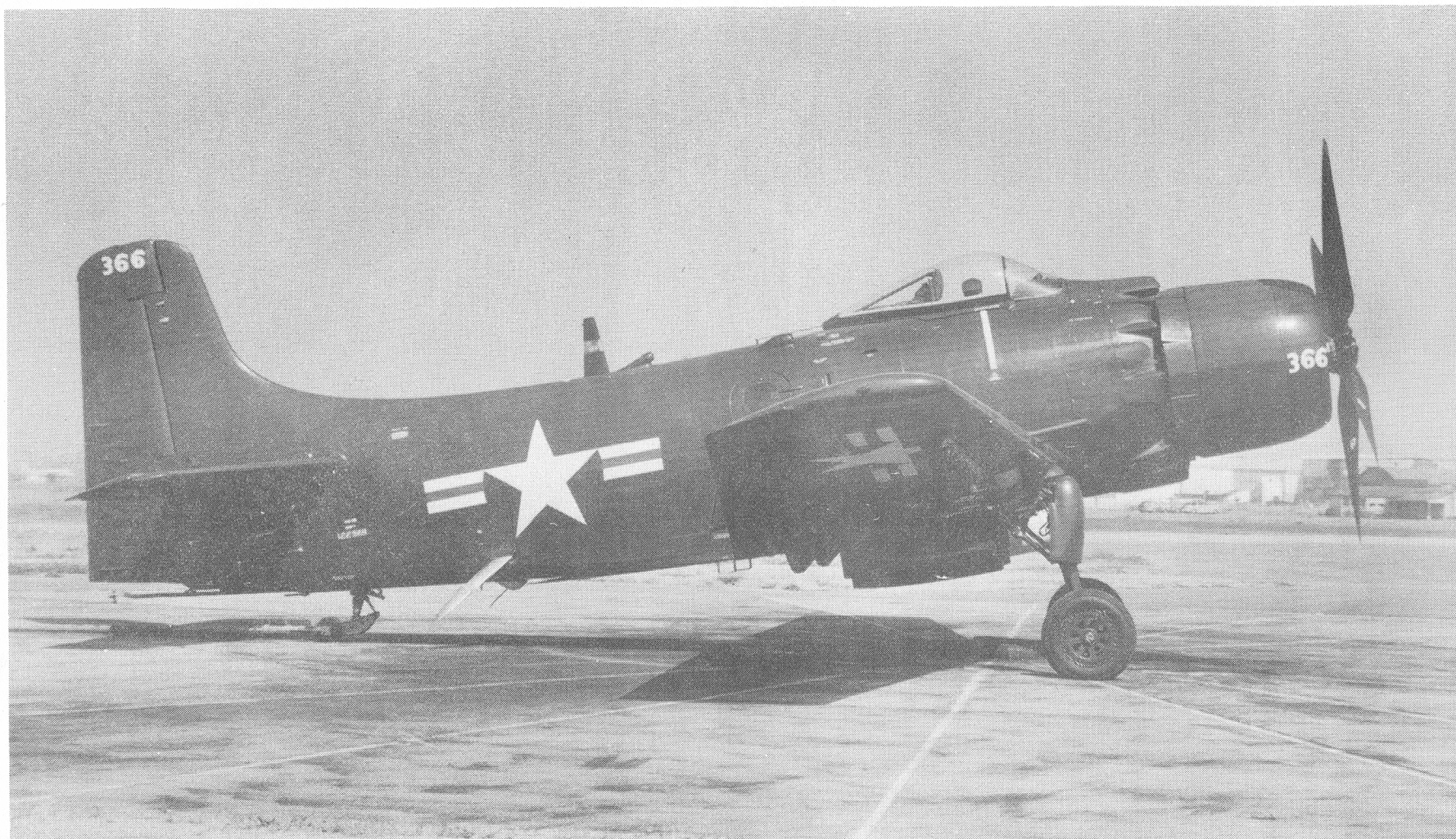


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SERVICE

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# STANDARD AIRCRAFT CHARACTERISTICS

