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NAVAIR 00-110AW1-1

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DOD DIR 5200.10

# Standard Aircraft Characteristics

## NAVY MODEL E-1B AIRCRAFT

(TITLE UNCLASSIFIED)

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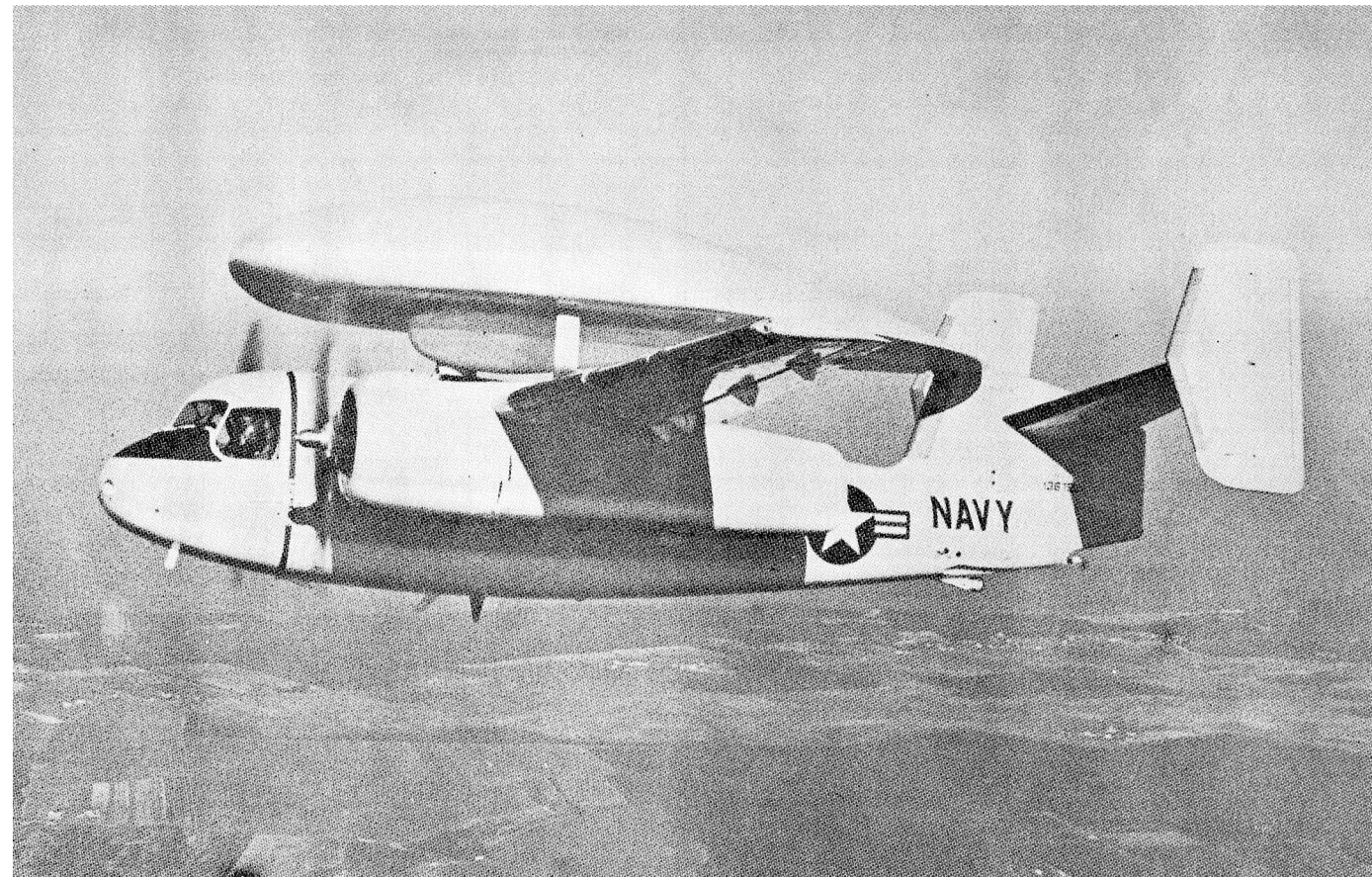
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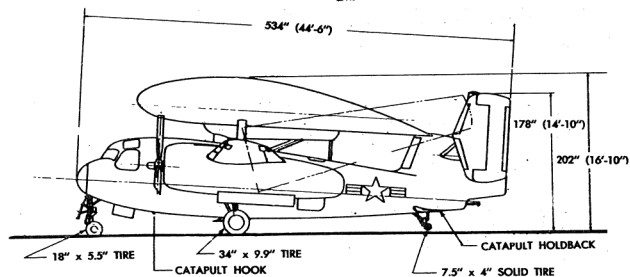
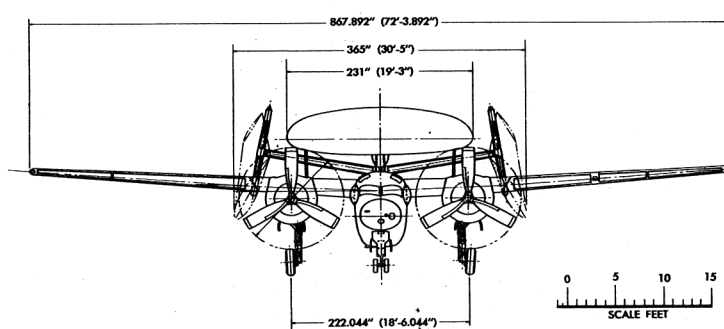
