SUMMARY OF AA-1 SERVICE LETTERS

NUMBER	DATE	SUBJECT	APPLICABILITY
68-01	11/15/68	Service Info Availability	All AA-1 Models
69-01A	7/10/69	Control System	AA1-001-125
69-02	7/11/69	Exhaust System	AA1 001-159
69-05	12/15/69	Nose Strut Spring Plunger	AA1-001-124
70-01	3/9/70	Canopy Attach Screw	AA1-001-132
70-02	3/9/70	Nose Wheel Spacer	AA1 001-334
70-03	3/18/70	Wheel Fairing	All AA-1
70-04	4/30/70	Canopy Improvements	All AA-1
70-05	4/30/70	Landing Gear Insp.	All AA-1
70-06	4/30/70	Wing Tip Stiffener	AA1 001-440
70-07	9/24/70	Vendor Info	All AA-1
70-08	10/14/70	Rudder Bellcrank	AA1 001-411 W/Exceptions
70-09	10/21/70	Magneto Lead Isolation	AA1 001-445
71-02	3/11/71	Service Info Summary	All AA-1
71-03	3/17/71	Muffler	AA1 001-447 W/Exceptions
71-04	6/4/71	Misc. Improvements	Various AA-1; AA-1A
71-05	6/7/71	Cabin Floor	AA1 001-457; AA1A 001-123
71-06	7/9/71	Trainer Owners Manual	All AA-1A
71-07	7/19/71	Rudder/Elev. Rib	AA1 001-448; AA1A 001-239
71-08	8/3/71	Defroster Outlet	AA1 001-458; AA1A 001-159
71-09	8/2/71	Battery Box Cover	AA1 137-457; AA1A 001-132
71-10	9/1/71	Carb Heat/Mixture	AA1 001-457; AA1A 001-223 W/Ex
71-11A	10/28/71	Bungee Inspection	All AA-1; AA-1A
71-12	12/9/71	Carb Air Valve	All AA-1; AA-1A
71-13	12/10/71	Misc Improvements	Various-See SL
72-01	1/13/71	Prop Care & Operation	All AA-1; AA-1A
72-02	2/15/72	Rudder Rigging	All AA-1; AA-1A
72-04	8/28/72	Leaning Procedure	All AA-1; AA-1A
72-06	12/11/72	Fuel Placard	AA1A 246-470; AA1B 001-023
72-07	12/15/72	Control System	AA1 001-459; AA1A 001-470 AA1B 001-049
74-01	1/3/74	Owners Manual Change	All AA1 Shipped < 1/31/74
74-02	2/6/74	Bondline Inspection	All AA-1 Models
74-03	7/22/74	Misc Service	Various-See SL
74-04	5/8/74	Misc Service	All AA1 Models
74-06	5/24/74	Bus Bar/Bearing collar	AA1B 238-395 W/Exceptions
74-07	9/24/74	Parking Brake	All AA-1 Models
75-01	2/3/75	Anti-Shimmy Washer	All AA1A; AA1B; AA1C
75-02	2/10/75	Battery & Box	All AA-1 Models
75-04	6/1/75	Landing Light	All AA1; AA1A; AA1B
75-05	6/1/75	Narco/Lycoming Info	All AA1 Models
75-07	11/17/75	Fuel Level Visibility	All AA1 Models
75-09	11/17/75	Spark Plug Fouling	All AA1 Models
75-10	11/17/75	Parking Brake	All AA1 Models
76-01	2/9/76	Telex Microphone	AA1B 535-579
76-02	2/16/76	Vendor Info	All AA1 Models
77-01	2/17/77	Engine Primer"O"Ring	AA1 001-459; AA1A 001-470 AA1B 001-679
77-02	5/24/77	Magneto Leads	All AA1 Models
78-04	12/18/78	Narco ELT 10	All AA1 So Equipped
78-05	1/26/79	Upholstery Replacement	AA1B 449-611 W/Exceptions
79-04	5/16/79	TCP Fuel Additive	All AA1 Models
81-01	10/9/81	Air Filter	All AA1 Models
89-01	7/28/89	Use of Auto Gas	All AA-1 Models

SERVICE

LETTER

DATE: November 15, 1968 Service Letter #68-1

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Availability of Service Bulletins and Service Letters

To assist Owners and Operators of Model AA-1 Yankee Aircraft, the American Aviation Corporation Customer Service Department will publish Service Bulletins and Service Letters as required to inform all concerned of new maintenance information, modifications, improvements and policies pertaining to the operation and support of the Yankee.

A basic format will be followed on all publications issued by the Service Department in that the word SERVICE will be printed in red in the heading.

SERVICE BULLETINS

Will describe mandatory procedures that must be observed for safety reasons. Service Bulletins can be readily identified by the word BULLETIN printed in red on the right margin.

SERVICE LETTERS

Will be issued to explain service policies and describe modifications, processes, new products and other information pertinent to operation, maintenance and repair of the Yankee. Service Letters can be identified by the word LETTER printed in blue on the right margin.

Presently, each Authorized Yankee Dealer will receive one copy each of all Service Bulletins and Service Letters. If additional copies are required or if others within the Dealer organization should receive these publications, please address your request to:

Customer Service Department
American Aviation Corporation
318 Bishop Road
Cleveland, Ohio 44143

Operators engaged in servicing Yankee aircraft should maintain a complete file of these Service publications and make them available to their personnel at all times.

There is no charge for American Aviation Corporation Service Bulletins and Service Letters, and currently active copies are available on request.

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

Service Letter No. 69-1A
Supersedes Service Letter No. 69-1

DATE: July 10, 1969

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Control System Improvements
Including:
1. Bungee Mounting Plate Replacement
2. Rudder Bearing Support Bracket Assembly Replacement

MODELS AFFECTED: Item 1. AA1-0001 through AA1-0125
Item 2. AA1-0001 through AA1-0036

TIME OF COMPLIANCE: At next scheduled inspection or sooner at owner's discretion.

To preclude the possibility of the trim bungee housing binding in the existing bearing, it is recommended that a redesigned bungee bearing be installed on those aircraft listed in Item 1.

To strengthen the lower rudder bearing support bracket assembly, we are making available a redesigned bracket to be installed on those aircraft listed in Item 2.

Bungee Mounting Plate Replacement

1. The following list of parts is required to effect this replacement:
(1) 607013-504 Bungee Mounting Plate Assembly.
(2) AN380-2-4 Cotter Pins.

2. Remove seven (7) screws securing tailcone to fuselage and remove tailcone after disconnecting taillight wire.

3. Mark position of rear collar held to bungee housing by cotter pins and remove pins.

NOTE:—Collar must be reinstalled exactly in the same position as removed after mounting plate change.

4. Loosen and remove two (2) bolts and nuts holding existing bungee mounting plate and slide plate off bungee housing.

5. Install replacement mounting plate assembly (Part No. 607013-504) bolt in position making sure that delrim side of plate faces aft and that friction shim is between mounting plate and support arm.

6. Install bungee collar exactly as removed and install cotter pins (Part No. AN380-2-4) supplied with plate.

NOTE: Revision A to Service Letter 69-1 revises cotter pin part number.

7. Actuate elevators through complete travel and check bungee housing for smooth action through bearing. Adjust plate if necessary.

8. Check shear link assembly (located between bungee housing and elevator down cable) for loose rivets. If loose rivets are found tighten or replace rivets with MS20470A3-5 SOFT rivets.

9. Reinstall tailcone if rudder bearing support is not to be installed at this time.

Rudder Bearing Support Bracket Assembly Replacement

1. The following list of parts is required to effect this replacement:
   (1) 300002-502 Support Bracket Assembly (with 902013-1 bearing installed).
   (2) AN6-7A Bolts.
   (4) AN960-616 Washers.

2. If tailcone is not already removed, remove seven (7) screws securing tailcone to fuselage and remove after first disconnecting taillight wire.

3. Remove the seven (7) screws attaching the right aft fuselage inspection cover and remove cover.

4. Remove bolt and nut attaching rudder bellcrank to rudder torque tube.

5. While holding elevators in full-up position, carefully pull rudder bellcrank down off torque tube and allow it to rest against aft fuselage bulkhead. Remove bearing spacer from rudder torque tube.

6. Remove two (2) bolts attaching existing support bracket assembly and remove support from rudder torque tube.

7. Remove and discard two (2) lower attach bolts and washers from vertical fin.

8. Install new support bracket assembly (Part No. 300002-502) by locating support over holes and install two (2) bolts previously removed from support.

   NOTE: Make sure original shim is reinstalled between aft bulkhead and new rudder bearing support prior to installing bolts.

9. Install the two (2) replacement bolts (Part No. AN6-7A) in the lower vertical fin attach holes.

   NOTE: One replacement washer (Part No. AN960-616) to be located next to bolt head and one next to nut on each bolt.

10. Assemble spacer and rudder bellcrank to rudder torque tube and reinstall bolt, washers, and nut. Torque nut to 50-70 inch pounds.

11. Check for correct operation and freedom of movement of the rudder.

12. Reinstall tailcone and right aft fuselage inspection cover.

All parts listed above will be available from your Authorized American Aviation Corporation Dealer by July 16, 1969. Parts removed from the aircraft are to be scrapped in the field and not returned to the factory.

Since the incorporation of the suggested Control System Improvements is a design improvement rather than a mandatory modification, no labor allowance will be available and no Warranty Claims will be honored for work performed in accordance with the Service Letter 69-1A.

The Service Reply Card (attached) is to be completed and mailed immediately upon completion of either or both of the improvements.

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:vsb

NOTE: Revision A to Service Letter 69-1 revises bolt torque to 50-70 inch pounds.

SERVICE LETTER

Service Letter No. 69-2

DATE: July 11, 1969

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Exhaust System Modification

MODELS AFFECTED: AA1-0001 through AA1-0159

TIME OF COMPLIANCE: At the next scheduled inspection or sooner at owner's discretion.

Starting with aircraft Serial No. AA1-0160 we are installing a new type exhaust tail pipe brace. This new rigid brace is much more effective in absorbing and distributing vibrational stresses than the flexible hanger previously used.

Since some reports have been received from the field regarding vibration induced muffler and tail pipe cracks, it is recommended that the following be accomplished on all aircraft listed above as soon as possible, but no later than the next scheduled inspection.

1. Inspect muffler assembly and muffler shroud for cracks, particularly in the area adjacent to the welds inside the shroud at the transition between the muffler and tail pipe. If cracks are found in the muffler or tail pipe, they should be heli-arc welded. (Muffler material is 321 Stainless Steel). If cracks are found in the muffler shroud they should be stop-drilled or heli-arc welded. (Shroud material is 304 Stainless Steel).

2. Install the new rigid tail pipe brace.

The new brace with related hardware and instructions is available as Service Kit No. SK-106, "Exhaust System Modification" (copy attached). Service Kit No. SK-106 will be available at no charge from your Authorized American Aviation Corporation Dealer by July 30, 1969.

A labor allowance of .5 hours at the Dealer's prevailing shop rate will be credited for the installation of Service Kit No. SK-106 providing the work is performed or authorized by an Authorized American Aviation Corporation Dealer.

Work must be completed and Warranty Claim Form AA-740, submitted to the factory prior to September 30, 1969 for credit allowance.

The Service Reply Card (attached) is to be completed and mailed immediately upon completion of the modification.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:gec

Service Letter No. 69-5

DATE: December 15, 1969

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Elimination of Nose Strut Spring Plunger

MODELS AFFECTED: AA1-0001 through AA1-0224

TIME OF COMPLIANCE: When factory replacement strut or fork is installed or at owner's discretion.

Starting with Aircraft Serial No. AA1-0225, we are eliminating the nose strut spring plunger, Part No. 901041-1. This plunger is no longer available as a spares item. The spring plunger may be removed from aircraft serials prior to AA1-0225, providing Service Kit No. SK-107 is installed. It has been found that this kit will sustain the required friction of the nose gear fork and reduce the tendency towards nose wheel shimmy.

Installation of Service Kit No. SK-107 will be required if a factory replacement nose strut or nose fork is to be installed or if the plunger is damaged or worn on the aircraft. Service Kit No. SK-107 will be available from your authorized American Aviation Corporation Dealer at a cost of $1.30 (H).

Aircraft Serial Nos. AA1-0225 and up have the kit incorporated at the factory and are not affected by this letter.

Prices are subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (3)

GRUMMAN AMERICAN AVIATION CORPORATION
318 BISHOP ROAD, CLEVELAND, OHIO 44143
(216) 449-2200 TELEX NO. 980-245

SERVICE LETTER

SERVICE LETTER NO. 70-1

DATE: March 9, 1970

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Canopy Attach Screw Inspection

MODELS AFFECTED: AA1-0001 through AA1-0302

TIME OF COMPLIANCE: As soon as possible but no later than the next scheduled inspection.

Field reports indicate that on certain aircraft, the two screws that attach the lower forward corners of the canopy to the bow and canopy tracks may not be of sufficient length to engage the locking portion of the nuts inside the tracks. This may result in the screws vibrating out and possible cracks developing in the canopy.

To insure the integrity of the canopy attachment, the two lower forward screws should be checked for proper thread engagement as soon as possible but no later than the next scheduled inspection.

If improper thread engagement is found, the screws should be replaced with longer AN526-1032 screws. Screws should not be so long as to interfere with the canopy operation by contacting the fixed portion of the track assembly. Washers may be added under the heads of the screws as necessary.

NOTE: On Aircraft Serial No. AA1-0001 through AA1-0189, the forward screws are retained by MS20364-1032 nuts which are accessible by bending the canopy stops inboard and sliding the canopy aft past the stops to expose the nuts. Aircraft AA1-0190 and up use Essna 22ND8-02 spine nuts which are staked into the canopy tracks. Access to these nuts should not be required unless they are damaged and must be replaced.

Aircraft Serial No. AA1-0303 and up have AN526-1032R12 screws and AN960-10 washers installed at the factory in this location and are not affected by this Service Letter.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribtuion (B)

SERVICE LETTER

SERVICE LETTER NUMBER 70-2

DATE: March 9, 1970

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Nose Wheel Spacer Replacement

MODELS AFFECTED: AA1-0001 through AA1-0344

TIME OF COMPLIANCE: At next scheduled inspection or sooner at owner's discretion.

New nose wheel spacers are now being used on production aircraft Serial Number AA1-0345 and on. (Reference AA-1 Parts Catalog, Figure II, Index II). These new spacers are slightly larger in outside diameter and improve the sealing of the nose wheel bearings.

This new spacer, Part No. 702053-5, replaces and obsoletes the previous spacer, Part No. 702053-4, and will be used for all future spares requirements.

It is recommended that two (2) each of the new spacer, Part No. 702053-5, be installed on all aircraft listed above at the next scheduled inspection or sooner at the owner's discretion.

These new spacers will be available at no charge from your authorized American Aviation Corporation Dealer by March 31, 1970. Spacers removed from aircraft in the field should be scrapped and not returned to the factory.

An initial supply of spacers will be forwarded immediately to all dealers. Quantity will be determined by approximate number of aircraft in the dealer's territory. Additional quantities, if required, should be requested from the factory.

New spacer for aircraft located in an area <u>not</u> served by an authorized American Aviation Corporation Dealer may be obtained direct from the factory by contacting the Customer Service Department.

Aircraft Serial Number AA1-0345 and up have Part Number 702053-5 spacers installed at the factory and are not affected by this Service Letter.

Since the installation of the replacement nose wheel spacers is a design improvement rather than a mandatory modification, no labor allowance will be available and no warranty claims will be honored for work performed in accordance with the Service Letter No. 70-2.

Prices subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr
Distribution (B)

CORPORATION
316 BISHOP ROAD CLEVELAND OHIO 44143
(216) 449-2200 TELEX NO 980-245

SERVICE LETTER NO. 70-3
Supersedes Service Bulletin No. 104 A

LETTER

DATE: March 8, 1970

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Wheel Fairing Installation

MODELS AFFECTED: All Model AA-1

TIME OF COMPLIANCE: At Owner's Discretion

Main and nose wheel fairings may now be installed on all Model AA-1 aircraft at the owner's discretion. The new wheel fairings are available as an Accessory Kit No. AK-116-1 or -2 (Wheel Fairings) through your authorized American Aviation Corporation Dealer.

Accessory Kit No. AK-116-1 or -2 will include all parts necessary for a complete installation of wheel fairings and complete instructions. Fairings will be supplied primed only, not painted. Paint must be ordered separately. Please allow two weeks for kit preparation at the factory. The following covers applicability of the kits.

ACCESSORY KIT NO.	PRICE	FITS AIRCRAFT SERIAL NUMBER
AK-116-1	$230.00 (E)	AA1-0001 through AA1-0064
AK-116-2	$220.00 (E)	AA1-0065 and up

NOTE: Spring Plunger Elimination Service Kit No. SK-107 must be installed on aircraft AA1-0001 through AA1-0224 in conjunction with the nose wheel fairing to prevent shimmy (Reference Service Letter 69-5). Service Kit No. SK-107 must be ordered separately.

NOTE: Fairings removed from aircraft AA1-0001 through AA1-0022 pre Service Bulletin No. 104A may not be reinstalled but may be exchanged for Accessory Kit No. AK-116-1 at no charge. Exchange fairings must be forwarded to the factory prepaid and the exchange is predicated on receipt at the factory of fairings that have not been damaged in service or shipment.

CAUTION

AIRCRAFT OPERATION WITH WHEEL FAIRINGS INSTALLED IN SNOW, ICE, MUD, OR EXTREME ROUGH FIELD CONDITIONS OR WITH TIRES OUT OF BALANCE IS DETRIMENTAL TO THE LIFE OF THE FAIRINGS AND MUST BE AVOIDED. WE WILL NOT WARRANT ANY FAIRINGS THAT HAVE BEEN SUBJECTED TO ABNORMAL OPERATING CONDITIONS.

Prices subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

DISTRIBUTION (A)

SERVICE LETTER NO. 70-4

DATE: April 30, 1970

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Canopy Improvements

MODELS AFFECTED: All Model AA-1

TIME OF COMPLIANCE: Any time at owner's discretion

Item 1 - Canopy Tracks

Field experience has shown that after extended operation, the canopy on the Yankee may become difficult to open and close. The following suggestions and improvements are listed to help you maintain satisfactory freedom of operation of the canopy.

1. DO NOT use the canopy as a hand hold during entry to and exit from the aircraft as bending of the inner tracks can result.

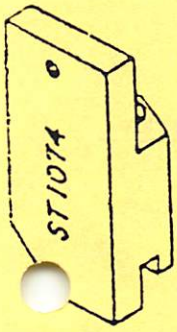
2. The inner canopy tracks must be perfectly straight. If the tracks are bent, they should be straightened or replaced.

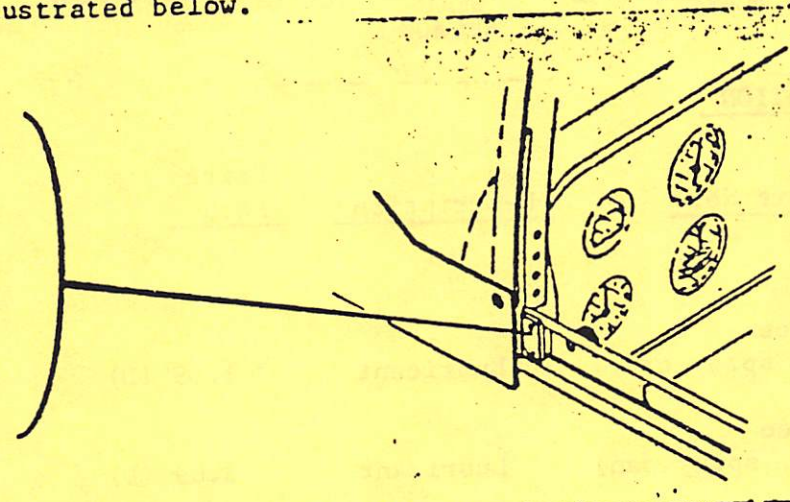
3. The sliding surfaces of the canopy inner tracks and the teflon glide material in the canopy outer tracks must be kept clean and lightly lubricated. Smoother operation may be achieved by cleaning the sliding surfaces with isopropyl alcohol and a small brush and then injecting a small amount of silicone grease or spray lubricant into the sliding surfaces. Production aircraft canopy tracks are now being lubricated with E-Z-Free lubricant which is available in 6 or 16 oz. spray cans from your American Aviation Corporation dealer or from XIM Products, Inc., 1169 Bassett Road, Westlake, Ohio 44145.

4. If external cleaning and lubricating does not satisfactorily eliminate canopy sticking or binding, the canopy plexiglas and bows should be removed from the tracks and the tracks slid completely out of the airplane. All sliding surfaces should then be carefully cleaned with isopropyl alcohol or lacquer thinner and relubricated with a very thin film of lubricant. If the teflon glide material is galled or severely worn, it should be replaced with new material which is available under Part No. 102269-1 (left-hand top), 102269-2 (left-hand and right-hand bottom) and 102269-5 (right-hand top).

5. A Canopy Track Sizing Tool, Part No. ST-1064, is available which may be used to resize the teflon glide material when the tracks are removed for cleaning or when the teflon is replaced in the field. This tool is simply inserted into the outer track in place of the sliding inner track and forced through the entire length of the outer track to force the teflon tightly into the retaining channels.

6. Aircraft delivered from the factory after April 21, 1970 have the teflon glide material secured in the outer tracks with a roll pin, Essna Part No. 52-012-062-0500, inserted at the forward end of each channel. Aircraft delivered prior to April 21, 1970 can be modified in the field to incorporate this improvement. A Canopy Track Drill Jig, Part No. ST-1074, is available which may be used to assist in locating and drilling holes for field installation of the roll pins. Use of Tool No. ST-1074 is illustrated below.



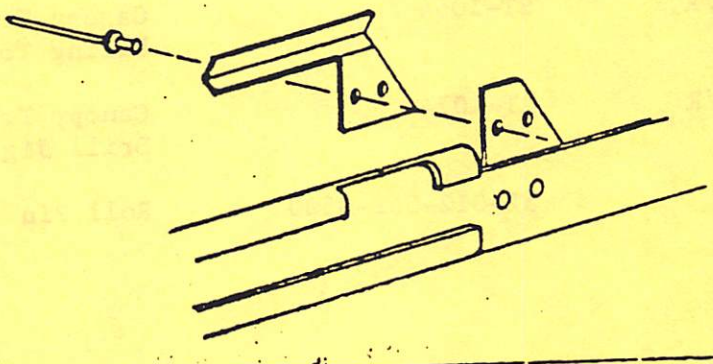


Insert tool into outer track, rotate and slide forward against cowl deck. Drill (2) 1/16" diameter holes. Remove tool. Install roll pins. Repeat operation on opposite track.

Item 2 - Canopy Stops

Production aircraft AA1-0190 and up have extended canopy stops installed to limit the rearward travel of the canopy which results in greater support of the canopy track in the forward canopy bow attach area. Extended stops, Part No. 102371-1 and 102371-2, which are secured in place with Part No. 1601-0410 pop rivets, can be installed on aircraft prior to AA1-0190 as illustrated below.

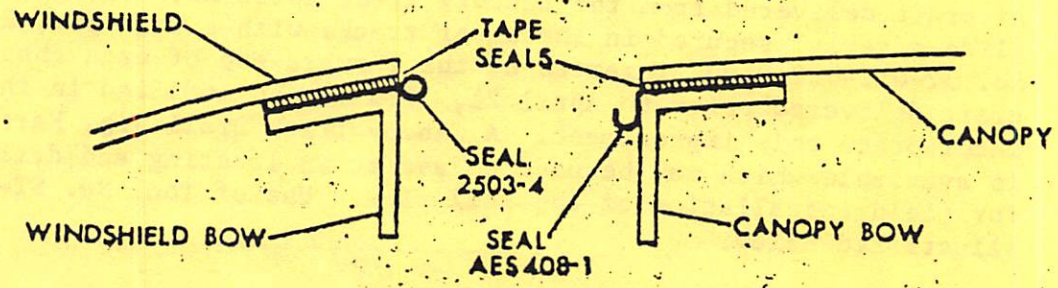
Line up extended stop over existing stop. Drill (2) .136/.139 diameter holes and rivet stop in place. Repeat on opposite track.



NOTE: Installation of Cockpit Vent Accessory Kit No. AK-113 includes installation of extended stops.

Item 3 - Canopy - Windshield Seals

Improved seals at the canopy-windshield junction have been installed on Aircraft AA1-0262 and up and are being supplied for all spares requirements for earlier aircraft. The new windshield seal, Part No. 2503-4, and canopy seal, Part No. AES408-1, are positioned between the plexiglas tape seal and the windshield-canopy bow as illustrated below.



SUMMARY OF PARTS INFORMATION

Number Required Per Aircraft	Part No.	Description	Price Each	Remarks
ITEM 1				
A/R	E-Z-Free (6 oz. spray can)	Lubricant	$ 1.69 (D)	-
A/R	E-Z-Free (16 oz. spray can)	Lubricant	$ 3.69 (D)	-
1	102269-1	Runner (LH Top)	$ 5.72 (E)	-
2	102269-2	Runner (LH & RH Bottom)	$ 6.74 (E)	-
1	102269-5	Runner (RH Top)	$ 5.96 (E)	-
A/R	ST-1064	Canopy Track Sizing Tool	$ 4.17 (B)	-
A/R	ST-1074	Canopy Track Drill Jig	$10.00 (B)	-
4	52-012-062-0500	Roll Pin	$ .04 (E)	-

Number Required Per Aircraft	Part No.	Description	Price Each	Remarks
ITEM 2				
1	102371-1	Canopy Stop (LH)	$ .50 (H)	-
1	102371-2	Canopy Stop (RH)	$ .50 (H)	-
4	1601-0410	Rivet	$1.52 per 100 (E)	Sold in packs of 100 only
ITEM 3				
6 ft.	AES408-1	Seal - Canopy	$ .60/ft. (H)	Replaces 102362-
6 ft.	2503-4	Seal - Windshield	$ .60/ft. (H)	Replaces 102362-

Please obtain all parts required from your authorized American Aviation Corporation Dealer.

Prices subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:vsb

DISTRIBUTION (A)

SERVICE LETTER NO. 70-5

DATE: April 30, 1970

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Landing Gear Inspection

MODELS AFFECTED: All Model AA-1

TIME OF COMPLIANCE: At each scheduled inspection.

In addition to the routine inspection items outlined in the Yankee Service Manual and outstanding Service Bulletins and Service Letters, experience in operating the Yankee has shown that the landing gear struts should be carefully inspected and maintained as outlined below on all Model AA-1 aircraft at each scheduled inspection.

Nose Gear Strut

1. Inspection - Inspect the steel tube nose gear strut for evidence of nicks, rust or damage to the protective paint coating from propeller blast or abrasion.

   NOTE: Nicks more than .030 inches deep or any cracks are cause for immediate rejection of the strut.

2. Corrective Action - Smooth out and blend in minor nicks. Remove all rust and smooth out damaged paint by sanding with No. 150 Tri-Mite. Clean strut with wax and grease remover and prime with two light coats of Zinc Chromate Primer per MIL-P-8585. Paint strut to match aircraft color.

Main Gear Strut

1. Inspection - Inspect the laminated fiberglas main gear struts for evidence of nicks, cracks, delamination and deterioration of the protective paint coating.

   NOTE: Minor surface delaminations are acceptable providing they do not extend more than one ply into the surface of the strut. Corner delaminations (slivers) are acceptable if they are smaller than 1/16 X 1/16 inch in size throughout their length. If airworthiness of a damaged fiberglas strut is in question, close up photographs of the damaged area may be submitted to the Customer Service Department for analysis and recommendations.

2. Corrective Action - Remove delaminated material. Smooth out minor paint chips or stone bruises with No. 150 Tri-Mite. Clean unpainted areas thoroughly with Methyl Ethyl Keytone. Seal minor surface or corner delaminations with 2216/B/A adhesive to seal out moisture from the damaged area. Clean strut with wax and grease remover and prime with two light coats of Zinc Chromate Primer per MIL-P-8585 and paint to match aircraft color.

NOTE: 2216/B/A adhesive is available from the Customer Service Department or 3M Company, St. Paul, Minnesota.

This inspection and corrective action procedure is to be used on all Model AA-1 aircraft and will be incorporated in the next revision of the Yankee Service Manual.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:vsb

Distribution (A)

SERVICE LETTER NO. 70-6

DATE: April 30, 1970

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Wing Tip Stiffener Inspection

MODELS AFFECTED: AA1-0001 through AA1-0440

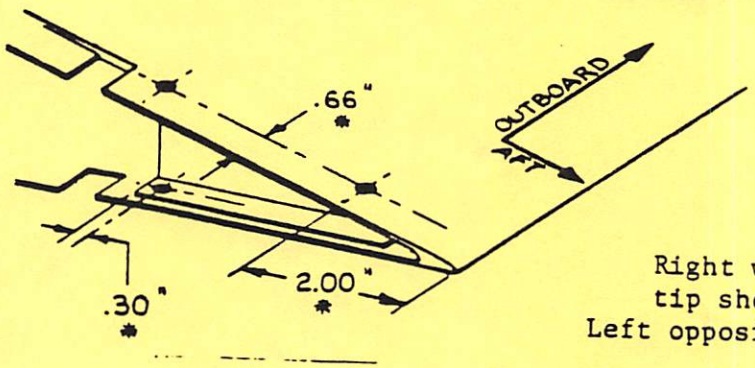
TIME OF COMPLIANCE: At each scheduled inspection unless modified in accordance with Item 2 of this Service Letter.

Field reports indicate that on certain aircraft the aluminum stiffening rib located inside of the aft inboard edge of the wing tip may be subject to delamination from the inside of the wing tip. To insure the integrity of the stiffening rib, it is recommended that the attachment of the stiffening rib to the wing tip be inspected for delamination on Aircraft AA1-0001 through AA1-0440 at each scheduled inspection unless the aircraft has been modified in accordance with Item 2 below.

1. If delamination has taken place, the rib must be resecured to the inner surface of the wing tip with at least two layers of 10 oz. glass cloth and epoxy resin.

2. To eliminate possible future delamination of the stiffening rib to the wing tip joint caused by wing tip flexing, it is recommended that three (3) flush rivets be installed in each wing tip as shown below.

Drill .136/.139 inch diameter hole, countersink 100° X .205 inch diameter. Install Avex "pop" rivet #1604-0412 or equivalent three places each wing tip.



Right wing tip shown - Left opposite

*NOTE: Approximate dimensions only. Use existing holes in stiffening rib as guide for locating holes.

Aircraft Serial No. AA1-0440 and up have rivets installed per Item 2 above at the factory and are not affected by this Service Letter. Certain aircraft below Serial No. AA1-0440 may have rivets installed per Item 2 above in either or both wing tips at the factory. If inspection reveals rivets in this location, no further inspection or modification is required.

Since this inspection and modification is a design improvement rather than a mandatory modification, no labor allowance will be available and no warranty claims will be honored for work performed in accordance with this Service Letter No. 70-6.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:vsb
DISTRIBUTION (B)

SERVICE LETTER NO. 70-7

DATE: September 24, 1970

TO: Owners and Operators of Yankee Aircraft

SUBJECT: Vendor Service Publications

MODELS AFFECTED: All Model AA-1

TIME OF COMPLIANCE: As called out on vendor publications.

Attached for your service information files are copies of vendor service publications covering accessory items listed below. It is recommended that compliance with these publications be made as called out in the individual service bulletin/letter.

ITEM 1 - Slick Magneto Replacement

Lycoming Service Letter No. L173 recommends that Slick magnetos be exchanged at 900 hours of magneto log time.

ITEM 2 - Carburetor Throttle Arm Screw

Lycoming Service Bulletin No. 330 recommends the throttle arm lock screw be retorqued and safe-tied within the next 100 hours.

NOTE: Item 3 & 5 of American Aviation Corporation Service Letter No. 69-4 cover this same subject.

ITEM 3 - Alternator Oil Seal

Prestolite Aircraft Service Bulletin No. ASM-2 covers corrective action for loose slip ring end oil seals in Prestolite Part No. ALE-6406, Lycoming Part No. 78401 Alternators.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (A)

ITEM #1

Service Letter

AVCO LYCOMING DIVISION
WILLIAMSPORT, PA. 17701

Service Letter No. L173
March 13, 1970

TO: Owners and operators of Avco Lycoming models O-235-C2C and O-320-E2D aircraft engines.

SUBJECT: Slick Electro Corporation Service Bulletin No. 2-69.

The subject bulletin, reprinted herewith in its entirety pertains to replacement of the Slick Electro magnetos nos. 76949 (Slick no. 4050) and 76950 (Slick no. 4051) after 900 hours of service. All owners and operators of Avco Lycoming aircraft engines on which these magnetos are installed are urged to comply with this bulletin.

SLICK ELECTRO INC.

Designers and Manufacturers of Magnetos-Ignition Parts and Precision Equipment...

530 BLACKHAWK PARK AVENUE, ROCKFORD, ILLINOIS 61101
PHONE 815 965-7704

2-69 SERVICE BULLETIN ON SLICK MODEL 4000 MAGNETOS

The Slick Unitized 4000 Series Magneto incorporates the latest development in electrical balance and design, and has proven to be a reliable unit.

This Magneto cannot be overhauled in the field. The coil, capacitor, and breaker assembly are non-replaceable.

As a good maintenance practice, and to have the benefit of good ignition at all times, it is recommended that you remove the Magneto at 900 hours of Magneto log time, and replace it with a Slick 4000 Series Exchange Magneto. This is available at your Fixed Base Operator, at the exchange price of $40.00 each with your time expired Magneto.

SLICK ELECTRO INC.

AVCO LYCOMING DIVISION
WILLIAMSPORT, PA. 17701

Service Bulletin

(L)

DATE: July 3, 1970

Service Bulletin No. 330
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Retighten and Lockwire Carburetor Throttle Arm Screw

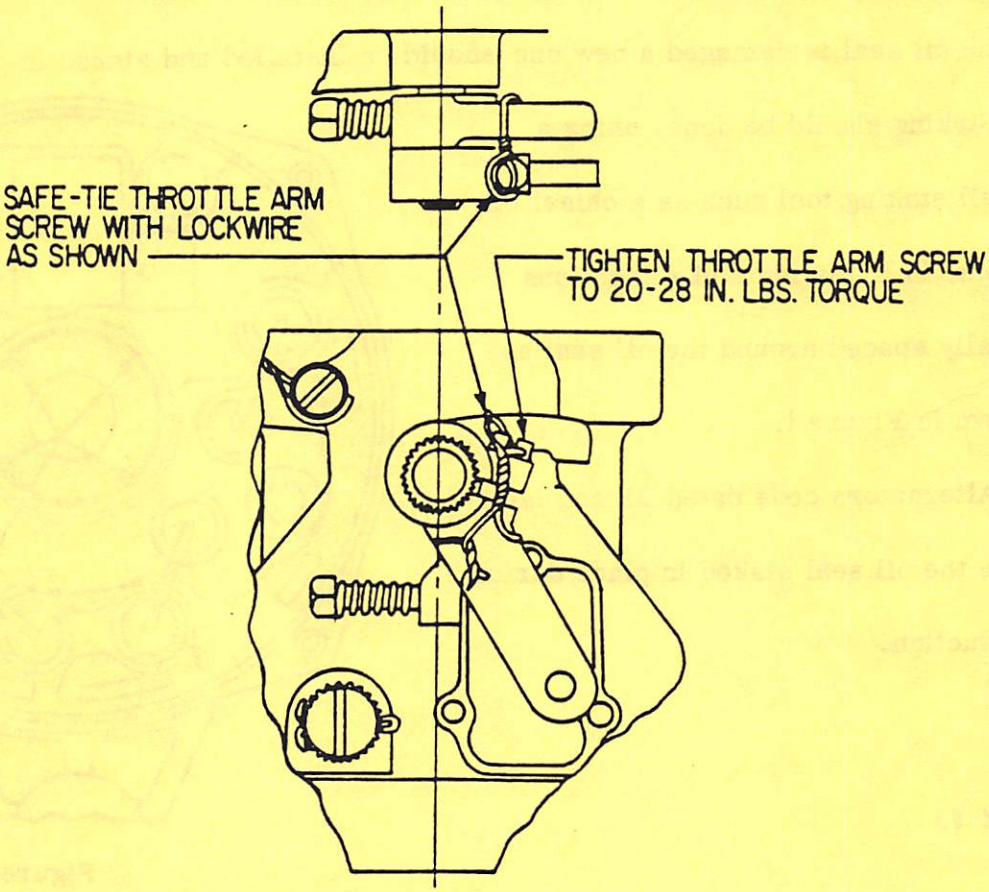
MODELS AFFECTED: All Avco Lycoming opposed series engines with Marvel-Schebler carburetors.