## AD-2Q "SKYRAIDER"

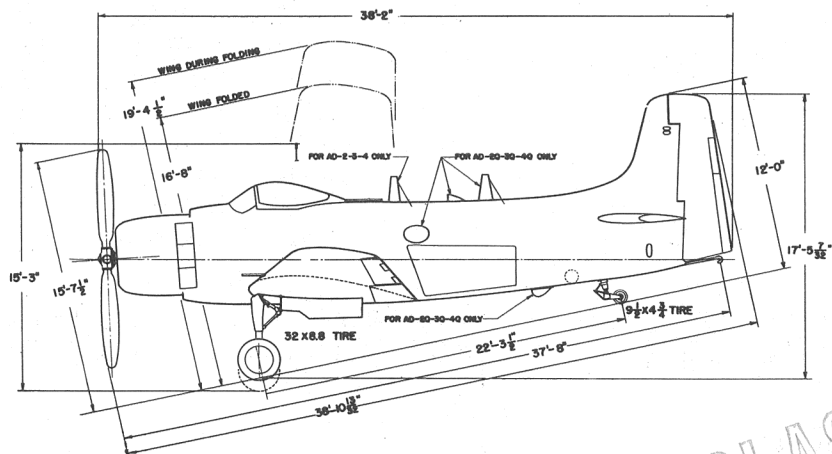
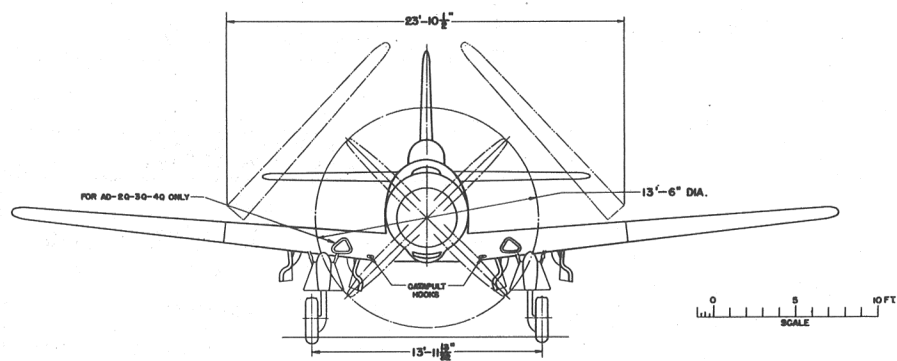
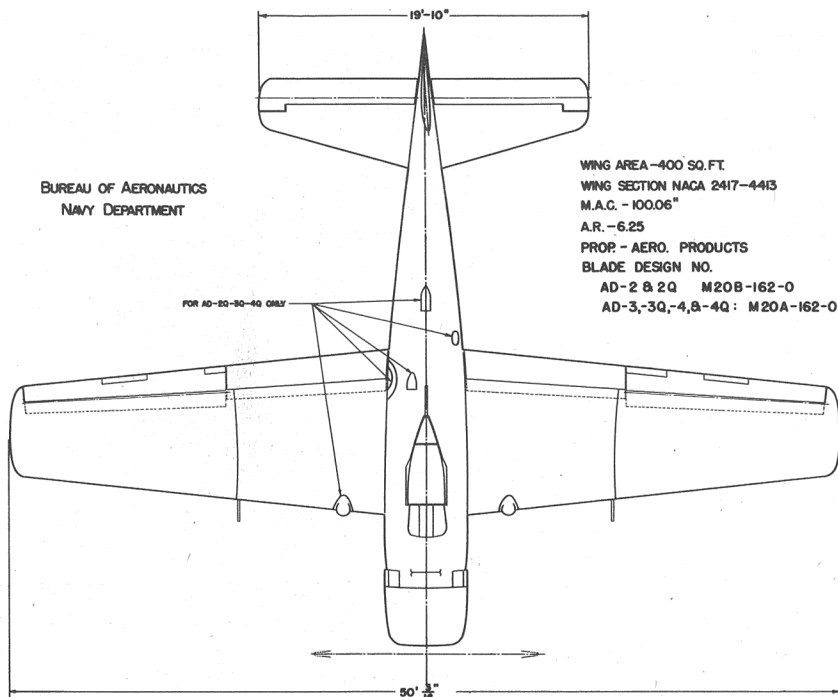
DOUGLAS

