OR

BELLANCA AIRCRAFT CORP.

BOX 624

ALEXANDRIA, MINNESOTA

SERVICE LETTER NO. 39 MARCH 8, 1967

SUBJECT: PILOT RUDDER PEDAL REPLACEMENT

AIRCRAFT AFFECTED: 14-19-3A S/N 4315 through 4334

17-30 S/N 30001 through 30021

Due to a recently discovered deficiency in a production batch of rudder pedal castings, it is highly recommended that the aircraft mentioned above have a replacement effected for these parts.

A new pair of rudder pedals are enclosed with this letter. Please have the compliance card signed by a licensed mechanic and return it to the factory along with the two pedals which are to be removed from service.

This change is simple to accomplish and it is requested that it be done as soon as possible to forestall any potential difficulties in service. At the same time, the brake pedal could be adjusted to suit the pilot's preference. Bringing the toe pad aft will increase the apparent effectiveness of the brakes.

BELLANCA AIRCRAFT CORPORATION

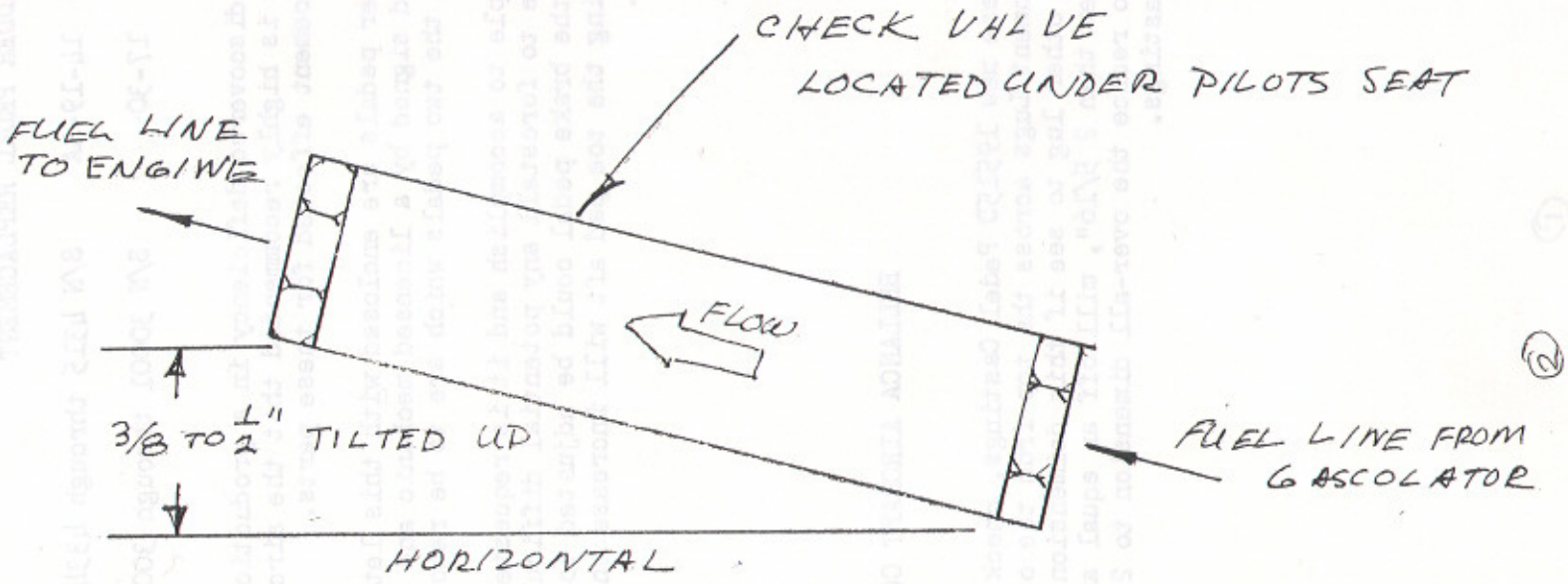
NOTE:
When installing these new 19515D Pedel Castings, check your 19516F Support Castings Top Attachment Lugs across the top from the outside of one lug to the outside of the other lug to see if this deimension is 2 5/16". If this dimension is greater than 2 5/16", mill off an equal amount from the outside edge of each lug to reduce the over-all dimension to 2 5/16". Do not rework the 19515D Pedal Castings.

