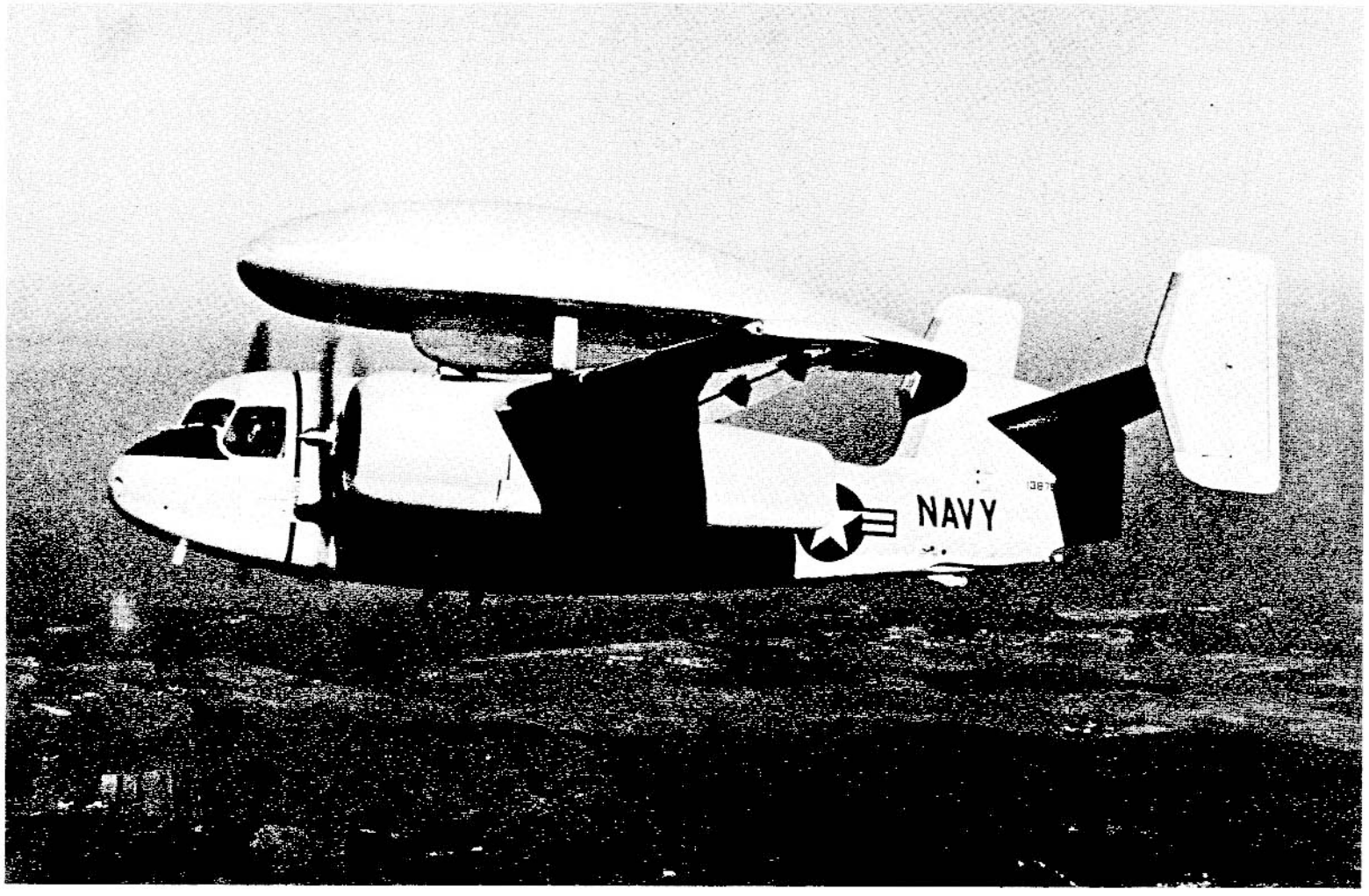


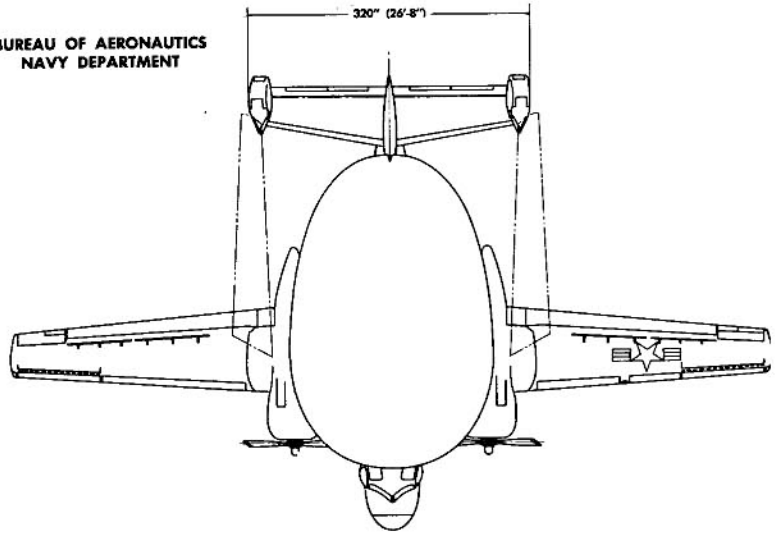
STANDARD AIRCRAFT CHARACTERISTICS

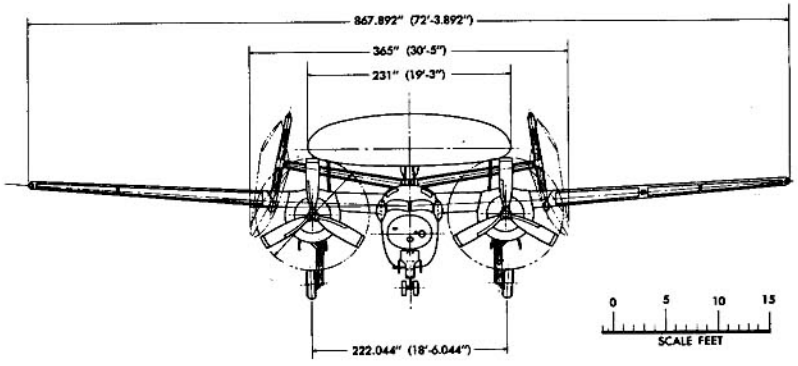
WF-2 "TRACKER"

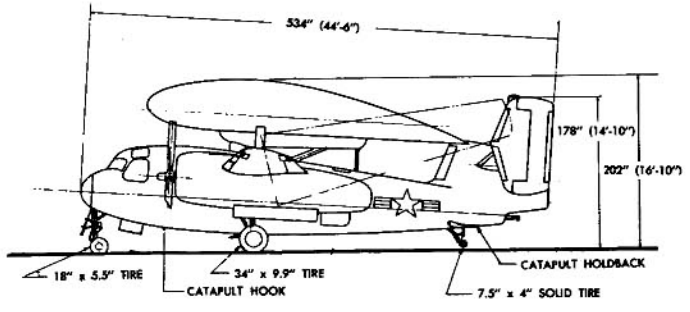
GRUMMAN

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-55)

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

