

United States of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate

Number SA1209NW

This certificate, issued to Ameromod Corporation

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified herein meets the airworthiness requirements of Part 23 of the Civil Air Regulations, dated February 1, 1965, amendment 23-1 and 23-2.

Original Product — Type Certificate Number A11EA
Make Gulfstream American (Grumman)
Model AA-1, AA-1A, AA-1B, and AA-1C

Description of Type Design Change. Relocation of the battery from the forward face of the firewall to the aft baggage compartment bulkhead in accordance with Ameromod Corporation Installation Instructions No. AM110.

NOTE: This modification may be applied in conjunction with other modifications which require a mass change for weight and balance adjustment.

NOTE: Authorization for application of this modification is given only for use on the specific airplane described on the reversed side of this document.
(VALID ONLY WITH ORIGINAL SIGNATURE)

Limitations and Conditions. Approval of this change in type design applies to the above model aircraft only. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this Certificate shall be maintained as part of the permanent records for the modified aircraft.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: March 19, 1981

Date issued:

Date of issuance: April 3, 1981

Date amended:



By definition of the Administrator
Charles C. Schroeder
(Signature)

Acting Chief, Seattle Area Aircraft
Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47

DISCLAIMER OF RESPONSIBILITY

The authorization, as stated below, gives permission to use the approval, represented by the issuance of this Supplemental Type Certificate by the Federal Aviation Administration, to the STC Holder. In giving this permission, the STC Holder assumes no responsibility or liability for the installation and/or fabrication of any portion of this modification or any results thereof, except for work actually done by the STC Holder.

AUTHORIZATION ENDORSEMENT

The Application of Supplemental Type Certificate Number SA1209NW

to Tom Millen / 18 Riverview / N. Aurora, IL 60542
for the modification of the specific aircraft described below:

Registration # N9652L Serial # AA1B-0152

Manufacturer & Model: Gulfstream American AA-1B

from (Name of grantor) Ameromod Corporation
(STC Holder)


(Address of grantor) Bldg. C-3, Paine Field
Number and street

Everett, WA 98204
City, State, and ZIP code

Extent of Authority: Authorization is extended to the above named individual, individuals, or company to modify the above specified aircraft in accordance with this Supplemental Type Certificate. No further authority is given beyond this aircraft and this document, along with all related supplements, instructions, and drawings must remain a perminate part of this aircraft's records. Any supplement to the aircraft Pilot Operating Handbook and or Aircraft Flight Manual must be carried in aircraft during all flight operation.

Date August 5, 1985

Signature of grantor (In ink):


Kennis G. Blackman
Gen. Mgr.



(VALID ONLY WITH ORIGINAL SIGNATURE)

AMEROMOD CORPORATION INSTALLATION INSTRUCTIONS No. AM110

Application:

Gulfstream American Corporation (Grumman American Aviation Corporation) models AA-1, AA-1A, AA-1B and AA-1C.

Purpose:

Relocate battery for weight and balance reasons. To be used in conjunction with modifications requiring offsetting added weight in the forward portion of the aircraft.

General Information:

Many supplemental type certificates exist, for the above models, allowing the installation of heavier powerplants, extended engine mount and cowling, and auxiliary fuel. Some of these modifications require offsetting this extra weight in order to comply with the aircraft weight and balance envelope. Gross weight is a significant factor, in most cases, and rather than add ballast to the empennage, relocating the battery from the firewall to aft of the baggage compartment is preferable.

This modification provides for this relocation and may be included as either an optional or a mandatory procedure of any modification developed for the above aircraft and held by Ameromod Corporation, Kennis G. Blackman, Maynard C. Crosby, or Al E. Smith and Weston M. Howard.

References:

Refer to Gulfstream American Corporation parts catalogue for parts ordering information, where applicable. Refer to Gulfstream American Corporation maintenance manual for further procedure information where applicable.

Detailed Procedures:

A. Fabrication;

1. Fabricate mounting panel assembly IAW fabrication drawing AM110-FD-1.
 - a. Cut honeycomb panel from sheet of material, such as a salvaged section of honeycomb from the fuselage box section of any Gulfstream American Corporation light aircraft, or obtain new material meeting equivalent specifications.
 - b. Cut and bend aluminum angle bracket.
 - c. Attach bracket to panel with rivets.

