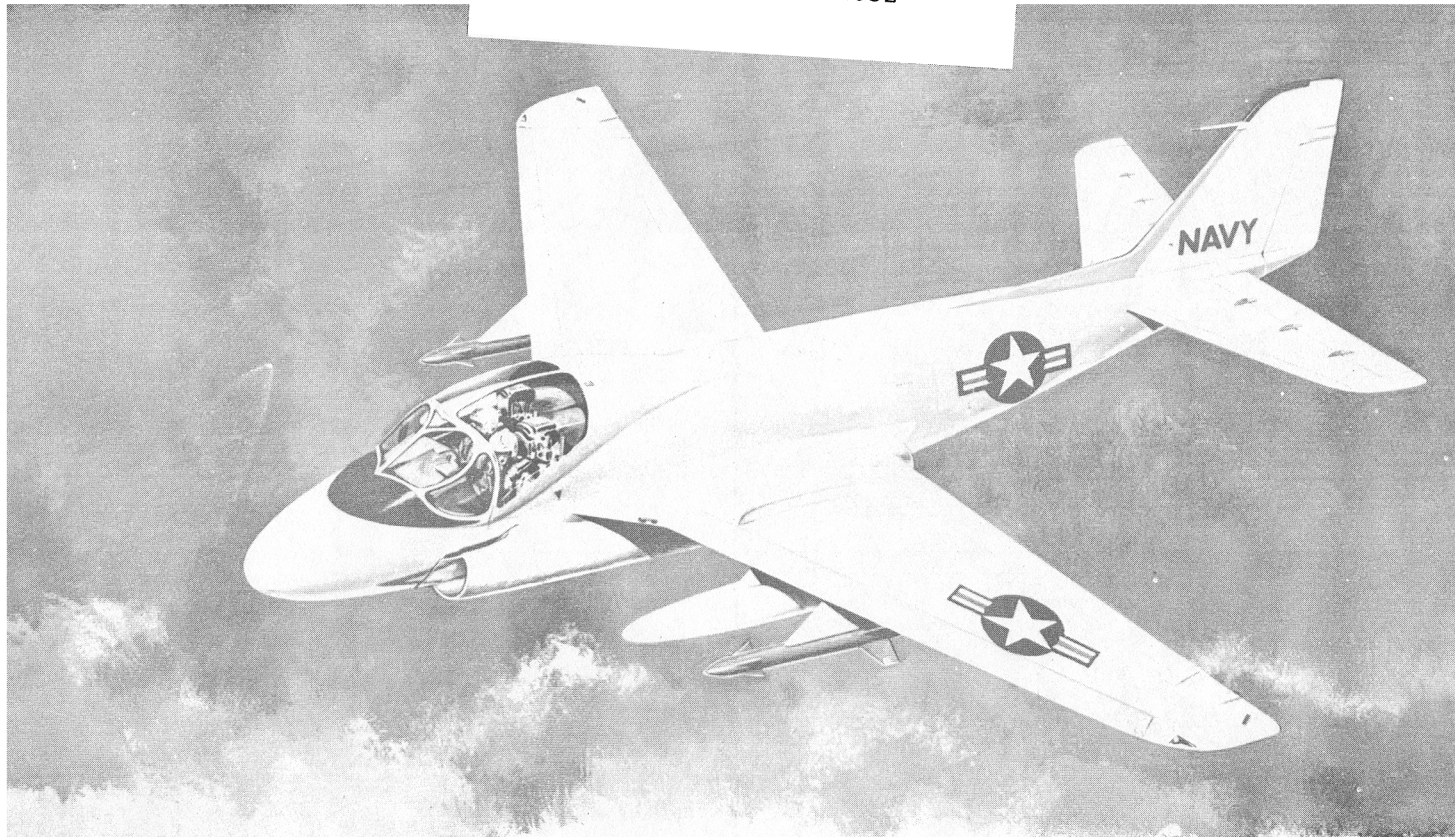


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SERVICE

DECLASSIFIED BY  
EXECUTIVE ORDER 11652



# STANDARD AIRCRAFT CHARACTERISTICS

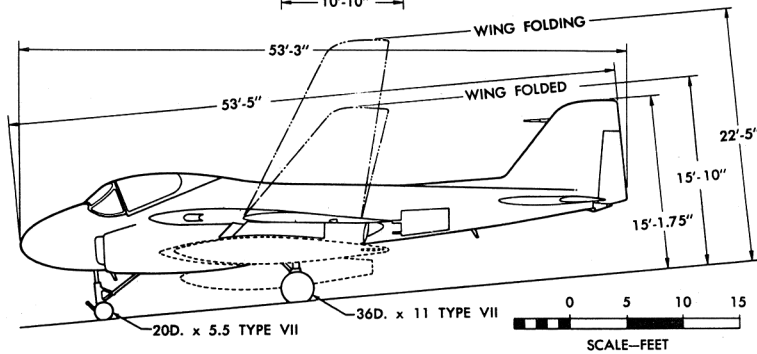
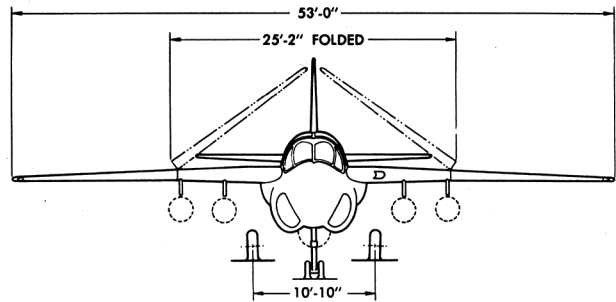