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BUREAU OF AERONAUTICS  
NAVY DEPARTMENT



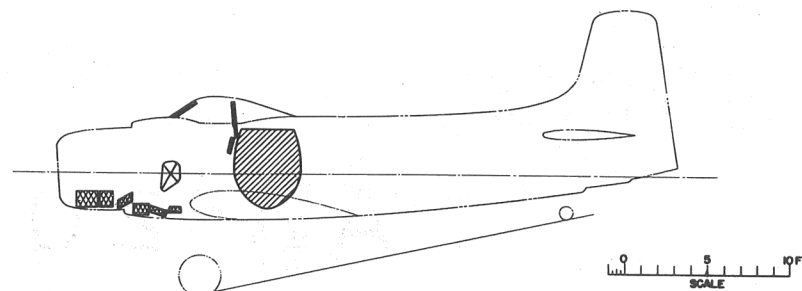
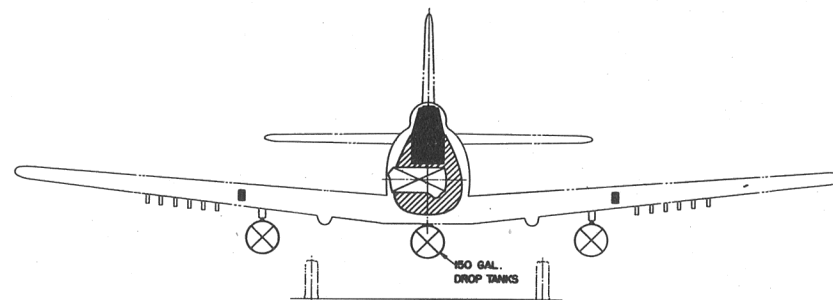
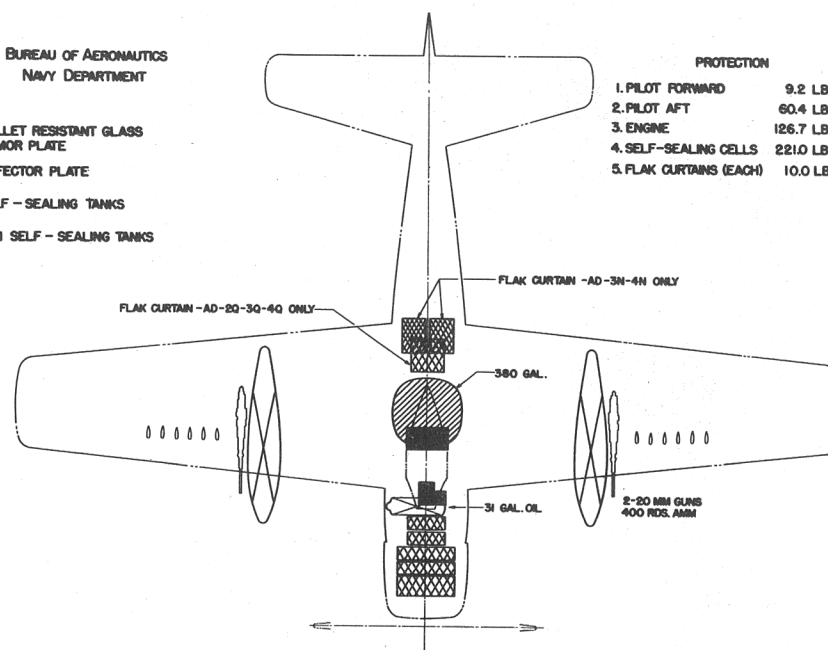
DESCRIPTIVE ARRANGEMENT

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

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**MISSION AND DESCRIPTION**

The AD-2Q model is primarily designed for use as a radar countermeasures airplane. As such it can be used for the effective search and jamming of enemy radar. This airplane has accommodation for an RCM operator in the rear as in the AD-1Q.

This modification of the AD-2 airplane can also be used for dive and glide bombing and torpedo and rocket attacks. Use of the standard Mark 51-9 Racks permits alternate installations of mines, incendiary clusters, fuel tanks and other standard external stores up to a maximum of 2,000 pounds weight. The structure and basic equipment are identical to the AD-2 except that the RCM operator's compartment is provided aft of the fuel tank with partial controls for the radio and complete controls for radar and radar countermeasures equipment. An entrance door (incorporating a window) for this compartment is provided on the right side of the fuselage.

