

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A11EA
Revision 9
American General
Aircraft Holding Co.
AA-1
AA-1A
AA-1B
AA-1C

June 7, 1995

TYPE CERTIFICATE DATA SHEET NO. A11EA

This data sheet, which is a part of Type Certificate No. A11EA, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder American General Aircraft Holding Co., Inc.
2900 One Liberty Place
1650 Market. St.
Philadelphia, PA 19103

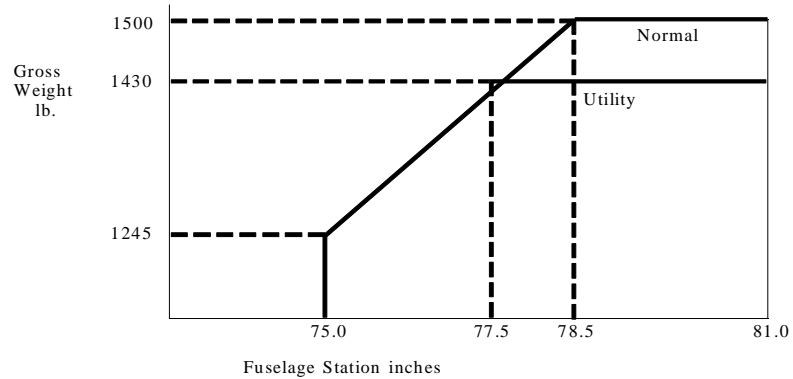
I. - Model AA-1, Yankee, 2 PCLM, Utility Category, Approved August 29, 1967, Normal Category Approved July 16, 1968.

Engine	Lycoming 0-235-C2C (Carburetor Setting 10-4953 or 10-3103-1)		
Fuel	80/87 minimum grade aviation gasoline		
Engine limits	For all operations 2600 r.p.m. (108 h.p.)		
Propeller and propeller limits	<ol style="list-style-type: none"> 1. McCauley Model 1A105/SCM-7157 fixed pitch propeller. Static r.p.m. at maximum permissible throttle setting; not over 2300; not under 2150. Diameters: not over 71 inches, not under 69.5 inches. 2. McCauley Model 1A105/SCM-7153 and 1A105/SCM-7154 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2400; not under 2250. Diameter: not over 71 inches, not under 69.5 inches. 3. McCauley Model 1A106/NCM-7157 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2400; not under 2300. Diameter: not over 71 inches, not under 69.5 inches. 4. McCauley Model 1A106/NCM-7153 hub and fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2475; not under 2375. Diameter: not over 71 inches, not under 69.5 inches. 		
Airspeed limits (CAS)	V_{ne} V_{no} V_a V_a V_{fe}	Never exceed Maximum structural cruising Maneuvering (Utility Category) Maneuvering (Normal Category) Flaps extended Canopy half open	195 m.p.h. (169 knots) 144 m.p.h. (125 knots) 132 m.p.h. (115 knots) 125 m.p.h. (109 knots) 100 m.p.h. (87 knots) 130 m.p.h. (113 knots)

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I. Model AA-1 (cont'd)

Center of gravity (C.G) range (+78.5) to (+81.0) at 1500 lb.
 (+77.5) to (+81.0) at 1430 lb.
 (+75.0) to (+81.0) at 1245 lb.
 Straight line variation between points given.



Empty weight C.G. range	None		
Maximum weight	1430 lb. (Utility Category) 1500 lb. (Normal Category)		
Number of seats	2 at (+92.5) (For optional child's seat refer to Equipment List.)		
Maximum baggage	100 lb. at (+120)		
Fuel capacity	24 gal. (2 wing tanks) at (+84.5) (See Note 1 for unusable fuel)		
Oil capacity	6 qt. at (+39) (2 qt. minimum)		
Control surface movements	Elevator	25° ± 2° up	15° ± 2° down
	Rudder	25° ± 2° left	25° ± 2° right
	Ailerons	25° ± 2° up	20° ± 2° down
	Flaps		30° ± 2° down
	Elevator tab trim	21.5° ± 2° up	11° ± 2° down
Serial numbers eligible	AA1-0001 and up (Normal and Utility Category)		
Production basis	None. Prior to original certification of each aircraft manufactured subsequent to September 17, 1976, an FAA representative must perform a detailed inspection for workmanship, materials and conformity with the approved technical data and a check of the flight characteristics.		

