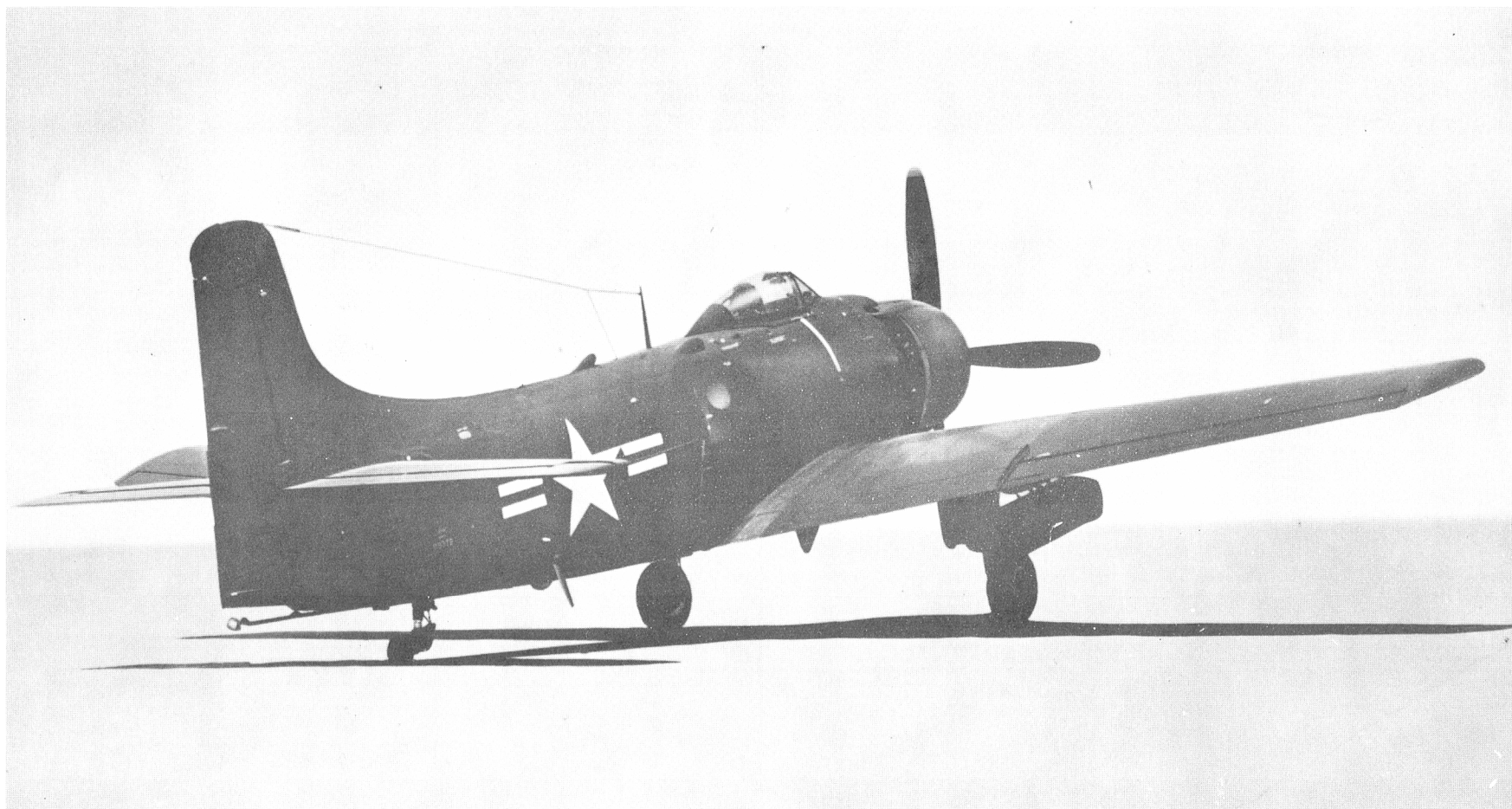


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UNCLASSIFIED

SERVICE



STANDARD AIRCRAFT CHARACTERISTICS

AD-1Q "SKYRAIDER"