AM110-DL-1
3-18-81
Rev.

AMEROMOD CORPORATION
EVERETT, WA

SUPPLEMENTAL TYPE CERTIFICATE SA1209NW

INSTALLATION INSTRUCTIONS No. AM110

MASTER DOCUMENT LIST

<u>IDENTIFICATION</u>	<u>DESCRIPTION</u>	<u>DATE</u>	<u>REV./EO</u>
AM110-DL-1	Master Document List	3-18-81	
AM110-II-1	Installation Instructions	3-18-81	
AM110-II-2	Installation Instructions	3-18-81	
AM110-II-3	Installation Instructions	3-18-81	
AM110-II-4	Installation Instructions	3-18-81	
	<u>Fabrication Drawings</u>		
AM110-FD-1	Mounting Panel Assembly	3-18-81	
	<u>Installation Drawings</u>		
AM110-ID-1	Mounting Panel Assembly Installation	3-18-81	
AM110-ID-2	Installation Projection	3-18-81	
AM110-ID-3	Battery Cable Routing and Location Layout	3-18-81	
AM110-ID-4	Fuse Bracket Modification and Battery Cable Connection	3-18-81	

B. Installation;

1. Remove battery, battery box and heat shield from battery support assembly.
2. If so equipped, remove fuse holder bracket from lower forward portion of battery support tray by drilling out the rivets (leave wires connected).

NOTE: Late serial number AA-1B and all AA-1C models have a small aluminum bracket riveted to the base of the battery support tray containing two fuse holders. Earlier serial numbers have these fuses in line but may have been retrofitted.

3. Remove battery support assembly from firewall.
4. Remove negative battery cable from ground connection.
5. Enlarge lower outboard bolt hole in firewall, former battery support location, to accept battery cable and protective insulating material.
6. Plug remaining 3 holes with bolts and nuts or firewall sealant, "ProSeal 700" or equivalent.
7. Modify fuse holder bracket and rivet to firewall using existing rivet holes in bracket.

NOTE: Accomplish steps 5 through 7 IAW installation drawing AM110-ID-4.

8. Remove upper and lower aft baggage compartment bulkhead covers.
9. Install mounting panel assembly IAW installation drawing AM110-ID-1.
 - a. Locate panel assembly to lower bulkhead beam and lower fuselage skin. When satisfactory fit is achieved, temporarily clamp panel assembly to lower bulkhead beam. Match drill holes through bulkhead beam and mating skin of panel assembly. Match drill holes in panel assembly angle bracket and lower fuselage skin. Rivet into place using AN470AD3 rivets (length as required).

NOTE: Rivets securing angle bracket to lower fuselage skin may be either flush head or round head. If flush head rivets are used, remove panel assembly after all holes have been match drilled, countersink panel assembly angle bracket holes (lower surface) and dimple holes in fuselage skin (outer surface). Relocate panel assembly and rivet into place using AN426AD3 rivets (length as required).

10. Match drill upper bolt holes in panel assembly through bulkhead beam and install battery support assembly IAW installation

drawing AM110-ID-2 using existing fasteners.

11. Place battery box in tray and mark location of vent tube hole to be drilled in lower fuselage skin. Remove battery box and drill hole in skin to the outside diameter of vent tube.
12. Reinstall battery box (heat shield not required). Battery vent tube must protrude through lower surface of fuselage a minimum of $1\frac{1}{2}$ inches. Trim end of vent tube at a 45° angle so that any discharge is vented aft.

NOTE: Either of two types of battery boxes may be found installed in the aircraft. Recent production versions have a plastic drain tube cemented into an opening in the bottom of the plastic battery box, whereas earlier versions may have a short length of flared metal tubing bonded to the box with a plastic drain tube clamped over the metal tubing. With age and use, it is common to find this flared metal tubing corroded and loose. Also, engine heat may have distorted the upper portion of the battery box. Inspect the battery box for these characteristics. If metal tube is present, but box is in good condition, thoroughly clean metal tube and adjacent area of battery box with wire brush and battery terminal cleaning solution. Coat with an epoxy cement to ensure security of metal tube to battery box. Before installing, make sure drain tube is not blocked. If battery^{box} is damaged, worn, distorted or metal tube is badly corroded and loose, replace battery box with new part.

