

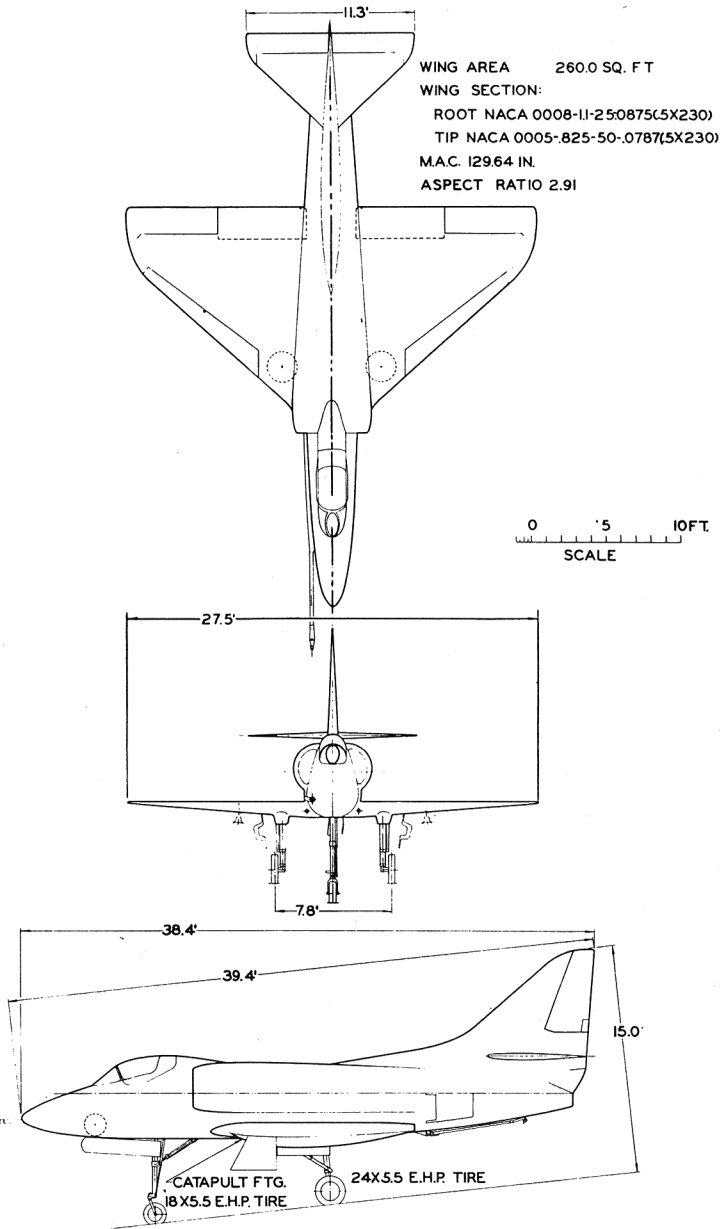
STANDARD AIRCRAFT CHARACTERISTICS

A4D-2 "SKYHAWK"