TIME OF COMPLIANCE: Not later than next 100 hour inspection of the aircraft.

A few instances of loosening of the throttle arm on Marvel-Schebler carburetors have been reported to Avco Lycoming. This is a condition caused by improper torque on the screw during assembly of the throttle arm. Because of the serious consequences of a loosened throttle arm, Avco Lycoming has established a torque value of 20 to 28 inch pounds for the No. 10-24 throttle arm tightening screws and recommends that all owners and operators of applicable aircraft check the screw at the earliest opportunity, not later than the next 100 hour inspection. Be sure the torque wrench is correctly calibrated to insure the attaching screw is neither under nor over tightened.

NOTE

Before tightening the screw, remove lock tab. After retightening to 20/28 inch pounds secure the screws with .032 inch diameter lockwire as shown in the illustration. If required. drill 1/16 in. dia. hole thru head of throttle arm screw for lockwire.



ITEM #2

View of Carburetor Throttle Arm Showing Method of Tieing Lockwire

15529 - This number for Avco Lycoming reference only.

ASM-2 8-12-70

Loose Slip Ring End Oil Seal

ALE, ALT, ALU, ALY, ALZ - 6400, 8400 & 9400 Series Alternators

1 1

The alternators listed above incorporate an oil seal in the slip ring end head to prevent bearing lubrication from entering the alternator.

Alternators manufactured prior to July 1969 (code date 7B) had the oil seal pressed into the end head during production.

It has come to our attention that, under certain conditions, the oil seal can vibrate loose and work out of the end head.

When a loose slip ring end oil seal is encountered, the alternator should be disassembled, the oil seal inspected for damage, and, if usable, reinstalled and staked in place. If the oil seal is damaged a new one should be installed and staked in place.

Staking should be done, using a small staking tool such as a chisel or punch, in a minimum of 4 locations equally spaced around the oil seal as shown in Figure 1.

Alternators code dated 7B and later have the oil seal staked in place during production.

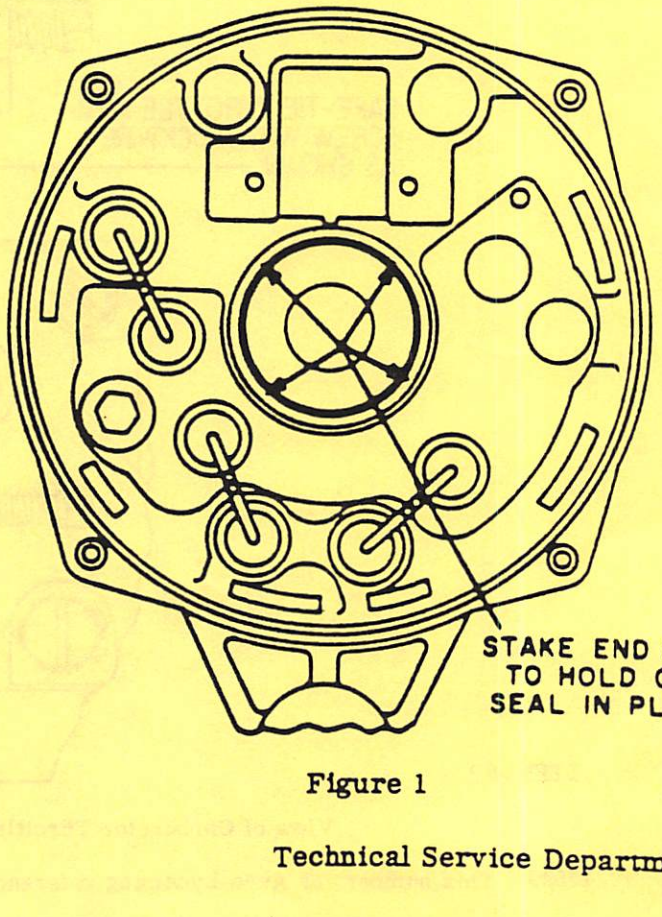


Figure 1

ITEM #3

Technical Service Department

American Aviation Corporation
318 Bishop Road Cleveland, Ohio 44143

SERVICE LETTER

SERVICE LETTER NO. 70-8

DATE: October 14, 1970

SUBJECT: Rudder Bellcrank Modification

MODELS AFFECTED: AA1-0001 thru 0310, 0312 thru 0332, 0334 thru 0346, 0348 thru 0350, 0352 thru 0375, 0377 thru 0378, 0380 thru 0403, 0405, 0407, 0409, & 0411.

TIME OF COMPLIANCE: At next scheduled inspection, or sooner at Owner's discretion.

Field reports indicate that on some aircraft a camming action is taking place between the rudder bellcrank and the bellcrank stop bolts due to the radius on the bellcrank at the stop contact point. It is suggested that the bellcrank be modified to provide a flat contact area between bellcrank and stop bolts at the next scheduled inspection, or sooner at the owner's discretion.

Rudder Bellcrank Modification Procedure.

1. Remove the tail cone assembly.

2. Disconnect rudder cables and remove the rudder bellcrank.

   CAUTION: The rudder control cables are spring loaded. Pull the rudder pedals to the rear and place a 4 to 4-1/2 in. block between each pedal and the firewall. This will loosen cables for clevis bolt removal and prevent them from retracting into the fuselage.

3. Rework the rudder bellcrank as shown on figure 1.

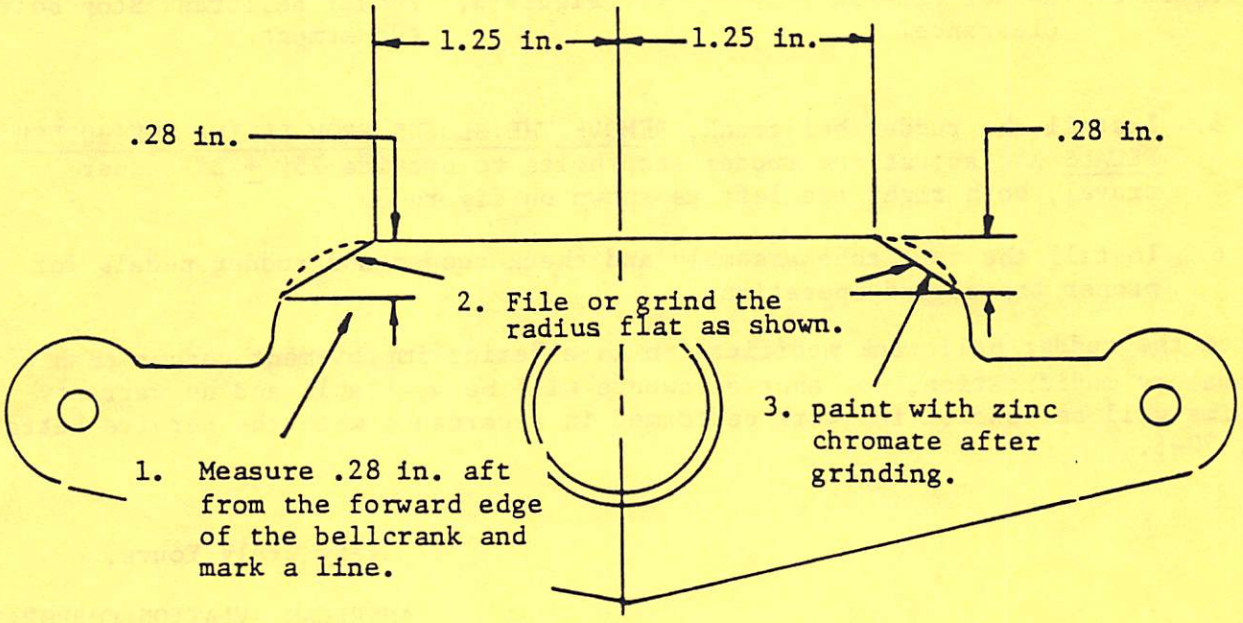


Figure 1. Rudder Bellcrank Modification Procedure.

4. Prior to installation of the rudder bellcrank, check the clearance between the rudder tip and fin. Minimum clearance is 0.10 inch as shown on figure 2. If clearance is less than 0.10 inch, install shims part number 902014-2 as required. Lubricate the rudder bearings, as required, with Aeroshell grease #6 or equivalent per MIL-G-7711.

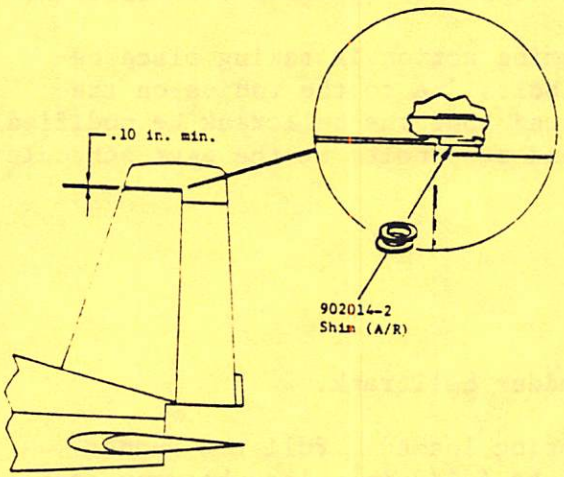


Figure 2. Rudder Tip-Fin Clearance.

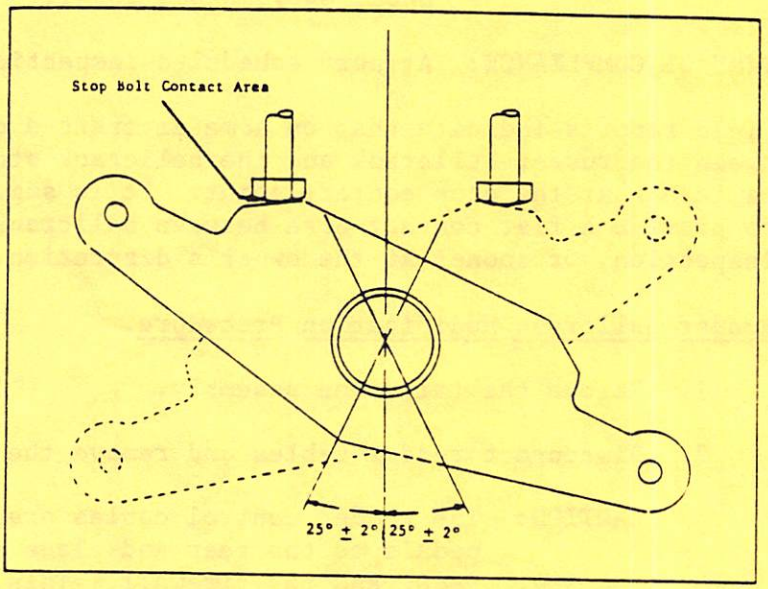


Figure 3. Rudder Bellcrank Stop Bolt Adjustment.

5. Install the rudder bellcrank, REMOVE THE BLOCKS FROM BEHIND THE RUDDER PEDALS and adjust the rudder stop bolts to provide 25° ± 2° rudder travel, both right and left as shown on figure 3.

6. Install the tail cone assembly and check rudder and rudder pedals for proper travel and operation.

Since the rudder bellcrank modification is a design improvement rather than a mandatory modification, no labor allowance will be available and no warranty claims will be honored for work performed in accordance with the Service Letter No. 70-8.

Very Truly Yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert
Customer Service Manager

DISTRIBUTION (B)

318 Bishop Road Cleveland, Ohio 44143

SERVICE LETTER

SERVICE LETTER NO. 70-9

DATE: October 21, 1970

SUBJECT: Magneto Lead Isolation

MODELS AFFECTED: AA1-0001 thru AA1-0445

TIME OF COMPLIANCE: At next scheduled inspection, or sooner at the owner's discretion.

It has been reported that during a routine inspection, the magneto ground lead shielding, which is attached to the magneto housing, was found improperly secured and contacted the magneto stud causing a dead magneto. To prevent the possibility of this happening, we recommend that two nipples, part no. MS25171-1S, be installed at next scheduled inspection, or sooner at the owner's discretion.

Nipples, part no. MS25171-1S, are available at your authorized American Aviation Corporation Dealer at a cost of $0.67 each (E).

Magneto Lead Isolation Procedure (Figure 1)

1. Disconnect the leads from each magneto stud.
2. Slide a nipple (MS25171-1S) over each lead and reconnect leads to magneto studs.

   NOTE: Torque the magneto stud nuts to 10-15 in. lbs. Do not over torque as stud may be pulled from capacitor.
3. Slide the nipple over the magneto studs.
4. The shielding on the magneto lead is pulled back, looped and tied as shown on figure 1. Be sure the loop is pulled back and tied securely Loop must be outside of nipple.
5. Run up engine and check for normal magneto and switch operation.

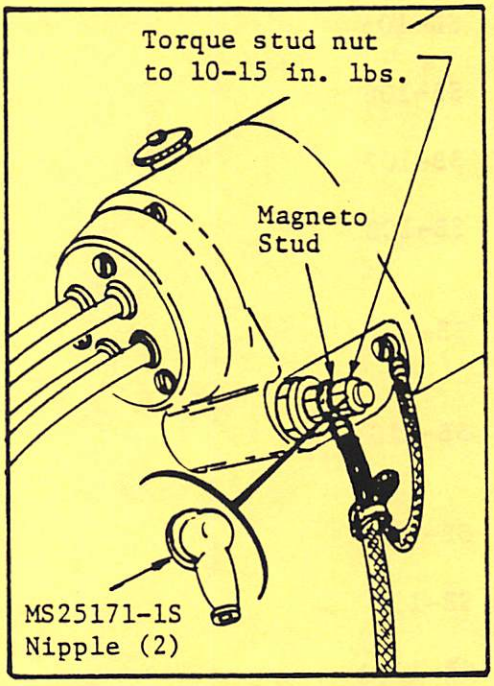


Figure 1. Magneto Lead Isolation

Since the installation of the nipples is a design improvement rather than a mandatory modification, no labor allowance will be available and no warranty claims will be honored for work performed in accordance with this Service Letter No. 70-9.

Prices are subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr
Distribution (B)

SUBJECT: Service Information Summary

Listed below is the current status of Service Bulletins and Service Letters applicable to the American Model AA-1 Yankee. Also, listed are current Service Bulletins and Service Letters that are applicable to the American Model AA-1A Trainer. Copies of current bulletins and letters are available free of charge from the factory on request.

SERVICE BULLETINS APPLICABLE TO MODEL AA-1 YANKEE

Service Bulletin No.	Subject	Status
SB-101	Wheel Fairing Improvements	Obsolete-See SL-70-3
SB-102	Canopy Improvements	Obsolete-See SL-70-4
SB-103	Seat Belt Chafe Protection	Inactive
SB-104	Wheel Fairing Removal	Obsolete-See SB-104A
SB-104A	Wheel Fairing Removal	Obsolete-See SL-70-3
SB-105	Static Line Chafing	Inactive
SB-106	Ground Strap Installation	Inactive
SB-107	Brake System Cleaning	Obsolete-See SB-109
SB-108	Nose Gear Strut Replacement	Obsolete-All A/C complied with
SB-109	Brake System Retrofit	Obsolete-All A/C complied with
SB-110	Nose Gear Improvements	Obsolete-All A/C complied with
SB-111	Throttle Arm Inspection	Obsolete-See SB-112A
SB-112	Throttle Arm Inspection	Obsolete-See SB-112A
SB-112A	Throttle Arm Inspection	Inactive
SB-113	Engine Cooling Improvements	Current
SB-114	Carburetor Drain Plug Inspection	Obsolete-See SB-114A
SB-114A	Carburetor Drain Plug Inspection (AD69-24-3)	Current-Supersedes SB-114
SB-115	Main Gear Bracket Inspection	Current
SB-116	Exhaust System Inspection (AD70-5-5)	Current-Supersedes SL-69-6

Service Bulletin No.	Subject	Status
SB-117	Paint Removers	Current
SB-118	Oil Pressure Line Inspection	Current
SB-119	Spinner/Back Plate Inspection	Current
SB-119 (Supplement No. 1)	Spinner/Back Plate Inspection	Current
SB-120	Throttle Control Inspection	Current
SB-121A	Nose Gear Strut Inspection (AD71-4-3)	Current
Wire Bulletin No. 122	Muffler Weldment Failure	Obsolete-See SL-71-3
SB-123	Carburetor Inspection	Current

SERVICE LETTERS APPLICABLE TO MODEL AA-1 YANKEE

Service Letter No.	Subject	Status
SL-68-1	Availability of Service Letters & Service Bulletins	Current
SL-68-2	Trim Bungee Inspection	Obsolete-See SL-69-1A
SL-69-1	Control System Improvements	Obsolete-See SL-69-1A
SL-69-1A	Control System Improvements (AD70-25-5)	Current-Supersedes SL-68-2 and SL-69-1
SL-69-2	Exhaust System Modification	Current
SL-69-3	Throttle Control	Obsolete-See Service Manua
SL-69-4	Throttle Control Inspection & Rigging	Inactive -See Service Manua
SL-69-5	Spring Plunger Elimination	Current
SL-69-6	Exhaust System Inspection	Obsolete-See SB-116
SL-70-1	Canopy Screw Inspection	Current
SL-70-2	Nose Wheel Spacer Replacement	Current
SL-70-3	Wheel Fairing Installation	Current-Supersedes SB-101 and SB-104A
SL-70-4	Canopy Improvements	Current-Supersedes SB-
SL-70-5	Landing Gear Inspection	Current
SL-70-6	Wing Tip Stiffener Inspection	Current

Service Letter No.	Subject	Status
SL-70-7	Vendor Service Publications	Current
SL-70-8	Rudder Bellcrank Modification	Current
SL-70-9	Magneto Lead Isolation	Current
SL-71-1	Model AA-1A Service Manual Supplement	Current
SL-71-2	Service Information Summary	Current
SL-71-3	Muffler Inspection	Current-Supersedes Wire Bulletin No. 122

SERVICE BULLETINS & SERVICE LETTERS APPLICABLE TO AMERICAN MODEL AA-1A TRAINER

Service Bulletin No.	Subject	Status
SB-117	Paint Removers	Current
Wire Bulletin No. 122	Muffler Inspection	Obsolete-Does not apply-See SL-71-3
SB-123	Carburetor Inspection	Current

Service Letter No.	Subject	Status
SL-68-1	Availability of Service Letters & Service Bulletins	Current
SL-70-4	Canopy Improvements	Current
SL-70-5	Landing Gear Inspection	Current
SL-70-7	Vendor Service Publications	Current
SL71-1	Model AA-1A Service Manual Supplement	Current
SL-71-2	Service Information Summary	Current

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (C)

AVCO LYCOMING DIVISION

WILLIAMSPORT, PENNSYLVANIA 17701

Service Instruction

L

DATE: May 7, 1971

Service Instruction No. 1237A
(Supersedes Service Instruction No. 1237)
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Prestolite Service Bulletins No. ASM-3 and ASM-4. Aircraft Charging System Service Precautions

MODELS AFFECTED: Avco Lycoming powered aircraft employing Prestolite belt driven alternators.

TIME OF COMPLIANCE: At any time alternators are removed or installed.

Prestolite Service Bulletins No. ASM-3 and ASM-4 are reprinted herewith in their entirety. Compliance with them is recommended to all owners of applicable Avco Lycoming powered aircraft.

prestolite

NUMBER ASM-4 ISSUED January 20, 1971

SUBJECT Aircraft Charging System Service Precautions

APPLICATION Aircraft with Belt Driven Prestolite Alternators

PAGE NO. 1 OF 1 PAGES

1. Before removing any unit or wiring for service, make sure master switch is in the off position to prevent accidental shorting or grounding of electrical components.

2. Before removal of any unit and after installation of any unit, a visual inspection of parts involved should be considered an important part of service.

3. POINTS OF VISUAL INSPECTION SHOULD INCLUDE:

   A. All - Safety wire and mounting bolts.
   Safety wires must be locked in position.

   All bolts must be torqued properly. (Loose bolts will allow alternator to shift and vibrate.)
   Over torque may cause alternator mounting lugs and/or mounting brackets to crack or break. Pulley nut over torque may cause fan blade to crack or break.

   B. Make sure all electrical connections are made to the proper terminals and are clean, and connections properly torqued.

   REMEMBER: When an alternator or regulator is installed, the mounting bolts or screws become an electrical connection. They must be clean, and properly torqued.

4. DRIVE BELTS - Inspect condition of belt and adjust tension properly. A loose belt will cause slippage and loss of alternator output. An over tensioned belt may break and also will cause extreme side loading pressure on alternator shaft, bearings and seals, which will contribute to early failure of the unit. When adjusting belt tension, do not pry on alternator fan or pulley.

5. THE ALTERNATOR FAN - It cools the alternator by causing air to flow thru in the proper direction. Inspect the fan condition, check for being bent, or having cracked or broken welds. If any of these conditions are found, replace fan and properly torque pulley nut. Torque the pulley nut to 35 Ft. Lbs. min. to 45 Ft. Lbs. max. Be sure fan is clear of brackets and baffles.

prestolite AIRCRAFT SERVICE BULLETIN

NUMBER ASM-3 ISSUED 3-1-71

SUBJECT Unbalanced Output Readings

APPLICATION Dual Alternator Installations Using One Regulator for Control

Inquiries have been received from aircraft owners concerning unbalanced output between alternators.

Most people are interpreting unbalanced output as an indication of a faulty alternator, yet when the alternator is removed for testing, it checks to the proper specifications.

There are several reasons why this type of application may show unbalanced output between the alternators. These reasons include voltage drops in the charging system wiring, voltage drops in the ground circuit connections, and manufacturing tolerances in the alternators.

Any variation in the overall resistance characteristics between the two charging circuits will cause unbalanced output readings.

The reason for this is that the voltage regulator can control only the amount of field current required for sufficient current output from the two charging circuits. The regulator cannot control the amount of field current going into each alternator.

If, for example, the load requirement is 60 amperes from the two charging systems, the voltage regulator will allow enough current to flow thru the field circuits to meet that requirement. However, the charging circuit with the lesser amount of overall resistance will use more of that current and therefore produce more output than the other charging circuit. One alternator may be producing 33 amperes while the other alternator is producing only 27 amperes, yet they are still producing the required 60 amperes.

Alternator charging systems, unlike generator systems that had to have balanced output to prevent component damage, Do Not require balanced output.

Prestolite Technical Service
Toledo, Ohio 43601

Service Instruction

AVCO LYCOMING DIVISION
WILLIAMSPORT, PA. 17701

(L)

DATE: April 23, 1971

Service Instruction No. 1070C
(Supersedes Service Instruction No. 1070B)
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Specified Fuels

MODELS AFFECTED: All Avco Lycoming opposed series aircraft engines.

TIME OF COMPLIANCE: When refueling aircraft.

The importance of using the fuel specified for each model Avco Lycoming engine has been previously stressed in Avco Lycoming Service Letters and Service Bulletins. Again we wish to stress the point that if the specified fuel is not available, the next higher octane fuel must be used. The ability of today's aircraft to cover wide areas in a relatively short period of time sometimes creates a problem of fuel supply due to geographic locations.

The purpose of this instruction, therefore, is to provide a chart of alternate fuels that can be safely used when the specified fuel is not available. Additional precautions are noted for certain model engines that are limited in their operation on fuels of higher octane than that which is specified for the engine. It is recommended that these notes be strictly adhered to in order to obtain the best service from your Avco Lycoming engine. The chart in no instance permits fuels of lower octane rating than that which is specified, and it is not permissible in any instance to use an automotive fuel in aircraft engines, regardless of its octane or advertised features. Any fuel used in Avco Lycoming engines must conform with specification MIL-G-5572.

The difference in the properties and composition of automotive gasoline and aviation gasoline make automotive fuels unsafe for use in aircraft. The main differences between automotive and aircraft fuels are as follows:

1. Automotive fuels have a wider distillation range than aircraft fuels and this promotes poor distribution of the high anti-knock components of the fuel. Further, the octane ratings of automotive and aircraft fuels are not comparable due to the different methods used to rate the two types of fuels. This would result in an appreciable difference in actual knock rating for two fuels which have the same octane number. This difference could lead to destructive preignition or detonation.

2. Automotive fuels are more volatile and have higher vapor pressure which can lead to vapor lock. Also the greater volatility increases the fire hazard.

3. Tetraethyl lead in automotive fuels contains an excess of chlorine and bromine whereas aviation fuels contain only the chemically correct amount of bromine. The chlorine is very corrosive and under severe conditions can lead to exhaust valve failures.

4. Automotive fuels are less stable and can form gum deposits. Gum deposits can result in valve sticking and poor distribution.

5. Automotive fuels have solvent characteristics not suitable for aircraft engines. Seals, gaskets and flexible fuel lines are susceptible to attack.

COLOR CODE - FUEL OCTANE RATING

OCTANE RATING	FUEL COLOR
80/87	Red
91/96	Blue
100/130	Green
115/145	Purple

NOTE: Revision "C" adds new models, revises fuel chart and footnotes; adds 100/130 grade with 2 c.c. TEL max. for continuous service.

FUEL CHART FOR AVCO LYCOMING ENGINES			
SERIES	SPECIFIED FUEL*	ALTERNATE FUELS FOR CONTINUOUS OPERATION	
O-235-C, -E, O-290-D	80	**80/87	
O-235-F	100/130	115/145	
O-290-D2	80/87	**80/87	
O-320-A, -C, -E	80/87	***91/96 thru 115/145	
O-320-B, -D	91/96	100/130 or 115/145	
IO-320-A, -E	80/87	91/96 thru 115/145	
IO-320-B, -D	91/96	100/130 or 115/145	
IO-320-C	100/130	115/145	
AIO-320	91/96	100/130 or 115/145	
LIO-320-B	91/96	100/130 or 115/145	
LIO-320-C	100/130	115/145	
O-340-A	91/96	100/130 or 115/145	
O-340-B	80/87	91/96 thru 115/145	
O-360-A, -C	91/96	100/130 or 115/145	
O-360-B, -D	80/87	91/96 thru 115/145	
HO-360	91/96	100/130 or 115/145	
IO-360-A, -C, -D, -F	100/130	115/145	
IO-360-B, -E	91/96	100/130 or 115/145	
AIO-360	100/130	115/145	
HIO-360-A, -C, -D	100/130	115/145	
HIO-360-B	91/96	100/130 or 115/145	GRADE 100/130 AVGAS
TIO-360	100/130	115/145	
VO-360	91/96	100/130 or 115/145	(w/2 c. c. TEL MAX.)
IVO-360	91/96	100/130 or 115/145	
O-435-A	80/87	80/87	Aviation grade 100/130 fuels in which the lead content is limited to 2 c. c. per gal. are approved for continuous use in all Avco Lycoming engines listed herein.
O-435-K1 (O-435-4), -A2	91/96	**100/130 or 115/145	
GO-435	80/87	***91/96 thru 115/145	
VO-435-A	80/87	***91/96 thru 115/145	
VO-435-B	100/130	115/145	
TVO-435	100/130	115/145	
GO-480-B, -D, -F	80/87	***91/96 thru 115/145	
GO-480-C, -G and IGO-480	100/130	115/145	
GSO-480	100/130	115/145	
IGSO-480	100/130	115/145	
O-540-A, -D, -E, -F, -G, -H	91/96	100/130 or 115/145	
O-540-B	80/87	91/96 thru 115/145	
IO-540-A, -B, -E, -G, -J, -K, -L, -M, -P, -R	100/130	115/145	
IO-540-C, -D, -N	91/96	100/130 or 115/145	
TIO-540	100/130	115/145	
VO-540-A, -B	80/87	91/96 thru 115/145	
VO-540-C and IVO-540-A	100/130	115/145	
TVO-540	100/130	115/145	
IGO-540-A, -B	100/130	115/145	
IGSO-540-A, -B	100/130	115/145	
TIVO-540	100/130	115/145	
TIO-541	100/130	115/145	
TIGO-541	100/130	115/145	
IO-720	100/130	115/145	

* - Engines specified for use with 91/96 grade fuel may also be considered to be specified for 100/130 grade. See Service Letter No. L169 for explanation.

** - O-235-C, O-290-D, -D2 and O-435-A2, -K1 (O-435-4) engines are built with solid stem exhaust valves. The use of higher leaded fuel such as 91/96 thru 115/145 must be limited to 25% of the operating time. If used for longer periods of time the same 150 hour inspection requirement, described in the following note is applicable.

*** - Early production O-320-A, -C, -E; GO-435, VO-435-A; and GO-480-B, -D, -F were built with solid stem exhaust valves and their use with higher leaded fuels is limited to 25% of operating time. If specified fuel is not available and usage with high leaded fuel exceeds 25% the valve stems should be inspected at 150 hour intervals for erosion, or "necking". This inspection is accomplished by removing the exhaust manifold and visually inspecting the valves through the exhaust ports. To determine if an engine has solid stem exhaust valves, remove the rocker cover and look for valve rotor caps which are used with sodium cooled valves but not with solid stem valves.

318 Bishop Road Cleveland, Ohio 44143

SERVICE LETTER

SERVICE LETTER NO. 71-3
Supersedes Wire Bulletin No. 122

DATE: March 17, 1971

SUBJECT: Muffler Inspection

SERIALS AFFECTED: AA1-0123, AA1-0140, AA1-0201, AA1-0291, AA1-0348, AA1-0420 through AA1-0447 and all aircraft AA1-0001 and up that have been modified by the installation of part no. 099001-137 muffler sub assembly or 099001-017 muffler assembly shipped from the factory prior to October 23, 1970.

TIME OF COMPLIANCE: Prior to, but no later than 30 hours of operation and thereafter at each 50 hour interval unless muffler has been modified or exchanged in accordance with item (3.) or (4.) below.

Wire Bulletin No. 122 (Muffler and Tail Pipe Weldment Failure) was issued as a result of two (2) premature failures of the muffler-tail pipe welded joint on aircraft within the above serial range. The mufflers on which failures occurred were fabricated with a .040" thick outer muffler core. Inspection of the failed units has revealed improper welding technique and mismatch between the tail pipe and muffler prior to welding. No further failure reports have been received.

Wire Bulletin No. 122 recommended that C.O. warning indicators be installed on all aircraft with the "straight down" tail pipe installation, and that C.O. indicators would be forwarded from the factory, as soon as available.

We are ammending the requirements of Wire Bulletin No. 122 to recommend that C.O. indicators be installed in only the aircraft serials listed above, since they are the most suspect in the possibility of cracking in service. C.O. indicators for the above aircraft will be mailed from the factory at no charge, by March 29, 1971.

In addition to the use of C.O. indicators in the above listed aircraft, it is recommended that the muffler be inspected for cracks as outlined in (1.) below, prior to, but no later than 30 hours of operation and thereafter at each 50 interval, unless modification per item (3.) or exchange per item (4.) below has been accomplished.

1. Inspect muffler assembly for cracks in the areas adjacent to the weld inside the shroud at the joint between the muffler and tail pipe. If thorough visual inspection is not possible, pressure test for leaks in accordance with AC43.13-1, Chapter 14, Section 3, paragraph 387 B.

2. If cracks are found in the muffler or tail pipe, repairs must be accomplished in accordance with AC43.13-1, Chapter 14, Section 3, paragraph 388.

3. At the owners discretion, cracked mufflers removed from the above serial no. aircraft, within the 150 hour warranty period, may be returned to the Elano Corporation, 24555 Dayton - Xenia Road, Xenia, Ohio, shipping charges prepaid, for repair. Repairs will be made by the Elano Corp. at no charge to the owner. In addition, the Elano Corp. will add external reinforcing patches to the muffler-tail pipe joint at no charge. Reinforcement patches will not be available from the Elano Corp. for field installation on mufflers that are repaired in the field.

4. At the owners discretion, any muffler cracked or not cracked removed from the above serial no. aircraft with less than 30 hours total time in service, can be exchanged at no charge to the owner. Exchange must be accomplished in accordance with our normal procedures of ordering replacement muffler assemblies (part no. 099001-017) and returning the defective parts with Warranty Claim Form No. AA-740. Mufflers supplied from the factory for this exchange, will be of current production design and will not require 50 hour inspections.

5. Complete attached Service Reply Card, showing aircraft hours and repair required and mail card.

A labor allowance of 1.0 hours at the Dealer's Prevailing Shop Rate will be credited for performance of the initial inspection only, providing the work is performed or authorized by an authorized American Aviation Corporation Dealer or representative. Work must be completed and Warranty Claim Form No. AA-740 submitted to the factory prior to July 16, 1971 for credit allowance.

Mufflers installed on aircraft serial no. AA1-0448 and up and AA1A-0001 and up and mufflers supplied after October 23, 1970, are fabricated with an outer core of .050" thick material and are not affected by this Service Letter No. 71-3.

Prices are subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Enclosure: Service Reply Card

Distribution (B)

Gulfstream American
Gulfstream American Corporation
P.O. Box 2206 Savannah, Georgia 31402

SERVICE

SERVICE LETTER NO. 71-4

DATE: June 4, 1971

SUBJECTS:
Item 1. Seat Track Improvements
Item 2. Canopy Track Improvements
Item 3. Windshield/Canopy Hardware Improvements
Item 4. Exhaust Joint Sealing
Item 5. Nose Gear Inspection and Precautions
Item 6. Nose Gear Strut Sealing
Item 7. Static System Improvements
Item 8. Air Vent Improvements
Item 9. Fuel Selector Valve Lubrication
Item 10. Lycoming Service Instructions 1070C and 1237

SERIALS AFFECTED: As indicated on each subject.

Item 1. Seat Track Improvements (AA1-0001 thru AA1-0457, AA1A-0001 thru AA1A-0125)

Reports from the field indicate that, in some instances, seat track binding has occurred on aircraft subjected to excessive aft loads on the seat backs. Binding is caused by twisting and eventual bending of the outer track which allows the seat track bearings to drop out.

Improved seat track assemblies have been developed which incorporate retainers (3 per seat), riveted to the ends of the inner track and enclosing the outer track. The retainers prevent the outer track from springing and twisting when excessive aft loads are exerted against the seat back (see figure 1).

