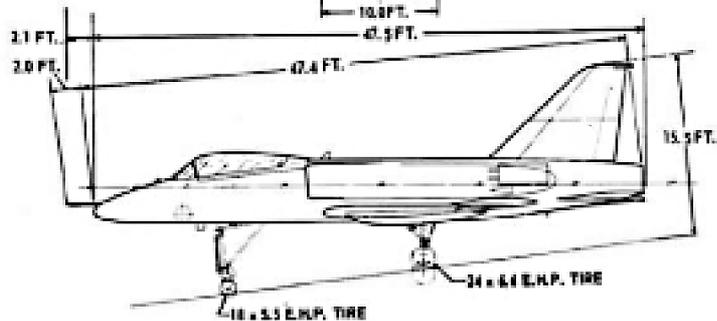
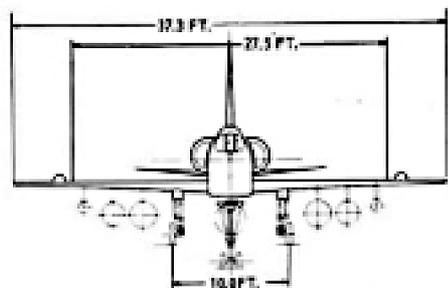
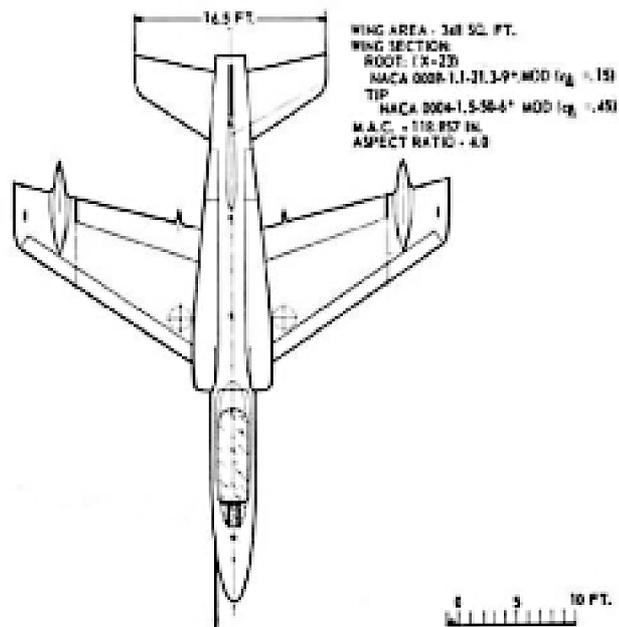
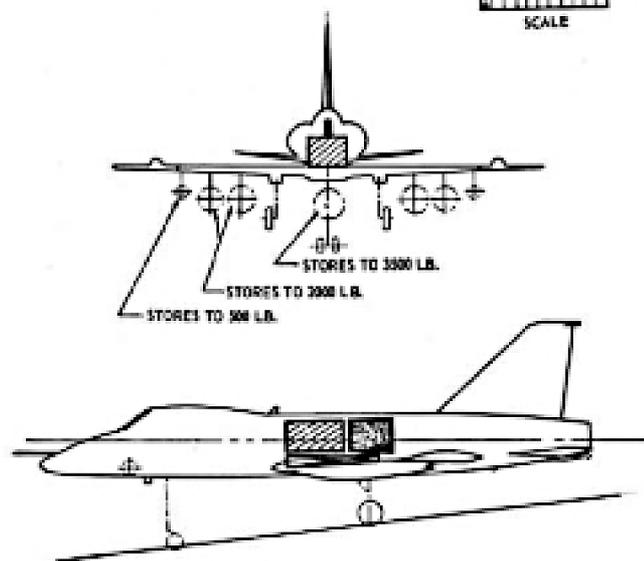
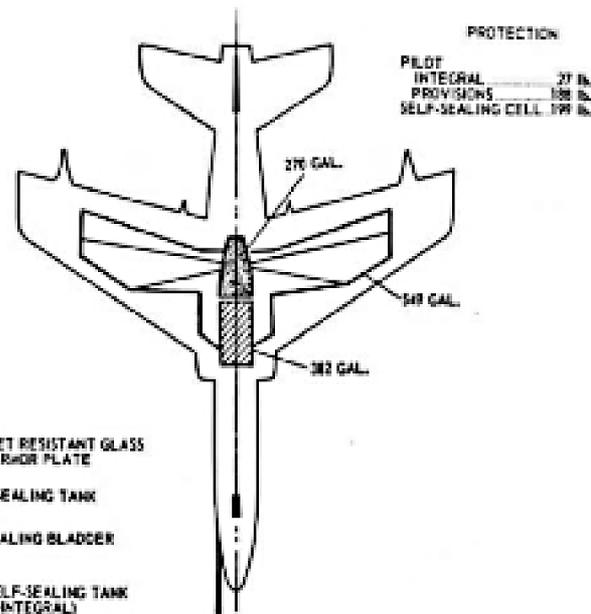


STANDARD AIRCRAFT CHARACTERISTICS
A4D-4 ATTACK AIRPLANE

DOUGLAS AIRCRAFT COMPANY, INC., EL SEGUNDO DIVISION



DESCRIPTIVE ARRANGEMENT



ARMAMENT & TANKAGE

ORDNANCE

CENTRELINE STATION

SPECIAL WEAPONS: Mk. 28, 28 Retard-
ed, 91, 43, 105, TX43X1, Lodestar
G.P. BOMBS: Mk. 81, 82, 83, 84
MISSILES: DAC Model 742 (or Equiv.),
Bullpup, Corvus
ROCKETS: Aero 7D Dispenser
Aero 10D Dispenser
GUNS: Mk. 11 or Vulcan 20mm Pods
FUEL: Aero 1A 150 Gal. or 300
Gal. Tank, DAC 400 Gal. Tank
In-flight Fueling Store
MISC: Mk. 79 Fire Bomb, Aero BA
Practice Dispenser, Aero 14B
Spray Tank, Aero 5A Flare Dis-
penser, DECM Package, ASW Package

WING STATION 90

SPECIAL WEAPONS: Mk. 28, 28 Retard-
ed, 43, 105, TX43X1, Lodestar
G.P. BOMBS: Mk. 81, Mk. 82, Mk. 83
MISSILES: Bullpup, Corvus,
DAC Model 742 (or Equiv.)
ROCKETS: Aero 7D Dispenser
Aero 10D Dispenser
GUNS: Mk. 11 or Vulcan 20mm Pods
FUEL: Aero 1A, 150 or 300 Gal. Tank
DAC 400 Gal. Tank
MISC: Mk. 79 Fire Bomb, Aero 5A
Flare Dispenser DECM Package
(right side only)

WING STATIONS 121 & 151

G.P. BOMBS: Mk. 81, 82
MISSILES: Bullpup
ROCKETS: Aero 7D Dispenser
MISC: Aero 5A Flare Dispenser
(Station 121 only)

MISSION AND DESCRIPTION

The A4D-4, an advancement of the A4D series, is de-
signed specifically for long-range attack under all
weather conditions. The primary mission is low-alti-
tude delivery of a special weapon. In-flight fuel
receiving equipment is installed and provisions are
made for carrying a tanker store.

The A4D-4 is a single-place, swept-wing airplane pow-
ered by a single turbojet engine. The all-metal,
semi-monocoque fuselage is essentially one piece,
with removable tail cone. IR suppression is provided
in the tail cone. The longer fuselage accommodates
additional electronics equipment and internal fuel.
A large bubble canopy provides excellent visibility.
Alternate missions can be accomplished with a wide
variety of conventional and special weapons carried
on seven external stations. The A4D-4 is well
suited for close air support, interdiction, armed
reconnaissance, and pre-strike sweeps against enemy
defense installations and parked aircraft.

The three-spar wing has manually-folded tips for car-
rier operation. Control surfaces extending from the
wing root to fold line set differentially as ailerons
and symmetrically as flaps. Leading-edge slats are
mechanically actuated with the flaps.

The rudder, ailerons and horizontal stabilizer are
actuated by a tandem hydraulic system. A wind-driven
pump provides emergency hydraulic power. Electrical
power is provided by an alternator with engine-mounted
constant-speed drive. Emergency electrical power is
by a wind-driven generator.

New features include: dead-reckoning navigation compu-
tation with inputs from an astrotracker and doppler
radar; improved terrain clearance; and automatic nav-
igation corrections from radar fixes.

WEIGHTS

Loadings	Gross lbs.	L.F.
Empty	12,702	
Basic	13,165	
Flight		
Design	20,086	7.0
Combat	20,086	7.0
Catapult		
Design	28,000	5.0
Landing		
Basic	18,454	
Emer.	20,086	

DIMENSIONS

Wing:
MAC.....118.857 in.
Sweepback.....30°
Area.....348 sq.ft.
Span.....37.33 ft.
Span(folded)27.5 ft.
Length.....47.5 ft.
Height.....15.5 ft.
Tread.....10 ft.

POWER PLANT

No. & Model.....J52-P-6
Mfr.....Pratt & Whitney
Eng.Spec.No.....N-1731 (7-17-57)
Type.....Turbojet
Compr.....Two-Rotor, Multi-Stage
Axial Flow
Length.....104.6 in.
Diameter.....32.0 in.
Weight.....2005 lb.

RATINGS

Sea Level Static

Thrust, lb.

Take-off.....8500
Military.....8500
Normal.....7500

ELECTRONICS

Navigation & Terrain Clearance
Radar.....AN/APG-33A (Mod.)
CNI Package.....AN/ASQ-19
AJB-3 Gyro Platform & LABS System
ASN-19 Navigation Computer
ALR-15 ECM Receivers
Air Data Sensors
AVN-1 Star-Tracker
Doppler Radar
Optical Sight
Auto-Pilot

FUEL AND OIL

Gal.	No. Tanks	Location
547	1 (Integral)	Wing
384	1 (Self-seal)	Fuselage
270	1 (Ripran Bladder)	Fuselage
600	2 (Drop)	Ext. Wing
Tanker and Receiver Provisions		
Fuel Grade.....JP-5		
Fuel Spec.....MIL-F-7914		

OIL

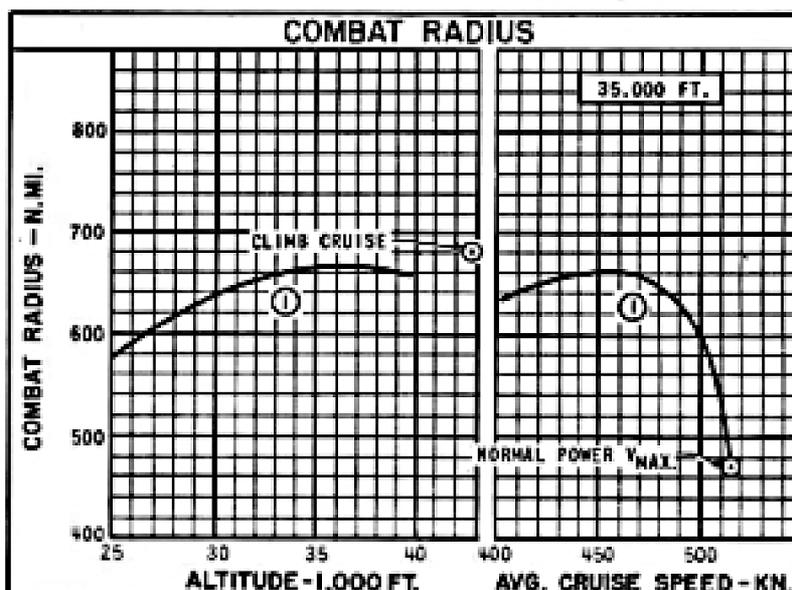
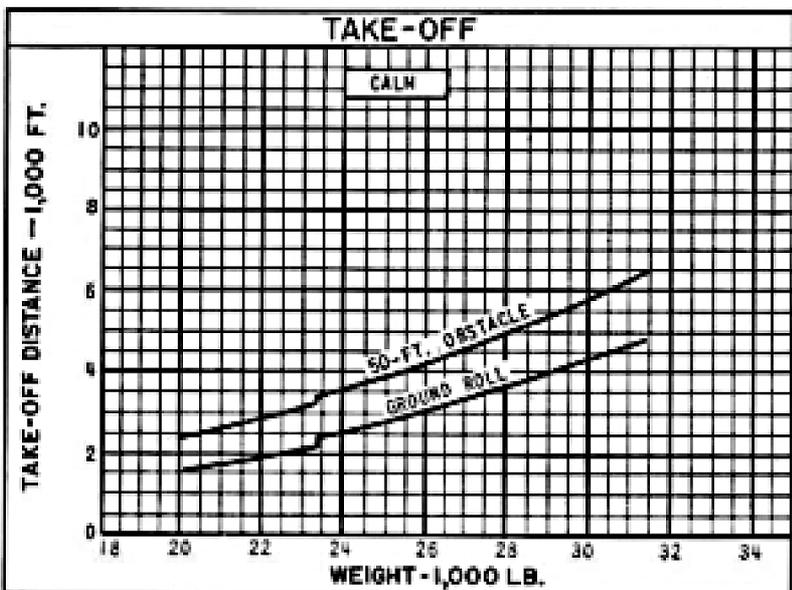
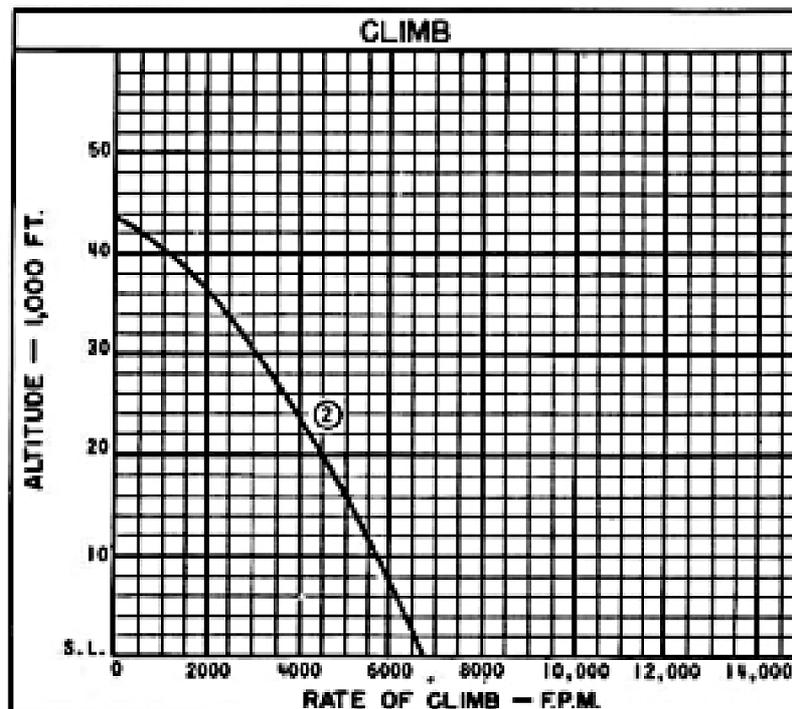
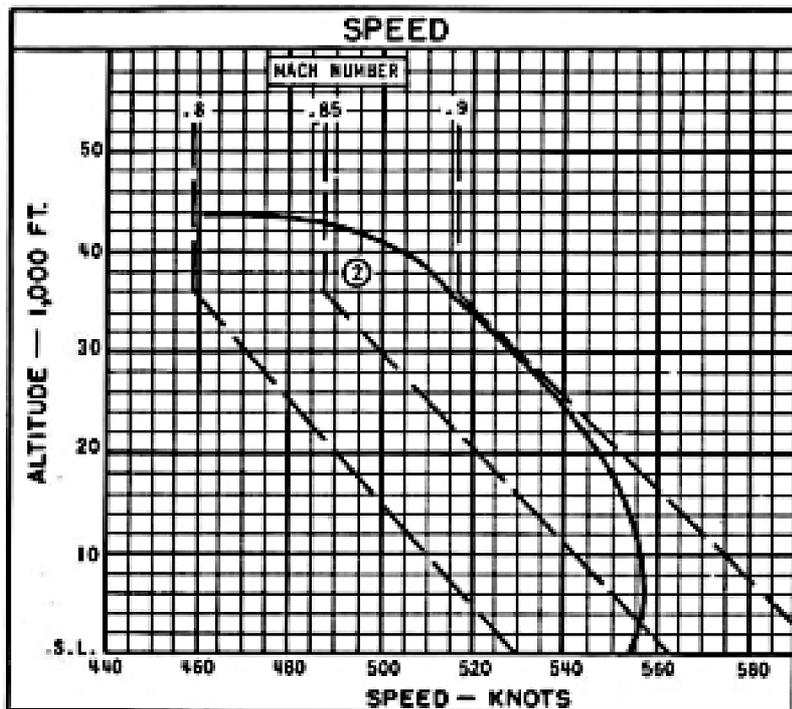
Capacity.....5.0 gal.
Oil Spec.....MIL-F-7808

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) BASIC ATTACK ONE SPECIAL WEAPON	(2) LONG RANGE ATTACK ONE SPECIAL WEAPON 2-300 GALL. TANKS	(3) EXTENDED RANGE ATTACK ONE SPECIAL WEAPON 2-300 GALL. TANKS	(4) MISSILE ATTACK FIVE ASM-N-7 (BULLPUPS)
TAKE-OFF WEIGHT lb.	23,300	28,000	22,484	24,475
Fuel (JP-5) lb.	8160	12,240	13,600	8160
Payload lb.	2025	2025	2025	2000
Wing loading lb./sq.ft.	67	81	85	70
Stall speed - power-off kn.	111	127	131	119
Take-off run at S.L. - calm ft.	2220	3670	4140	2650
Take-off run at S.L. kn.wind ft.	1440	2540	2920	1760
Take-off to clear 50 ft. - calm ft.	3240	4980	5530	3780
Max. speed/altitude (A) kn./ft.	558/5000	523/12,000	510/15,000	498/20,000
Rate of climb at S.L. (A) fpm	5860	3980	5580	3830
Time: S.L. to 20,000 ft. (A) min.	4.3	7.0	8.2	7.5
Time: S.L. to 30,000 ft. (A) min.	8.2	14.9	19.0	16.1
Service ceiling (100 fpm) (A) ft.	40,500	34,000	32,800	34,400
Combat range n.mi.	1660	2170	2380	1040
Average cruising speed kn.	460	460	460	420
Cruising altitude(s) ft.	38,600-44,600	33,000-45,200	31,700-45,200	34,000-39,800
Combat radius n.mi.	690	1000	1105 (B)(E)	415 (F)
Average cruising speed kn.	460	460	460	440
Mission time hr.	3.1	4.5	5.0	2.4
Cycle time hr.	3.4	4.8	5.3 (B)(E)	2.7
COMBAT LOADING CONDITION	(3) 408 FUEL ONE SPECIAL WEAPON			
COMBAT WEIGHT lb.	20,086			
Engine power	MILITARY			
Fuel lb.	4896			
Combat speed/combat altitude kn./ft.	554/S.L.			
Rate of climb/combat altitude fpm/ft.	6770/S.L.			
Combat ceiling (500 fpm) ft.	41,200			
Rate of climb at S.L. fpm	6770			
Max. speed at S.L. kn.	554(M = .84)			
Max. speed/altitude kn./ft.	517(M = .90)/35,000			
LANDING WEIGHT (20% Fuel, No Weapon) lb.	(3) 14,797			
Fuel lb.	1638			
Stall speed - power-off kn.	89			
Stall speed - with approach power kn.	86			

NOTES

- (A) Military thrust
- (B) With one refueling outbound from an A4D-4 tanker, combat radius is 1500 n.mi. and cycle time is 7.0 hours.
- (C) Performance Basis: Estimated data based on A4D-2 wind tunnel and flight tests and A4D-4 wind tunnel tests. Combat range and radius are based on engine specification fuel consumption data increased 5%.
- (D) Spotting: A total of 20 airplanes can be accommodated in a landing spot 96 ft. wide and 200 ft. long.
- (E) Combat radius with 300 n.mi. run-in and 300 n.mi. run-out at sea level is 760 n.mi.; cycle time is 4.7 hours. Combat radius with sea level cruise all the way is 575 n.mi. and with one in-flight fueling is 785 n.mi.
- (F) Close support mission with 0.5 hour loiter at 300 knots and 5000 feet at the target.



○ LOADING CONDITION COLUMN NUMBER

NOTES

COMBAT RADIUS DESCRIPTION LOW ALTITUDE ATTACK PROFILE

<p><u>Start Engine, Take-Off, and Accelerate</u> Fuel for 5 min. with normal power at sea level.</p>	<p><u>Climb-Out</u> At maximum rate of climb with military power on course to optimum cruise altitude.</p>	<p><u>Cruise-Out</u> At max. range airspeeds at optimum cruise altitude. (Drop any external tanks when empty).</p>	<p><u>Descend</u> To sea level (no fuel consumed-no distance covered). Drop bombs.</p>	<p><u>Combat</u> At sea level for 5 min. with military power. No distance made good.</p>	<p><u>Climb-Back</u> At maximum rate of climb with military power on course to optimum cruise altitude.</p>	<p><u>Cruise-Back</u> At max. range airspeeds at optimum cruise altitude.</p>	<p><u>Reserve</u> Fuel allowance: 5 percent of internal fuel plus 20 min. at speed for maximum endurance at sea level.</p>
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Combat Radius = Climb-Out + Cruise-Out + Climb Back + Cruise-Back