**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.....	11,159.....	
BASIC.....	11,756.....	
DESIGN.....	15,600..	7.0
COMBAT.....	14,998..	7.0
MAX.T.O..(Cat.)..	19,700..	5.5
(Field).....	23,998*	4.5
MAX.LD.(Smooth).....	19,000.....	
(Rough).....	16,800.....	
(Arrest).....	17,000.....	
(Qualif.).....	15,600.....	

\*Tentative

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**

RANGE REC.....AN/ARC-5  
VHF.....AN/ARC-1  
HOMING.....AN/ARR-2A  
RADIO ALT.....AN/APN-1  
IFF.....AN/APX-2A  
RCM REC.....AN/APR-1  
RADAR SEARCH.....AN/APS-4A  
PAN. ADAPT.....AN/APA-38  
PULSE ANALYZER.....AN/APA-11

**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.....M20B-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****GUNS**

No.	Size	Location	Rds.
2	20 mm	Wing	400

**BOMBS & ROCKETS**

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

**FIRE CONTROLS**

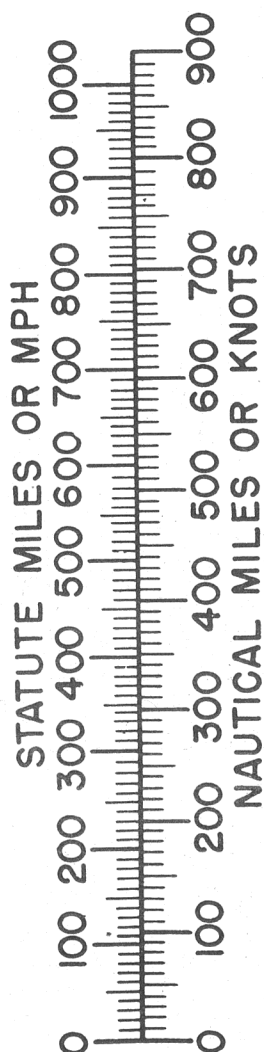
Sighting Sys.....Mk 1 Mod 2  
Bomb Director.....AN/ASG-10A

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

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## PERFORMANCE SUMMARY



LOADING CONDITION	(1) ATTACK 1-2000# Bomb 2-150 Gal. Ext. Tanks			(5) ATTACK 1-2000# Bomb AN/APS-4
TAKE-OFF WEIGHT	lbs.	19,143		17,140
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.		47.8/10.1		42.8/9.0
Stall Speed--Power off	kn.	83.4		79.0
Stall Speed--Power off - No Fuel	kn.	74.1		73.6
Stall Speed--Power on	kn.	78.3		74.1
Maximum Speed/Alt (B)	kn/ft.	267/18,300		275/18,300
Take-off Distance, deck -- calm	ft.	1,009		778
Take-off Distance, deck 25 kn.	ft.	492		361
Take-off Distance, Airport	ft.			
Rate of climb -- sea level (B)	ft/min.	2,160		2,590
Service Ceiling (B)	ft.	28,700		31,500
Time-to-climb 10,000 ft. (B)	min.	5.0		4.1
Time-to-climb 20,000 ft. (B)	min.	12.7		9.9
Combat Range/V av 15,000	ft. n.mi./kn.	1,430/181		740/178
Combat Radius/V av B-1	ft. n.mi./kn.	685/176		255/175
LOADING CONDITION	(2) COMBAT	(3) COMBAT	(4) COMBAT	
GROSS WEIGHT	lbs.	14,998	14,998	14,998
Engine power		Combat	Military	Normal
Fuel	lbs.	2,280	2,280	2,280
Bombs/Tanks				
Max. speed at sea level	kn.	315	294	277
Max. speed/Alt	kn/ft.	319/10,700	313/16,200	310/18,700
Combat speed/Alt	kn/ft.	314/1,500	298/1,500	281/1,500
Rate of climb SL	ft/min.	4,260	3,850	3,250
Ceiling for 500 fpm R/C	ft.	33,000	33,000	33,000
Time-to-climb/Alt.	min/ft.			