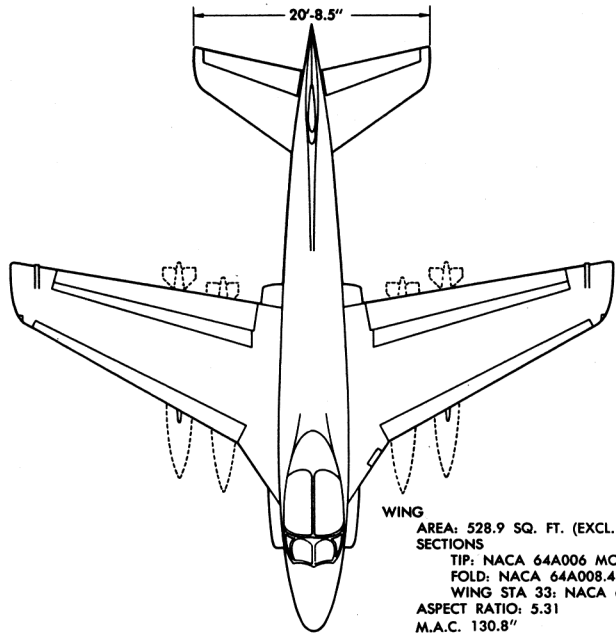
A2F-1  
GRUMMAN

30 APRIL 1960

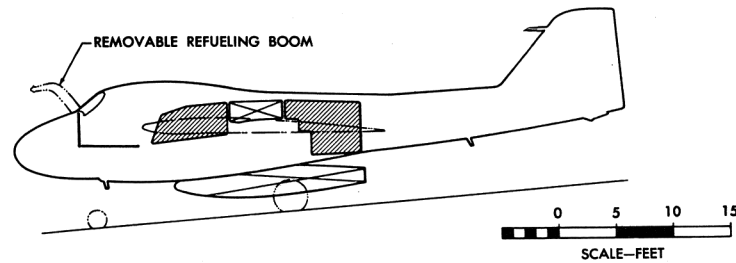
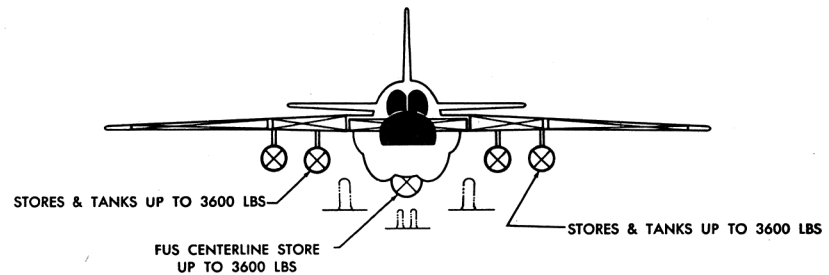
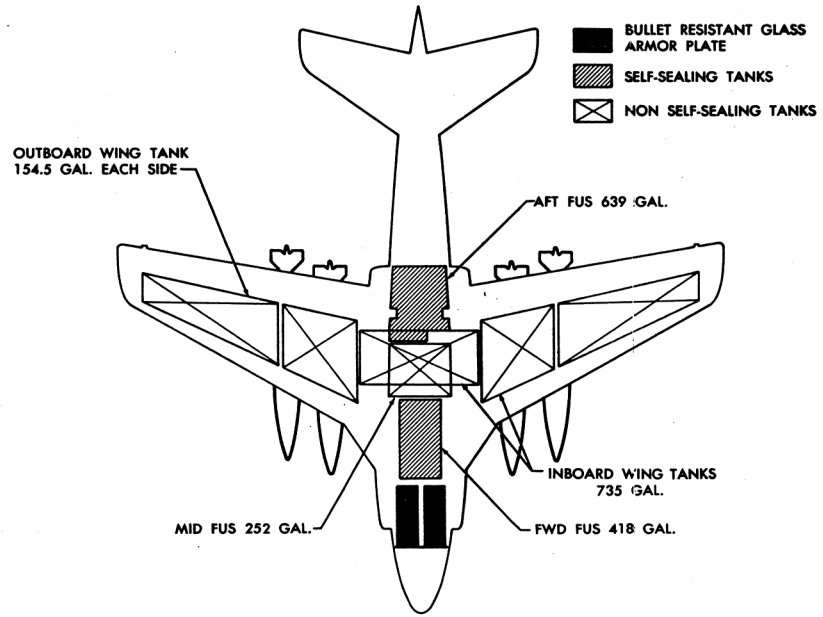
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A2F-1