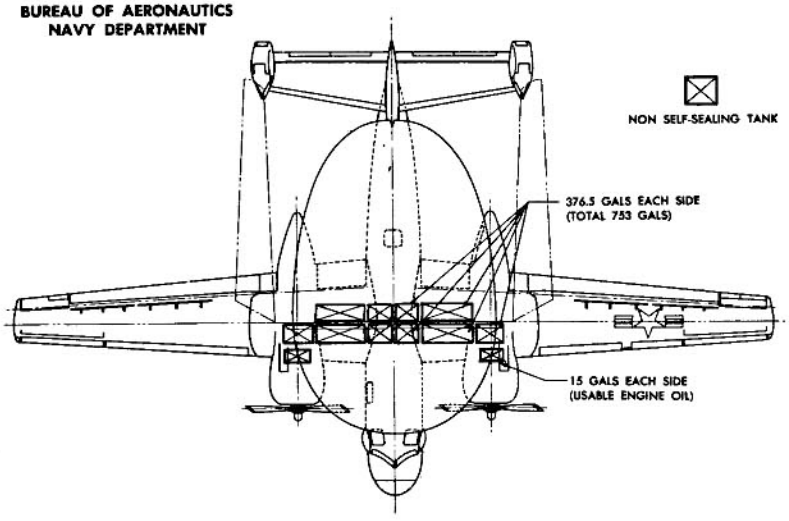


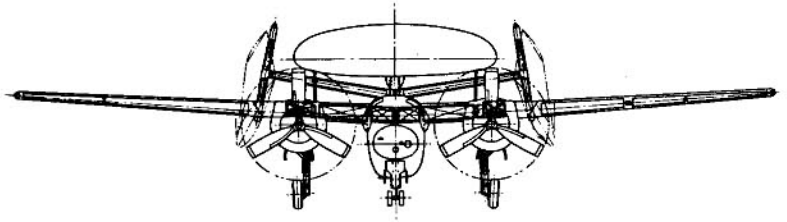


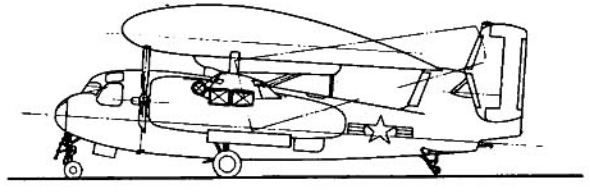


DESCRIPTIVE ARRANGEMENT
WF-2

BUREAU OF AERONAUTICS
NAVY DEPARTMENT







ARMAMENT & TANKAGE
WF-2

Standard Aircraft Characteristics NAVAER 1335B (Rev. 1-55)