(1)

BELLANCA AIRCRAFT CORPORATION
BOX 624
ALEXANDRIA, MINNESOTA

MARCH 22, 1967

MODEL VIKING 300
S/N's APPROX 30001 THRU 30010



IN SOME OF THE VIKING 300 MODELS THIS CHECK VALVE MAY NOT BE SLANTED ENOUGH. WHILE THE FUEL SYSTEM WILL FUNCTION NORMALLY EVEN WITH THE VALVE HORIZONTAL, IT BECOMES MUCH MORE SENSITIVE TO SMALL AMOUNTS OF DIRT WHICH MAY BE PRESENT IN THE FUEL. CHECK YOUR AIRCRAFT FOR THIS CONDITION.

BELLANCA

NOTE TO
SERVICE LETTER NO. 41

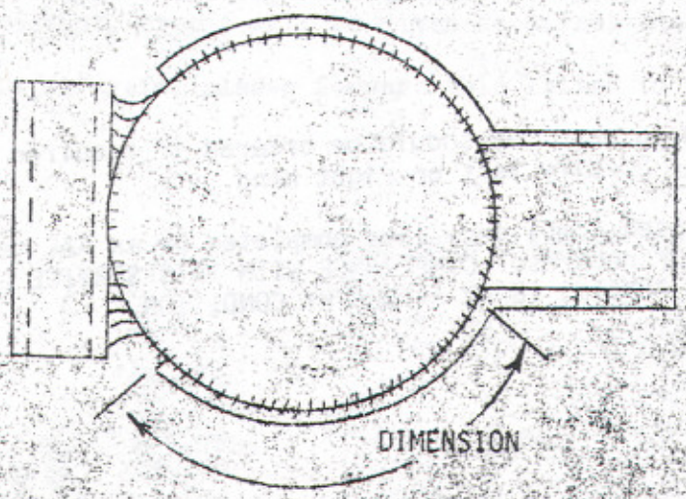
TO: All Owners of Bellanca 14-19-3 Aircraft

SUBJECT: Replacement of Upper Main Landing Gear Struts

AIRCRAFT AFFECTED: 14-19-3--All

We recently conducted static and drop tests on the landing gear under the supervision of the FAA. As a result of these tests, the heat treat requirements have been removed from the main gear legs. This means that if your mechanic would want to make a field repair to your legs by welding a strap around the legs in accordance with CAM 18, the gear would not have to be annealed and reheat treated after the welding. Because the bushings inside the leg are of either bronze or aluminum stock, they should all be removed before any welding. Also, be very sure that all paint, grease, dirt or any other foreign matter is removed from the metal in the area where you intend to weld.

If you should need to make this repair and find your wiper seal at the bottom of the strut needs replacing, send $3.00 to the factory and we will send you enough 10V70 wiper seal for replacement.



BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 41

Date: June 3, 1967
Revision:
Page: 1 of 3

To: All Owners of Bellanca 14-19-3 Aircraft

SUBJECT: Replacement of Upper Main Landing Gear Struts

AIRCRAFT AFFECTED: 14-19-3--All

PURPOSE

Due to evidence of failures occuring at the nutcracker attach fitting on the upper main gear leg, it is required that all 14-19-3 model aircraft be fitted with a stronger version of this unit. Many aircraft in service have already had this change accomplished (reference Service Letter 24-A) and an inspection will be required to determine if replacement is necessary.

PROCEDURE

Measure the length of the reinforcement strap that is welded around the bottom of the main gear upper leg. (This strap also forms the attach fitting for the drag strut.) From the approximate center of the bend where the strap comes out of the attach fitting to the end of the strap should measure 2¼ inches.

The units which require replacement are those which measure 2-3/16 inches or less.

COMPLIANCE

A new upper main gear leg should be ordered if required and may be identified as P/N 19446. Specify left or right hand.

Have the enclosed compliance card completed by an A&E mechanic and return to the factory for our records. COMPLIANCE WITH THIS SERVICE LETTER WILL INSURE THAT YOUR AIRCRAFT REMAINS IN AN AIRWORTHY CONDITION.

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 624 Phone AC 612-763-6668

SERVICE LETTER No. 42 February 23, 1968

TO: ALL OWNERS OF BELLANCA VIKING 300 AIRCRAFT

SUBJECT: INSTALLATION OF ADAPTER FOR OIL TEMPERATURE BULB FOR COLD WEATHER OPERATION

AIRCRAFT AFFECTED: Model 17-30 S/N 30001 thru 30097

In cold weather operation we have found that if the oil in the oil cooler congeals that the oil pressure drop can be reduced by the installation of an adapter (Part No. 191481) between the oil temperature bulb and the crankcase.

A 20 pound decrease in oil pressure is normal with a congealed oil cooler. Even with the installation of this adapter, it is still recommended that the oil cooler be covered if congealing is experienced.