II - Model AA-1A, Trainer, 2 PCLM, Utility Category, Approved January 14, 1971, Normal Category Approved January 14, 1971.

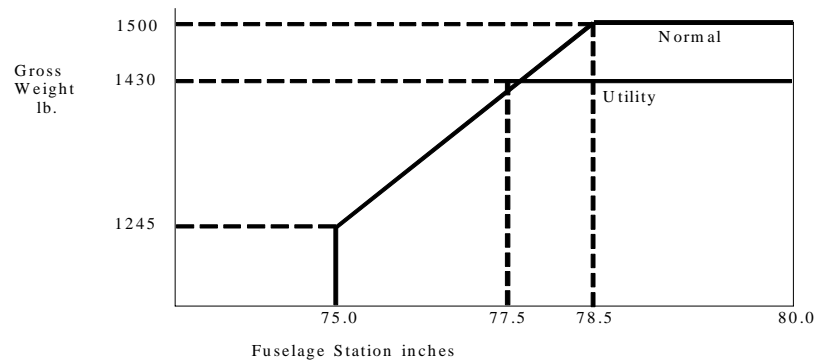
Engine	Lycoming O-235-C2C (Carburetor Setting 10-4953 or 10-3103-1)
Fuel	80/87 minimum grade aviation gasoline
Engine limits	For all operations 2600 r.p.m. (108 h.p.)
Propeller and propeller limits	1. McCauley Model 1A105/SCM-7157 fixed pitch propeller. Static r.p.m. at maximum permissible throttle setting; not over 2300; not under 215C. Diameter: not over 71 inches, not under 69.5 inches.

II. Model AA-1A (cont'd)

2. McCauley Model 1A105/SCM-7153 and 1A105/SCM-7154 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2400; not under 2250. Diameter: not over 71 inches, not under 69.5 inches.
3. McCauley Model 1A106/NCM-7157 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2400; not under 2300. Diameter: not over 71 inches, not under 69.5 inches.
4. McCauley Model 1A106/NCM-7153 hub and fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2475; not under 2375. Diameter: not over 71 inches, not under 69.5 inches.

Airspeed limits (CAS)	V_{ne}	Never exceed	195 m.p.h. (169 knots)
	V_{no}	Maximum structural cruising	144 m.p.h. (125 knots)
	V_a	Maneuvering (Utility Category)	127 m.p.h. (110 knots)
	V_a	Maneuvering (Normal Category)	120 m.p.h. (104 knots)
	V_{fe}	Flaps extended	115 m.p.h. (100 knots)
		Canopy half open	130 m.p.h. (113 knots)

Center of gravity (C.G) range	(+78.5) to (+80.0) at 1500 lb.
	(+77.5) to (+80.0) at 1430 lb.
	(+75.0) to (+80.0) at 1245 lb.
	Straight line variation between points given.



Empty weight C.G. range	None		
Maximum weight	1430 lb. (Utility Category) 1500 lb. (Normal Category)		
Number of seats	2 at (+92.5) (For optional child's seat refer to Equipment List.)		
Maximum baggage	100 lb. at (+120)		
Fuel capacity	24 gal. (2 wing tanks) at (+84.5) (See Note 1 for unusable fuel)		
Oil capacity	6 qt. at (+39) (2 qt. minimum)		
Control surface movements	Elevator	$25^\circ \pm 2^\circ$ up	$15^\circ \pm 2^\circ$ down
	Rudder	$25^\circ \pm 2^\circ$ left	$25^\circ \pm 2^\circ$ right
	Ailerons	$25^\circ \pm 2^\circ$ up	$20^\circ \pm 2^\circ$ down
	Flaps		$30^\circ \pm 2^\circ$ down
	Elevator tab trim	$14.5^\circ \pm 2^\circ$ up	$18^\circ \pm 2^\circ$ down
Serial numbers eligible	AA1A-0001 and up (Normal and Utility Category)		

Production basis None. Prior to original certification of each aircraft manufactured subsequent to September 17, 1976, an FAA representative must perform a detailed inspection for workmanship, materials and conformity with the approved technical data and a check of the flight characteristics.