13. Install battery cables IAW installation drawing AM110-ID-3.
 - a. Remove upholstery and kick panels from right side of cabin.
 - b. Route positive cable along lower corner of fuselage from the point it passes through honeycomb bulkhead, forward of control surface torque tubes, to just forward of fuel guage area, passing under center spar.

NOTE: Cable will follow the same path as wire loom and should be tie-wrapped to existing loom at 12" spacing.

- c. Forward of fuel guage, locate cable just below wire loom following it upward. Secure cable to honeycomb with stick clamp just forward of last wire loom holder and route directly forward toward firewall passage hole.
- d. Bend as tight a jog as possible in cable just before firewall, and insert cable through hole in firewall.

NOTE: In area where cable passes through firewall, wrap cable with SPIRAP (Grumman American p/n 50002-2) or equivalent material to ensure tight abrasion resisting fit and apply "PRO SEAL 700" or equivalent to firewall and cable in area where cable exits firewall.

- e. Secure cable to side panel wall as near to firewall as possible with stick clamp.
- 14. Reinstall upholstery and kick panel using additional screws and trim washers as required in areas where battery cable may prevent panel from laying flat against honeycomb.

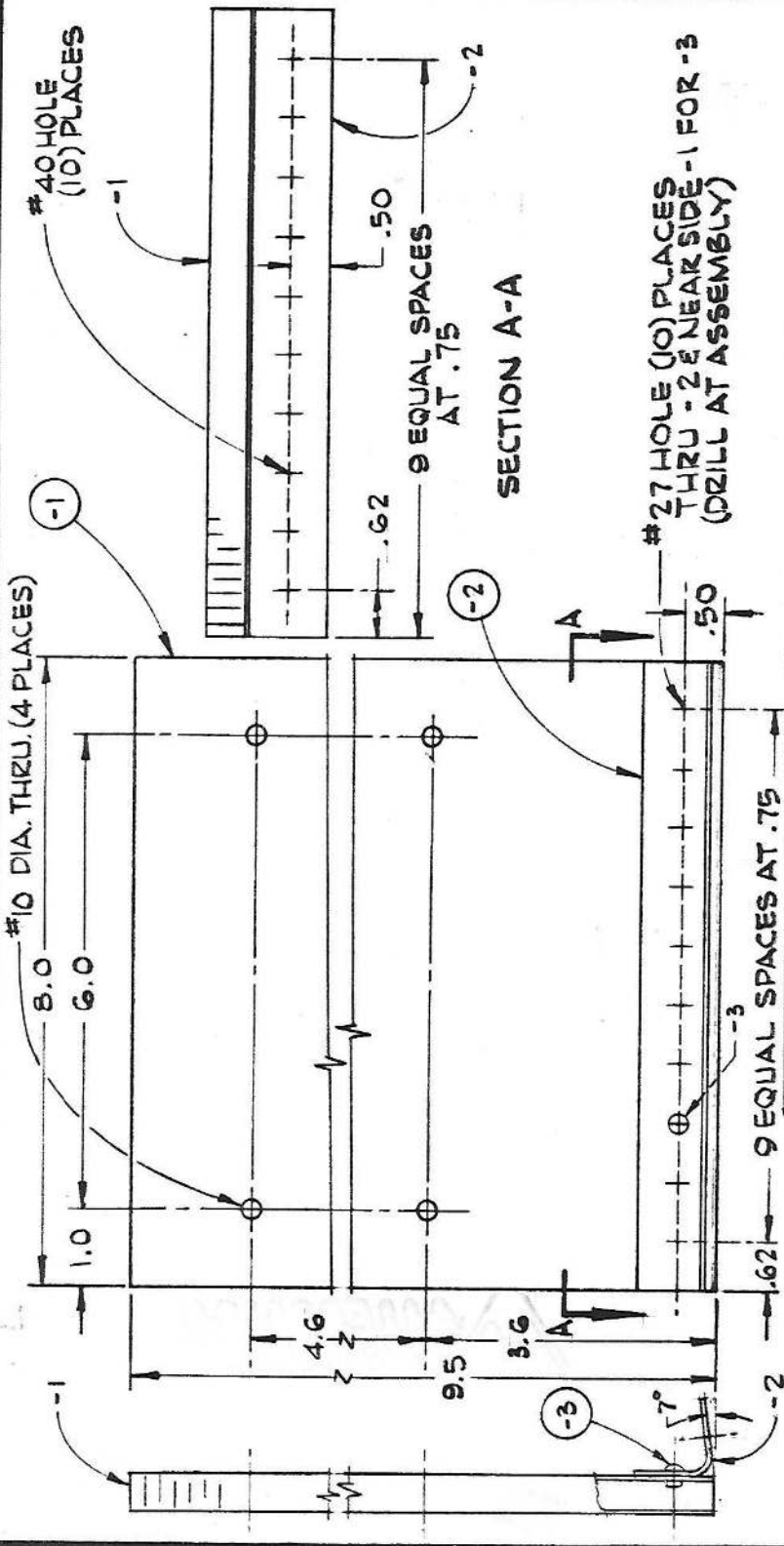
NOTE: Assure that kick panel does not interfere with right rudder pedal movement.