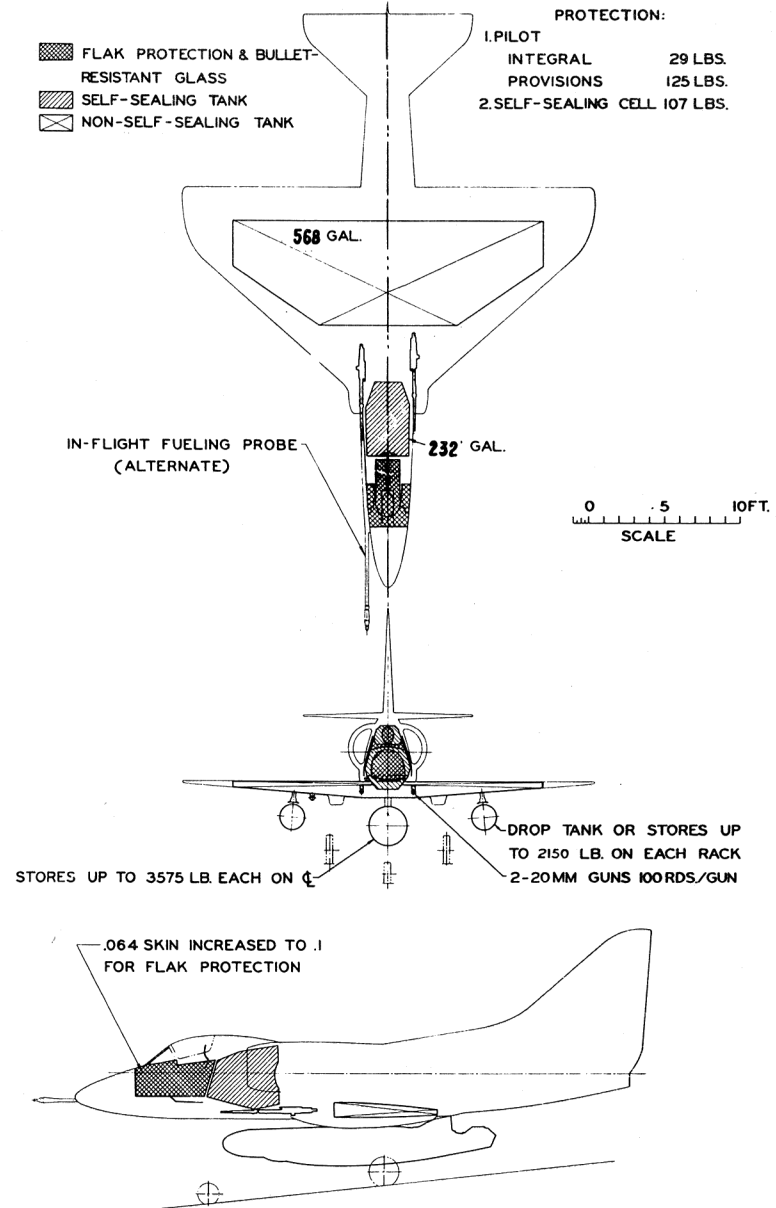
DOUGLAS

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-55)

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DESCRIPTIVE ARRANGEMENT



ARMAMENT & TANKAGE

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POWER PLANT

NO. & MODEL.....(1) J65-W-16A or -4B
 MFR.....WRIGHT AERONAUTICAL
 TYPE.....AXIAL FLOW
 LENGTH.....113 in.
 DIAMETER.....31 in.
 AUGMENTATION.....NONE

RATINGS

	LBS	RPM
MILITARY	7000	8300
NORMAL	6780	8030

SEA LEVEL STATIC

SPEC. WAD N890-B

MISSION AND DESCRIPTION

The A4D-2 airplane is a light-weight, carrier based, jet attack airplane whose primary mission is the destruction of enemy ground and surface targets. The airplane is also capable of in-flight refueling as a tanker or a receiver.

The arrangement is conventional with all-metal semi-monocoque structure and three span low aspect ratio wing. Landing gear, flaps and speed-brakes are hydraulically operated. An electrically operated, fully adjustable stabilizer is used to trim throughout the normal flight range. The aileron, elevator, and rudder systems are hydraulic-power operated. Manual control is provided for emergencies.

This airplane does not have folding wings. The A4D-2 differs from the A4D-1 in that A4D-2 has the following:

1. Receiver and tanker in-flight refueling capabilities
2. Basic weight increase of 735 Lbs.
3. Installation of a "tadpole" rudder.

