

AI
A-7D/char

UNCLASSIFIED

SERVICE



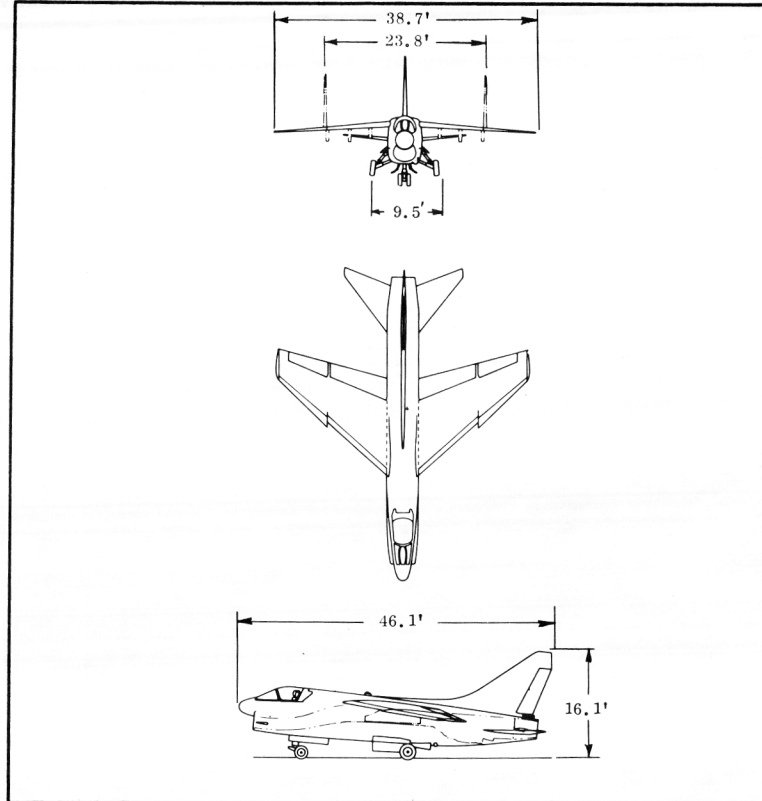
Standard Aircraft Characteristics

BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

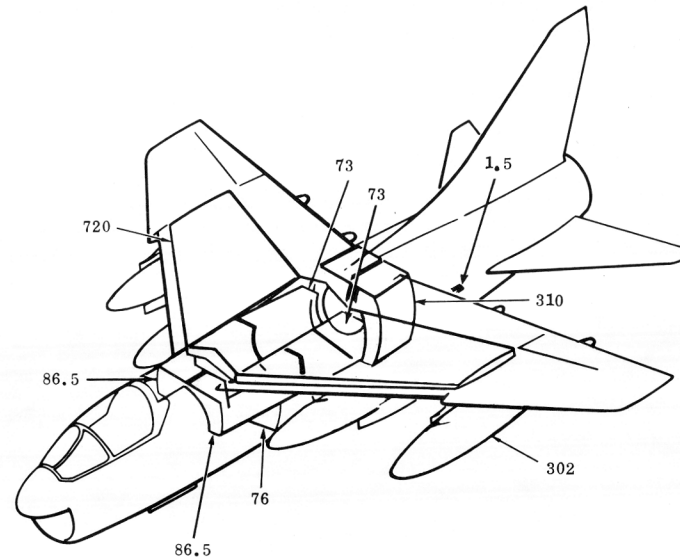
A-7 D
CORSAIR II
LTV INC

ONE TF41-A-1

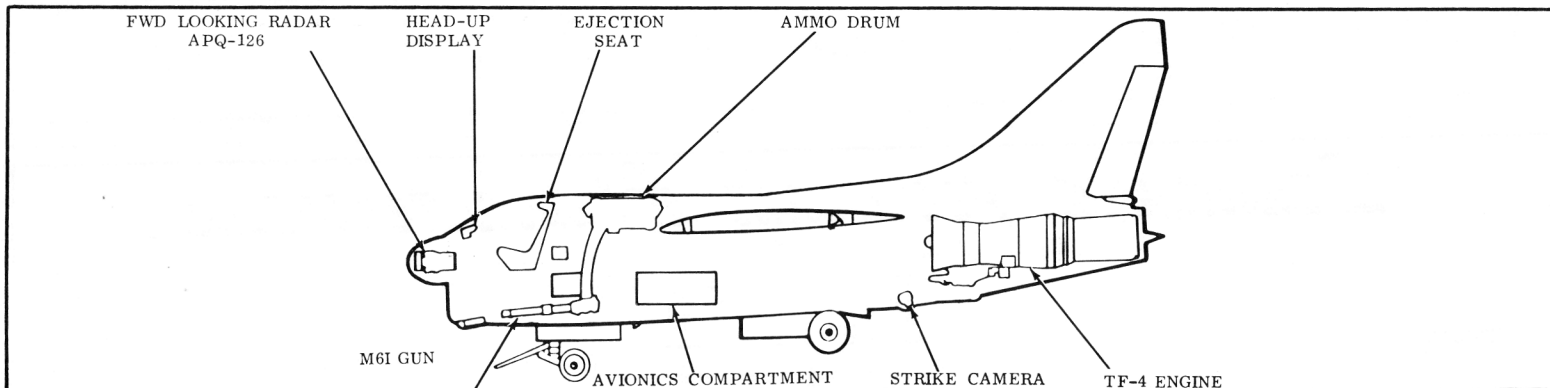
ALLISON



Wing Area	375 sq ft	Wing Section	—
Aspect Ratio	4.0	M.A.C.	130.08 in



 Fuel (Gal)  Oil (Gal)



<p>POWER PLANT</p> <p>Nr & Model (1) TF41-A-1 Mfr Allison Engine Spec Nr 747C Type Axial Flow, Turbofan Length 114.2" Diameter 39.5" Tailpipe Fixed Area</p>	<p><i>Mission and Description</i></p> <p>Navy Equivalent: A-7E Mfr's Model: None</p> <p>The principal mission of the A-7D Aircraft is the destruction of ground targets in support of ground forces. The A-7D is a single place transonic aircraft and has an all-weather combat capability.</p> <p>The A-7D has fixed wing incidence and a high-lift system composed of leading edge flaps and single slotted trailing edge flaps.</p> <p>Primary flight control is provided by outer panel ailerons, spoiler deflectors on the center section, unit horizontal tail and a rudder. A dual channel, three-axis, stick-steering autopilot is provided.</p> <p>The fuel system incorporates both inflight and single-point ground refueling capabilities. A Head-Up Display (HUD) system is provided to put all steering and attack displays between the pilot's eyes and the windshield.</p> <p>A Navigation/Weapon Delivery system integrates many of the aircraft's avionic subsystems to provide for navigation to the target, computed run on target, computed weapon release, and return navigation.</p> <p>There are two fuselage and six wing pylon store stations.</p> <p>A KB-18A strike camera system is located in the forward section of the engine compartment.