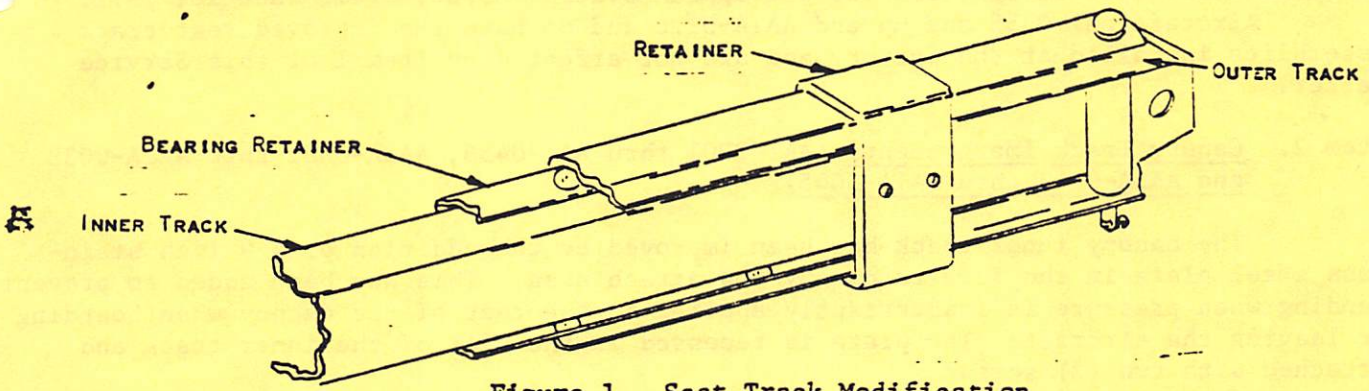
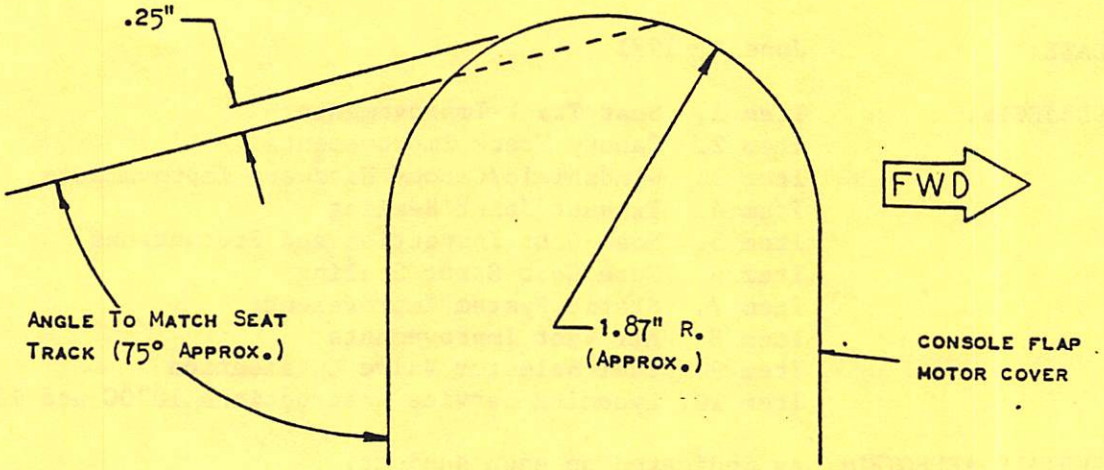


Figure 1. Seat Track Modification

NOTE

When installing 102323-505 inboard track assembly on aircraft serials AA1-0001 thru AA1-0457 and AA1A-0001 thru AA1A-0125, a slight interference will be noted between the forward retainer on the co-pilot inboard seat track and the flap motor cover area of the console. Modify the console interference area using a hot iron (225°F), as shown below. (Place a piece of cloth between iron and console to prevent sticking).



The improved seat track assemblies, part nos. 102323-503 L.H. outboard, 102323-504 R.H. outboard, and 102323-505 inboard, can be ordered through your American Aviation Corp. dealer at a cost of:

Part No.	Price Each
102323-503	$ 27.63 (H)
102323-504	27.63 (H)
102323-505	31.25 (H)

These improved seat track assemblies replace and obsolete the previous track assemblies and will be supplied for all spares orders shipped after June 18, 1971.

Aircraft AA1-0458 and up and AA1A-0126 and up have the improved seat track assemblies installed at the factory and are not affected by item 1 of this Service Letter.

Item 2. Canopy Track Improvements (AA1-0001 thru AA1-0456, AA1A-0001 thru AA1A-0038 and AA1A-0043 thru AA1A-0045)

The canopy inner track has been improved by the addition of a 9 inch stainless steel plate in the forward canopy bow attach area. This has been added to prevent bending when pressure is inadvertantly applied to the rear of the canopy when boarding or leaving the aircraft. The plate is recessed in the slot of the inner track and attached with two (2) screws.

The improved track assembly, part no. 102276-901, two (2) required per aircraft, can be obtained from your authorized American Aviation Corp. dealer at a cost of $23.05(H) each. Each assembly contains all necessary parts for installation.

All orders for track assemblies shipped after March 5, 1971, have been filled with the improved assembly.

Aircraft serials AA1-0457 and up, AA1A-0039 thru AA1A-0042 and AA1A-0046 and up have the improved inner track assembly installed at the factory and are not affected by item 2 of this Service Letter.

Item 3. Windshield/Canopy Hardware Improvements (AA1-0254, AA1-0264, AA1-0312, AA1-0316, AA1-0337, AA1-0340 thru AA1-0351, AA1-0361, AA1-0369, AA1-0371, AA1-0377, AA1-0378, AA1-0382, AA1-0401, AA1-0404 thru AA1-0410, AA1-0412, AA1-0420, AA1-0422 thru AA1-0424, AA1-0426, AA1-0427 and AA1-0429)

Improvements in the windshield/canopy hardware have been made which provide better sealing of the canopy to the windshield by preventing movement of the bows when latching the canopy. The improved hardware consists of four (4) spacers, part no. 10149-1 which are installed in the two top holes of the windshield and the two top holes of the canopy only (see figure 2).

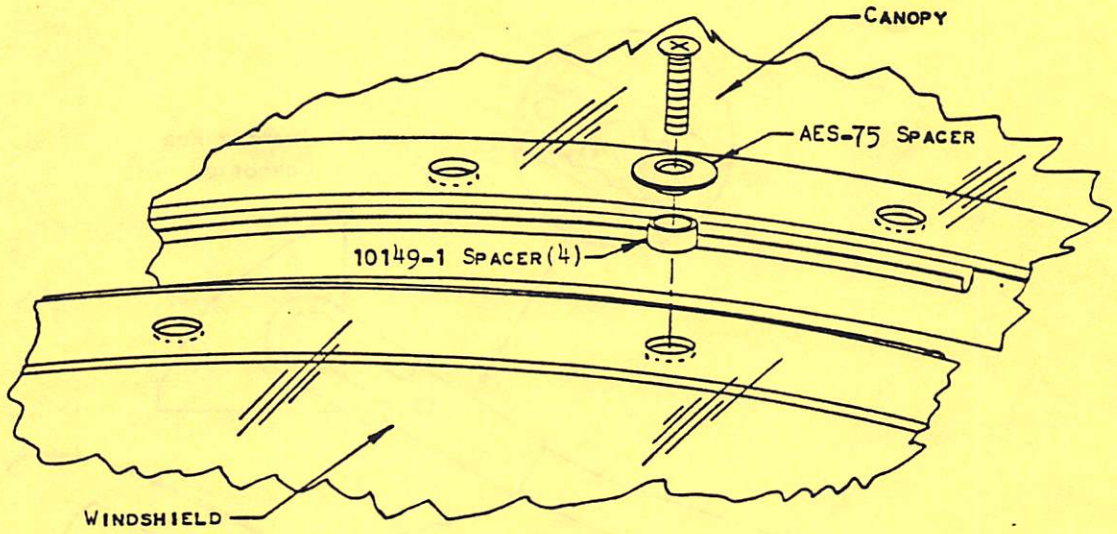


Figure 2. Canopy & Windshield Hardware Improvement

Spacers, part no. 10149-1 can be ordered (no charge), from your American Aviation Corp. dealer, four (4) required per aircraft. Aircraft not shown on the above serial no. list, do not require the installation of the spacers.

Item 4. Exhaust Joint Sealing (All AA-1 and AA-1A)

At each inspection, check for visible exhaust stains at exhaust riser pipe/muffler pipe clamps. If leaks are indicated, remove clamps and inspect riser/muffler pipe joints (muffler assembly). If looseness is noted between the riser pipes and muffler pipes, swage out the lower ends of the riser pipes to provide close fit or apply "Walker Acousti-Seal 5160" or equivalent, at the riser and muffler pipe connections and under the clamps.

Item 5. Nose Gear Inspection and Precautions (All AA-1 and AA-1A) (Figure 3)

At each 100 hour inspection, it is recommended that the following be accomplished, unless otherwise noted:

a. Loosen nose gear boot and inspect strut for evidence of overload damage in the area shown:

b. Check strut for looseness in torque tube yoke. If loose, replace bolts (NAS464P6A28). If new bolts do not eliminate looseness, ream to next larger size NAS bolt (NAS464P7 maximum).

c. Check drain hole at lower end of strut to insure it is open. One method is by running a .125" drill bit through the hole to clean out any foreign material that may inhibit draining.

d. Remove strut at each annual inspection and inspect for corrosion in the strut to torque tube yoke joint. Reseal per item 6.

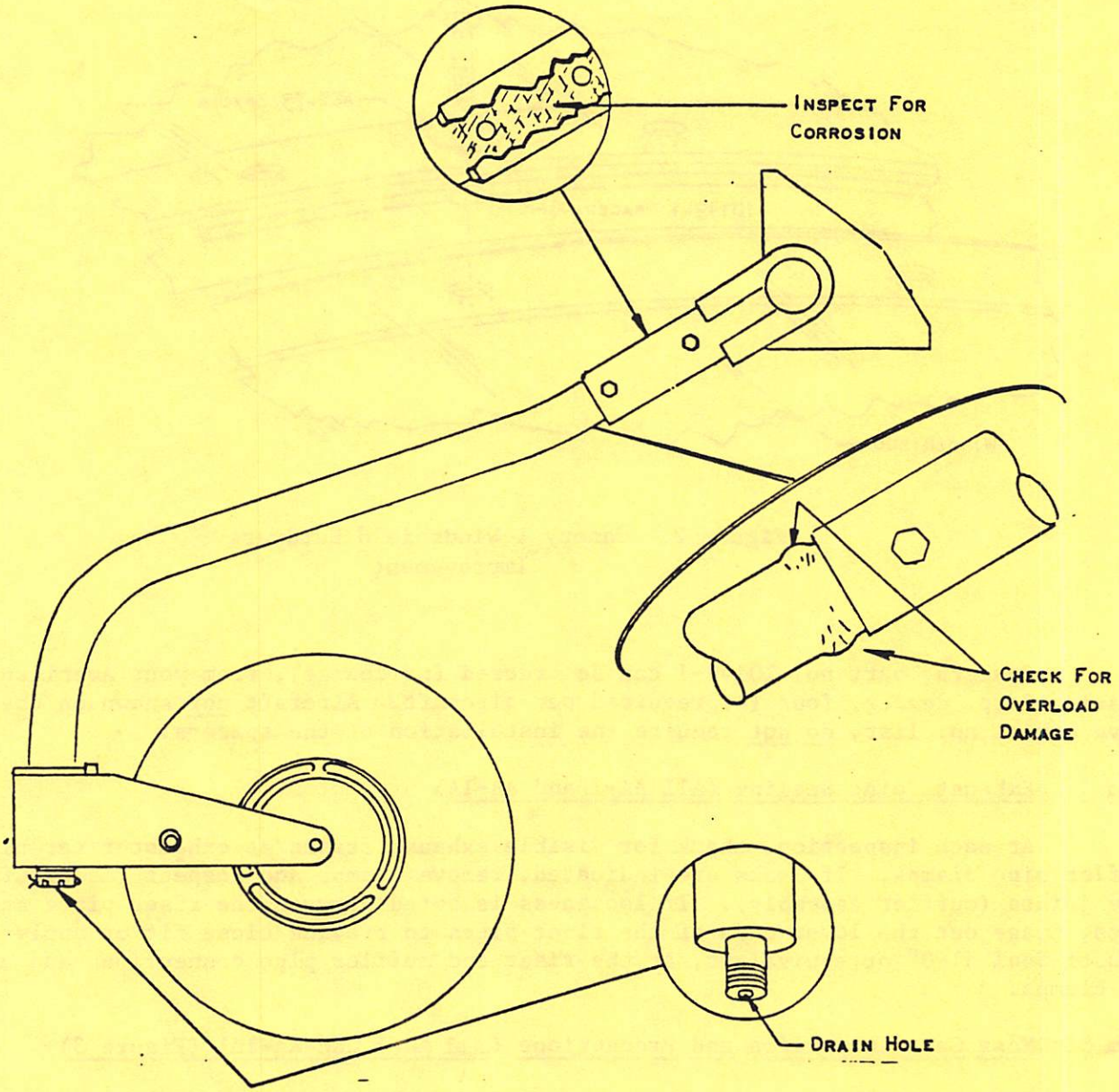
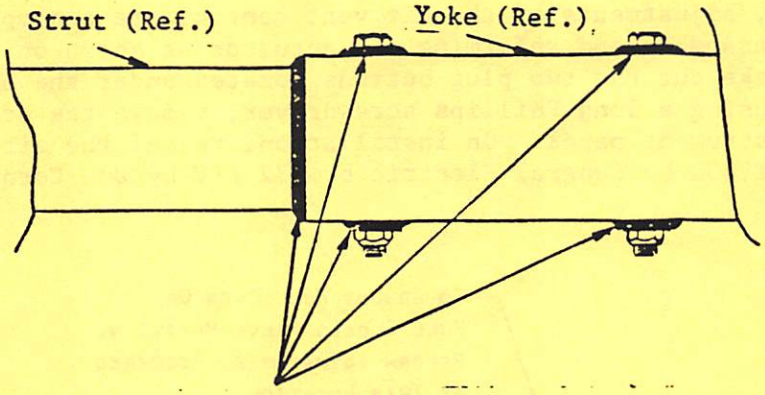


Figure 3. Nose Gear Inspection

Item 6. Nose Gear Strut Sealing (AA1-0001 thru AA1-0456, AA1A-0001 thru AA1A-0067)

At next inspection and any time strut is removed, it is recommended that the nose gear strut be sealed at the strut/torque tube yoke joint to prevent water from entering the strut from inside the cabin. Clean the area thoroughly and apply sealant* to the joint and around bolt heads as shown on figure 4.

* Approved Sealants:
RTV102 by General Electric
732RTV by Dow Corning



Apply sealant (RTV 102 by General Electric or 732 RTV by Dow-Corning) on bolts and strut to torque tube connection. At next inspection and any time strut is removed.

Figure 4. Nose Gear Strut Sealing

Item 7. Static System Improvements (AA1-0001 thru AA1-0326)

Production aircraft, AA1-0327 and up, and AA1A-0001 and up, have a redesigned static system. The static lines in the turtle back area have been rerouted and a moisture trap, located behind the left baggage compartment side panel, has been added between the static ports and the instrument panel. This design change minimizes the accumulation of moisture in the instruments vented to the static system.

If fluctuations in instruments are evident or if moisture is noted inside the cover glass of the airspeed indicator or if it is desirable to modify early aircraft to present production configuration, the necessary parts can be obtained from your authorized American Aviation Corp. dealer to update the system on aircraft serials AA1-0001 thru AA1-0326. Installation of the improved system is recommended for aircraft operated in high humidity areas. (Allow thirty (30) days for preparation of kit).

Item 8. Air Vent Control Shaft Improvement (AA1A-0001 thru AA1A-0057, AA1A-0059 thru AA1A-0063. Air Vent Adjustments (AA1A-0001 and up)

To provide more control rod travel toward the closed position, a spacer, part no. 10165-1, has been added on current production aircraft, between the shaft shoulder and the control knob. This provides 1/4 inch more rod travel and assures the valve fully closing when properly adjusted. Spacer, part no. 10165-1 can be ordered (no charge), from your authorized American Aviation Corporation dealer.

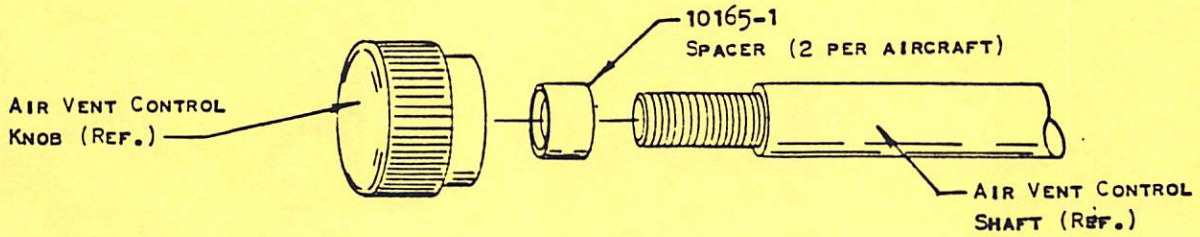


Figure 5. Air Vent Control Shaft Spacer

If required, adjustments of the air vent control are accomplished by removing the air vent assembly and reforming the actuator as shown on figure 6. To remove the airbox, take out the two plug buttons located under the box, (figure 6) near the front, and using a long Phillips screwdriver, remove the screws attaching the airbox to the instrument panel. On installation, reseal the airbox to the fuselage with sealant (RTV102 by General Electric or 732 RTV by Dow Corning).

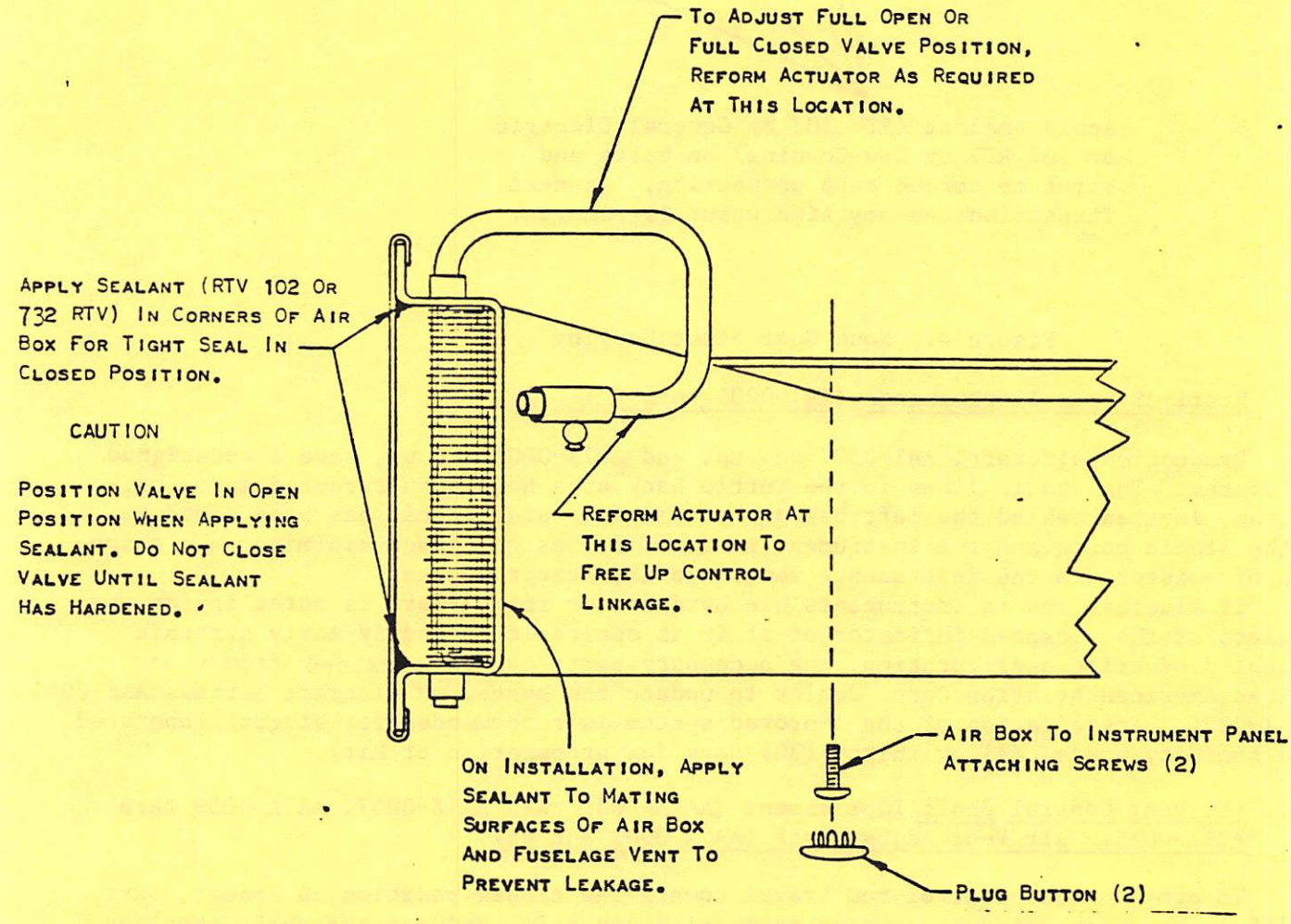


Figure 6. Air Vent Sealing and Adjustments

Item 9. Fuel Selector Valve Lubrication (AA1-0001 and up, AA1A-0001 and up)

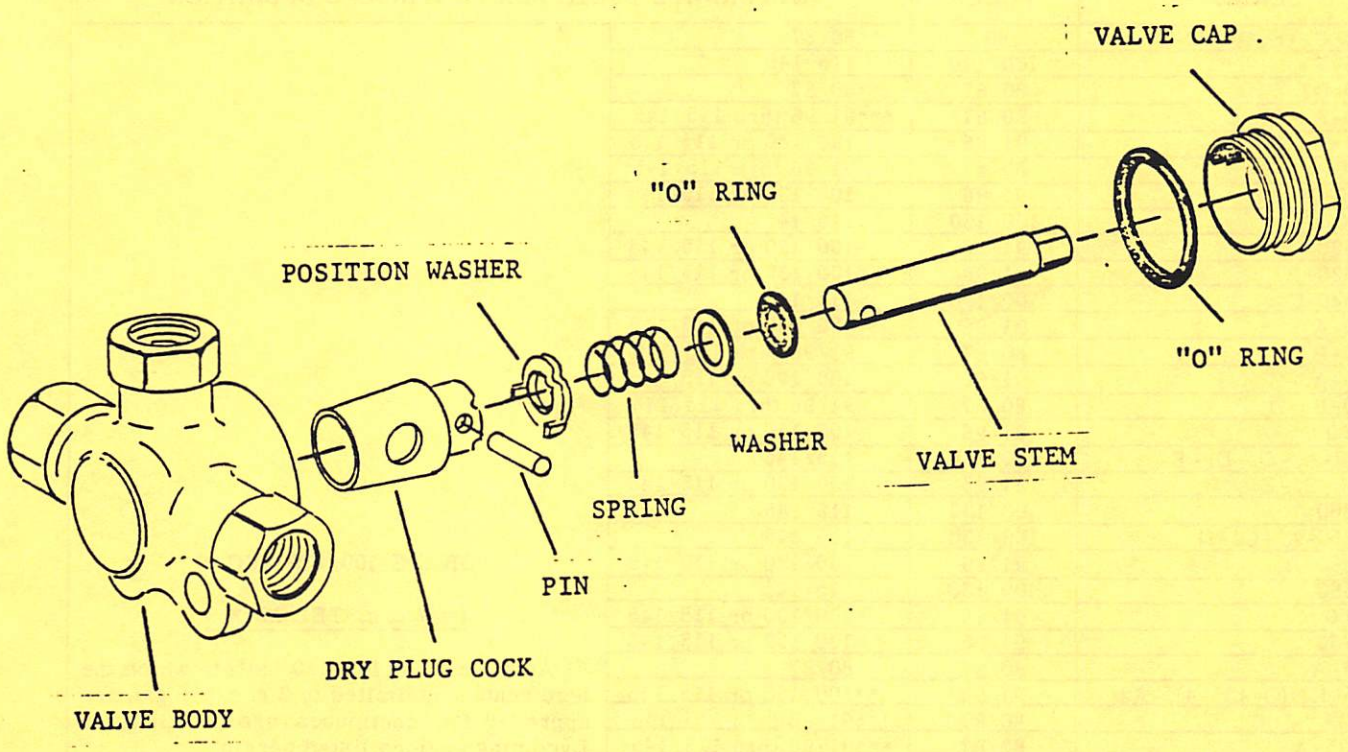


Figure 7. Fuel Selector Valve, exploded view

It is recommended that the fuel selector valve be disassembled, cleaned and lubricated each 500 hours of operation or sooner if the valve becomes difficult to operate.

The clean, dry valve plug cock should be lubricated with a very light film of plug cock lubricant conforming to MIL-G-6032*. The plug should be inserted and turned several times and all surplus lubricant removed from the valve ports prior to reassembly. It is not necessary to drain the fuel system when servicing the fuel selector valve, however, a small container should be placed under the valve to collect residual fuel. See figure 7 for identification of fuel selector valve parts.

* Approved plug cock lubricant MIL-G-6032
E Z Turn by the United Erie, Inc., 1429 Walnut Street, Erie, Pa. 16512

Item 10. Lycoming Service Instructions 1070C and 1237

Included for your information are copies of Lycoming Service Instruction No. 1070C, Specified Fuels, and Lycoming Service Instruction No. 1237, Prestolite Service Bulletin No. ASM-4, Aircraft Charging System Service Precautions.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (B)

FUEL CHART FOR AVCO LYCOMING ENGINES			
SERIES	SPECIFIED FUEL*	ALTERNATE FUELS FOR CONTINUOUS OPERATION	
O-235-C, -E, O-290-D	80	**80/87	
O-235-F	100/130	115/145	
O-290-D2	80/87	**80/87	
O-320-A, -C, -E	80/87	***91/96 thru 115/145	
O-320-B, -D	91/96	100/130 or 115/145	
IO-320-A, -E	80/87	91/96 thru 115/145	
IO-320-B, -D	91/96	100/130 or 115/145	
IO-320-C	100/130	115/145	
AIO-320	91/96	100/130 or 115/145	
LIO-320-B	91/96	100/130 or 115/145	
LIO-320-C	100/130	115/145	
O-340-A	91/96	100/130 or 115/145	
O-340-B	80/87	91/96 thru 115/145	
O-360-A, -C	91/96	100/130 or 115/145	
O-360-B, -D	80/87	91/96 thru 115/145	
HO-360	91/96	100/130 or 115/145	
IO-360-A, -C, -D, -F	100/130	115/145	
IO-360-B, -E	91/96	100/130 or 115/145	
AIO-360	100/130	115/145	
HIO-360-A, -C, -D	100/130	115/145	
HIO-360-B	91/96	100/130 or 115/145	
TIO-360	100/130	115/145	
VO-360	91/96	100/130 or 115/145	
IVO-360	91/96	100/130 or 115/145	
O-435-A	80/87	80/87	
O-435-K1 (O-435-4), -A2	91/96	**100/130 or 115/145	
GO-435	80/87	***91/96 thru 115/145	
VO-435-A	80/87	***91/96 thru 115/145	
VO-435-B	100/130	115/145	
TVO-435	100/130	115/145	
GO-480-B, -D, -F	80/87	***91/96 thru 115/145	
GO-480-C, -G and IGO-480	100/130	115/145	
GSO-480	100/130	115/145	
IGSO-480	100/130	115/145	
O-540-A, -D, -E, -F, -G, -H	91/96	100/130 or 115/145	
O-540-B	80/87	91/96 thru 115/145	
IO-540-A, -B, -E, -G, -J, -K, -L, -M, -P, -R	100/130	115/145	
IO-540-C, -D, -N	91/96	100/130 or 115/145	
TIO-540	100/130	115/145	
VO-540-A, -B	80/87	91/96 thru 115/145	
VO-540-C and IVO-540-A	100/130	115/145	
TVO-540	100/130	115/145	
IGO-540-A, -B	100/130	115/145	
IGSO-540-A, -B	100/130	115/145	
TIVO-540	100/130	115/145	
TIO-541	100/130	115/145	
TIGO-541	100/130	115/145	
IO-720	100/130	115/145	

GRADE 100/130 AVGAS

(w/2 c. c. TEL MAX.)

Aviation grade 100/130 fuels in which the lead content is limited to 2 c. c. per gal. are approved for continuous use in all Avco Lycoming engines listed herein.

* - Engines specified for use with 91/96 grade fuel may also be considered to be specified for 100/130 grade. See Service Letter No. L169 for explanation.

** - O-235-C, O-290-D, -D2 and O-435-A2, -K1 (O-435-4) engines are built with solid stem exhaust valves. The use of higher leaded fuel such as 91/96 thru 115/145 must be limited to 25% of the operating time. If used for longer periods of time the same 150 hour inspection requirement, described in the following note is applicable.

*** - Early production O-320-A, -C, -E; GO-435, VO-435-A; and GO-480-B, -D, -F were built with solid stem exhaust valves and their use with higher leaded fuels is limited to 25% of operating time. If specified fuel is not available and usage with high leaded fuel exceeds 25% the valve stems should be inspected at 150 hour intervals for erosion, or "necking". This inspection is accomplished by removing the exhaust manifold and visually inspecting the valves through the exhaust ports. To determine if an engine has solid stem exhaust valves, remove the rocker cover and look for valve rotor caps which are used with sodium cooled valves but not with solid stem valves.

Service Instruction

AVCO LYCOMING DIVISION
WILLIAMSPORT, PA. 17701

(L)

DATE: April 23, 1971

Service Instruction No. 1070C
(Supersedes Service Instruction No. 1070B)
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Specified Fuels

MODELS AFFECTED: All Avco Lycoming opposed series aircraft engines.

TIME OF COMPLIANCE: When refueling aircraft.

The importance of using the fuel specified for each model Avco Lycoming engine has been previously stressed in Avco Lycoming Service Letters and Service Bulletins. Again we wish to stress the point that if the specified fuel is not available, the next higher octane fuel must be used. The ability of today's aircraft to cover wide areas in a relatively short period of time sometimes creates a problem of fuel supply due to geographic locations.

The purpose of this instruction, therefore, is to provide a chart of alternate fuels that can be safely used when the specified fuel is not available. Additional precautions are noted for certain model engines that are limited in their operation on fuels of higher octane than that which is specified for the engine. It is recommended that these notes be strictly adhered to in order to obtain the best service from your Avco Lycoming engine. The chart in no instance permits fuels of lower octane rating than that which is specified, and it is not permissible in any instance to use an automotive fuel in aircraft engines, regardless of its octane or advertised features. Any fuel used in Avco Lycoming engines must conform with specification MIL-G-5572.

The difference in the properties and composition of automotive gasoline and aviation gasoline make automotive fuels unsafe for use in aircraft. The main differences between automotive and aircraft fuels are as follows:

1. Automotive fuels have a wider distillation range than aircraft fuels and this promotes poor distribution of the high anti-knock components of the fuel. Further, the octane ratings of automotive and aircraft fuels are not comparable due to the different methods used to rate the two types of fuels. This would result in an appreciable difference in actual knock rating for two fuels which have the same octane number. This difference could lead to destructive preignition or detonation.

2. Automotive fuels are more volatile and have higher vapor pressure which can lead to vapor lock. Also the greater volatility increases the fire hazard.

3. Tetraethyl lead in automotive fuels contains an excess of chlorine and bromine whereas aviation fuels contain only the chemically correct amount of bromine. The chlorine is very corrosive and under severe conditions can lead to exhaust valve failures.

4. Automotive fuels are less stable and can form gum deposits. Gum deposits can result in valve sticking and poor distribution.

5. Automotive fuels have solvent characteristics not suitable for aircraft engines. Seals, gaskets and flexible fuel lines are susceptible to attack.

COLOR CODE - FUEL OCTANE RATING

OCTANE RATING	FUEL COLOR
80/87	Red
91/96	Blue
100/130	Green
115/145	Purple

i

NOTE: Revision "C" adds new models, revises fuel chart and footnotes; adds 100/130 grade with 2 c.c. TEL max. for continuous service.

Service Instruction

AVCO LYCOMING DIVISION
WILLIAMSPORT, PA. 17701

(L)

DATE: May 7, 1971

Service Instruction No. 1237A
(Supersedes Service Instruction No. 1237)
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Prestolite Service Bulletins No. ASM-3 and ASM-4. Aircraft Charging System - Service Precautions

MODELS AFFECTED: Avco Lycoming powered aircraft employing Prestolite belt driven alternators.

TIME OF COMPLIANCE: At any time alternators are removed or installed.

Prestolite Service Bulletins No. ASM-3 and ASM-4 are reprinted herewith in their entirety. Compliance with them is recommended to all owners of applicable Avco Lycoming powered aircraft.

Prestolite AIRCRAFT SERVICE BULLETIN

NUMBER ASM-4 ISSUED January 20, 1971
SUBJECT Aircraft Charging Systems Service Precautions
APPLICATION Aircraft with Belt Driven Prestolite Alternators
PAGE NO 1 OF 1 PAGES

1. Before removing any unit or wiring for service, make sure master switch is in the off position to prevent accidental shorting or grounding of electrical components.

2. Before removal of any unit and after installation of any unit, a visual inspection of parts involved should be considered an important part of service.

3. POINTS OF VISUAL INSPECTION SHOULD INCLUDE:

   A. All - Safety wire and mounting bolts.
   Safety wires must be locked in position.

   All bolts must be torqued properly. (Loose bolts will allow alternator to shift and vibrate.)
   Over torque may cause alternator mounting lugs and/or mounting brackets to crack or break. Pulley nut over torque may cause fan blade to crack or break.

   B. Make sure all electrical connections are made to the proper terminals and are clean, and connections properly torqued.

   REMEMBER: When an alternator or regulator is installed, the mounting bolts or screws become an electrical connection. They must be clean, and properly torqued.

4. DRIVE BELTS - Inspect condition of belt and adjust tension properly. A loose belt will cause slippage and loss of alternator output. An over tensioned belt may break and also will cause extreme side loading pressure on alternator shaft, bearings and seals, which will contribute to early failure of the unit. When adjusting belt tension, do not pry on alternator fan or pulley.

5. THE ALTERNATOR FAN - It cools the alternator by causing air to flow thru in the proper direction. Inspect the fan condition, check for being bent, or having cracked or broken welds. If any of these conditions are found, replace fan and properly torque pulley nut. Torque the pulley nut to 35 Ft. Lbs. min. to 45 Ft. Lbs. max. Be sure fan is clear of brackets and baffles.

1

Prestolite Technical Service
Toledo, Ohio 43601

prestolite AIRCRAFT SERVICE BULLETIN

NUMBER ASM-3 ISSUED 3-1-71

SUBJECT Unbalanced Output Readings

APPLICATION Dual Alternator Installations Using One Regulator for Control

Inquiries have been received from aircraft owners concerning unbalanced output between alternators.

Most people are interpreting unbalanced output as an indication of a faulty alternator, yet when the alternator is removed for testing, it checks to the proper specifications.

There are several reasons why this type of application may show unbalanced output between the alternators. These reasons include voltage drops in the charging system wiring, voltage drops in the ground circuit connections, and manufacturing tolerances in the alternators.

Any variation in the overall resistance characteristics between the two charging circuits will cause unbalanced output readings.

The reason for this is that the voltage regulator can control only the amount of field current required for sufficient current output from the two charging circuits. The regulator cannot control the amount of field current going into each alternator.

If, for example, the load requirement is 60 amperes from the two charging systems, the voltage regulator will allow enough current to flow thru the field circuits to meet that requirement. However, the charging circuit with the lesser amount of overall resistance will use more of that current and therefore produce more output than the other charging circuit. One alternator may be producing 33 amperes while the other alternator is producing only 27 amperes, yet they are still producing the required 60 amperes.

Alternator charging systems, unlike generator systems that had to have balanced output to prevent component damage, Do Not require balanced output.

Prestolite Technical Service
Toledo, Ohio 43601

318 Bishop Road Cleveland, Ohio 44143

SERVICE LETTER

SERVICE LETTER NO. 71-5

DATE: June 7, 1971

SUBJECT: Cabin Floor Inspection and Modification

SERIALS AFFECTED: AA1-0001 thru AA1-0457
AA1A-0001 thru AA1A-0123

TIME OF COMPLIANCE: At next scheduled inspection or sooner at owner's discretion

General

Field reports have indicated that on some aircraft, minor delamination of the honeycomb cabin floor bottom skin has occurred. Investigation has revealed the cause to be water ingestion around the PK screws which attach the kick pads, console and carpet retaining strips to the floor. If the accumulated water freezes, minor delamination of the honeycomb bottom skin may result. Drilling the PK screw holes completely through the bottom skin eliminates the possibility.

Inspection

Inspect the cabin honeycomb floor bottom skin from under the aircraft. Delamination of the honeycomb skin will be indicated by bumps in the skin approximately 3/4 to 1-1/2 inches in diameter. If delamination is found, Service Kit Number SK-110,(Honeycomb Repair)should be incorporated. Service Kit No. SK-110 which includes necessary material and complete instructions for making a satisfactory repair of delaminated areas, is available from your authorized American Aviation Corporation Dealer at no charge until December 1, 1971. Thereafter, the kit will be available at a cost of $10.00 (A).

