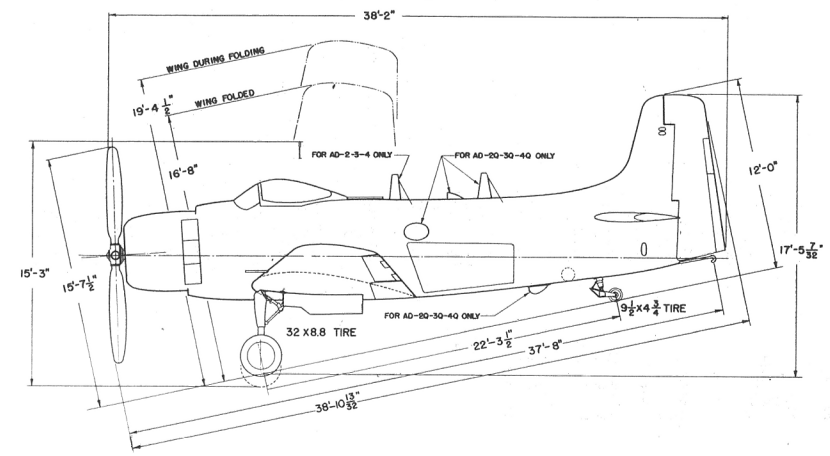
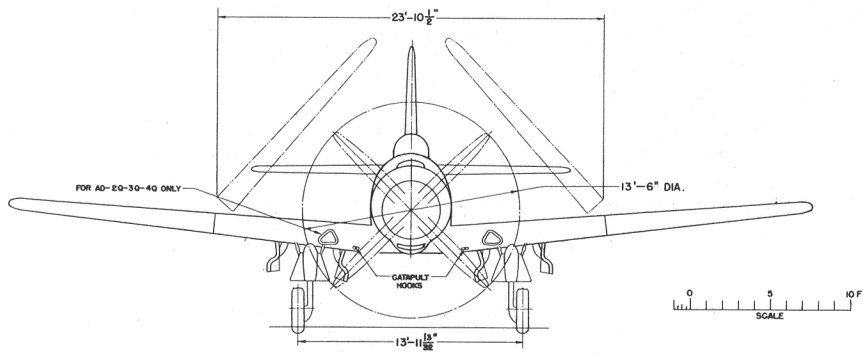
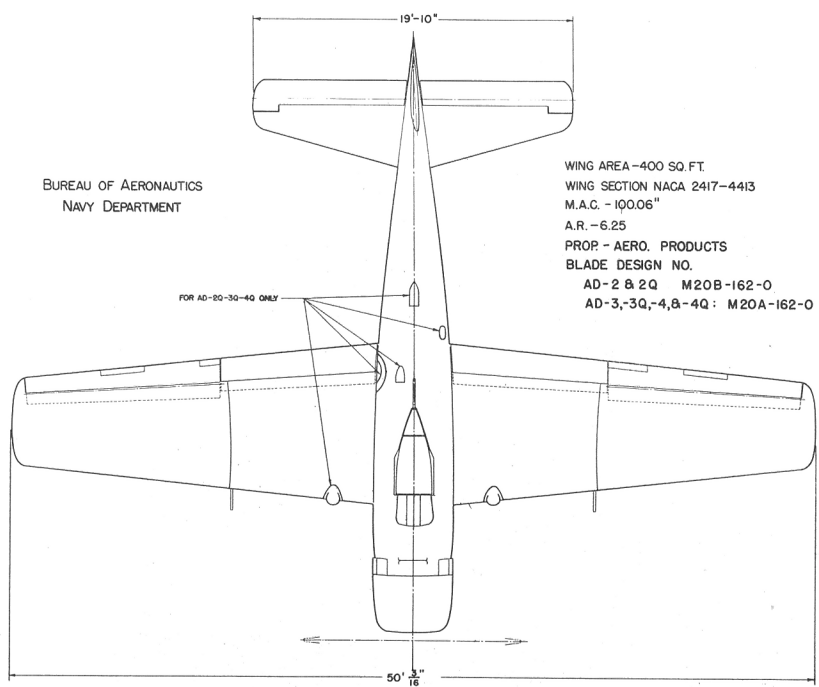


STANDARD AIRCRAFT CHARACTERISTICS

AD-4 "SKYRAIDER"

