

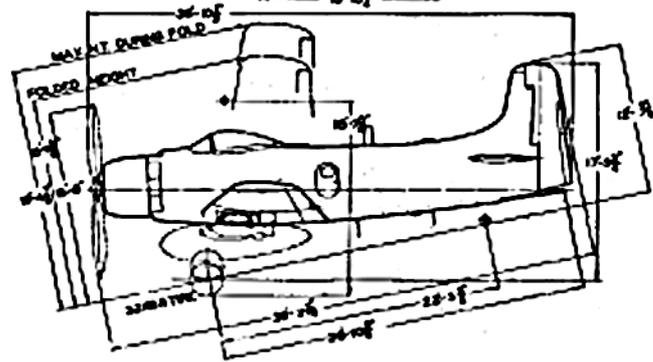
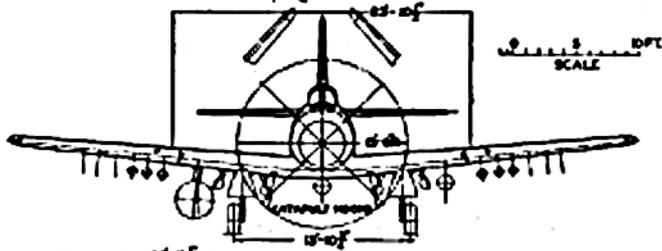
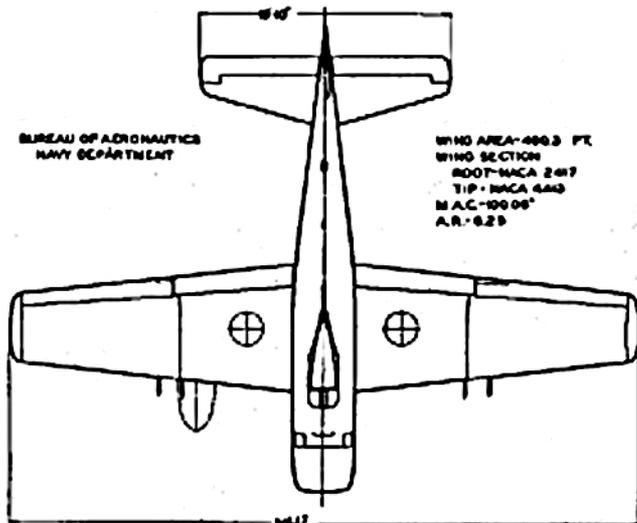
STANDARD AIRCRAFT CHARACTERISTICS
AD-4N "SKYRAIDER"

DOUGLAS

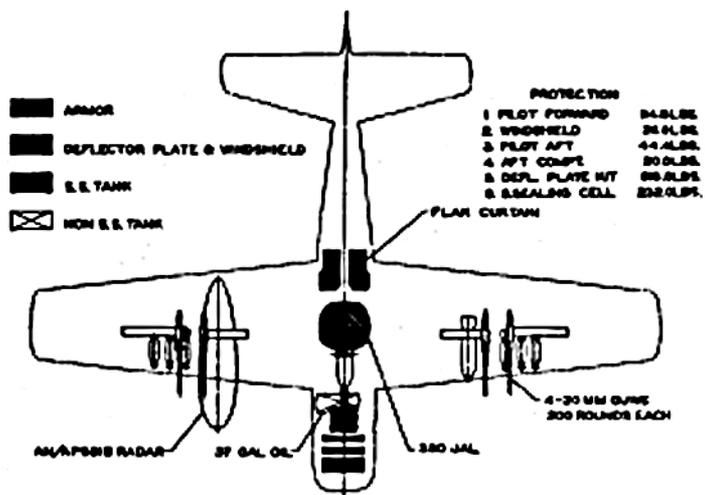
Standard aircraft characteristics MAY 1951 (REV. 3-49)