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. M867-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 GRD. 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/APS-82
Radar Indicators.....AN/APA-125(MOD)
Radar Relay Transmitter....ART-28(MOD)
Navigational Computer Group..AN/ASA( )

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				

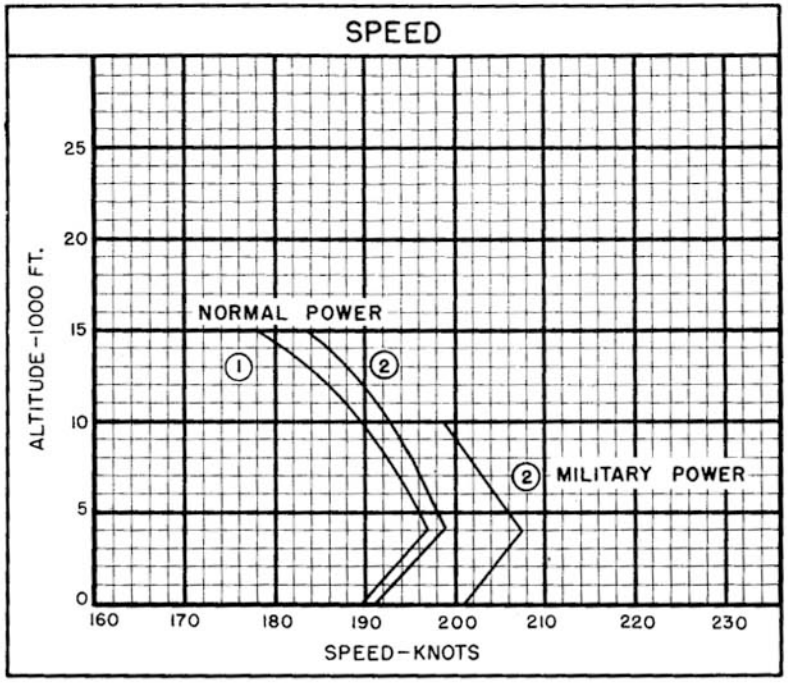
NOTES

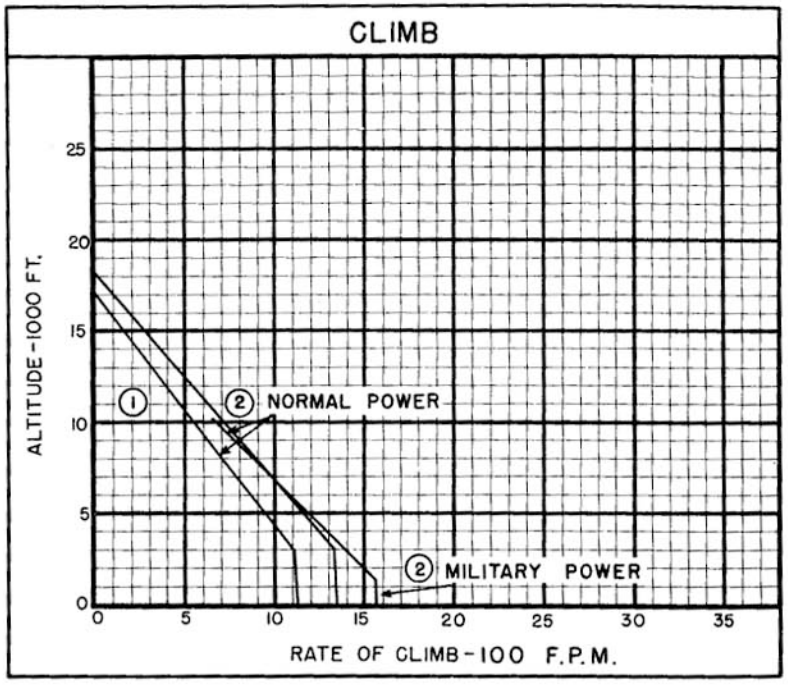
(A) Take-off Power