WEIGHTS

LOADINGS	LBS	L.F.
EMPTY	8965	
BASIC	9570	
DESIGN	12504	7.0
COMBAT	16014	5.5
MAX. T.O. (FIELD)	20,000	4.2
(CAT.)	22,500	3.8
MAX. LAND (FIELD)	16,000	5.5
(ARREST)	12,000	7.0

ALL WEIGHTS ARE ACTUAL

FUEL AND OIL

NO. TANKS	TOL. GALS.	LOCATION
1	568	Wing
1	232	Fuselage
2	300 or 600	Wing Pylons

FUEL GRADE.....JP-4 or -5
 FUEL SPEC. (APPLICABLE).....MIL-F-5624

OIL

CAPACITY (GALS).....3.2
 SPEC (APPLICABLE).....MIL-L-7808

ORDNANCE

FUSELAGE

Bombs	1-Mk.81 Mod.1(250 lb.)
	1-Mk.82 Mod.1 (500 lb.)
	1-Mk.83 Mod. 2 or 3 (1000 lb)
	1-Mk.84 Mod.1 (2000 lb.)
Stores	1-1050 lb.
	1-1480 lb.
	1-1660 lb.
	1-2025 lb.
	1-3500 lb.
	1-In-flight Refueling Store
Spray Tank	1-Aero 14B
Fire Bomb	1-Mk.79 Mod.0(1000 lbs.) or 1-150 gal.DAG Fuel Tank
Missiles	1-ASM-N-7 Bullpup
Pyrotechnics	1-Aero 5A Flare Dispenser
Rockets	1-pkg (7) 2.75" Aero 3A
	1-pkg. (19) 2.75" Aero X7A
	1-pkg. (4) 5.00" Aero X10A
Prac. Bombs	1-Aero 5A Prac. bomb cont.
Drop Tanks	1-150 gal. (DAC) (2 fins)
	1-300 gal. (DAC) (no fins)

(Continued on NOTE page)

DEVELOPMENT

First Flight.....March 1956
 Service UseJuly 1957

DIMENSIONS

WING
 AREA.....260 sq. ft.
 SPAN27' - 6"
 MAC.....10' - 9.6"
 SWEEPBACK (1/4 chord).....33.2°
 LENGTH39" - 4.8"
 HEIGHT15' - 0"
 TREAD.....7' - 9.8"

ELECTRONICS

Electronics Control.....AN/ASQ-17
 Integrated Package consisting of:
 UHF Communication.....AN/ARC-27A
 IFF.....AN/APX-6B
 Coder.....AN/APA-89
 Direction Finder.....AN/ARA-25
 Automatic Dead
 Reckoning Computer.....AN/ASN-19
 TACANAN/ARN-21