III - Model AA-1B, Trainer/TR-2, 2 PCLM, Utility Category, Approved June 30, 1972

Engine Lycoming 0-235-C2C (Carburetor Setting 10-4953 or 10-3103-1)

Fuel 80/87 minimum grade aviation gasoline

Engine limits For all operations 2600 r.p.m. (108 h.p.)

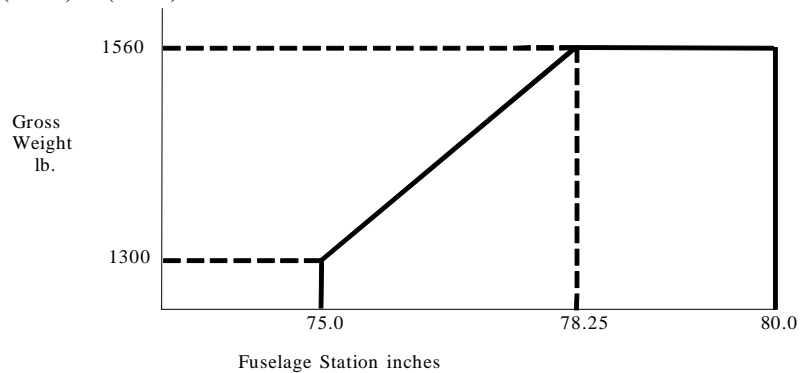
Propeller and propeller limits

1. McCauley Model 1A105 with 1A105/SCM hub and 7157 blades. Static r.p.m. at maximum permissible throttle setting; not over 2300; not under 2150. Diameter: not over 71 inches, not under 69.5 inches.
2. McCauley Model 1A105/SCM-7153 and 1A105/SCM-7154 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2400; not under 2250. Diameter: not over 71 inches, not under 69.5 inches.
3. McCauley Model 1A106/NCM-7153 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2400; not under 2300. Diameter: not over 71 inches, not under 69.5 inches.
4. McCauley Model 1A106/NCM-7157 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2475; not under 2375. Diameter: not over 71 inches, not under 69.5 inches.

Airspeed limits (CAS)

V_{ne}	Never exceed	195 m.p.h. (169 knots)
V_{no}	Maximum structural cruising	144 m.p.h. (125 knots)
V_a	Maneuvering	135 m.p.h. (117 knots)
V_{fe}	Flaps extended	115 m.p.h. (100 knots)
	Canopy half open	130 m.p.h. (113 knots)

Center of gravity (C.G) range (+78.25) to (+80.0) at 1560 lb.
(+75.0) to (+80.0) at 1300 lb.



Empty weight C.G. range None

Maximum weight 1560 lb.

Number of seats 2 at (+92.5) (For optional child's seat refer to Equipment List.)

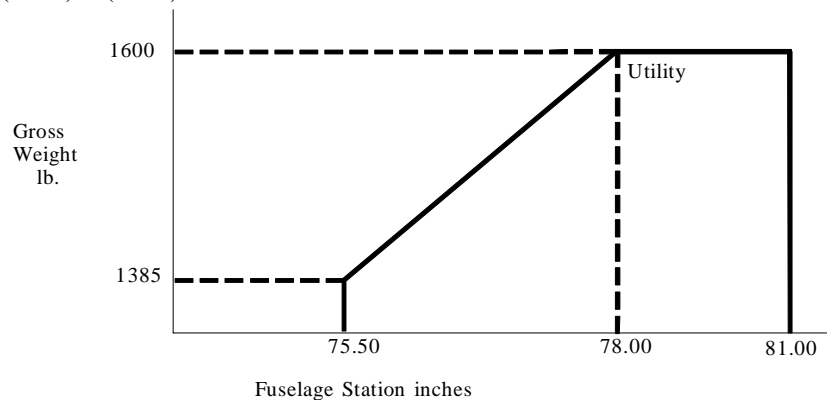
Maximum baggage 100 lb. at (+120)

III - Model AA-1B (cont'd)