DOUGLAS



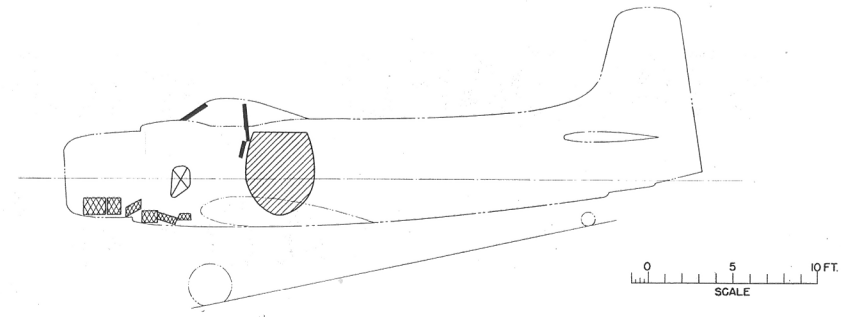
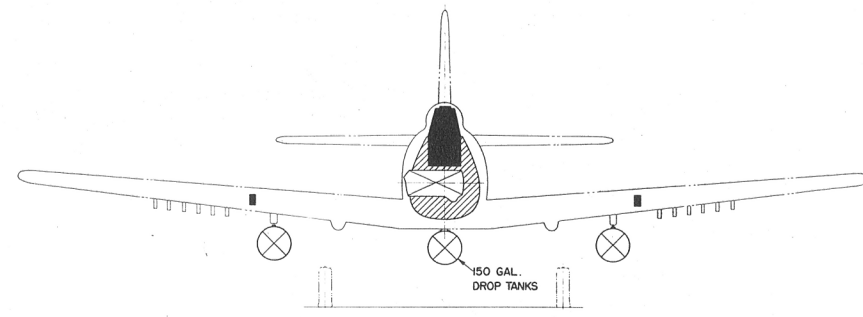
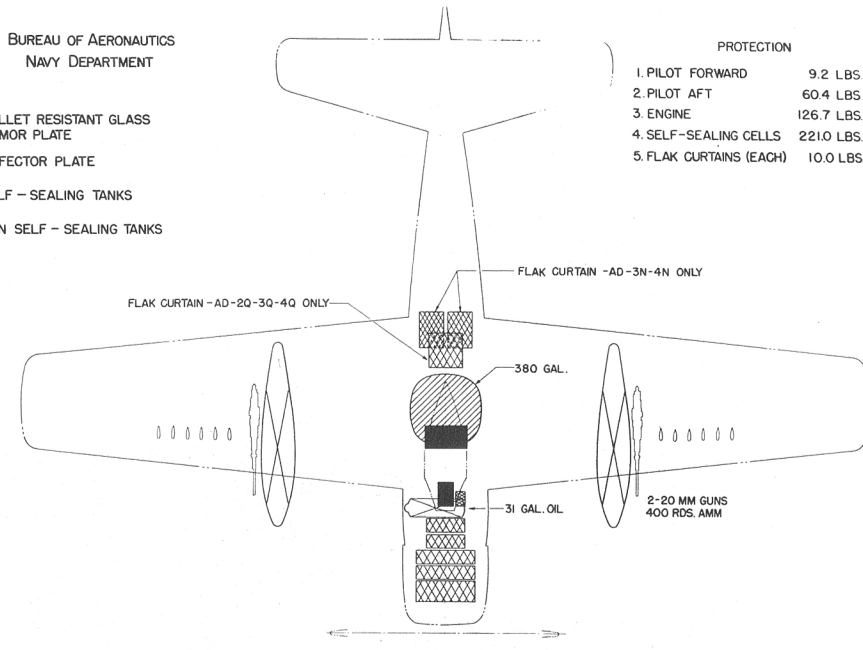
DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- ▨ DEFLECTOR PLATE
- ▩ SELF-SEALING TANKS
- ⊠ NON SELF-SEALING TANKS

PROTECTION

- | | |
|-------------------------|------------|
| 1. PILOT FORWARD | 9.2 LBS |
| 2. PILOT AFT | 60.4 LBS |
| 3. ENGINE | 126.7 LBS |
| 4. SELF-SEALING CELLS | 221.0 LBS. |
| 5. FLAK CURTAINS (EACH) | 10.0 LBS. |



ARMAMENT AND TANKS

MISSION AND DESCRIPTION

The primary mission of the AD-4 is the destruction of sea and ground targets by dive bombing attacks. The airplane is also capable of torpedo, glide bombing and rocket attacks. The AD-4 is designed to operate from all classes of naval aircraft carriers or from land bases.