Modification

It is recommended all PK screws in the cabin floor forward of the main spar (Figure 1) be removed, one at a time, and the holes be drilled through the bottom skin from the top using a #40 (.098") drill. This will allow any water entering around the PK screws to drain. After drilling each hole through bottom skin, reinstall the PK screw before proceeding to next screw. This will help maintain alignment and prevent possible enlargement of the screw holes. After all screw holes have been drilled through bottom skin, insert the shank end of the #40 drill in the hole from underneath and push drill aft to provide a lip on the forward edge of hole. (See Figure 2).

N O T E

Do not extend shank of drill into honeycomb more than 1/8 inch. Use care in performing this operation to prevent delaminating the honeycomb.

Carbon monoxide levels have been checked by the manufacturer and found to be satisfactory.

AA1-0458 and on, and AA1A-0124 and on have all holes drilled through the bottom skin and are not affected by this Service Letter.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (B)

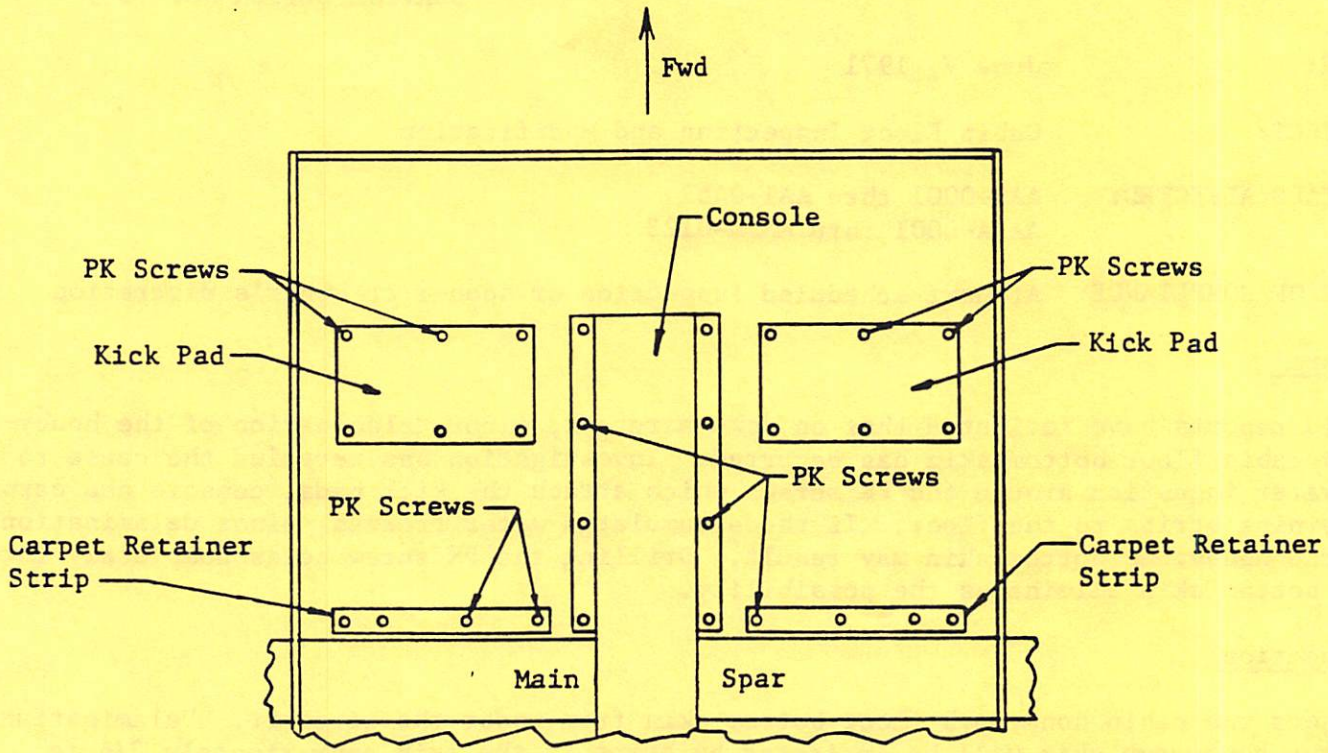


Figure 1. PK Screw Locations

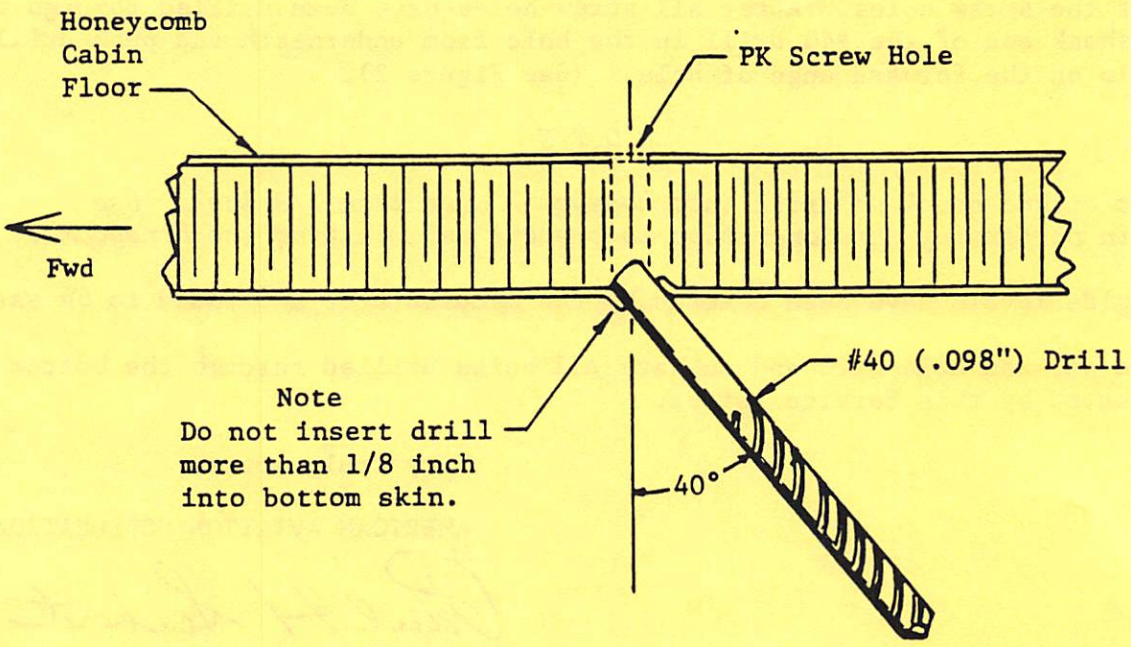


Figure 2. Flanging Forward Edge of Drain Hole

CORPORATION
318 BISHOP ROAD CLEVELAND, OHIO 44143
(216) 449-2200 TELEX NO 980-245

SERVICE LETTER NO. 71-6

LETTER

DATE: July 9, 1971

SUBJECT: Model AA-1A Trainer Owner's Manual Correction

TIME OF COMPLIANCE: Immediately

It has come to our attention that a typographical error exists in the Model AA-1A Trainer Owner's Manual, page 30, Cruise Performance Table. At 8500 ft. Altitude and 2600 RPM, the "Endurance Hours" are shown as "4.6". This should read "3.6" (See extract below).

30

Model AA-1A Cruise Performance Table (Climb Propeller)

Altitude Feet	RPM	Percent Power	True Air-Speed MPH	Fuel Con-sump-tion GPH	Endur-ance Hours	Range Miles Zero Wind
2500	2600	76	125	6.4	3.2	406
	2500	70	119	5.8	3.6	430
	2400	63	113	5.2	3.9	445
	2300	58	107	4.9	4.3	456
	2200	53	101	4.6	4.5	459
	2100	50	96	4.4	4.7	453
4500	2600	73	125	6.1	3.3	414
	2500	67	118	5.5	3.7	437
	2400	61	112	5.1	4.0	452
	2300	56	106	4.8	4.3	456
	2200	53	101	4.5	4.5	455
	2100	50	96	4.4	4.6	447
6500	2600	70	124	5.9	3.5	429
	2500	64	117	5.3	3.8	445
	2400	59	111	5.0	4.1	455
	2300	55	105	4.7	4.3	455
	2200	52	100	4.5	4.6	451
8500	2600	67	122	5.6	~~4.6~~ 3.6	439
	2500	62	116	5.2	3.9	451
	2400	58	110	4.9	4.1	454
	2300	55	105	4.7	4.3	452
10500	2600	66	121	5.3	3.7	446
	2500	61	115	5.1	3.9	453
	2400	57	110	4.9	4.0	445

NOTES:

1) Range and endurance data include allowance for take-off and climb.
2) Fuel consumption is for level flight with mixture leaned to best power. Continuous operation 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 and above standard temperature, respectively.

All Model AA-1A Trainer Owner's Manuals issued prior to this date must be permanently corrected as shown. Manuals forwarded from the factory after July 9, 1971, will have the correction made.

It is requested that all Dealers and Dealer's Outlets advise Student Pilots and other holders of the Model AA-1A Trainer Owner's Manual of the error so that they may correct their manuals accordingly.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (B)

American Aviation Corporation
318 Bishop Road Cleveland, Ohio 44143

SERVICE LETTER

SERVICE LETTER NO. 71-7

DATE: July 19, 1971

SUBJECT: Rudder/Elevator Rib Rivnut Inspection

SERIAL AFFECTED: AA1-0001 thru AA1-0458, AA1A-0001 thru AA1A-0239

TIME OF COMPLIANCE: At each scheduled inspection.

General

It has come to our attention that on some aircraft, the rivnut in the elevator outboard rib and rudder top rib, which secures the aft end of the tip support rib, has pulled out or become loose.

Inspection

At each scheduled inspection, it is recommended that the elevator/rudder tip be inspected for looseness. If looseness is noted, remove the elevator/rudder tip and tip-to-elevator rib assemblies and inspect the rivnut in the outboard/top rib for security of installation. Evidence of pulling will be indicated by clearance between the rivnut flange and the honeycomb skin (See Figure 1.)

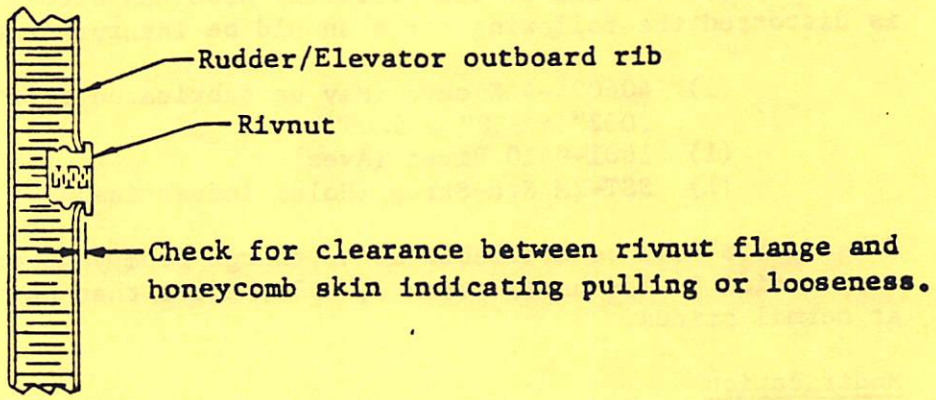


Figure 1. Rudder/Elevator Rivnut Inspection

If rivnuts are found to be loose or pulled, Service Kit No. SK-111 (Rudder/Elevator Tip Rib Modification), should be incorporated. Service Kit No. SK-111 includes all the necessary materials and complete instructions for making the modification and is available from your authorized American Aviation Corporation Dealer at no charge until March 1, 1972. Thereafter, the kit will be available at a cost of $.63 (H). One kit is required for each control surface being repaired.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:bh
Distribution (B)

American Aviation Corporation
318 Bishop Road Cleveland, Ohio 44143

SERVICE LETTER

SERVICE LETTER NO. 71-8

DATE: August 3, 1971

SUBJECT: Defroster Outlet Design Improvement

SERIALS AFFECTED: AA1-0001 thru AA1-0458
AA1A-0001 thru AA1A-0159

TIME OF COMPLIANCE: At owner's discretion.

General

On some aircraft it has been noted that the defroster outlet duct has distorted allowing the defroster hose to become disconnected. A modification has been incorporated on current production aircraft, consisting of an aluminum sleeve riveted in place to prevent distortion of the duct. Parts are available for field installation if required (See figure 1).

Inspection

The defroster outlet can be inspected by opening the sliding defroster door on the instrument panel deck and looking down through the windshield to see if the outlet duct is distorted and if the defroster hose has become disconnected. If the outlet is distorted the following parts should be incorporated:

(1) 406004-4 Sleeve (May be fabricated from 2024T3 aluminum-.032" x .50" x 5.00").
(1) 1601-0410 Rivet (Avex)
(1) SST-2M Sta-Strap (Holub Industries)

These parts will be available at no charge from your authorized American Aviation Corporation Dealer until March 1, 1972. After that date, parts will be available at normal prices.

Modification

Remove the screws and washers securing the instrument panel deck. Lift up the deck and cut the sta-strap securing the hose to the defroster outlet and disconnect the hose.

Remove the deck from the aircraft. Install the 406004-4 sleeve into the outlet and drill a .136/.139 diameter hole through the outlet and sleeve as shown in Figure 1. Install rivet (1601-0410) using pop rivet tool (United Shoe Machinery, Part No. PRG410 or equivalent).

Position the deck on the aircraft and raise the rear to connect the defroster hose using a new sta-strap. Fasten the deck with the screws and washers.

Very truly yours,
AMERICAN AVIATION CORPORATION

Paul H. Seibert
Customer Service Manager

Distribution (B)

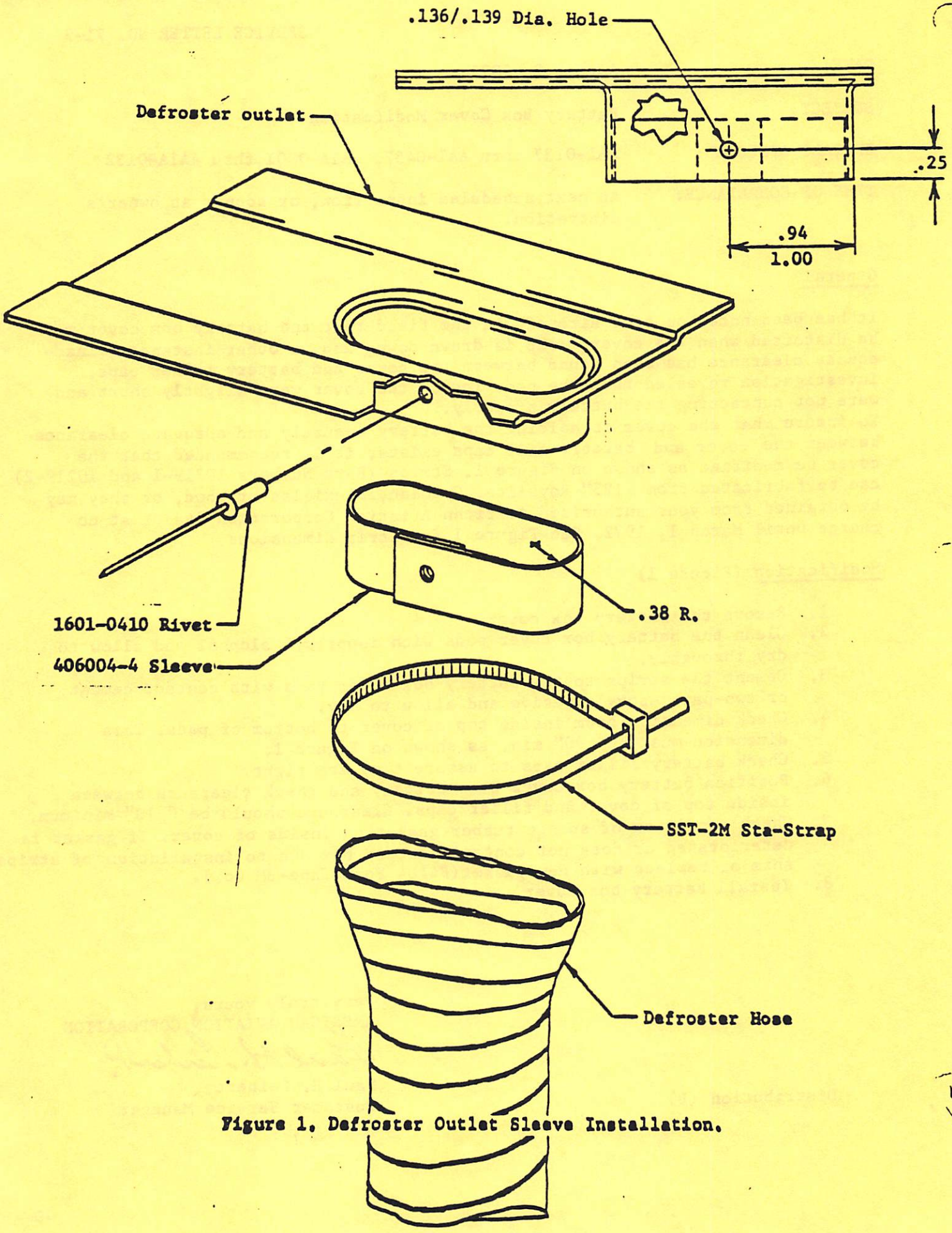


Figure 1. Defroster Outlet Sleeve Installation.

American Aviation Corporation
318 Bishop Road Cleveland, Ohio 44143

SERVICE LETTER

SERVICE LETTER NO. 71-9

DATE: August 2, 1971

SUBJECT: Battery Box Cover Modifcation

SERIALS AFFECTED: AA1-0137 thru AA1-0457, AA1A-0001 thru AA1A-0132

TIME OF COMPLIANCE: At next scheduled inspection, or sooner at owner's discretion.

General

It has been noted on some aircraft in the field that the battery box cover may be distorted when the cover clamp is drawn down, and in other instances, inadequate clearance has been found between the cover and battery filler caps. Investigation revealed that the pads inside the cover were slightly short and were not contacting the battery properly.
To insure that the cover is holding the battery securely and adequate clearance between the cover and battery fill caps exists, it is recommended that the cover be modified as shown on Figure 1. Strips (Part Numbers 10219-1 and 10219-2) can be fabricated from .125" Royalite, Cycolac, Plexiglas or wood, or they may be obtained from your authorized American Aviation Corporation Dealer at no charge until March 1, 1972. See Figure 1 for strip dimensions.

Modification (Figure 1)

1. Remove the battery box cover.
2. Clean the battery box cover pads with isopropyl alcohol and allow to dry throughly.
3. Cement the strips to the battery box cover pads with contact cement or two-part epoxy adhesive and allow to dry.
4. Check dimension from inside top of cover to bottom of pads. This dimension must be .90" min. as shown on Figure 1.
5. Check battery filler caps to assure they are tight.
6. Position battery box cover over battery and check clearance between inside top of cover and filler caps. Clearance should be 0.10" minimum.
7. Check condition of sponge rubber gasket on inside of cover. If gasket is deteriorated or does not contact battery box due to installation of strips, shim or replace with new gasket(#4104 Foam Tape-3M Co.).
8. Install battery box cover.

Very truly yours,
AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

Distribution (B)

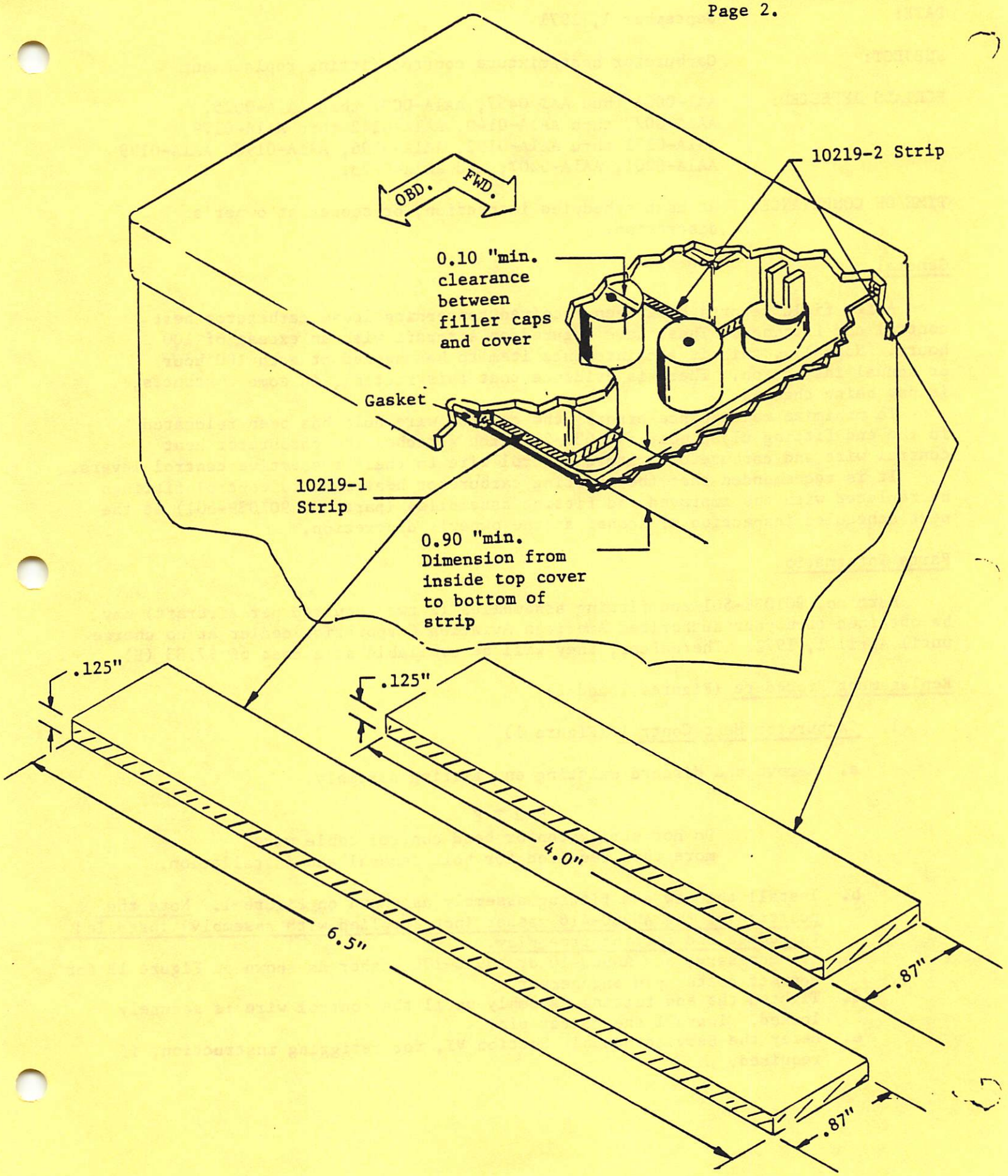


Figure 1. Battery Box Cover Modification

SERVICE LETTER NO. 71-10

DATE: September 1, 1971

SUBJECT: Carburetor heat/mixture control fitting replacement

SERIALS AFFECTED: AA1-0001 thuu AA1-0457, AA1A-0001 thru AA1A-0025, AA1A-0027 thru AA1A-0140, AA1A-0142 thru AA1A-0179, AA1A-0181 thru AA1A-0192, AA1A-0196, AA1A-0198, AA1A-0199 AA1A-0201, AA1A-0207, and AA1A-0223.

TIME OF COMPLIANCE: At next scheduled inspection, or sooner at owner's discretion.

General

A few field reports have been received concerning loose carburetor heat control end fittings. These have occured on aircraft with an excess of 100 hours. Normally, this is a maintenance item to be checked at each 100 hour or annual inspection. There is evidence that this fitting, in some instances, is not being checked.

To minimize maintenance errors, the control wire hole has been relocated in the end fitting clamp bolt (901039-2) which attaches the carburetor heat control wire and carburetor mixture control wire to their respective control levers.

It is recommended that the existing carburetor heat/mixture control fittings be replaced with the improved end fitting assemblies (part no. 901039-501) at the next scheduled inspection or sooner at the owner's discretion.

Parts Information

Part no. 901039-501 end fitting assemblies (2 two required per aircraft) may be obtained thru your authorized American Aviation Corporation dealer at no charge until April 1, 1972. Thereafter, they will be available at a cost of $7.33 (H).

Replacement Procedure (Figures 1 and 2)

1. Carburetor Heat Control (Figure 1)

   a. Remove and discard existing end fitting assembly.

   N O T E
   Do not straighten or bend control cable wire more than required for bolt removal and installation.

   b. Install the new end fitting assembly as shown on Figure 1. Note the position of the AN960-416 washer (not supplied with assembly) installed to reduce end fitting free play.
   c. If necessary, add AN960-10 or AN960-10L washer as shown on Figure 1B for correct cotter pin engagement.
   d. Tighten the end fitting assembly until the control wire is securely locked. Install the cotter pin.
   e. Refer the Service Manual, Section VI, for rerigging instruction, if required.

N O T E

If the slots in the nut do not line up with the cotter pin hole in bolt, tighten nut to next slot. Do not loosen nut to align cotter pin hole.

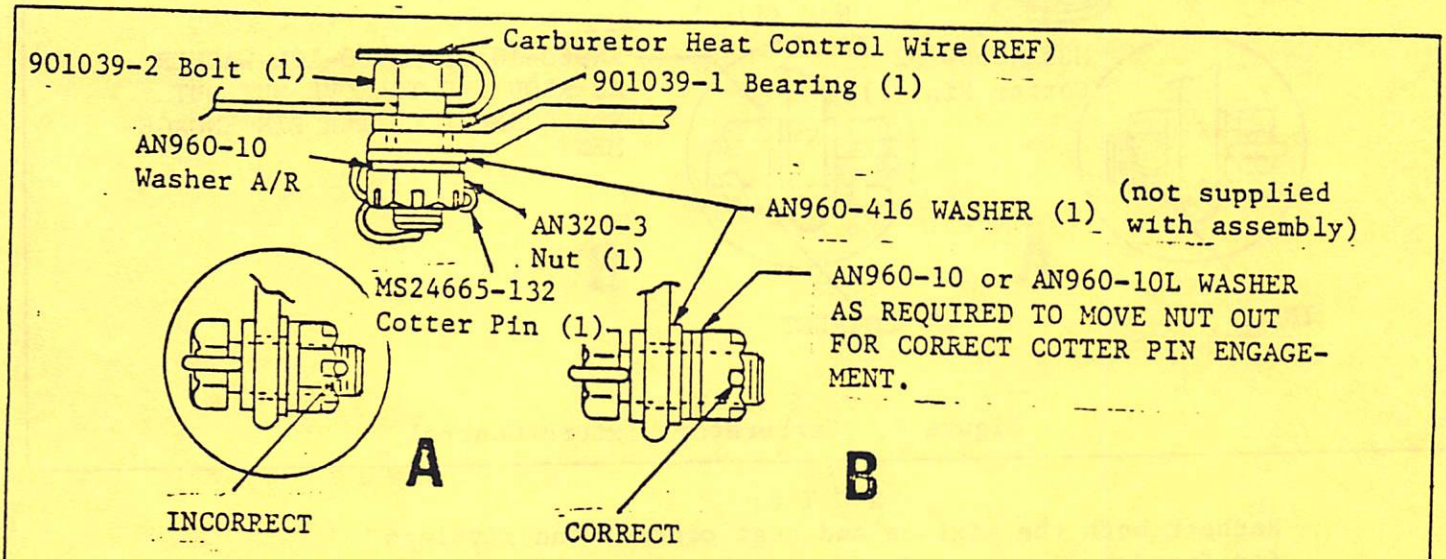


Figure 1. Carburetor Heat Control

2. Carburetor Mixture Control (Figure 2)

a. Installation of the carburetor mixture control end fitting assembly is accomplished in the same manner as the heat control end fitting assembly with exception of the AN960-416 washer is not required. (See Figure 2 for proper location of parts and correct cotter pin engagement.)
b. Refer to Service Manual, Section VI for rerigging instruction, if required.

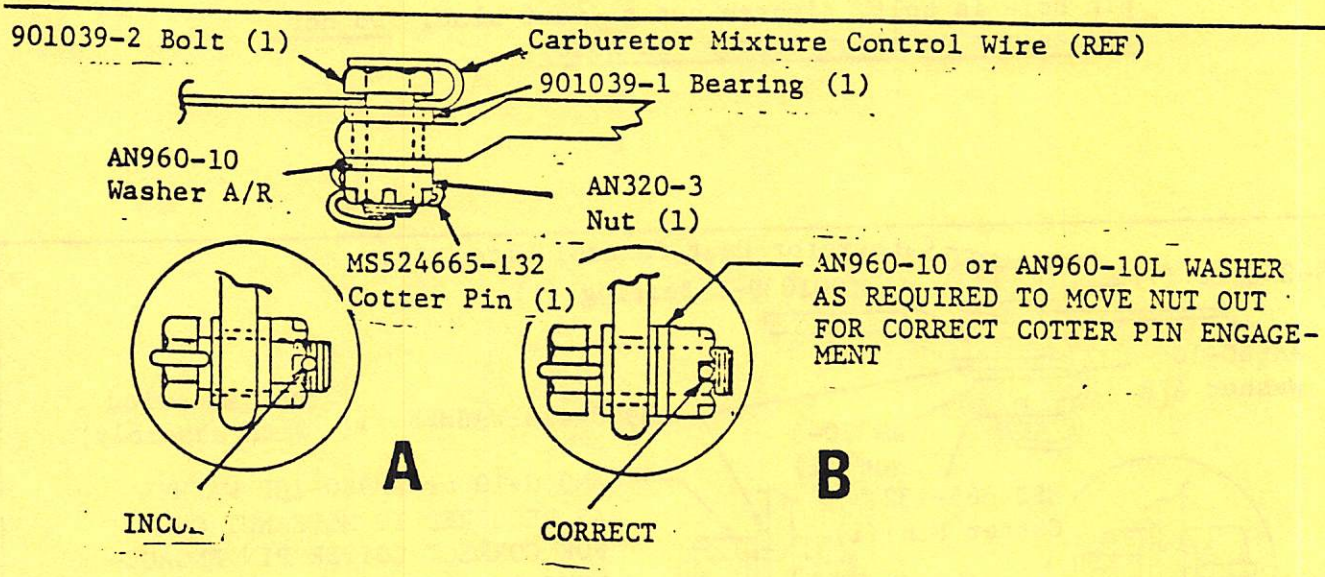


Figure 2. Carburetor Mixture Control

N O T E

Recheck both the mixture and heat control end fittings for freedom of movement. If mixture control fitting is too tight, clearance may be obtained by filing the lever to reduce thickness.

Prices subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

Distribution (B)

SERVICE LETTER NO. 71-11A
Supersedes Service Letter No. 71-11

DATE: October 28, 1971

SUBJECT: Bungee Inspection

SERIALS AFFECTED: All Model AA-1 and AA-1A aircraft.

TIME OF COMPLIANCE: At the next 100 hour or annual inspection and every 100 hours thereafter.

General

Field reports indicate that on aircraft with 500 or more hours, the bungee housing outer surface may show excessive wear at the support bearing, or the rivets, which secure the shear link, may have become loose (See Figure 1).

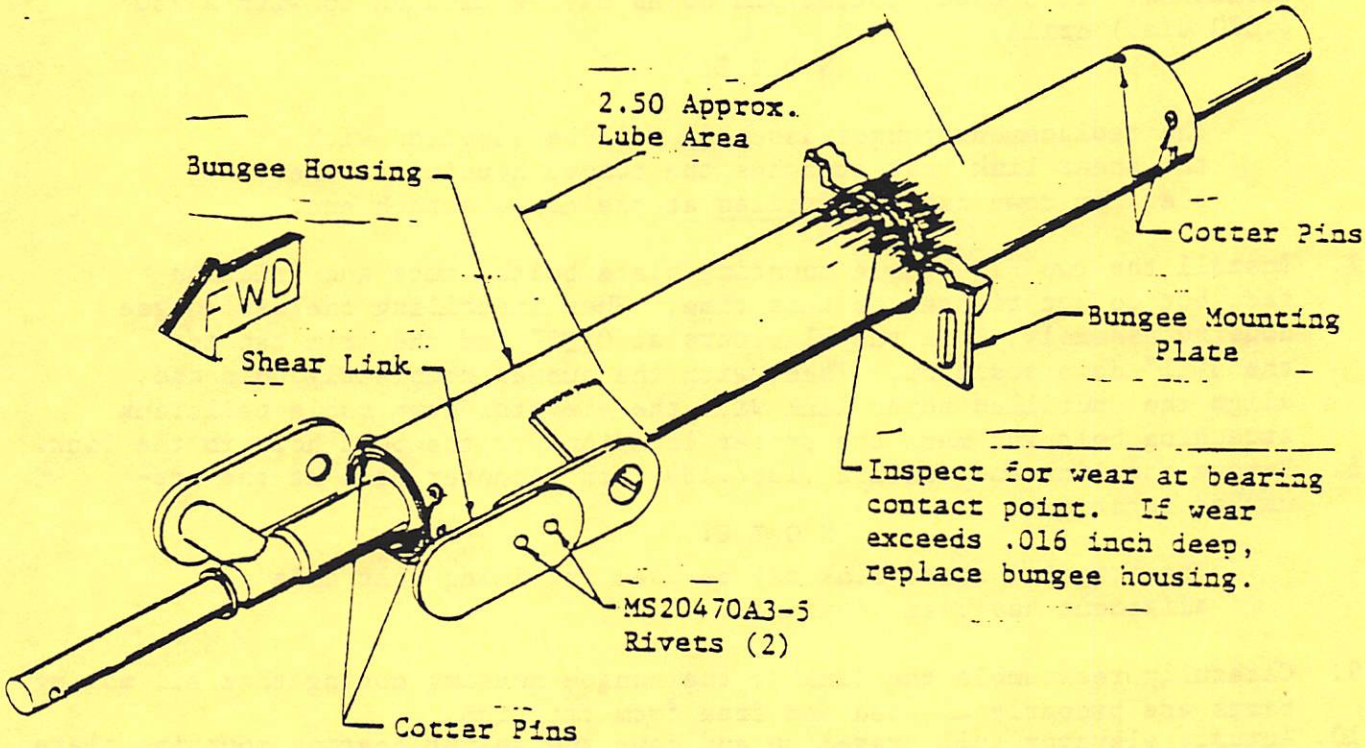


Figure 1. Bungee Assembly

Inspection

It is recommended that the following be accomplished at the next 100 hour or annual inspection and every 100 hours thereafter.

1. Inspection of the bungee housing outer surface. If housing is worn more than .016 inch deep, the bungee housing assembly (part no. 607004-701) $19.72 (H), should be replaced.

NOTE: Revision A to Service Letter No. 71-11 revises rivet part number.

2. Inspect two (2) MS20470A3-5 rivets in shear link. If loose rivets are found, they should be replaced with identical soft rivets, or the shear link (part no. 607004-503) $2.08 (H), should be replaced.

Bungee Housing Replacement Procedure

1. Remove the tailcone after disconnecting the taillight wire.
2. Disconnect the link that attaches the bungee housing to the elevator down cable at the elevator bellcrank.
3. Remove the four (4) cotter pins securing the bungee housing to the bungee shaft assembly and discard them.
4. Remove the two (2) bolts and nuts holding the bungee mounting plate and slide the plate off the housing assembly.
5. Slide off the old bungee housing and slip on the new bungee housing assembly. Lubricate outer surface of bungee housing as shown on Figure 1 with McLube #1708 (McGee Chemical Co.) or equivalent.
6. Slide on the bungee mounting plate, line up the cotter pin holes and secure the housing assembly with four (4) cotter pins (AN380-2-4) furnished. If needed, cotter pin holes may be cleaned up with a #50 (.070 dia.) drill.

N O T E:

The replacement bungee assembly will be supplied with the shear link that attaches the bungee housing to the elevator down cable undrilled at the cable attach end.

7. Install the two (2) bungee mounting plate bolts, nuts and friction pad, but do not tighten at this time. When installing the new bungee housing assembly, lock the elevators at 0°±2° and the trim tab in the 3°±1° down position. Then, with the bungee completely unloaded, align the undrilled shear link with the elevator down cable bellcrank attaching bolt and mark the proper location for the bolt hole in the link.
8. Remove the link and drill a .186/.189 inch diameter hole at the pre-marked location.