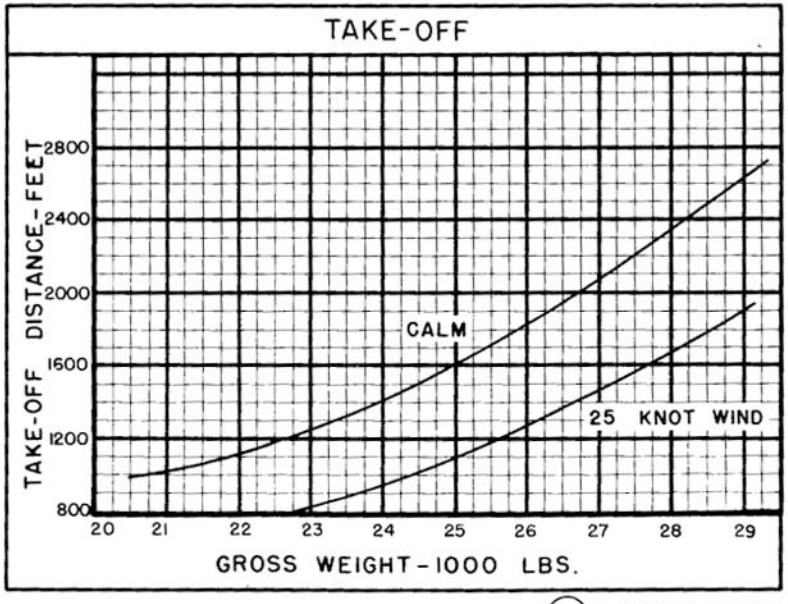
(B) Normal Rated Power

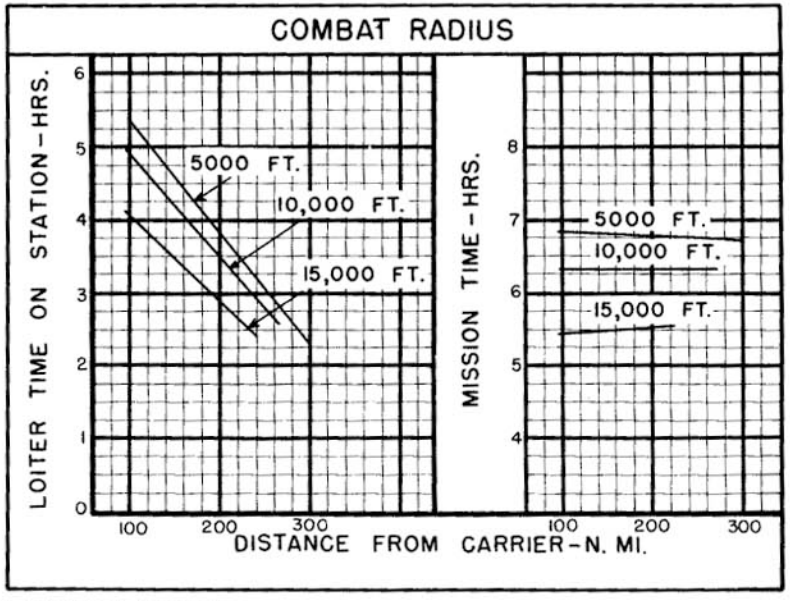
PERFORMANCE BASIS: **Performance is based on contractor's flight test and calculations; Range and Radius are based on engine specification fuel consumption increased 5%.**

NAVAER-1335D (Rev. 1-55)









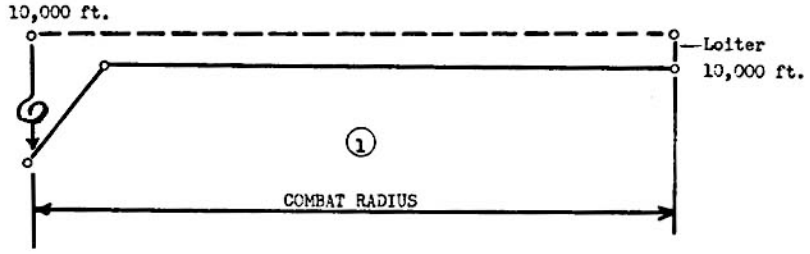
◯ LOADING CONDITION COLUMN NUMBER

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)

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.