DOUGLAS

DECLASSIFIED

UNCLASSIFIED
~~CONFIDENTIAL~~

AD-1Q

1 JULY 1949

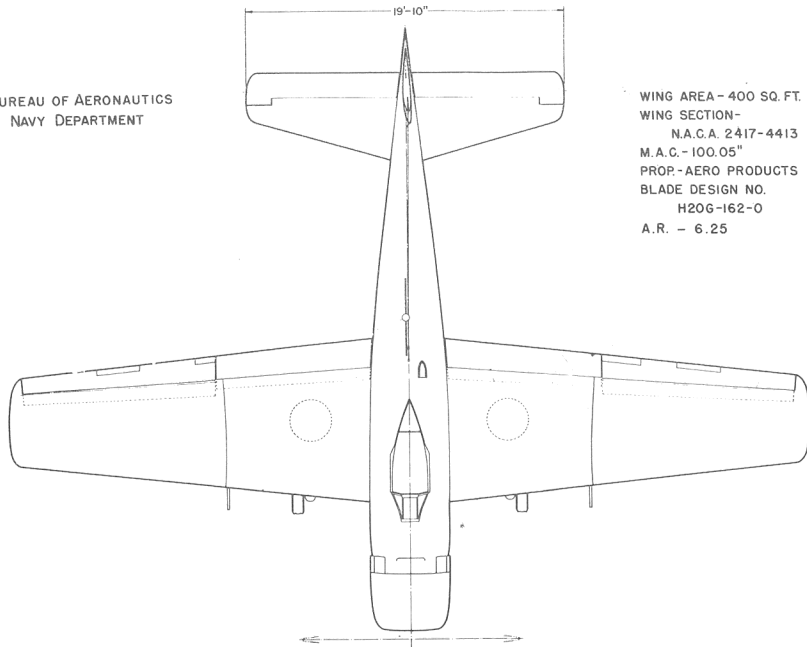
21

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

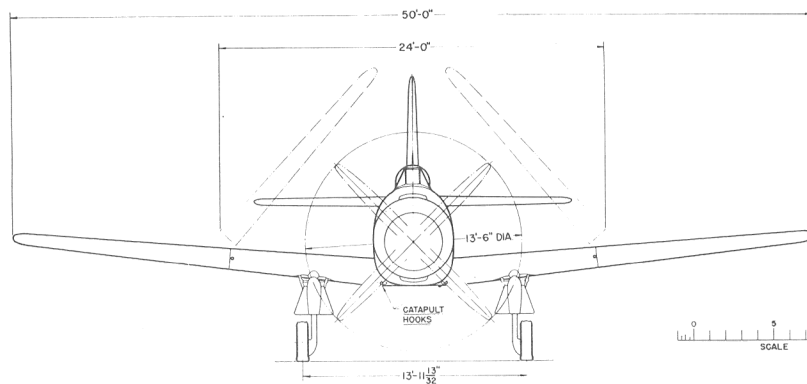
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SERVICE

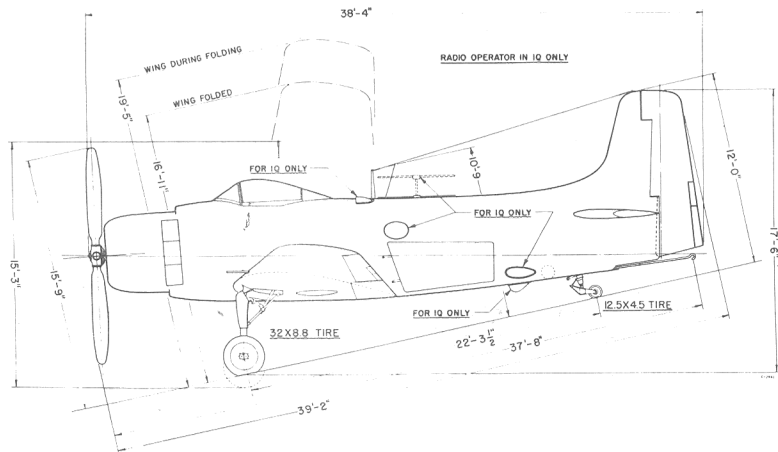
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BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 400 SQ. FT.
WING SECTION -
N.A.C.A. 2417-4413
M.A.C. - 100.05"
PROP. - AERO PRODUCTS
BLADE DESIGN NO.
H206-162-0
A.R. - 6.25



