

# STANDARD AIRCRAFT CHARACTERISTICS

AH-1T

SEA COBRA

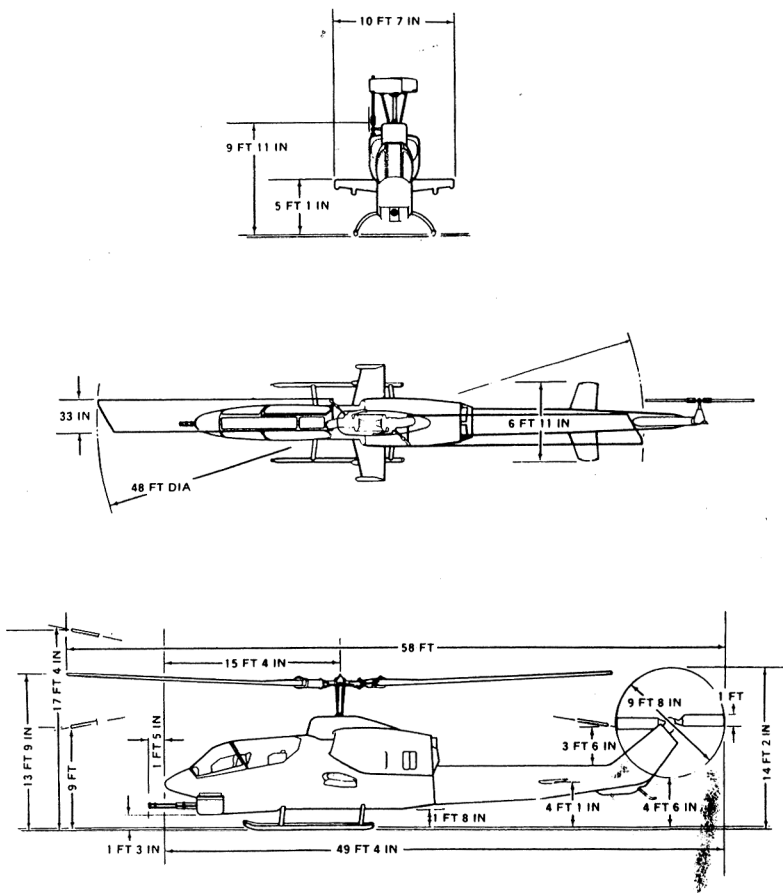
BELL

NOTE

ALL INQUIRES CONCERNING DATA  
IN THIS CHART SHOULD BE DIRECTED  
TO NAVAIR, CODE AIR-53012

# PRE SERVICE

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT



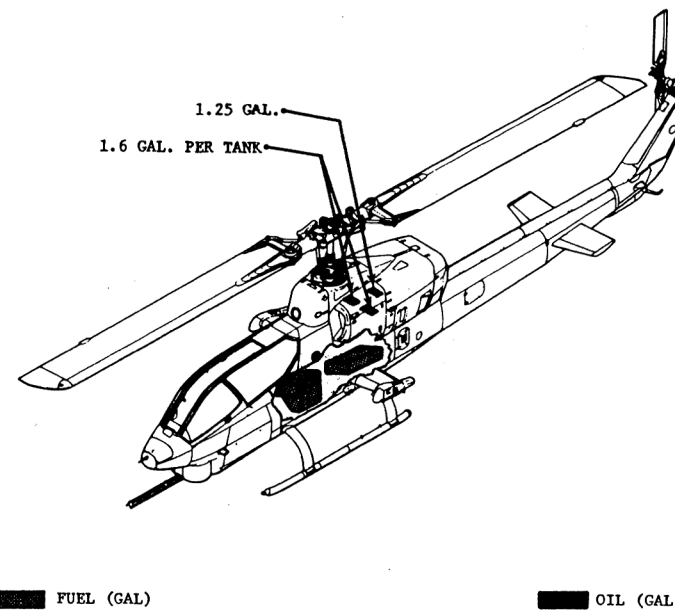
DESCRIPTIVE ARRANGEMENT

AH-1T

2

# NAVAIR 00-110AH1-5

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT



ARMAMENT AND TANKAGE

APRIL 1978

POWER PLANT	MISSION AND DESCRIPTION	WEIGHTS																																										
No. & Model . . . (1) T400-WV-402 Manufacturer . . . United Aircraft of Canada Pratt and Whitney) Engine Spec. No. 743A Type . . . . Twin Section Free Power Turbine with Reduction Gearbox Gear Reduction Ratios Main Rotor 21.288:1 Tail Rotor 4.520:1	<p>The primary mission of this aircraft is that of an armed tactical helicopter capable of delivering weapons fire, low altitude high speed flights, search and target acquisition, reconnaissance by five, multiple weapons fire support, and troop helicopter support. The aircraft is capable of performing this mission from prepared or unprepared areas, day or night, and operation from ships at sea.</p> <p>The gas turbine powered twin sea cobra is of combat design, featuring tandem seating to give both pilot and gunner excellent visibility. Both crew stations have flight control and fire control systems permitting flexibility in division of functions under normal and emergency situations.</p> <p>The twin engine installation gives increased safety and reliability. The 2050 shp transmission can transmit the full rated engine power under all conditions except for density altitudes well below sea level. A mission designed fuselage combined with the improved Model 214 rotor system gives increased load capability and speed. Four wing stores stations and integral chin turret provide good armament versatility with the capability of quickly mounting a wide variety of weapons to match the desired mission. Most components have been proven in the AH-1J and Model 214, assuring reliability and maintainability.</p>	<table><tr><td>Loading</td><td>LB.</td><td>LF</td></tr><tr><td>Empty</td><td>8030</td><td>-</td></tr><tr><td>Basic</td><td>8076</td><td>-</td></tr><tr><td>Design</td><td>10,000</td><td>3.5</td></tr><tr><td>Maximum Takeoff</td><td>14,000</td><td>2.5</td></tr><tr><td>Maximum Landing</td><td>14,000</td><td>2.5</td></tr></table>	Loading	LB.	LF	Empty	8030	-	Basic	8076	-	Design	10,000	3.5	Maximum Takeoff	14,000	2.5	Maximum Landing	14,000	2.5																								
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## PERFORMANCE SUMMARY

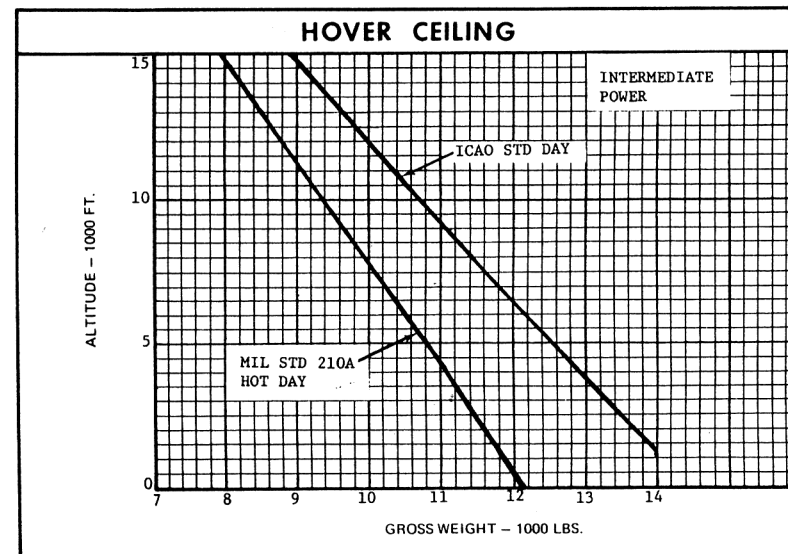
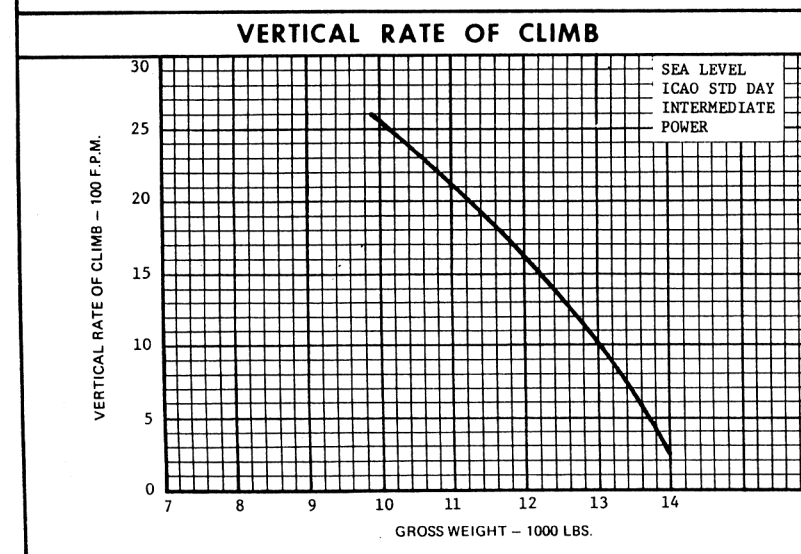
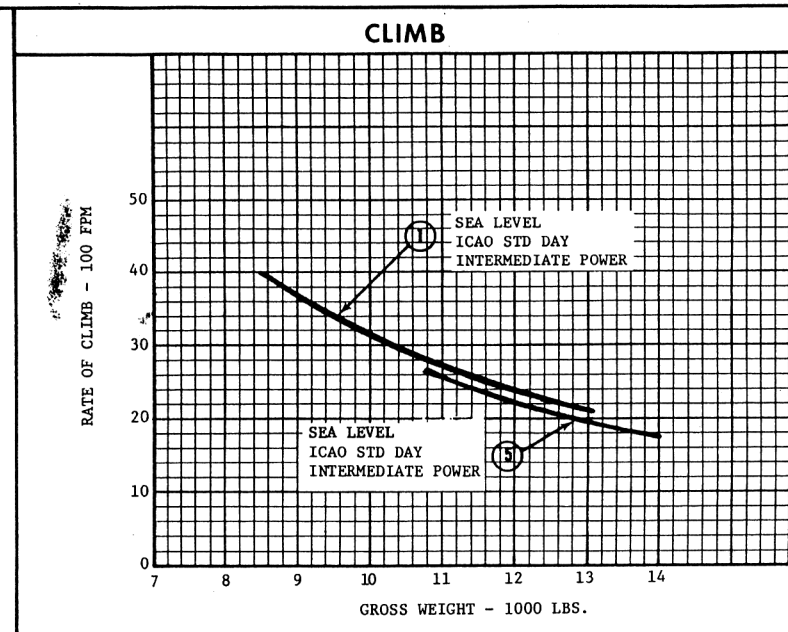
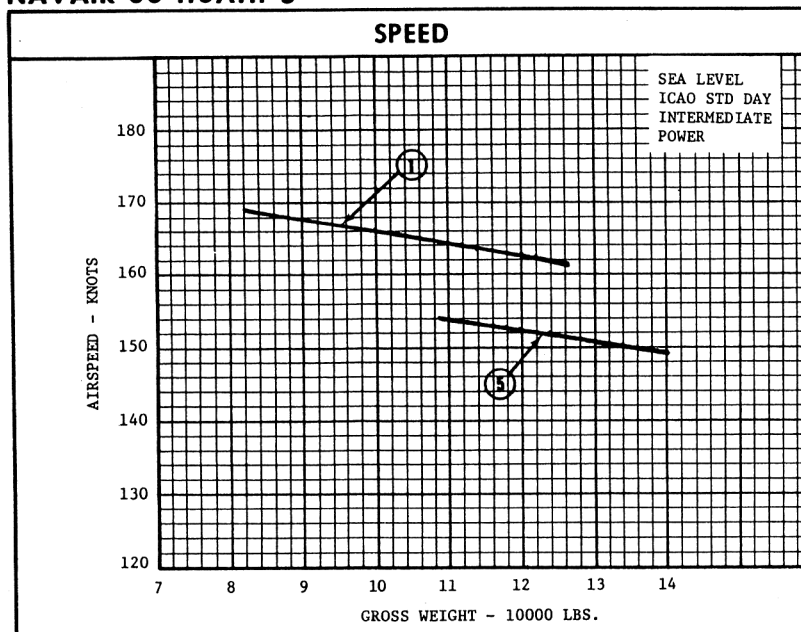
TAKE-OFF LOADING CONDITION		① CLEAN HIGH ALTITUDE	② ATTACK 2 LAU 68 PODS 750 RDS 20 MM	③ ATTACK 2 LAU 68 PODS 2 MINIGUN PODS 750 RDS 20 MM	④ CLOSE SUPPORT 2 LAU 68 PODS 2 MINIGUN PODS 750 RDS 20 MM	⑤ ATTACK 4 LAU 61A PODS 750 RDS 20 MM	⑥ FERRY CLEAN
TAKE-OFF WEIGHT	lb.	10,705 (A)	11,746	12,401	12,401	13,928	10,705 (A)
Fuel internal/external (JP-5)	lb./lb.	2,081/0	2,081/0	2,081/0	2,081/0	2,081/0	2,081/0
Payload	lb.	0	909	1,074	1,074	2,707	0
Disc loading	lb./sq. ft.	5.9	6.5	6.9	6.9	7.7	5.9
Vertical rate of climb at S.L.	(B) fpm.	2,258	1,770	1,390	1,390	301	2,258
Absolute hovering ceiling (OGE)	(B) ft.	10,000 (B)	7,150	5,350	5,350	1,200	10,000 (B)
Max. rate of climb at S.L.	(B) fpm.	2,880	2,460	2,190	2,190	1,785	2,880