</p> <p style="text-align: center;"><i>Development</i></p> <p>Developed from Navy A-7A First Flight Mar 68 First Production Delivery Dec 68 First Delivery to TAC Aug 69</p>	<p>WEIGHTS</p> <table border="1"> <thead> <tr> <th>Loading</th> <th>Lb</th> <th>L, F.</th> </tr> </thead> <tbody> <tr> <td>Empty</td> <td>19,733 (E)</td> <td></td> </tr> <tr> <td>Basic</td> <td>21,672 (E)</td> <td></td> </tr> <tr> <td>Design</td> <td>28,851</td> <td>7.0</td> </tr> <tr> <td>Combat</td> <td>*28,200</td> <td>7.0</td> </tr> <tr> <td>Max T.O.</td> <td>39,325</td> <td>4.9</td> </tr> </tbody> </table> <p>(E) Estimated * For Basic Mission</p>	Loading	Lb	L, F.	Empty	19,733 (E)		Basic	21,672 (E)		Design	28,851	7.0	Combat	*28,200	7.0	Max T.O.	39,325	4.9																																			
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<p>DIMENSIONS</p> <p>Wing Span (max) 38.7' folded 23.8' Aspect Ratio 4 Sweep 1/4 chord 35° Length 46.1' Height 16.1' Tread 9.5'</p>	<p>B O M B S</p> <p>See Table (Page 7)</p> <p>M I S S I L E S</p> <p>See Table (Page 7)</p>	<p>G U N S</p> <table border="1"> <thead> <tr> <th>Nr</th> <th>Type</th> <th>Size</th> <th>Rds ea</th> <th>Loc</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>M61A1</td> <td>20 mm</td> <td>1000</td> <td>Fus.</td> </tr> </tbody> </table> <p>(See Table, Page 7)</p> <p>R O C K E T S</p> <p>See Table (Page 7)</p> <p>D I S P E N S E R S</p> <p>See Table (Page 7)</p>	Nr	Type	Size	Rds ea	Loc	1	M61A1	20 mm	1000	Fus.																																											
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<p>ELECTRONICS</p> <p>UHF Command AN/ARC-51BX or AN/ARC-164(V) VHF Command FM-622A ILS AN/ARN-58A Interphone AN/AIC-26(V) IFF AN/APX-72 Doppler Radar AN/APN-190(V) Computer AN/ASN-91(V) Radar Beacon AN/APN-154(V) TACAN AN/ARN-118(V) ADF(UHF) AN/ARA-50 Radar Altimeter AN/APN-194(V) Automatic Flt Control AN/ASW-30(V) FWD Looking Radar AN/APQ-126(V) HUD AN/AVQ-7(V) HSI AQU-6/A</p> <p>(Continued on Page 6)</p>																																																							

