

PERFORMANCE CHARTS		MOMENT		TIME	
Altitude	Temperature	11000	11500	12000	12500
10000	100				
10500	105				
11000	110				
11500	115				
12000	120				
12500	125				

30641
 1033
 1033

SECTION V

PERFORMANCE CHARTS

Performance information has been derived from actual flight tests and corrected to standard atmospheric conditions at 1560 pounds maximum gross weight. Aircraft performance data is representative of the AA-1B Trainer equipped with a climb propeller (standard on the trainer) and the AA-1B Tr-2 equipped with a cruise propeller and wheel fairings (both standard on the Tr-2). These aircraft are both available with either propeller, so check the aircraft equipment list and/or the log books to determine how your aircraft is equipped.

Actual performance will vary from standard due to variations in atmospheric conditions, engine and propeller condition, mixture leaning technique, and other variables associated with the particular performance item.

PERFORMANCE CHARTS		MOMENT		TIME	
Altitude	Temperature	11000	11500	12000	12500
10000	100				
10500	105				
11000	110				
11500	115				
12000	120				
12500	125				

TAKE-OFF DATA

HARD SURFACE RUNWAY - FLAPS UP

AIRCRAFT	GROSS WT. LBS.	IAS AT 50 MPH	HEAD WIND KNOTS	AT S.L. & 59° F.		AT 2000 FT. & 52° F.		AT 4000 FT. & 45° F.		AT 6000 FT. & 38° F.	
				GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.	GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.	GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.	GROUND RUN	TOTAL TO CLEAR 50 FT. OBS.
AA-1B TRAINER WITH CLIMB PROP (STD.)	1560	75	0	210	1550	912	1810	1055	2179	1207	2655
			10	569	1185	651	1399	758	1698	875	2093
			20	373	858	431	1032	510	1266	599	1586
AA-1B TR-2 WITH CRUISE PROP (STD.)	1560	75	0	890	1590	1015	1850	1190	2220	1380	2695
			10	625	1215	725	1430	855	1730	1000	2125
			20	410	880	480	1055	575	1290	685	1610

NOTES:

1. Increase ground run 7% for each 20° F. above standard temperatures.
2. The increase in total take-off distance varies from 8% at sea level to 14% at 6000 feet for each 20° F. above standard temperature.

Figure 8

MAXIMUM RATE-OF-CLIMB DATA

1560 POUNDS GROSS WEIGHT - FLAPS RETRACTED

AIRCRAFT	ALTITUDE FEET	TEMPERATURE °F.	IAS MPH	RATE OF CLIMB FT. /MIN.	FUEL USED FROM S. L. GALLONS
AA-1B TRAINER WITH CLIMB PROP (STD.)	S.L.	59°	89	705	1.0
	2500	50°	88	585	1.6
	4500	43°	87	485	2.1
	6500	36°	86	390	2.6
	8500	28°	85	290	3.3
	10500	21°	84	190	4.1
AA-1B TR-2 WITH CRUISE PROP (STD.)	S.L.	59°	89	660	1.0
	2500	50°	88	540	1.6
	4500	43°	87	440	2.1
	6500	36°	86	345	2.7
	8500	28°	85	245	3.4
	10500	21°	84	145	4.2

NOTES:

1. Full throttle climb, mixture leaned above 5,000 feet to smooth engine operation.
2. Fuel used includes taxi and warm up allowance.
3. Power loss attributable to the presence of humidity can be as high as 7%, this represents approximately 100 FPM loss in climb rate at sea level.