To cover oil cooler - tape the front of the oil cooler with a heavy fabric backed tape leaving 2 inch square open at the center of the oil cooler. Caution; when oil cooler is covered and ambient temperatures of over 70 degrees are experienced, monitor oil temperature closely.

HOW TO OBTAIN ADAPTER FOR YOUR AIRCRAFT: If you wish to install this adapter on your aircraft, please complete and return to us the enclosed PARTS REQUEST AND COMPLIANCE CARD. (Order Kit for Service Letter No. 42 - See Card).

When the Service Kit (1 ea. 191481 Adapter, and 2 ea. AN900-10 Gaskets) is sent to you, you will be billed in the amount of $9.00, and the Compliance Card will be returned to you with the invoice. When the adapter has been installed, please have the Supervising Mechanic complete and sign the Compliance Card, and return it to the Factory. Upon its receipt, credit will be given to offset the invoice.

If you no longer own this aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 43

Date: April 17, 1968
Revision:
Page: 1 of 1

TO: Owners of Bellanca Viking 300 Aircraft Equipped with Auxiliary Wing Fuel Tanks

SUBJECT: Changes to Airplane Flight Manual and Additional Instrument Panel Placard

AIRCRAFT AFFECTED: Model 17-30, Serial Number Noted Below

In order to clarify the operation of the fuel system, the F.A.A. Approved Airplane Flight Manual has been slightly reworded. Also, an additional placard has been developed. We are enclosing the three affected pages of the Airplane Flight Manual, and a placard to be installed in aircraft Serial No._____.

The placard should be installed directly below the engine/fuel gauge unit.

As soon as these new pages have been inserted in your Airplane Flight Manual in place of the original ones, and the placard has been installed in the aircraft, please fill out the enclosed Service Letter Compliance Card, sign it and return it to the factory. The signature of the aircraft owner is sufficient.

Please forward this letter to the new owner if applicable, and notify the factory of the new owner's name and address so that we may change our records.

Encls: Model 17-30, Page 2, 6, 6a, Rev. No. 2 (3-15-68) AFM
Placard
Compliance Card

LOG OF REVISIONS

REV. NO.	DATE	DESCRIPTION	FAA* APP'VL
1	5/18/67	Added Wing Aux Tanks and Optional Propeller.	
2	3/15/68	Revise placards for optional fuselage aux tank. Pages 2, 6 and 6A.	

* For - Chief, Eng. and Mfg. Branch, Central Region

K. Placards:

On Instrument Panel
"This airplane must be operated as a normal category airplane in compliance with the approved airplane flight manual. No acrobatic maneuvers, including spins are approved."

Adjacent To Aux Fuel Pump Switch
"Use only to restore fuel pressure."

Adjacent To Fuel Gauges (Except Airplanes with 58 Gal. System)
"Fuel gages read quantity in tank selected."

Fuel Selector Placards

1. 58 Gal. fuel system with two main tanks and fuselage aux tank:

   On Main Fuel Selector Valve
   "Left Tank: 19 Gallons"
   "Right Tank: 19 Gallons"
   "Auxiliary Tank: 20 Gallons"
   "(Use Aux Tank in level flight only)"
   "Aux Tank gauge reads continuous"
   "Main Tank gauge reads as selector valve indicates"

2. 92 Gal. fuel system with two main tanks, fuselage aux tank and two wing aux tanks:

   On Main Fuel Selector Valve
   "Left Tank: 19 Gallons"
   "Right Tank: 19 Gallons"
   "To use aux fuel tank:
   1. Select tank with aux tank selector.
   2. Select aux position with main fuel selector valve."

   On Aux Tank Selector Valve

   "Left Aux Tank: 17 Gallons"
   "Right Aux Tank: 17 Gallons"
   "Fuselage Aux Tank: 20 Gallons"

"(Use these tanks in level flight only)"
Fuel remaining in tank when gauge reads zero cannot be used safely in flight."

3. 72 Gal. fuel system with two main tanks and two wing aux tanks:

On Main Fuel Selector Valve
"Left Tank: 19 Gallons"
"Right Tank: 19 Gallons"
"To use aux fuel tank:
1. Select tank with aux tank selector.
2. Select aux position with main fuel selector valve."

On Aux Tank Selector Valve
"Left Tank: 17 Gallons"
"Right Tank: 17 Gallons"
"(Use these tanks in level flight only)"
"Fuel remaining in tank when gauge reads zero cannot be used safely in flight."