It is equipped with a redesigned windshield and cockpit enclosure to provide greater pilot protection, addition of the P-1 automatic pilot, and installation of the AN/APS-19A radar and Mk 3 Mod 3 bomb director.

The airplane is conventional in design and structure. Landing gear, canopy, flaps, wing folding, and three fuselage dive brakes are hydraulically operated. The pressure-balance type ailerons are operated by power boost. The rudder is equipped with a spring tab system. Longitudinal trim is achieved by an electrically adjustable stabilizer. Elevators and interchangeable power plant are conventional with a monocoque engine mount. Oxygen for five hours is supplied. Bomb displacing gear at the centerline station is power operated by a standard engine starter cartridge. Twenty gallons of ADI fluid are supplied for injection.

DIMENSIONS

WING AREA.....400 sq. ft.
SPAN.....50' - 0"
LENGTH.....38' - 2"
HEIGHT.....15' - 8"
TREAD.....13' - 11"
M.A.C.....8' - 4"
PROP. CLEAR.....6"

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	11,138.....	
BASIC.....	11,629.....	
DESIGN.....	15,600..7.0	
COMBAT.....	14,716..7.0	
MAX.T.O..(Cat.)..	19,700..5.5	
(Field).....	23,716*.4.5	
MAX.LD.(Smooth).....	19,000.....	
(Rough).....	16,800.....	
(Arrest).....	17,000.....	
(Qualif.).....	15,600.....	

*Tentative. Limited by space.
All weights are actual.

FUEL AND OIL

Gal.	No. Tanks	Location
380	1	Fuse., S.S.
150	1	Ctr., Drop
300	2	Wing, Drop

FUEL GRADE.....115/145
FUEL SPEC.....AN-F-48

OIL

CAPACITY (Gals.).....31
GRADE.....1120
SPEC.....AN-O-8

ELECTRONICS

VHF COMM.....AN/ARC-1
RANGE REC.....AN/ARC-5
VHF NAVIGATION.....AN/ARR-2A
RADIO ALTM.....AN/APN-1
SEARCH & AIM RDR..AN/APS-19A
IFF.....AN/APX-2

POWER PLANT

NO. & MODEL....(1) R-3350-26W
MFR.....Wright
SUPERCH.....1 Stage, 2 Speed
PROP. GEAR RATIO.....0.4375
PROP. MFR.....Aero Prod
PROP. DES. NO.....M20A-162-0
NO. BL./DIA.....4/13'-6"

RATINGS

	Bhp @	Rpm @	Alt.
T. O.	2,700	2,900	S. L.
COMBAT	3,020	2,900	S. L.
	2,570	2,600	8,900'
MIL.	2,700	2,900	3,700'
	2,100	2,600	14,500'
NORMAL	2,300	2,600	S. L.
	1,900	2,600	17,100'

SPEC. NO. N-836

ORDNANCE

No.	Size	GUNS	
		Location	Rds.
2	20 mm	Wing	400

BOMBS & ROCKETS

Type	Size	Location	No.
HVAR*	5"	Wing	12 or
Bomb	250#	Wing	12
A.R.	11.75"	Wing	2
Torp.	Mk-13	External	3
D.B.	325#	External	3
Bomb	500#	External	3
Bomb	2,000#	External	3
Mine	1,000#	External	3
Mine	2,000#	External	3

* SEE NOTES

FIRE CONTROLS

Bomb Director.....Mk 3 Mod 3
Sighting Sys.....Mk 1 Mod 3

MAX. BOMB CAP.....9,000 lbs.