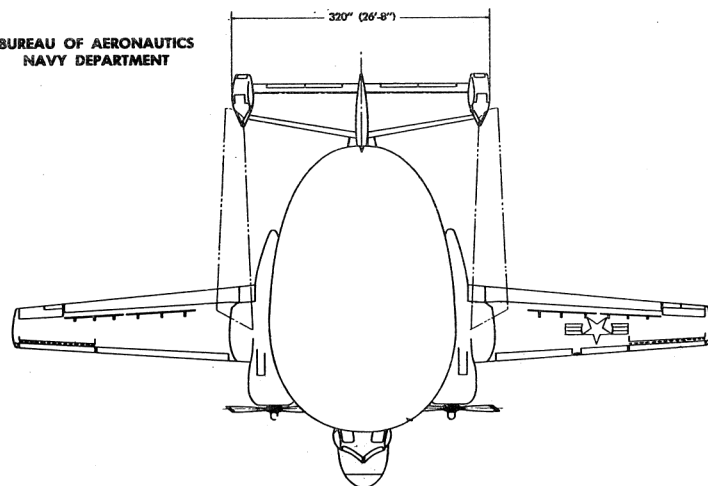
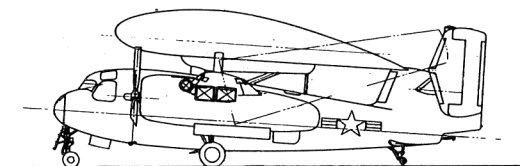
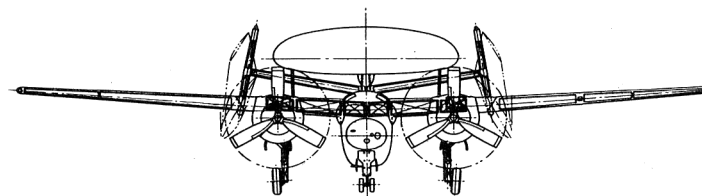
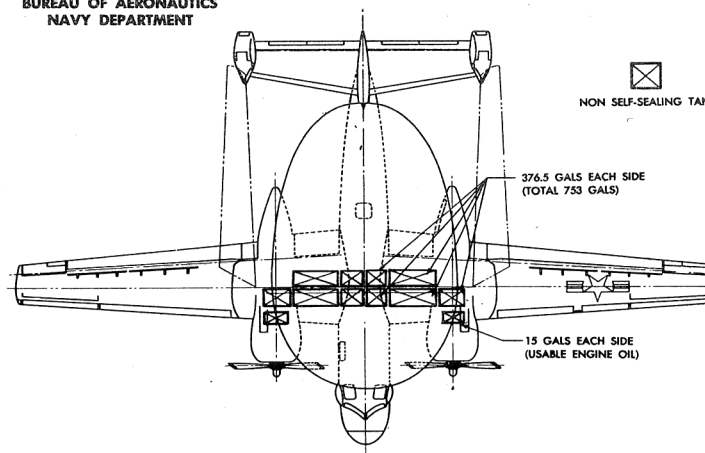
SERVICE



## STANDARD AIRCRAFT CHARACTERISTICS E-1B TRACER

GRUMMAN

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BUREAU OF AERONAUTICS  
NAVY DEPARTMENTDESCRIPTIVE ARRANGEMENT  
WF-2BUREAU OF AERONAUTICS  
NAVY DEPARTMENTARMAMENT & TANKAGE  
WF-2

