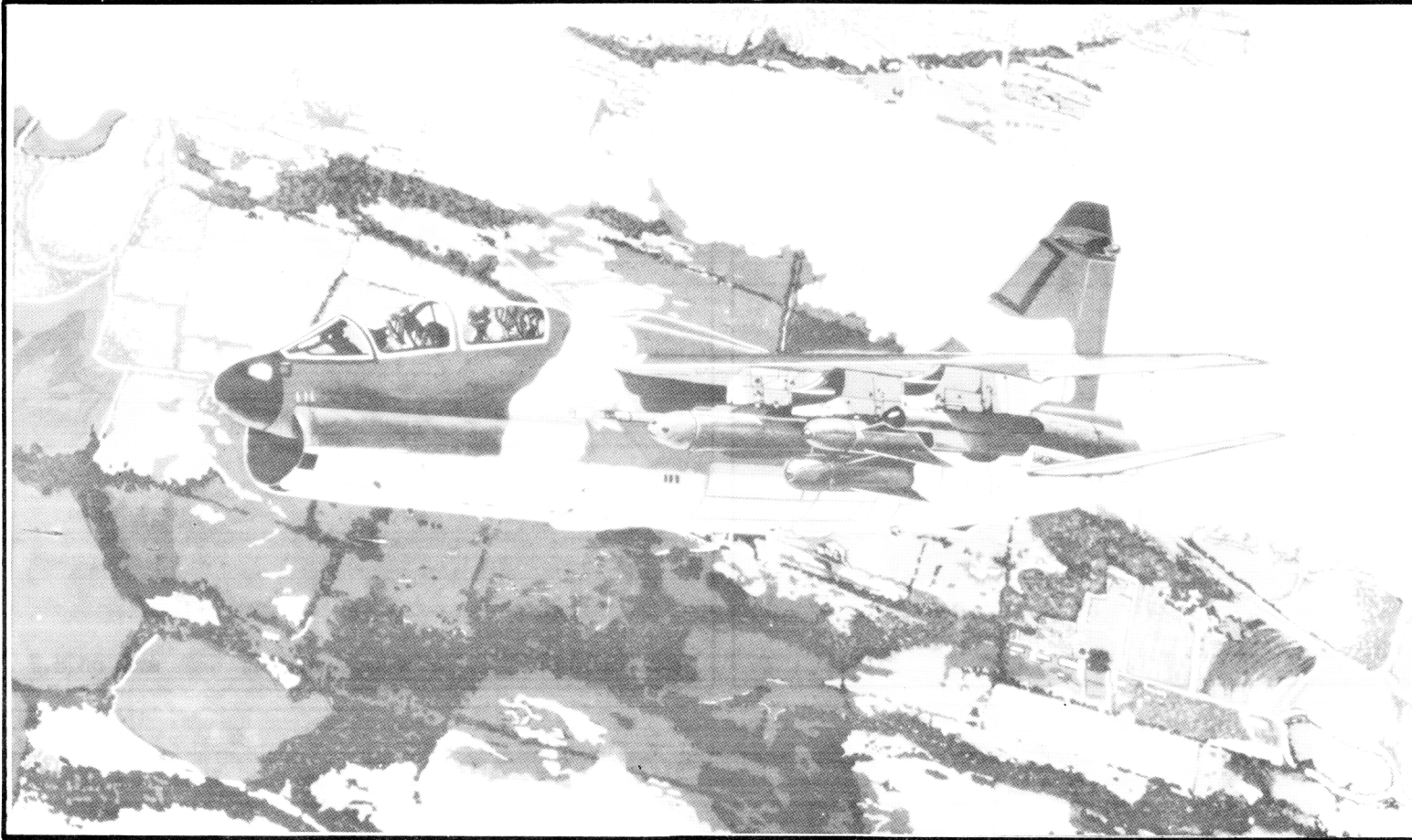


A1
A-7K/char

UNCLASSIFIED

SERVICE



Standard Aircraft Characteristics