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA-4003 FT.
WING SECTION
ROOT-NACA 2417
TIP-NACA 440
M.A.C.-100.00"
A.R.-6.25



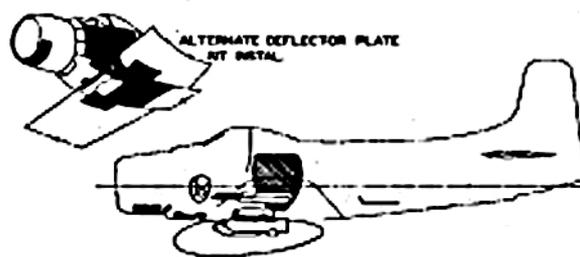
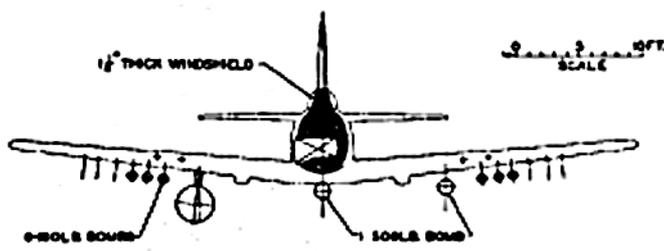
DESCRIPTIVE ARRANGEMENT



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

PROTECTION

- 1 PILOT FORWARD 24 LBS.
- 2 WINDSHIELD 24 LBS.
- 3 PILOT AFT 44 LBS.
- 4 AFT COMPT. 20 LBS.
- 5 DEFL. PLATE HT 88 LBS.
- 6 SEALING CELL 232 LBS.



ARMAMENT & TANKS

Standard Aircraft Characteristics NAVY 1338 (REV. 1-49)

POWER PLANT

NO. & MODEL.....(1) R-3350-26NA
 MFR.....Wright
 SUPERCH.....1 Stage, 2 Speed
 RED. GR. RATIO.....0.4375
 PROP. MFR.....Aero. Prod.
 BLADE DESIGN, A64208/M20A-162-0
 NO. BL./DLA.....4/13' -5"

RATINGS

	Hp	Rpm	Alt
T.O.	2,700	2,900	S.L.
WIL	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 5,200'
	1,900	2,600	12,000 to 17,000'
SPNO. NO.	W336-B		

ORDNANCE

No.	Size	Location	Rds.
4	20 mm	Wing	800
No. 1 Mod. 4 Gunright.			

BOMBS & ROCKETS STATICS

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

Maximum Bomb Capacity:
 (Ship) 6,500 lbs.
 (Shore) 9,000 lbs.

MISSION AND DESCRIPTION

The primary mission of the AD-4W airplane is that of night attack and radar counter-measures. It may also be used as a bomber, torpedo or scout airplane. The equipment includes sonobuoys, searchlight, periscope, and APA-16 for ASW attack missions. The AD-4W is a single engine, three place attack, land-plane with equipment for operation from carriers.

The fuselage arrangement provides separate compartments for the pilot and radar operators. The pilot's cockpit contains the flight controls and instruments, bombing, torpedo, arresting gear, and wing folding controls. The aft cockpit has accommodations for a radar operator-navigator with partial control of the radio, complete control of radar equipment, radar bombing attachment, auto pilot, and complete navigation instruments, and for an ECM operator with partial control of the radio and complete control of the radar counter-measures equipment. An entrance door is provided on each side of the aft compartment for normal access and is equipped with emergency release for bail-out.