- 15. Connect positive battery cable.
- 16. Connect ground (negative) cable to airframe.

CAUTION: Connect ground (negative) cable last to prevent accidental short circuiting during installation.

- 17. Reinstall aft baggage compartment bulkheads.

NOTE: If quick and easy access to battery is desired, "Velcro" tape may be attached to aft surface of bulkhead and mating areas and used in lieu of bulkhead attach screws.

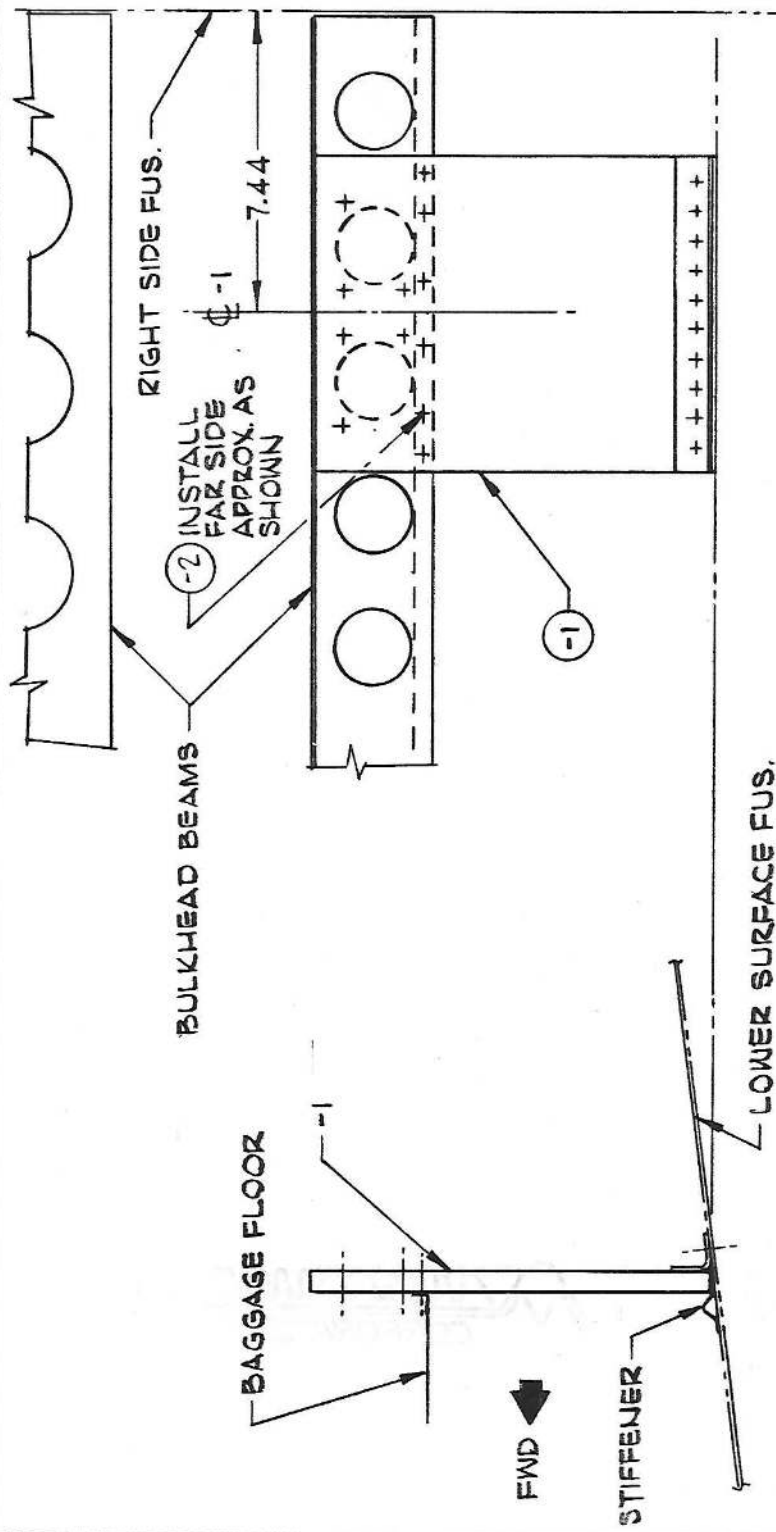


ITEM No.	MFRS. PART No.	LIST OF MATERIALS	REQUIREMENTS	MATERIAL DESCRIPTION
-3	RIVET-CHERRY MAX	10	CR3243-4-(AS REQ'D)	
-2	BRACKET	1	1.0x1.0x8.0	.063 AL. SHT. 6061-T3
-1	PANEL	1	5.0x8.0x9.8	HONEYCOMB
ITEM	NOMENCLATURE	REQ'D	MATERIAL SIZE & TOL.	MATERIAL DESCRIPTION

Drawn by:	J.L.D.	Date:	3-18-81
CHK:		Date:	3-18-81
Appr:		Date:	3-18-81
Appr:		Date:	3-18-81

APPLICATION:	GULFSTREAM AMERICAN MOUNTING PANEL ASSY. FABRICATION
MODELS:	AA-1, AA-1A, AA-1B, AA-1C
DRAWING TITLE:	MOUNTING PANEL ASSY. FABRICATION
Scale:	1/2
Reduct:	
Sht #	1 of 1
DRAWING No.	AM110-FD-1
AMEROMOD CORPORATION	