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DESCRIPTIVE ARRANGEMENT  
A2F-1



ARMAMENT AND TANKAGE  
A2F-1

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**POWER PLANT**

No. & Model ..(2) J52-P-6,  
Mfrg. .... Pratt & Whitney  
Type ..Twin Spool Axial Flow  
Length ..... 127"  
Diameter ..... 31"  
Augmentation ..... None

**RATINGS**

	Lbs.	@ RPM
Maximum	8500	11650
T.O. & Mil.	8500	11650
Normal	7500	11400

Sea Level Static

Spec No.N-1731 of  
17 July 1957

**ELECTRONICS**

Attack-Navigation-Instruments  
\*Search Radar  
Track Radar AN/APQ-88  
Doppler Radar AN/APN-122(V)  
\* Digital Computer  
\* Inertial Platform  
Radar Altimeter AN/APN-117  
Bullpup Transmitter AN/ARW-73  
\* All-Weather Bullpup  
Integrated Display Subsystem  
\* - Nomenclature not available  
Communications  
CNI Package AN/ASQ-57  
UHF ADF AN/ARA-50  
UHF Rec. Transmitter AN/ARC-52  
UHF Stand-by Rec. AN/ARR-40  
IFF AN/APX-6B  
IFF Coder AN/APA-89(SIF)  
TACAN AN/ARN-21A  
IGS AN/AIC-14

Counter Measures  
Repeater Jammer AN/ALQ-32  
Repeater Jammer (2) AN/ALQ-19  
Chaff Dispenser AN/ALE-18  
Warning Receiver (2) AN/AIR-15

**MISSION AND DESCRIPTION**

The A2F-1 is a medium size, all weather low altitude two-place attack aircraft capable of high subsonic performance and broad mission versatility including tanker capability.

At light gross weights it can operate from short unprepared fields and H-8 catapults, in close support of ground troops, while at higher gross weights, it can operate from CLL-1 catapults on long range special weapon strikes against heavily defended fixed targets.

An integrated attack-navigation and central digital computer system is provided to find, track and destroy small moving targets and large fixed targets in all weather conditions. Pilot displays provide contact analogue, terrain clearance, attack and horizontal situation information in integrated form. Five store stations are provided, inboard of the wing fold joint.

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.

High lift devices are slotted flaps, leading edge slats and tilting tail pipes. Anti-skid brakes on main wheels are provided. Nose wheel tow catapulting is used. A speed brake is located aft on each side of the fuselage. Side by side ground level ejection seats are provided for the pilot and radar operator.

Power wing folding is provided. The engines may be removed and serviced by removal of fuselage fairing panels.

**DEVELOPMENT**

First Flight ..... April 1960  
Service Use ..... December 1962

**DIMENSIONS**

Wing Area	528.9 sq. ft.
Span	53 ft.
MAC	130.8 inches
Sweepback ( $\frac{1}{4}$ Chord)	25°
Length	53' 3"
Height	15' 2"
Tread	10' 10"

**WEIGHTS**

LOADINGS	LBS.	L.F.
EMPTY.....	23412	.....
BASIC		
(Long Range)	24391	.....
(Short Range)	24348	.....
DESIGN.....	36395	6.5
COMBAT		
(Long Range)	40846	.....
(Short Range)	32633	.....
MAX.T.O.(Field)	53278	.....
(Cat.)	53278	.....
MAX. LAND.(Field)	32483	.....
(Arrest)	32483	.....