In Baggage Compartment

"Maximum total baggage compartment load: 186 lbs., at least 35 lbs. of which is required for all operations. 20 lbs. of total may be on hat shelf, Refer to flight manual for instructions."

(8)

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 624 Phone: AC 612-763-6668

April 23, 1968

SERVICE LETTER NO. 44

TO: REGISTERED OWNER OF BELLANCA VIKING 300 AIRCRAFT, MODEL 17-30.
SERIAL NUMBERS 30001 thru 30095

SUBJECT: NOSE GEAR ACTUATING CYLINDERS.

(1) As a result of our continuing improvement program on BELLANCA products, we have developed an improvement to the Nose Gear Actuating Cylinder. It consists of a full-length 9/16" diameter Shaft to replace your present Shaft and Extension Rod. A new End Plug is required to accomodate this larger diameter shaft.

Because we are desirous that all VIKING 300 owners have this improvement on their aircraft we are offering it free of charge, on an exchange basis.

HOW TO OBTAIN PARTS FOR YOUR AIRCRAFT: If you wish to install this shaft on your aircraft, please complete and return to us the enclosed PARTS REQUEST & COMPLIANCE CARD, together with your deposit of $15.00. Order Kit #44-1, see Card. When the Service Kit (1 ea. 195582 Shaft, and 1 ea. 195583 End Plug w/O-Rings) is sent to you, the Compliance Card will be returned to you with our invoice. When the kit has been installed, please have the Supervising Mechanic complete and sign the card. Return it and the removed parts to the Factory. Upon their receipt, credit will be given to offset the invoice, and your deposit will be returned to you.

This cylinder modification is not mandatory for continued airworthiness at this time. However, it is strongly recommended by BELLANCA to alleviate a potential service difficulty, and is certainly worth the small effort required for the modification.

(2) A recently approved Nose Gear Actuating Cylinder that is now being installed in all new production "300's", is also offered for sale to owners of older aircraft. This cylinder has a spring-load feature that insures the extension of the nose gear in case of a failure in the hydraulic system that resulted in a total loss of hydraulic fluid, making the hand pump useless. This cylinder is available at $87.50 net, Exchange, plus a $15.00 deposit. Order Kit #44-2, see Card, and enclose your check for $102.50 with your order. This Cylinder Kit includes the new cylinder, a longer flexible hose, an attaching bracket, and installation instructions. The installation of this cylinder requires a slight modification of the Upper Nose Gear Leg. This can be accomplished by an A & E Mechanic. Upon our receipt of the removed cylinder and flexible hose, your $15.00 deposit will be refunded.

If the cylinder described in Item (2) is ordered, it completely replaces your present cylinder, and this of course, means that you do not need to order Item (1).

If you no longer own this aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION

Encl:
Parts Request & Compliance Card

BELIANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P. O. Box 624 Phone: AC 612-763-6606

October 15, 1968

TO: ALL OWNERS OF BELIANCA AIRCRAFT, MODEL 14-19-3A, SERIAL NUMBERS 4230 THRU 4342 AND VIKING 300, MODEL 17-30, SERIAL NUMBERS 30001 THRU 30151.

SUBJECT: REPLACEMENT OF TRIM TAB - OUR SERVICE LETTER NO. 45

A correction has been made to the problem of vibration in the horizontal tail surfaces covered in our Service Letter No. 45.

It is mandatory that this correction be installed on all affected aircraft, and we are offering it free of charge, on an exchange basis.

HOW TO OBTAIN PARTS FOR YOUR AIRCRAFT: When you wish to install these parts on your aircraft, it is requested that you complete and return to us the request section of the enclosed PARTS REQUEST & COMPLIANCE CARD, together with your deposit of $100.00. Order SERVICE LETTER KIT NO. 46. Complete instructions for installation will be included with the parts furnished. When the kit is sent you, the Compliance Card will be returned to you with our invoice. When the kit has been installed, please have the Supervising Mechanic complete and sign the compliance section of the card. Return the card and the removed parts to the Factory. Upon their receipt, credit will be given to offset the invoice, and your deposit will be returned to you.

If you no longer own this aircraft, please forward this letter to the present owner.

BELIANCA AIRCRAFT CORPORATION

Encl:
Parts Request and Compliance Card

(10)

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. BOX 624 Phone AC 612-763-6668

May 29, 1968

SERVICE LETTER NO. 45

TO: ALL OWNERS OF BELLANCA AIRCRAFT MODEL 14-19-3A (260 A, B, C) & MODEL 17-30 (VIKING 300)

SUBJECT: VIBRATION OF HORIZONTAL TAIL SURFACES

AIRCRAFT AFFECTED: MODEL 14-19-3A (260 A, B, C) & MODEL 17-30 (VIKING 300)

PURPOSE:

It has recently come to our attention that several of the above model Bellanca airplanes have shown vibration in the horizontal tail surfaces at speeds below the "red line."

