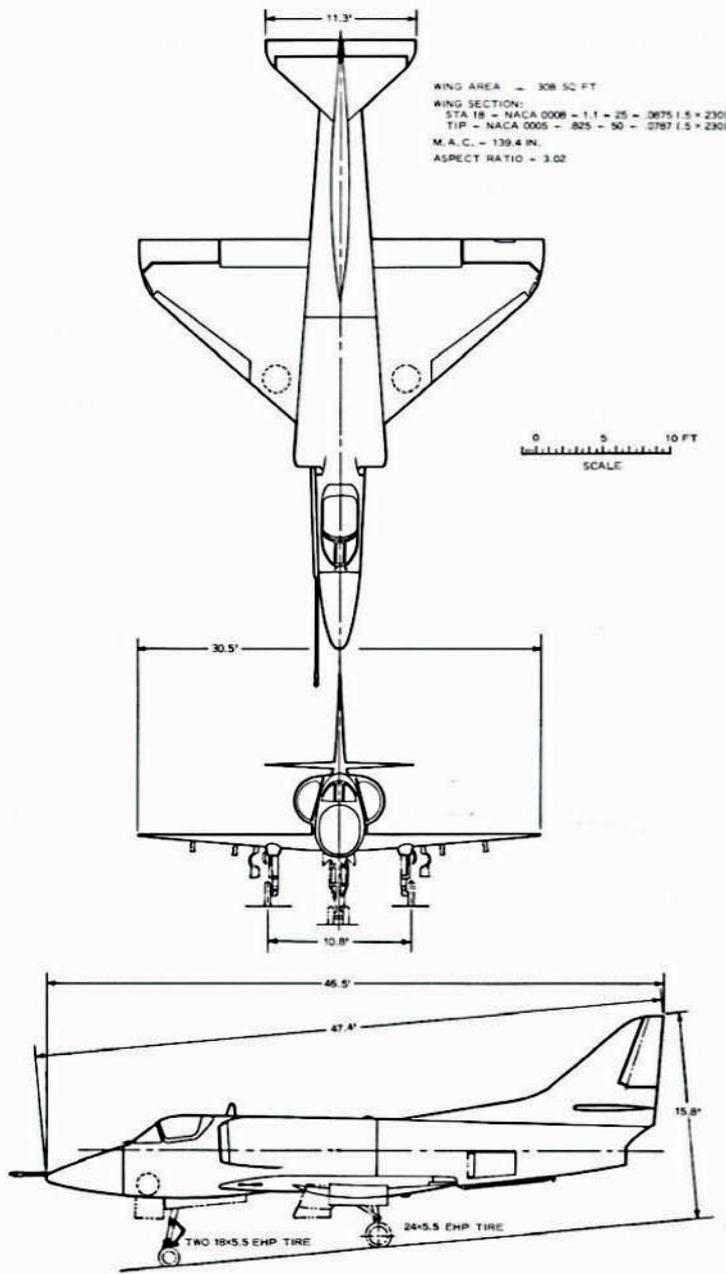


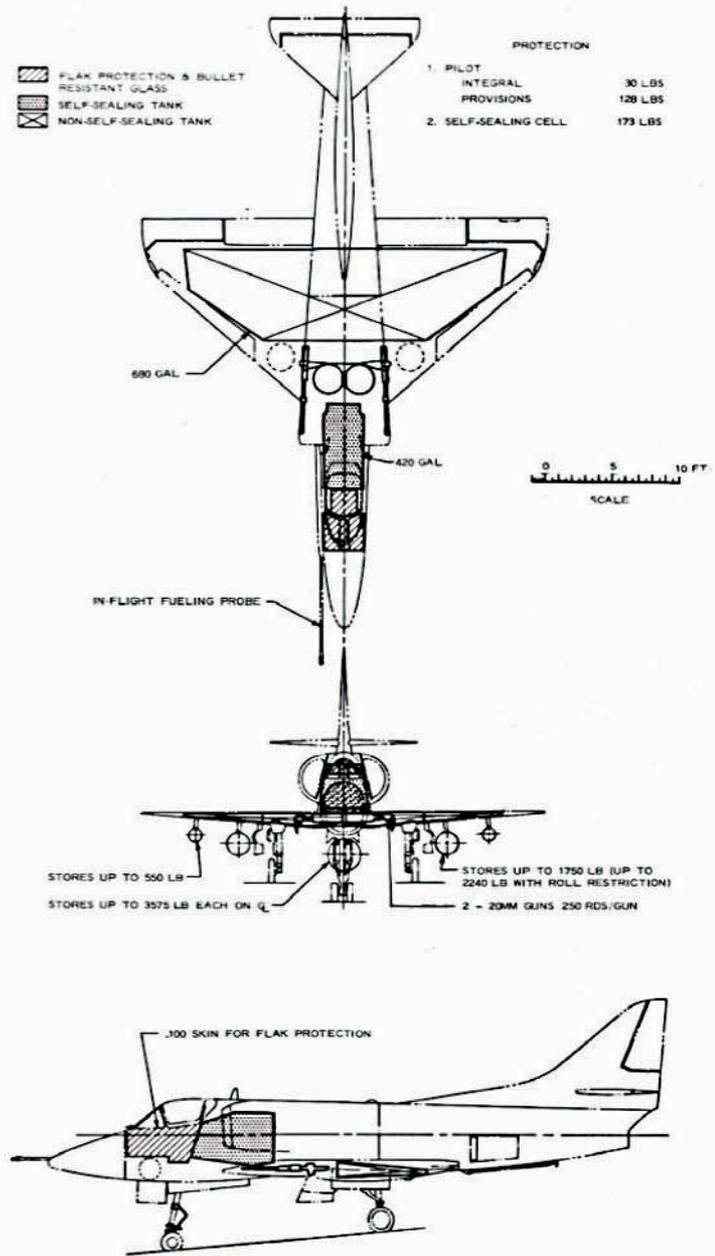


STANDARD AIRCRAFT CHARACTERISTICS
A4D-6 SKYHAWK

DOUGLAS



DESCRIPTIVE ARRANGEMENT



ARMAMENT AND TANKAGE

ORDNANCE

FUSELAGE

Bombs 6xMK81 (250 lb) or 6xMK82 (500 lb) can be carried on Douglas Multiple Bomb Rack.
 1-MK81 G.P. (250 lb)
 1-MK82 G.P. (500) lb)
 1-MK83 G.P. (1000 lb)
 1-MK84 G.P. (2000 lb)

Stores 1-1480 lb MK105
 1-2025 lb MK28
 1-3500 lb MK91
 1-2035 lb MK43

Spray Tank .. 1-Aero 14B

Fire Bomb 1-MK79 (1000 lb) or 1-150 gal Aero 1A fuel tank

Rockets 1-pkg (7) 2.75" Aero 6A-1
 1-pkg (19) 2.75" Aero 7D
 1-pkg (4) 5.00" LAU/10A

Prac. Bombs 1-Aero 5A prac. bomb cont.

Drop Tanks .. 1-150 gal Aero 1A (2 fins)
 1-300 gal Aero 1A (no fins)

Radio 1-NAVPAC unit

Misc. 1-In-Flight Refueling Store
 300 gal

Missile 1-ASM-N-7 Bullpup

INBOARD WING

Bombs 2-6xMK81 (250lb) can be carried on Douglas Multiple Bomb Rack.
 2-MK81 G.P. (250 lb) *
 2-MK82 G.P. (500 lb) *
 2-MK83 G.P. (1000 lb)

Drop Tank 2-150 gal. Aero 1A (2 fins)
 2-300 gal. Aero 1A (2 fins)

Fire Bomb .. 2-MK79 or 2-150 gal fuel tanks

Rockets 2-pkgs (7) 2.75" Aero 6A-1 *
 2-pkgs (19) 2.75" Aero 7D *
 2-pkgs (4) 5.00" LAU/10A *

Missile 2-ASM-N-7 Bullpup *

OUTBOARD WING

*Items marked thus can be carried on outboard wing stations.

FIXED GUNS/ROUNDS AMMUNITION
 2-MK 12 20mm/250 rounds per gun

MISSION AND DESCRIPTION

The proposed A4D-6 is a single place, carrier based, multi-purpose attack and close support airplane. It is capable of dive, glide, and loft bombing using both conventional bombs and special weapons. The A4D-6 is equipped with 5 external store stations to carry a wide variety of ordnance and external fuel tanks. Inflight fueling (tanker and receiver) capability is provided. Limited all weather navigational aids are standard equipment.