All weights are estimated.

**FUEL AND OIL**

No. Tanks	Gal.	Lbs.	Location
3	1309	8900	Fuselage
5	1044	7120	Wings
5(300 gal.)	1477	10044	Drop Tanks
Fuel Grade	.....	JP-5	
Fuel Spec. (Appl.)	.....	Mil-F-5624C-1	

**OIL**

Capacity (Gals.).....5/Eng.  
Spec. (Appl.) ..... Mil-L-7808

**ORDNANCE**

Maximum Bomb Capacity:18000 lbs.  
Bombs:MK.81,MK.82,MK.83,MK.84,  
Fire Bomb-MK.79 Mod-6  
Special Weapons: MK.28,  
MK.28-1,MK.43  
Rocket Pkg.:Aero 7D,Aero 10D,  
Aero 6A1  
Missiles:Sidewinder, Bullpup,  
Corvus  
In addition, the following  
may be carried:  
Practice Bomb Containers,  
Aero 8A(MK.76,MK.89)  
Lazy Dog Missile Dispenser-  
Aero 1A  
Flare Dispenser-Aero 5A  
Napalm Tank-150 gal.

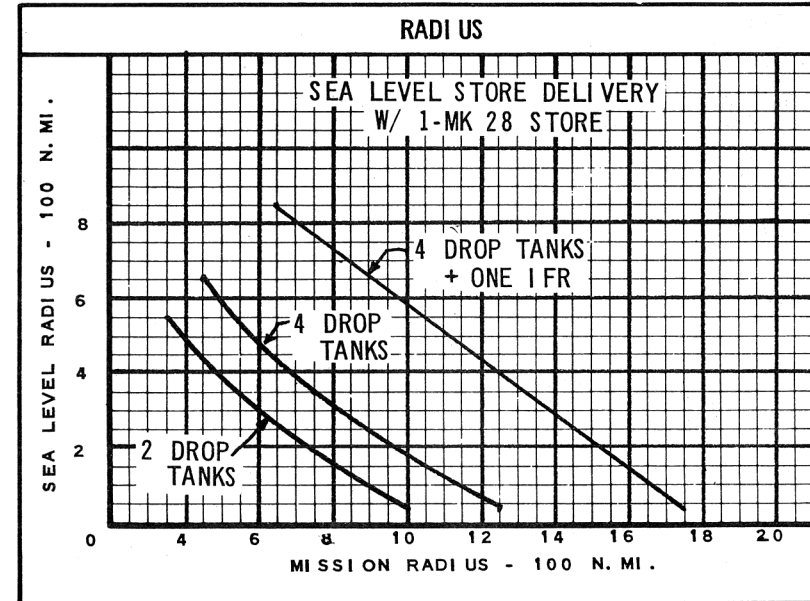
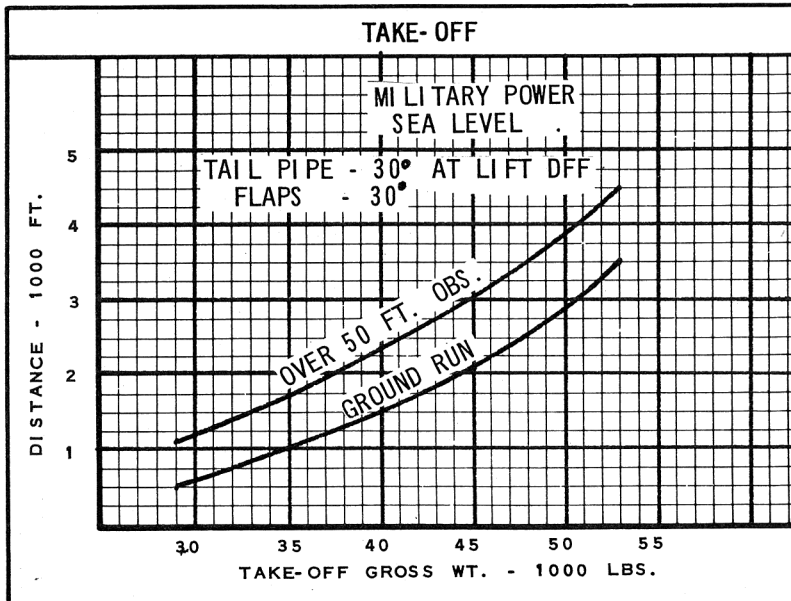
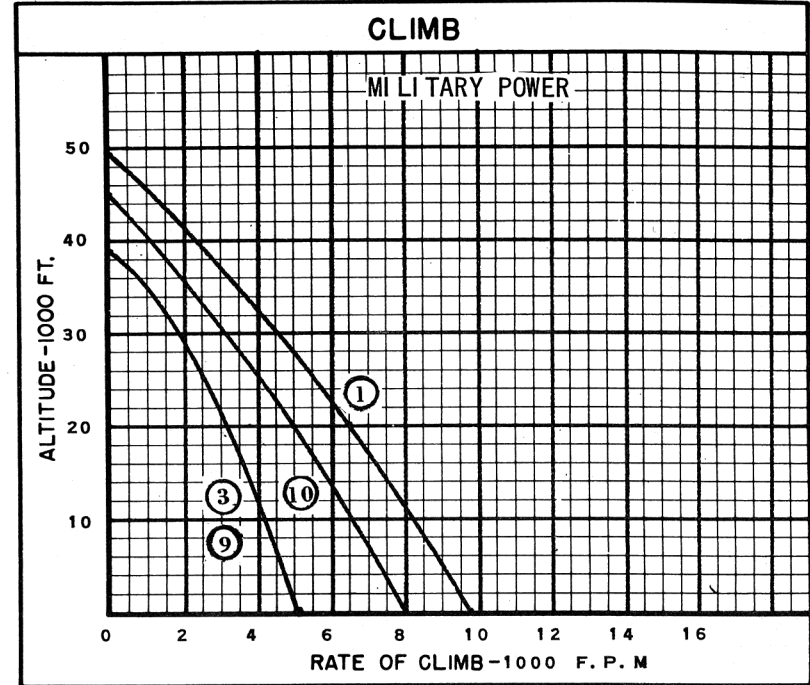
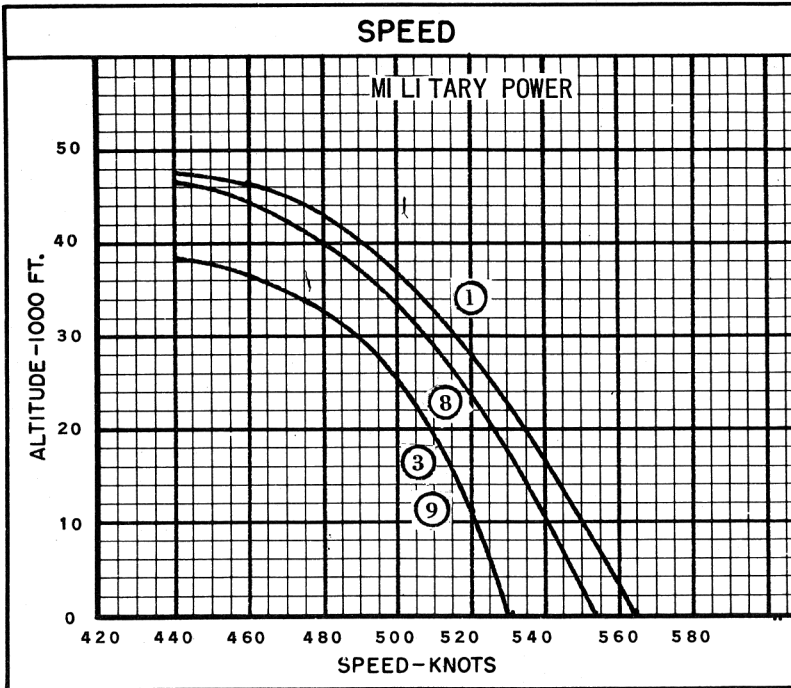
PERFORMANCE SUMMARY										
TAKE-OFF LOADING CONDITION	①	Low Altitude Attack (Mod.) 2-MK 83	③	S.L. Store Del. (Mod.) 1-MK 28 4-300Gal.Tks.	⑤	Low Alt Attack (MIL-C-5011A) 5-MK 83	⑦	Low Alt Attack (MIL-C-5011A) 5 Bullpups	⑨	High Alt Attack (Mod.) 1 Corvus 4-300 Gal.Tks.