DIMENSIONS ARE IN INCHES
 TOLERANCES ON FRACTIONS DECIMALS ANGLES
 $\pm 1/32$ ± 0.01 $\pm 2^\circ$

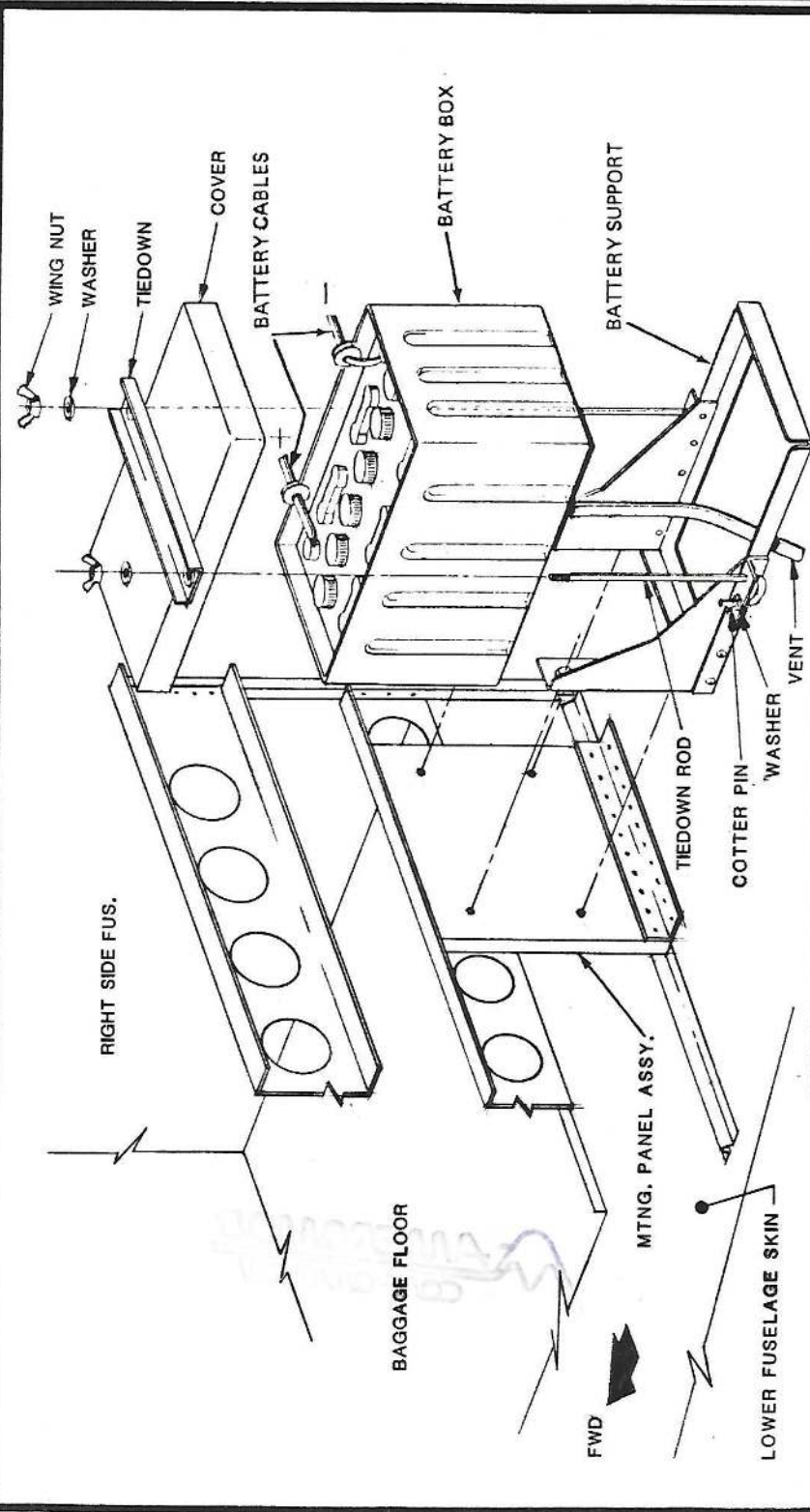


ITEM No.	MFRS. PART No.	LIST OF MATERIALS	REQ'd	MATERIAL SIZE & TOL.	MATERIAL DESCRIPTION
-2	RIVET-CHEERY MAX	12	CR3243-4-(AS REQD)		AM110-FD-1
-1	MOUNTING PANEL ASSY	1			