N O T E:

The original shear link may be used providing that hole alignment has been verified.

9. Carefully reassemble the link to the bungee housing noting that all moving parts are properly aligned and free from friction.
10. Actuate elevator full travel up and down and adjust bearing mounting plate as required to allow bungee housing to slide freely through the bearing and tighten the two (2) attaching bolts.
11. Connect taillight wires and reinstall tailcone.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (A)

SERVICE LETTER NO. 71-12

DATE: December 9, 1971

SUBJECT: Carburetor Air Valve Screw Inspection

SERIALS AFFECTED: All Model AA-1 and AA-1A aircraft

TIME OF COMPLIANCE: At the next 100 hour or annual inspection and every 200 hours thereafter

General

Field reports indicate that certain aircraft may have the screws that secure the carburetor air box alternate air valve to the shaft worn under the heads.

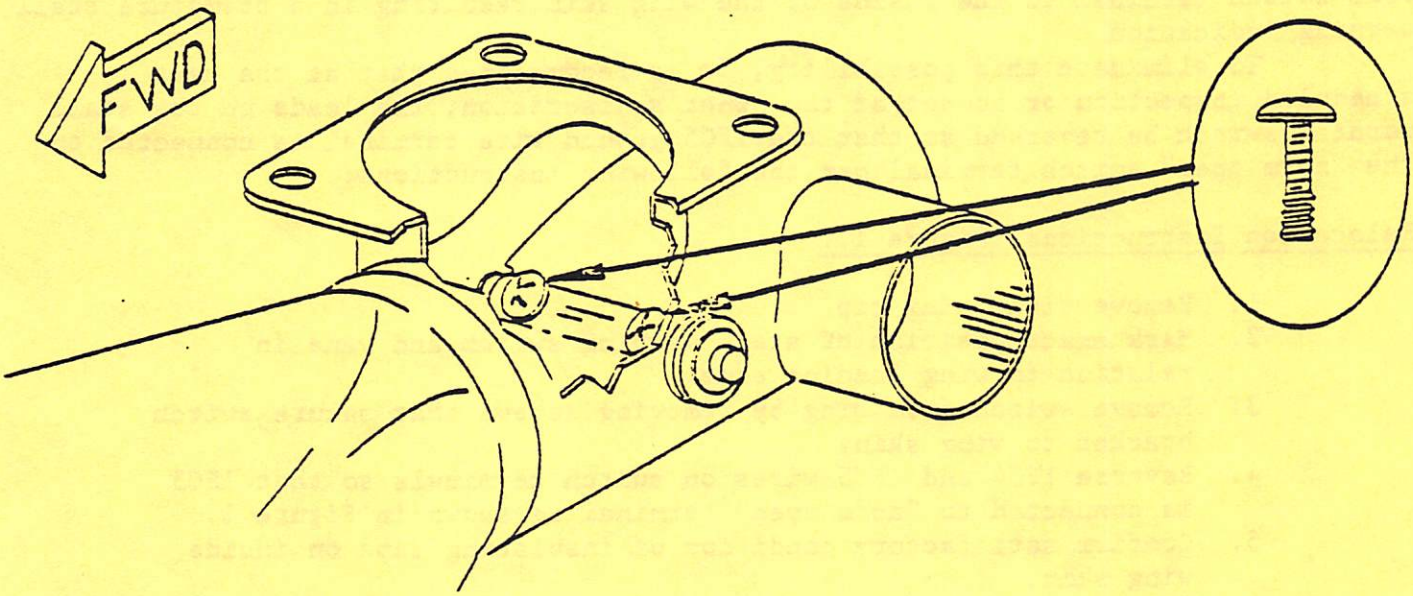


Figure 1. Carburetor Air Valve Screw Inspection

Inspection

It is recommended that the AN526-632R9 screws be removed and inspected as shown in Figure 1 at the next 100 hour or annual inspection and every 200 hours thereafter.

If the screws are worn they should be replaced with identical screws or AN515-6R8 screws. Determine that the metal lock nuts are in satisfactory condition and torque the lock nuts to 5 in. lbs.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr
Distribution (A)

SERVICE LETTER NO. 71-13

DATE: December 10, 1971

SUBJECTS:
Item 1. Stall Warning Wire Relocation
Item 2. Master Cylinder Operation
Item 3. Windshield/Canopy Improvement
Item 4. Nose Gear Fork Installation
Item 5. Canopy Attachment Improvement
Item 6. Prestolite Service Bulletin No. ASM-5

SERIALS AFFECTED: As indicated on each subject.

Item 1. Stall Warning Wire Relocation (AA1A-0001 thru AA1A-0279)

The stall warning switch is installed in the model AA-1A wing such that flexing of the lower wing skin could cause intermittent contact of the normally open switch terminal to the inside of the wing skin resulting in a premature stall warning indication.

To eliminate this possibility, it is recommended that at the next scheduled inspection or sooner at the owner's discretion, the leads on the stall warning switch be reversed so that the 1FC5 ground wire terminal is connected to the "norm open" switch terminal per the following instructions:

Relocation Instructions (Figure 1.)

1. Remove right wing tip.
2. Mark exact position of stall warning switch and vane in relation to wing leading edge.
3. Remove switch from wing by removing screws that secure switch bracket to wing skin.
4. Reverse 1FC4 and 1FC5 wires on switch terminals so that 1FC5 is connected to "norm open" terminal as shown in Figure 1.
5. Confirm satisfactory condition of insulating tape on inside wing skin.
6. Install switch in exact same position as removed. Install wing tip.

N O T E

If switch is not relocated in exact same position as removed, the aircraft must be flight tested to confirm that stall warning horn sounds at 5-10 mph above stall speed at gross weight flaps up and flaps down.

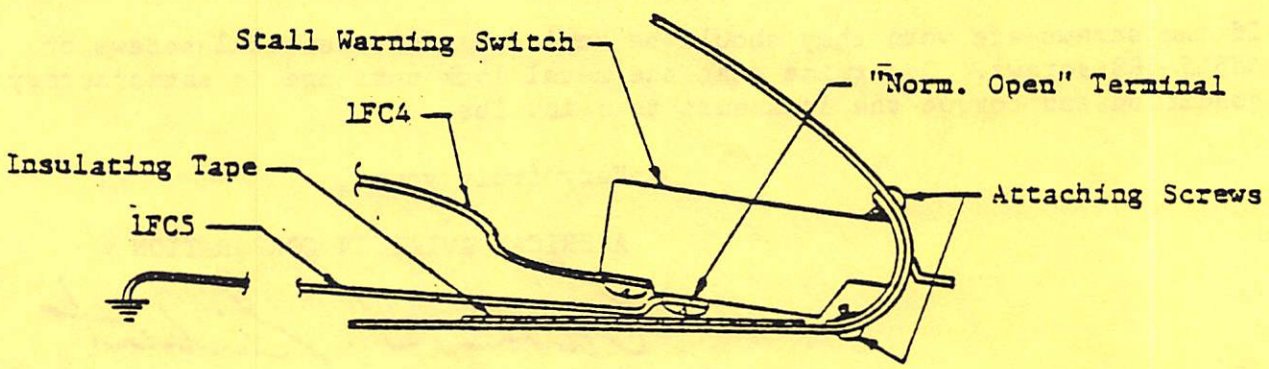


Figure 1. Stall Warning Wire Relocation

Aircraft nos. AA1A-0280 and up have the wire terminals connected as shown in Figure 1 and are not affected by this item.

Item 2. Master Cylinder Operation (All model AA-1, AA-1A and AA-5).

A few field reports of intermittent locking of a brake on the pilot's side of the aircraft have been received. The reports indicate that the brakes will operate normally for an extended period of time, but occasionally one wheel may lock for no apparent reason, particularly after several rapid applications of brakes such as "pumping" the brake pedal.

A cause for this intermittent brake locking has been traced to a slightly mislocated Gerdes part no. A-087-A screw and washer assembly which acts as an up travel stop for the piston and opens the bypass port between the piston and shaft when brake pedal pressure is released. Mislocation of the screw and washer assembly too far from the cylinder bore could result in insufficient washer overlap on the piston which could allow the piston to occasionally slip by the washer, and not open the bypass port, causing that brake to lock or drag.

If intermittent brake locking is experienced, the cause should be determined as quickly as possible. Cylinders that do not have proper washer overlap per Figure 2, should be removed from service immediately and replaced with new cylinders part no. 403010-3.

Note that this possible defect applies only to the reservoir type master cylinders installed on the pilot's side of the aircraft and does not affect the co-pilot's side.

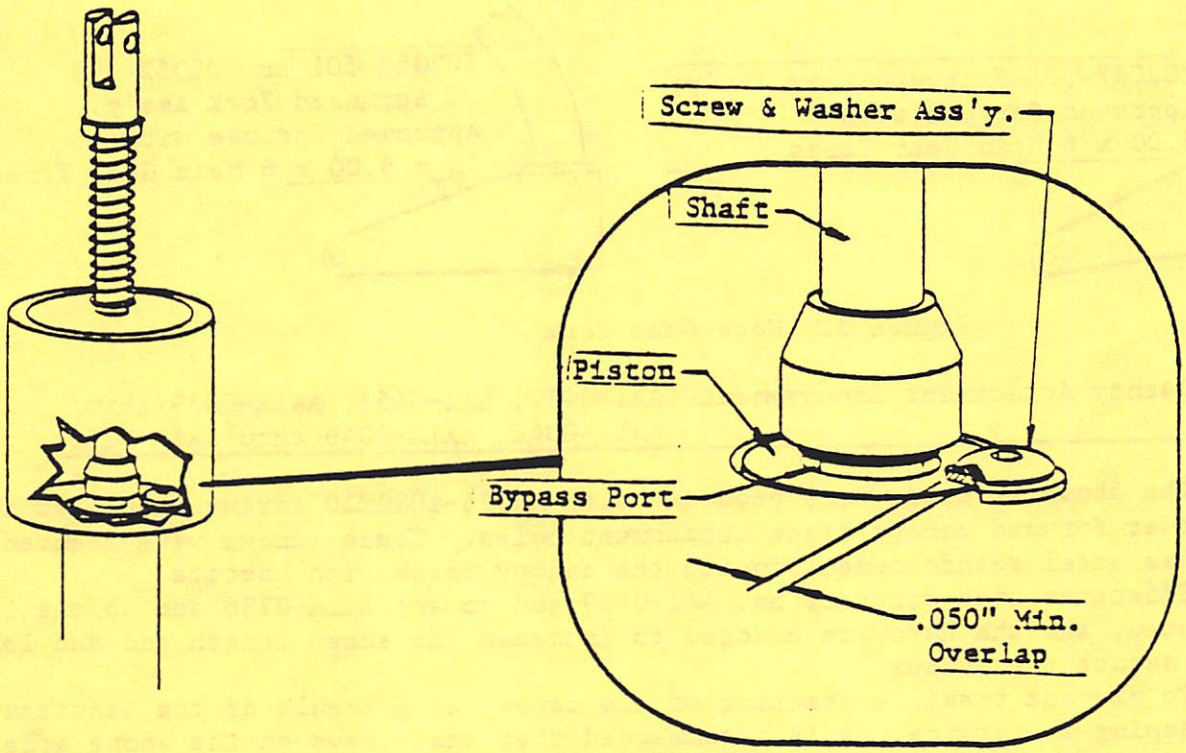


Figure 2. Master Cylinder

Item 3. Windshield/Canopy Improvement (AA1-0254, AA1-0264, AA1-0312, AA1-0316, AA1-0337, AA1-0349 thru AA1-0351, AA1-0361, AA1-0369 thru AA1-0371, AA1-0377, AA1-3[illegible] AA1-0382, AA1-0401, AA1-0404 thru AA1-0410, AA1-0412, AA1-0420, AA1-0422 thru AA1-0458, AA1A-0001 thru AA1A-0325)

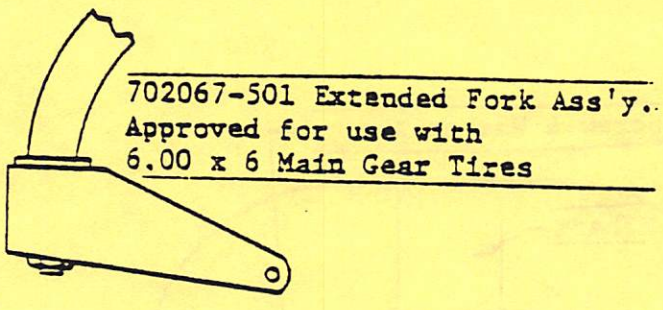
The rubber washers located between the windshield/canopy plexiglas and the aluminum retaining washers, have recently been improved. The improved washers are fabricated from a higher durometer rubber and will not extrude in service and allow the windshield/canopy bows to move when latching the canopy.

It is recommended that these improved washers, part no. AES75-2, $.25 (H), (24 required per aircraft), be installed on the above affected aircraft if the existing washers are extruded to the point that they allow the bows to move or the appearance of the extruded washers is objectionable.

Item 4. Nose Gear Fork Installation (All model AA-1 and AA-1A with 6.00 x 6 main gear tires installed)

It has come to our attention that some model AA-1 and AA-1A have been improperly modified in the field when replacing the factory installed 15 x 6.00 x 6 main gear tires and tubes with 6.00 x 6 tires and tubes. These modifications have been accomplished without installing the extended nose gear fork assembly part no. 702067-501 in place of the original factory installed part no. 702052-501 or 702052-503 fork assembly as called out in Accessory Kit No. AK-120.

Failure to install part no. 702067-501 extended fork assembly when installing 6.00 x 6 main gear tires, results in reduced propeller clearance and is not approved. We cannot be responsible for any aircraft operated in this condition. Figure 3 below illustrates the different fork assemblies to assist you in identifying these components.



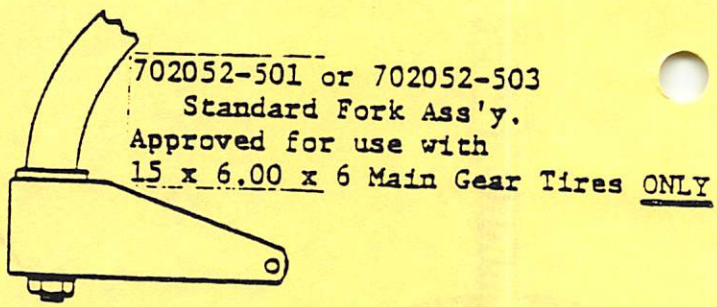


Figure 3. Nose Gear Fork

Item 5. Canopy Attachment Improvement (AA1-0457, AA1-0458, AA1A-0039 thru AA1A-0042, AA1A-0046 thru AA1A-0285)

The above aircraft were produced with AN526-1032R10 screws installed in the four lower forward canopy/track attachment holes. These screws were secured to the stainless steel reinforcement inside the canopy track with Loctite.

Effective with aircraft no. AA1-0459 and up and AA1A-0286 and up the Loctite was eliminated, and the hardware changed to increase the screw length and add lock washers to secure the screws.

To prevent possible cracking of the canopy as a result of the Loctited screws loosening in service, it is recommended that the screws on the above affected aircraft be inspected for security within the next 10 hours of operation. If the screws are found loose, they should be replaced with the improved hardware shown in Figure 4.

It is further recommended that the original hardware be replaced per Figure 4 regardless of condition, at the next interval of maintanance that requires canopy removal for cleaning and lubricating of the tracks.

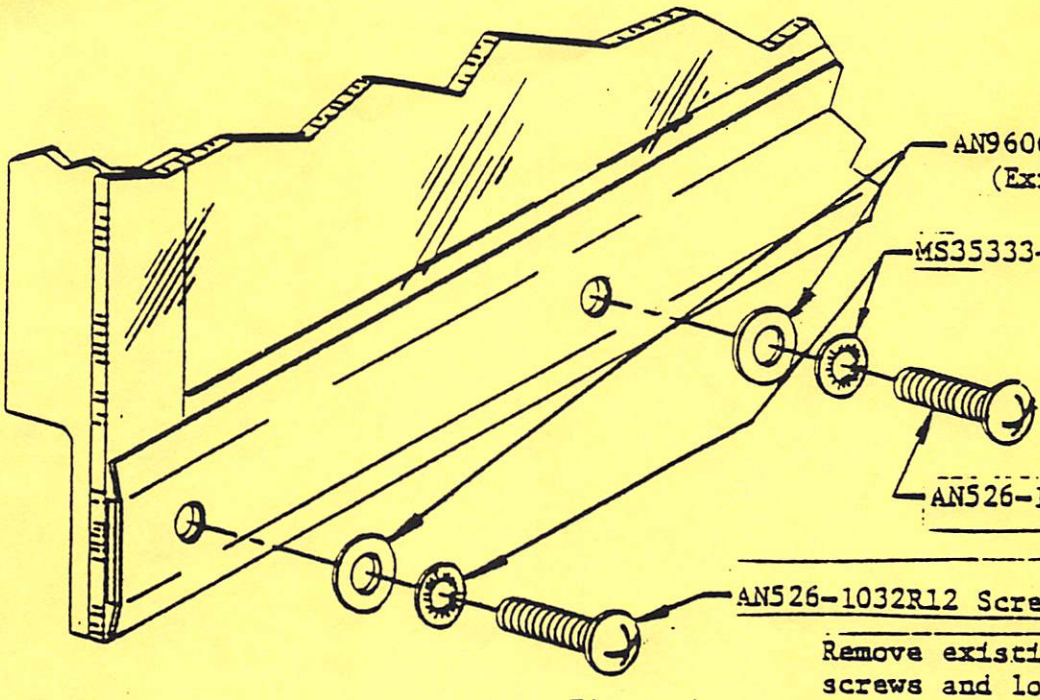


Figure 4.

N O T E

When tightening any fasteners that secure the plexiglas windshield or canopy, the fasteners should be tightened only enough to insure proper plexiglas retention. Overtightening can cause cracking of the plexiglas.

Item 6. Prestolite Service Bulletin No. ASM-5 (All model AA-1 and AA-1A)

Attached is a copy of Prestolite Service Bulletin No. ASM-5 covering Field Terminal Stud Insulation Replacement. Compliance with this Bulletin is recommended.

Your requirements of Prestolite part no. P90-2213, insulating material should be obtained through your local Prestolite outlet.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:jac

Attachment:

Distribution (A)

SERVICE LETTER NO. 72-1

DATE: January 13, 1972

SUBJECT: Propeller Care and Operation Limits

SERIALS AFFECTED: All Model AA-1 and AA-1A Aircraft

TIME OF COMPLIANCE: Immediately

General

A few field reports have been received concerning propeller blade tip failures. Typical cause of failure is attributed to metal fatigue which is most commonly caused by continued operation with nicks, scratches, gouges, etc., in the blade. It must be pointed out that any operation of a propeller in this condition is detrimental to the service life and in severe cases can lead to failure in a very short time. Damage of this nature which is not removed immediately can cause metal fatigue in the areas directly adjacent to the damaged area. This will remain and weaken the blade even though the original damage has been removed.

In cases where an aircraft must be flown with minor blade nicks etc., to reach a maintenance facility, it should be flown at a low RPM cruise.

Maximum RPM Operation Limitation

The AA-1 and AA-1A Owner's Manual specify that the maximum RPM for engine operation is 2600 RPM. This maximum must not be exceeded, since operation above this established limitation will increase vibrational stress levels on the propeller blades, as well as increase engine temperatures which may lead to substantial engine damage.

Propeller Care

a. Inspect blades for damage on each pre-flight inspection. Check entire blade area, especially leading edge and thrust side for signs of erosion, scratches, nicks, cracks, etc. Damaged areas act as stress-risers and should be removed immediately by filing and polishing. Remove metal and smoothly finish surfaces as specified in applicable propeller service manual, aircraft service manual or FAA Advisory Circular AC43.13-1. This work can normally be performed by an A & P mechanic without removing propeller from engine. However, if propeller has extensive damage, it should be reconditioned by an FAA approved repair station.

b. Keep blades clean - a crack can't be seen if covered by dirt or other foreign matter. Waxing blades can help prevent erosion damage.

c. Avoid engine run-up in areas where loose rocks, gravel, etc. can be encountered.

d. Do not move the aircraft by pushing or pulling on the propeller blades - they were not designed to be used as handles.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr
Distribution (A)

SERVICE

LETTER

SERVICE LETTER NO. 72-2

DATE: February 15, 1972

SUBJECT: Rudder Rigging

SERIALS AFFECTED: All Model AA-1 and AA-1A Aircraft

TIME OF COMPLIANCE: Anytime when rigging rudder control

Section V of the Model AA-1 and AA-1A Service Manual will be revised to provide simplified instructions for rigging the rudder control system. The new simplified instructions are listed below and should be followed anytime rerigging of the rudder control system is to be accomplished:

C. RUDDER

1. Position the rudder at 5° right rudder as indicated by a rudder rigging fixture. Secure the rudder in this position (Figure 5-1 shows one recommended method).
2. Adjust the rudder turnbuckles, located beneath the aft end of the console, until the left rudder pedal hinge pin is located 7.50 inches aft of the firewall and the right rudder pedal hinge pin is located 7.75 inches aft of the firewall (fiberglass sound-proofing material compressed). Refer to Figure 5-4.
3. Return the rudder surface to free movement and check the neutral position, 0° to 5° right rudder (4° right rudder desired).
4. Adjust the rudder stops, located in the aft bulkhead to limit the rudder travel to 25° ± 2° left and right.
5. Safety turnbuckles, recheck the rudder travel and neutral position.

The above information will be included in the next revision of each applicable Service Manual

AMERICAN AVIATION CORPORATION

PHS:pjr

Distribution (C)

SERVICE LETTER

DATE: August 28, 1972

SUBJECT:
ITEM 1. AA-1 AND AA-1A OWNER'S MANUAL LEANING PROCEDURE CHANGE.
ITEM 2. AVCO LYCOMING SERVICE BULLETIN NO. 355.
ITEM 3. AVCO LYCOMING SERVICE INSTRUCTION NO. 1070D.

SERIALS AFFECTED: AS INDICATED ON EACH SUBJECT.

ITEM 1. AA-1 AND AA-1A OWNER'S MANUAL LEANING PROCEDURE CHANGE. (ALL AA-1 OWNER'S MANUALS. ALL AA-1A OWNER'S MANUALS PRINTED PRIOR TO MAY, 1972.)

An improved leaning procedure has been incorporated in all recent AA-1A Owner's Manuals. This improved leaning procedure is applicable to all Model AA-1 Yankees and AA-1A Trainers. It is recommended that this improved leaning procedure be incorporated in ALL Yankee Owner's Manuals (Page 16) and all Trainer Owner's Manuals (Page 19) printed PRIOR to May, 1972. Trainer Owner's Manuals printed from May, 1972 and on, have this change incorporated and can be identified by the code "AA1A-137-2 MVII 5/72" at the bottom of Page 1. All AA-1 Yankee Owner's Manuals shipped from the factory after October 2nd, 1972 will have this change incorporated. The following paragraph should be inserted in the affected Manuals.

> Fuel consumption can be reduced significantly, especially at high altitudes, by leaning the mixture in cruising flight. For optimum fuel consumption in cruise at 75% power or less, lean the mixture as follows:
> 1. Slowly move the mixture control from full rich position toward lean position.
> 2. Continue leaning until engine roughness is noted.
> 3. Enrich mixture slightly until engine runs smoothly.

It is requested that all Dealers advise holders of these Manuals of this change so that they can update their Manuals accordingly.

ITEM 2. AVCO LYCOMING SERVICE BULLETIN NO. 355 (ALL MODEL AA-1 AND AA-1A)

Included for your information is a copy of Avco Lycoming Service Bulletin No. 355-"Alternator Fan Replacement" (Prestolite Bulletin ASM8). Early compliance with this bulletin is recommended. Parts requirements, as outlined in the service bulletin should be obtained through your local Avco Lycoming Distributor.

ITEM 3. AVCO LYCOMING SERVICE INSTRUCTION NO. 1070D

Included for your information is a copy of Avco Lycoming Service Instruction "Specified Fuels".

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

Distribution(B)

SERVICE

LETTER

SERVICE LETTER NO. 72-6

DATE: December 11, 1972

SUBJECT: Fuel Quantity and Fuel Quick Drain Placards

SERIALS AFFECTED: AA1A-0246 thru AA1A-0470, AA1B-0001 thru AA1B-0023, AA5-0001 thru AA5-0180

TIME OF COMPLIANCE: At next scheduled inspection, or sooner at owner's discretion

General

Field reports indicate that on some aircraft the fuel quantity and fuel drain placards, located by the fuel tank caps and the quick drains respectively, show signs of deterioration after exposure to frequent fuel spillage and aircraft washing or polishing. Placards showing signs of this deterioration must be replaced.

Recent production aircraft have incorporated improved exterior fuel placards with subsurface printing which makes them more durable. These new style placards should be used as replacements, where required, on any of the above listed aircraft. Refer to the placard list below for the correct ordering information:

Placard Name	Part Number	Print Color	Aircraft Model	Qty. Per Aircraft	Location Used
Fuel Capacity	803007-26	White	AA-1A & AA-1B	2 or	Top of wings
Fuel Capacity	803007-28	Black	AA-1A & AA-1B	2	"
Fuel Capacity	5803007-6	White	AA-5	2 or	"
Fuel Capacity	5803007-9	Black	AA-5	2	"
Fuel Drains-LH	5803007-18	White	AA-5	2 or	Fuselage Sides
Fuel Drains-LH	5803007-20	Black	AA-5	2	"
Fuel Drains-RH	5803007-19	White	AA-5	2 or	"
Fuel Drains-RH	5803007-21	Black	AA-5	2	"

Order two (2) white or two (2) black placards of each type as required.

The required placards may be obtained through your authorized American Aviation Corporation Dealer at no charge until July 1, 1973. Thereafter, they will be available at prevailing prices.

Prices subject to change without notice.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (B)

SERVICE LETTER

SERVICE LETTER NO. 72-7

DATE: December 15, 1972

SUBJECT: Control System Improvements

MODELS AFFECTED: AA1-0001 thru AA1-0459, AA1A-0001 thru AA1A-0470, AA1B-0001 thru AA1B-0049 and AA5-0002 thru AA5-0209.

TIME OF COMPLIANCE: At Owner's Discretion.

General

Service Bulletin No. 127 called for inspection of all control cables at each scheduled inspection. Field reports indicate that during compliance with Service Bulletin No. 127, a number of control cables, particularly rudder control cables, have been found with more than four (4) broken wires per cable and subsequent replacement was required.

In an effort to improve the service life of the control cable system, a design change has been made on aircraft AA1B-0050 and on and AA5-0210 and on, in which larger MS20220-2 pulleys are installed in place of the MS20220-1 pulleys previously used in certain areas of the control system. This single design change should add appreciably to the service life of the cables and increase the time that cables may remain in service before eventual replacement.

Service Kit

To make the large pulleys available to the field for those owners who wish to incorporate this design improvement on earlier aircraft, we have developed two (2) reduced price Service Kits: Service Kit No. SK-118-1, ($26.30 (B)), which covers models AA-1, AA-1A and AA-1B and Service Kit No. SK-118-2 ($44.00 (B)), which covers model AA-5. These kits may be installed at the owner's discretion.

Service Kit No. SK-118-1 and Service Kit No. SK-118-2 will be supplied at the prices shown for all orders received prior to June 30, 1973. Thereafter, the kits will be repriced to reflect the actual cost of the components therein.

Since the use of the MS20220-2 pulleys on aircraft AA1B-0050 and AA5-0210 and on is considered a design improvement, the incorporation of Service Kit No. SK-118-1 and SK-118-2 on in-service aircraft, in or out of warranty, will not be considered for credit allowance for parts or labor.

Very truly yours,

AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjr

Distribution (B)

GRUMMAN AMERICAN AVIATION CORPORATION
318 BISHOP ROAD, CLEVELAND, OHIO 44143
(216) 449-2200 TELEX NO. 980-245

SERVICE LETTER

SERVICE LETTER NO. 74-1

DATE: January 3, 1974

SUBJECT: 2-Place Owner's Manual Revision

SERIALS AFFECTED: All Model AA-1*, AA-1A and AA-1B Owner's Manuals shipped from factory prior to January 31, 1974

TIME OF COMPLIANCE: Immediately

GENERAL

In order to provide additional, more uniform information on stalls, stall speeds vs bank angle and the most effective recovery techniques from inadvertent spins, all 2-place Owner's Manuals are to be changed. The revised pages and their part numbers are listed below:

PART NUMBER	DESCRIPTION	CONTAINS
AA1-137-3R	AA-1 Yankee Revision	P15 thru P22 (staple in) & P26 (paste in)
AA1A-137-3R	AA-1A Trainer Revision	P19 thru P26 (staple in) & P31 (paste in)
AA1B-137-1R	AA-1B Trainer & Tr-2 Revision	P3-5 thru P4-4 (staple in) & P5-6 (paste in)

The changes require that the center 8 pages (center two sheets of paper on the staples), of all Manuals be removed and replaced with revised pages. To accomplish this, bend open the staple ends in the center of the Manual, remove and discard the center 8 pages (two folded sheets), insert the new pages on the staples and bend the staple ends back down. One additional page change is made by pasting a new page directly over an original page.

NOTE: VERIFY THAT THE NEW PAGE NUMBERS CORRESPOND TO THE OLD PAGES BEING REMOVED.

All Manuals shipped from the factory after February 1, 1974 will have these revisions incorporated. It is requested that all Dealers advise holders of the affected Manuals of these revisions so that they may update their Manuals accordingly. A copy of each applicable above referenced revision is enclosed with each copy of this Service Letter being mailed direct to owners on record. Additional copies of these revisions may be obtained at no charge by ordering by part number from your authorized Grumman American Aviation Dealer or from the Customer Service Department at the factory.

* A new Yankee Owner's Manual, instead of the revision, is enclosed with each copy of this Service Letter being mailed direct to 1969 Yankee owners on record only. Additional holders of 1969 Yankee Owner's Manuals can obtain new Manuals at no charge by ordering AA1-137-3 from the Customer Service Department. The original 1969 Manual should be destroyed upon receipt of the new Manual. NOTE: 1969 MANUALS SAY "1969" ON COVER.

All material listed in this Service Letter will be available at no charge, from the Customer Service Department until July 1, 1974.

Prices are subject to change without notice.

Very truly yours,
GRUMMAN AMERICAN AVIATION CORPORATION

Paul H. Seibert

PHS:pjo
Distribution (B)

Paul H. Seibert
Customer Service Manager

GRUMMAN AMERICAN AVIATION CORPORATION
318 BISHOP ROAD, CLEVELAND, OHIO 44143
(216) 449-2200 TELEX NO. 980-248

SERVICE LETTER

SERVICE LETTER NO. 74-2

DATE: FEBRUARY 6, 1974

SUBJECT: BONDLINE INSPECTION PROCEDURES

SERIALS AFFECTED: ALL AIRCRAFT

TIME OF COMPLIANCE: AT EACH SCHEDULED INSPECTION

I. GENERAL

Grumman American Aviation aircraft are manufactured using the most modern assembly techniques in the industry. Major airframe assemblies utilize a high degree of metal to metal bonded construction. This solid type of construction provides higher strength to weight ratios, longer fatigue life, smoother surfaces, etc., than conventional types of construction. All bonded assemblies are manufactured to the highest quality standards. To maintain this high level of integrity throughout the life of the aircraft, good maintenance procedures are required.

The purpose of this Service Letter is to provide information on the simple procedures required for good field inspection of bondlines during normal maintenance inspection.

II. TYPICAL TYPES OF BONDLINE DAMAGE

A. Physical Damage

The most common type of bondline damage is physical damage along the trailing edges of the flaps, ailerons, elevators and rudder. This is caused by persons stepping on the inboard trailing edges of the flaps and general "hangar rash" on the other control surfaces. This type of damage is usually readily visible in the form of joint separation.

B. Corrosion Damage

A less common type of bondline damage is damage caused by metal corrosion. This type of damage is usually restricted to edges of unfilleted bondlines, such as found on the rear spar to skin joints on the trailing edges of wings and stabilizers, particularly if these edges are not well protected by paint. This type of damage is more likely in tropical and subtropical climates, particularly where an aircraft is located close to the coast.

III. MOST COMMONLY DAMAGED AREAS

A. Areas which should be given particular attention include: flanges of wing and stabilizer rear spars, trailing edges of control surfaces the side lap joint between the tailcone and forward cabin section, the joint between the tailcone top and side skin, and the aft tailcone bulkhead joints.

B. Inside edges and internal joints which have an undisturbed bondline fillet are generally not affected.

IV. INSPECTION PROCEDURES

The three steps to the inspection procedure are listed below. They should be performed in the listed order. Step "A" is the initial identification of a suspect area. Steps "B" and "C" are verification procedures.

A. Visual Scanning

Carefully scan the edges of all joints in a well lighted hangar or outside in daylight to determine the existence of hairline cracks between two layers of bonded metal. Figure 1 shows the appearance of this condition. Identify the location of any cracks with a grease pencil as shown in Figure 1.

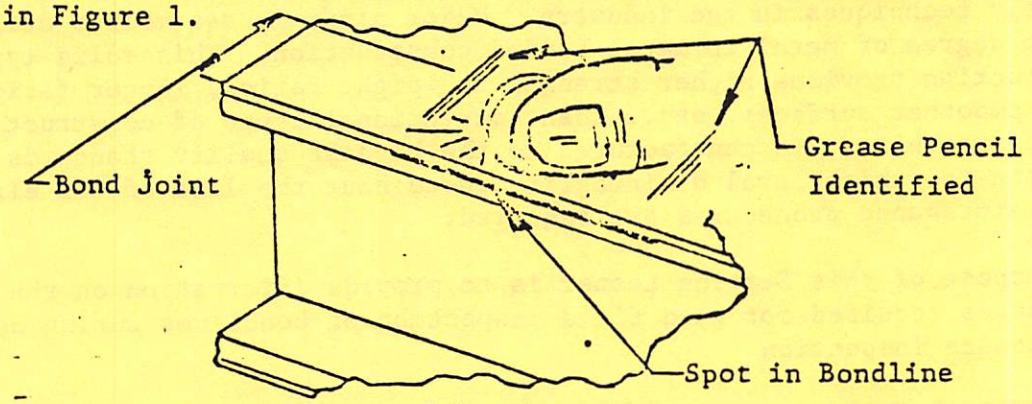


Figure 1. Identifying Suspect Areas

B. Tapping

Gently tap the bondline with a coin or similar metal object to verify the existence of a bondline separation. Slowly move along the bondline, while tapping, and listen for a change in tone as the suspect area is traversed. A bondline separation will produce a flat or hollow sound when "tapped" directly in the damaged area.

C. Separation

If the results of "B" are questionable, attempt to insert a .004" to .006" feeler gauge into the bondline to verify that a separation exists.

V. REPAIR

If the results of inspection steps "B"and "C" are negative, the hairline should be wiped with MEK and sealed with paint. Additionally, any bare bondline edges should be sealed with paint. If the results of either "B" or "C" are positive, order Service Kit No. SK-125 and make the repairs accordingly.

The above information will be included in the next revision of each applicable Service Manua

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:pjo

SERVICE LETTER NO. 74-3

DATE: JULY 22, 1974

SUBJECTS:
ITEM 1. FLAP SWITCH BOOT INSTALLATION
ITEM 2. NOSE STRUT LENGTH INCREASE
ITEM 3. CONTROL SURFACE TORQUE TUBE REPAIR
ITEM 4. AVCO LYCOMING SERVICE PUBLICATIONS

SERIALS AFFECTED: AS INDICATED ON EACH SUBJECT.

TIME OF COMPLIANCE: AS INDICATED ON EACH SUBJECT.

GENERAL

This Service Letter provides information concerning the subject items listed above and recommends compliance as indicated. These items include engineering improvements that have been incorporated on current production aircraft, suggested repair methods and vendor service publications.

ITEM 1. FLAP SWITCH BOOT INSTALLATION

SERIALS AFFECTED: All Model AA-1 and AA-1A, AA1B-0001 through AA1B-0237 and AA5-0001 through AA5-0405.

