B has fixed wing incidence and a high-lift system composed of leading edge flaps and single slotted trailing edge flaps. Lateral control is provided by outboard ailerons and inboard spoilers. Superior stability and control qualities over the entire aircraft speed envelope, including transonic, are features of the A-7B.</p> <p>A stick steering autopilot is provided to augment the weapon system capability. An approach power compensator provides automatic speed control for carrier landing.</p>	<u>Loading</u>	<u>Pounds</u>	<u>Limit Load Factor</u>																																																												
Radar Beacon	AN/APN-154		Empty	16,133	7.0																																																												
Shrike Improved Display System	-		Basic	16,477	7.0																																																												
Weapon Release Computer	CP-741/A		Design	27,100	7.0																																																												
Weapon Station Control and Junction Box	215-37225		Combat <sup>Ⓢ</sup>	25,732	7.0																																																												
Weapon Release Programmer	AN/AWE-1		Max T.O.*	38,000	5.0 overload																																																												
Sight Unit	215-21126		Max T.O.	35,600	5.3 normal																																																												
Armament Monitor and Control	T-375		Max Ldg (Carrier)	25,300	7.0																																																												
Fuse Function Control	AN/AWW-2A		○ Loading Condition Column Number																																																														
Transmitter	AN/ARW-77		* 42,000 lb with ECP 16																																																														
Launcher Electrical Package	A/A24B-2A		<p><b>FUEL AND OIL</b></p> <table border="1"> <thead> <tr> <th>Gal.</th> <th>No. Tanks</th> <th>Location</th> <th>Self Sealing</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">Main Cluster:</td> </tr> <tr> <td colspan="4" style="text-align: center;">Fuselage</td> </tr> <tr> <td>218</td> <td>2</td> <td>Left and Right Forward</td> <td>No</td> </tr> <tr> <td>144</td> <td>2</td> <td>Mid</td> <td>No</td> </tr> <tr> <td>80</td> <td>1</td> <td>Main Samp</td> <td>Yes</td> </tr> <tr> <td>315</td> <td>1</td> <td>Fuselage: Aft Bladder Transfer System</td> <td>Partial</td> </tr> <tr> <td colspan="4" style="text-align: center;">Wing: Integral</td> </tr> <tr> <td>743</td> <td>1</td> <td>Transfer System</td> <td>No</td> </tr> <tr> <td>1,500</td> <td colspan="3">Useable Fuel Capacity</td> </tr> <tr> <td colspan="2">Fuel Specification</td> <td colspan="2">MIL-J5624F</td> </tr> <tr> <td colspan="2">Fuel Grade</td> <td colspan="2">JP-5</td> </tr> <tr> <td colspan="4" style="text-align: center;">Oil</td> </tr> <tr> <td colspan="2">Engine Oil Tank (total) (useable)</td> <td colspan="2">5 Gal. / 4 Gal.</td> </tr> <tr> <td colspan="2">Oil Specification</td> <td colspan="2">MIL-J-7808</td> </tr> </tbody> </table>			Gal.	No. Tanks	Location	Self Sealing	Main Cluster:				Fuselage				218	2	Left and Right Forward	No	144	2	Mid	No	80	1	Main Samp	Yes	315	1	Fuselage: Aft Bladder Transfer System	Partial	Wing: Integral				743	1	Transfer System	No	1,500	Useable Fuel Capacity			Fuel Specification		MIL-J5624F		Fuel Grade		JP-5		Oil				Engine Oil Tank (total) (useable)		5 Gal. / 4 Gal.		Oil Specification		MIL-J-7808	
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ECM Pods	AN/ALQ-81, AN/ALC-88																																																																
Countermeasures Set	AN/ALO-100/51A																																																																
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UHF Communications	AN/ARC-51A																																																																
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Cmd Mach/Airspeed Indicator	215-21124-2																																																																
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AIMS	-																																																																
MK-12 Computer	KIT-1A/T SEC																																																																
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All Attitude Indicator	ID-1329																																																																
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Switch/Demodulator	215-27143																																																																
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## SERVICE

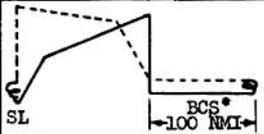
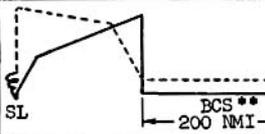
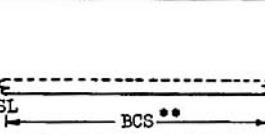
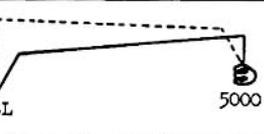
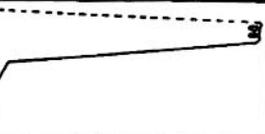
## PERFORMANCE SUMMARY