0 5 10 F
SCALE



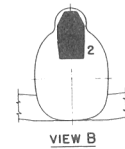
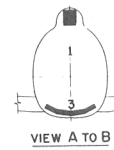
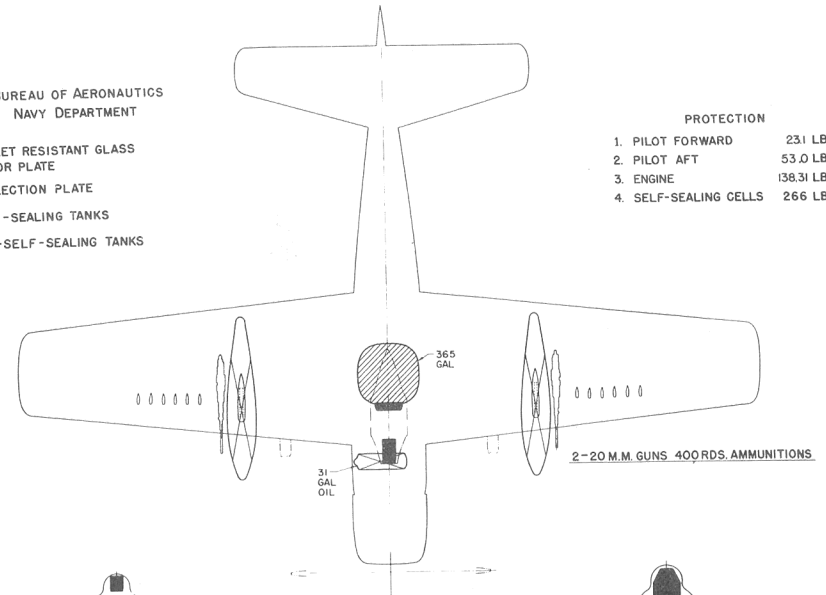
DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE
- ▨ DEFLECTION PLATE
- ▧ SELF-SEALING TANKS
- ⊠ NON-SELF-SEALING TANKS

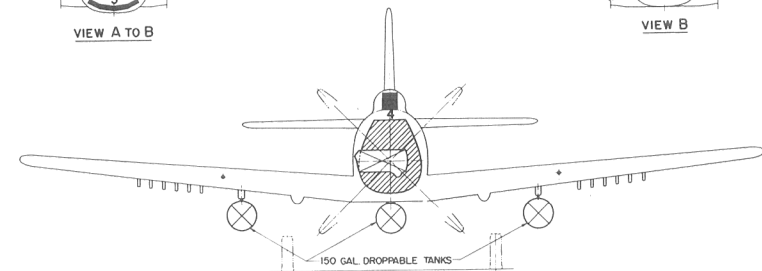
PROTECTION

- | | |
|-----------------------|-------------|
| 1. PILOT FORWARD | 231 LBS. |
| 2. PILOT AFT | 53.0 LBS. |
| 3. ENGINE | 138.31 LBS. |
| 4. SELF-SEALING CELLS | 266 LBS. |

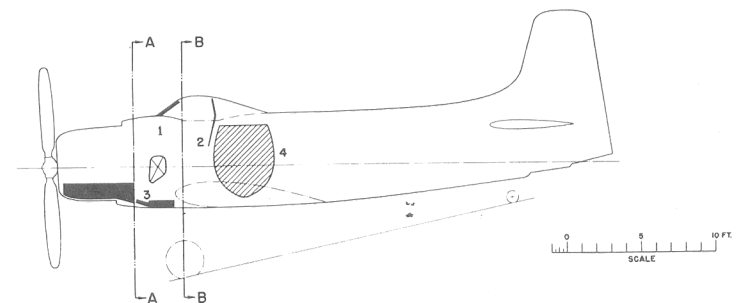


VIEW A TO B

VIEW B



0 5 10 F
SCALE



ARMAMENT AND TANKS

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Standard Aircraft Characteristics NAVAER 13358 (REV. 1-49)