TIME OF COMPLIANCE: At owner's discretion.

To prevent contamination of the flap switch internal electrical contacts, a rubber boot has been installed between the flap handle lever and the switch. This Boot, part number N1030B, may be installed on the earlier aircraft listed above, by unscrewing the flap handle and installing the boot. Lock Tite Screw Lock Sealant or equivalent should be applied to the flap switch lever screw threads, before installing the flap handle.

ITEM 2. NOSE STRUT LENGTH INCREASE

SERIALS AFFECTED: All Model AA-1 and AA-1A, AA1B-0001 through AA1B-0189, AA1B-0191 through AA1B-0195, AA1B-0197 through AA1B-0201, AA5-0001 through AA5-0376, AA5-0381 through AA5-0384 and AA5-0386 through AA5-0388.

TIME OF COMPLIANCE: At owner's discretion.

Additional propeller clearance may be obtained on the above listed aircraft by installing the current production Nose Strut Assembly, part number 702057-506. This strut assembly has a one inch increase in length in the area above the fork turn limit stop and may be used to replace all previous struts. If installation is intended, the applicable Service Manual should be consulted, concerning removal of the existing strut and installation of the new strut.

ITEM 3. CONTROL SURFACE TORQUE TUBE REPAIR

SERIALS AFFECTED: All Model AA-1, AA-1A, AA-1B and AA-5 aircraft.

TIME OF COMPLIANCE: When aileron, elevator or rudder torque tubes show a decrease in wall thickness, due to wear in the bearing areas.

The aileron, elevator and rudder control surface torque tubes may be returned to service, due to wear in the bearing areas, by installation of Service Kit No. SK-121, if the decrease in wall thickness has not exceeded .030 inches. Wear greater than .030 inches necessitates replacement of the control surface.

Service Kit No. SK-121, Control Surface Torque Tube Repair Kit, provides instructions and material required to repair all worn torque tubes on one aircraft. The modification requires removal of the control surface and installation of a stainless steel sleeve over the original worn bearing surface area on the torque tube. The Kit contains new bearings and spacers with slightly larger bore to compensate for the larger diameters of the stainless steel repair sleeve. One (1) Kit should be ordered for each aircraft that requires modification.

ITEM 4. AVCO LYCOMING SERVICE PUBLICATIONS

SERIALS AFFECTED: All Model AA-1, AA-1A, AA-1B and AA-5 aircraft.

TIME OF COMPLIANCE: As indicated in each publication.

Included for your information are copies of five (5) Avco Lycoming Service Publications. Publication type, number and subject are listed below:

1.) Service Bulletin No. 366, Carburetor Throttle Body Screw Inspection.
2.) Service Bulletin No. 374, Fuel Pump Inlet Inspection.
3.) Service Letter No. L180, Engine Preservation for Active & Stored Aircra
4.) Service Instruction No. 1070F, Specified Fuels.
5.) Service Instruction No. 1278, Starter Drive Lubrication.

Compliance, as indicated in the respective Publication, is recommended.

PARTS INFORMATION SUMMARY

	QUANTITY	PART NUMBER	DESCRIPTION	PRICE
ITEM 1.	1	N1030B	Boot	$ 1.00 (E)
ITEM 2.	1	702057-506	Strut Assy.	119.20 (E)
ITEM 3.	1	SK-121	Control Surface Torque Tube Repair Kit	45.00 (E)
ITEM 4.	N/A	N/A	N/A	N/A

Parts required for the above modifications are available from your authorized Grumman American Aviation Corporation Dealer.

Since the subjects covered in this Service Letter are design improvements and normal service items, no parts or labor allowance will be available for compliance with any item of this Service Letter.

Prices are subject to change without notice.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:jz

Distribution (A)

AVCO LYCOMING DIVISION
WILLIAMSPORT, PENNSYLVANIA 17701

Service Bulletin

L

DATE: September 14, 1973

Service Bulletin No. 366
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Carburetor Throttle Body Screw Inspection

MODELS AFFECTED: All Avco Lycoming engines equipped with Marvel-Schebler carburetors.

TIME OF COMPLIANCE: During next 50 hour inspection of the aircraft engine and each 100 hour engine inspection thereafter.

Instances have been reported of leakage through the gasket between the bowl assembly and throttle body of the carburetor, evidenced by fuel stains in the area of the leak. Leakage of this type is accompanied by loose screws that attach the bowl and throttle body.

During inspection, check the throttle body attaching screws for tightness; the correct torque for these screws is 40 to 50 inch pounds.

During the next 50 hour inspection of the aircraft engine if leakage is evident and the bowl attaching screws are found to be loose, disassemble the bowl from the throttle body as described in the applicable Marvel-Schebler service manual and replace the gasket. During assembly, use new lockwashers* and be sure the screws are evenly tightened to the correct torque; 40 to 50 inch pounds.

* - Older carburetors use drilled head screws that are secured by lockwire.

AVCO LYCOMING DIVISION
WILLIAMSPORT, PENNSYLVANIA 17701

Service Bulletin

L

DATE: March 15, 1974

Service Bulletin No. 374
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Fuel Pump Inlet Inspection

MODELS AFFECTED: All engines using AC diaphragm fuel pumps, 75246 and 75247 with 9/16-18 UNF threaded inlet (not applicable to pumps with tapered pipe threaded inlet ports).

TIME OF COMPLIANCE: Anytime fuel pressure fluctuates or deteriorates with increase in altitude.

Loss of fuel pressure may be due to leakage at the inlet port of the diaphragm fuel pump. Leakage at this location may be caused by ageing of the "o"-ring seal or improper installation of the adapter fitting that connects the fuel line to the pump. If any indication of leakage is evident at this area the following procedure should be followed.

1. Remove the fuel line from the fitting that attaches it to the fuel pump.

NOTE

The fuel pump inlet port is designed to accept a 9/16 in. x 18 UNF straight threaded fitting and standard o-ring seal similar to the one shown in figure 1 which is a 37° swivel fitting that can be securely positioned at the correct angle to attach the fuel line. The following instructions are written specifically for this fitting; however the methods described are generally valid for any straight threaded fitting and o-ring seal that may be used at this location.

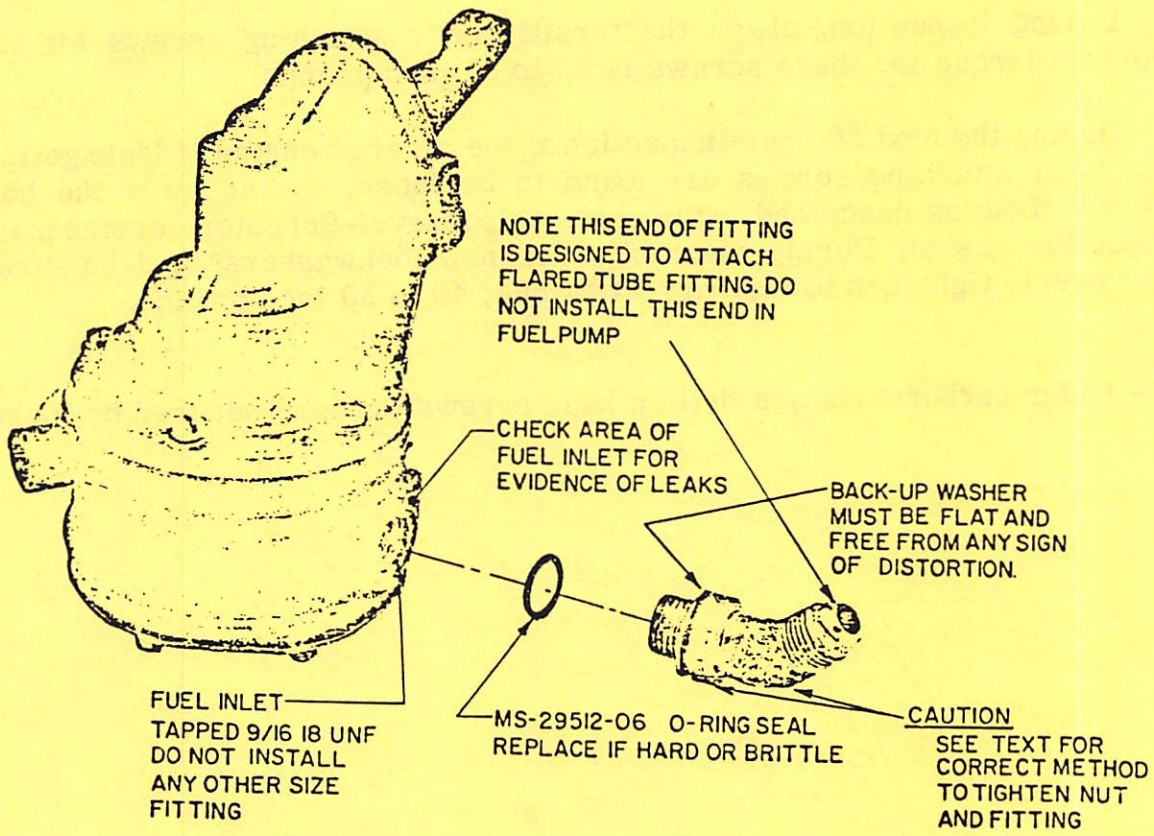


Figure 1. Diaphragm Fuel Pump Showing Inlet Boss, Seal and Fitting

2. Loosen the hex nut on the fitting to release the metal back-up washer from the o-ring; then, remove the fitting from the fuel pump inlet boss.

3. Carefully examine the o-ring seal and metal back-up washer on the fitting. Determine if the seal is hard or brittle from ageing or damaged from improper assembly. Likewise, examine the back-up washer on the fitting to determine if it is flat and free from distortion. Also examine the chamfered o-ring seat and the threads in the fuel pump inlet boss for evidence of damage. From the condition of these parts the cause of leakage likely can be determined.

4. Any of these parts that are damaged must be discarded, even the fuel pump if the inlet threads are damaged or the chamfer nicked.

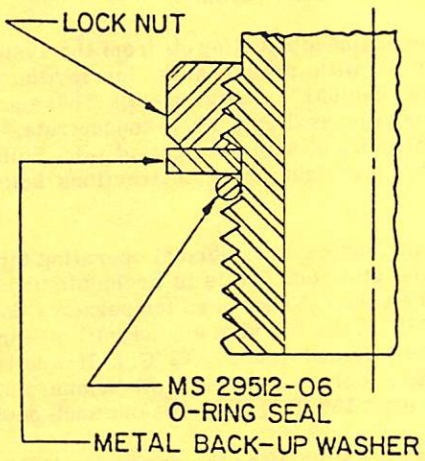


Figure 2. Section Thru Fitting Showing O-Ring Assembled Against Back-Up Washer

5. Lubricate a new MS-29512-06 o-ring seal (or premium compounded material MS-9966-06 seal) with oil or petrolatum and install it over the fitting adjacent to the face of the metal back-up washer which is assembled at the extreme end of the groove. See figure 2.

6. Screw the fitting into the fuel pump port until the metal back-up washer contacts the face of the boss as shown in figure 3.

7. Position the fitting in alignment with the fuel supply tube fitting by turning outward (counter-clockwise) up to a maximum of one turn.

8. While holding the pad of the fitting with a wrench, tighten the locknut and washer against the face of the boss as shown in figure 4.

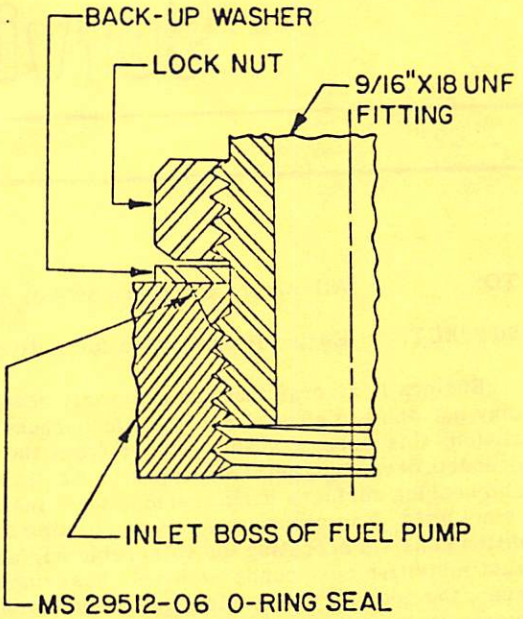


Figure 3. Section Thru Inlet Boss Showing Correct Location of O-Ring Seal and Back-Up Washer

9. Connect the flared tube fitting (on the end of the fuel line) to the fitting installed in the fuel pump. Tighten attaching nut to 75/125 in. lbs. if fitting are aluminum; 270/300 in. lbs. if fitting are steel.

10. Start engine and check fuel pressure to be sure the leak has been corrected.

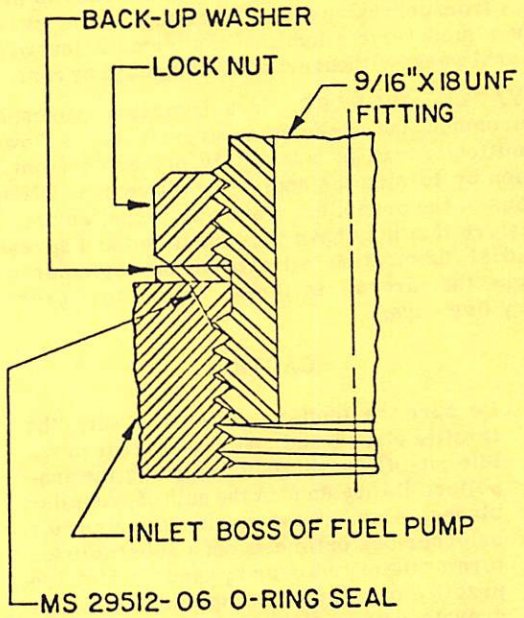


Figure 4. Section Thru Inlet Boss Showing Locknut Tightened Against Back-Up Washer

PARTS REQUIRED: (Available through Avco Lycoming distributors.)

(1) - MS-29512-06 O-ring seal (Std. Black)
or (1) - MS-9966-06 O-ring seal (Premium Red Silicone)

AVCO LYCOMING DIVISION
WILLIAMSPORT, PENNSYLVANIA 17701

Service Letter

L

Service Letter No. L180
January 4, 1974

TO: All owners and operator's of Avco Lycoming aircraft engines.

SUBJECT: Engine Preservation for Active and Stored Aircraft

Engines in aircraft that are flown only occasionally may not achieve normal service life because of corrosion; this occurs when moisture from the air and products of combustion combine to attack cylinder walls and bearing surfaces during periods when the aircraft is not used. The procedures for combatting this condition consists of coating the vulnerable surfaces with rust inhivitive compounds as herein described. However, the need for doing this must be evaluated by the owner or operator of the aircraft, based on environmental conditions and frequency of aircraft activity.

Obviously, an aircraft based near the sea coast and flown once each week will have much more need for preservation attention than one flown every day in an arid region. Our experience has proven that in regions of high humidity, active corrosion can be found on cylinder walls of new engines inoperative for periods as brief as two days; in engines that have accummulated 50 hours or more in service the cylinder walls will have acquired a coating of resin that tends to protect them from corrosive action; such engines under favorable atmospheric condition can remain inactive for several weeks without evidence of damage by corrosion.

FLYABLE AIRCRAFT: In a favorable atmospheric environment the engine of an aircraft that is flown intermittently can be adequately protected from corrosion by turning the engine over five revolutions by means of the propeller. This will dispel any beads of moisture that may have accummulated and spread the residual lubricating oil around the cylinder walls. Unless the aircraft is flown, repeat this procedure every five days.

CAUTION

Be sure the ignition switch is "off", the throttle closed, and mixture control in the idle cut-off position before turning the propeller. Do not stand in the path of propeller blades. Also, ground running the engine for brief periods of time is not a substitute for turning the engine over by hand; in fact, the practice of ground running will tend to aggravate rather than minimize corrosion formation in the engine.

After 30 days, the aircraft should be flown for 30 minutes or a ground runup should be made long enough to produce an oil temperature within the lower green arc range. Excessive ground runup should be avoided.

INACTIVE AIRCRAFT: If it is known that an aircraft is to remain inactive for a period of time exceeding thirty days the following procedure should be applied to the engine, especially if the aircraft is located near salt water or similar humid area.

1. Drain the engine lubricating oil from the system and replace it with preservation lubrication oil (Exxon "Rust Ban 631" or equivalent). These products are usually available as a concentrate, or already compounded with lubricating oil. Follow carefully the manufacturer's instructions before use.

2. Operate the engine until normal operating temperatures are attained. If this is accomplished on the ground be sure cylinder head temperature does not exceed 475° F. Do not stop engine until oil temperature has attained 180° F. (82° C.). If weather conditions are below freezing, oil temperature should be at least 160° F. (71° C.) before shut-down.

3. As soon as possible after the engine is stopped, move the aircraft into the hangar, or other shelter where the preservation process is to be performed.

4. Drain the preservative oil from the engine lubricating system. This oil may be saved and reused for future preservation runs.

5. Remove sufficient cowling to gain access to the spark plugs and remove both spark plugs from each cylinder.

6. Spray the interior of each cylinder with approximately two (2) ounces of corrosion preventive oil while cranking the engine about five (5) revolutions with the starter. The spray gun nozzle may be placed in either of the spark plug holes.

The corrosion preventive oil to be used should conform to specification MIL-L-6529C, Type 1 heated to 200° F./220° F. (93° C./104° C.) spray nozzle temperature. It is not necessary to flush preservative oil from the cylinder prior to flying the aircraft. The small quantity of oil coating the cylinders will be expelled from the engine during the first few minutes of operation.

Spraying should be accomplished using an airless spray gun (Spraying Systems Co., "Gunjet"

Model 24A-8395 or equivalent). In the event an airless spray gun is not available, a moisture trap in the air line of a conventional spray gun may be installed. Be certain oil is hot at the nozzle before spraying cylinders.

7. With the crankshaft stationary, again spray each cylinder through the spark plug holes with approximately two (2) ounces of corrosion preventive oil. Assemble spark plugs and do not turn crankshaft after cylinders have been sprayed.

NOTE

Oils of the type mentioned are to be used in Avco Lycoming aircraft engines for corrosion prevention only, and not for lubrication. See the latest edition of Avco Lycoming Service Instruction No. 1014 and Service Bulletin No. 318 for recommended lubricating oil.

8. If the aircraft is stored in a region of high humidity, or near a sea coast, it is better to use dehydrator plugs instead of merely replacing the spark plugs as directed in the preceding step. Cylinder dehydrator plugs, Avco Lycoming P/N 40238, or equivalent, may be used.

9. Preferably before the engine has cooled, install small bags of desiccant in exhaust and intake ports and seal with moisture impervious material and pressure sensitive tape. Any other opening from the engine to the atmosphere, such as the breather and any pad from which an accessory is removed, should likewise be sealed.

10. Firmly attach red cloth streamers to any desiccant bags installed in the intake or exhaust passages to insure material is removed when the engine is made ready for flight. Streamers should be visible from outside of aircraft. Propeller should be tagged, "Engine preserved - do not turn propeller".

11. A periodic check should be made of the cylinder dehydrator plugs; when the color of the desiccant has turned from blue to pink this preservation procedure must be repeated.

AVCO LYCOMING DIVISION
WILLIAMSPORT, PENNSYLVANIA 17701

Service Instruction

L

DATE: January 5, 1973

Service Instruction No. 1070F
(Supersedes Service Instruction No. 1070E)
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Specified Fuels

MODELS AFFECTED: All Avco Lycoming opposed series aircraft engines.

TIME OF COMPLIANCE: When refueling aircraft.

The importance of using the fuel specified for each model Avco Lycoming engine has been previously stressed in Avco Lycoming Service Letters and Service Bulletins. Again we wish to stress the point that if the specified fuel is not available, the next higher octane fuel must be used. The ability of today's aircraft to cover wide areas in a relatively short period of time sometimes creates a problem of fuel supply due to geographic locations.

The purpose of this instruction, therefore, is to provide a chart of alternate fuels that can be safely used when the specified fuel is not available. Additional precautions are noted for certain model engines that are limited in their operation on fuels of higher octane than that which is specified for the engine. It is recommended that these notes and exceptions be strictly adhered to in order to obtain the best service from your Avco Lycoming engine. The chart in no instance permits fuels of lower octane rating than that which is specified, and it is not permissible in any instance to use an automotive fuel in aircraft engines, regardless of its octane or advertised features. Any fuel used in Avco Lycoming engines must conform with specification MIL-G-5572.

The difference in the properties and composition of automotive gasoline and aviation gasoline make automotive fuels unsafe for use in aircraft. The main differences between automotive and aircraft fuels are as follows:

1. Automotive fuels have a wider distillation range than aircraft fuels and this promotes poor distribution of the high anti-knock components of the fuel. Further, the octane ratings of automotive and aircraft fuels are not comparable due to the different methods used to rate the two types of fuels. This would result in an appreciable difference in actual knock rating for two fuels which have the same octane number. This difference could lead to destructive preignition or detonation.

2. Automotive fuels are more volatile and have higher vapor pressure which can lead to vapor lock. Also the greater volatility increases the fire hazard.

3. Tetraethyl lead in automotive fuels contains an excess of chlorine and bromine whereas aviation fuels contain only the chemically correct amount of bromine. The chlorine is very corrosive and under severe conditions can lead to exhaust valve failures.

4. Automotive fuels are less stable and can form gum deposits. Gum deposits can result in valve sticking and poor distribution.

5. Automotive fuels have solvent characteristics not suitable for aircraft engines. Seals, gaskets and flexible fuel lines are susceptible to attack.

COLOR CODE - FUEL OCTANE RATING

OCTANE RATING	FUEL COLOR
80/87	Red
91/96	Blue
100/130	Green
115/145	Purple

NOTE: Revision "F". Exception for use of 115/145 grade with 4.6 c.c. TEL. added. Inspection exemption for engines using 100/130 avgas added.

FUEL CHART FOR AVCO LYCOMING ENGINES			
SERIES	SPECIFIED FUEL*	ALTERNATE FUELS CONTINUOUS USE	EXCEPTIONS
-235-C, -E, O-290-D	80	**80/87	
O-235-F	100/130	115/145	
O-290-D2	80/87	**80/87	
O-320-A, -C, -E	80/87	***91/96 thru 115/145	
O-320-B, -D	91/96	100/130 or 115/145	
IO-320-A, -E	80/87	91/96 thru 115/145	
IO-320-B, -D	91/96	100/130 or 115/145	
IO-320-C	100/130	115/145	
AIO-320	91/96	100/130 or 115/145	
LIO-320-B	91/96	100/130 or 115/145	
LIO-320-C	100/130	115/145	
O-340-A	91/96	100/130 or 115/145	
O-340-B	80/87	91/96 thru 115/145	
O-360-A, -C	91/96	100/130 or 115/145	
O-360-B, -D	80/87	91/96 thru 115/145	
HO-360	91/96	100/130 or 115/145	
IO-360-A, -C, -D, -F	100/130	115/145	
IO-360-B, -E	91/96	100/130 or 115/145	
AIO-360	100/130	115/145	
HIO-360-A, -C, -D	100/130	115/145	
HIO-360-B	91/96	100/130 or 115/145	
TIO-360	100/130	115/145	
VO-360	91/96	100/130 or 115/145	
IVO-360	91/96	100/130 or 115/145	
O-435-A	80/87	80/87	
O-435-K1 (O-435-4), -A2	91/96	**100/130 or 115/145	
GO-435	80/87	***91/96 thru 115/145	
VO-435-A	80/87	***91/96 thru 115/145	
VO-435-B	100/130	115/145	
TVO-435	100/130	115/145	
GO-480-B, -D, -F	80/87	***91/96 thru 115/145	
GO-480-C, -G and IGO-480	100/130	115/145	
GSO-480	100/130	115/145	
IGSO-480	100/130	115/145	
O-540-A, -D, -E, -F, -G, -H	91/96	100/130 or 115/145	
O-540-B	80/87	91/96 thru 115/145	
IO-540-A, -B, -E, -G, -J, -K, -L, -M, -P, -R	100/130	115/145	
IO-540-C, -D, -N	91/96	100/130 or 115/145	
TIO-540	100/130	115/145	
VO-540-A, -B	80/87	91/96 thru 115/145	
VO-540-C and IVO-540-A	100/130	115/145	
TVO-540	100/130	115/145	
IGO-540-A, -B	100/130	115/145	
IGSO-540-A, -B	100/130	115/145	
TIVO-540	100/130	115/145	
TIO-541	100/130	115/145	
TIGO-541	100/130	115/145	
IO-720	100/130	115/145	

LOW LEAD

GRADE 100/130 AVGAS

(w/2 c. c. TEL MAX.)

Aviation grade 100/130 fuels in which the lead content is limited to 2 c. c. per gallon are approved for continous use in all Avco Lycoming engines listed herein. Inspection procedure described in footnote below is not required for engines using this fuel.

GRADE 115/145 MILITARY FUEL

(w/4. 6c c TEL MAX)

Continuous use of 115/145 fuel can result in increased lead deposits both in combustion chambers and spark plugs causing engine roughness and scored cylinder walls.

It is recommended that the use of this fuel be limited wherever possible; however when 115/145 fuel is used, periodic inspections of combustion chambers, valves and valve parts should be conducted more frequently and spark plugs rotated or cleaned whenever lead fouling is experienced.

* - Engines specified for use with 91/96 grade fuel may also be considered to be specified for 100/130 grade. See Service Letter No. L169 for explanation.

** - O-235-C, O-290-D, -D2 and O-435-A2, -K1 (O-435-4) engines are built with solid stem exhaust valves. The use of higher leaded fuel such as 91/96 thru 115/145 must be limited to 25% of the operating time. If used for longer periods of time the same 150 hour inspection requirement, described in the following note is applicable. O-235-C and O-290-D models can be converted to use sodium cooled exhaust valves. See Service Instruction No. 1246 for procedure.

*** - Early production O-320-A, -C, -E; GO-435; VO-435-A; and GO-480-B, -D, -F were built with solid stem exhaust valves and their use with higher leaded fuels is limited to 25% of operating time. If specified fuel is not available and usage with high leaded fuel exceeds 25% the valve stems should be inspected at 150 hour intervals for erosion, or "necking". This inspection is accomplished by removing the exhaust manifold and visually inspecting the valves through the exhaust ports. To determine if an engine has solid stem exhaust valves, remove the rocker cover and look for valve rotor caps which are used with sodium cooled valves but not with solid stem valves in these particular engines.

AVCO LYCOMING DIVISION
WILLIAMSPORT, PENNSYLVANIA 17701

Service Instruction

L

DATE: March 23, 1973

Service Instruction No. 1278
Engineering Aspects are
FAA (DEER) Approved

SUBJECT: Starter Drive Lubrication

MODELS AFFECTED: All Avco Lycoming direct drive engines

TIME OF COMPLIANCE: During 100 hour inspection of the engine.

Operation of starting motors furnished on these engines can be improved, especially during cold weather, if the following procedure is accomplished periodically after each 100 hours of engine operation.

1. Thoroughly wash Bendix starter drive assembly with clean petroleum spirits (Varsol or equivalent).

2. Lubricate Bendix starter drive assembly with spray silicone. *

CAUTION

Do not use solvents to wash the starter drive. Also, do not use grease, oil, or graphite lubricants; only silicone* spray lubricants are recommended for satisfactory operation.

* - A suitable spray lubricant is Crown Industrial Products Co's. "Silicone Spray" product Code No. 8034; available from Avco Lycoming.

GRUMMAN AMERICAN AVIATION CORPORATION
SERVICE LETTER

SERVICE LETTER NO. 74-4

DATE: MAY 8, 1974

SUBJECTS:
ITEM 1. WINDSHIELD/CANOPY ATTACH SCREW TORQUE
ITEM 2. CANOPY LATCH IMPROVEMENT
ITEM 3. CARBURETOR HEAT/MIXTURE CONTROL FITTING IMPROVEMENT (SUPERSEDES SL71-10)
ITEM 4. FUEL TANK VENT INSPECTION AND MODIFICATION
ITEM 5. INSPECTION COVER INSTALLATION
ITEM 6. AVCO LYCOMING SERVICE INSTRUCTION NO. 1266

SERIALS AFFECTED: AS INDICATED ON EACH SUBJECT

TIME OF COMPLIANCE: AS INDICATED ON EACH SUBJECT

GENERAL

This Service Letter itemizes engineering improvements that have been incorporated on current production two-place aircraft. These items, plus the service related subjects, are recommended for the indicated aircraft in the compliance time suggested.

ITEM 1. WINDSHIELD/CANOPY ATTACH SCREW TORQUE

SERIALS AFFECTED: All Model AA-1, AA-1A and AA-1B aircraft.

TIME OF COMPLIANCE: Each time attach screw is checked for security and during the installation of a replacement windshield or canopy.

A torque value of 8 to 12 inch lbs. has been assigned to all fasteners used to attach the windshield and canopy Plexiglas. While checking these fasteners for security of attachment, the specified torque value must not be exceeded. A torque greater than 12 inch lbs. will eventually cause cracks in the Plexiglas around the attach area. Also, this same torque value must be used when installing a replacement windshield or canopy.

ITEM 2. CANOPY LATCH IMPROVEMENT

SERIALS AFFECTED: AA1B-0238 through AA1B-0392

TIME OF COMPLIANCE: At owner,s discretion.

Field reports indicate that on the affected aircraft, the inside/outside canopy latch may not lock properly, due to deformation of the bearing retainer spring. This deformation of the spring occurs when the locking hook strikes the bearing on dead center. To prevent this condition, a new bearing block assembly, part number 102441-502, has been introduced.

The new bearing block assembly has a modified bearing seat and may be installed on the serials affected, however, on aircraft serial numbers AA1B-0238 through AA1B-0336 the two attach holes in the new bearing block must be enlarged to .191/.196 inch diameter (existing holes are .167/.172 inch diameter), to accept the existing attach hardware. The 102441-502 Bearing Block Assembly includes the bearing block, spring, bearing, and retainer.

N O T E

To assure proper operation of the canopy latch, the latch hook must pass directly through the center of the bearing block, so as to not contact the spring. Bend hook to achieve this condition.

ITEM 3. CARBURETOR HEAT/MIXTURE CONTROL FITTING IMPROVEMENT (SUPERSEDES SL71-10)

SERIALS AFFECTED: AA1-0001 through AA1-0458 and AA1A-0001 through AA1A-0276.

TIME OF COMPLIANCE: When replacing existing fitting, or sooner at owner's discretion.

Since the issuance of Service Letter No. 71-10, (Carburetor Heat/Mixture Control Fitting Replacement), dated September 1, 1971, an improved fitting, part number 3A-665-3/16 Swivel Assembly (Shakespear), has been incorporated.

The introduction of this swivel assembly supersedes Service Letter No. 71-10 and provides for an improved method of control wire attachment for the affected aircraft. One (1) swivel assembly should be ordered for each control that is being modified. Swivel Assembly description, installation and control rigging instructions may be found in the Power Plant Section of the applicable Service Manual.

ITEM 4. FUEL TANK VENT INSPECTION AND MODIFICATION

SERIALS AFFECTED: All Model AA-1, AA-1A and AA-1B aircraft.

TIME OF COMPLIANCE: At next scheduled inspection or anytime erratic fuel quantity indications are observed on the right-hand fuel manometer.

To preclude the possibility of an accumulation of moisture and subsequent freezing in a low spot in the right-hand wing outboard vent line, the following inspection should be performed within the compliance time suggested.

Remove the right-hand wing tip and note the PVC vent line that connects to the fuel tank filler neck and the tube leading to the vent drain. If a low spot exists in this line, or if due to sagging, a low spot could develop, the line should be secured to the tank filler neck with part number, SST-1M Ty-rap or equivalent. The Ty-rap should support the vent line to prevent low spots, however, the Ty-rap should not be tightened to such an extent that the vent line will collapse.

See Figure 1 for Ty-rap location.

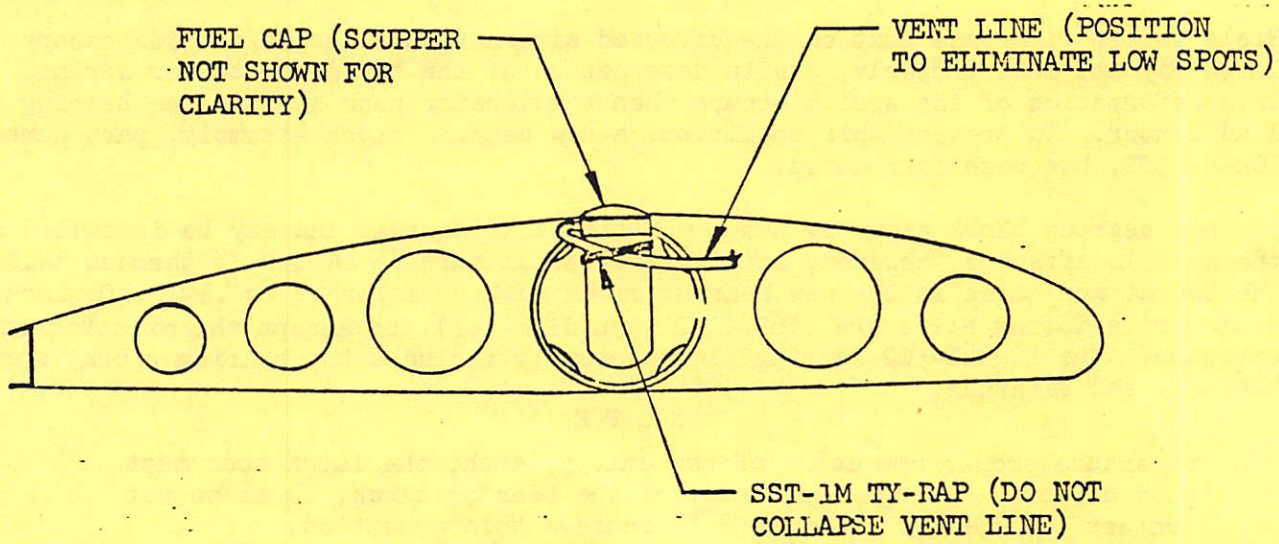


FIGURE 1. FUEL TANK VENT INSPECTION AND MODIFICATION

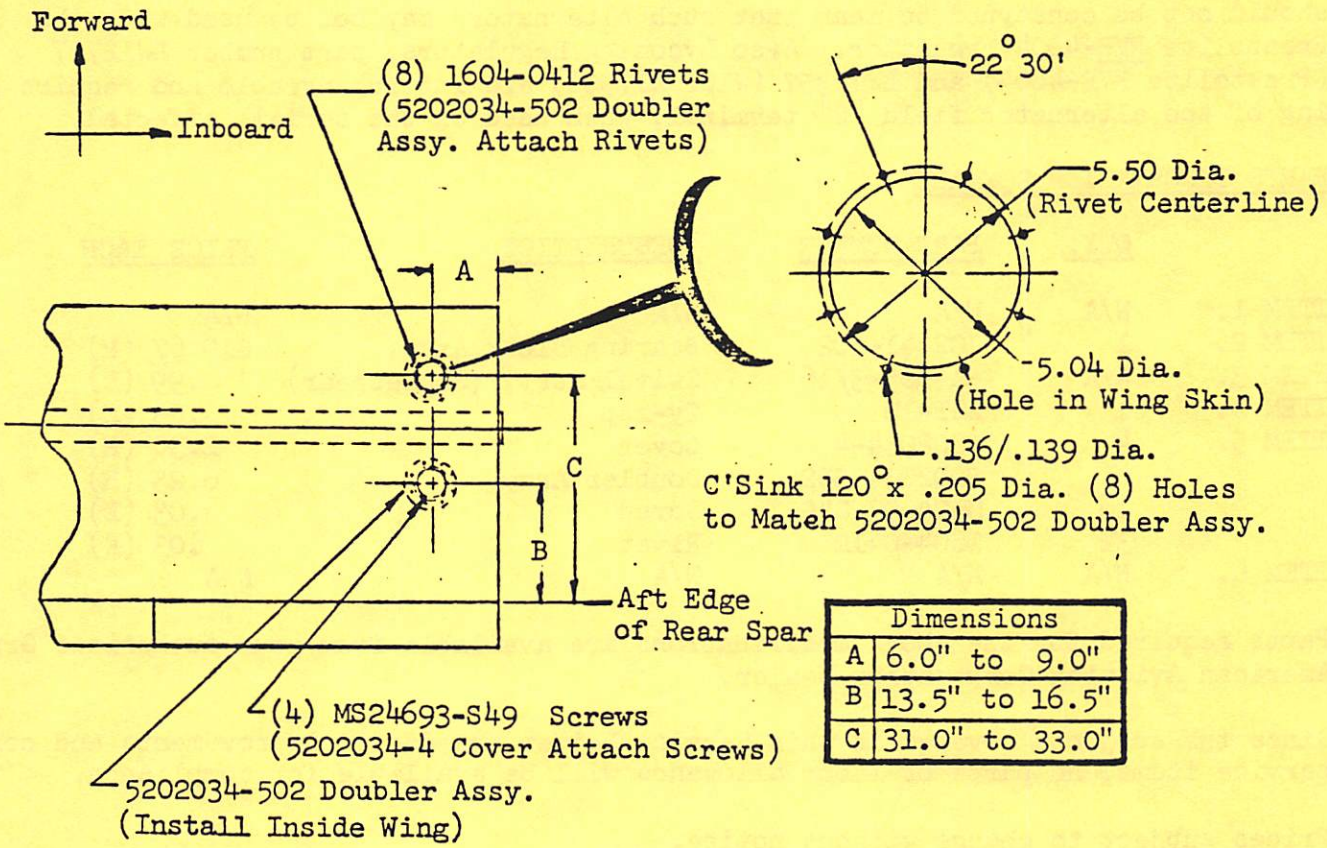
ITEM 5. INSPECTION COVER INSTALLATION

SERIALS AFFECTED: All Model AA-1, AA-1A and AA-1B aircraft.