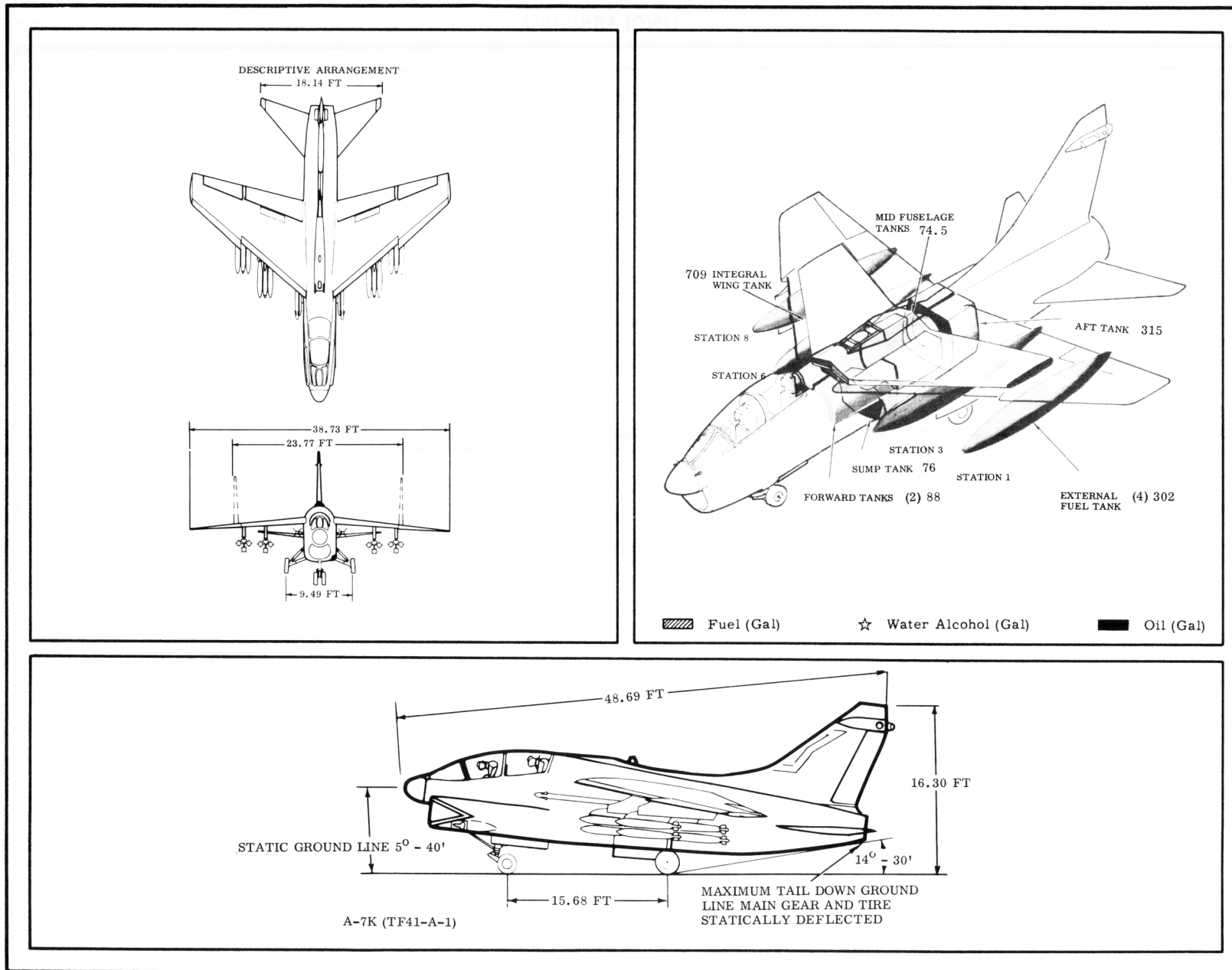
BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