TAKE-OFF WEIGHT	lb.	36533		51935		45846		43726		51773
Fuel internal/external (JP-5)	ib.	9750/0		16020/8035		16020/0		16020/0		16020/8035
Payload	lb.	2000		2250		5000		2850		1750
Wing loading	lb./sq.ft.	69.04		98.19		86.68		82.67		97.89
- Stall speed - power-off	kn.	98.4		117.5		110.3		107.6		117.3
- Take-off run at S.L. - calm	ft.	1130		3250		2310		2015		3230
- Take-off run at S.L. - 25 kn. wind	ft.	630		2175		1475		1250		2155
- Take-off to clear 50 ft. - calm	ft.	1779		4260		3080		2730		4225
Max. speed / altitude	(A) kn./ft.	565/S.L.		532/S.L.		548/S.L.		553/S.L.		531/S.L.
Rate of climb at S.L.	(A) fpm	9750		5300		7200		7350		5200
Time: S.L. to 20,000 ft.	(A) min.	2.5		4.9		3.5		3.4		5.0
Time: S.L. to 30,000 ft.	(A) min.	4.3		9.1		6.1		6.0		9.2
Service ceiling (100 fpm)	(A) ft.	48250		39200		43200		44200		39200
Combat range	n.mi.	1213		3079		1873		1927		3047
Average cruising speed	kn.	429		426		428		425		426
Cruising altitude(s)	ft.	44450		39360		40750		41700		40600
Combat radius/Mission time	n.mi./hr.	300/2.4		1041/5.7		858/4.1		865/4.1		1564/7.4