TAKEOFF LOADING CONDITION		① HI-HI-HI MISSION CLEAN AIRPLANE	② PRIMARY ATTACK MISSION 6 MK 81 SNAKEYES	③ PRIMARY ATTACK MISSION 12 MK 81 SNAKEYES	④ 5000 FT LOITER MISSION 12 MK 82 & 6 MK 81 BOMB	⑤ DEEP STRIKE MISSION 1 MK 28 & 3-300-GAL TANKS	⑥ FERRY MISSION 2-300-GAL TANKS
TAKEOFF WEIGHT	LB	27,245	29,812	31,857	36,512	37,027	32,229
FUEL — INTERNAL/EXTERNAL	LB/LB	10,200/0	10,200/0	10,200/0	10,200/0	10,200/6,120	10,200/4,080
PAYLOAD <sup>1</sup>	LB	0	1,800	3,600	7,500	2,000	0
WING LOADING	LB/SQ FT	72.65	79.50	84.95	97.37	98.74	85.94
STALL SPEED — POWER-OFF	KNOTS	121.8	127.6	132.4	141.5	141.8	133.5
TAKEOFF GRD. RUN/OVER 50 FT OBS — CALM, 59° F <sup>2</sup> , SL	FT/FT	2,780/3,530	3,520/4,330	4,150/5,040	5,810/6,730	5,880/6,800	4,320/5,200
TAKEOFF GRD RUN/OVER 50 FT OBS — CALM 89.6° F <sup>2</sup> , SL	FT/FT	3,500/4,260	4,430/5,250	5,310/6,210	7,520/8,630	7,600/8,700	5,520/6,440
MFT MAX SPEED/ALTITUDE	KNOTS/FT	592/S. L.	542/10,500	533/14,000	472/8,500	533/9,000	556/6,000
MFT RATE OF CLIMB AT SL	FPM	6,290	5,530	4,940	3,780	4,040	5,070
MFT TIME: SL TO 20,000 FT <sup>3</sup>	MIN	3.9	5.3	6.7	10.5	7.7	5.4
MFT TIME: SL TO 30,000 FT <sup>3</sup>	MIN	6.6	11.5	-----	-----	-----	11.3
MFT SERVICE CEILING (100 FPM)	FT	42,400	36,500	32,800	26,600	31,700	36,800
COMBAT RANGE	NMI	2,533	1,707	1,436	2,011	2,794	2,770
AVERAGE CRUISING SPEED	KNOTS	476	439	419	388	454	462
CRUISING ALTITUDE (S)	FT	40,757/47,239	33,239/39,942	29,615/36,508	22,405/29,146	27,041/41,339	33,371/43,179
COMBAT RADIUS/MISSION TIME <sup>4</sup>	NMI/HR	1,206/5.13	694/3.47	613/3.16	389/2.89	1,210/5.31	-----
AVERAGE CRUISING SPEED	KNOTS	478	399	388	408	457	-----
IFR REFUEL RADIUS <sup>5</sup> /MISSION TIME <sup>4</sup>	NMI/HR	1,852/7.86	1,265/5.85	1,163/6.05	776/4.83	-----	-----
FUEL TRANSFERRED/DISTANCE FROM BASE	LB/NMI	5,463/1,025 <sup>7</sup>	5,386/841 <sup>8</sup>	5,710/773 <sup>9</sup>	5,181/503 <sup>10</sup>	-----	-----
ACCELERATION AT CES AT 89.6° F <sup>2</sup>	FT/SEC/SEC	4.93	3.86	3.20	1.88	1.80	2.87
COMBAT LOADING CONDITION		① HI-HI-HI MISSION CLEAN AIRPLANE	④ BOMBS RETAINED	⑤ BOMBS RETAINED	⑥ BOMBS RETAINED	⑦ BOMBS RETAINED	⑧ FERRY MISSION 2-300-GAL TANKS
COMBAT WEIGHT	LB	23,165	25,732	27,777	32,432	30,499	26,517
ENGINE POWER		MILITARY	MILITARY	MILITARY	MILITARY	MILITARY	MILITARY
FUEL	LB	6,120	6,120	6,120	6,120	9,792	8,586
COMBAT SPEED/COMBAT ALTITUDE	KN/FT	556/27,329	531/SL	515/SL	473/5,000	528/SL	-----
RATE OF CLIMB/COMBAT ALTITUDE	FPM/FT	4,050/27,329	6,520/SL	5,890/SL	3,680/5,000	5,370/SL	-----
COMBAT CEILING (500 FPM)	FT	43,900	37,200	33,300	26,800	33,500	38,600
RATE OF CLIMB AT SL	FPM	7,290	6,520	5,890	4,630	5,370	6,370
MAX. SPEED AT SL	KNOTS	593	531	515	469	528	553
MAX. SPEED/ALTITUDE	KN/FT	593/SL	543/11,500	535/13,300	474/9,000	535/10,000	556/5,500
LANDING WEIGHT <sup>11</sup>	LB	18,038	18,836	19,099	19,888	19,420	19,192 <sup>12</sup>
FUEL	LB	993	1,024	1,042	1,076	1,337	1,243
STALL SPEED - POWER-OFF/ APPR POWER	KNOTS/KNOTS	98.9/96.4	101.2/98.6	102.0/99.5	104.0/101.5	102.9/100.3	102.7/100.1
DIST GRD ROLL/OVER 50 FT OBS	FT/FT	3,080/4,040	3,200/4,160	3,250/4,210	3,350/4,310	3,280/4,240	3,300/4,260