External Stores

Marker-Beacon Rec.....AN/ARN-12
 VOR Rec.....AN/ARN-14E

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

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	① SEA LEVEL STORE DELIVERY 1-1050 LB. STORE 2-150 GAL. EXT. TANKS	③ SEA LEVEL STORE DELIVERY 1-2025 LB STORE 2-300 GAL. EXT. TANKS	⑤ 15,000 FT. STORE DELIVERY 3-BULLPUP MISSILES	⑦ LOW ALT. ATTACK 3-ZUNI ROCKET PACKAGES	⑨ MODIFIED HIGH ALTITUDE ATTACK 2-CORVUS MISSILES 1-300 GAL. EXT. TANK	
TAKE-OFF WEIGHT	lb.	18,324	21,469	17,203	16,947	20,928
Fuel internal/external (JP-5)	lb./lb.	5440/2040	5440/4080	5440/NONE	5440/NONE	5440/2040
Fayload	lb.	1050	2025	1650	1284	3500
Wing loading	lb./sq.ft.	70.5	82.6	66.2	65.2	80.5
Stall speed - power-off	kn.	*122	132	118	117	130
Take-off run at S.L. - calm (A)	ft.	3160	4750	2660	2570	4500
Take-off run at S.L. 25 kn. wind (A)	ft.	2250	3500	1900	1870	3250
Take-off to clear 50 ft. - calm (A)	ft.	4070	6250	3500	3400	5800
Max. speed/altitude (A)	kn./ft.	542/7000	530/11,000	529/17,000	535/6,000	527/10,000
Rate of climb at S.L. (A)	fpm.	6550	5150	6400	7200	5200
Time: S.L. to 20,000 ft. (A)	min.	3.9	5.0	3.9	3.5	4.9
Time: S.L. to 30,000 ft. (A)	min.	7.0	9.8	7.1	6.3	9.4
Service ceiling (100 fpm) (A)	ft.	38,100	34,100	38,400	39,700	34,700
Combat range	n.mi.	1310	1520	715	800	1030
Average cruising speed	kn.	405	400	395	400	400
Cruising altitude(s)	ft.	33,100-40,600	29,700-38,900	35,100-39,500	34,700-39,500	30,300-36,600
Combat radius/mission time (B)	n.mi./hr.	395/2.1	565/2.8	325/1.8	305/1.7	555/2.8
Average cruising speed	kn.	405	400	400	400	400
IFR-Buddy refuel. -rad./mission time	n.mi./hr.	800/4.0	955/4.8			925/4.8
IFR(30,000') fuel transf./dist. out	lb/n.mi.	3620/525	4050/490			4000/490
COMBAT LOADING CONDITION	② TANKS OFF STORE RETAINED	④ TANKS OFF STORE RELEASED	⑥ MISSILES RETAINED	⑧ ROCKET PACKAGES RETAINED	⑩ TANK OFF MISSILES RETAINED	
COMBAT WEIGHT	lb.	16,014	14,964	15,027	14,771	18,705
Engine power		MILITARY	MILITARY	MILITARY	MILITARY	MILITARY
Fuel	lb.	FULL INTERNAL	FULL INTERNAL	60% INTERNAL	60% INTERNAL	FULL INTERNAL
Combat speed/altitude	kn./ft.	562/.85/S.L.	574/.87/S.L.	530/.85/15,000	536/.81/S. L.	506/.86/30,000
Rate of climb/altitude	fpm/ft.	8200/S.L.	9100/S. L.	5100/15,000	8350/S.L.	2000/30,000
Combat ceiling (500 fpm)	ft.	40,400	42,100	40,200	41,600	36,500
Rate of climb at S.L.	fpm.	8200	9100	7500	8400	6350
Max. speed at S.L.	kn/M	562/.85	574/.87	512/.77	536/.81	538/.81
Max. speed/altitude	kn./M/ft	562/.85/2000	574/.87/S.L.	530/.85/16,000	536/.83/5000	538/.83/4000
Max. speed at 35,000 ft.	kn./M	514/.89	523/.91	500/.87	500/.87	488/.85
LANDING WEIGHT	lb.	10,690	10,794	11,181	11,005	10,939
Fuel	lb.	1166	1270	1068	1073	1174
Stall speed - power-off/appr. pwr.	kn./kn.	91.5/87.3	91.9/87.7	93.6/89.3	92.8/88.6	92.5/88.3
Dist.-grnd.run/over 50 ft. obstacle	ft./ft.	2550/3265	2580/3295	2690/3405	2640/3355	2620/3335

NOTES

PERFORMANCE BASIS: CONTRACTOR AND NATC Flight Test Results

RANGE AND/OR RADIUS are based on NATC Flight test fuel consumption data.

(A) Military Rated Thrust

(B) For effect of JP-4 Fuel on Combat Radius and Mission Time. See Notes page.

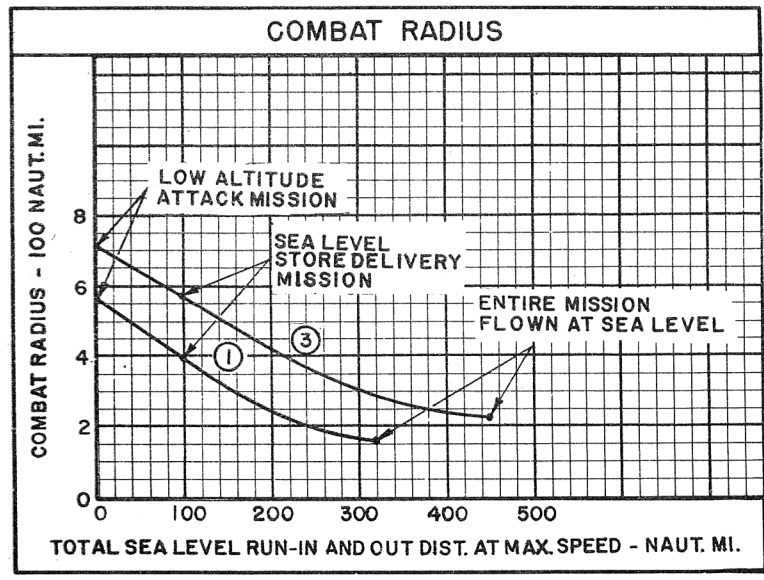
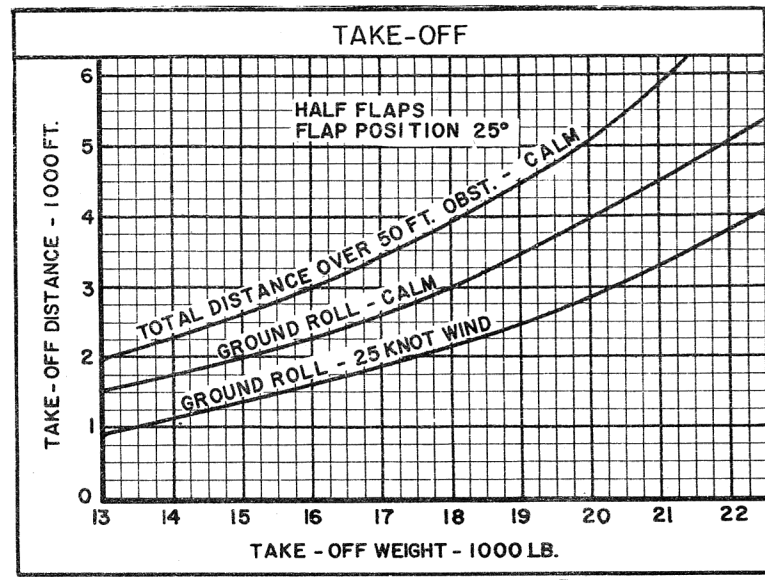
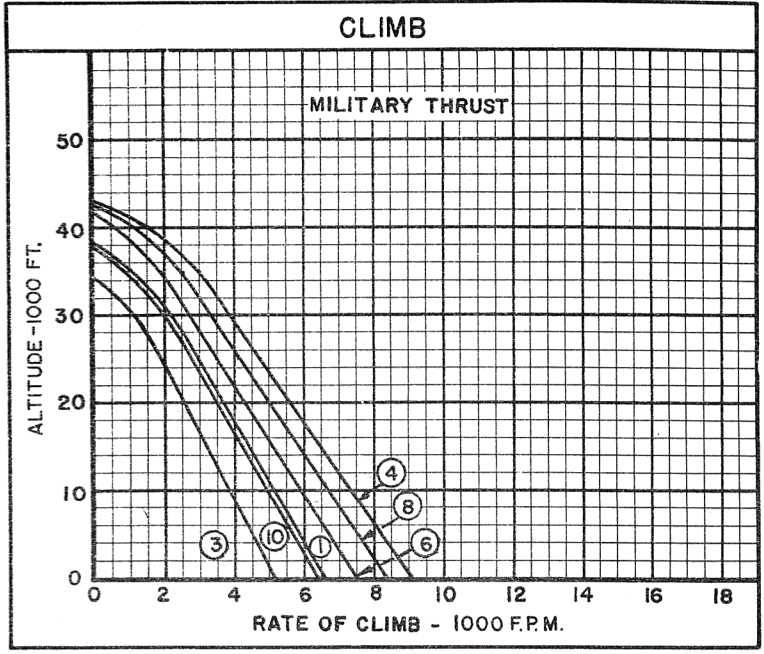
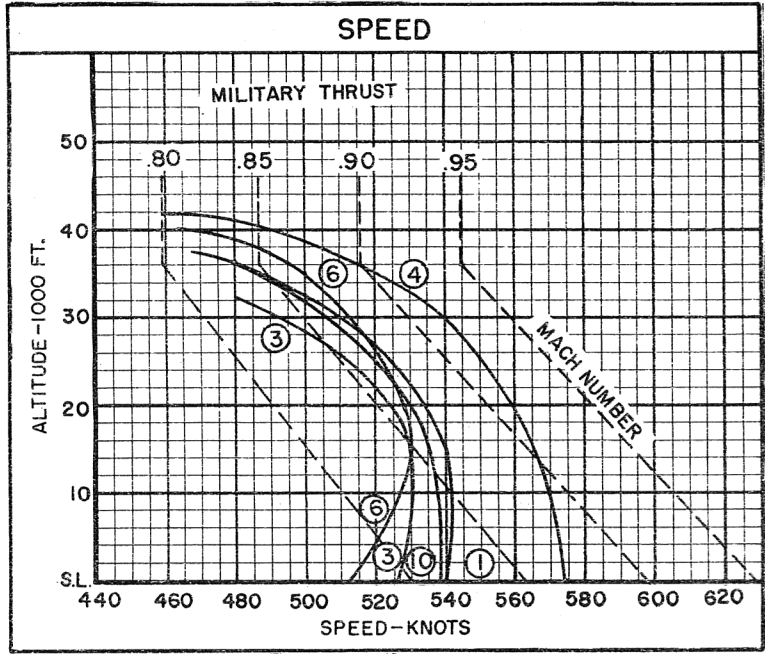
All configurations include wing pylons and in-flight refueling probe; loadings 5, 6, 7 and 8 include guns and ammunition.