DEVELOPMENT

First Flight - - - - Feb 1950
 Service Use - - - - - May 1950

DIMENSIONS

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

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	12,715	
BASIC.....	13,621	
DESIGN.....	15,595	6.0
COMBAT.....	16,573	5.7
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
180	1	Fuse., 8"
150	1	Ctr. Drop
300	2	Wing Drop
FUEL GRADE.....	115/145	
FUEL SPEC.....	MIL-B-5572	

OIL

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

ELECTRONICS

DEF COMM.....	AN/ARC-1A or AN/ARC-2T
TRAFFIC REC.....	AN/ARC-2
INTERPHONE.....	AN/AIC-4A
RADIO ALTM.....	AN/ASB-1
RANGE REC.....	R-23A/ARC-5
RADIO REC.....	AN/ARR-2A
IFF.....	AN/APX-6
SEARCHLIGHT.....	AN/AYQ-2A
RADAR.....	AN/APR-31B
RADAR RELAY REC.....	AN/ARR-27A

(Cont'd on Note Page)

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	1) Night Attack			(3) Countermeasures - (4) ASW Attack	
	12-1000# 1-500# 1-1000# Bombs	AS/APB-16 Radar	AS/APB-16 Radar	ASW Dip. 3000 ft. 8-5 HPAE Rockets	ASW Dip. 3000 ft. 8-5 HPAE Rockets
TAKE-OFF WEIGHT	1b.	20,195	19,124	20,126	
Fuel	1b.	2,230	2,220	2,220	
Payload Bombs/Rockets	1b.	2,700/None	None/None	None/1,000	
Wing loading	lb./sq.ft.	50.4	45.3	51.1	
Stall speed - power-off	km.	85.2	80.7	85.7	
Take-off run at S.L. - calm	ft.	1,070	790	1,115	
Take-off run at S.L. 25 km. wind	ft.	525	170	555	
Take-off to clear 50 ft. - calm	ft.	-	-	-	
Max. speed/altitude	(A) km./ft.	235/18,500	292/19,700	252/19,000	
Rate of climb at S.L.	(A) fpm	1,500	2,150	1,640	
Time S.L. to 10,000 ft.	(A) min.	7.3	4.8	6.5	
Time S.L. to 20,000 ft.	(A) min.	20.3	11.8	16.5	
Service ceiling (100 fpm)	(A) ft.	22,700	28,300	24,300	
Combat range	n.mi.	435	710	580	
Average cruising speed	km.	190	202	157	
Cruising altitude(s)	ft.	15,000	15,000	1,500	
Combat radius	n.mi.	150	230	* 210	
Average cruising speed	km.	158	174	157	
COMBAT LOADING CONDITION (2) Combat					
COMBAT WEIGHT	1b.	15,573			
Engine power		Military			
Fuel	1b.	1,368			
Combat speed/combat altitude	km./ft.	281/S.L.			
Rate of climb/combat altitude	fpm/ft.	3,090			
Combat ceiling (500 fpm)	ft.	27,100			
Rate of climb at S.L.	fpm	3,090			
Max. speed at S.L.	km.	281			
Max. speed/altitude	km./ft.	304/27,500			
LANDING WEIGHT	1b.	15,421			
Fuel	1b.	512			
Stall speed - power-off	km.	74.5			
Stall speed - with approach power	km.	72.1			

See ASW problem listed on note page.

(A) Normal rated power.