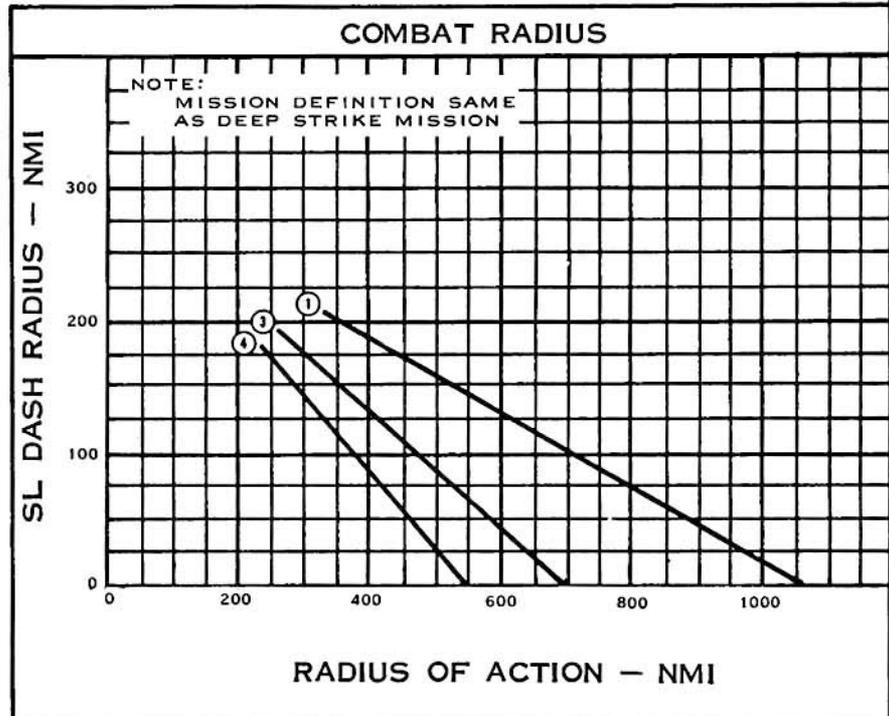
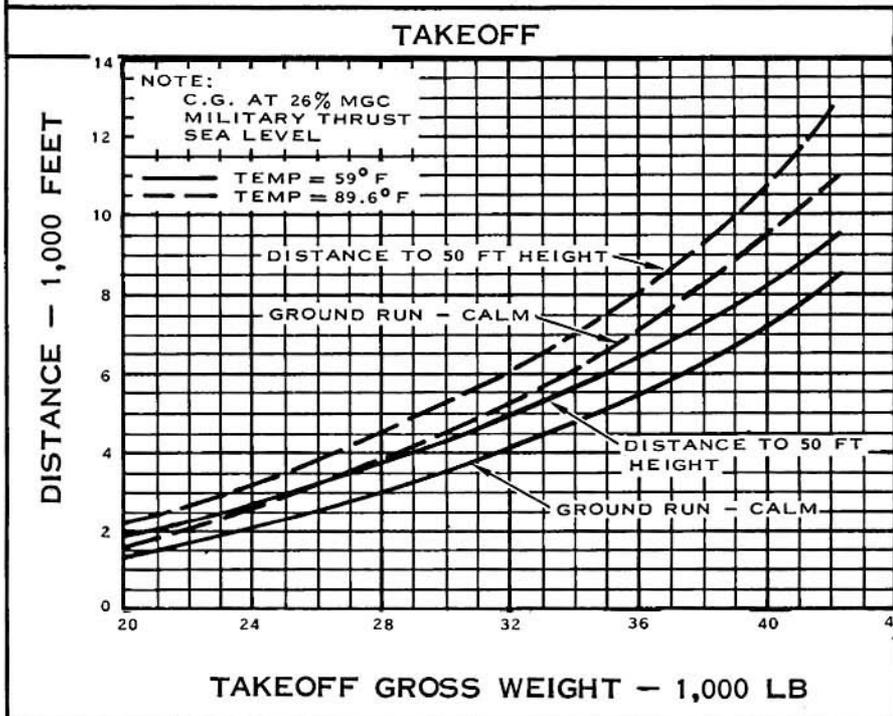
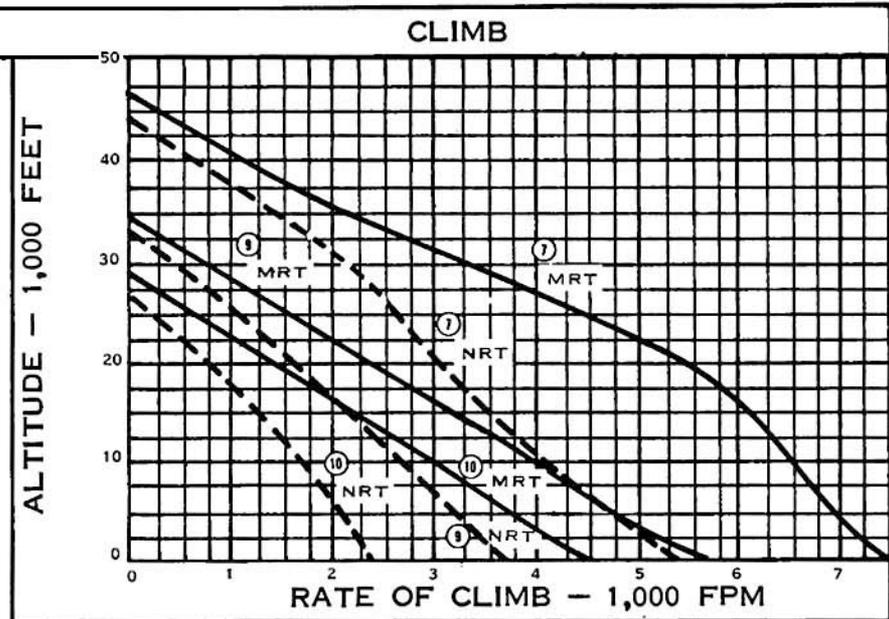
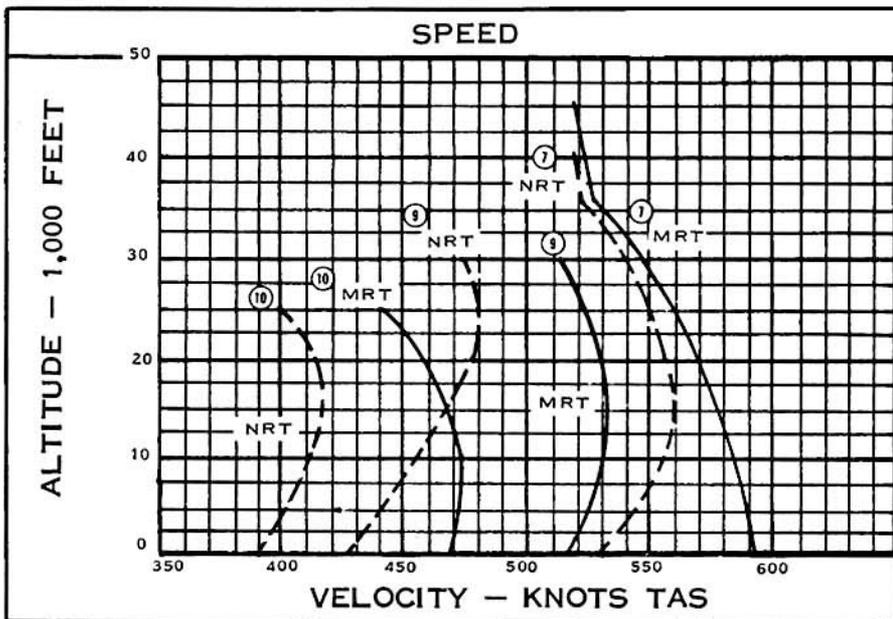
## NOTES:

- PAYLOAD IS DROPPABLE ORDINANCE. DOES NOT INCLUDE 500 ROUNDS OF AMMUNITION OR EXTERNAL FUEL TANKS.
- MILITARY THRUST.
- CLIMB TIMES CONSIDER WEIGHT REDUCTION DUE TO FUEL USED.
- MISSION TIME EXCLUDES TIME FOR WARMUP AND TAKEOFF AND 20-MINUTE LOITER AT SEA LEVEL.
- CYCLE TIME IS MISSION TIME PLUS 20-MINUTE LOITER AT SEA LEVEL.
- REFUEL RADIUS IS DETERMINED WITH REFUELING TO FULL INTERNAL FUEL CAPACITY OF 10,200 POUNDS. REFUELING ALTITUDE IS CRUISE CEILING WITH FULL INTERNAL FUEL.
- REFUEL ALTITUDE IS 39,700 FT.
- REFUEL ALTITUDE IS 32,600 FT.
- REFUEL ALTITUDE IS 28,700 FT.
- REFUEL ALTITUDE IS 21,300 FT.
- 163 LB AMMUNITION RETAINED
- 163 LB AMMUNITION AND EXTERNAL FUEL TANKS RETAINED

## SUPPLEMENTAL MISSION SUMMARY

MISSION LOADINGS FUEL - GAL TAKEOFF WT - LB	HI-LO-LO-HI MISSION				LO-LO-LO MISSION		5000 FT LOITER MISSION		HI-HI-HI MISSION	
	100 NMI IN & OUT		200 NMI IN & OUT		RADIUS NMI	TIME * HOURS	RADIUS NMI	TIME * HOURS	RADIUS NMI	TIME * HOURS
	RADIUS NMI	TIME * HOURS	RADIUS NMI	TIME * HOURS						
										
1 MK 28 1500 GAL INT 29,489 a = 3.98 FT/SEC <sup>2</sup> ***	846	3.98	723	3.80	503	4.15	821	4.46	1088	4.68
1 MK 28 1500 GAL INT 900 GAL EXT 37,027 a = 1.80 FT/SEC <sup>2</sup> ***	1242	5.78	1147	5.66	760	5.91	1188	6.19	1435	6.35
6 MK 81 SNAKEYES 1500 GAL INT 29,812 a = 3.86 FT/SEC <sup>2</sup> ***	694	3.50	592	3.38	456	3.92	652	3.86	897	4.07
6 MK 81 SNAKEYES 1500 GAL INT 1200 GAL EXT 39,842 a = 1.12 FT/SEC <sup>2</sup> ***	1064	5.53	982	5.45	726	5.62	997	5.85	1226	6.02
6MK 82 SNAKEYES 1500 GAL INT 31,438 a = 3.31 FT/SEC <sup>2</sup> ***	654	3.35	558	3.25	443	3.78	597	3.67	846	3.88
6 MK 82 SNAKEYES 1500 GAL INT 1200 GAL EXT 41,468 a = .832 FT/SEC <sup>2</sup> ***	995	5.27	919	5.2	703	5.68	916	5.54	1149	5.72
20 MK 82 SNAKEYES 1500 GAL INT 40,920 a = .96 FT/SEC <sup>2</sup> ***	369	2.30	329	2.35	324	2.65	245	2.30	459	2.54
12 MK 82 GP 6 MK 81 GP 2 MK 84 GP 1500 GAL INT 41,000 a = .85 FT/SEC <sup>2</sup> ***	405	2.42	356	2.44	342	3.00	285	2.45	509	2.70

\* MISSION TIME: EXCLUDES TIME FOR WARMUP AND TAKEOFF AND 20-MINUTE LOITER TIME  
 \*\* BCS: BEST CRUISE SPEED  
 \*\*\* ACCELERATION AT CATAPULT END SPEED AT 89.6° F, MILITARY THRUST

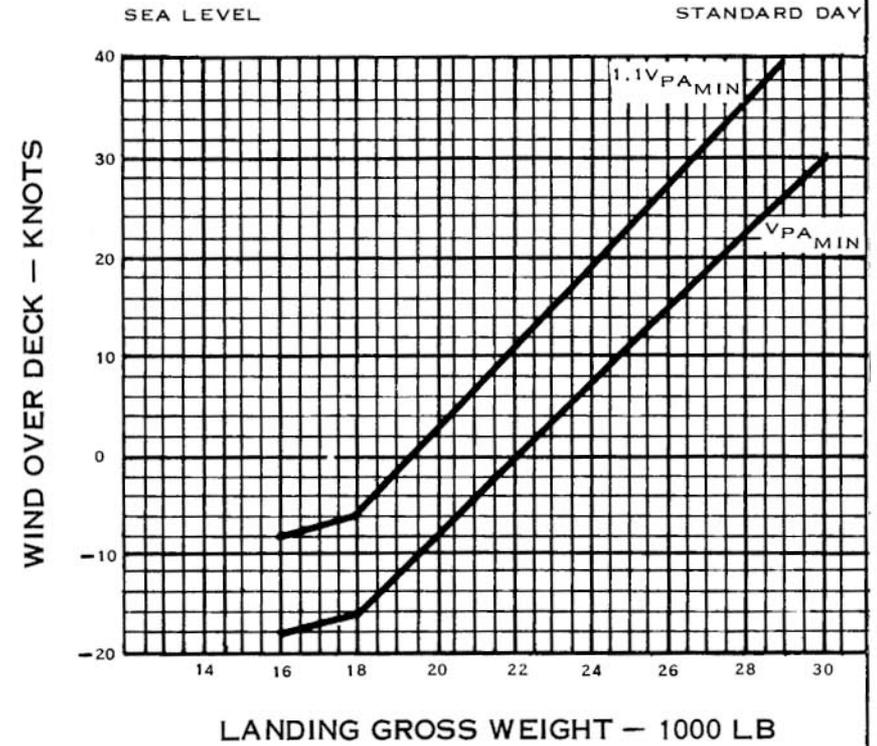
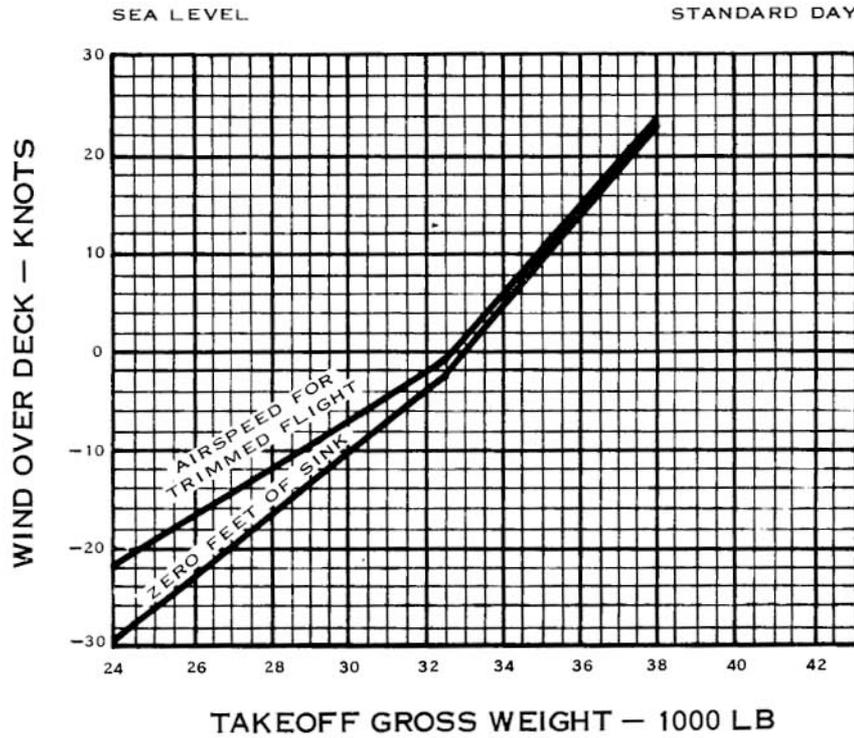


○ — LOADING CONDITION COLUMN NUMBER

CARRIER SUITABILITY

MINIMUM WIND OVER DECK REQUIRED FOR CATAPULTING<sup>1</sup>

MINIMUM WIND OVER DECK REQUIRED FOR LANDING<sup>2</sup>



- NOTES:
1. C-11-1 BUWEP SKETCH RSSH-1338K OF 10 NOVEMBER 1961
  2. MK - 7, MOD 1 - 3 BUWEP SKETCH R S S H - 1259F OF 5 JUNE 1962

**SERVICE**

**PRIMARY ATTACK MISSION**

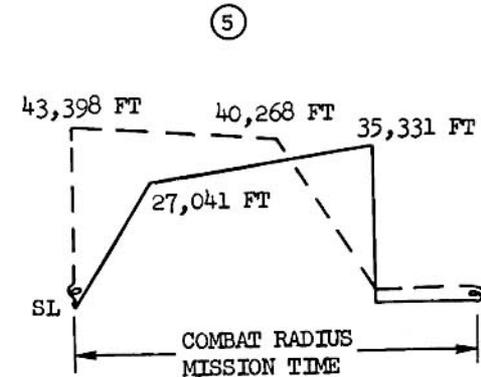
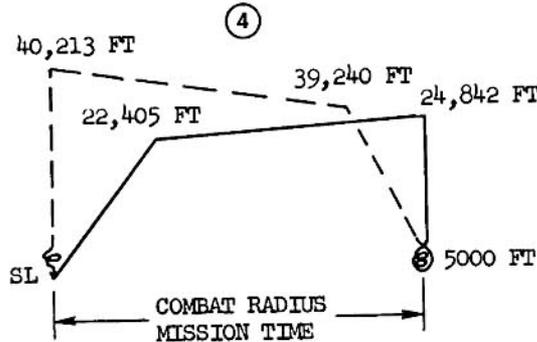
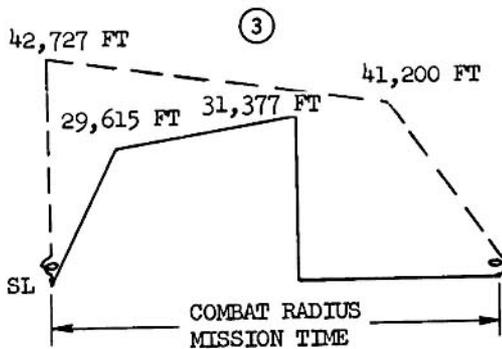
WARMUP, TAXI, TAKEOFF: 5 MIN  
 SL NRT  
 CLIMB: ON COURSE TO OPT CRUISE ALT WITH MIL THRUST  
 CRUISE OUT: AT SPEED FOR MAX RANGE AT OPT CRUISE ALT  
 DESCEND: TO SL (NO FUEL USED, NO DISTANCE GAINED)  
 RUN IN: 200 NMI AT SL AT SPEED FOR MAX RANGE  
 COMBAT: 5 MIN AT MRT (STORES ON, NO DIST GAINED) DROP BOMBS  
 CLIMB: ON COURSE TO OPT CRUISE ALT WITH MIL THRUST  
 CRUISE BACK: AT MAX RANGE SPEED AT OPT ALT  
 RESERVE: 5% OF INITIAL FUEL + 20 MIN AT MAX ENDURANCE SPEED AT SL

**5000 FT LOITER MISSION**

WARMUP, TAXI, TAKEOFF: 5 MIN SL NRT  
 CLIMB: ON COURSE TO OPT CRUISE ALT WITH MIL THRUST  
 CRUISE OUT: AT MAX RANGE SPEED AT OPT CRUISE ALT (DROP FUEL TANKS WHEN EMPTY)  
 DESCEND: TO 5000 FT (NO FUEL USED, NO DIST GAINED)  
 LOITER: 1 HOUR AT MAX END. SPEED (NO DIST GAINED) STORES DROPPED AT END OF LOITER  
 CLIMB: ON COURSE TO OPT CRUISE ALT WITH MIL THRUST  
 CRUISE BACK: AT MAX RANGE SPEED AT OPT ALT  
 RESERVE: 5% INITIAL FUEL + 20 MIN AT MAX ENDURANCE SPEED AT SL

**DEEP STRIKE MISSION**

WARMUP, TAXI, TAKEOFF: 5 MIN  
 SL NRT  
 CLIMB: ON COURSE TO OPT CRUISE ALT WITH MIL THRUST  
 CRUISE OUT: AT MAX RANGE SPEED AT OPT CRUISE ALT (DROP FUEL TANKS WHEN EMPTY)  
 DESCEND: TO SL WHEN 50 NMI FROM TARGET (NO FUEL USED, NO DIST GAINED)  
 RUN IN: 50 NMI AT V<sub>MAX</sub> AT MRT  
 COMBAT: 5 MIN AT MRT (STORES ON, NO DIST GAINED) DROP BOMBS  
 RUN OUT: 50 NMI AT V<sub>MAX</sub> AT MRT AT SL  
 CLIMB: ON COURSE TO OPT CRUISE ALT WITH MIL THRUST  
 CRUISE BACK: AT MAX RANGE SPEED AT OPT ALT  
 RESERVE: 5% INITIAL FUEL + 20 MIN AT MAX ENDURANCE SPEED AT SL

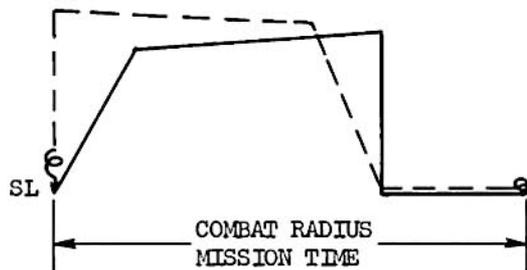


NOTE:  
 MISSION TIME: EXCLUDES TIME FOR WARMUP AND TAKEOFF AND 20-MINUTE LOITER TIME  
 CYCLE TIME: MISSION TIME PLUS 20 MINUTES SL LOITER

○ LOADING CONDITION COLUMN NUMBER

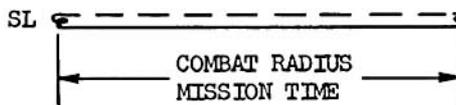
HI-LO-LO-HI  
MISSION

WARMUP, TAXI, TAKEOFF: 5 MIN  
SL NRT  
CLIMB: ON COURSE TO OPT CRUISE  
ALT WITH MIL THRUST  
CRUISE OUT: AT MAX RANGE SPEED  
AT OPT CRUISE ALT (DROP FUEL  
TANKS WHEN EMPTY)  
DESCEND: TO SL WHEN 100/200  
NMI FROM TARGET (NO FUEL USED,  
NO DIST GAINED)  
CRUISE: AT MAX RANGE SPEED AT SL  
(DROP FUEL TANKS WHEN EMPTY)  
COMBAT: 5 MIN AT MRT (STORES ON, NO  
DISTANCE GAINED)  
DROP STORES  
CRUISE: AT MAX RANGE SPEED AT SL  
TO A POINT 100/200 NMI FROM  
TARGET  
CLIMB: ON COURSE TO OPT CRUISE  
ALT WITH MIL THRUST  
CRUISE BACK: AT MAX RANGE SPEED AT  
OPT ALT  
RESERVE: 5% INITIAL FUEL + 20 MIN  
AT MAX ENDURANCE SPEED AT SL



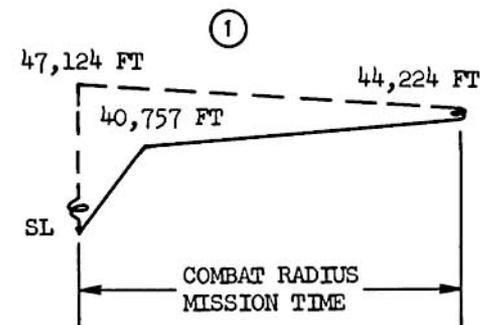
LO-LO-LO  
MISSION

WARMUP, TAXI, TAKEOFF: 5 MIN  
SL NRT  
CRUISE: AT MAX RANGE SPEED AT SL  
(DROP FUEL TANKS WHEN EMPTY)  
COMBAT: 5 MIN AT MRT (STORES ON, NO  
DISTANCE GAINED)  
DROP STORES  
CRUISE: AT MAX RANGE SPEED AT  
SEA LEVEL  
RESERVE: 5% INITIAL FUEL + 20 MIN  
AT MAX ENDURANCE SPEED AT SL



HI-HI-HI  
MISSION

WARMUP, TAXI, TAKEOFF: 5 MIN  
SL NRT  
CLIMB: ON COURSE TO OPT CRUISE ALT  
WITH MIL THRUST  
CRUISE OUT: AT MAX RANGE SPEED AT  
OPT CRUISE ALT (DROP FUEL TANKS  
WHEN EMPTY)  
COMBAT: 5 MIN AT MRT (STORES ON, NO  
DIST GAINED)  
DROP STORES  
CRUISE BACK: AT MAX RANGE SPEED AT  
OPT ALT  
RESERVE: 5% INITIAL FUEL + 20 MIN  
AT MAX ENDURANCE SPEED AT SL



NOTE  
MISSION TIME: EXCLUDES TIME FOR WARMUP AND TAKEOFF AND 20-MINUTE LOITER TIME  
CYCLE TIME: MISSION TIME PLUS 20 MINUTES SL LOITER

○ LOADING CONDITION COLUMN NUMBER