PERFORMANCE SUMMARY				
LOADING CONDITION		(1) ATTACK 1-2,000# Bomb 2-150 Gal. Ext. Tanks		(5) ATTACK 1-2,000# Bomb AN/APS-19A Radar
TAKE-OFF WEIGHT	lbs.	18,861		16,888
Fuel (Fixed/Drop)	lbs.	2,280/1,800		2,280
Bombs	lbs.	2,000		2,000
Wing/Power Loading (A) lbs/sq.ft; lbs/bhp.		47.2/9.9		42.2/8.9
Stall Speed--Power off	kn.	82.9		78.4
Stall Speed--Power off - No Fuel	kn.	72.4		73.0
Stall Speed--Power on	kn.	77.7		73.5
Maximum Speed/Alt (B)	kn/ft.	272/18,300		279/18,300
Take-off Distance, deck -- calm	ft.	929		701
Take-off Distance, deck 25 kn.	ft.	455		322
Take-off Distance, Airport	ft.			
Rate of climb -- sea level (B)	ft/min.	2,230		2,660
Service Ceiling (B)	ft.	29,700		32,200
Time-to-climb 10,000 ft. (B)	min.	4.8		4.0
Time-to-climb 20,000 ft. (B)	min.	12.1		9.6
Combat Range/V av 15,000 ft. n.mi./kn.		1,505/183		780/175
Combat Radius/V av A-1 ft. n.mi./kn.		725/178		275/177
LOADING CONDITION		(2) COMBAT	(3) COMBAT	(4) COMBAT
GROSS WEIGHT	lbs.	14,716	14,716	14,716
Engine power.		Combat	Military	Normal
Fuel	lbs.	2,280	2,280	2,280
Bombs/Tanks				
Max. speed at sea level	kn.	319	298	281
Max. speed/Alt	kn/ft.	324/10,700	318/16,200	315/18,700
Combat speed/Alt	kn/ft.	318/1,500	302/1,500	285/1,500
Rate of climb SL	ft/min.	4,390	3,940	3,340
Ceiling for 500 fpm R/C	ft.	33,800	33,800	33,800
Time-to-climb/Alt.	min/ft.			