AD-1Q

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MISSION AND DESCRIPTION

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

This modification of the AD-1 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-1 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'- 4"
HEIGHT.....15'- 9"
TREAD.....13'-11"
M.A.C.....8'- 4"
PROP. CLEAR.....7"

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	11,142.....	
BASIC.....	11,638.....	
DESIGN.....	15,600..7.0	
COMBAT.....	14,802..7.0	
MAX.T.O.(Cat.)...17,800..6.1		
(Field)...	23,802*.4.6	
MAX.LD.(Smooth)..18,000.....		
(Rough)...	15,800.....	
(Arrest.)...	16,000.....	
(Qualif.)...	14,600.....	

*Tentative

All weights are actual.

FUEL AND OIL

Gal.	No. Tanks	Location
365	1	Fuse, S.S.
150	1	Ctr., Drop
300	2	Wing, Drop

FUEL GRADE.....100/130

FUEL SPEC.....AN-F-48

OIL

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

ELECTRONICS

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

POWER PLANT

NO. & MODEL....(1) R-3350-24W
MFR.....Wright
SUPERCH.....1 Stage, 2 Speed
PROP.GEAR RATIO.....0.4375
PROP. MFR.....Aero Prod
PROP. DES. NO.....H20G-162-0
NO. BL./DIA.....4/13'-6"

RATINGS

	Bhp @	Rpm @	Alt.
T. O.	2,500	2,900	S. L.
COMBAT	2,950	2,800	S. L.
	2,570	2,600	6,200'
MIL.	2,500	2,800	3,500'
	1,900	2,600	14,800'
NORMAL	2,100	2,400	5,500'
	1,800	2,400	15,000'
SPEC. NO. N-825			

ORDNANCE

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

BOMBS & ROCKETS

Type	Size	Location	No.
D.B.	325#	External	3
Bomb	500#	External	3
Bomb	2000#	External	3
Mine	1000#	External	3
Mine	2000#	External	3
Torp.	Mk-13	External	3
A.R.	11.75"	Wing	2
HVAR	5"	Wing	12

FIRE CONTROLS

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

MAX. BOMB CAPACITY....9,000 #

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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 Radar
TAKE-OFF WEIGHT	lbs.	18,906		16,994
Fuel (Fixed/Drop)	lbs.	2,190/1,800		2,190
Bombs	lbs.	2,000		2,000
Wing/Power Loading (A) lbs/sq.ft; lbs/bhp.		47.3/10.5		42.5/9.4
Stall Speed--Power off	kn.	83.0		78.6
Stall Speed--Power off - No Fuel	kn.	73.8		73.3
Stall Speed--Power on	kn.	77.8		73.7
Maximum Speed/Alt (B)	kn/ft.	253/16,000		261/16,000
Take-off Distance, deck -- calm	ft.	1,079		821
Take-off Distance, deck 25 kn.	ft.	527		379
Take-off Distance, Airport	ft.			
Rate of climb -- sea level (B)	ft/min.	1,880		2,280
Service Ceiling (B)	ft.	26,500		29,000
Time-to-climb 10,000 ft. (B)	min.	6.7		5.2
Time-to-climb 20,000 ft. (B)	min.	16.7		12.4
Combat Range/V av 15,000	ft. n.mi/kn.	1,290/178		650/174
Combat Radius/V av B-1	ft. n.mi/kn.	630/175		240/175
LOADING CONDITION	(2) COMBAT	(3) COMBAT	(4) COMBAT	
GROSS WEIGHT	lbs.	14,802	14,802	14,802
Engine power		Combat	Military	Normal
Fuel	lbs.	2,190	2,190	2,190
Bombs/Tanks				
Max. speed at sea level	kn.	307	280	263
Max. speed/Alt	kn/ft.	307/S.L.	295/15,800	292/16,400
Combat speed/Alt	kn/ft.	306/1,500	284/1,500	267/1,500
Rate of climb SL	ft/min.	4,280	3,560	2,970
Ceiling for 500 fpm R/C	ft.	31,700	31,700	30,900
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 contractor's flight test fuel consumption data increased 5%.