## NOTES

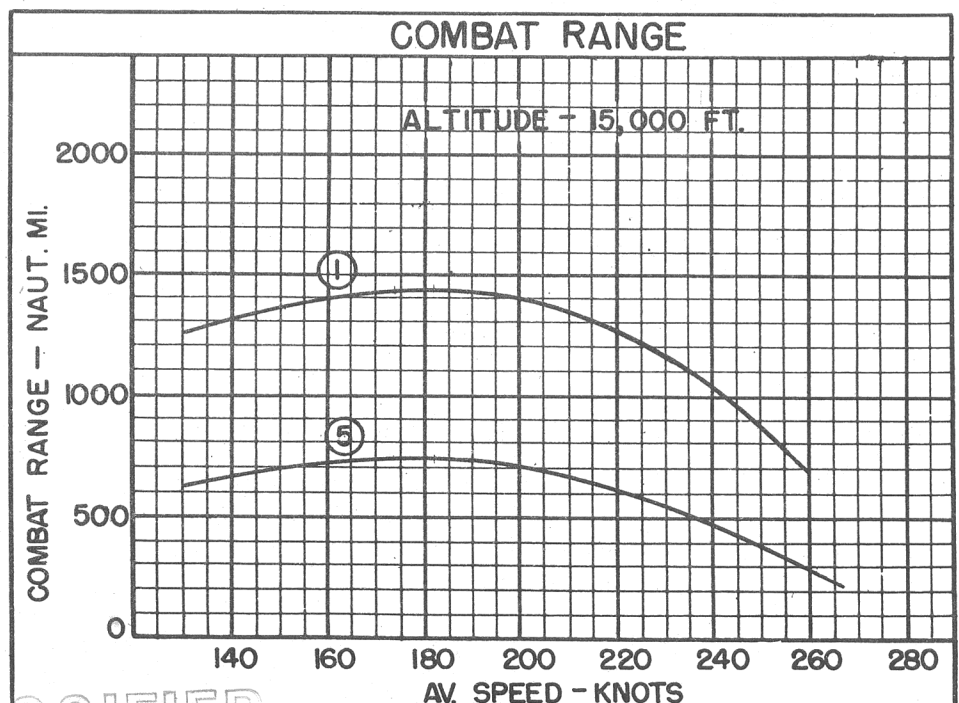
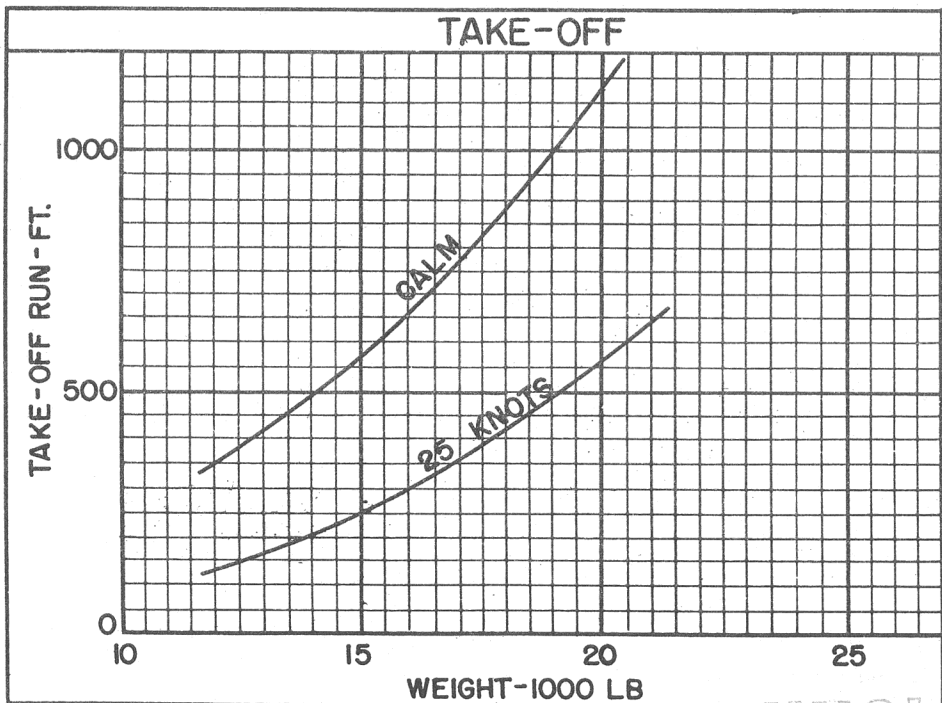
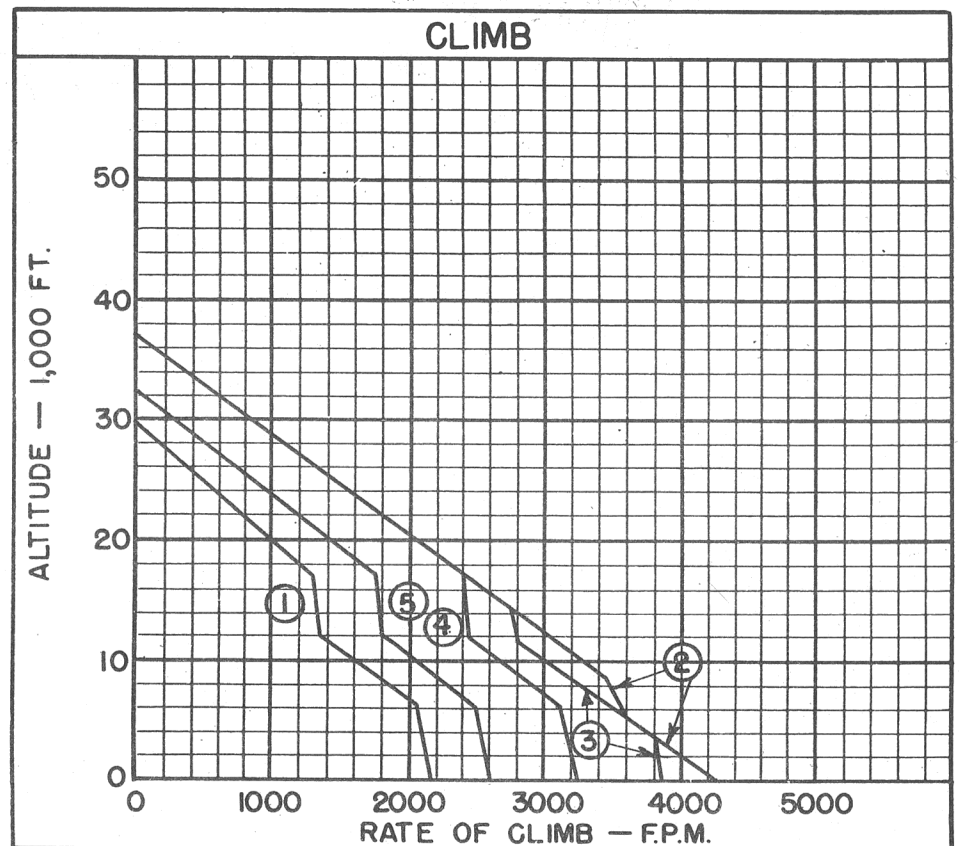