Fuel capacity	24 gal. (2 wing tanks) at (+84.5) (See Note 1 for unusable fuel)		
Oil capacity	6 qt. at (+39) (2 qt. minimum)		
Control surface movements	Elevator	25° ± 2° up	15° ± 2° down
	Rudder	25° ± 2° left	25° ± 2° right
	Ailerons	25° ± 2° up	20° ± 2° down
	Flaps		30° ± 2° down
	Elevator tab trim	14.5° ± 2° up	18° ± 2° down
Serial numbers eligible	AA1B-0001 and up (Utility Category)		
Production basis	Production Certificate No. 112/Production Certificate No. 350		

IV - Model AA-1C, T-Cat/Lynx, 2 PCLM, Utility Category, Approved December 21, 1976. (Same as AA-1B except for engine, propeller, engine mount/baffles, and AA-5 elevator).

Engine	Lycoming O-235-L2C (Carburetor Setting 10-4953 or 10-3103-1)		
Fuel	100/130 minimum grade aviation gasoline		
Engine limits	For all operations 2700 r.p.m. (115 h.p.)		
Propeller and propeller limits	1. Sensenich Model 72CK-0-56 fixed pitch propeller. Static r.p.m. at maximum permissible throttle setting; not over 2275; not under 2125. No additional tolerance permitted. Diameter: not over 72 inches, not under 70.5 inches.		
	2. Sensenich Model 72CK-0-52 fixed pitch propellers. Static r.p.m. at maximum permissible throttle setting; not over 2475; not under 2325. No additional tolerance permitted. Diameter: not over 72 inches, not under 70.5 inches.		
Airspeed limits (CAS)	V _{ne}	Never exceed	195 m.p.h. (169 knots)
	V _{no}	Maximum structural cruising	144 m.p.h. (125 knots)
	V _a	Maneuvering	135 m.p.h. (117 knots)
	V _{fe}	Flaps extended	115 m.p.h. (100 knots)
		Canopy half open	130 m.p.h. (113 knots)
Center of gravity (C.G.) range	(+78.00) to (+81.0) at 1600 lb.		
	(+75.5) to (+81.0) at 1385 lb.		



Empty weight C.G. range	None
Maximum weight	1600 lb.
Number of seats	2 at (+92.5) (For optional child's seat refer to Equipment List.)

IV - Model AA-1C (cont'd)

Maximum baggage	100 lb. at (+120)		
Fuel capacity	24 gal. (2 wing tanks) at (+84.5) (See Note 1 for unusable fuel)		
Oil capacity	6 qt. at (+39) (2 qt. minimum)		
Control surface movements	Elevator	12° ± 1° up	28° ± 2° down
	Rudder	25° ± 2° left	25° ± 2° right
	Ailerons	25° ± 2° up	20° ± 2° down
	Flaps		30° ± 2° down
	Elevator tab trim	15° ± 4° up	15° ± 2° down
Serial numbers eligible	AA1B-0601 and AA1C-0001 and up (Utility Category)		
Production basis	Production Certificate No. 3SO		

DATA PERTINENT TO ALL MODELS:

Datum	50.0 inches forward of front face of firewall (wing chord 48 inches for Model AA-1 and 49.32 inches for Models AA-1A, AA-1B, and AA-1C).
Leveling means	Top of fuselage canopy slide rail.
Certification basis	FAR 23 effective February 1, 1965, and amendments 23-1 and 23-2; and FAR 36 amended through 36-4 for the Model AA-1C. Type Certificate No. A11EA issued August 29, 1967. Data of Application for Type Certificate October 22, 1965.
Equipment	The basic required equipment prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification. In addition, equipment for the particular operation must be installed.

NOTE 1. Current weight and balance report including a list of equipment included in the certificated empty weight, and loading instructions when necessary must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include 12 lb. (2 gal.) at (+84.5) of unusable fuel.

NOTE 2. The following placards must be installed in full view of the pilot:

(a) Models AA-1 and AA-1A:

"THIS AIRPLANE MUST BE OPERATED AS A NORMAL OR UTILITY CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS, AND MANUALS."