Rocket launchers not aboard. Addition of 12 launchers to Cond. (2) reduces V_{max} . S. L. to 300 kn. and $V_{max.}/ACA$ to 298 kn./8,000 ft. Addition of 12 launchers and 12-5" HVAR increases gross weight of Cond. (2) to 16,531 lbs. and decreases V_{max} . S. L. to 281 kn. and $V_{max.}/ACA$ to 278 kn./8,000 ft.

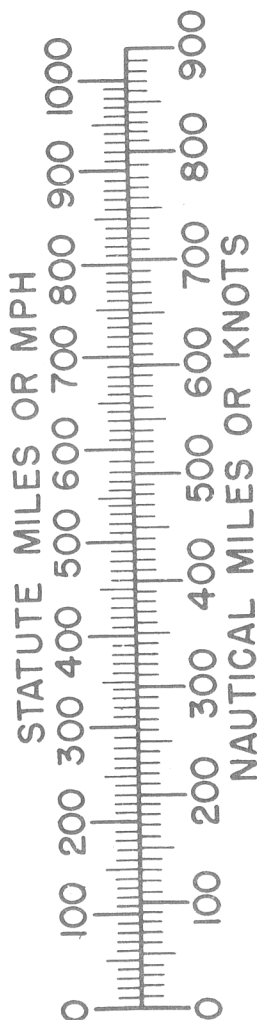
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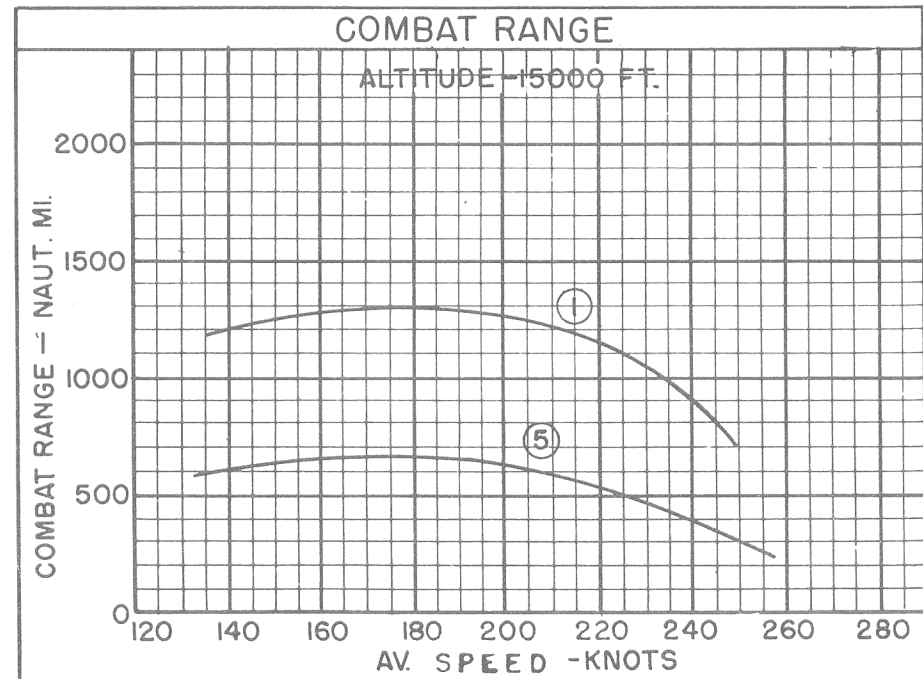