A - 7 K

VOUGHT

ONE TF41-A-1

ALLISON



POWER PLANT	
Nr & Model	(1) TF41-A-1, -1A
Mfr	Allison
Engine Spec Nr	747E
Type	Axial Flow, Turbofan
Length	114.165"
Diameter	39.54"
Tailpipe	Fixed Area

ENGINE RATINGS			
S. L. S.	LB	*RPM	MIN
Intermed.	14,500	- 8940/12,840	- 30
Max Cont	13,200	- 8600/12,550	- Cont

* LP/HP Compressor

DIMENSIONS	
Wing Area	375 sq ft
Span (max)	38.73 ft
(folded)	23.77 ft
Aspect Ratio	4
Sweep 1/4 chord	35°
Length	48.69 ft
Height	16.30 ft
Max Tread	9.5 ft

Mission and Description

The A-7K is a two place turbofan, light-attack airplane derived from the A-7D Corsair II series. It is an attack aircraft designed for close support and interdiction missions. Eight external store stations provide a large ordnance capacity and freedom of ordnance choice. The large internal fuel capacity make external fuel unnecessary for most missions. Inflight refueling capability is provided. Features to expedite maintenance and airplane turnaround are important A-7K design characteristics.

The A-7K has fixed wing incidence and a high-lift system composed of leading edge flaps and single slotted trailing edge flaps. The A-7K low speed maneuvering performance is enhanced by the incorporation of the automatic maneuvering flap (AMF). Primary flight control is provided by outer panel ailerons, spoiler deflectors on the center section, unit horizontal tail, and a rudder, superior stability and control qualities over the entire aircraft speed envelope, including transonic, are features of the A-7K.

A dual-channel, three-axis, stick-steering autopilot is provided.

Development

A-7K based on Navy's TA-7C

First Flight	Oct 80
First Production Delivery	Apr 81
Acceptance Date by Air National Guard	Apr 81

WEIGHTS		
Loading	Lb	L. F.
Empty	21,300	7.0
Basic	21,856	7.0
Design	29,575	7.0
Combat	29,112	7.0
Max T. O.	42,000	4.9
Max Ldg	37,088	5.6

NOTE: Weights are detail spec. (SD555-8-1)

FUEL		
Location	Nr Tanks	Gal
Wing Integral	1	709
Fus, Forward	2	176
Mid, Fus	2	149
Fus, Aft	1	315
Main Sump	1	76
External	4	1207
	Total	2632
Grade		JP-4
Specification		MIL-T-5624

OIL

Engine	1	1.8
Usable		1.45
Specification		MIL-L-7808

BOMBS
See Table (Page 7)

MISSILES
See Table (Page 7)

GUNS				
Nr	Type	Size	Rds ea	Location
1	M61A1	20 mm	500	LH Lower Fuselage

(See Table, Page 7)

ROCKETS
See Table (Page 7)

DISPENSERS
See Table (Page 7)