After careful study of this problem, we feel that it is necessary to limit the "never exceed speed" to 180 miles per hour indicated airspeed until proper correction is determined. We expect to have a correction for this problem very soon and will be in touch with each owner. We intend to make the necessary correction at no cost.

We are enclosing a placard for installation near the airspeed indicator.
If you no longer own this aircraft, please return this letter to us immediately, together with the name and address of the person to who you sold it.

BELLANCA AIRCRAFT CORPORATION

Encl: Placard

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 624 Phone AC 612-763-6668

October 28, 1968

SERVICE LETTER NO. 46

TO: ALL OWNERS OF BELLANCA AIRCRAFT MODEL 14-19-3A (260 A, B, C) & MODEL 17-30 (Viking 300)

PART A

SUBJECT: INSTALLATION INSTRUCTIONS TRIM TAB MODIFICATION

AIRCRAFT AFFECTED: MODEL 14-19-3A (260 A, B, C) SERIAL NO. 4229 - 4342, & MODEL 17-30 (VIKING 300) SERIAL NO. 30001 - 30151

COMPLIANCE TIME: WITHIN THE NEXT 12 CALENDAR MONTHS AFTER THE ISSUANCE OF AD 68-23-8.

In order to assure that Bellanca models 14-19-3A and 17-30 will be free from flutter, it is necessary to install trim tab assembly part number 193129. Installation of this trim tab will also remove the airspeed restriction imposed by AD 68-12-2.

To install the new trim tab, remove the present tab and actuator rod. The access doors on the vertical tail at the elevator torque tube must be removed to allow the actuator rod to be disconnected from the actuator. The tab may be removed by removing the two AN bolts connecting bracket 195516-20 to the elevator (See fig. 1). To remove the pin engaging the center hinge, remove the shear pin at the inboard end of the tab hinge tube. To pull the pin, screw a coarse thread ¼ inch bolt into the hinge pin from the inboard end. This hinge pin does not need to move inboard more than 1½ inches, and care must be taken not to damage the rudder by pulling the pin too far. With this pin removed, pull aft on the inboard end of the tab until the center hinge is free. Then slide the tab inboard to disengage the outboard hinge pin. Remove the 195516-20 hinge bracket from the tab as it will be used with the new tab. Save the present tab

and actuator rod to be returned to the factory for credit.

Assemble the 195516-20 bracket to the new tab as shown in figure 1. The 193126 bushing should be lubricated before assembly. Also, lubrication should be applied to the center and outboard hinge pins. Install the new tab by engaging the outboard hinge pin first and sliding the tab outboard until the center hinge pin engages. Continue to slide the tab outboard until the bolt holes in the 195516-20 bracket align with those in the elevator. Re-install the AN bolts removed from the bracket. Connect the new tab actuator rod (Part No. 195603) in the same manner as the old rod.

To adjust the travel of the new tab, block the elevator in the neutral position. That is, the chord line of the elevator and stabilizer should be in a straight line. With the trim control in the full "airplane nose down" configuration, adjust the rod end of the actuator rod until the trailing edge of the tab is 11/32" above the center line of the elevator trailing edge. This measurement must be made at the outboard end of the tab. Turning the tab control three turns, nose up, from full nose down, should cause the trailing edges of the tab and elevator to align. If a protractor or inclinometer is available to check the tab travel, it should be 4° up and 34.5° down, minimum from the aligned position. After tightening the jam nut on the rod end, be sure the rod end does not bind as the tab is moved through its full travel.

When the new tab is completely installed and all of the attachments have been tightened, it is necessary to determine that the free play of the tab is within limits. To do this the elevator and trim tab must be in the neutral position. The elevator must be held rigid forward of the tab to assure proper measurement. This can be done by clamping the elevator with a "C" clamp and a rod. Measure the free play with a dial indicator, approximately 4 inches outboard from the inboard trailing edge. Apply approximately 10 pounds of force up at the trailing edge and release

the force. Read the dial indicator. Then apply the same force down and release. Again read the indicator. The difference between the readings should be less than .090 inches. If the difference is greater than the specified amount, the trim actuator must be reworked to reduce the free play.

