

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		BOMBER 1-2000# FULL FUEL*	BOMBER (NO BOMB) 60% FUEL*	FIGHTER FULL FUEL**	FIGHTER 60% FUEL**
GROSS WEIGHT	LBS	19000	15800	16880	15680
EMPTY WEIGHT	LBS	12353			
FUEL	GALS.	500	300	500	300
FIXED GUNS/AMMUNITION(MK5-0 Gunsight)		4-20MM Shirkuns/800 Rds. (Alt. Provision 4-20MM.M-3)			
FLEXIBLE GUNS/AMMUNITION		NONE			
ENGINE POWER USED FOR PERFORMANCE		MILITARY	MILITARY	MILITARY	MILITARY
WING LOADING	LBS/SQ.FT.				
POWER LOADING ①	LBS/BHP.				
V-MAX. SEA LEVEL	KN.	406	416	418	419
V-MAX. 20000 Ft.	KN./FT.	427	435	436	437
V-STALL GROSS WEIGHT ②	KN.	86.8	78.4	81.0	78.0
V-STALL WITHOUT FUEL ②	KN.	78.8	73.9	73.5	73.5
TIME-TO-CLIMB. 20000 FT.	MIN.	4.15		3.52	
TIME-TO-CLIMB 40000 FT.	MIN.	12.62		10.19	
SERVICE CEILING	FT.	46600	51800	50500	52000
TAKE-OFF DISTANCE -CALM-	FT.	540		400	
TAKE-OFF DISTANCE -15 KN-	FT.				
TAKE-OFF DISTANCE -25 KN-	FT.	270		188	
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS			*	
RATE OF CLIMB -SL-	FT./MIN.	6120	7620	7130	7800
MAX. RANGE / V-AV. ③	N MI./KN.				
RANGE / V-AV -60%NSP-③-	N MI./KN.				
SEARCH RADIUS / V-AV -20% R-	N MI./KN.				
A.S.W. RADIUS / V-AV -20% R-	N MI./KN.				
Combat RADIUS (B-3) Mod.	N MI.	300			
COMBAT RADIUS (P-3) Mod.	N MI.			325	
ENGINE, Allison Model 500 Turbo Prop					
ENGINE RATING BHP/RPM/ALT.	(Specification No. 125-C Rev. Jan. 27 1947)				
	MILITARY STATIC RATING		NORMAL STATIC		
	5100 SHP & 830# THRUST/13620/SL		4500 SHP & 800# THRUST/13620/SL		
	T. O. STATIC RATING				
5100 SHP & 830# THRUST/13620/SL					
AUX. FIXED	TANKAGE IN GALLONS	OIL	FUEL	ARMAMENT	
	PROTECTED		500	Fuselage: Alt. with MK51 Rack	
	UNPROTECTED			1-2000#	
	TOTAL-FIXED INTERNAL			Wings: Alt. with MK 51	
	DROPPABLE (Not determined)			2-1000# or Drop Tanks	
	DROPPABLE			8-MK9 Rocket Launchers Spaced to Accomodate 250# Bombs.	
NOTE	TOTAL				
	① BHP AT MAX. CRIT. ALT.				
	② STALL-WITHOUT POWER				
③ AT ALTITUDE					

DATE APRIL 1947

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~~CONFIDENTIAL~~

MODEL XAD-3

PERFORMANCE AND RADIUS ARE CONTRACTOR ESTIMATES

DECLASSIFIED IN ACCORDANCE WITH E. O. 11652

PRELIMINARY

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

*Bomber Conditions 1 & 2; 3-pylon-racks aboard.

1-2000# bomb of Condition 1 is Douglas High Speed External Store.

**Fighter Conditions 3 & 4: No racks or external stores.

No external radar on any loading condition.

BOMBER COMBAT RADIUS FORMULA NO. B-3-CONDITION NO. -1					RADIUS-CLIMB+CRUISE-OUT-CRUISE BACK		
WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DESCEND	COMBAT	CRUISE BACK	RESERVE
30 sec. at Max.	Climb to	to		To	10 min. -V max.		15 min. at
Stat. Thrust	5000 ft.	30000 ft.	at 30000 ft.	1500 ft.	at 1500 ft.	at 30000 ft.	10000 ft.
<u>TAKE-OFF</u>	Mil. Thrust	Mil. Thrust	at Vel. for	DROP BOMBS	Mil. Thrust	at Vel. for	15 min. at
1 min. at	10 min. REND		Max. Range		<u>RETURN</u>	Max. Range	S.L.
T.O. Thrust	Vel. for				to 30000 ft.		Vel. for
	Max. Range				Mil. Thrust		max. End.

FIGHTER COMBAT RADIUS FORMULA NO. F-3-CONDITION NO. -3					RADIUS-CLIMB+CRUISE-OUT-CRUISE BACK		
WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DESCEND	COMBAT	CRUISE BACK	RESERVE
30 sec. at Max.	Climb to	to		to	15 min. -V max.		15 min. at
Stat. Thrust	5000 ft.	30000 ft.	at 30000 ft.	15000 ft.	at 15000 ft.	at 30000 ft.	10000 ft.
<u>TAKE-OFF</u>	Mil. Thrust	Mil. Thrust	at Vel. for		<u>RETURN</u>	at Vel. for	15 min. at
1 min. at	10 min. REND		Max. Range		to 30000 ft.	Max. Range	S.L.
T.O. Thrust	Vel. for				Mil. Thrust		Vel. for
	Max. Range						max. End.

Description

The XAD-3 is designed as a general purpose carrier attack airplane and as a fighter of conventional arrangement and construction. The Allison XT40-A-2 engine with contrarotating propellers give this airplane the ability to carry a variety of external stores for increasing its striking power or its radius of action, and in a clean condition to function as a fighter with better climb performance and maneuverability at high altitudes than most turbo jet airplanes. By careful control of the design it is expected that this airplane can be operated as a fighter from the CVE-55 class carriers although some penalties in operating and handling characteristics will be accepted rather than penalize the aerodynamic characteristics of the airplane. Provisions are made for aileron power boost, pressure cabin, ejection seat, and sufficient dive brakes to permit toss bombing. 20 mm shir-guns and new high speed stores are specified although alternate provisions will be made for carrying standard items.

Design gross weight	17000#
Alternate gross weight	19000#
Crew	One
Length	40'-6"
Height	16'-10"
Span	50'-0"
Folded Span	26'-10"
Wing Area	400 Sq. Ft.

Contractural

Phase I - Preliminary investigation and engineering development, wind tunnel model testing and full scale mock-up.

Letter of intent	April 1947
Mock-up date	July 1947

Phase II - Complete engineering and construction and Part I flight demonstration.

No contract has been let for Phase II, but it is expected that one will be initiated in July 1947, and that the first flight will be January 1949.

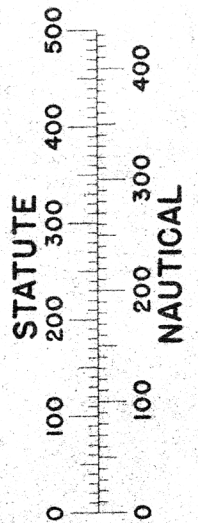
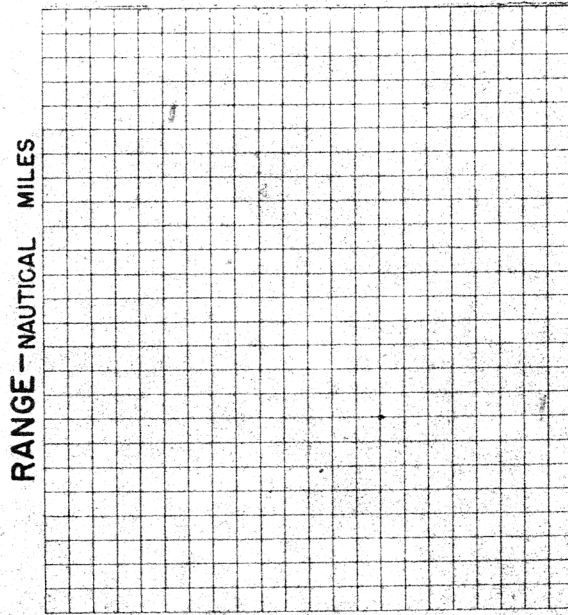
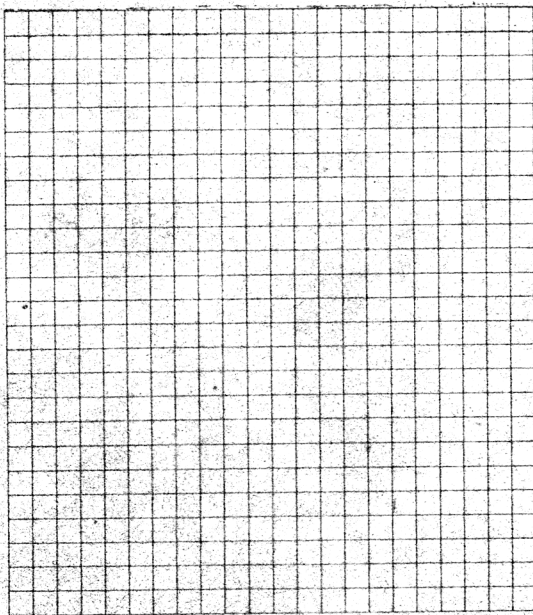
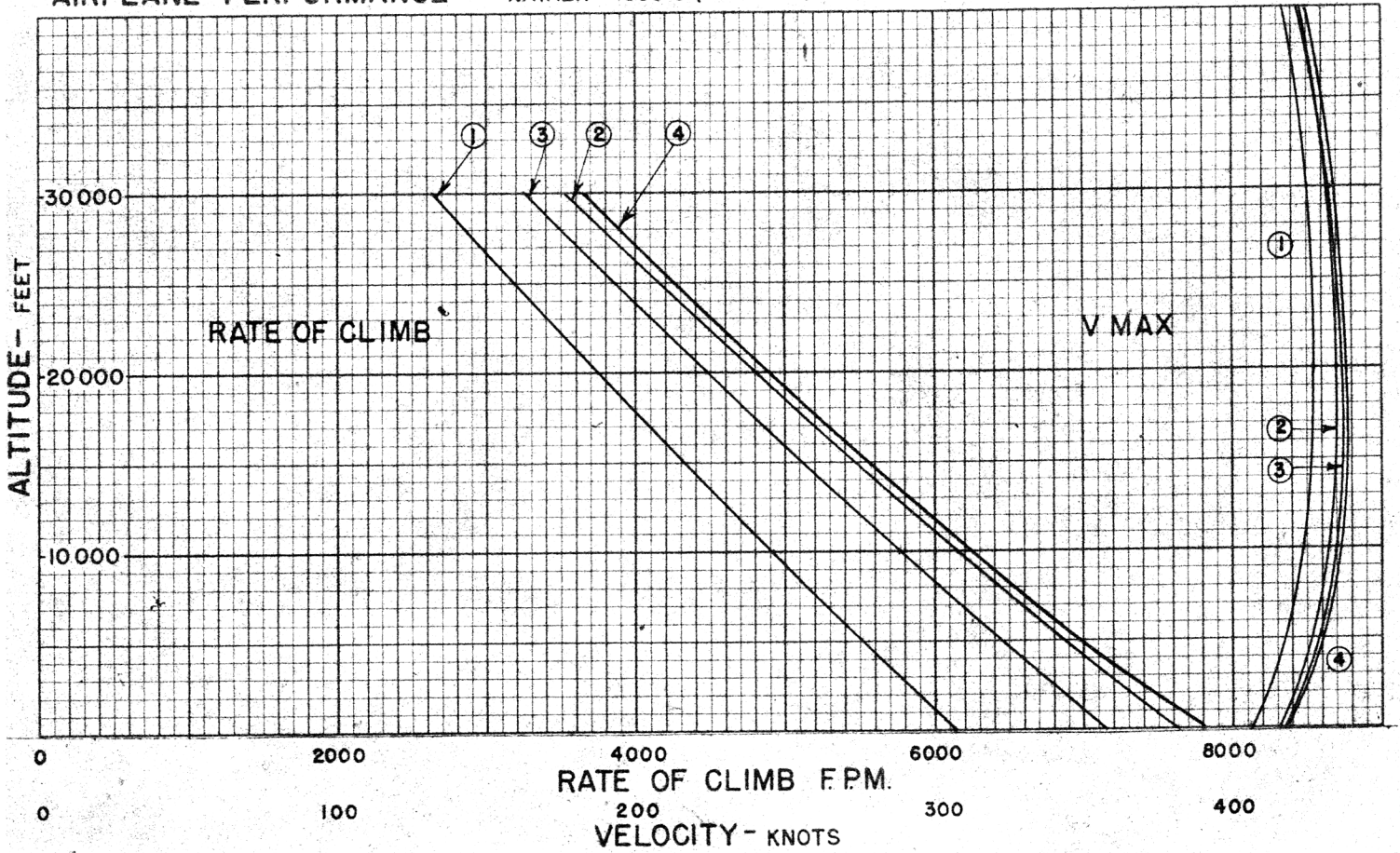
190 ft. length is required to spot 15 airplanes on the 96 ft. wide deck immediately aft of forward ramp on CV-9 class carriers.

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MODEL XAD-3

PRELIMINARY



AV. VELOCITY - KNOTS

○ LOADING CONDITION COLUMN NUMBER

PRELIMINARY

CONTRACTOR ESTIMATES

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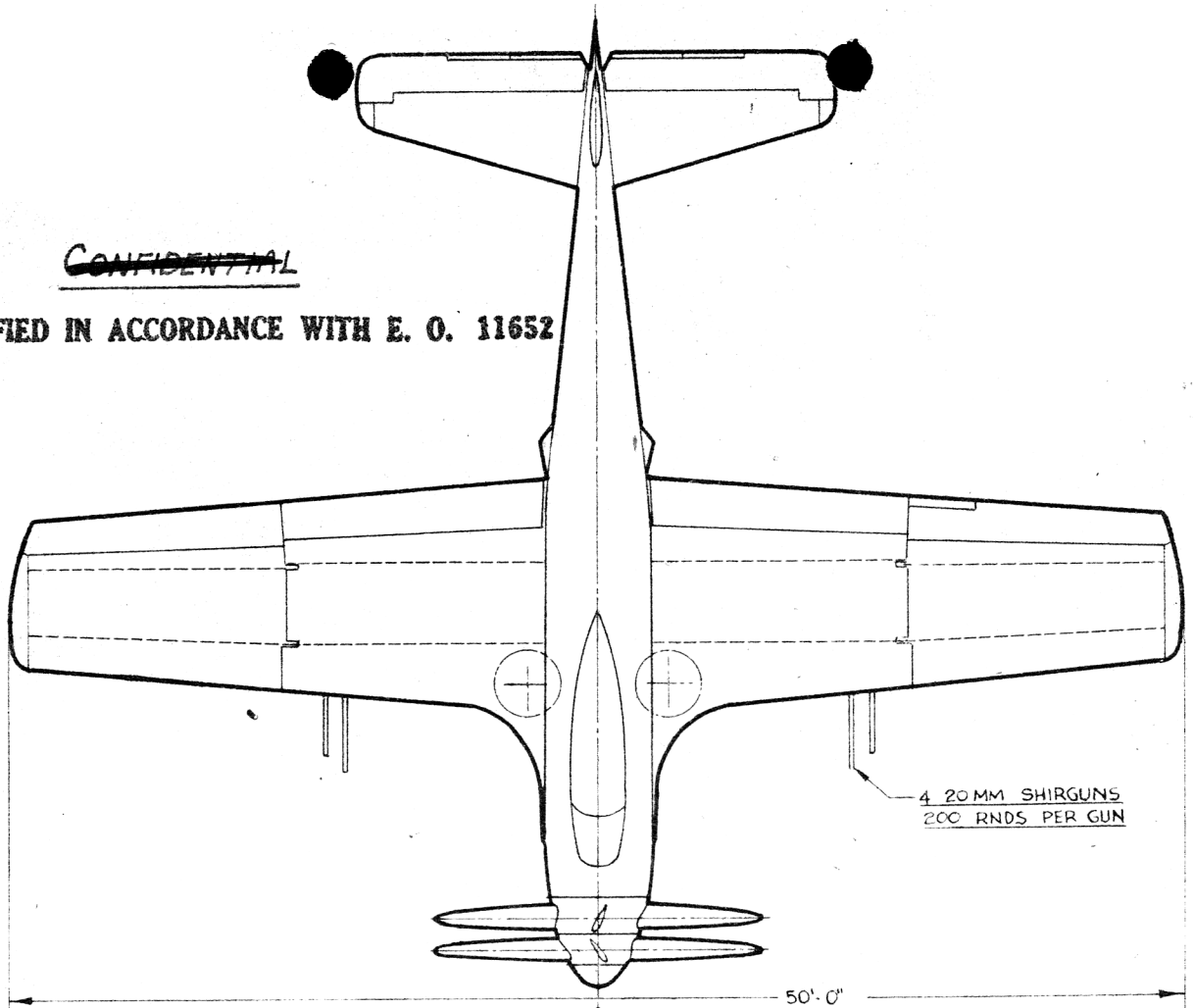
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MODEL - XAD-3

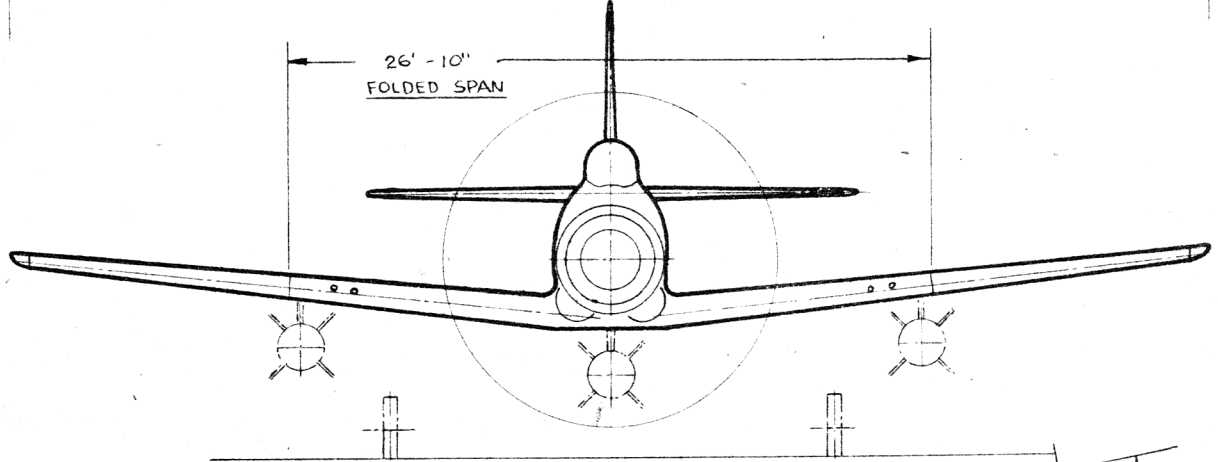
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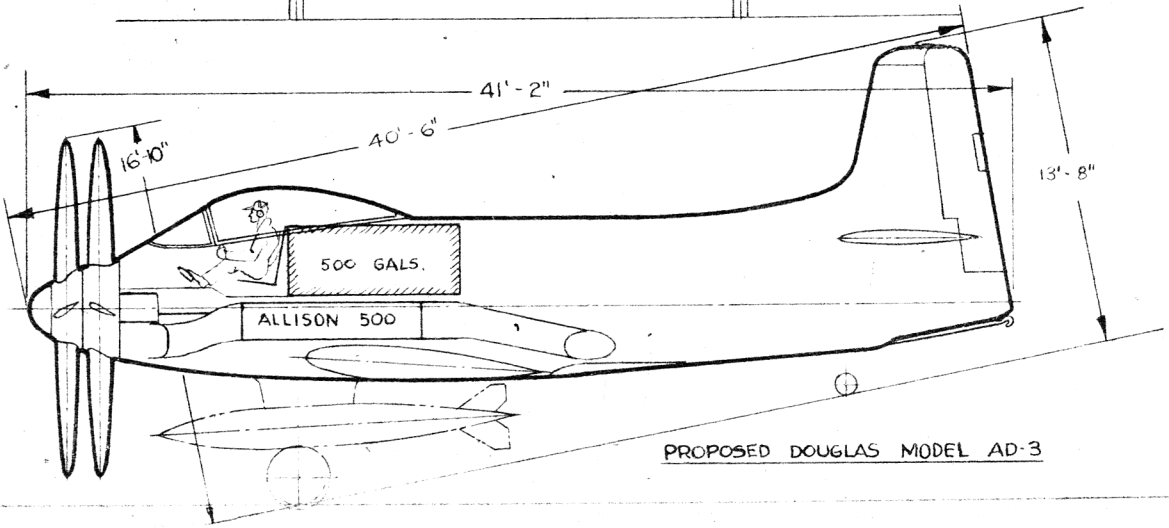


4 20 MM SHIRGUNS
200 RNDS PER GUN

50'-0"



26'-10"
FOLDED SPAN



16'-10"

40'-6"

41'-2"

13'-8"

500 GALS.

ALLISON 500

PROPOSED DOUGLAS MODEL AD-3