Average cruising speed	kn.	430		360		429		428		429
IFR Radius/Mission Time	n.mi./hr.			1591/8.4(B)						2061/10.0 (C)
COMBAT LOADING CONDITION										
	②	Stores Retained	④	Tanks Off Store Off	⑥	Stores Retained	⑧	Missiles Retained	⑩	Tanks Off Missile On
COMBAT WEIGHT	lb.	32633		40846		39438		37318		42934
Engine power		Military		Military		Military		Military		Military
Fuel	lb.	5850		16020		9612		9612		16020
Combat speed / combat altitude	kn./ft.	566/S.L.		573/S.L.		549/S.L.		553/S.L.		488/37750
Rate of climb / combat altitude	fpm/ft.	10950/S.L.		8950/S.L.		8500/S.L.		8650/S.L.		2000/37750
Combat ceiling (500 fpm)	ft.	49300		44800		45300		46250		43700
Rate of climb at S.L.	fpm	10950		8950		8500		8650		8020
Max. speed at S.L.	kn.	566		573		549		553		569
Max. speed / altitude	kn./ft.	566/S.L.		573/S.L.		549/S.L.		553/S.L.		569/S.L.
LANDING WEIGHT (Stores off)										
Fuel	lb.	1353		1671		1671		1671		1681
Stall speed - power-off / approach power	kn./kn.	81.9/73.3		82.5/73.7		82.5/73.7		82.5/73.7		83.0/74.2
Landing distance - ground roll over 50' obst.	ft.	1056/1559		1069/1574		1069/1574		1070/1575		1080/1590