Service ceiling	(C) ft.	10,000 (C,D)	10,000 (C,D)	10,000 (C,D)	10,000 (C,D)	7,400 (D)	10,000 (C,D)
Speed at S.L.	(B) kn.	165	161	157	157	149	165
Max speed/altitude	(B) kn./ft.	165/4,000	161/0	157/0	157/0	149/0	166/4,000
O.E.I. Service ceiling	(B) ft.	9,000	6,400	3,000	3,000	-100	9,000
Min. speed (O.E.I.)	(B) kn.	42	45	54	54	65	42
Max. speed (O.E.I.)	(B) kn.	112	109	105	105	95	112
Combat radius	n. mi.	165	116	113	74	108	314
Mission time	hrs.	2.81	1.63	1.63	2.31	1.63	2.60
Average cruising speed	kn.	121	150	146	121	138	121
Cruising altitude	ft.	10,000	S.L.	S.L.	S.L.	S.L.	10,000
Range	n. mi.	342	245	234	240	227	342
Average cruising speed	kn.	121	150	145	121	138	121
Cruising altitude	ft.	10,000	S.L.	S.L.	S.L.	S.L.	10,000
Maximum endurance	hrs.	3.42	2.73	2.62	2.62	2.41	3.42
Endurance speed	kn.	79	75	76	76	78	79
Endurance altitude	ft.	10,000	S.L.	S.L.	S.L.	S.L.	10,000