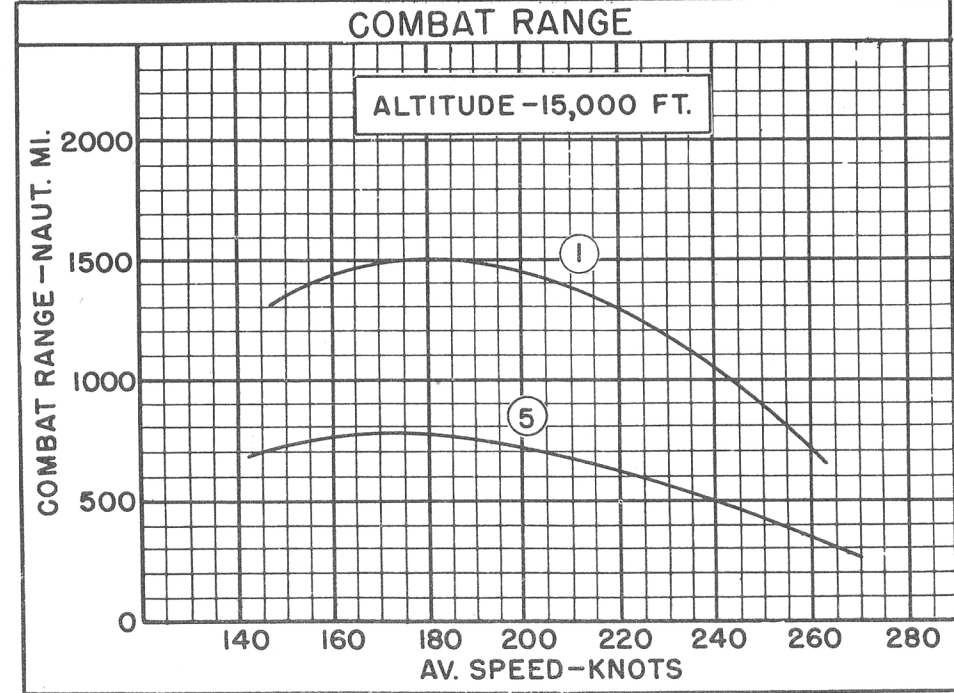
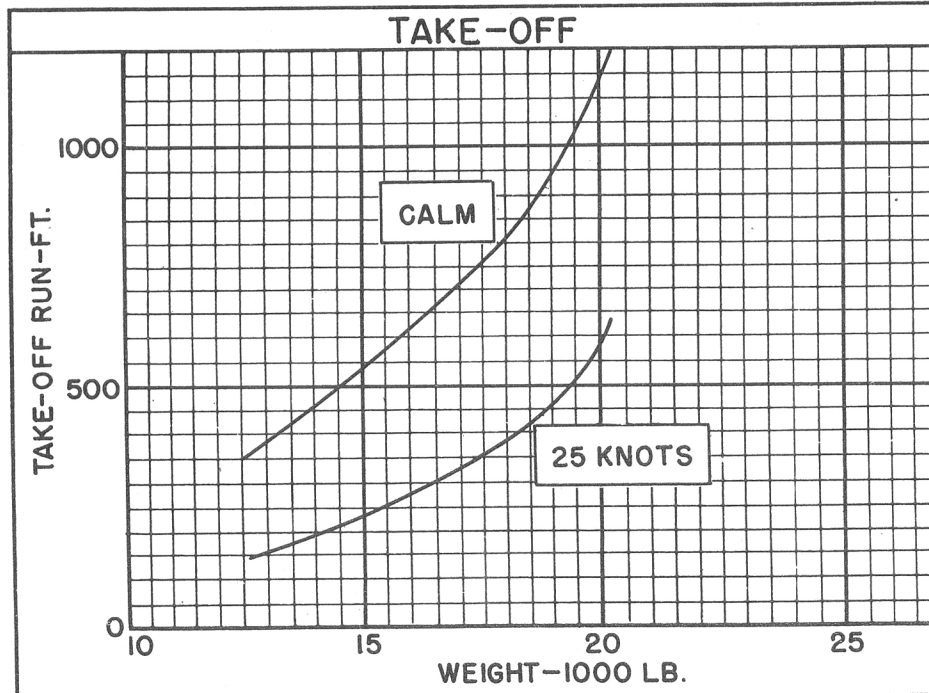
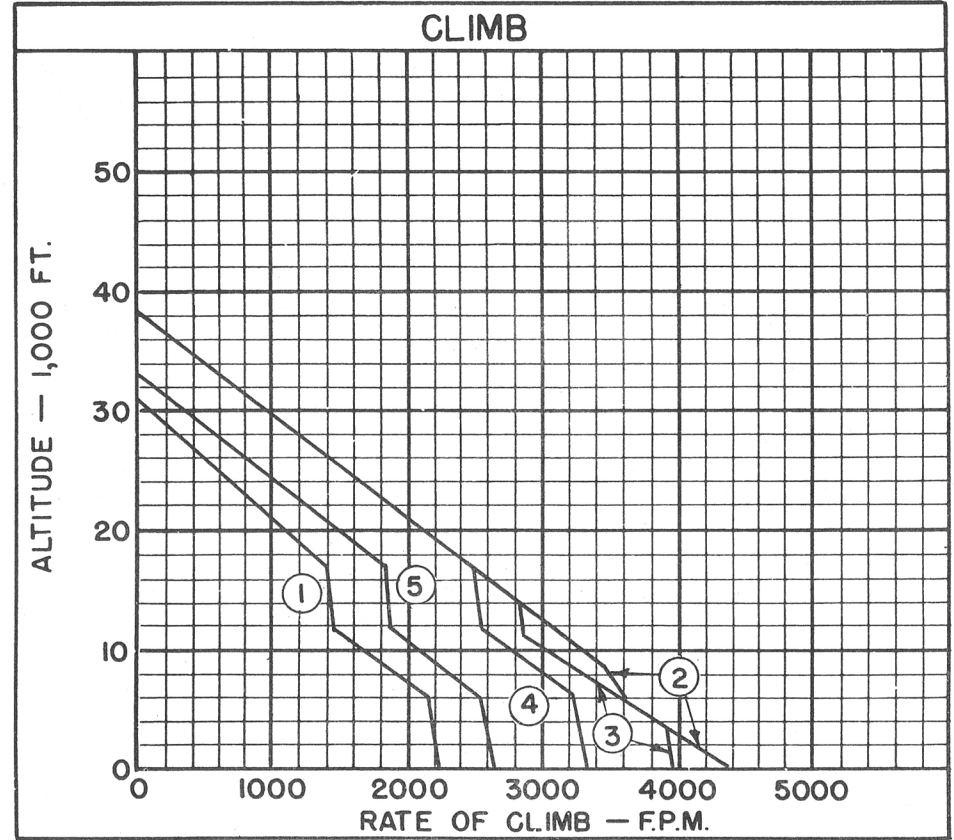
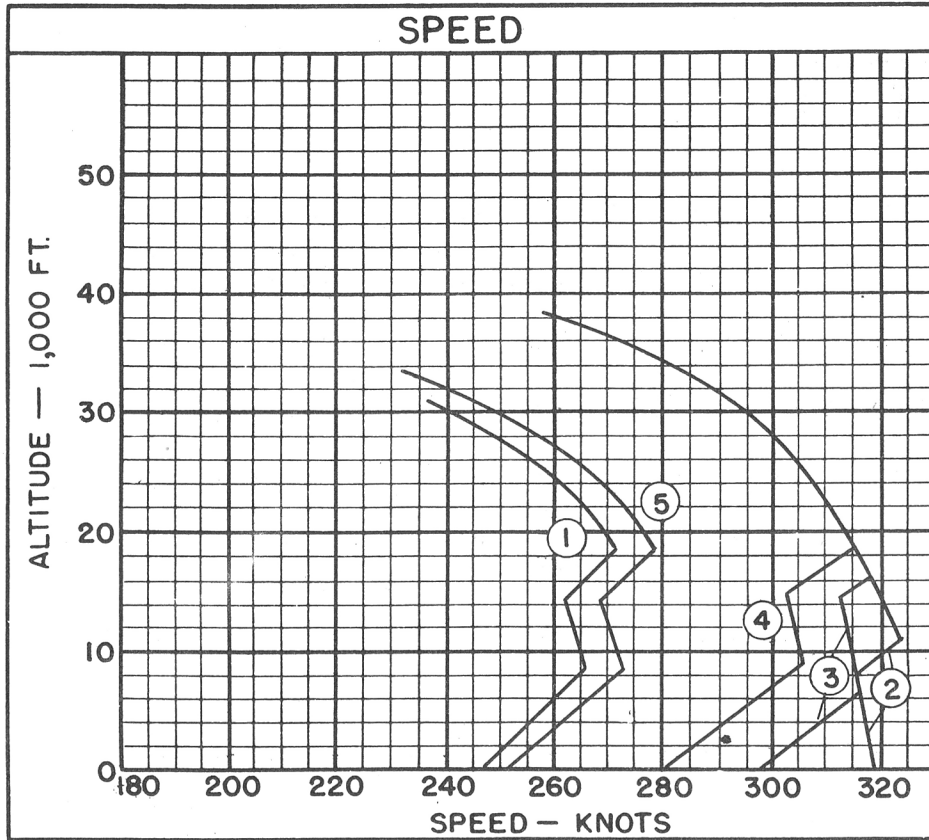
NOTES