Loading and Performance — Typical Mission

C O N D I T I O N S		BASIC MISSION I	INTERDICTION MISSION II	CLOSE AIR SUPPORT III	CLOSE AIR SUPPORT IV	FERRY MISSION V
TAKE-OFF WEIGHT	② (lb)	39,325 ④	34,976 ⑤	34,976 ⑤	38,146 ⑥	39,695 ⑦
Fuel at 6.5 lb/ gal (grade JP-4)	(lb)	13,163	9263	9263	9263	17,111
Payload	(lb)	4240	4240	4240	4240	0
Wing loading	(lb/sq ft)	105	93	93	100	105
Stall speed (power off)	(kn)	145	135	135	143	146
Take-off ground run at SL	② (ft)	5000	3800	3800	4650	5100
Take-off ground run (Tropical Day)	② (ft)	6600	5700	5100	6200	6800
Take-off to clear 50 ft	② (ft)	7100	5300	5300	6500	7100
Take-off to clear 50 ft (Tropical Day)	② (ft)	9600	7300	7300	8900	9800
Rate of climb at SL	① (fpm)	5400	6600	6600	5400	6800
Rate of climb at SL (one engine out)	(fpm)	--	--	--	--	--
Time: SL to 20,000 ft	① (min)	5.5	5.0	5.0	7.5	4.8
Time: SL to 30,000 ft	① (min)	11.2	10.0	10.0	17.4	11.5
Service ceiling (100 fpm)	① (ft)	32,500	33,500	33,500	24,900	31,300
Service ceiling (one engine out)	(ft)	--	--	--	--	--
COMBAT RANGE	(n. mi.)					2645
COMBAT RADIUS	③ (n. mi.)	600	260	200	200	--
Average cruise speed	(kn)	465	474	476	388	470
Initial cruising altitude	(ft)	27,000	31,500	31,500	25,100	30,500
Target speed	② (kn)	530	608	560	441	--
Target altitude	(ft)	S. L.	S. L.	5000	5000	--
Final cruising altitude	(ft)	41,000	42,000	42,000	37,600	42,500
Total mission time	⑨ (hr)	2.9 ⑧	1.79	1.93	1.61	5.65
COMBAT WEIGHT	⑧ (lb)	28,200	31,000 ③	29,800 ③	33,407 ③	--
Combat altitude	(ft)	S. L.	S. L.	5000	5000	--
Combat speed	① (kn)	530	608	560	465	--
Combat climb	① (fpm)	8000	7500	6700	5200	--
Combat ceiling (500 fpm)	① (ft)	35,000	33,800	34,200	25,600	--
Service ceiling (100 fpm)	① (ft)	37,000	35,500	36,000	27,800	--
Service ceiling (one engine out)	(ft)	--	--	--	--	--
Max rate of climb at SL	① (fpm)	8000	7500	7900	6400	--
Max speed at altitude	① (kn)	576/7000	546/9000	546/9000	470/5000	--
Basic speed at 35,000 ft	(kn)	506	476	476	412	--
LANDING WEIGHT	(lb)	22,922	22,727	22,727	24,775	--
Ground roll at SL	⑩ (ft)	3350	3200	3200	3200	--
Total from 50 ft	⑩ (ft)	4800	4650	4650	4655	--