## NOTES

- (A) Includes ammunition boxes for 20 MM cannon, which are required for proper CG.
- (B) At Intermediate Power
- (C) Limited by oxygen requirement; at maximum continuous power
- (D) At maximum continuous power

## Performance Basis

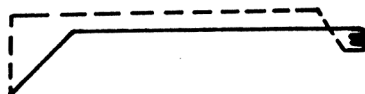
- (1) All performance at standard day conditions
- (2) Flight test data from modified Model 309, April 1974
- (3) Engine specification fuel consumption increased 5%
- (4) 20 MM nose turret on all configurations



○ LOADING CONDITION COLUMN NUMBER

## NOTES

## CLEAN - HIGH ALTITUDE



- (1) Engine Start and Takeoff: Fuel allowance of 5 minutes at maximum continuous power at sea level.
- (2) Climb Out: On course at best climb speed at intermediate power to optimum cruise altitude, not to exceed 10,000 ft.
- (3) Cruise Out: To target at speed for maximum range at optimum cruise altitude, not to exceed 10,000 ft.
- (4) Hover: 5 minutes at hover ceiling, not to exceed 10,000 ft., out of ground effect.
- (5) Cruise Back: To home base at speed for maximum range at optimum cruise altitude, not to exceed 10,000 ft.
- (6) Descend to Sea Level: No fuel used, no distance gained.
- (7) Landing Reserve: 10% of initial fuel or fuel for 20 minutes at speed for maximum range at sea level, whichever is greater.

## CLOSE SUPPORT



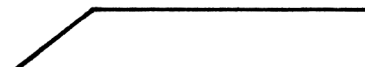
- (1) Engine Start and Takeoff: Fuel allowance of 5 minutes at maximum continuous power at sea level.
- (2) Cruise Out: To target at speed for maximum range at sea level.
- (3) Loiter: 1 hour at speed for maximum endurance at sea level.
- (4) Combat: 5 minutes at intermediate power at sea level.
- (5) Expend all ordnance.
- (6) Cruise Back: To home base at speed for maximum range at sea level.
- (7) Landing Reserve: 10% of initial fuel or fuel for 20 minutes at speed for maximum range at sea level, whichever is greater.

## ATTACK MISSION



- (1) Engine Start and Takeoff: Fuel allowance of 5 minutes at maximum continuous power at sea level.
- (2) Dash Out: To target at maximum continuous power at sea level.
- (3) Combat: 5 minutes at intermediate power at sea level.
- (4) Expend all ordnance.
- (5) Dash Back: To home base at maximum continuous power at sea level.
- (6) Landing Reserve: 10% of initial fuel or fuel for 20 minutes at speed for maximum range at sea level, whichever is greater.

## FERRY MISSION



- (1) Engine Start and Takeoff: Fuel allowance of 5 minutes at maximum continuous power at sea level.
- (2) Climb Out: On course at best climb speed at intermediate power to optimum cruise altitude, not to exceed 10,000 ft.
- (3) Cruise Out: To remote base at speed for maximum range at optimum cruise altitude, not to exceed 10,000 ft.
- (4) Descend to Sea Level: No fuel used, no distance gained.
- (5) Landing Reserve: 10% of initial fuel or fuel for 30 minutes at speed for maximum range at sea level, whichever is greater.

○ LOADING CONDITION COLUMN NUMBER