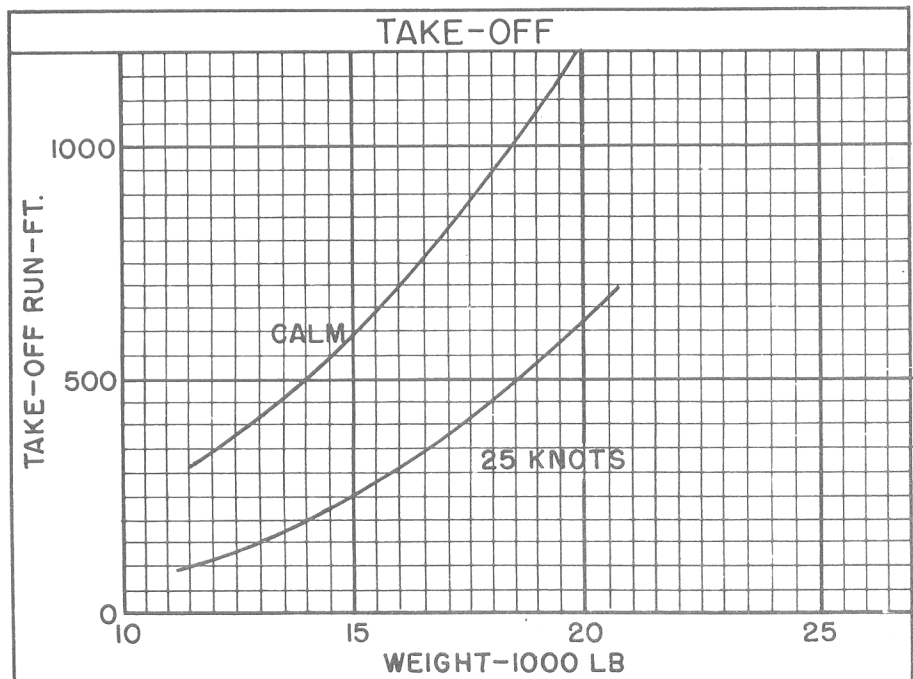
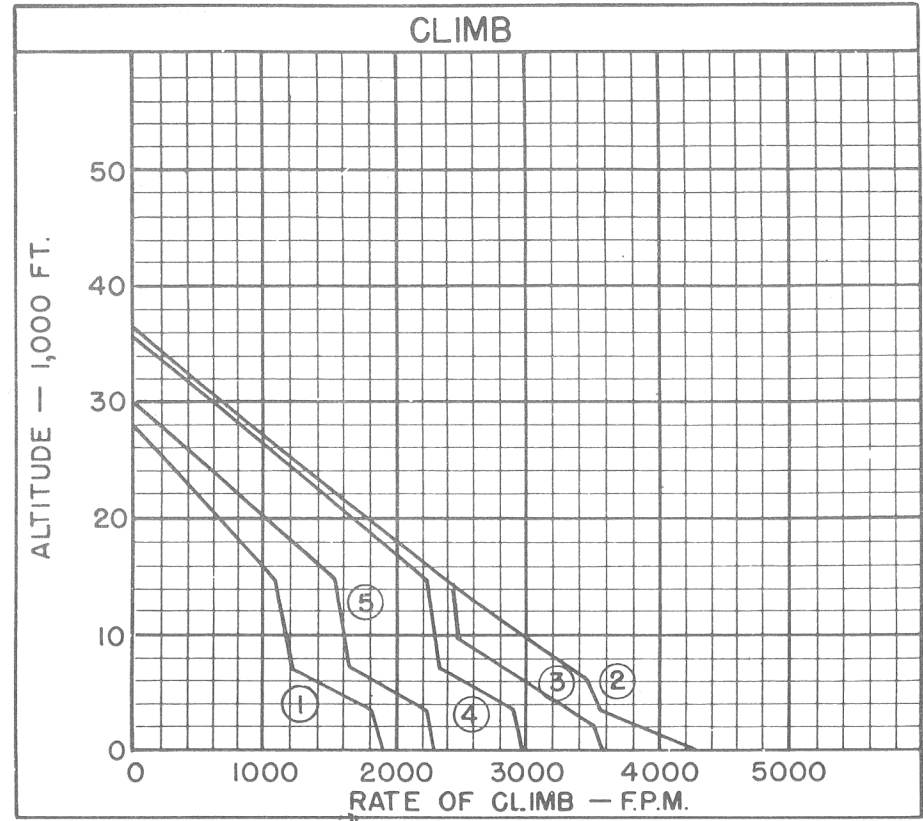
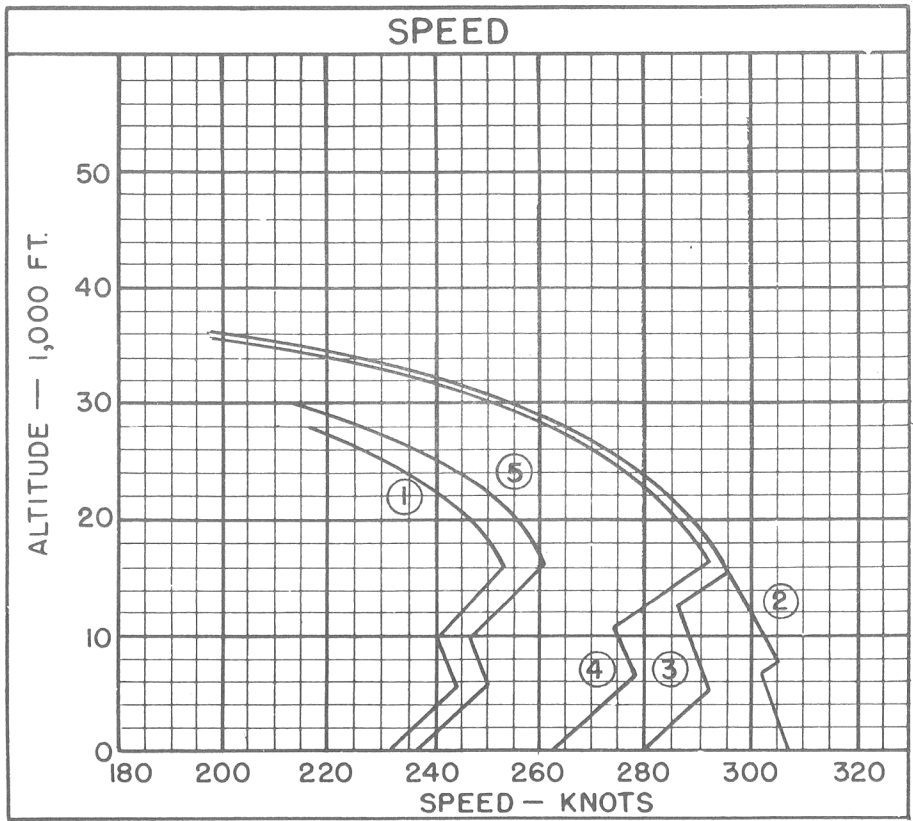
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Standard Aircraft Characteristics NAVAER 1335E (REV. 1-49)