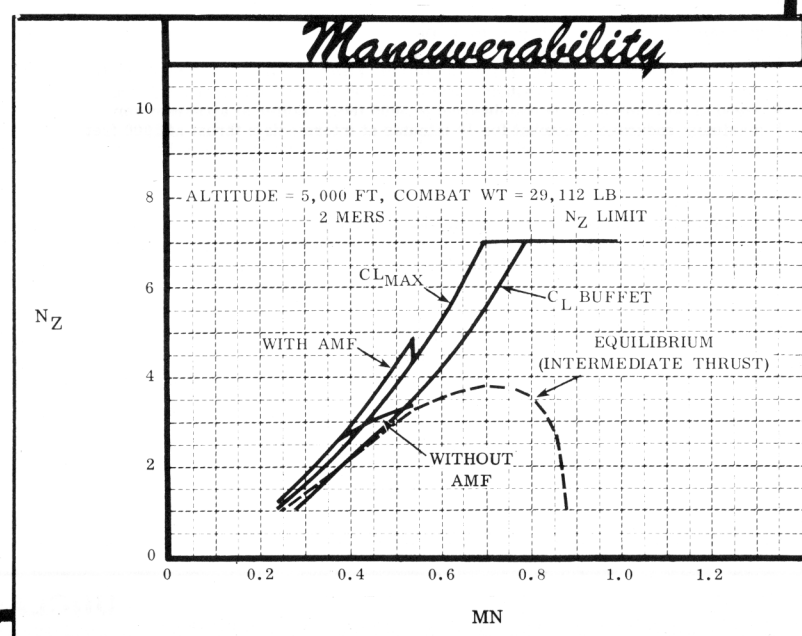
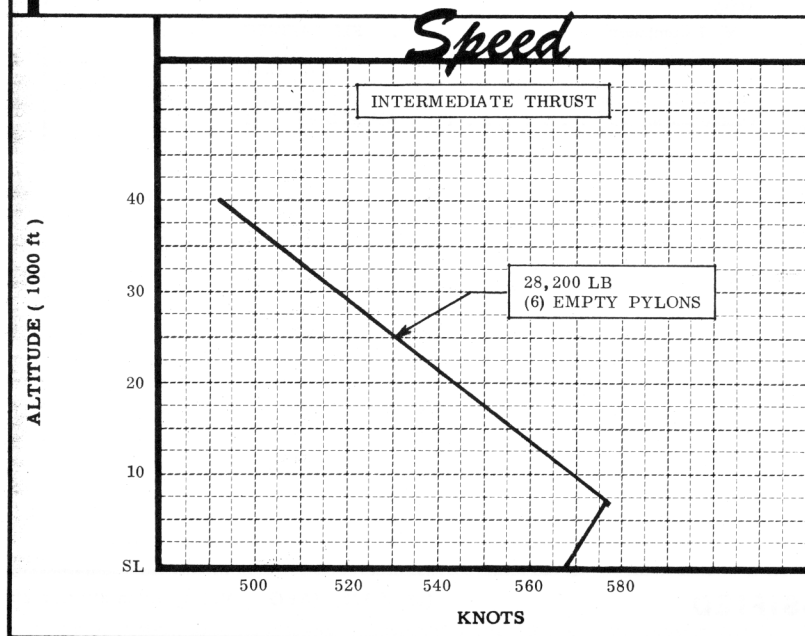
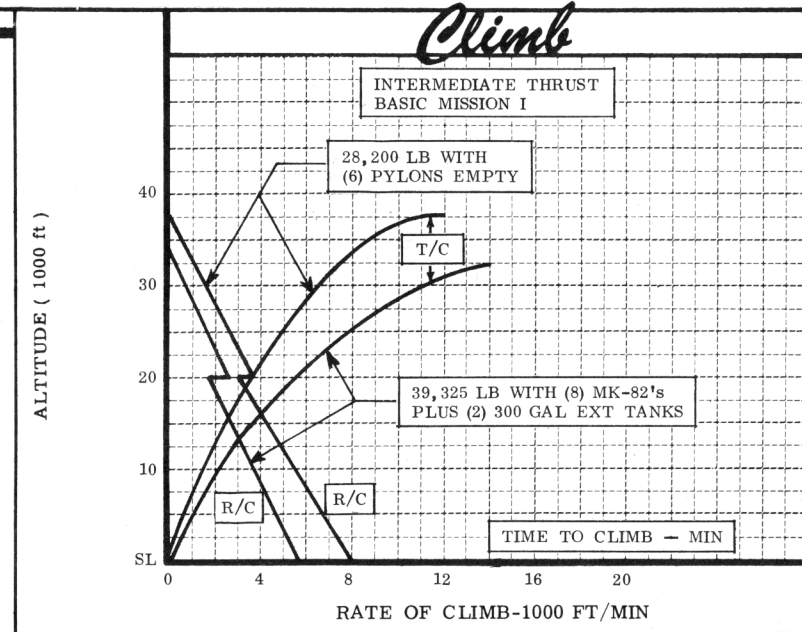
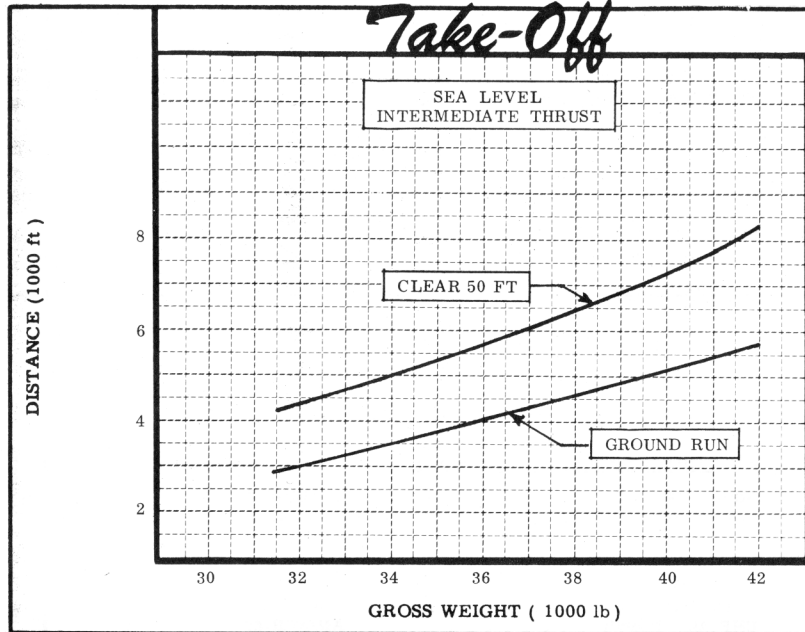
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- ① Intermediate thrust
 ② Max continuous thrust
 ③ Detailed description of RADIUS and RANGE missions given on page 6.
 ④ 8 x MK-82's plus 2 x 300 gal tanks.