MISSION TIME: Any time where fuel is used and distance gained plus combat and refuel allowance times.

SPOTTING: A total of 106 aircraft can be accommodated in a landing spot on the flight and hanger decks of a CVA-19 class angled-deck carrier.

NAVJER-1335D (Rev. 1-55)

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○ LOADING CONDITION COLUMN NUMBER

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

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NOTES

LOADING
(All data based on JP-4 fuel)

	TAKE-OFF WEIGHT
1-2025 lb. store plus 2-300 gal. ext tanks	21,049 lb.
3-Bullpup Missiles	16,963 lb.
2-Corvus Missiles plus 1-300 gal.ext.tank	20,598 lb.

15,000 FT. STORE DELIVERY	
Combat Radius	Mission Time
710 n.mi.	3.7 hr.
305 n.mi.	1.7 hr.
490 n.mi.	2.5 hr.

SEA LEVEL STORE DELIVERY	
Combat Radius	Mission Time
525 n.mi.	2.6 hr.
110 n.mi.	0.6 hr.
310 n.mi.	1.6 hr.

SEA LEVEL STORE DELIVERY

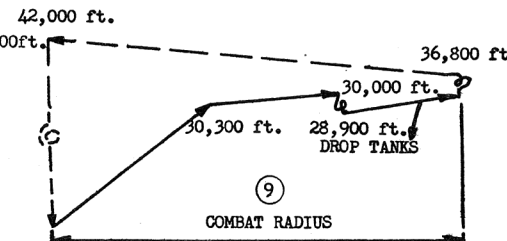
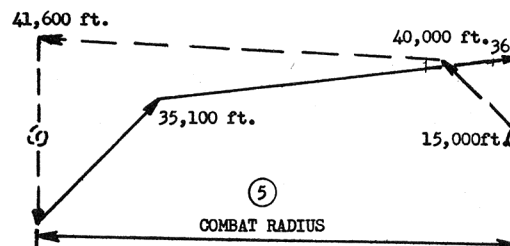
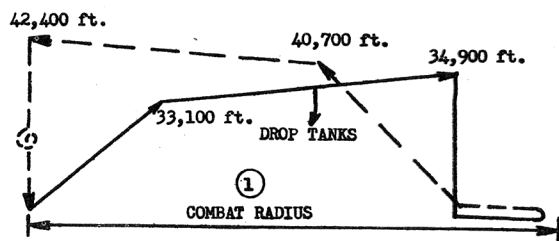
START ENGINE, TAKE-OFF AND ACCELERATE: Fuel for 5 minutes with normal power at sea level.
 CLIMB OUT: At maximum rate of climb with military power on course to optimum cruise altitude.
 CRUISE OUT: At maximum range speeds at optimum cruise altitude. (Drop any external tanks when empty.)
 DESCEND: To sea level (no fuel consumed - no distance covered.)
 RUN-IN: At S.L. for 50 N.Mi. at maximum speed with military power. Drop bombs, fire rockets.
 COMBAT: At sea level for 5 minutes with military power. No distance made good.
 RUN-OUT: At sea level for 50 nautical miles at maximum speed with military power.
 CLIMB BACK: At maximum rate of climb with military power on course to optimum cruise altitude.
 CRUISE BACK: At maximum range airspeeds at optimum cruise altitude.
 DESCEND: To sea level (no fuel consumed - no distance covered.)
 RESERVE: Fuel allowance; 5% of initial fuel plus 20 minutes at speed for maximum endurance at sea level.