○ LOADING CONDITION COLUMN NUMBER

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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>	<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.	20 min. at	to	at	<u>DESCEND</u>	15 min. at	at 1500 ft.	60 min. at
$\frac{1}{2}$ Normal RPM	Sea Level	15000 ft.	15,000 ft.	to 1,500 ft.	1,500 ft.	170 kts.	V for Max.
<u>TAKE-OFF</u>	at 60%	at Normal	180 kts.	<u>DROP BOMBS</u>	5 min. combat	TAS Normal	Range at 1500 ft.
1 min. at	N. Pr.	Power	TAS Normal	<u>FIRE</u>	and 10 min.	Mixture	Normal
T. O. Pr.	Normal	Normal	Mixture	<u>ROCKETS</u>	N. Pr.		Mixture
	Mixture	Mixture					

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

NOTE: Addition of window dispenser to Cond. (5) increases gross weight to 17,145 lbs., decreases V_{\max} S.L. 9 kn., decreases combat range 53 n.mi. and increases T.O. distance (25 kn.) 21 ft.

Following engine ratings from flight test were used in preparation of performance data:

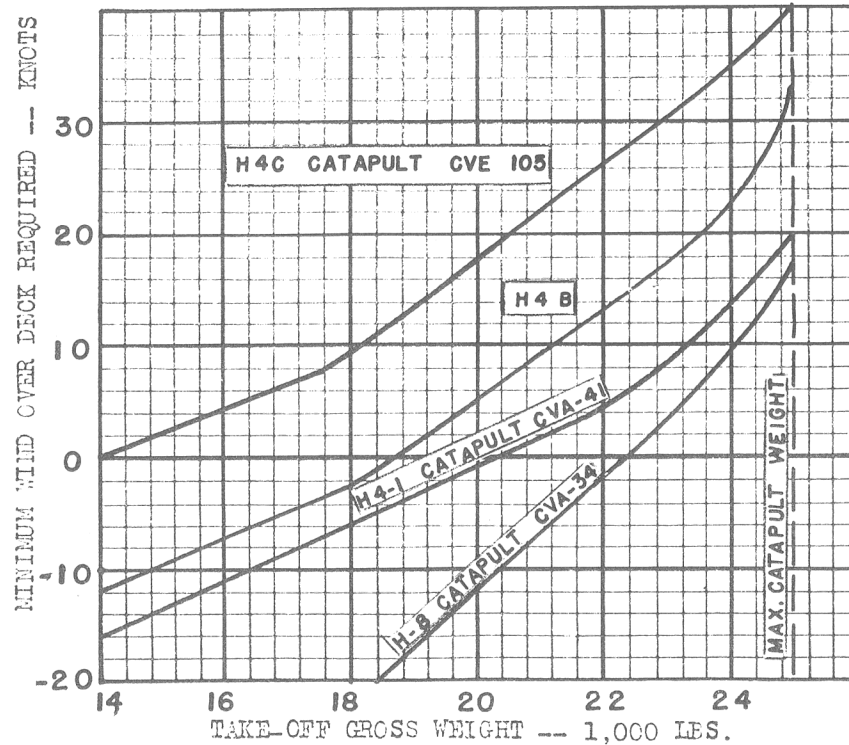
	<u>Bhp.</u>	<u>Rpm.</u>	<u>Alt.</u>
T.O.	2500	2900	S.L.
Mil.	2500	2800	2000'
	1900	2600	14300'
Norm.	2100	2400	3300'
	1800	2400	14800'

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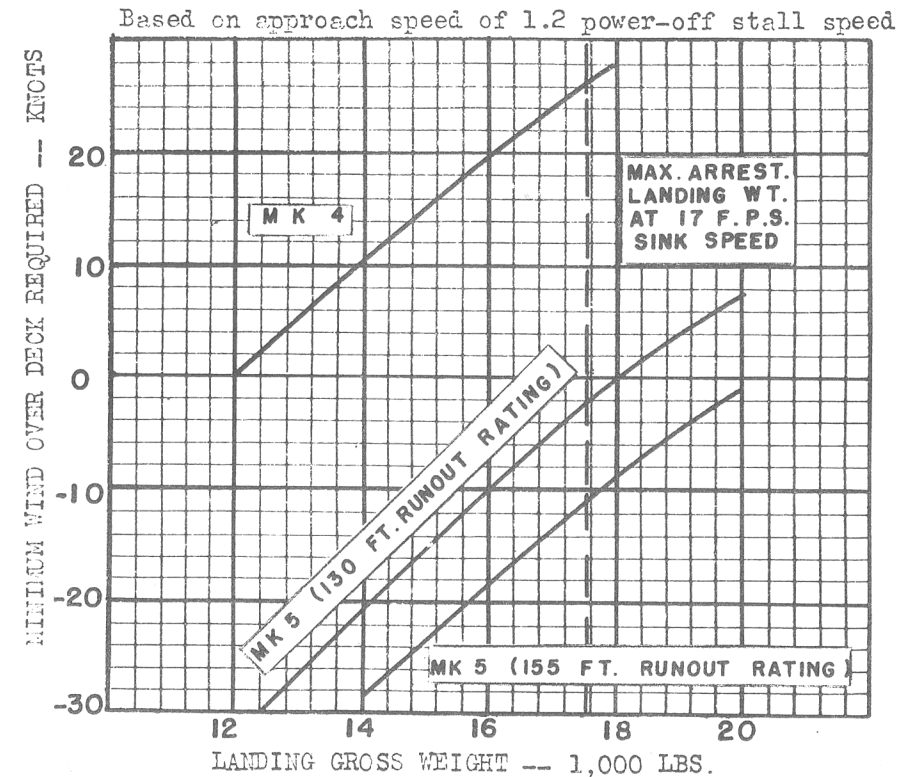
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CARRIER SUITABILITY

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.