TIME OF COMPLIANCE: At owner's discretion.

Access to the four wing lock bolts and fuel outlet fittings may be improved by the installation of an access cover and associated doubler below each wing lock bolt on the lower surface of each wing. This installation will provide a 4" diameter hole, which simplifies inspection of the wing lock bolt torque and facilitates the wing removal and installation procedure. The following items are required for the installation of four (4) access covers (two (2) per wing): four (4) 5202034-4 Cover; four (4) 5202034-502 Doubler Assembly; sixteen (16) MS24693-S49 Screw; (32) 1604-0412 Rivet.

Installation details are shown in Figure 2.



Dimensions	
A	6.0" to 9.0"
B	13.5" to 16.5"
C	31.0" to 33.0"

FIGURE 2. INSPECTION COVER INSTALLATION
(BOTTOM VIEW OF RH WING SHOWN)

ITEM 6. AVCO LYCOMING SERVICE INSTRUCTION NO. 1266

SERIALS AFFECTED: All Model AA-1B aircraft.

TIME OF COMPLIANCE: As indicated in the Service Instruction

Included for your information is a copy of Avco Lycoming Service Instruction No. 1266, Alternator Ground Strap.

When replacing an alternator on AA-1B aircraft, the field "2" terminal must be grounded to assure proper operation of the electrical system. On aircraft serial numbers AA1B-0001 through AA1B-0195, this grounding is accomplished by an external ground wire, labeled 1PB8, and alternators may not be stamped with "G" suffix. On aircraft serial numbers AA1B-0196 and on, grounding of the field "2" terminal is accomplished by a ground strap, as noted in Avco Lycoming Service Instruction No. 1266, and alternators are stamped with "G" suffix.

As indicated in the Service Instruction, Prestolite VSF type regulators are not compatible with alternators that have the ground strap or wire and "G" suffix. This should not be construed to mean that such alternators may not be used with the Prestolite FVR-4004 regulator. Avco Lycoming Regulators, part number LW12747 (Prestolite FVR-4004) and LW11357 (WICO X17990) are interchangeable and require grounding of the alternator field "2" terminal, when used on the serials affected.

PARTS INFORMATION SUMMARY

	QTY.	PART NUMBER	DESCRIPTION	PRICE EACH
ITEM 1.	N/A	N/A	N/A	N/A
ITEM 2.	1	102441-502	Bearing Block Assy.	$19.67 (H)
ITEM 3.	A/R	3A-665-3/16	Swivel Assy. (Shakespear)	.99 (E)
ITEM 4.	1	SST-1M	Ty-rap	.03 (E)
ITEM 5.	4	5202034-4	Cover	1.30 (H)
	4	5202034-502	Doubler Assy.	6.25 (H)
	16	MS24693-S49	Screw	.03 (E)
	32	1604-0412	Rivet	.03 (E)
ITEM 6.	N/A	N/A	N/A	N/A

Parts required for the above modifications are available from your authorized Grumman American Aviation Corporation Dealer.

Since the subjects covered in this Service Letter are design improvements and normal service items, no parts or labor allowance will be available for compliance.

Prices subject to change without notice.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Paul H. Seibert

PHS:pjo

Paul H. Seibert
Customer Service Manager

Distribution (B)

Attachment: Avco Lycoming Service Instruction No. 1266

GRUMMAN AMERICAN AVIATION CORPORATION

SERVICE LETTER

SERVICE LETTER NO. 74-6

DATE: May 24, 1974

SUBJECT: BUSS BAR/BEARING COLLAR CLEARANCE

SERIALS AFFECTED: AA1B-0238 thru AA1B-0296, AA1B-0298 thru AA1B-0318, AA1B-0320 thru AA1B-0337, AA1B-0339 thru AA1B-0343, AA1B-0345 thru AA1B-0356, AA1B-0358 thru AA1B-0376, AA1B-0380, AA1B-0382 thru AA1B-0384, AA1B-0386 thru AA1B-0388, AA1B-0391 and AA1B-0395.

AA5-0406 thru AA5-0548, AA5-0551 and AA5-0552.

TIME OF CONPLIANCE: At next scheduled inspection, or sooner if maintenance is performed behind the instrument panel.

General

To preclude the possibility of inadvertent grounding of the electrical system, due to deflecting or bending of the buss bar, a recent production change has increased the clearance between the buss bar and the right hand control shaft bearing collar.

In order to verify that adequate clearance exists on the above listed serials, the following "onetime" inspection and modification, if required, is recommended in the compliance time suggested.

Inspection

The minimum clearance between the buss bar and the right hand control shaft bearing collar is 1/8" (See Figure 1). This clearance may be checked as follows:

1. Confirm that the master switch is in the "OFF" position.
2. Gain access to the buss bar/bearing collar area by removing the right hand control wheel shaft.
3. Obtain a 1/8" thick feeler gauge and from under the instrument panel, attempt to insert the gauge between the buss bar and the right hand control shaft bearing collar.
4. If the gauge can be inserted, without deflecting or bending the buss bar, no further action is required. If the gauge cannot be inserted, or if deflecting or bending of the buss bar occurs, proceed to the modification steps listed below.
5. Install the right hand control wheel shaft.

Modification

1. Confirm that the master switch is in the "OFF" position.

Modification Cont'd

2. Remove the right hand control wheel shaft.

3. Remove the right hand vent airbox by taking out the two plug buttons on the under side of the box and using a long Phillips screwdriver, remove the screws attaching the airbox to the instrument panel.

4. Bend or trim the inboard aft corner of the buss bar to obtain 1/8" clearance between buss bar and the right hand control shaft bearing collar (See Figure 1).

C A U T I O N

Avoid stressing the buss bar, as separation of the buss bar/fuse holder solder connections could occur.

5. Install the right hand vent airbox and reseal to the fuselage with sealant (RTV102 by General Electric or 732 RTV by Dow-Corning).

6. Install the right hand control wheel shaft.

7. Check electrical system for proper operation.

Credit Allowance

A labor credit allowance of .5 hours for the inspection and 2.0 hours for the modification, if required, at the Dealer's prevailing shop rate, will be available for each affected aircraft for compliance with this Service Letter.

All work must be performed or authorized by a Grumman American Aviation Corporation Dealer or representative and a completed Warranty Claim, Form GAA-740, submitted to the factory prior to January 1, 1975 for credit allowance.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:jd

Distribution (B)

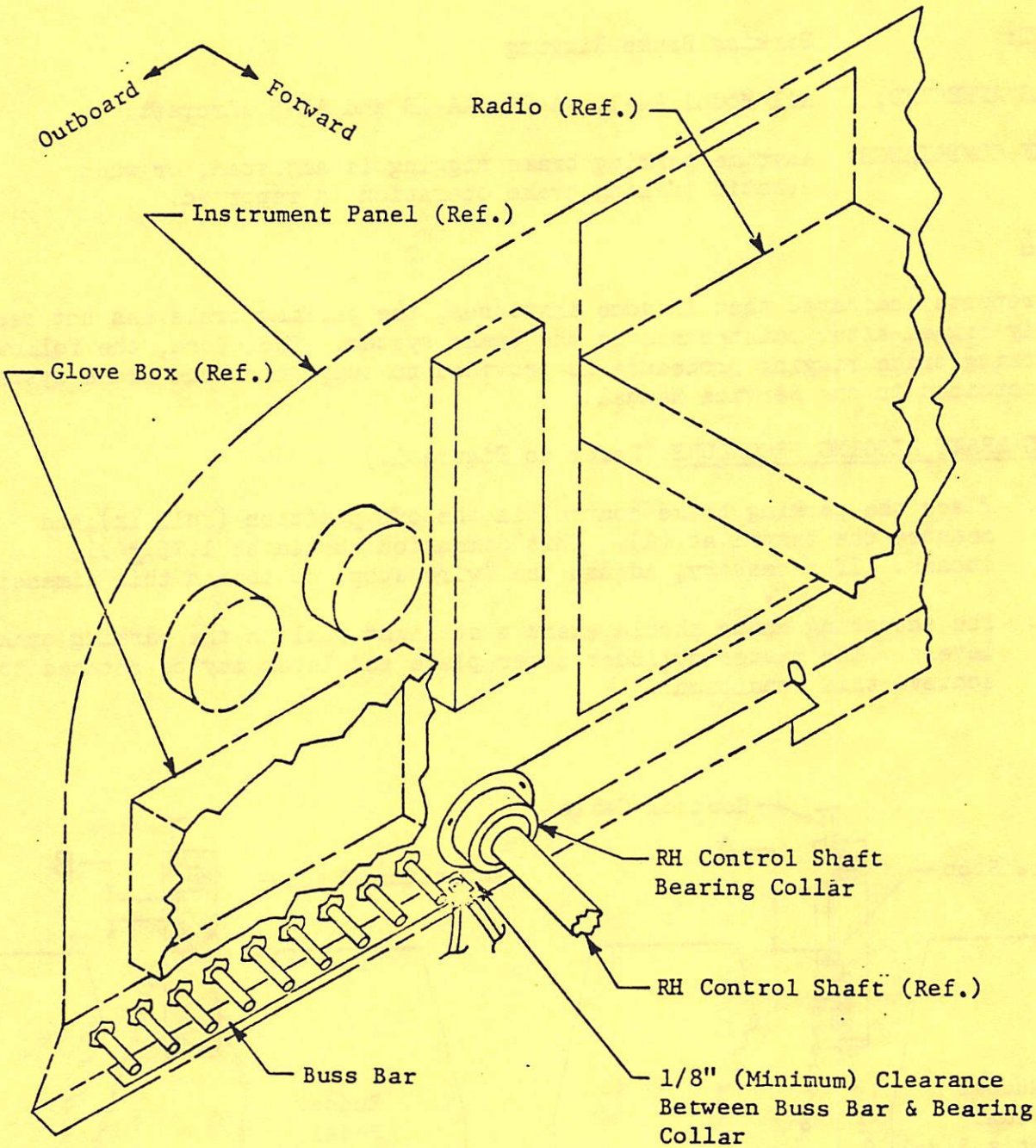


Figure 1. Buss Bar/Bearing Collar Clearance

SERVICE LETTER NO. 74-7

DATE: September 24, 1974

SUBJECT: Parking Brake Rigging

SERIALS AFFECTED: All Model AA-1, AA-1A, AA-1B and AA-5 aircraft.

TIME OF COMPLIANCE: Anytime parking brake rigging is adjusted, or when erratic parking brake operation is reported.

GENERAL

Field reports indicated that in some instances, the parking brake has not been properly rigged after maintenance on the brake system. Therefore, the following parking brake rigging procedure is provided to supplement the brake system data contained in the Service Manual.

PARKING BRAKE RIGGING PROCEDURE (Refer to Figure 1.)

1. Place the parking brake control in the off position (full in) and measure the travel at (A). This dimension should be 1.75 ± .13 inches. If necessary, adjust the "wire stop" to obtain this dimension.
2. The actuating chain should exert a straight pull on the parking brake levers. The master cylinder cover plate and lever may be rotated to achieve this condition.

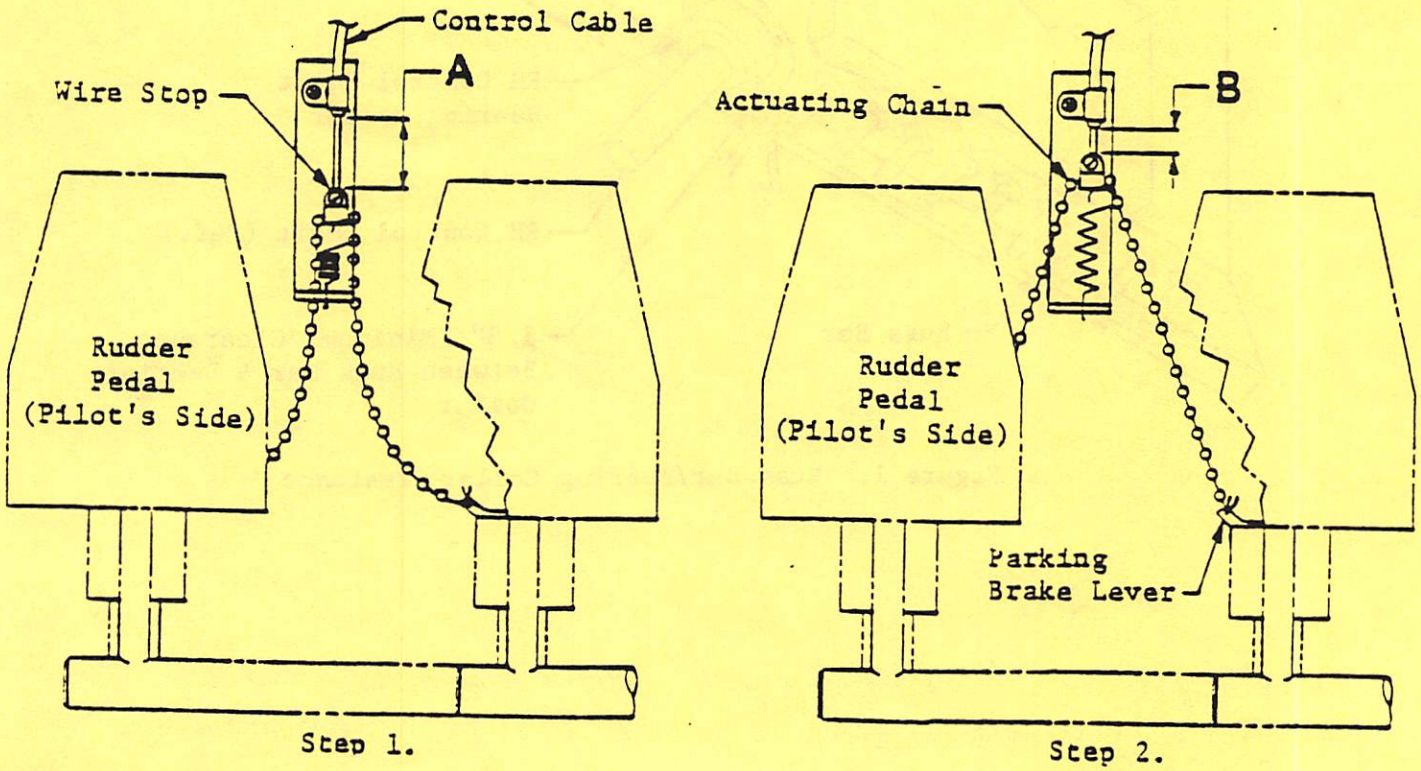


Figure 1. Parking Brake Rigging

3[illegible] BISHOP ROAD CLEVELAND OHIO 44143
(216) 449-2270 TELEX NO 980-245

SERVICE LETTER NO. 75-1
"FAA DOA EA-4 APPROVED"
SUPERSEDES SL 69-5 and SK-107

LETTER

DATE: February 3, 1975

SUBJECT: IMPROVED ANTI-SHIMMY WASHER

SERIALS AFFECTED: All Model AA-1 and AA-1A, AA1B-0001 thru AA1B-0523, AA5-0001 thru AA5-0746 and AA5B-0001 thru AA5B-0024.

TIME OF COMPLIANCE: Anytime nose gear shimmy problems are experienced or sooner at owners discretion.

GENERAL

On some aircraft it has been noted that the tension on the nose fork anti-shimmy (Belleville) washers must be adjusted more often than normal to maintain the proper nose gear fork drag. If the drag is less than specified, side-to-side motion of the nose wheel and fork may occur; if the drag is greater than specified, increased brake pressure will be required to turn the aircraft, while taxiing.

To provide a stabilized drag between scheduled inspections, an improved anti-shimmy washer and a revised assembly sequence have been developed. This washer, identified as AM341615 Spring, may be used to replace the existing Belleville washers on the aircraft serials listed above. Refer to installation instructions for correct assembly sequence.

INSTALLATION INSTRUCTIONS (Refer to Figure 1)

N O T E

EARLY MODEL AA-1 AIRCRAFT ARE EQUIPPED WITH A SPRING PLUNGER THAT IS ATTACHED TO THE FORK TRAVEL STOP ON THE NOSE GEAR STRUT. IF INSTALLED, REMOVE AND DISCARD THE SPRING PLUNGER AND LOCK NUT, PRIOR TO INSTALLATION OF THE IMPROVED ANTI-SHIMMY WASHERS.

1. Remove weight from the nose landing gear per jacking instructions in the applicable service manual.
2. Remove MS24665-353 Cotter Pin and AN320-10 Nut that attaches nose fork to nose gear strut and discard existing Belleville and attach washers.
3. Assemble 702054-5 Washers, AM341615 Springs, AN960-1016L Washers and AN320-10 Nut in the order shown in Figure 1 and attach to nose gear strut.

N O T E

PRIOR TO INSTALLATION, APPLY GENERAL PURPOSE GREASE PER MIL-G-7711 BETWEEN RUBBING SURFACES OF WASHERS AND SPRINGS.

3. Allow the rudder pedals to center and begin pulling out the parking brake control, until all slack is removed from the actuating chain.

N O T E

Do not permit either master cylinder parking brake lever to lift.

4. Measure the travel at (B). This dimension should be .5 ± .13 inches. If this dimension is less than specified, remove enough chain to obtain .5 ± .13 inches; if this dimension is greater than specified, the chain length will have to be increased. Chain, part number 36T0521, is available from the Customer Service Department at $1.32(H) per foot.

5. Check the parking brake for proper operation. After disengaging, apply full rudder pedal deflection in both directions and confirm that neither master cylinder parking brake lever is lifting.

The above information will be included in the next revision of each applicable Service Manual.

Prices subject to change without notice.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Paul H. Seibert

Paul H. Seibert
Customer Service Manager

PHS:nf

Distribution (A)

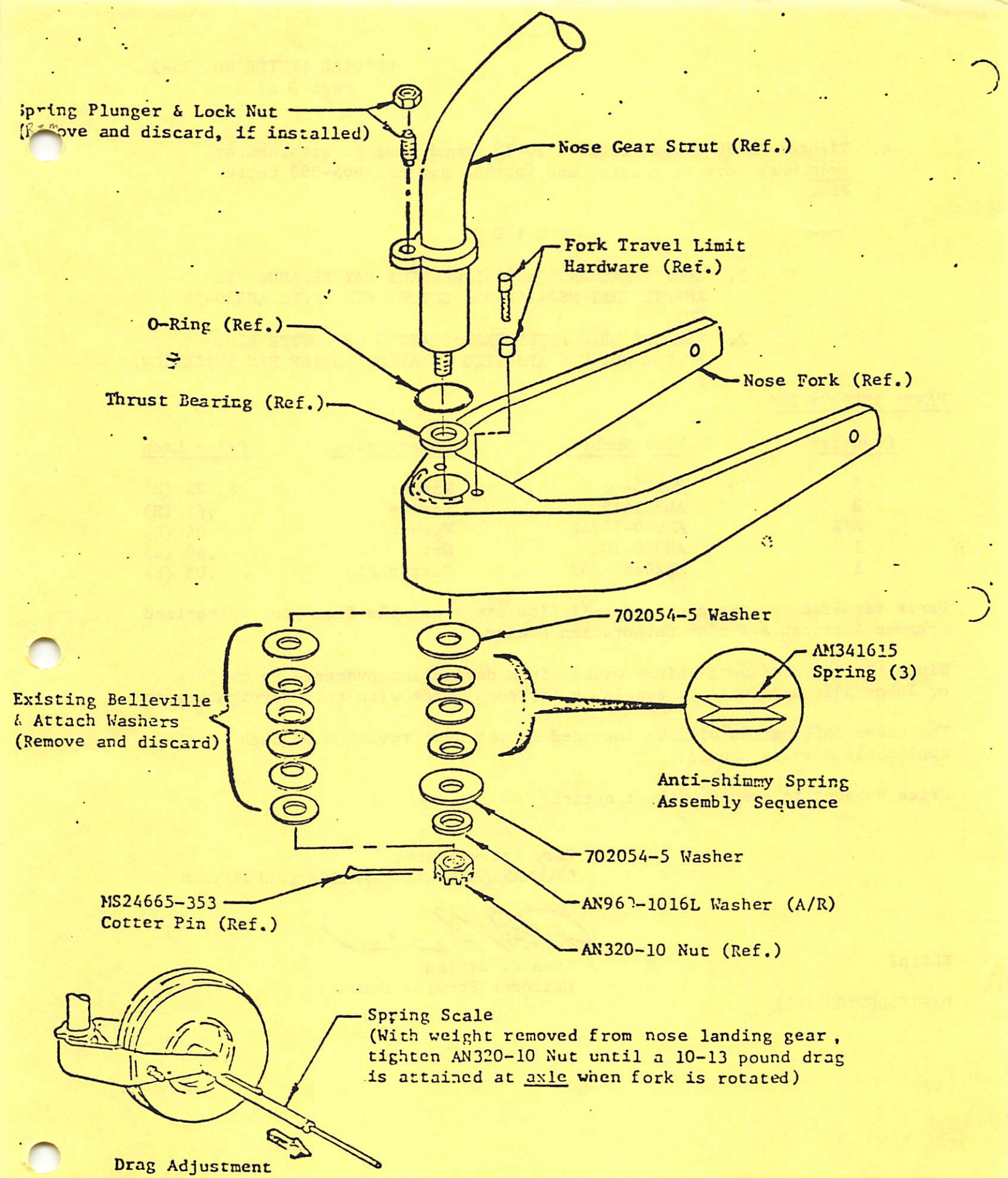


Figure 1. Improved Anti-shimmy Washer Installation

4. Tighten AN320-10 Nut until a 10-13 pound drag is attained at axle when fork is rotated and install new MS24665-353 Cotter Pin.

N O T E S

1. ADDITIONAL AN960-1016L WASHERS MAY BE ADDED TO INSURE THAT MS24665-353 COTTER PIN LOCKS AN320-10 NUT.
2. RECHECK DRAG AFTER INSTALLATION OF COTTER PIN, IF THE NUT WAS ADJUSTED TO ALLOW COTTER PIN INSERTION.

PARTS INFORMATION

Quantity	Part Number	Description	Price Each
2	702054-5	Washer	$ .25 (H)
3	AM341615	Spring	.62 (H)
A/R	AN960-1016L	Washer	.04 (E)
1	AN320-10	Nut	.60 (E)
1	MS24665-353	Cotter Pin	.03 (E)

Parts required for the above installation are available from your authorized Grumman American Aviation Corporation Dealer.

Since the improved anti-shimmy washer is a design improvement, no parts or labor allowance will be available for compliance with this Service Letter.

The above information will be included in the next revision of each applicable service manual.

Price subject to change without notice.

Very truly yours,
GRUMMAN AMERICAN AVIATION CORPORATION

Russ E. Belles
Customer Service Manager

REB:nf

DISTRIBUTION (02)

GRUMMAN AMERICAN AVIATION CORPORATION
318 BISHOP ROAD CLEVELAND, OHIO 44143
(216) 449-2200 TELEX NO. 980-245

SERVICE LETTER

SERVICE LETTER NO. 75-2
"FAA DOA EA-4 APPROVED"

DATE: February 10, 1975

SUBJECTS: ITEM 1: APPROVED REPLACEMENT BATTERIES
ITEM 2: BATTERY BOX COVER INSPECTION

SERIALS AFFECTED: ITEM 1: All Model AA-1, AA-1A, AA-1B, AA-5 and AA-5B aircraft.
ITEM 2: All Model AA-1 and AA-1A, AA1B-0001 through AA1B-0523, AA5-0001 through AA5-0748 and AA5B-0001 through AA5B-0024.

TIME OF COMPLIANCE: ITEM 1: Anytime original equipment battery is replaced.
ITEM 2: At next scheduled inspection or sooner at owner's discretion.

APPROVED REPLACEMENT BATTERIES

Original equipment batteries installed in Grumman American aircraft have been supplied by Gill Aircraft Batteries (Teledyne Battery Products). The specific battery is identified by Gill part number 6-GCAB-9. An approved alternate to this battery, is the Rebat battery, part number S-25.

Although similar in appearance, batteries other than those listed above, are not approved and should not be used to replace the original equipment battery, due to possible vent plug blockage by the battery box cover. Among those batteries not approved, is the Gill battery, part number PS6-9.

N O T E

Refer to AC43.13-2, "Acceptable Methods, Techniques, and Practices - Aircraft Alterations", for installation of batteries not specifically approved by Grumman American Aviation Corporation.

BATTERY BOX COVER INSPECTION

To insure adequate sealing of the battery box cover, the following inspection should be performed within the compliance time suggested.

Remove the battery box cover and view the 1/4" x 1/4" seal located around the cover inside lower edge. If a continuous groove has been formed in the seal, due to contact with the battery box upper edge, no further action is required and the aircraft may be returned to service. If a positive seal is not being maintained, remove the existing seal and install a 1/4" x 1/2" seal (wide side against cover edges) in place of the existing seal. Thirty inches of 4104 Foam Tape (1/4" x 1/2"), 3M Company or equivalent, will be required to fabricate the new seal. Seal material may be purchased locally, or from the Customer Service Department at $.23 (E) per foot.

Prices subject to change without notice.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Russ E. Belles

REB:jmz

318 BISHOP ROAD, CLEVELAND, OHIO 44143
(216) 449-2200 TELEX NO 980-245

SERVICE LETTER NO. 75-4
"FAA DOA EA-4 APPROVED"

LETTER

DATE: June 1, 1975

SUBJECT: LANDING LIGHT REPLACEMENT

SERIALS AFFECTED: All Model AA-1 and AA-1A, AA1B-0001 thru AA1B-0550, and AA5-0001 thru AA5-0640

TIME OF COMPLIANCE: Each time landing light is replaced.

GENERAL

The cowl mounted landing light and retainers on the aircraft serials affected, are subject to premature failure if installed improperly and/or nonstandard attach hardware is used for assembly. Therefore, this Service Letter provides lamp replacement instructions, specifies the attach hardward and identifies improvements that may be incorporated.

Two types of lamp mounting have been used to secure the lamp to the forward cowl. Reference to the applicable replacement instructions should be made, prior to replacing the lamp.

REPLACEMENT INSTRUCTIONS - FIGURE 1

Applicable serials: All Model AA-1 and AA-1A; AA1B-0001 thru AA1B-0338; AA1B-0340; AA1B-0343; AA1B-0346 thru AA1B-0370; AA5-0001 thru AA5-0640.

1. From behind the forward cowl, remove existing lamp and inspect retainer, support and flange assemblies for cracks; screws and anchor nuts for type specified and thread condition; and tapes for deterioration. Replace all items that are worn or damaged.

2. View the intersection of the locating notch and the inside diameter of the 804003-503 Retainer Assembly shown in Detail A. If a sharp corner exists, round off to .06 inch radius.

3. If 804003-5 & -6 Tapes were not provided as original equipment, fabricate tapes out of .06 inch thick vinyl foam tape (single faced) and attach as shown in Details A and B.

4. Subassemble retainer, lamp, support, screws and springs, and loosely attach to forward cowl. Adjust light to lowest position possible by tightening top adjustment screw fully and lower two screws only enough to eliminate gap between lamp and cowl.

5. Refer to applicable Service Manual for final adjustment specifications.

REPLACEMENT INSTRUCTIONS - FIGURE 2

Applicable serials: AA1B-0339; AA1B-0341; AA1B-0342; AA1B-0344; AA1B-0345; AA1B-0371 thru AA1B-0550.

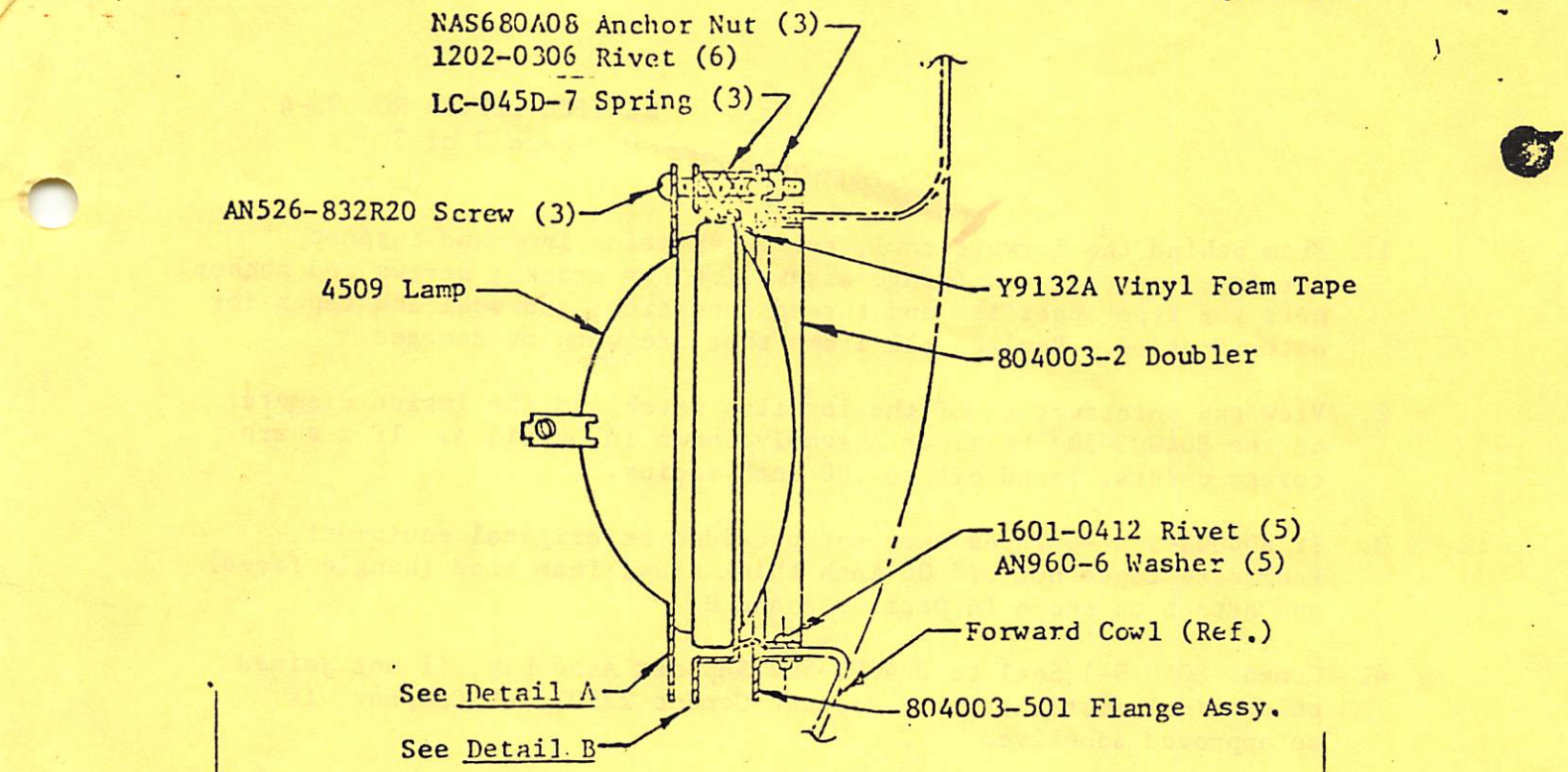
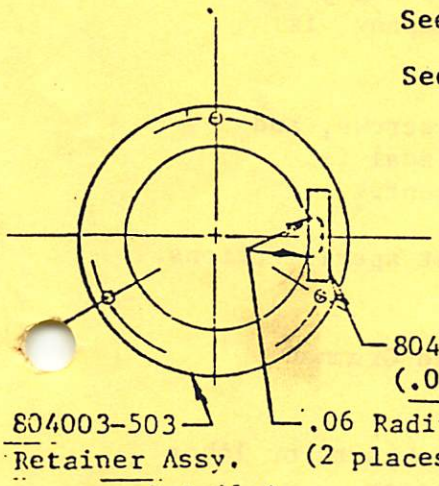
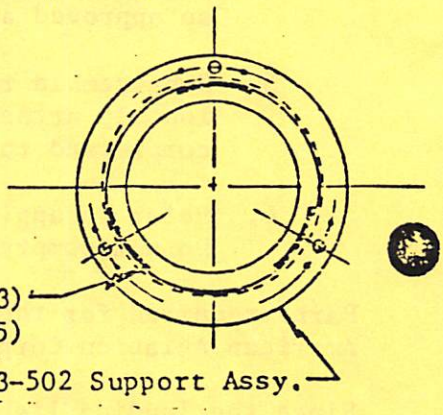


Figure 1: All Model AA-1 and AA-1A;
AA1B-0001 thru AA1B-0338;
AA1B-0340; AA1B-0343;
AA1B-0346 thru AA1B-0370;
AA5-0001 thru AA5-0640.



Detail A
(View looking aft, half size)



Detail B
(View looking forward, half size)

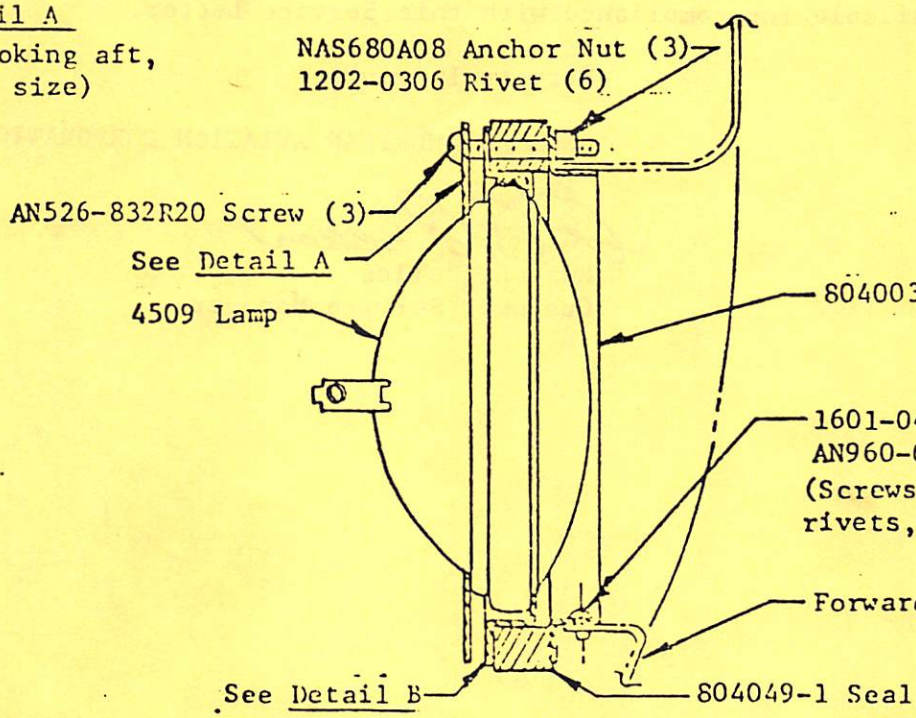


Figure 2: AA1B-0339; AA1B-0341;
AA1B-0342; AA1B-0344;
AA1B-0345; AA1B-0371
thru AA1B-0550.