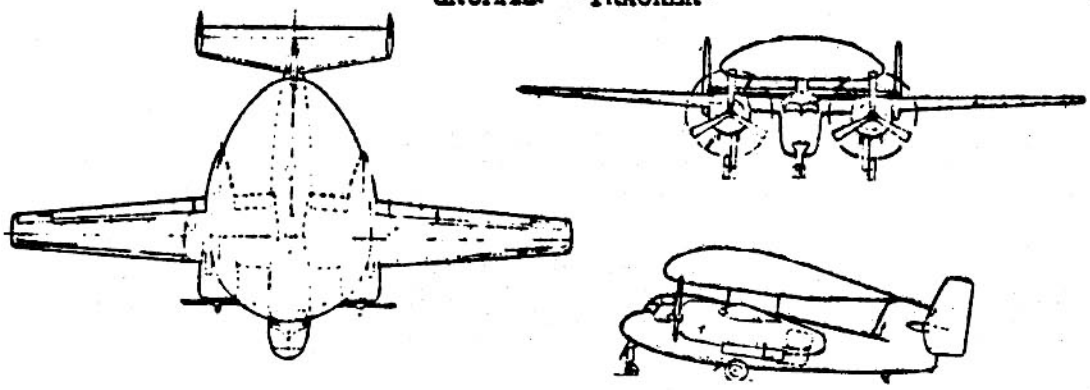


(1) LOADING CONDITION COLUMN NUMBER

CHARACTERISTICS SUMMARY

AEW/AIC WF-2

GRUMMAN "TRACKER"



WING AREA 506 Sq. Ft.
WING SPAN 72' - 4"

LENGTH 45' - 4"
HEIGHT 16' - 10"

AVAILABILITY			PROCUREMENT				
NUMBER AVAILABLE			NUMBER DELIVERED IN FISCAL YEARS				
ACTIVE	RESERVE	TOTAL					

STATUS

First Flight - - - - - - - - - - - - - December 1956 (Prototype)
Service Use (est.) - - - - - - - - - - - June 1959

ENGINES

(2) Wright R-1820-82

	BHP	RPM	ALT
T.O.	1525	2800	700
MIL.	1425	2700	2400
NORM.	1275	2500	3500

SPEC. NO. 867-B-A

FEATURES

CREW - 4

Slotted flaps

Top mounted 20' radome

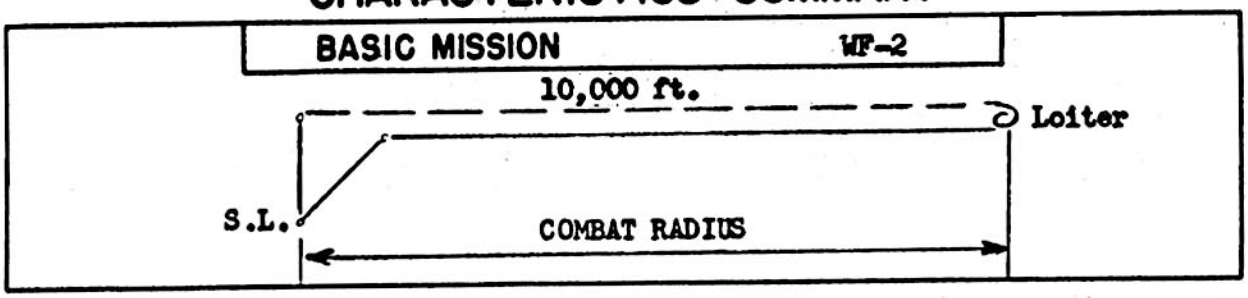
Catapult & Arresting gear

ARMAMENT

NONE

NAVIER 1519 A (REV. 1-49)

CHARACTERISTICS SUMMARY



PERFORMANCE

COMBAT RADIUS	COMBAT RANGE	SPEED
150 naut. mi. 142 knots avg. Cruising Speed 4.9 hrs. loiter	875 naut. mi. 142 knots avg. - - hours	knots at ft. 201 knots at Sea Level 207 knots at 4,000 ft. Combat Weight Military Power
CLIMB	**CEILING**	**TAKE OFF**
1,120 ft./min. Sea Level, T. O. wt. Normal Power	15,800 ft. 100 ft./min., T. O. wt. Normal Power	1,960 ft. - calm T.O. Wt. - T.O. Power
1,580 ft./min. Sea Level, Combat Wt. Military Power		1,380 ft. - 25 kn wind T.O. Wt. - T.O. Power
LOAD	**WEIGHTS**	**STALLING SPEED**
Fuel 753 gal. fixed 753 drop - -	Empty 20,638 lbs. Combat 24,765 lbs. Take-off 26,594 lbs.	84.0 knots Power Off Flaps down, T. O. wt.
		TIME TO CLIMB
		10,000 ft. in 11.3min. T.O. Wt., Normal Power

NOTES

PERFORMANCE BASIS: Performance is based on contractor's flight test and calculations.

Range and Radius are based on engine specification fuel flows increased 5%.