In order to meet certain trim speed requirements, it is necessary to induce some twist in the stabilizer. A protractor or inclineometer should be used to measure the required twist of 1.7° stabilizer nose down from the stabilizer root to the stabilizer strut attachment station. This amount of twist can be achieved by removing the bolt from the rear stabilizer brace, where it attaches to the forward brace, and turning out the adjustment clevis approximately 3 turns.

As a result of the above changes, there is a small restriction of the forward center of gravity limit. Accordingly your Airplane Flight Manual must be changed as follows:

1. To the Model 14-19-3A Airplane Flight Manual add Revision Number 5, dated October 26, 1968.
2. To the Model 17-30 Airplane Flight Manual, add Revision Number 4, dated August 28, 1968.

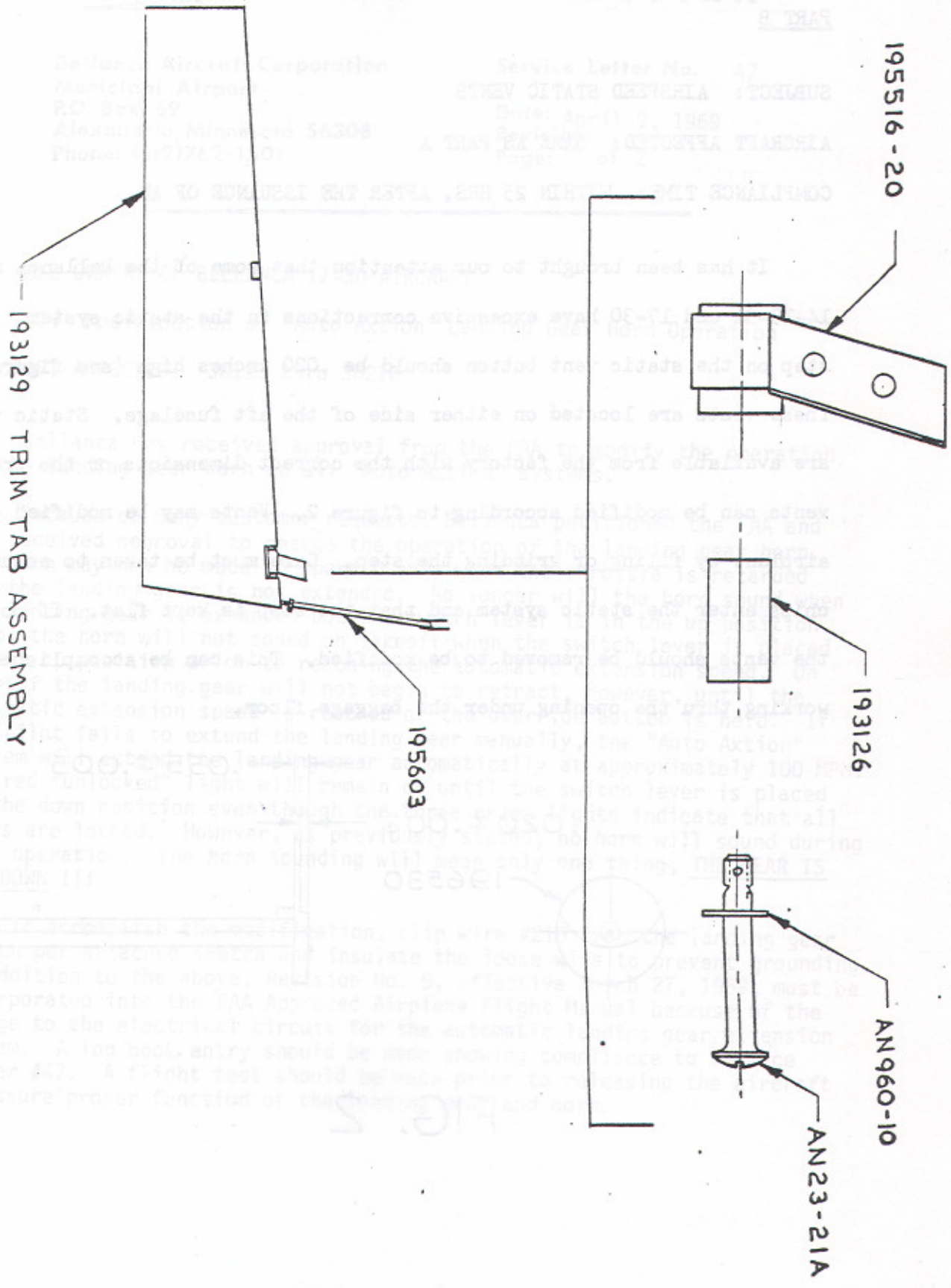

195516-20
193129 TRIM TAB ASSEMBLY
195603
193126
AN960-10
AN23-21A

FIG. 1

PART B

SUBJECT: AIRSPEED STATIC VENTS

AIRCRAFT AFFECTED: SAME AS PART A

COMPLIANCE TIME: WITHIN 25 HRS. AFTER THE ISSUANCE OF AD

It has been brought to our attention that some of the Bellanca models 14-19-3A and 17-30 have excessive corrections in the static system. The step on the static vent button should be .020 inches high (see figure 2). These vents are located on either side of the aft fuselage. Static vents are available from the factory with the correct dimensions or the present vents can be modified according to figure 2. Vents may be modified on the airplane by filing or grinding the step. Care must be taken to assure no chips enter the static system and that the step is kept flat. If possible, the vents should be removed to be modified. This can be accomplished by working thru the opening under the baggage floor.

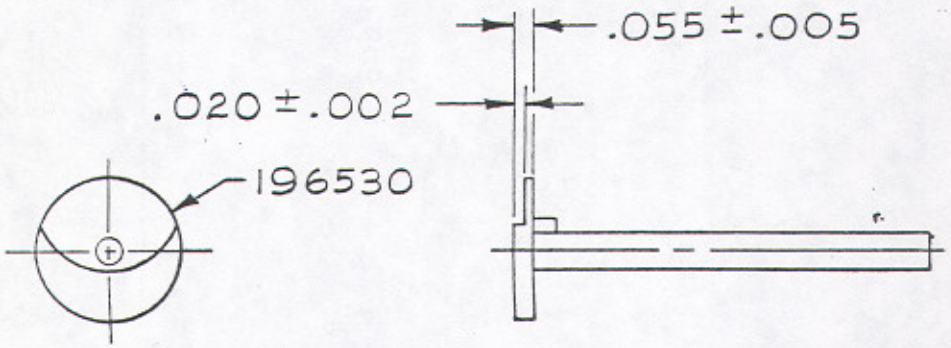


FIG. 2

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 47

Date: April 9, 1969
Revision:

TO: ALL OWNERS OF BELLANCA 17-30 AIRCRAFT

SUBJECT: Modification of "Auto Axtion" Landing Gear Horn Operation

AIRCRAFT AFFECTED: 30123 thru 30210

Bellanca has received approval from the FAA to modify the operation of the landing gear horn on all "Auto Axtion" systems.