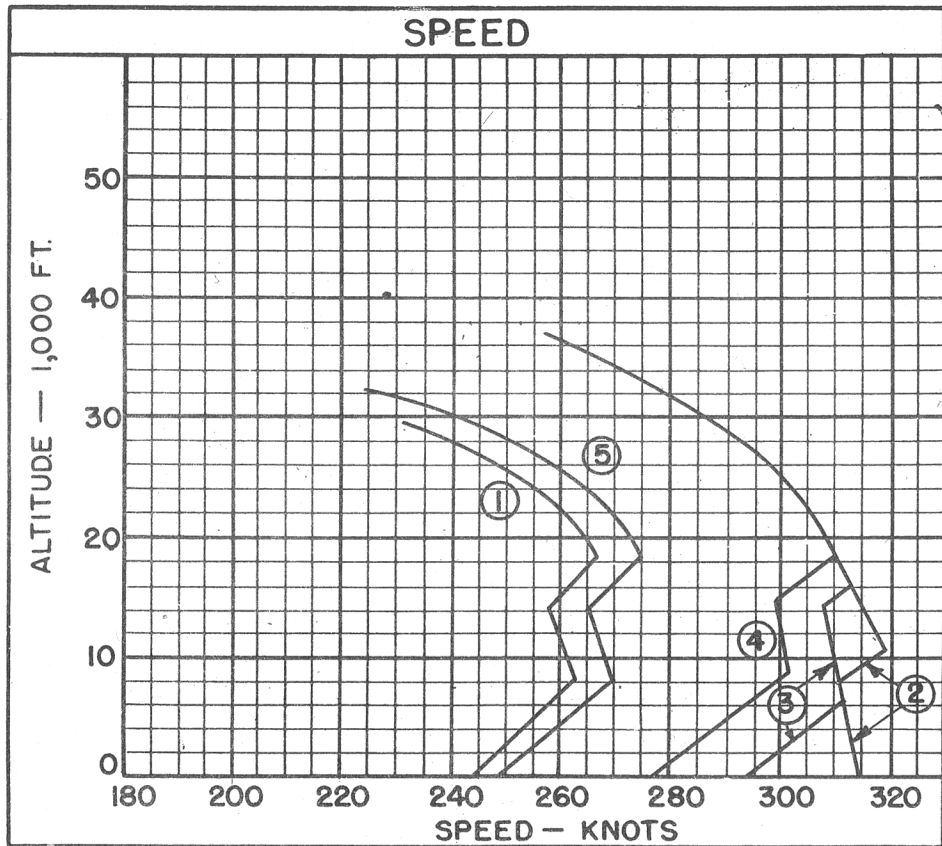
- (A) BHP at Maximum Critical Altitude  
(B) Normal BHP