- ⑤ 8 x MK-82's
 ⑥ 12 LAU-3A's plus S/W
 ⑦ 4 x 300 gal tanks
 ⑧ Prior to dropping stores
 ⑨ Excludes warm-up, take-off and 20 minutes loiter at S. L.

- ⑩ Antiskid braking

PERFORMANCE BASIS:
 (a) Data source: Contractors flight test.



N O T E SFORMULA: RADIUS MISSION I

Take-off with maximum continuous thrust, climb on course at intermediate thrust to optimum cruise altitude, cruise out at long range speed at optimum cruise altitude, drop tanks when empty, descend to sea level. Loiter at airspeeds for maximum endurance for 10 minutes, drop stores at end of loiter. Combat 10 minutes at intermediate thrust, climb on course at intermediate thrust to optimum cruise altitude, cruise back to base at long range speed at optimum cruise altitude.

Range free allowances are 5 minutes at maximum continuous thrust at sea level for starting engines, take-off and accelerate to climb speed, plus reserve of 20 minutes at speeds for long range at sea level, plus 5% of initial fuel.

FORMULA: RADIUS MISSION II

Take-off with maximum continuous thrust, climb on course at intermediate thrust to optimum cruise altitude, cruise out at long range speed at optimum altitude, descend to sea level, dash in to target from 100 nautical miles out at 500 KTAS at sea level. Combat 5 minutes at intermediate thrust, drop stores at end of combat. Dash out from target 100 nautical miles at 500 KTAS at sea level. Climb on course at intermediate thrust to optimum cruise altitude, cruise back to base at long range speed at optimum cruise altitude.

Range free allowances are 5 minutes at maximum continuous thrust at sea level for starting engines, take-off and accelerate to climb speed, plus reserve of 20 minutes at speeds for long range at sea level, plus 5% of initial fuel.