NOTES

PERFORMANCE BASIS: Calculations  
 RANGE AND/OR RADIUS Eng. spec. fuel consumption increased 5%  
 (A) Military Rated Thrust  
 (B) Inflight refueling. One out bound inflight refueling  
 756 n.mi. out, 9700 lb. fuel transferred. (tanker, tot. fuel=26099 #)  
 (C) IFR: One out bound IFR 765 N.Mi out, 9600 lb. fuel transferred from buddy tanker

MISSION TIME: Any time where fuel is used and distance gained including loiter and combat time.  
 SPOTTING: A total of 60 airplanes can be accommodated in the safe parking area on the flight and hangar decks of a CVA-19 class angled deck carrier.

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○ LOADING CONDITION COLUMN NUMBER

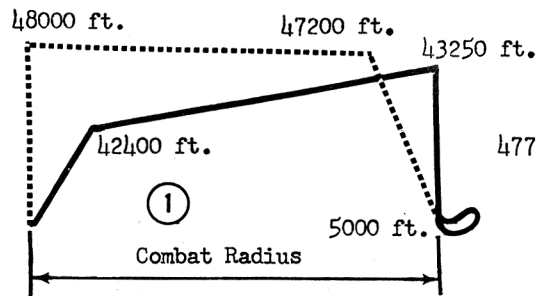
Standard Aircraft Characteristics NAVAER 1335E (Rev. 1-55)

# NOTES

Loading (all data based on JP-5 fuel)	Take-Off Weight-Lbs.	Sea Level Store Delivery (Mod.)		Low Altitude Attack (Mod.)	
		Combat Radius	Mission Time	Combat Radius	Mission Time
1-MK 28 Store plus 2-300 gal. ext. tanks	47516	787	4.5	1054	5.9
1-MK 43 Store plus 4-300 gal. ext. tanks	51795	1044	5.7	1285	7.0
2-MK 83 Stores plus 3-300 gal. ext. tanks	49475	924	5.1	1173	6.5
5-MK 84 Stores	50846	415	2.8	624	3.9
4 Sidewinders	41559	465	3.1	763	4.6

**Low Altitude Attack (Modified)**

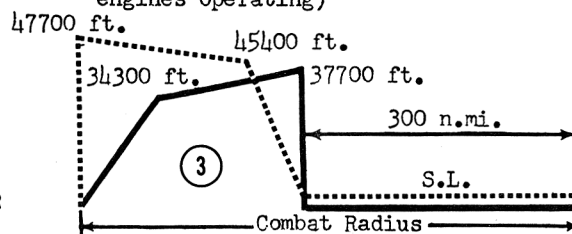
Warm-up, taxi, take-off: 5 min. SSL NRP  
 Climb: On course to optimum cruise alt. with mil. power  
 Cruise-out: At max. range speed at opt. cruise alt.  
 Descend: To 5000 ft. (no fuel used, no dist. gained)  
 Loiter: 1 hour at max. end. speed (no dist. gained) Store dropped at end of loiter  
 Climb: On course to optimum cruise alt. with mil. power  
 Cruise-back: At max. range speed at opt. cruise alt.  
 Reserve: 5% initial internal fuel+20 min. @max. end. speed at S.L. (all engines operating)



○ LOADING CONDITION COLUMN NUMBER

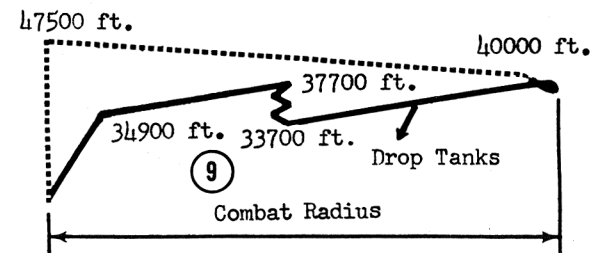
**Sea Level Store Delivery (Modified)**

Warm-up, taxi, take-off: 5 min. SSL NRP  
 Climb: On course to optimum cruise alt. with mil. power  
 Cruise-out: At max. range speed at opt. cruise alt.  
 Descend: To S.L. when 300 n.mi. from target (no fuel used, no dist. gained)  
 Cruise: At max. range speed at S.L. (all engines operating)  
 Dash: 3 min. to target with mil. thrust, tanks dropped prior to dash. (All engines operating)  
 Drop Store(s)  
 Dash: 2 min. from target with mil. thrust (all engines operating)  
 Cruise: At max. range speeds at S.L. to a point 300 n.mi. from target  
 Climb: On course to opt. cruise. alt. with mil. power  
 Cruise-back: At max. range speed at opt. alt.  
 Reserve: 5% initial internal fuel+20 min. @ max. end. speed at S.L. (all engines operating)



**High Altitude Attack-Buddy IFR (Modified)**

Warm-up, taxi, take-off: 5 min. SSL NRP  
 Climb: On course to optimum cruise alt. with mil. power  
 Cruise-out: At max. range speed at opt. cruise alt.  
 Allowance for hook-up and flight contingencies - 5 min. at max. endurance speeds (no fuel used, no distance gained during transfer of fuel)  
 Refuel Point: Limited to return of receiver to base with normal reserve if contact is not made.  
 Cruise-out: At max. range speed at opt. cruise altitude  
 Combat: 5 min. with mil. thrust at best cruise altitude  
 Cruise-back: At max. range speed at opt. cruise alt.  
 Reserve: 5% initial internal fuel +20 min. @ max. end. speed at S.L. (all engines operating)



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