1. From behind the forward cowl, remove existing lamp and inspect retainer, support and flange assemblies for cracks; screws and anchor nuts for type specified and thread condition; and seal and tapes for deterioration. Replace all items that are worn or damaged.

2. View the intersection of the locating notch and the inside diameter of the 804003-503 Retainer Assembly shown in Detail A. If a sharp corner exists, round off to .06 inch radius.

3. If 804003-5 & -6 Tapes were not provided as original equipment, fabricate tapes out of .06 inch thick vinyl foam tape (single faced) and attach as shown in Details A and B.

4. Cement 804049-1 Seal to 804003-502 Support Assembly, if not joined on original installation. Contact Cement 2210, 3-M Company, is an approved adhesive.

5. Subassemble retainer, lamp, support/seal assembly and screws, and loosely attach to forward cowl. Tighten screws until seal is compressed to .68 $\pm$ .10 prior to landing light adjustment.

6. Refer to applicable Service Manual for final adjustment specifications. Do not compress seal to less than .50 inch thick.

Parts required for the above, are available from your authorized Grumman American Aviation Corporation Dealer.

Since the landing light replacement is a normal service item, no parts or labor allowance will be available for compliance with this Service Letter.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Russ E. Belles
Customer Service Manager

REB:jmz

Distribution (02)

GRUMMAN AMERICAN AVIATION CORPORATION
318 BISHOP ROAD CLEVELAND OHIO 44143
(216) 449-2200 TELEX NO 980-245

SERVICE LETTER

SERVICE LETTER NO. 75-5
"FAA DOA EA-4 APPROVED"

DATE: June 1, 1975

SUBJECT: VENDOR SERVICE PUBLICATIONS

SERIALS AFFECTED: All Model AA-1, AA-1A, AA-1B, AA-5 and AA-5B

TIME OF COMPLIANCE: As indicated in each publication.

Attached for your service information files, are copies of vendor service publications covering the items listed below. It is recommended that compliance with these publications be made as called out in the individual service bulletin, letter or instruction.

ITEM 1. Narco Service Bulletin No. PDF-35-2, Circuit Change to Improve Operation of PDF-35 in Grumman American Aircraft Installations.

ITEM 2. Lycoming Service Bulletin No. 369A, Engine Inspection After Overspeed or Overboost.

ITEM 3. Lycoming Service Bulletin No. 385A, Oil Pump Impeller and Drive Replacement.

ITEM 4. Lycoming Service Letter No. L-159C, Facilities for Cylinder Repair.

ITEM 5. Lycoming Service Instruction No. 1230A, Sintered Iron Oil Pump Impellers.

ITEM 6. Lycoming Service Instruction No. 1307, Connecting Rod Bolt Assembly.

N O T E

ITEM 6 APPLIES TO MODEL AA-5B AIRCRAFT ONLY; THEREFORE, LYCOMING SERVICE INSTRUCTION NO. 1307, CONNECTING ROD BOLT ASSEMBLY, WILL NOT BE ATTACHED TO COPIES OF THIS SERVICE LETTER THAT ARE SENT TO OWNERS OF MODEL AA-1, AA-1A, AA-1B AND AA-5 AIRCRAFT.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Russ E. Belles
Customer Service Manager

REB:jmz

Distribution (01)

SERVICE

NARCO AVIONICS DIVISION OF NARCO SCIENTIFIC INDUSTRIES, Fort Washington, Pa. 19034

NARCO SERVICE BULLETIN NO. PDF-35-2 May 6, 1975

TO: ALL NARCO AVIONIC CENTERS
ALL NARCO WHOLESALE DISTRIBUTORS

SUBJECT: CIRCUIT CHANGE TO IMPROVE OPERATION OF PDF-35 IN GRUMMAN-AMERICAN AIRCRAFT INSTALLATIONS

Due to the fact that the Antenna Specialists combination marker beacon/ADF sense antenna (AV 8) used primarily on Grumman-American aircraft has about 14 DB less gain than a standard top sense antenna, the PDF-35 has less range than it normally would have with a standard top sense antenna.

Analysis of this problem has shown that the pointing range of the unit can be improved considerably with the following change in the PDF-35 NAV squelch circuit:

1. Refer to the PDF-35 manual.

2. Change R-584 from 820 OHMS to 1500 OHMS in all PDF-35 receivers that have a 2200 OHM resistor for R-600. If R-600 is 1000 OHMS, then R-584 should not be changed.

   This change only applies to PDF-35 installations in aircraft using the Antenna Specialists AV 8 combination Marker Beacon/ADF sense antenna, and does not require any additional tuning or alignment of the radio.

Very truly yours,

NARCO AVIONICS
A Division of Narco Scientific Industries

Gene Salzmann
Technical Representative

GS/pk

GRUMMAN AMERICAN AVIATION CORPORATION
P.O. BOX 2206 SAVANNAH, GEORGIA

SERVICE LETTER

SERVICE LETTER NO. 75-7
"FAA DOA EA-4 APPROVED"

DATE:	November 17, 1975
SUBJECT:	IMPROVED FUEL LEVEL VISIBILITY
SERIALS AFFECTED:	All Model AA-1 and AA-1A, and AA1B-0001 thru AA1B-0542
TIME OF COMPLIANCE:	At owner's discretion.

GENERAL

A red fuel float has been installed in the fuel measurement gauges of recent production aircraft to aid in determining fuel level when using the relatively colorless 100 octane fuel. Although some aviation oil companies may add purple dye to increase the visibility of 100 octane fuel, the float may be added to the aircraft serials affected by this Service Letter.

INSTALLATION INSTRUCTIONS (Refer to Figure 1)

WARNING

INSTALLATION OF THE FLOAT INVOLVES OPENING OF THE FUEL SYSTEM WITHIN THE COCKPIT. OBSERVE ALL AIRPORT AND OTHER APPLICABLE FIRE REGULATIONS CONCERNING DEFUELING AND FUEL SYSTEM MAINTENANCE.

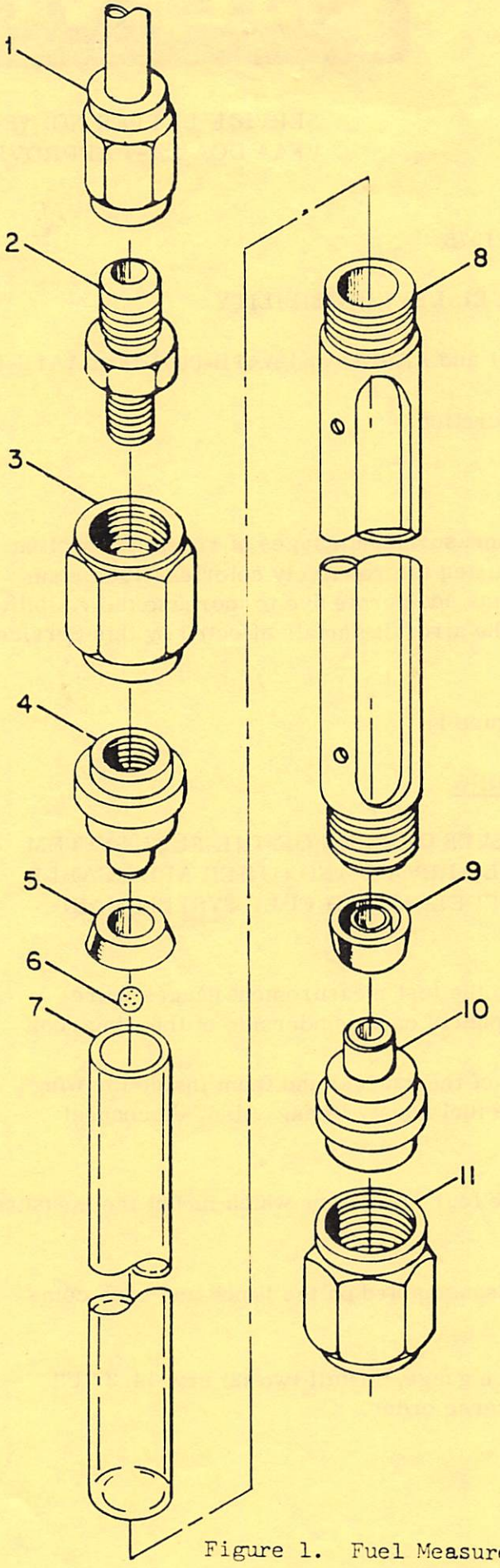
1. Defuel both fuel tanks and gain access to the fuel measurement gauges by removing interior side panels and access panels on the underside of the wing root.

2. Disconnect the line fittings from the top of the gauges; and from inside the wing root, disconnect the measurement gauge fuel supply lines. Also, disconnect primer line on the right gauge.

3. Remove the two (2) screws in each of the four (4) clamps which mount the measurement gauges to the side panels.

4. The measurement gauges may now be disassembled on the bench and each component individually inspected.

5. Place one (1) 401129-5 Fuel Float in each gauge, install two (2) new 14.2 "U" Cup Packings and reassemble in the reverse order.



1. LINE FITTING
2. NIPPLE
3. NUT
4. VENT CAP
5. "U" CUP PACKING
6. FUEL FLOAT
7. GLASS TUBE
8. CASE
9. "U" CUP PACKING
10. INLET CAP
11. NUT

Figure 1. Fuel Measurement Gauge - Exploded View

NOTE

TO PREVENT PACKING DAMAGE FROM OVER TIGHTENING, ASSEMBLE PACKINGS TO CAPS AND PRESS ASSEMBLIES ONTO GLASS TUBE UNTIL THEY BOTTOM. RUN NUTS UP EQUALLY ON BOTH ENDS UNTIL CONTACT IS MADE WITH CAPS. COMPLETE ASSEMBLY BY TURNING EACH NUT 1/4 TURN TIGHTER.

6. Install fuel measurement gauges in aircraft and check for leaks. Install interior side panels and access panels on the underside of the wing root.

PARTS INFORMATION

QUANTITY	PART NUMBER	DESCRIPTION	KIT PRICE
2	401129-5	Fuel Float	
4	14.2	"U" Cup Packing	$5.00

Parts required for the above installation are available from your authorized Grumman American Aviation Corporation Dealer.

Since the improved fuel level visibility is a design improvement, no parts or labor allowance will be available for compliance with this Service Letter.

Price subject to change without notice.

SERVICE LETTER

SERVICE LETTER NO. 75-9
"FAA DOA EA-4 APPROVED"

DATE: November 17, 1975

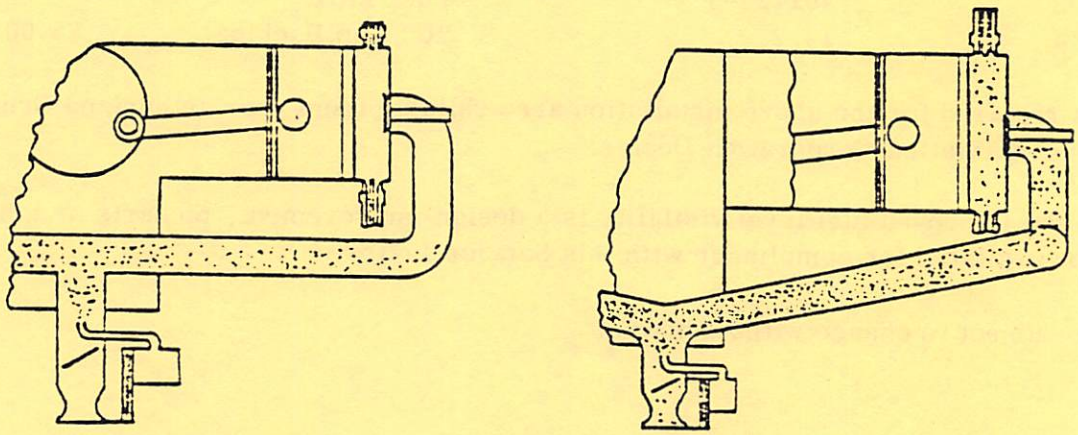
SUBJECT: SPARK PLUG LEAD FOULING

SERIALS AFFECTED: All Aircraft

GENERAL

Aviation grade 100/130 fuels (100 AVGAS) in which the lead content is limited to 2 c.c. per gallon are approved for continuous use in all Avco Lycoming engines installed in Grumman American Aviation Corporation aircraft, however, continuous use may cause spark plug lead fouling, particularly on the O-235-C2C engine.

The schematics of the intake manifold are illustrating what is happening when the fuel mixture is too rich. The heavy ends of the fuel that contain tetra ethyl lead (T.E.L.) revert back to a solid once they come in contact with a cold manifold. These lead globules build up, and eventually work their way into the cylinder and find their way to the spark plug, causing the spark plug to foul.



Intake Manifold Schematic

Several procedures may be observed to limit spark plug lead fouling, however, the single most important item is proper fuel mixture leaning.

In addition to reduced lead fouling, there are other benefits which are realized. These include: economy of fuel means lower cost of operation; excessively rich running engines are rough - proper leaning makes them smooth, which protects engine mounts and engine accessories from vibration; leaning at cruise extends the range of the aircraft - a safety factor; correct leaning means cleaner combustion chambers - less likelihood of preignition from undesirable deposits.

FUEL MIXTURE LEANING PROCEDURES

The maximum recommended cruise power setting is 75% of the rated horsepower. True airspeeds, which are determined by the particular altitude and power setting chosen, can be obtained from the tables in the appropriate owners manual. For optimum fuel consumption and minimum spark plug lead fouling in cruise at 75% power or less, lean the mixture as follows:

N O T E

THE MIXTURE SHOULD BE FULL RICH DURING TAKE-OFF AND CLIMB AT ALTITUDES BELOW 5000 FEET MSL. HOWEVER, DURING TAKE-OFF OR CLIMB FROM HIGH-ALTITUDE AIRPORTS, THE ENGINE SHOULD BE LEANED TO ACHIEVE BEST POWER (MAXIMUM RPM).

1. Slowly move the mixture control from full rich position toward lean position.

2. Continue leaning until engine roughness is noted.

3. Enrich mixture slightly until engine runs smoothly.

ADDITIONAL PROCEDURES

In addition to leaning, the following techniques should be considered to minimize spark plug lead fouling: swap top spark plugs with bottom spark plugs at mid-spark plug servicing periods (50 hours); avoid closed throttle idle operation on the ground - wherever possible, idle engine in the 1000-1200 RPM range; insure that the idle mixture has been properly adjusted to avoid a rich condition; rather than closing the throttle, use other methods to drop airspeed to loose altitude - power landings prevent rapid temperature drop, retaining the advantage of proper operating temperatures; use the correct heat range spark plug.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

Russ E. Belles
Customer Service Manager

REB:jmz

Distribution (01)

P.O. BOX 2206 SAVANNAH, GEORGIA 31402
(912) 964-1454 TELEX NO. 54-6470

SERVICE LETTER NO. 75-10
"FAA DOA EA-4 APPROVED"

LETTER

DATE: November 17, 1975

SUBJECT: PARKING BRAKE IMPROVEMENT

SERIALS AFFECTED: All Model AA-1, AA-1A and AA-5, AA1B-0001 thru AA1B-0582, AA5A-0001 thru AA5A-0058 and AA5B-0001 thru AA5B-0179.

TIME OF COMPLIANCE: At next scheduled inspection, or sooner at owner's discretion.

GENERAL

Recent production aircraft have incorporated an engineering change that provides for increased retention of the parking brake control housing. Field reports indicate that in some instances, the housing would slip through the retaining clamp, when the parking brake control was actuated. Therefore, a nut and associated tywrap lock have been added directly above the clamp.

It is recommended that this improvement be incorporated on the above affected aircraft in the time of compliance indicated.

INSTALLATION INSTRUCTIONS (Refer to Figure 1)

1. Loosen screw on wire stop, straighten parking brake control wire and remove wire stop.

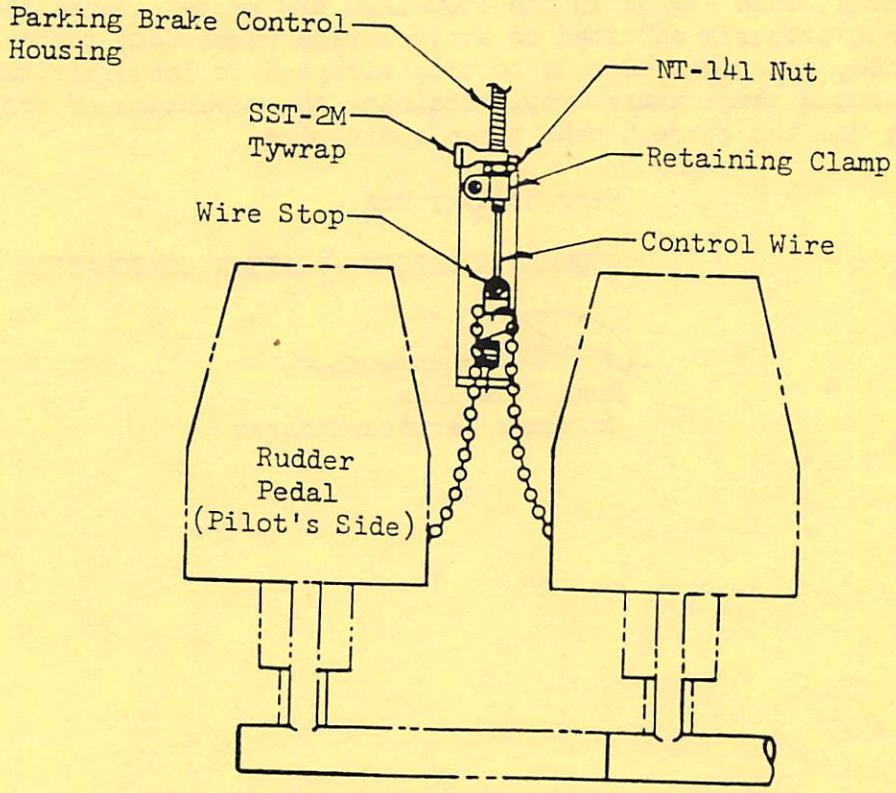


Figure 1. Parking Brake Improvement

2. Loosen retaining clamp sufficiently to allow the housing to slide through.

3. Install NT-141 Nut on housing, reassemble in the reverse order and rig parking brake.

N O T E

RIGGING INFORMATION MAY BE OBTAINED FROM THE CURRENT SERVICE MANUAL OR SERVICE LETTER NO. 74-7.

4. Seat NT-141 Nut on retaining clamp and install SST-2M Tywrap to prevent nut from turning.

5. Check parking brake for proper operation. After disengaging, apply full rudder pedal deflection in both directions and confirm that neither master cylinder parking brake lever is lifting.

PARTS INFORMATION

QUANTITY	PART NUMBER	DESCRIPTION	PRICE EACH
1	NT-141	Nut	$ .27 (E)
1	SST-2M	Tywrap	.10 (E)

Since the subject of this Service Letter is a design improvement, no parts or labor will be available for compliance.

Prices subject to change without notice.

Very truly yours,

GRUMMAN AMERICAN AVIATION CORPORATION

REB:jmz

Distribution (02)

SERVICE LETTER

SERVICE LETTER NO. 76-1
AMENDMENT NO. 1
''FAA DOA EA-4 APPROVED''

DATE: May 17, 1976

SUBJECT: TELEX MICROPHONE REPLACEMENT

SERIALS AFFECTED: AA1B-0535 thru AA1B-0579, AA5-0783 thru AA5-0834, AA5A-0001 thru AA5A-0065 and AA5B-0045 thru AA5B-0190. (This Service Letter applies to those aircraft in the above serial range that were supplied with TEL66TRA Telex Microphones as original equipment).

TIME OF COMPLIANCE: Anytime intermittent microphone operation is experienced or sooner at owner's discretion.

Under CREDIT INFORMATION, amend the last line of the second paragraph to read as follows:

. . . must be received at the factory before July 15, 1976 for credit allowance.

GRUMMAN AMERICAN AVIATION CORPORATION

REB/lr

Distribution (02)

SERVICE LETTER NO. 76-1
"FAA DOA EA-4 APPROVED"

DATE: February 9, 1976

SUBJECT: TELEX MICROPHONE REPLACEMENT

SERIALS AFFECTED: AA1B-0535 thru AA1B-0579, AA5-0783 thru AA5-0834, AA5A-0001 thru AA5A-0065 and AA5B-0045 thru AA5B-0190. (This Service Letter applies to those aircraft in the above serial range that were supplied with TEL66TRA Telex Microphones as original equipment).

TIME OF COMPLIANCE: Anytime intermittent microphone operation is experienced or sooner at owner's discretion.

GENERAL

We have been advised by Telex Communications Incorporated that the TEL66TRA Microphone, supplied as original equipment in the above specified aircraft, may be subject to intermittent operation. The problem has been identified as the production technique that was being utilized to install the switch and the ohms resistance of the cord.

Grumman American and Telex Communications have initiated a program whereby owners/operators of the above specified aircraft may replace their existing TEL66TRA Microphone with a new unit. This replacement should be accomplished even though intermittent operation has not been experienced.

PARTS INFORMATION

Microphone, part number TEL66TRA, price $43.50 (E) each, is available from your authorized Grumman American Aviation Corporation Dealer.

CREDIT INFORMATION

A full parts allowance will be available for each affected aircraft.

The replacement must be performed or authorized by a Grumman American Aviation Dealer. A completed Warranty Claim Form No. GAA-740 and the replaced microphone must be received at the factory before April 30, 1976 for credit allowance.

Prices subject to change without notice.

GRUMMAN AMERICAN AVIATION CORPORATION

REB:jmz

Distribution (02)

SERVICE LETTER NO. 76-1
AMENDMENT NO. 1
''FAA DOA EA-4 APPROVED''

DATE: May 17, 1976

SUBJECT: TELEX MICROPHONE REPLACEMENT

SERIALS AFFECTED: AA1B-0535 thru AA1B-0579, AA5-0783 thru AA5-0834, AA5A-0001 thru AA5A-0065 and AA5B-0045 thru AA5B-0190. (This Service Letter applies to those aircraft in the above serial range that were supplied with TEL66TRA Telex Microphones as original equipment).

TIME OF COMPLIANCE: Anytime intermittent microphone operation is experienced or sooner at owner's discretion.

Under CREDIT INFORMATION, amend the last line of the second paragraph to read as follows:

. . . must be received at the factory before July 15, 1976 for credit allowance.

GRUMMAN AMERICAN AVIATION CORPORATION

REB/lr

Distribution (02)

SERVICE

Gulfstream American

SERVICE LETTER NO. 78-5
"FAA (DER) APPROVED"

LETTER

DATE: 26 January 1979

SUBJECT: UPHOLSTERY REPLACEMENT/HERCULON MATERIAL

MODEL AFFECTED: AA-1B, AA-5, AA-5A and AA-5B

SERIALS AFFECTED: Refer to TABLE I

TIME OF COMPLIANCE: As indicated in the following text

GENERAL

Some 1975 and early 1976 aircraft which were factory equipped with interiors which consisted of the vinyl/fabric design have experienced fabric disintegration in the fabric areas of the interior seats. TABLE I represents those aircraft which may be affected.

REPLACEMENT PROCEDURE

1.) A replacement procedure has been established wherein the vinyl/fabric material can be replaced in the field by local upholstery shops. Gulfstream American Corporation will supply replacement material for the affected aircraft in the form of a kit applicable to the particular model of aircraft. The fabric used on the replacement material is nylon; the vinyl used will be of the same design as the original configuration.

2.) Replacement interior kit will consist of the following material:

	Qty. per Aircraft	Description
AA-1B Kit:	2 each	Front Seat Back Cover
	2 each	Front Seat Bottom Cover
	1 each	Left Forward Side Panel
	1 each	Right Forward Side Panel
AA-5, AA-5A Kit:	2 each	Front Seat Back Cover
	2 each	Front Seat Bottom Cover
	1 each	Rear Seat Bottom Cover
	2 each	Rear Seat Back Cover
	1 each	Left Forward Side Panel
	1 each	Right Forward Side Panel

REPLACEMENT PROCEDURE - Continued

AA-5B Kit: The parts required for the AA-5, AA-5A Kit plus the following:

Qty. per Aircraft	Description
1 each	Left Aft Side Panel
1 each	Right Aft Side Panel

When ordering a Kit, the aircraft serial number must be given along with the aircraft trim code which can be found on the finish and trim plate located on the upper left hand section of the firewall, attached to the engine side of the firewall.

EXAMPLE: Aircraft Serial No: AA1B-0526
Trim Code: 5-EP-G-K-12-P

3.) Replacement material for those affected aircraft will be made available providing that a request for a replacement interior Kit is made through a Gulfstream American Corporation (formerly Grumman American Aviation Corporation) Dealer or International Distributor and the request is received by Product Support Department (Gulfstream American Corporation Light Aircraft) no later than May 1, 1979.

CREDIT INFORMATION

1. When available, Kits will be shipped at no cost (NOTE: This does not include transportation costs). A labor allowance will be available as follows:

AA-1B Model:	Up to $125.00
AA-5, AA-5A and AA-5B Models:	Up to $250.00

2. A completed Gulfstream American Corporation Warranty Claim, Form GAA 740, must be submitted by a Gulfstream American Corporation Dealer/International Distributor upon completion of the interior change. A copy of the Work Order from the upholstery shop completing the work must be attached.

CREDIT INFORMATION - Continued

3. The removed covers and side panels must be returned to Warranty Return Goods Department, Gulfstream American Corporation, Commercial Light Aircraft, at the time of filing the Warranty Claim. No labor credit will be issued until receipt of this material and a completed claim.

4. Deadline for claims to be submitted will be sixty (60) days after shipment date of replacement interior Kit(s) from the factory for domestic aircraft; ninety (90) days for export aircraft.

GULFSTREAM AMERICAN CORPORATION

R. E. Belles, Director
Light Aircraft Customer Service

REB:rjm

TABLE I

(Affected Aircraft Serial Numbers)

AA-1B AIRCRAFT

0449	0495	0539	0563
0451	0500	0540	0564
0459	0502	0543	0570
0461	0513	0546	0573
0463	0524	0549	0576
0464	0529	0552	0582
0465	0535	0553	0603
0466	0537	0556	0607
0482	0538	0558	0611

AA-5 AIRCRAFT

0642	0685	0725	0780
0643	0686	0732	0781
0644	0687	0737	0782
0645	0688	0741	0784
0646	0690	0744	0785
0647	0691	0745	0786
0648	0692	0749	0787
0650	0694	0750	0792
0651	0697	0751	0794
0656	0699	0752	0797
0658	0700	0755	0803
0661	0704	0756	0805
0662	0705	0757	0806
0663	0706	0759	0811
0664	0709	0762	0814
0665	0710	0763	0815
0666	0713	0764	0821
0667	0714	0765	0823
0668	0715	0767	0824
0672	0716	0768	0825
0673	0720	0772	0829
0677	0723	0773	0831
0679	0724	0779	0832
			0833

TABLE I

(Affected Aircraft Serial Numbers)

AA-5A AIRCRAFT

0001	0026	0054	0082	0105
0005	0031	0056	0083	0107
0009	0032	0060	0084	0108
0010	0033	0061	0085	0109
0011	0035	0062	0088	0110
0012	0037	0064	0089	0111
0013	0039	0065	0092	0116
0014	0040	0067	0093	0117
0015	0041	0069	0094	0118
0017	0042	0070	0097	0124
0018	0047	0072	0099	0130
0020	0049	0075	0100	0132
0022	0051	0076	0102	0133
0024	0052	0080	0103	0136
				0138

AA-5B AIRCRAFT

0004	0069	0121	0169	0217
0005	0071	0123	0170	0219
0006	0072	0125	0171	0220
0007	0073	0126	0172	0225
0008	0074	0127	0173	0227
0009	0075	0128	0174	0230
0012	0080	0129	0175	0232
0013	0083	0131	0176	0235
0014	0084	0132	0177	0236
0018	0086	0134	0179	0238
0025	0087	0140	0183	0239
0026	0089	0141	0184	0240
0031	0090	0142	0185	0241
0032	0092	0143	0186	0242
0037	0093	0144	0189	0245
0048	0094	0146	0190	0246
0049	0099	0148	0191	0248
0050	0101	0149	0192	0249
0051	0107	0150	0193	0250
0052	0108	0151	0194	0252
0053	0109	0157	0196	0254
0057	0110	0158	0197	0257
0061	0113	0159	0200	0258
0064	0114	0161	0207	0259
0065	0115	0162	0209	0261
0067	0117	0164	0212	0268
	0119	0165	0216	0301

SERVICE

Gulfstream American

SERVICE LETTER 79-4
"FAA (DER) APPROVED"

LETTER

DATE: 16 May 1979

SUBJECT: TCP FUEL ADDITIVE

MODLES AFFECTED: AA-1, AA-1A, AA-1B, AA-1C, AA-5, AA-5A, and AA-5B

SERIALS AFFECTED: All Serials

GENERAL

Enclosed is a copy of Avco Lycoming Service Letter L190. This Avco Lycoming Publication approves the use of TCP in all of Avco Lycoming normally aspirated aircraft engines.

Due to the unknown effects TCP may have on the airframe fuel system components during long term exposure, Gulfstream American Corporation advises that if TCP is used in Gulfstream American aircraft, it will be used at the sole risk of the owner/operator..

GULFSTREAM AMERICAN CORPORATION

R. E. Belles, Director
Light Aircraft Customer Service

REB:rjm

Attachment:

SERVICE

Gulfstream American

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GULFSTREAM AMERICAN CORPORATION

R. E. Belles, Director
Light Aircraft Customer Service

REB:rjm

Attachment:

SERVICE

Gulfstream American

SERVICE LETTER NO. 81-1

LETTER

DATE: October 9, 1981

SUBJECT: REPLACEMENT OF INDUCTION AIR FILTER

MODELS AFFECTED: AA1 0001 and Subsequent & AA5 0001 thru AA5 0640
AA5 0641 and Subsequent
AA5A 0001 and Subsequent
AA5B 0001 and Subsequent

TIME OF COMPLIANCE: As Noted Below

GENERAL:

This Service Letter calls attention to the requirements of Service Letter 77-4 (a copy of which is attached) for AA5B aircraft serial numbers 0001 thru 0549, and normal mandatory filter replacement intervals, as called for in the respective Maintenance Manual for each affected model series.

PROCEDURE:

1. Engine Air Filter Servicing all AA1 and AA5 0001 thru 0640 aircraft: Inspection, servicing and replacement should be done in accordance with the appropriate manufacturers maintenance manual. Although these aircraft were delivered with reusable filters, some aircraft may have been converted to foam-type filters under various STC's. These filters may not be washable, and must be serviced or replaced as called for under the provisions of these STC's.

2. Engine Air Filter Servicing: AA5 0641 and Subsequent, and all AA5A aircraft:

   The engine air filter element should be replaced every 100 hours of engine operation, every (12) twelve calendar months, when torn or when 50% covered with foreign material, whichever occurs first.

   Replace the engine air filter element as follows:

   NOTE

   Never blow off filter with compressed air or attempt to wash element in any liquid or soak in oil.

A. Locate filter access per Figure 6 Section 12-2-1 of the AA5 Series Maintenance Manual. Remove the screws that attach the filter cover plate and remove the plate.

B. Remove old filter element and install replacement.

C. Replace filter cover plate and reinstall screws attaching it.

3. Engine Air Filter Servicing: AA5B aircraft:

A. On aircraft AA5B 0001 through 0549 using filter Part Number 8994656 and aircraft AA5B 0550 through 0950 using filter Part Number 5500015-501, replace the foam-type filter element every 300 hours, ever (12) twelve calendar months, when torn, or when 50% covered with foreign material, whichever occurs first. Replace filter as follows:

NOTE

Never blow off filter with compressed air or attempt to wash element in any liquid or soak in oil.

1. Open both sides of upper cowl and secure with support tubes.

2. Remove lower engine cowl.

3. Unbolt filter access door, see Figure 7 Section 12-2-1 of the AA5 Series Maintenance Manual, on bottom of air box/filter assembly.

4. Remove old filter and install replacement.

5. Close and secure filter access door.

6. Install lower engine cowl.

7. Close and secure upper engine cowl.

B. On aircraft AA5B 0951 and subsequent, check the paper-type carburetor air filter during each 100 hour inspection. If the filter is dusty, it may be removed and cleaned with compressed air or washed in a solution of water and Donaldson D-1400 filter cleaning compound or equivalent. Replace the filter after one year, after ten cleanings, or after 500 flight hours, whichever occurs first. Service filter as follows:

1. Open both sides of upper cowl and secure tubes.

2. Remove lower engine cowl.

3. Unbolt filter access door, see Figure 7 Section 12-2-1 of the AA5 Series Maintenance Manual, on bottom of air box/filter.

4. Remove filter, clean and inspect as follows:

   (a) Clean filter, using methods described above.

   (b) After filter is clean and dry, inspect filter by using a bright light on one side and looking through the filter from the other side. Check thoroughly for holes or tears in the filter.

5. Install cleaned or new filter.

6. Close and secure filter access door.

7. Install lower engine cowl.

8. Close and secure upper engine cowl.

PARTS AVAILABILITY:

Service Kit No. 113 is available for filter/assembly replacement on AA5B 0001 through AA5B 0549. Filter element assemblies are available through your authorized Gulfstream Service Center for all other aircraft.

GULFSTREAM AMERICAN CORPORATION

SERVICE

LETTER

Gulfstream Aerospace Corporation

P O Box 2206, Savannah, Georgia 31402-2206
Telephone (912) 964-3000 Telex 546470

Service Letter No. 89-1

DATE: July 28, 1989

SUBJECT: Automotive Gasoline Use In Gulfstream Aircraft

MODELS AFFECTED: AA-1, AA-1A, AA-1B, AA-1C, AA-5, AA-5A and AA-5B

SERIAL NUMBERS AFFECTED: All Serial Numbers

TIME COMPLIANCE: None - provided for information only

General:

It has been brought to the attention of Gulfstream that some Owners/Operators of the above aircraft have been using automotive gasoline. There have been reported incidents of automotive gasoline causing fuel system seal/sealant deterioration. Although there may be Supplemental Type Certificates (STC's) approving the use of automotive gasoline, Gulfstream has not approved the airframe fuel system in these aircraft for the use of automotive gasoline. Owners/Operators are reminded that only the aviation grade fuels specified in the respective Owner's Manual/Pilot's Operating Handbook are approved by Gulfstream.

Gulfstream Aerospace Corporation

AVCO LYCOMING WILLIAMSPORT DIVISION
AVCO CORPORATION
WILLIAMSPORT, PENNSYLVANIA 17701

Service Letter

L

Service Letter No. L190
March 16, 1979

TO: All Owners and Operators of Avco Lycoming Normally Aspirated (Non-Turbocharged) Aircraft Engines.

SUBJECT: Use of "TCP"* as a Fuel Additive

This is to inform all owners and operators of Avco Lycoming normally aspirated (non-turbocharged) aircraft engines that our test conducted with "TCP" used as a fuel additive indicated no deterioration in the detonation characteristics or detrimental effect of Avco Lycoming aircraft engines. The "TCP" additive may be used in aircraft fuel supplied to the engines when mixed according to the instructions provided by Alcor, Inc.

It must be clearly understood that, although "TCP" is approved for use in Avco Lycoming engines, this approval does not imply approval by any airframe manufacturer for use in aircraft in which Avco Lycoming engines are used. Approval by the aircraft manufacturer should be obtained prior to use.

*TCP fuel additive is distributed by:

Alcor, Inc.
10130 Jones-Maltsberger Road
P.O. Box 32516
San Antonio, Texas 73284