Figure 9

CRUISE & RANGE PERFORMANCE						
AA-1B TR-2				GROSS WEIGHT 1560 LBS. STANDARD CONDITIONS ZERO WIND LEAN MIXTURE		
* WITH CRUISE PROPELLER (STD.)						
ALTITUDE	RPM	PERCENT POWER	TRUE AIR SPEED	GALLONS/HOUR	ENDURANCE HOURS	RANGE MILES
					2.8	379
2500	2600	86	136	7.4	3.1	404
	2500	78	130	6.6	3.6	433
	2400	71	123	5.9	3.9	449
	2300	64	116	5.3	4.3	460
	2200	58	108	4.8	4.6	456
2100	52	99	4.5			
4500	2600	82	135	7.0	3.0	395
	2500	75	129	6.3	3.3	418
	2400	67	121	5.6	3.7	441
	2300	61	113	5.1	4.0	453
	2200	56	106	4.7	4.4	458
2100	51	96	4.4	4.6	444	
6500	2600	79	134	6.7	3.1	407
	2500	72	127	5.9	3.5	432
	2400	65	119	5.4	3.8	446
	2300	59	112	4.9	4.2	460
	2200	54	104	4.5	4.5	464
8500	2600	75	133	6.3	3.3	426
	2500	68	125	5.7	3.6	440
	2400	62	117	5.2	3.9	454
	2300	57	109	4.7	4.3	459
	10,500	2600	72	130	5.9	3.5
2500		66	122	5.4	3.8	447
2400		60	114	5.0	4.1	455

NOTES:

1. Range and endurance data include allowance for take-off and climb.
2. Fuel consumption is for level-flight with mixture leaned. See Section III for proper leaning technique. Continuous operations at powers above 75% should be with full rich mixture.
3. Speed performance is with wheel fairings. Subtract 2 MPH for speed performance without wheel fairings.
4. For temperatures other than standard, add or subtract 1% power for each 10° F. below or above standard temperature respectively.
- * 5. Cruise propeller is standard on TR-2. For TR-2's equipped with optional climb propeller use Trainer data and add 2 MPH.

Figure 10

CRUISE & RANGE PERFORMANCE						
AA-1B TRAINER				GROSS WEIGHT 1560 LBS. STANDARD CONDITIONS ZERO WIND LEAN MIXTURE		
* WITH CLIMB PROPELLER (STD.)						
ALTITUDE	RPM	PERCENT POWER	TRUE AIR SPEED	GALLONS/HOUR	ENDURANCE HOURS	RANGE MILES
2500	2600	77	125	6.5	3.2	400
	2500	70	118	5.8	3.6	420
	2400	64	112	5.3	3.9	437
	2300	59	106	4.9	4.2	445
	2200	54	100	4.7	4.5	444
2100	52	95	4.5	4.6	441	
4500	2600	74	124	6.2	3.3	410
	2500	68	117	5.6	3.7	428
	2400	62	110	5.1	4.0	438
	2300	57	105	4.8	4.3	444
	2200	54	100	4.6	4.4	442
2100	52	97	4.5	4.5	437	
6500	2600	71	122	5.9	3.5	419
	2500	65	116	5.4	3.8	431
	2400	60	109	5.0	4.0	439
	2300	57	104	4.8	4.3	443
	2200	54	100	4.6	4.4	439
8500	2600	68	120	5.7	3.6	428
	2500	63	114	5.3	3.9	437
	2400	59	108	4.9	4.1	442
	2300	57	104	4.8	4.2	438
10,500	2600	66	119	5.5	3.7	433
	2500	62	114	5.2	3.9	438
	2400	59	109	4.9	4.1	440

NOTES:

1. Range and endurance data include allowance for take-off and climb.
2. Fuel consumption is for level flight with mixture leaned. See Section III for proper leaning technique. Continuous operations at powers above 75% should be with full rich mixture.
3. Speed performance is without wheel fairings. Add 2 MPH for wheel fairings.
4. For temperatures other than standard, add or subtract 1% power for each 10° F. below or above standard temperature respectively.
- * 5. Climb propeller is standard on Trainer. For Trainers equipped with optional cruise propeller use TR-2 data and subtract 2 MPH if not equipped with wheel fairings.

Figure 11