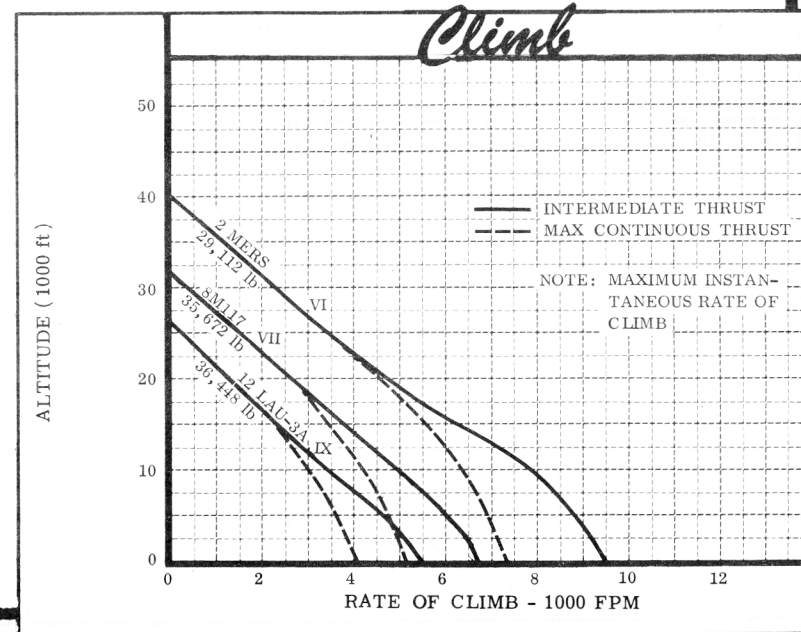
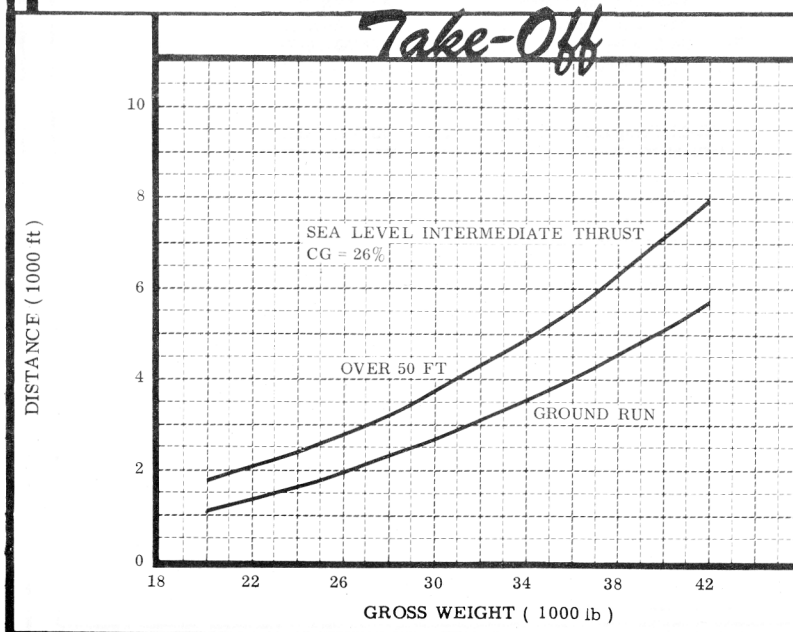
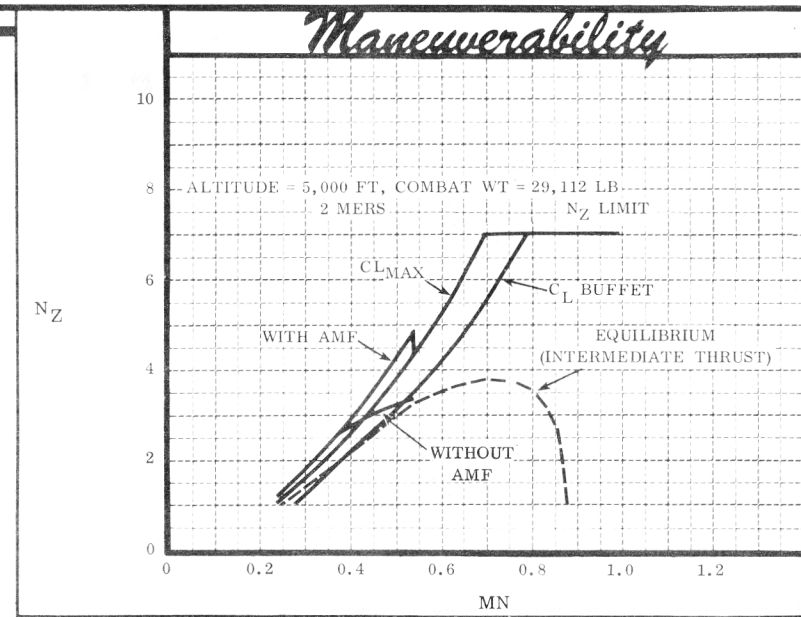
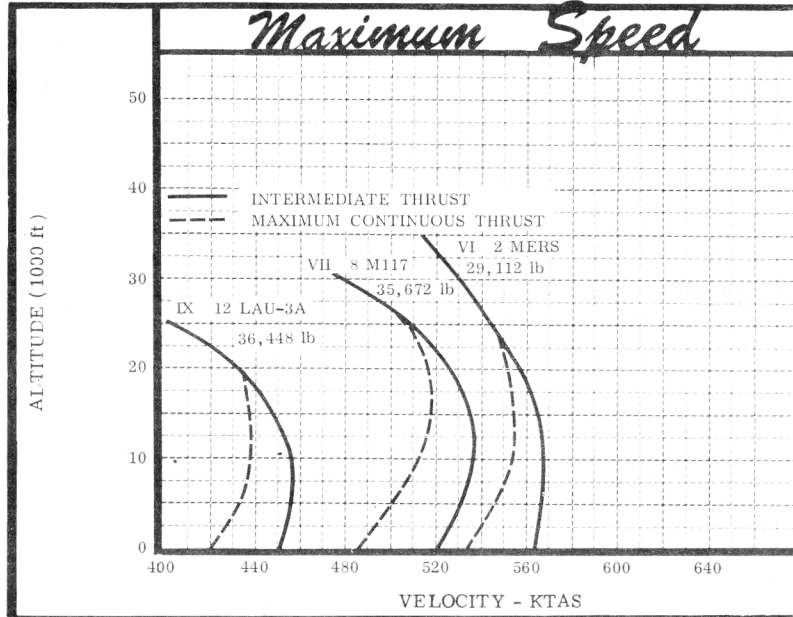
ELECTRONICS	
Radar	AN/APQ-126(V)
Radar Beacon	AN/APN-154(V)
Digital Scan Conv	OD-128/APQ-126
Controller	C-4504/ARW-77(V)
ASCU	C-9387/AWE
ECM Warning	AN/ALR-46
ECM Pods	ALQ-119 and 131 series
Blanking Unit	MX8252/A
Autopilot	AN/ASW-30(V)
Trim System	***
Nose Gear Steering	***
UHF Communications	AN/ARC-164(V)
UHF Auxiliary Receiver	AN/ARR-69
VHF Communication	AN/ARC-186(V)
Juliet 28	TSEC/KY-28
Automatic Maneuvering Flap	***