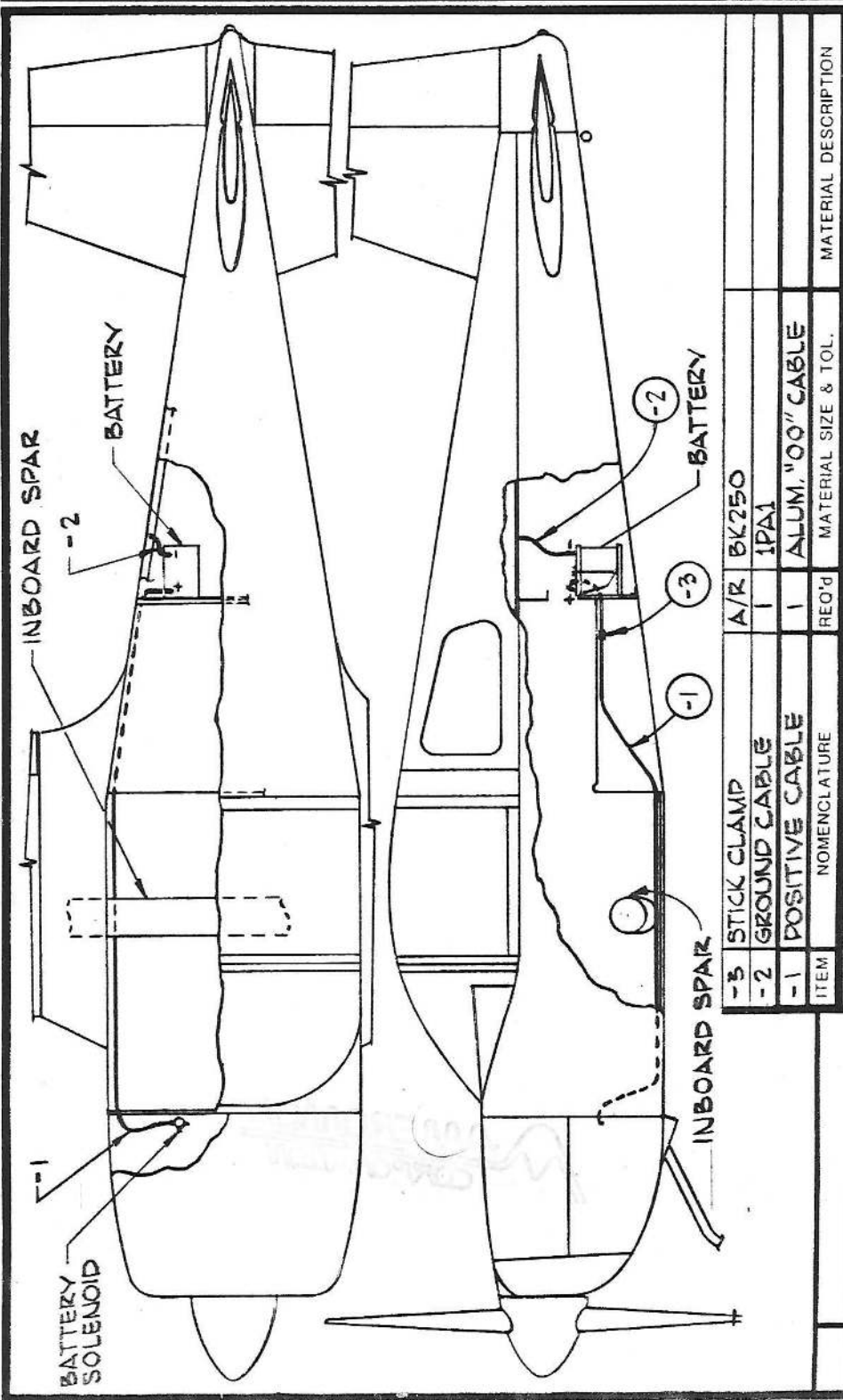
Drawn by:	Date:	APPLICATION:	DRAWING TITLE:	Scale:
J. L. D.	3-7-81	GULFSTREAM AMERICAN	MOUNTING PANEL ASSY.	1/4
Chk:	Date:	MODELS AA-1, AA-1A	INSTALLATION	Reduct:
	3-7-81	AA-1B, AA-1C		
Appr:	Date:			
	3-7-81			
Appr:	Date:			

DIMENSIONS ARE IN INCHES		TOLERANCES ON FRACTIONS DECIMALS ANGLES
AMERMOD CORPORATION		
DRAWING No.		AM110-ID-1

STC No. SA1209NW INSTL. INSTR. No. AM110 DESCR. BATTERY RELOCATION
 DWG No. AM110-ID-2 TITLE INSTALLATION PROJECTION REVISION