Because of many customer requests, Bellanca petitioned the FAA and has received approval to change the operation of the landing gear horn. The horn may now be made to operate only when the throttle is retarded and the landing gear is not extended. No longer will the horn sound when the landing gear is extended but the switch lever is in the up position. Also, the horn will not sound on takeoff when the switch lever is placed in the up position prior to reaching the automatic extension speed. On takeoff the landing gear will not begin to retract, however, until the automatic extension speed is reached or the override button is held. If the pilot fails to extend the landing gear manually, the "Auto Axtion" system will extend the landing gear automatically at approximately 100 MPH. The red "unlocked" light will remain on until the switch lever is placed in the down position even though the three green lights indicate that all gears are locked. However, as previously stated, no horn will sound during this operation. The horn sounding will mean only one thing, THE GEAR IS NOT DOWN !!!

To accomplish the modification, clip wire #210 from the landing gear switch per attached sketch and insulate the loose wire to prevent grounding. In addition to the above, Revision No. 9, effective March 27, 1969, must be incorporated into the FAA Approved Airplane Flight Manual because of the change to the electrical circuit for the automatic landing gear extension system. A log book entry should be made showing compliance to Service Letter #47. A flight test should be made prior to releasing the aircraft to assure proper function of the landing gear and horn.

- OVER -

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 48

Date: May 1, 1969
Revision:
Page: 1 of 1

TO: Owners of Bellanca Aircraft Model 17-30, Serial Numbers 30066 Thru 30216

SUBJECT: Installation of Modified Piston Assembly in Style "JL", Part 10050-A Electric Fuel Pump Assembly

AIRCRAFT AFFECTED: Model 17-30 (Viking 300) Serial Number 30066 Thru 30221

COMPLIANCE TIME: Next 25 Hour Inspection

We have been informed by the Weldon Tool Company that because of alleged failure, in two instances, of the relief valve contained in the Style "JL" Fuel Pump, it is recommended that the present Piston Assembly be replaced with a modified Piston Assembly Part No. 10611.

HOW TO OBTAIN PART: In order to assure that the replacement piston assembly reaches the present owner of the affected aircraft, we request that you fill out the "request section" of the enclosed Parts Request and Compliance Card, and mail it to the factory. Ask for Service Letter Kit NO. 48. Upon its receipt we will mail you the kit which will consist of the piston assembly, an "O" ring, a new name plate decal, Weldon's Service Bulletin No. WPSB-1, and our card.