FORMULA: RADIUS MISSION III & IV

Take-off with maximum continuous thrust, climb on course at intermediate thrust to optimum cruise altitude, cruise out 200 nautical miles at long range speed at optimum altitude and descend to 5000 feet. Loiter at airspeeds for maximum endurance, combat for 10 minutes at intermediate thrust at 5000 feet and drop stores at end of combat. Climb on course at intermediate thrust to optimum cruise altitude, cruise back to base at long range speed at optimum cruise altitude.

Range free allowances are: 5 minutes at maximum continuous thrust at sea level for starting engines, take-off and accelerate to climb speed plus a reserve of 20 minutes at speeds for long range at sea level, plus 5% of initial fuel load.

FORMULA: FERRY MISSION

Take-off with maximum continuous thrust, climb on course at intermediate thrust to optimum cruise altitude, cruise out at long range speed at optimum altitude, drop tanks when empty. Range free allowances are 5 minutes at maximum continuous thrust at sea level for starting engines, take-off and accelerate to climb speed, plus a reserve of 20 minutes at speeds for long range at sea level, plus 5% of initial fuel.

GENERAL DATA:

1. PERFORMANCE BASIS: Contractor's flight test data. (Data is based on configuration of the 28th and subsequent aircraft.)
2. REVISION BASIS: Includes changes in Electronics, page 3; External Stores, page 7; Maneuverability, page 5.

ELECTRONICS (Continued from Page 3)

Attitude Dir	ARU-5/A
ECM Warning	AN/APR-36, 37 or *AN/ALR-46
Flight Dir Computer	CPU-80/A, A/A
ECM Pods	See Table (Page 7)
Transmitter	AN/ARW-77()
UHF Aux. Rec'v'r	AN/ARR-69
AIMS	
Mk 7 Computer	KIT-1A/TSEC
Inflight Monitor	TS 1843/APX
Altimeter	AAU-19/A
Inertial Measurement Set (IMS)	AN/ASN-90(V)
Countermeasures	AN/ALE-40(V)-11

* A/C after T. O. A-7D-760

EXTERNAL STORES		STATION LOADING								TOTAL
STORES		1	2	3	4	5	6	7	8	
BOMBS										
M117A1 GP MC-1 Gas		3	1	2	-	-	2	1	3	12
or		1	4	2	-	-	2	4	1	14
MK-20 Rockeye		4	6	2	-	-	2	6	4	24
MK-36 Destructor		6	-	4	-	-	4	-	6	20
MK-82 LDGP		6	6	-	-	-	-	6	6	24
MK-82 Snakeye		6	-	4	-	-	4	-	6	20
MK-83 LDGP		1	1	1	-	-	1	1	1	6
MK-84 LDGP		1	1	1	-	-	1	1	1	6
MK-84 EO-TV (GBU-8)		-	1	1	-	-	1	1	-	4
or		1	1	-	-	-	-	1	1	4
MK-84 Laser (GBU-10), MK-82 Laser (GBU-12)		1	1	1	-	-	1	1	1	6
FIRE BOMBS										
BLU-27 Fire Bombs (Finned), BLU-1		1	3	1	-	-	1	3	1	10
BLU-27 Fire Bombs (unfined)		1	1	1	-	-	1	1	1	6
BLU-52 Chemical Bombs		1	1	1	-	-	1	1	1	6
DISPENSER & BOMBS										
CBU-24		1	4	-	-	-	-	4	1	10
CBU-30/38		1	1	1	-	-	1	1	1	6
CBU-49/52/58		1	4	-	-	-	-	4	1	10
CBU-52/58/71		1	4	-	-	-	-	4	1	10
CBU-12, -46		2	-	-	-	-	-	-	2	4
ROCKET LAUNCHERS										
LAU-3/68		1	1	1	-	-	1	1	1	6
LAU-88/117		-	1	-	-	-	-	1	-	2
MISSILES										
AIM-9B, 9E, 9J		-	-	-	1	1	-	-	-	2
AGM-65A/B/D		-	3	-	-	-	-	3	-	6
FLARE DISPENSERS										
SUU-25C/A, 25E/A		-	1	-	-	-	-	1	-	2
SUU-42/A, 42A/A		1	-	-	-	-	-	-	1	2
GUN PODS										
SUU-23/A, GPU-5/A		-	-	1	-	-	1	-	-	2
ECM PODS										
AN/ALQ-71(V)-2-3		1	-	-	-	-	-	-	1	2
AN/ALQ-87										
AN/ALQ-101(V)-1-3-4-6										
AN/ALQ-119(V)-16-17										
AN/ALQ-131(V)										

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