(Continued on Page 6)

Loading and Performance - Typical Mission

C O N D I T I O N S	BASIC MISSION 8 M117'S I	INTERDICTION MISSION 8 M117'S II	CLOSE AIR SUPPORT MISSION 8 M117'S III	CLOSE AIR SUPPORT MISSION 12 LAU-3A'S + S/W IV	FERRY MISSION 4 300-GAL TANKS ⁽²⁾ V
TAKE-OFF WEIGHT (lb)	39,377	39,377	39,377	40,153	41,364
Fuel (JP-4 @ 6.5 lb/gal) internal/external (lb/lb)	9263	9263	9263	9263	17,111
Payload ⁽¹⁾ (lb)	6560	6560	6560	6293	-
Wing loading (lb/sq ft)	105	105	105	107	110
Stall speed (power off) (kn)	---	---	---	---	---
Take-off ground run at SL - Calm Std Day ⁽⁶⁾ (ft)	5000	5000	5000	5200	5600
Take-off to clear 50 ft at SL - Calm Std Day ⁽⁶⁾ (ft)	6800	6800	6800	7200	7700
Take-off ground run at SL - Calm Tropical Day ⁽⁶⁾ (ft)	6500	6500	6500	6800	7250
Take-off to clear 50 ft at SL - Calm Tropical Day ⁽⁶⁾ (ft)	9500	9500	9500	10,000	10,750
Rate of climb at SL ⁽⁷⁾ (fpm)	5922	5922	5922	4732	5956
Time: SL to 20,000 ft ⁽⁷⁾ (min)	5.59	5.59	5.59	9.06	5.33
Time: SL to 30,000 ft (or service ceiling) ⁽⁷⁾ (min)	17.13 ⁽⁵⁾	17.13 ⁽⁵⁾	17.13 ⁽⁵⁾	16.35 ⁽⁵⁾	14.52
Service ceiling (100 fpm) (ft)	29,805	29,805	29,805	23,795	30,734
COMBAT RANGE (n. mi.)	828	828	828	585	2397
Average cruise speed (kn)	428	428	428	376	457
Cruise altitude, initial/final (ft/ft)	30,000/33,300	30,000/33,300	30,000/33,300	24,000/27,300	30,900/41,200
Total mission time ⁽⁸⁾ (hr)	1.95	1.95	1.95	1.57	5.27
COMBAT RADIUS (n. mi.)	282	237	200	200	---
Time on station (min)	---	---	32.4	16.0	---
Average cruise speed (kn)	431	431	431	378	---
Initial cruise altitude (ft)	30,000	30,000	30,000	24,000	---
Target speed ⁽⁶⁾ (kn)	485	485	500	433	---
Target altitude (ft)	0	0	5000	5000	---
Final cruise altitude (ft)	40,500	41,100	40,900	36,600	---
Total mission time ⁽⁸⁾ (hr)	1.645	1.15	1.645	1.48	---
IFR RADIUS (n. mi.)	624	528	---	---	---
Fuel transferred/distance from base (lb/n. mi.)	4669/408	4669/408	---	---	---
Total mission time ⁽⁸⁾ (hr)	3.22	2.59	---	---	---
COMBAT WEIGHT (lb)	VI 29,112 ⁽¹¹⁾	VII 35,672 ⁽³⁾	VIII 35,672 ⁽³⁾	IX 36,448 ⁽³⁾	---
Combat altitude (ft)	SL	SL	5000	5000	---
Combat speed (kn)	565	521	531	457	---
Combat climb (fpm)	9485	6709	6032	4573	---
Combat ceiling (500 fpm) (ft)	37,647	29,870	29,870	23,885	---
Service ceiling (100 fpm) (ft)	39,507	31,918	31,918	26,010	---
Max rate of climb at SL (fpm)	9485	6709	6709	5421	---
Max speed at altitude (kn/ft)	569/10,000	535/10,000	535/10,000	459/10,000	---
Basic speed at 35,000 ft (kn)	511	422 ⁽⁴⁾	422 ⁽⁴⁾	360 ⁽⁴⁾	---
LANDING WEIGHT (lb)	24,881	24,881	24,881	25,980	25,031
Ground roll at SL ⁽¹⁰⁾ (ft)	3650	3650	3650	3750	3650
Total from 50 ft ⁽¹⁰⁾ (ft)	4605	4605	4605	4705	4605

- | | | | |
|-------|---|---|---|
| NOTES | (1) Payload is droppable ordnance (does not include 1000 rd of ammo or external fuel tanks) | (5) Service ceiling | (10) Antiskid braking |
| | (2) External fuel tanks dropped when empty | (6) Maximum continuous thrust | (11) Combat weight = takeoff weight -40% of internal fuel |
| | (3) Stores retained since combat allowance was prior to dropping stores | (7) Intermediate thrust | |
| | (4) Combat ceiling | (8) Mission time excludes time for warmup and takeoff and 20 minutes loiter at SL | PERFORMANCE BASIS:
(a) Contractor's estimated data. |



N O T E S

BASIC MISSION

Warmup, Taxi, Takeoff: 5 minutes Sea Level MAX CONT
 Climb: On course at INT to optimum cruise altitude
 Cruise Out: Long-range cruise speed at optimum cruise altitude
 Descent: To Sea Level (no fuel, no distance)
 Loiter: 10 minutes at maximum endurance speed (no distance) stores dropped at end of loiter
 Combat: 10 minutes at INT (no distance)
 Climb: On course at INT to optimum cruise altitude
 Cruise Back: Long-range cruise speed at optimum cruise altitude
 Reserve: 5% initial fuel + 20 minutes at maximum endurance speed at Sea Level