NOTES

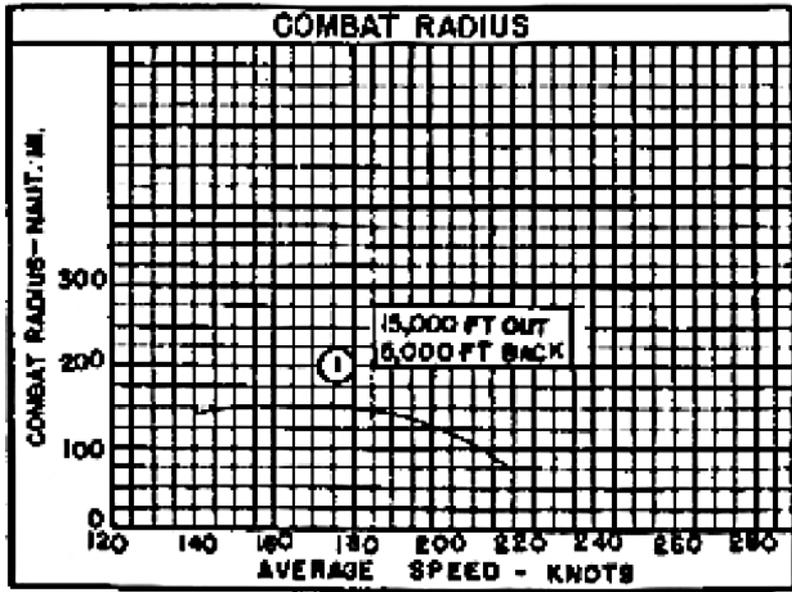
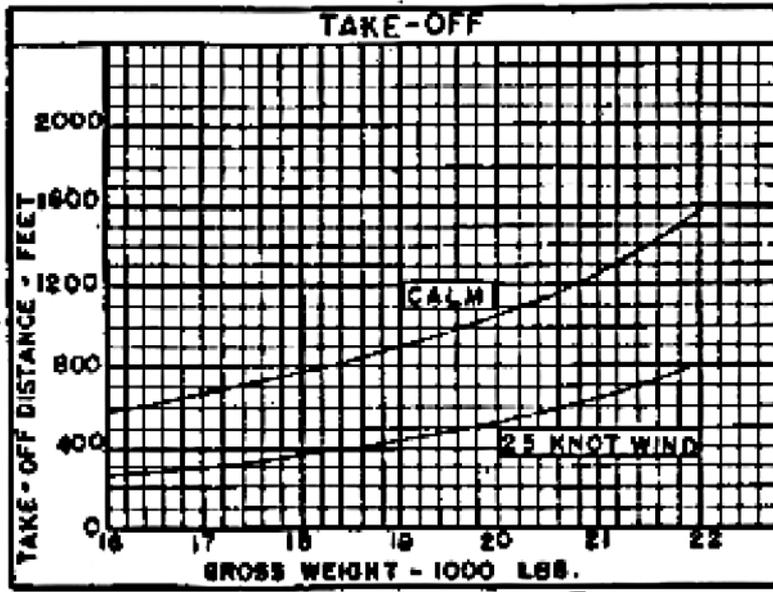
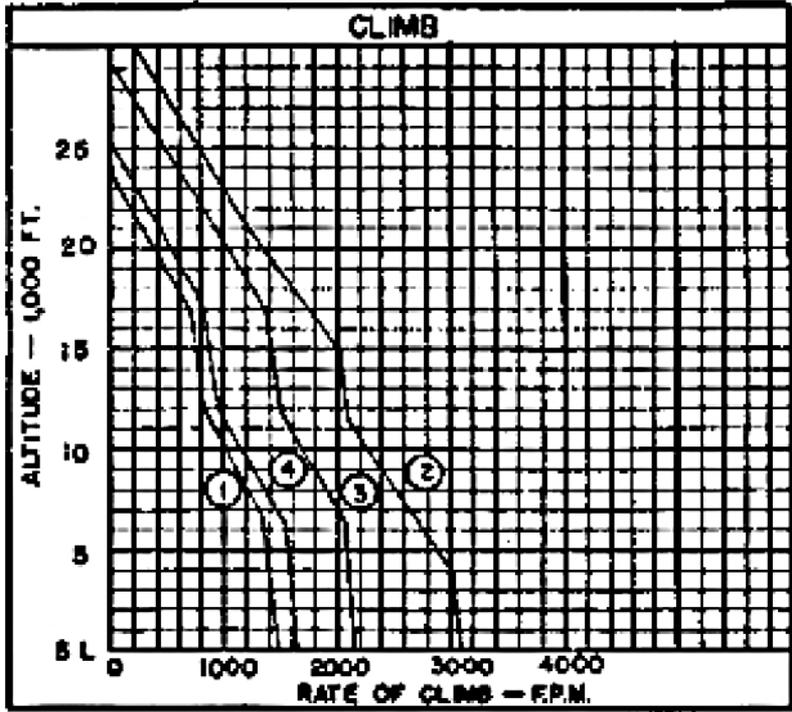