15,000 FT. STORE DELIVERY

START ENGINE, TAKE-OFF AND ACCELERATE: Fuel for 5 minutes with normal power at sea level.
 CLIMB OUT: At maximum rate of climb with military power on course to optimum cruise altitude.
 CRUISE OUT: At maximum range speeds at optimum cruise altitude. (Drop any external tanks when empty.)
 DESCEND: To 15,000 ft. (no fuel consumed - no distance covered) drop bombs, fire rockets.
 COMBAT: At 15,000 ft. for 5 minutes with military power. No distance made good.
 CLIMB BACK: At maximum rate of climb with military power on course to optimum cruise altitude.
 CRUISE BACK: At maximum range airspeeds at optimum cruise altitude.
 DESCEND: To sea level (no fuel consumed - no distance covered.)
 RESERVE: Fuel allowance; 5% of initial fuel plus 20 minutes at speed for maximum endurance at S. L.

MODIFIED HIGH ALTITUDE ATTACK

START ENGINE, TAKE-OFF AND ACCELERATE: Fuel for 5 minutes with normal power at sea level.
 CLIMB OUT: At maximum rate of climb with military power on course to optimum cruise altitude.
 CRUISE OUT: At maximum range airspeeds at optimum cruise altitude.
 IN-FLIGHT REFUELING: At 30,000 ft. Fuel allowances for hook-up and flight contingencies = 5 minutes at maximum endurance speeds (no distance made good.) Note: Refueling point limited to return of aircraft to base with normal reserve if refueling contact is not made.
 CRUISE OUT: Continue to cruise at maximum range airspeeds at optimum cruise altitude. (Drop any external tanks when empty.)
 DESCEND: To 30,000 ft. (no fuel consumed - no distance covered.) Launch missiles.
 COMBAT: At 30,000 ft. for 5 minutes with military power. No distance made good.
 CLIMB BACK: At maximum rate of climb with military power on course to optimum cruise altitude.
 CRUISE BACK: At maximum range airspeeds at optimum cruise altitude.
 DESCEND: To sea level (no fuel consumed - no distance covered.)
 RESERVE: Fuel allow.: 5% of initial fuel plus 20 min. at speed for maximum endurance at S.L.



ORDNANCE (Continued)

Radio	1-NAVPAC unit	Drop Tank
Misc.	1-Aero 1A Missile Disp.	Fire Bomb
	WING	Pyrotechnics
Bombs	2-Mk.81 Mod. 1 (250 lb.)	
	2-Mk.82 Mod.1 (500 lb.)	
	2-Mk.83 Mods. 2 or 3 (1000 lb.)	
Missiles	2-ASM-N-7 Bullpup	

2-150 gal. DAC (2 fins)	Rockets
2-300 gal. DAC	
2-Mk.79 Mod.0 or 2-150 gal. DAC fuel tanks	Misc.
2-Aero 5A Flare Dispensers	

2-pkgs. (7) 2.75" Aero 3A
2-pkgs. (19) 2.75" Aero X7A
2-Pkgs. (4) 5.00" Aero X10A
2-Aero 1A Missile Disp.

FIXED GUNS/RDS. AMM.

2 Mk. 12 Mod. 0 20mm/100 rds. per gun

Maximum Bomb Capacity: 5975 lbs.

○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAR 1335F (Rev. 1-55)