<u>NORMAL CATEGORY</u>	<u>AA-1</u>	<u>AA-1A</u>
Maximum Design Weight	1500 lb.	1500 lb.
Design Maneuvering Speed, V _a	125 mph CAS	120 mph CAS
Flight Load Factors:		
Flaps Up	+3.8, -1.52	+3.8, -1.52
Flaps Down	+2.0	+3.5

NO ACROBATIC MANEUVERS INCLUDING SPINS APPROVED (AA-1 and AA-1A)

<u>UTILITY CATEGORY</u>	<u>AA-1</u>	<u>AA-1A</u>
Maximum Design Weight	1430 lb.	1430 lb.
Design Maneuvering Speed, V _a	130 mph CAS	127 mph CAS
Flight Load Factors:		
Flaps Up	+4.4, -1.76	+4.4, -1.76
Flaps Down	+2.0	+3.5

ACROBATIC MANEUVERS ARE LIMITED TO THE FOLLOWING:

<u>MANEUVER</u>	<u>ENTRY SPEED (MPH, CAS)</u>	
	<u>AA-1</u>	<u>AA-1A</u>
Chandelles	132	127
Lazy Eights	132	127
Steep Turns	132	127
Stalls (Except Whip Stalls)	Slow Deceleration	Slow Deceleration

Models AA-1B and AA-1C:

"THIS AIRPLANE MUST BE OPERATED AS A UTILITY CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS STATED IN THE FORM OF PLACARDS, MARKINGS, AND MANUALS."

	<u>AA-1B</u>	<u>AA-1C</u>
Maximum Design Weight	1560 Lb.	1600 Lb.
Design Maneuvering Speed, V_a	135 Mph Cas	117 Knots Cas
Flight Load Factors:		
Flaps Up	+4.4, -1.76	+4.4, -1.76
Flaps Down	+3.5	+3.5

ACROBATIC MANEUVERS ARE LIMITED TO THE FOLLOWING:

<u>MANEUVER</u>	<u>ENTRY SPEED (MPH, CAS)</u>	<u>ENTRY SPEED (KNOTS, CAS)</u>
	<u>AA-1B</u>	<u>AA-1C</u>
Chandelles	135	117
Lazy Eights	135	117
Steep Turns	135	117
Stalls (Except Whip Stalls)	Slow Deceleration	Slow Deceleration
Maximum Altitude Loss In Stalls	300 Feet (AA-1) 250 Feet (AA-1A) 300 Feet (AA-1B) 200 Feet (AA-1C)	
Demonstrated Crosswind Velocity	15 Mph (AA-1) 13 mph (AA-1A) 18 mph (AA-1B) 16 knots (AA-1C)	

KNOWN ICING CONDITIONS TO BE AVOIDED. (Models AA-1, AA-1A, and AA-1B)

THIS AIRPLANE NOT APPROVED FOR FLIGHT IN ICING CONDITIONS. (Model AA-1C)

All Models:

THIS AIRPLANE IS CERTIFICATED FOR THE FOLLOWING OPERATIONS AS OF DATE OF ORIGINAL AIRWORTHINESS CERTIFICATE: IFR, VFR, DAY, NIGHT. (When properly equipped per FAR 91)

REFER TO WEIGHT AND BALANCE DATA FOR LOADING INSTRUCTIONS.

READ FUEL GAGES IN LEVEL FLIGHT ONLY.

FOR NORMAL OPERATION, MAINTAIN FUEL BALANCE.

DEMONSTRATED FUEL UNBALANCE 7 GAL.

- (b) On left side of cabin:

"130 MPH MAX WITH CANOPY OPEN TO HERE. NO FLIGHT WITH CANOPY OPEN BEYOND THIS POINT." Placard Part No. 5803007-22 or equivalent. (Models AA-1, AA-1A, AA-1B)

"113 KNOTS MAX WITH CANOPY OPEN TO HERE. NO FLIGHT WITH CANOPY OPEN BEYOND THIS POINT." Placard Part No. 5803007-51 or equivalent. (Model AA-1C).

- (c) In baggage compartment (All Models):

"BAGGAGE CAPACITY 100 LBS. MAX." Placard Part No. 803007-40 or equivalent.

- (d) On instrument panel in full view of pilot (All Models):

"SPINS PROHIBITED." Placard Part No. 803007-56 or equivalent.

- (e)