The A4D-6 is an advanced version of the A4D-5 incorporating an enlarged fuselage and wing, installation of the JTF10A-8 turbofan engine, nose wheel steering, nose gear catapult tow, wing tank compartmentation, increased internal fuel capacity, and increased cockpit-canopy size.

The structure of the A4D-6 is conventional, with an all-metal, semi-monocoque fuselage and a modified delta wing. Landing gear, flaps, spoilers, and speed brakes, as well as aileron, elevator and rudder systems are hydraulically operated. Wing leading edge slats are aerodynamically actuated. An electrically operated, fully adjustable stabilizer is used to trim throughout the normal flight range. Manual control is provided for emergencies. An automatic flight control system is provided.

DEVELOPMENT *

Proposed authority to proceed October, 1962
 Proposed first flight March, 1964
 Proposed first fleet delivery (12th aircraft) August, 1965

*REF: Report 30970 Program Summary

DIMENSIONS

Span 30.5 ft
 Length 47.4* ft
 Height 15.8 ft
 Max. Tread 10.8 ft
 Wing Area 308 sq ft
 Spotting Factor 1.10 (compared to A4D-5)

*without refueling probe

POWER PLANT

No. and Model .. (1) JTF10A-8
 Mfr. Pratt & Whitney
 Type Turbofan
 Length 125 in.
 Diameter 38 in.
 Assist Device
 Two 5KS-4500 JATO Units

RATINGS

Military 11,350 lb
 Normal 9,100 lb
 Assist Device
 JATO (2) 4,500 lb each

WEIGHTS

Loadings	Pounds	Load Factor
Empty (E)	11,150	
Basic	11,313	
Flight Design.....	18,199	7.0
Combat	16,164	7.0
Max. Design	25,531	5.0
Overload.....	27,531	4.6
Landing Design		
Landplane	17,574	
Carrier	16,600	

FUEL AND OIL

Gal.	No. Tanks	Location
680	1	Wing
420	1	Fuselage
In-Flight Fueling Provisions		
Fuel Spec		MIL-F-5624

OIL

5.8 gal. mounted on engine
 Oil Spec MIL-L-7808

ELECTRONICS

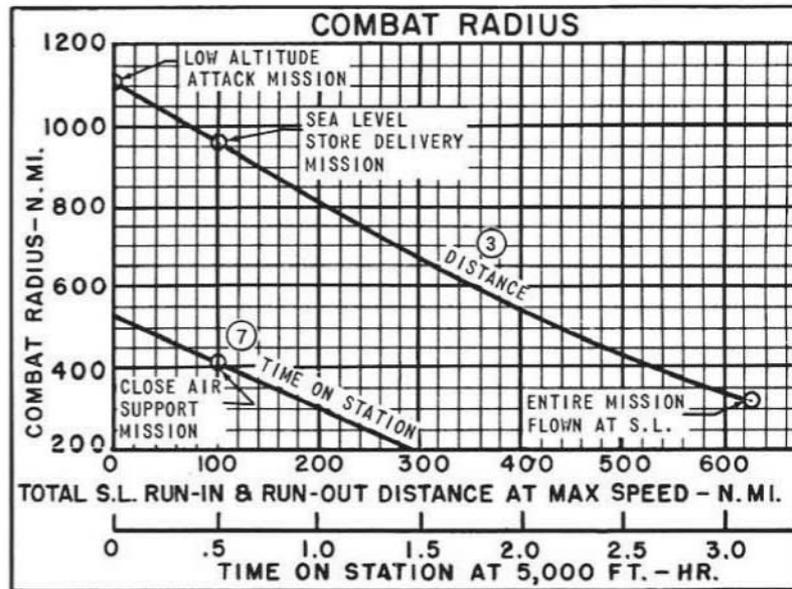
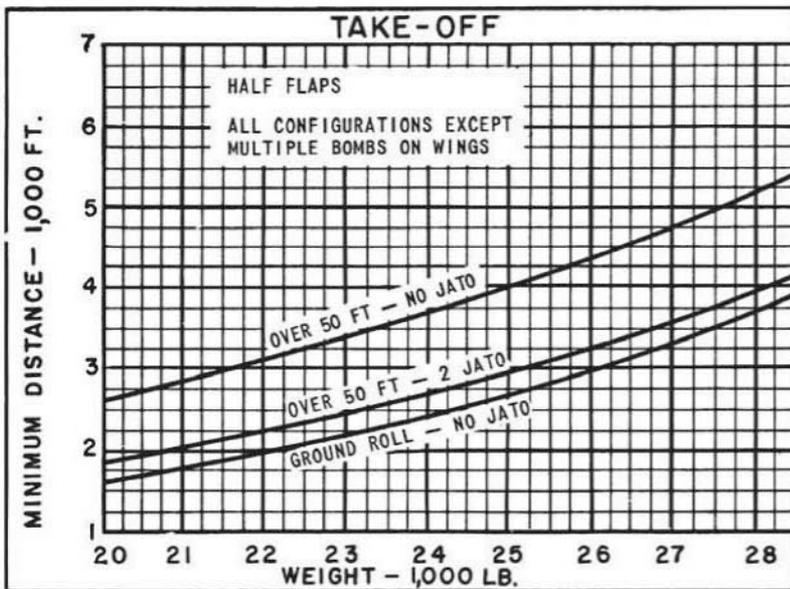
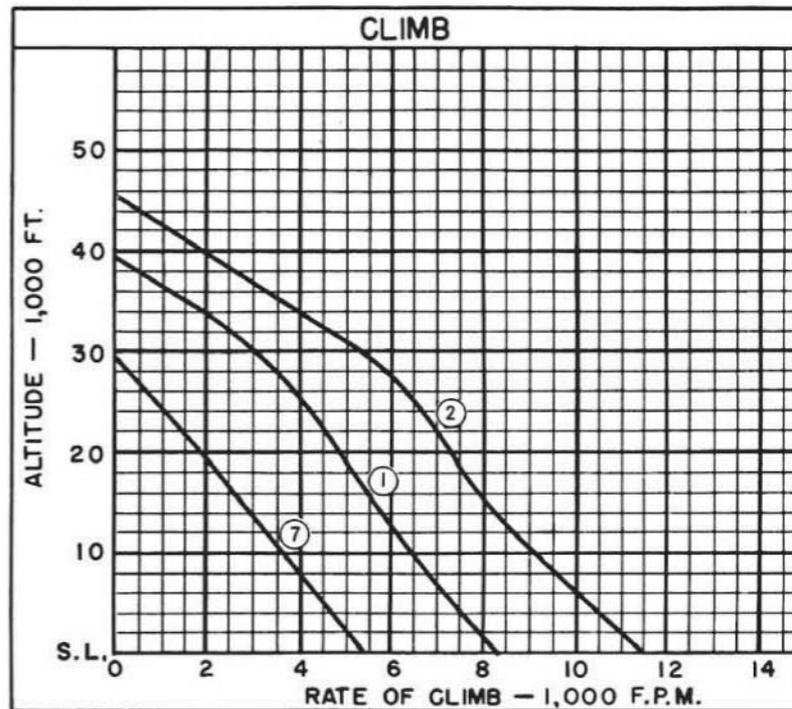
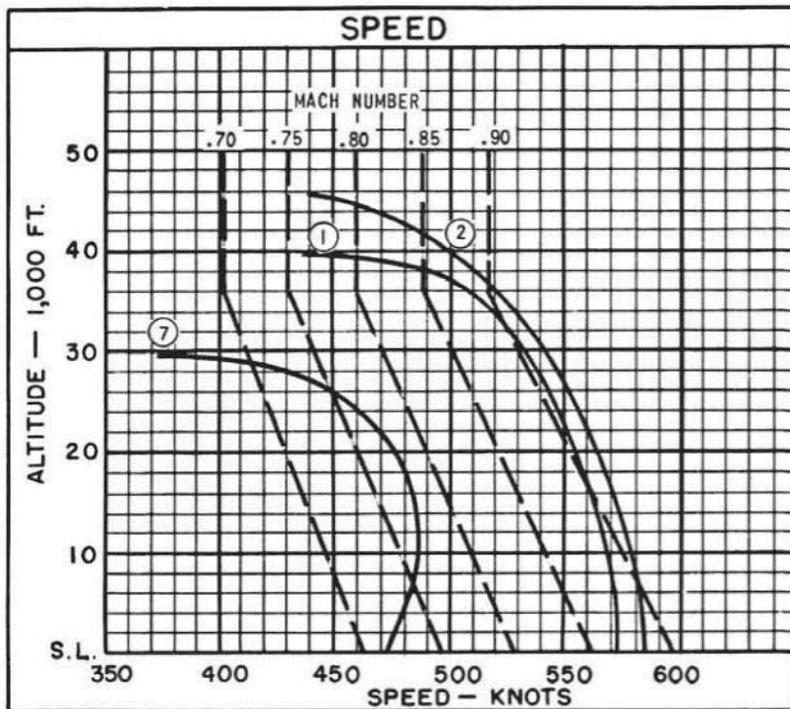
Electronics Central AN/ASQ-17B, consisting of:
 UHF Communications
 IFF
 SIF
 AN/ARA-25
 Radio Nav. AN/ARN-52
 Auto. Dead Reckoning .. AN/ASN-41
 TAS Computer
 Doppler
 Radio Altitude AN/APN-141
 Radar AN/APG-53A
 Auto Pilot Douglas
 LABS AN/AJB-3A
 Store Arming DCU/75

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	(1) SEA LEVEL STORE DELIVERY 1-MK 43	(3) SEA LEVEL STORE DELIVERY 1-MK 43 2-300 GAL TANKS	(5) CLOSE AIR SUPPORT 3-1000 LB MK 83 2-500 LB MK 82	(7) CLOSE AIR SUPPORT 1-6x500 LB MK 82 2-6x250 LB MK 81
TAKE-OFF WEIGHT lb.	21,191	25,784	21,553	26,424
Fuel - Internal/External (JP-5) lb/lb.	7480/NONE	7480/4080	4979/NONE (A)	7480/NONE
Payload lb.	2035	2035	4000	6000
Wing loading lb./sq. ft.	68.7	83.7	69.9	85.7
Stall speed - power-off kn.	120	135	123	138
Take-off run at S.L. ft.	1830	2900	1900	3180
Take-off to clear 50 ft. - no JATO ft.	2900	4280	3000	4600
Take-off to clear 50 ft. - with JATO ft.	2170	3350	2240	3620
Max. speed/altitude kn./M/ft.	573/.88/3000	545/.85/7500	549/.86/8500	486/.77/12,500
Rate of climb at S.L. fpm	8350	6150	7650	5300
Time: S.L. to 20,000 ft. min.	3.1	4.6	3.6	6.0
Time: S.L. to 30,000 ft. min.	5.6	10.5	7.2	-
Service ceiling (100 fpm) ft.	39,200	33,400	37,400	29,400
Combat range n.mi.	1650	2290		840
Average cruising speed kn.	429	427		396
Cruising altitude(s) ft.	34,800-41,600	30,600-41,100		27,300-33,100
Combat radius/Mission time n. mi./hr.	580/2.7	960/4.5	300/1.9	410/2.6
Average cruising speed kn.	430	427	423	409
IFR-Radius/Mission time (B) n.mi./hr.		1450/6.9		
IFR-Fuel transferred/Distance (B) lb./n.mi.		4794/743		
COMBAT LOADING CONDITION	(2) STORE RELEASED	(4) TANKS DROPPED STORE RETAINED	(6) STORES RETAINED	(8) STORES RETAINED
COMBAT WEIGHT lb.	16,164	21,308	19,561	23,432
Engine power	Military	Military	Military	Military
Fuel	60% Internal	Full Internal	60% Internal	60% Internal
Combat speed/combat altitude kn./M/ft.	584/.88/S.L.	563/.85/S.L.	550/.85/5000	483/.74/5000
Rate of climb/combat altitude fpm/ft.	11,450/S.L.	8150/S.L.	7650/5000	5350/5000
Combat ceiling (500 fpm) ft.	44,100	37,600	38,300	29,900
Rate of climb at 35,000 ft. fpm	3550	1350	1450	-
Max. speed at 35,000 ft. kn./M	525/.91	502/.87	490/.85	-
Max. speed/altitude kn./M/ft.	584/.88/S.L.	566/.87/6000	551/.86/8500	490/.78/13,500
LANDING WEIGHT lb.	12,484	12,820	13,293	13,813
Fuel lb.	808	1027	719	869
Stall speed - power-off/Appr pwr kn./kn.	92/88	93/89	95/91	97/92
Dist.-Ground run/over 50 ft. ft./ft.	2030/2740	2080/2790	2140/2850	2210/2920

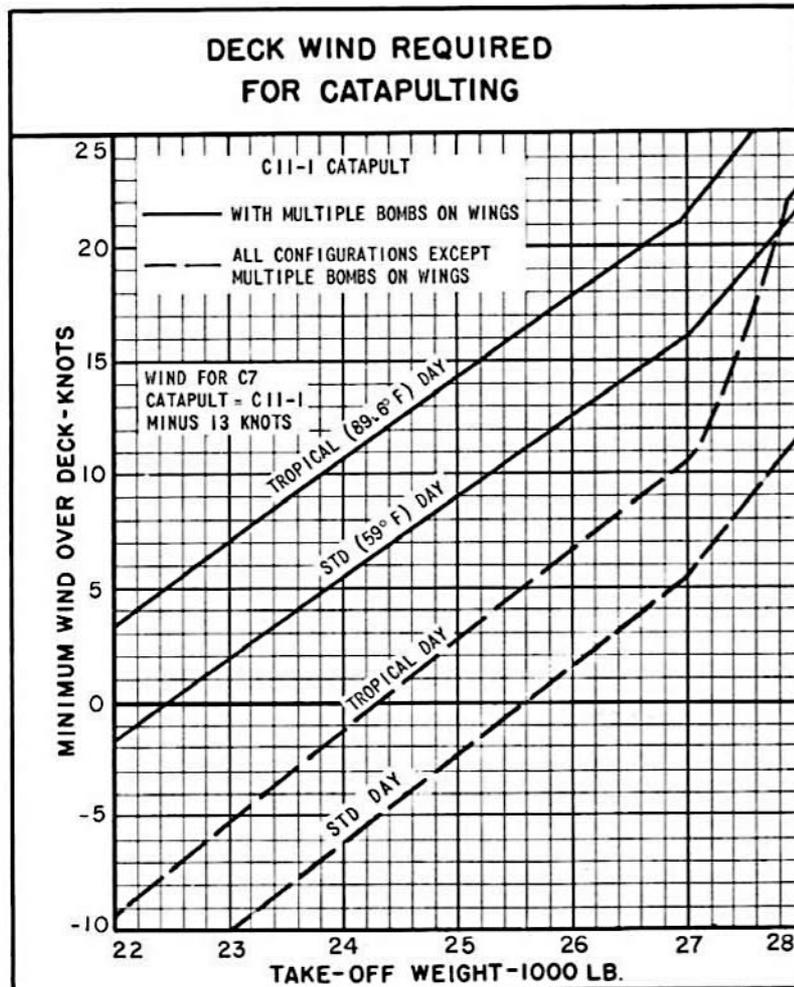
NOTES

- (A) Fuel required for 300 n.mi. radius and 30 min. time on station.
- (B) One buddy air fueling — fuel transferred at 30,000 ft. altitude.
- (C) All loadings include air fueling probe. Loadings (5), (6), (7), and (8) include guns and 500 rounds of ammunition.
- (D) Performance Basis: Contractor and NATC Flight Test Data on the A4D-1, -2, -2N. Fuel consumption based on P&W JTF10A-8 preliminary engine data increased 5%.
- (E) Operational Spotting: A total of 108 aircraft with air fueling probes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class angled-deck carrier.



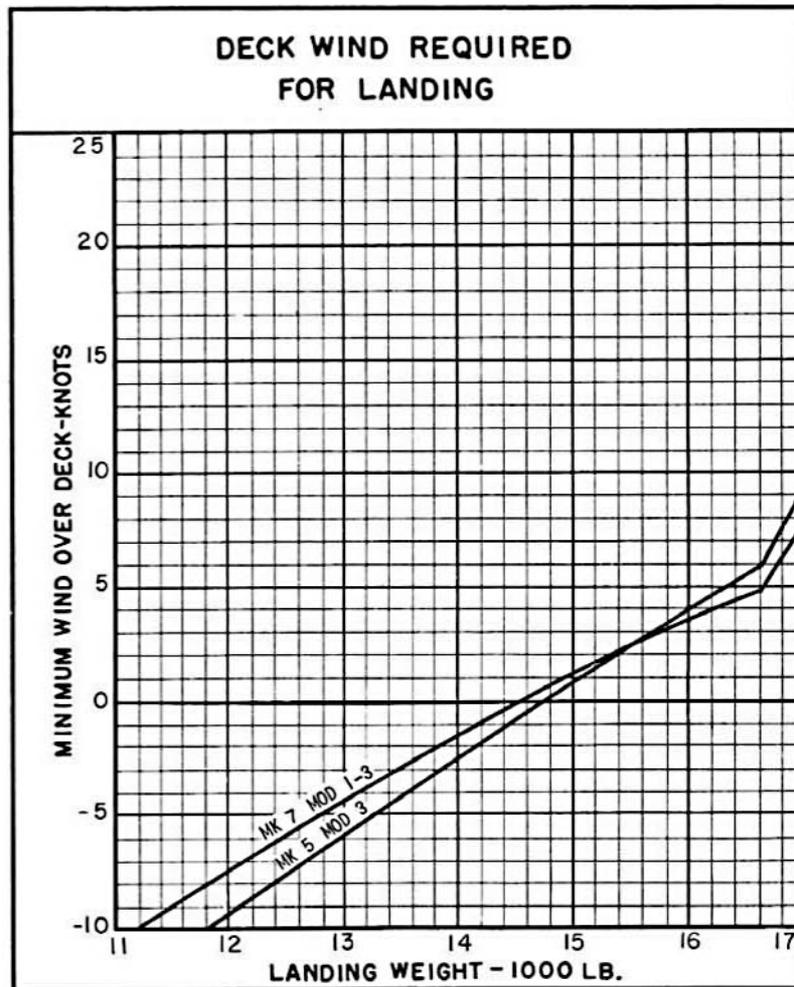
○ DENOTES LOADING CONDITION COLUMN NUMBER

CARRIER SUITABILITY



Catapult take-off speeds are derived from a correlation with NATC minimums shown in A4D launching bulletin No. 8-36D.

Below a take-off weight of 26,980 lb on the C11-1 catapult and 26,920 lb on the C7 catapult, the catapult end speed is limited by a maximum peak acceleration of 5.66g. Above these take-off weights the catapult end speed is limited by a maximum tow force of 146,500 lb.



Approach speed based on speeds approved by NATC for A4D-2 & -2N and corresponds to $1.23V_{S,L}$, no wing stores.

Good for all configurations.

Below a landing weight of 16,600 lb the engaging speed is limited by a maximum horizontal load factor of 5.67g. Above this landing weight the engaging speed is limited by a maximum horizontal hook load of 94,220 lb.

NOTES

S.L. STORE DELIVERY COMBAT RADIUS MISSION

START ENGINES, T.O. AND ACCELERATE: Fuel for 5 minutes sea level, normal static thrust.

CLIMB-OUT: At maximum rate of climb with military thrust, on course to optimum cruise altitude or cruise ceiling whichever is lower.

CRUISE-OUT: At speed for maximum range at optimum cruising altitude or cruise ceiling (Drop tanks when empty).

DESCEND: To S.L. (no fuel consumed - no distance covered).

RUN-IN: At S.L. for 50 n.mi. at maximum speed with military thrust. Drop bombs.

COMBAT: For 5 minutes at sea level maximum speed with military thrust (no distance covered).

RUN-OUT: At S.L. for 50 n.mi. at maximum speed with military thrust.

CLIMB-BACK: At maximum rate of climb with military thrust, on course to optimum cruise altitude.

CRUISE-BACK: At speed for maximum range at optimum cruising altitude.

DESCEND: To S.L. (no fuel consumed - no distance covered).

RESERVE AND LANDING: 5% initial fuel load plus fuel for 20 minutes at sea level at speed for maximum endurance.

CLOSE AIR SUPPORT COMBAT RADIUS MISSION

START ENGINES, T.O. AND ACCELERATE: Fuel for 5 minutes sea level, normal static thrust.

CLIMB-OUT: At maximum rate of climb with military thrust, on course to optimum cruise altitude or cruise ceiling whichever is lower.

CRUISE-OUT: At speed for maximum range at optimum cruising altitude or cruise ceiling.

DESCEND: To 5,000 ft altitude (no fuel consumed - no distance covered).

HOLD ON STATION: For 30 minutes at maximum endurance speed at 5,000 ft altitude then drop bombs.

CLIMB-BACK: At maximum rate of climb with military thrust, on course to optimum cruise altitude.

CRUISE-BACK: At speed for maximum range at optimum cruising altitude.

DESCEND: To sea level (no fuel consumed - no distance covered).

RESERVE AND LANDING: 5% initial fuel load plus fuel for 20 minutes at sea level at speed for maximum endurance.