- (A) BHP at Maximum Critical Altitude
(B) Normal BHP

Performance is based on NATC flight test of AD-1 and AD-1Q.

Combat range and radius are based on engine manufacturer's specification fuel consumption data increased 5%.

Rocket launchers not aboard. Addition of 12 launchers to Cond. (2) reduces V_{max} , S. L. to 312 kn. and $V_{max.}/ACA$ to 317 kn./10,700 ft. Addition of 12 launchers and 12-5" HVAR increases gross weight of Cond. (2) to 16,445 lbs. and decreases V_{max} , S. L. to 293 kn. and $V_{max.}/ACA$ to 297 kn./10,700 ft.



○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAER 1335E (REV. 1-49)

NOTES

Late Model AD-4 aircraft will have provisions for carrying 12 - 5" HPAG rockets on Aero-14A launchers.

All loadings include 2 Mk-51 wing bomb racks with sway bracing and fuselage bomb ejector with sway bracing.

AN/APS-19A radar is carried on port side wing bomb rack for Condition (5) only.

Twelve 100 lb. bombs or twelve 250 lb. bombs can be carried at Mk-9 rocket launcher positions by replacing launchers with Mk-55 bomb racks.

Twenty gallons of ADI fluid are available for 12 minutes at combat power.

Spotting: 200 ft. length is required to spot 20 planes on the 96 ft. wide deck immediately aft of the forward ramp on the CV-9 class carriers.

ATTACK COMBAT RADIUS FORMULA NO. A-1

<u>WARM-UP</u>	<u>RENDEZVOUS</u>	<u>CLIMB</u>	<u>CRUISE-OUT</u>	<u>DROP TANKS</u>	<u>COMBAT</u>	<u>CRUISE-BACK</u>	<u>RESERVE</u>
20 min. ½ Normal RPM	20 min. at Sea Level at 60%	to 15,000 ft. at Normal Power	at 15,000 ft. 180 kts. TAS Normal Mixture	<u>DESCEND</u> to 1,500 ft. <u>DROP BOMBS</u> FIRE ROCKETS	15 min. at 1,500 ft. 5 min. combat and 10 min. N. Pr.	at 1,500 ft. 170 kts. TAS Normal Mixture	60 min. at V for Max. Range at 1,500 ft. Normal Mixture
<u>TAKE-OFF</u> 1 min. at T.O.Pr.	N. Pr. Normal Mixture	Normal Mixture					

$$\text{RADIUS} = \text{CLIMB} \div \text{CRUISE-OUT} = \text{CRUISE-BACK}$$