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 308 kn. and  $V_{max./ACA}$  to 312/10,700 ft. Addition of 12 launchers and 12-5" HVAR increases gross weight of Cond. (2) to 16,727 lbs. and decreases  $V_{max}$ , S. L. to 289 kn. and  $V_{max./ACA}$  to 292 kn./10,700 ft.





○ LOADING CONDITION COLUMN NUMBER

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

## UNCLASSIFIED NOTES

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

AN/APS-4 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.

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. B-1

<u>WARM-UP</u> 20 min. $\frac{1}{2}$ Normal RPM TAKE-OFF 1 min. at T.O.Pr.	<u>RENDEZVOUS</u> 20 min. at Sea Level at 60% N. Pr. Normal Mixture	<u>CLIMB</u> to 15000 ft. at Normal Power Normal Mixture	<u>CRUISE-OUT</u> at 15,000 ft. 180 kts. TAS Normal Mixture	<u>DROP TANKS</u> <u>DESCEND</u> to 1,500 ft. <u>DROP BOMBS</u> FIRE ROCKETS	<u>COMBAT</u> 15 min. at 1,500 ft. 5 min. combat and 10 min. N. Pr.	<u>CRUISE-BACK</u> at 1,500 ft. 170 kts. TAS  Normal Mixture	<u>RESERVE</u> 60 min. at V for Max. Range at 1,500 ft. Normal Mixture
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$$\text{RADIUS} = \text{CLIMB} \div \text{CRUISE-OUT} = \text{CRUISE-BACK}$$