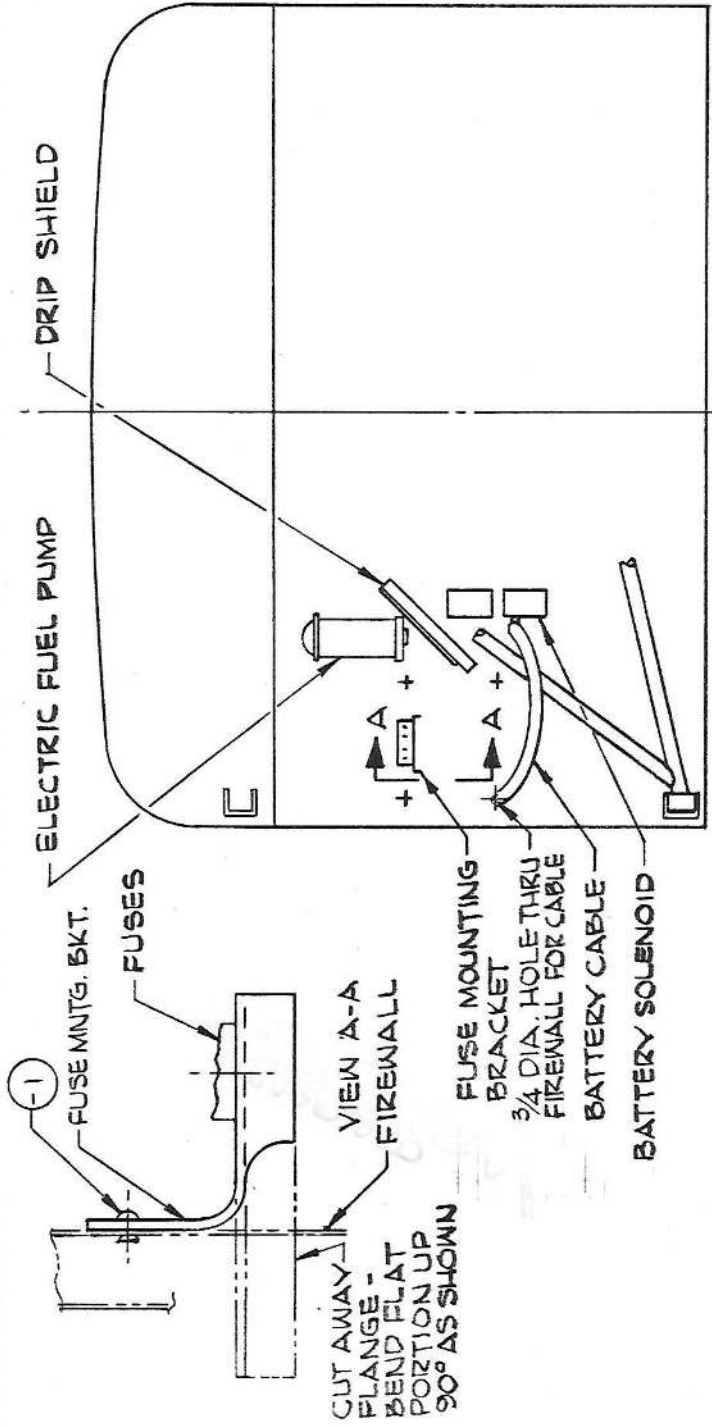


ITEM	NOMENCLATURE	REQ'd	MATERIAL SIZE & TOL.	MATERIAL DESCRIPTION
LIST OF MATERIALS				
Drawn by: J. L. D.		Date: 3-7-81	DRAWING TITLE: INSTALLATION PROJECTION	
Chk:	Date: 3-7-81	Scale:		Redct:
App:	Date: 3-7-81	Sht# 1 of 1		
App:	Date:	DRAWING No. AM110-ID-2		
MFRS. PART No.		AMEROMOD CORPORATION		
DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES				



ITEM No.	MFRS. PART No.	A/R	BKG250
-3	STICK CLAMP	1	1PA1
-2	GROUND CABLE	1	ALUM. "00" CABLE
-1	POSITIVE CABLE	1	
ITEM	NOMENCLATURE	REQ'd	MATERIAL SIZE & TOL.
LIST OF MATERIALS			
APPLICATION:			
GULFSTREAM AMERICAN MODELS AA-1, AA-1A, AA-1B, AA-1C			
DRAWING TITLE: BATTERY CABLE ROUTING AND LOCATION LAYOUT			
Date: 3-18-81		Scale: NONE	
Date: 3-18-81		Redct:	
Date: 3-18-81		Sht# 1 of 01	
Date: 3-18-81		DRAWING No. AM110-ID-3	
AMEROMOD CORPORATION			

DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES



VIEW LOOKING AFT AT FIREWALL

ITEM	NOMENCLATURE	QTY	REQ'D	MATERIAL SIZE & TOL.	MATERIAL DESCRIPTION
- 1	RIVET-CHERRY MAX	4		CR3243-4-(LNG. AS REQ'D)	
LIST OF MATERIALS					
Drawn by:	Date:	APPLICATION:			
J. L. D.	3-7-81	GULFSTREAM AMERICAN			
Chk:	Date:	DRAWING TITLE:			
	3-7-81	FUSE BRACKET MOD.			
Appr:	Date:	AND BATTERY CABLE CONN.			
	3-7-81	MODELS AA-1, AA-1A, AA-1B, AA-1C			
Appr:	Date:	Sht# 1 of			
		DRAWING No.			
		AM110-ID-4			
MFRS. PART No.		AMEROMOD CORPORATION			
DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES					