

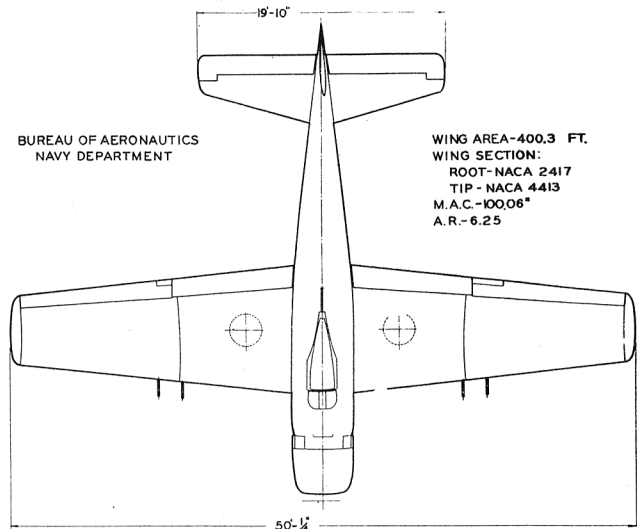
STANDARD AIRCRAFT CHARACTERISTICS
AD-4 "SKYRAIDER"

DOUGLAS

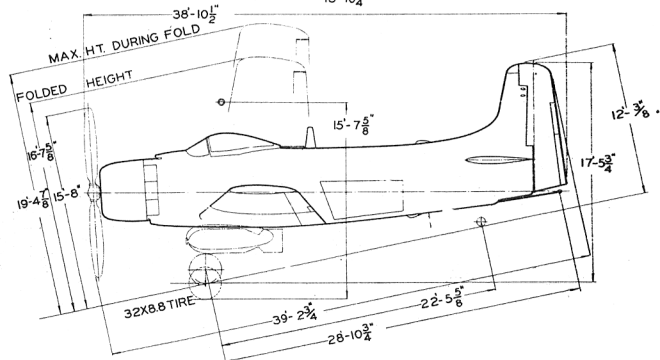
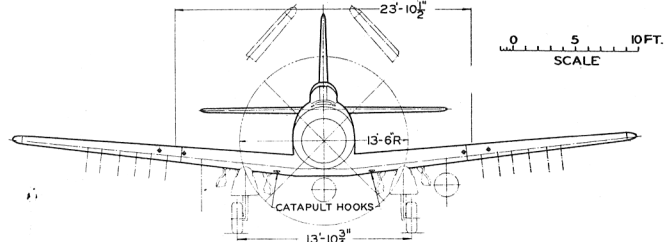
13

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

BUREAU OF AERONAUTICS
NAVY DEPARTMENT



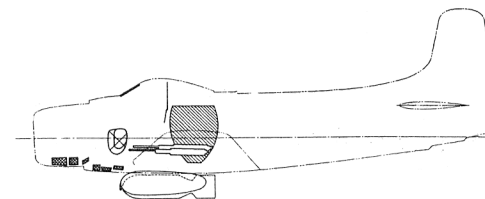
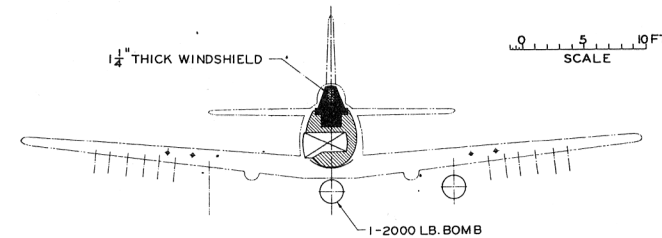
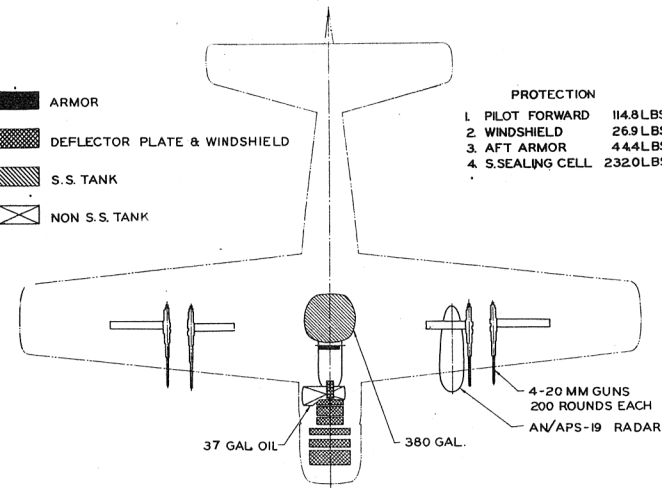
WING AREA-400.3 FT.
WING SECTION:
ROOT-NACA 2417
TIP-NACA 4413
M.A.C.-100.06"
A.R.-6.25



DESCRIPTIVE ARRANGEMENT

- ARMOR
- DEFLECTOR PLATE & WINDSHIELD
- S.S. TANK
- NON S.S. TANK

- PROTECTION
1. PILOT FORWARD 114.8 LBS.
 2. WINDSHIELD 26.9 LBS.
 3. AFT ARMOR 444 LBS.
 4. S.S. SEALING CELL 2320 LBS.



ARMAMENT & TANKS

14

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

POWER PLANT

NO. & MODEL..(1) R-3350-26WA
 MFR.....Wright
 SUPERCH....1 Stage, 2 Speed
 RED.GR.RATIO.....0.4375
 PROF.MFR.....Aero. Prod.
 BLADE DESIGN.A642G8/M20A-162-0
 NO.BL./DIA.....4/13' - 6"

RATINGS

	Bhp.	@ Rpm	@ Alt
T.O.	2,700	2,900	S.L.
MIL.	2,700	2,900	S.L.
			to 3,700'
	2,100	2,600	11,500
			to 14,500'
NORMAL	2,300	2,600	S.L.
			to 6,200'
	1,900	2,600	12,000
			to 17,000
SPEC. NO. N836-B			

MISSION AND DESCRIPTION

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

It is equipped with a strengthened landing gear, G-2 compass, anti-G suit provisions, 4-20 MM cannon, and Aero 14 rocket launchers capable of carrying bombs up to 500 lbs.

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, power plant, and engine mount are conventional. Oxygen for five hours is supplied. Bomb displacing gear at the centerline station is powder operated. Twenty gallons of ADI fluid are supplied for injection.

DEVELOPMENT

First Flight - - - - June 1949
 Service Use - - - - July 1949

DIMENSIONS

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

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	11,712	
BASIC.....	12,602	
DESIGN.....	15,595	6.0
COMBAT.....	15,199	6.0
MAX.T.O.(Field).....	24,000	
(Cat.).....	20,500	
MAX.LAND.(Field).....	21,000	
(Arrest).....	17,500	

All weights are actual.

FUEL AND OIL

Gals.	No. Tanks	Location
380	1	Fuse., S.S.
150	1	Ctr. Drop
300	2	Wing Drop
FUEL GRADE....		115/145
FUEL SPEC..MIL-F-5572		

OIL

CAPACITY (Gals.).....37
 GRADE.....1120
 SPEC.....MIL-O-6082A

ORDNANCE

No.	Size	Location	Rds.
4	20 mm	ing	800

Mk. 1 Mod. 4 Gunsight.

BOMBS & ROCKETS STATIONS

Racks	Max. Cap	Location	No.
Mk. 51	2,000#	Inner Wing	2
Douglas	2,000#	Center	1
Ejector		Fuselage	
Aero	500#	Outer Wing	12
14A			

Max. Bomb Cap. (Ship) 6,500 lbs.
 (Shore) 9,000 lbs.

ELECTRONICS

VHF COMM.. AN/ARC-1 or -1A or AN/ARC-27
 RADIO ALTM..... AN/APN-1
 RANGE REC..... R-23A/ARC-5
 RADIO REC..... AN/ARR-2A
 SEARCH & AIM RDR.. AN/APS-19A
 IFF..... AN/APX-6

15

Standard Aircraft Characteristics NAVAER-1335C

PERFORMANCE SUMMARY					
TAKE-OFF LOADING CONDITION		(1) Day Attack 1-2000 lb. Bomb AN/APS-19 Radar	(3) Day Attack 1-2000 lb. Bomb 2-150 Gal. Tanks 12 - 5 In. HVAR		
TAKE-OFF WEIGHT	lb.	18,111	21,483		
Fuel (Fixed/Drop)	lb.	2,280/ - - -	2,280/1,800		
Payload (Bombs/Rockets)	lb.	2,000/None	2,000/1,680		
Wing loading	lb./sq.ft.	45.3	53.7		
Stall speed - power-off	kn.	80.7	88.0		
Take-off run at S.L. - calm	ft.	790	1,400		
Take-off run at S.L. 25 kn. wind	ft.	370	710		
Take-off to clear 50 ft. - calm	ft.	- -	- -		
Max. speed/altitude (A)	kn./ft.	296/19,700	262/18,800		
Rate of climb at S.L. (A)	fpm	2,170	1,480		
Time: S.L. to 10,000 ft. (A)	min.	4.7	7.0		
Time: S.L. to 20,000 ft. (A)	min.	11.3	18.7		
Service ceiling (100 fpm) (A)	ft.	28,500	22,800		
Combat range	n.mi.	720	1,110		
Average cruising speed	kn.	203	201		
Cruising altitude(s)	ft.	15,000	15,000		
Combat radius	n.mi.	240	520		
Average cruising speed	kn.	193	198		
COMBAT LOADING CONDITION		(2) Combat			
COMBAT WEIGHT	lb.	15,199			
Engine power		Military			
Fuel	lb.	1,368			
Combat speed/combat altitude	kn./ft.	290/S.L.			
Rate of climb/combat altitude	fpm/ft.	3,550/S.L.			
Combat ceiling (500 fpm)	ft.	29,600			
Rate of climb at S.L.	fpm	3,550			
Max. speed at S.L.	kn.	290			
Max. speed/altitude	kn./ft.	316/17,500			
LANDING WEIGHT	lb.	14,037			
Fuel	lb.	206			
Stall speed - power-off	kn.	71.1			
Stall speed - with approach power	kn.	68.8			

NOTES

(A) Normal rated power

(B) Performance is based on AD series flight tests.

(C) Range and radius are based on AD series flight test fuel consumption data increased 5%.

(D) All loadings include 12 Aero-14A racks.

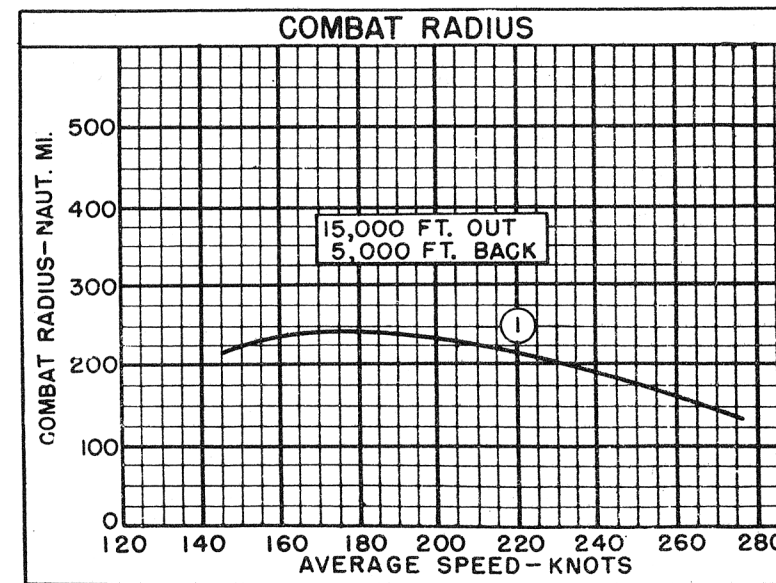
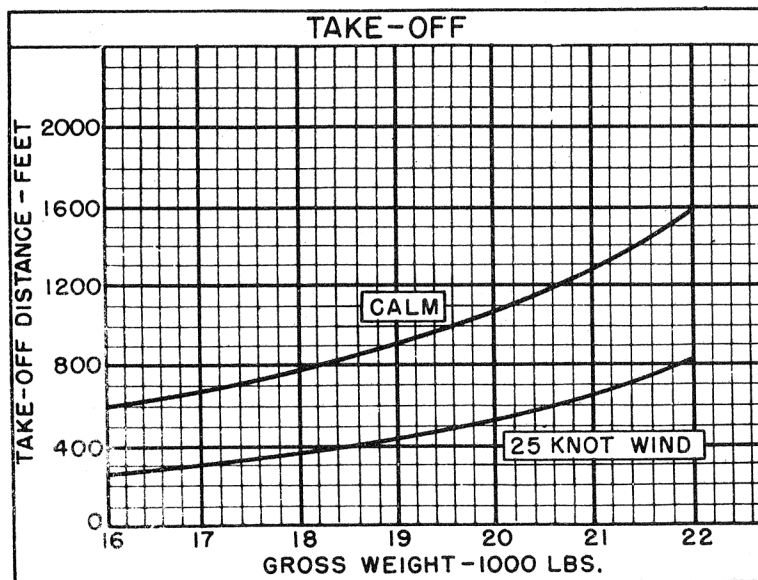
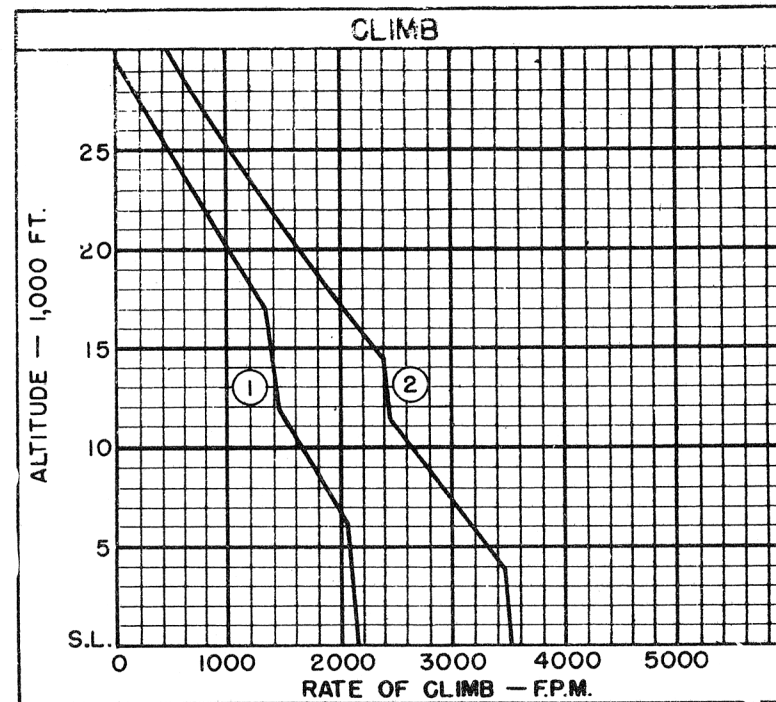
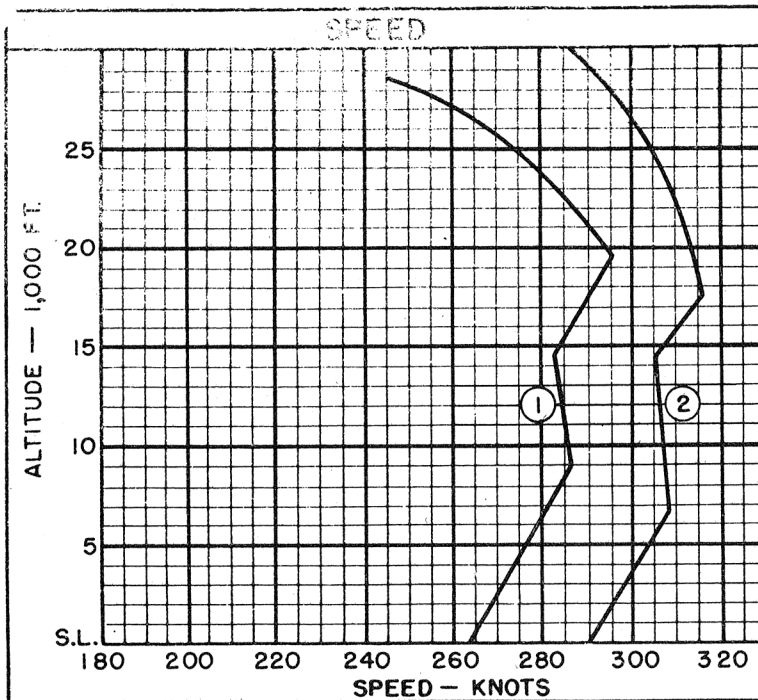
(E) 20 airplanes (wings folded) can be spotted in a rectangular area 200 feet long and 96 feet wide.

16

NAVAER-1335D (Rev. 10-51)

17

Standard Aircraft Characteristics: MAJAFK 1335E (REV. 2-50)



○ LOADING CONDITION COLUMN NUMBER

NOTES

LOW ALTITUDE ATTACK COMBAT RADIUS PROBLEM (RECIPROCATING ENGINE)

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal power.

CLIMB: On course to 15,000 feet at normal power.

CRUISE-OUT: At 15,000 feet, at V for long range. External fuel tanks dropped when empty.

DESCEND: To sea level. (No fuel used, no distance gained)

DROP BOMBS, FIRE ROCKETS

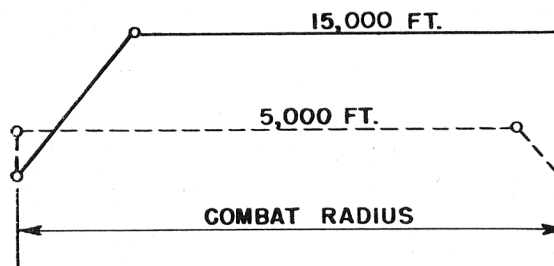
COMBAT: 15 minutes at sea level. (5 minutes at military power and 10 minutes at normal power)

CLIMB: On course to 5,000 feet at normal power.

CRUISE-BACK: At 5,000 feet at V for long range.

RESERVE: 20 minutes at V for long range at sea level plus 5% of initial fuel load.

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

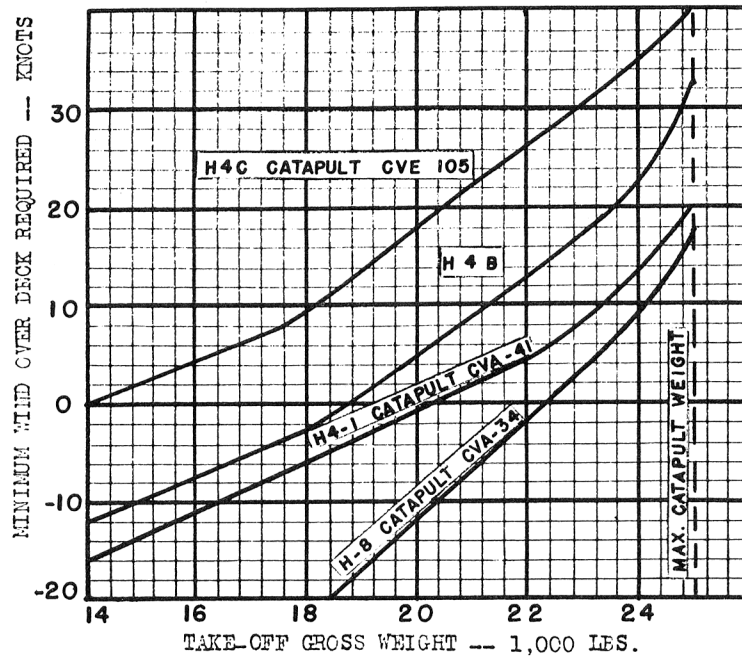


18

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

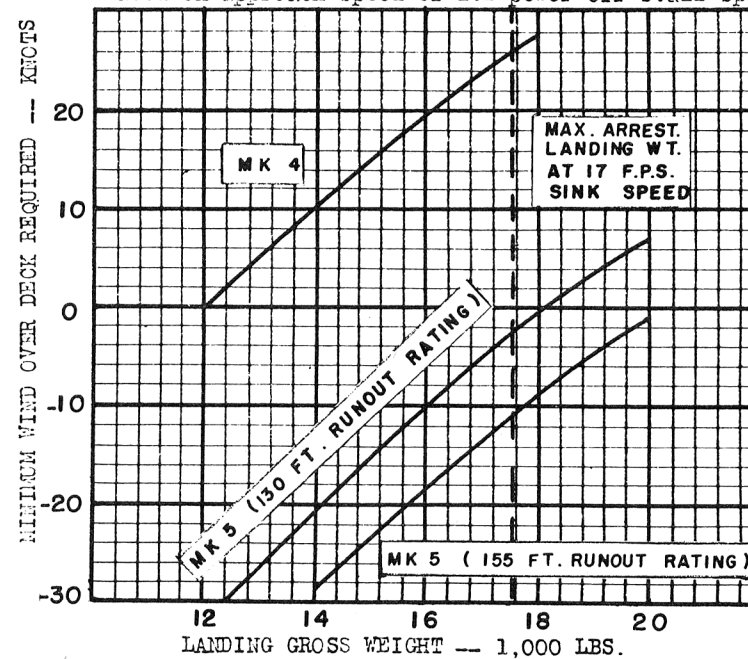
CARRIER SUITABILITY

MINIMUM WIND OVER DECK REQUIRED FOR CATAPULTING
VS. GROSS WEIGHT



MINIMUM WIND OVER DECK REQUIRED FOR LANDING
VS. GROSS WEIGHT

based on approach speed of 1.2 power-off stall speed



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.

19

NAVAER-13351 (New 5-52)