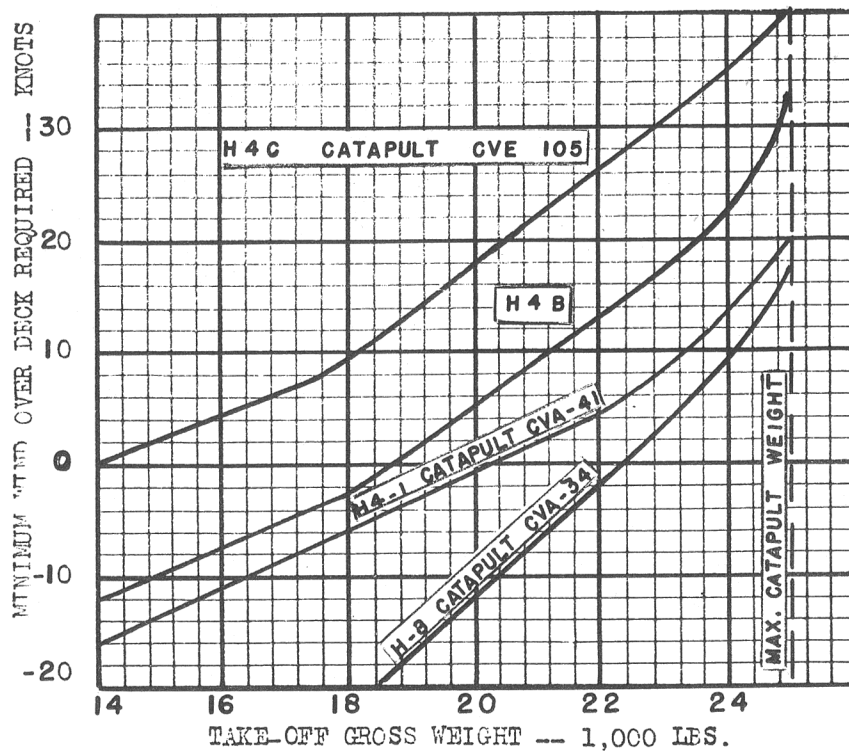
-----  
Addition of window dispenser to Condition (5) increases gross weight to 17,341 lbs., decreases Vmax. S. L. 9 kn., decreases combat range 53 n. mi. and increases T. O. distance (25 kn.) 21 ft.  
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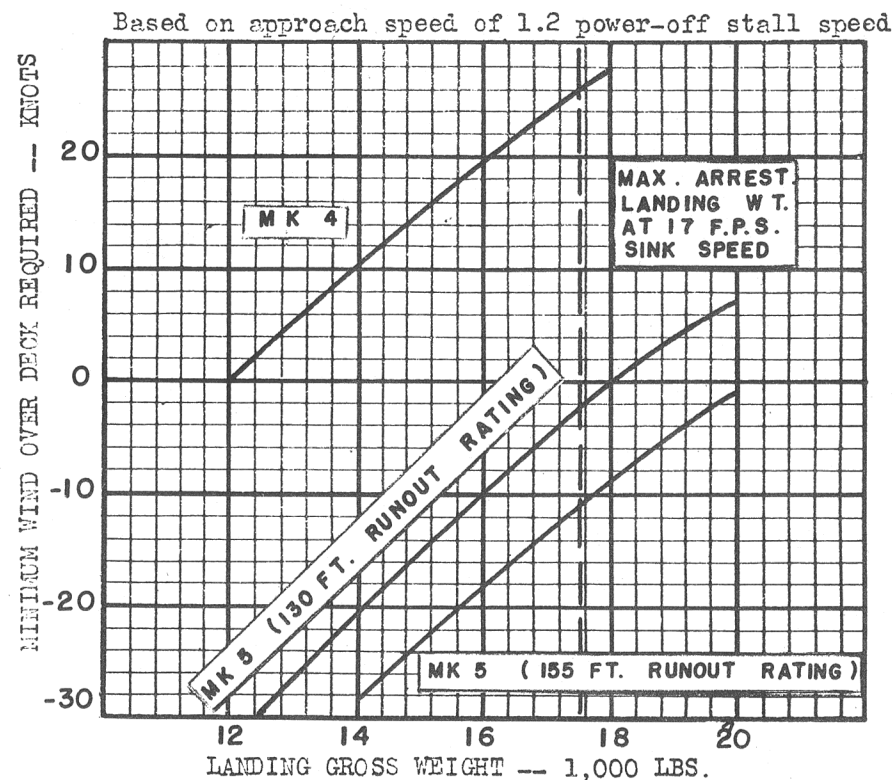
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# CARRIER SUITABILITY

MINIMUM WIND OVER DECK REQUIRED FOR CATAPULTING  
VS. GROSS WEIGHT



MINIMUM WIND OVER DECK REQUIRED FOR LANDING  
VS. GROSS WEIGHT



## NOTES

- (A) These curves should be used for planning purposes only. Actual catapult and arresting gear operation should be in accordance with applicable Aircraft Technical Orders, and Catapult and Arresting Gear Bulletins.
- (B) Based on NATC flight test.

NAVAER-1335I (New 5-52)