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## POWER PLANT

NO. & MODEL.....(2) R-1820-82A  
 MANUFACTURER.....Curtiss Wright  
 SUPERCHARGER.....1 Stage, 1 Speed  
 REDUCTION GEAR RATIO.....0.5625  
 PROP. MFR.....HAM STD  
 PROP. DES. NO.  
 NO. BL./DIA... 3/11" - 0"

## RATINGS

	BHP	@	RPM	@	ALT.
T.O.	1,525		2,800		700
MIL.	1,425		2,700		2,400
NORM.	1,275		2,500		3,500

SPEC. NO. N867-B-A

## ORDNANCE

NONE

## MISSION AND DESCRIPTION

The Grumman WF-2 is an all-weather, carrier-based AEW/AIC aircraft equipped to detect and report distant airborne targets and vector interceptors into attack positions. It is designed to carry a four man crew; pilot, co-pilot and tactical director, and two radar operators. The interior is arranged to facilitate interchange of crew positions in-flight as well as in-flight maintenance of electronic components.

The WF-2 is a propeller driven twin engine, high wing monoplane designed for operation from CVA-34 and superior class carriers. It is equipped for catapult and arrested landing operations and carries a 20 ft. diameter top-mounted radome. It contains a specialized complement of electronic equipment (including radar relay, ECM and height finding) which enables it to fulfill its mission. It is equipped with slotted type flaps outboard and split inboard. Normal controls are augmented by circular arc spoilers for additional lateral control and by rudder boost for directional control in the event of engine failure & low flight speeds.

The airplane is a modification of the TF-1 aircraft.

## DEVELOPMENT

First Flight - - - - - 17 December 1956  
 Service Use - - - - - June 1959

## DIMENSIONS

WING  
 AREA .....506 sq. ft.  
 SPAN .....72 ft. 4 in.  
 MAC .....7 ft. 3 in.  
 LENGTH.....45 ft. 4 in.  
 HEIGHT.....16 ft. 10 in.  
 TREAD.....18 ft. 6 in.  
 PROP CRD. CLEARANCE.....11 in.

## WEIGHTS

LOADINGS	LBS	LF
EMPTY.....	20,638	
BASIC.....	20,892	
DESIGN.....	24,800	3
COMBAT.....	24,800	
MAX.T.O. (Field)...	26,600	
(Cat).....	26,600	
MAX.LDG. (Field)...	26,600	
(Arrest)...	23,850	

## FUEL AND OIL

GALS.	NO. TANKS	LOCATION
753	2	Wing

FUEL GRADE.....115/145  
 FUEL SPEC.....applicable...MIL-F-5772

## OIL

CAPACITY (GALS)...32 (incl. prop. oil)  
 GRADE.....1100  
 SPEC.....applicable...MIL-L-6082

## ELECTRONICS

UHF.....AN/ARC-52 (3)  
 HF.....AN/ARC-38  
 Interphone.....AN/AIC-14 type  
 UHF Dir. Finder Group.....AN/ARA-25  
 Marker Beacon Receiver.....AN/ARN-12  
 Radar Set (Altimeter).....AN/APN-22  
 Radar Identification Set (IFF) AN/APX-6B  
 Radar Recognition Set.....AN/APX-7  
 Coder Group.....AN/APA-89  
 Radio Set (TACAN).....AN/ARN-21  
 LF ADF.....Collins DF-201  
 Radar System.....AN/APF-82  
 Radar Indicators.....AN/APA-125 (MOD)  
 Radar Relay Transmitter....ART-28 (MOD)  
 Navigational Computer Group..AN/ASA( )

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## PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	① AEW MISSION 10,000 ft. Loiter	④ FERRY MISSION			
TAKE-OFF WEIGHT lb.	26,594	26,594			
Fuel lb.	4518	4518			
Payload lb.	--	--			
Wing loading lb./sq.ft.	52.6	52.6			
Stall speed - power-off kn.	84	84			
Take-off run at S.L. - calm (A) ft.	1960	1960			
Take-off run at S.L. 25 kn. wind (A) ft.	1380	1360			
Take-off to clear 50 ft. - calm ft.	--	--			
Max. speed/altitude (B) kn./ft.	197/4000	197/4000			
Rate of climb at S.L. (B) fpm.	1120	1120			
Time: S.L. to 10,000 ft. (B) min.	11.3	11.3			
Time: S.L. to 15,000 ft. (B) min.	23.7	23.7			
Service ceiling (100 fpm) (B) ft.	15,800	15,800			
Combat range n.mi.	875	900			
Average cruising speed kn.	142	137			
Cruising altitude(s) ft.	10,000	5000			
Combat radius n.mi.	150	--			
Average cruising speed kn.	142	--			
Loiter on sta./mission time @ 5000 ft. hrs./hrs.	4.63/6.83				
Loiter on sta./mission time @ 10,000 ft. hrs./hrs.	4.19/6.30				
Loiter on sta./mission time @ 15,000 ft. hrs./hrs.	3.46/5.5				
COMBAT LOADING CONDITION	② CLEAN	③ CLEAN			
COMBAT WEIGHT lb.	24,765	24,765			
Engine power	Military	Normal			
Fuel lb.	2711	2711			
Combat speed/combat altitude kn./ft.	199/10,000	193/10,000			
Rate of climb/combat altitude fpm/ft.	750/10,000	700/10,000			
Combat ceiling (500 fpm) ft.	--	1240			
Rate of climb at S.L. fpm.	1580	1360			
Max. speed at S.L. kn.	201	191			
Max. speed/altitude kn./ft.	207/4000	199/4000			
LANDING WEIGHT lb.	23,883				
Fuel lb.	1807				
Stall speed - power-off kn.	80				
Stall speed - with approach power kn.	73				

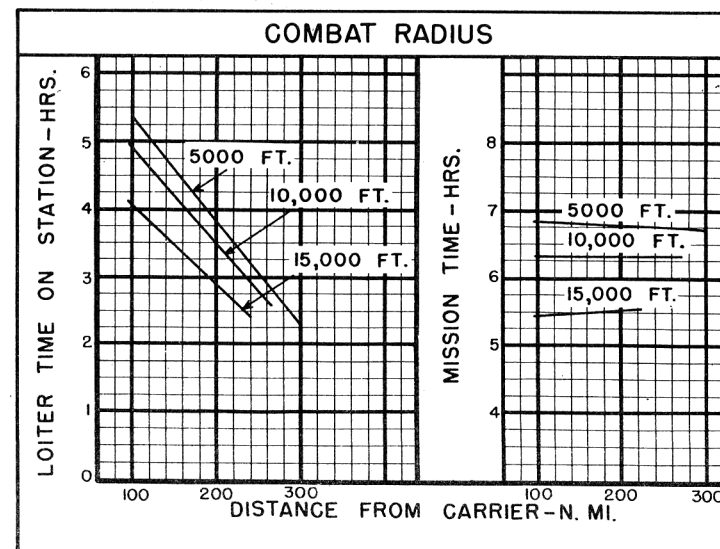
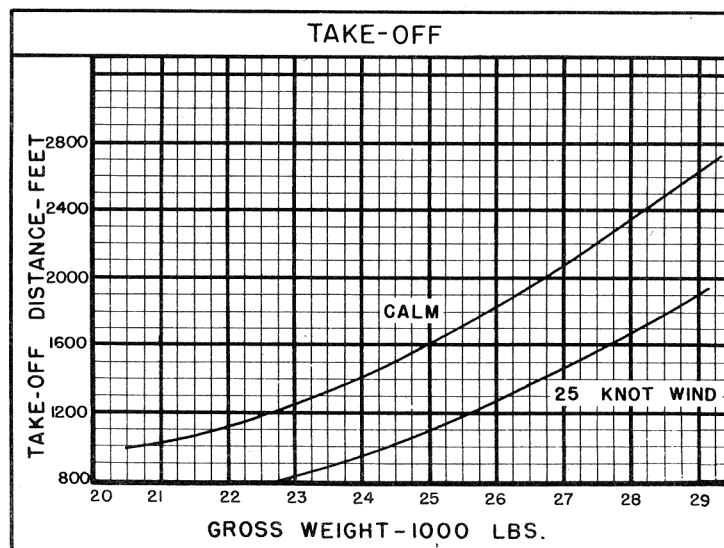
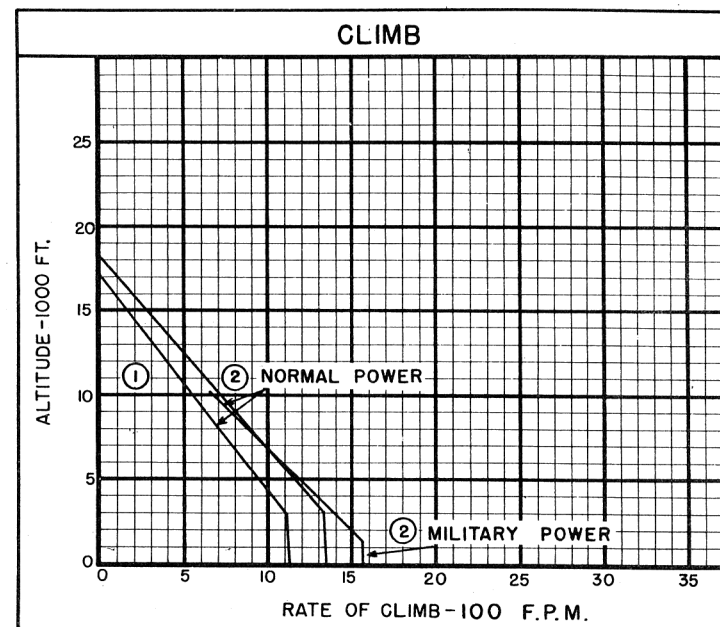
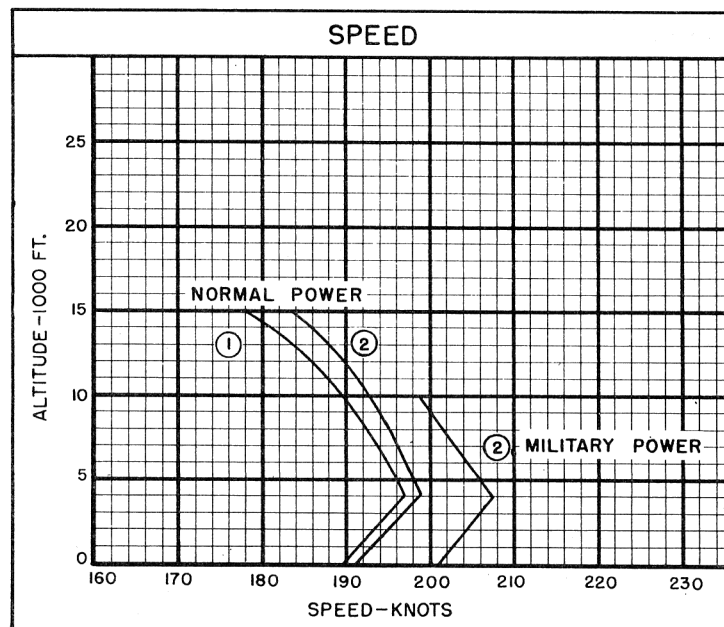
## NOTES

(A) Take-off Power

(B) Normal Rated Power

PERFORMANCE BASIS: Performance is based on contractor's flight test and calculations; Range and Radius are based on engine specification fuel consumption increased 5%.

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○ LOADING CONDITION COLUMN NUMBER

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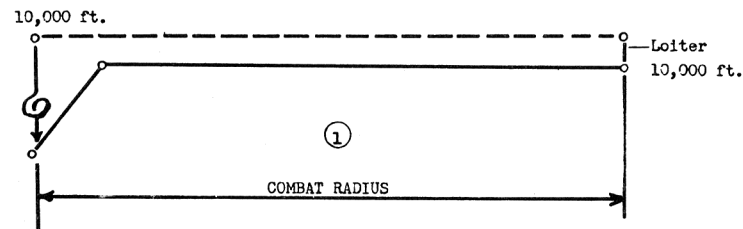
## NOTES

SPOTTING: A total of 45 airplanes can be accommodated in a landing spot on the flight and hangar decks of a CVA-19 class angled deck carrier.  
(25 flight, 20 hangar)

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### AEW MISSION

WARM-UP, TAXI, TAKE-OFF: 10 minutes at normal power at sea level.  
CLIMB: With normal rated power to 10,000 ft.  
CRUISE-OUT: At 10,000 ft. to a distance 150 N. Mi. from base.  
LOITER: On station at 150 N. Mi. from base at airspeeds for maximum endurance.  
CRUISE-BACK: 150 N. Mi. at 10,000 ft. to base.  
RESERVE: 10% of initial fuel load.



○ LOADING CONDITION COLUMN NUMBER

6

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