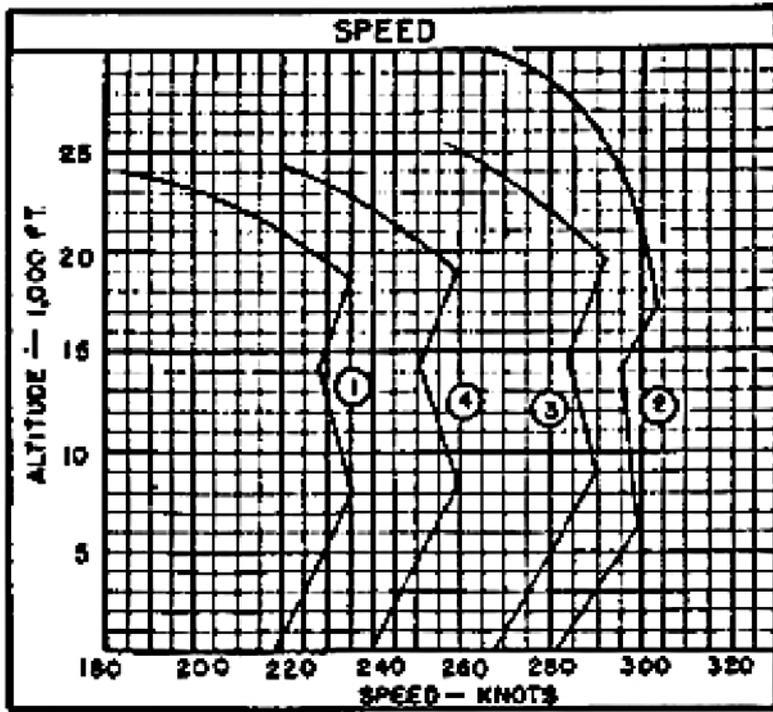
Performance is based on AD series flight tests.

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

All loadings include 12 Aero-14A racks and AS/APB-31 radar.

All loadings but (4) include 4-20 mm guns.

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

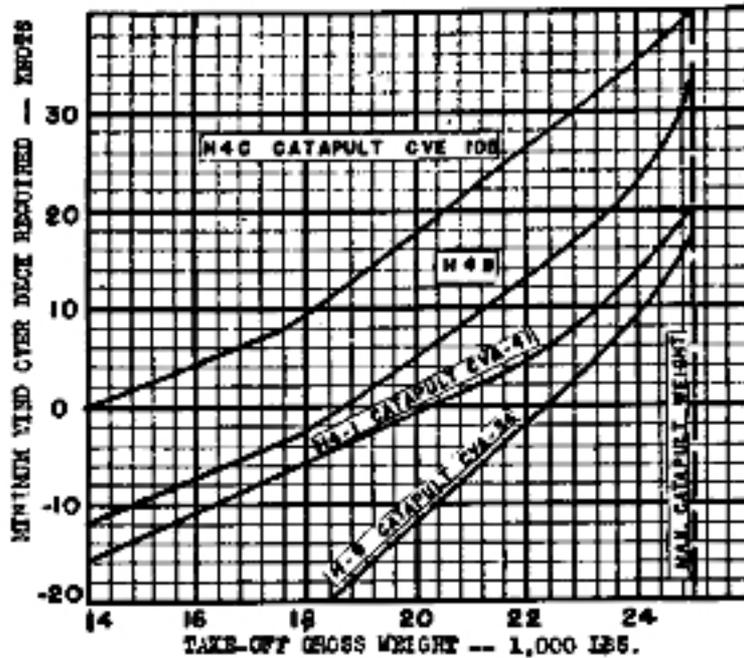


○ LOADING CONDITION COLUMN NUMBER

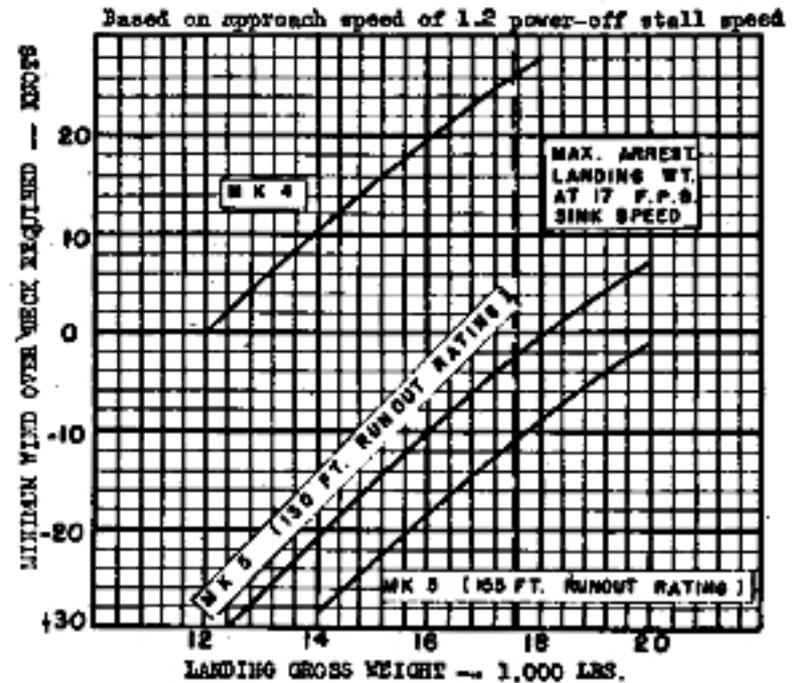
Standard aircraft characteristics number 3336 (REV. 2-60)

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.

NAYNER-33351 (Rev 5-52)

NOTES

Addition of External Armor Plates (See Armament and Tanks Description) increases the gross weight 600 pounds and results in the following performance changes:

- Δ Maximum speed at sea level (military power) = -1 knot.
- Δ Maximum speed at A.O.A. (military power) = -2 knots.
- Δ Stall speed (power off) = +1.4 knots
- Δ Service ceiling (normal power) = -800 feet.
- Δ Take-off distance, deck 25 knot wind = +45 feet.
- Δ Combat radius = -10 nautical miles.

LOADING CONDITIONS (1) AND (3)

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.

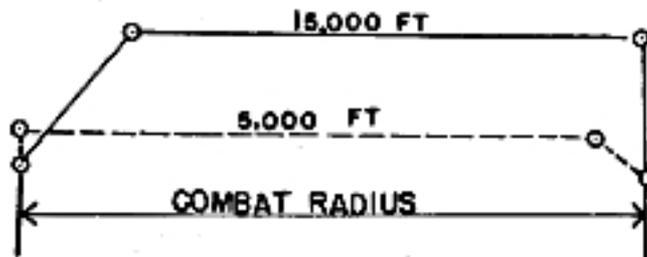
COMBAT: 15 minutes at sea level. (5 minutes at military power and 10 minutes at normal power.)

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.

COMBAT RADIUS = CLIMB + CRUISE-OUT + CLIMB + CRUISE-BACK



LOW RANGE AND RADIUS PROBLEM

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

CLIMB: On course to 1,500 feet at normal power.

CRUISE: At V for long range at 1,500 feet. External fuel tanks dropped when empty.

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

COMBAT RANGE = CLIMB + CRUISE

COMBAT RADIUS = 1/2 OF COMBAT RANGE

ELECTRONICS (Cont'd)

SONOBUOY REC.....AN/AAR-26
 WIRE RECORDER.....IC/WRM-7
 ECM DF.....AN/APA-70B
 ECM RECEIVER.....AN/APR-9B