INTERDICTION MISSION

Warmup, Taxi, Takeoff: 5 minutes Sea Level MAX CONT
 Climb: On course at INT to optimum cruise altitude
 Cruise Out: Long-range cruise speed at optimum altitude
 Descent: To Sea Level (no fuel, no distance)
 Dash In: 200 NMI at 500 KTAS at Sea Level
 Combat: 5 min at INT (no distance) stores dropped at end of combat
 Dash Back: 100 NMI at 500 KTAS at Sea Level
 Climb: On course at INT to optimum cruise altitude
 Cruise Back: Long-range cruise speed at optimum cruise altitude
 Reserve: 5% initial fuel + 20 minutes at maximum endurance speed at Sea Level

CLOSE AIR SUPPORT MISSION

Warmup, Taxi, Takeoff: 5 minutes at Sea Level MAX CONT
 Climb: On course at INT to optimum cruise altitude
 Cruise Out: Long-range cruise speed at optimum altitude to total distance of 200 NMI from base
 Descent: To 5,000 ft (no fuel, no distance)
 Loiter: Maximum endurance speed at 5,000 ft (no distance)
 Combat: 10 minutes at INT at 5,000 ft (no distance) stores dropped at end of combat
 Climb: On course at INT to optimum cruise altitude
 Cruise Back: Long-range cruise speed at optimum cruise altitude
 Reserve: 5% initial fuel + 20 minutes at maximum endurance speed at Sea Level

FERRY MISSION

Warmup, Taxi, Takeoff: 5 minutes at Sea Level MAX CONT
 Climb: On course at INT to optimum cruise altitude
 Cruise Out: Long-range cruise speed at optimum altitude, drop tanks when empty
 Reserve: 5% initial fuel + 20 minutes at maximum endurance speed at Sea Level

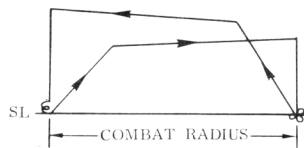
GENERAL DATA:

1. Performance Basis: Contractor's Estimated Data
2. REVISION BASIS: Includes changes in Electronics, page 3; External Stores, page 7; Maneuverability, page 5.

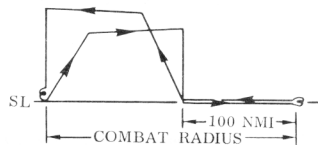
ELECTRONICS (Continued from Page 3)

Counter measure disp	AN/ALE-40(V)-11
Doppler Navigator	AN/APN-190(V)
Nav. WD Computer	AN/ASN-91
Inertial Measurement Set	AN/ASN-90(V)
Standby Vertical Reference	MIL-A-22858
Radar Altimeter	APN-194
Angle of Attack System	**
Air Data Computer	CP-9538/AJQ
TACAN	AN/ARN-118(V)
Instrument Landing System	AN/ARN-58A
UHF Direction Finder	AN/ARA-50
Head-Up Display	AN/AVQ-29(V)
Laser Spot Tracker	AN/AAS-35
IFF	AN/APX-72
AIMS	
MK-12 Computer	KIT-1/TSEC
Inflight Monitor	TS-1843/APX
Indicator (Alt)	AAU-19/A
Horizontal Situation Ind	AQU-6/A, 6A/A
All Alt. Indicator	ARU-21/A, 51/A
Turn Rate Gyro	TRU-2A/A
Flight Director Computer	CPU-80/A, 80/A/A
Projector Map Display	AN/ASN-99A
Hud Monitor System	AN/AXQ-13
Intercom	AN/AIC-26 mod.
ECM Pods	See Table 7
ECM Warning	AN/APR-36, 37

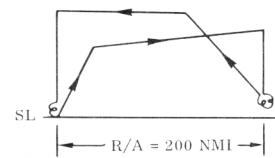
** Same as A-7D



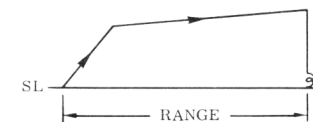
BASIC



INTERDICTION



CLOSE AIR SUPPORT



FERRY

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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(22 of 136) (AFG 2, Vol-1, Addn 59) Dec 86