This auxiliary fuel pump is located under the pilot's seat. Access is accomplished by removing both front seats, the carpet and carpet supports. Replacement can be made without removing the pump, but should you choose to remove the pump, be sure all lines are correctly replaced and thoroughly checked for leaks. An alternate procedure for accomplishing this modification is as follows: (1) Slide pilot's seat to forward position, and tip up. (2) Disconnect spring from seat mechanism. (3) Lift up under-seat carpet and remove support board from under pilot seat. (4) Disconnect seat retractor control spring. (5) Remove left air-duct hose between heel-plate and toe-plate. (6) Proceed with modification of Aux. Fuel Pump as per Weldon Bulletin WPSB-1. (7) Reverse step 5 thru 1 in order.

When the change has been made, have your mechanic make an appropriate entry in your aircraft log book. Also have him complete and sign the Compliance Card and return it to the factory so that we can be kept appraised of the percentage of Compliance with this service letter.

If you no longer own this aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P. O. Box 624 Phone AC 612-763-6668

May 12, 1969

SERVICE LETTER NO. 49

TO: ALL OWNERS, MODELS 14-19-3, 14-19-3A, and 17-30

SUBJECT: ENGINE CONTROL ASSEMBLY FAILURES

AIRCRAFT AFFECTED: THE FOLLOWING BELLANCA AIRPLANES, MODEL 14-19-3, 14-19-3A, and 17-30.

Due to the pilot being able to put undue stress on the control because of improper adjustment, several controls have failed.

With the control in full forward position, you should check to see that the knob is in contact with the mounting nut. If the knob has more than 1/32" clearance from the nut, it should be readjusted. This adjustment has to be made on the engine end of the control. Also, if the pilot has been in the habit of applying additional pressure by twisting the knob after the control is full in, the control should be replaced, because a fatigue failure could already be in process.

When ordering replacement control assemblies, be sure to furnish us with the serial number of your aircraft, and which control(s) you wish to replace. If you no longer own this aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 50

Date: 5-28-69
Revision:
Page: 1 of 1

TO: All 14-19-3A and 17-30 Owners

SUBJECT: Stabilizer Strut Fitting Failure

AIRCRAFT AFFECTED: S/N 4229 thru 4342
S/N 30001 thru 30164

Several instances of failure of the rear stabilizer strut clevis fitting have been reported. Because the purpose of this strut is to provide torsional stiffness, failure of the fitting while the aircraft is operating at the upper end of the speed range could result in serious structural damage. Therefore, to assure your airplane remains airworthy, Bellanca is recommending and providing parts and service information for a fitting modification. This modification consists of a new heavier fitting that can be installed with a minimum of rework. Bellanca is recommending this modification be made within the next 25 flight hours.

To obtain fittings and service instructions, fill out and mail the request card. If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota
56308

Box 624 Phone AC 612-763-6668

August 1, 1969

SERVICE LETTER 51

TO: AL 17-30, 17-31, & 17-31TC OWNERS

SUBJECT: CYLINDER ATTACHING LUG REINFORCEMENT

AIRCRAFT AFFECTED: S/N 30001 thru 30230
S/N 32-1 thru 32-9
S/N 31001 thru 31003

Because of a recent failure and to increase the rigidity of the nose gear, Bellanca is recommending a reinforcement be added to the retraction drag brace. This modification is illustrated on Bellanca sketch SK 234-4002, which will be furnished with the reinforcement triangles.

To accomplish this modification, the drag brace must be removed from the airplane. Since the drag brace is not a heat treated assembly, the reinforcement can be welded on by any qualified aircraft mechanic. The reinforcement triangles required will be furnished by Bellanca without charge when the enclosed request card is returned.

A retraction test should be performed on the ground prior to returning the aircraft to service to assure no changes in adjustment have occurred due to the welding.

Bellanca recommends that this modification be accomplished as soon as possible.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC612-7636668

December 1, 1969

SERVICE LETTER NO. 52

TO: ALL OWNERS OF BELLANCA MODELS 17-31, 17-31A and 17-31TC

SUBJECT: PROPELLER GOVERNOR REPLACEMENT

AIRCRAFT AFFECTED: MODEL 17-31 SERIAL NO. 32-1 THRU 32-14
MODEL 17-31A SERIAL NO. 32-15 THRU 32-18
MODEL 17-31TC SERIAL NO. 31001 THRU 31003

Some malfunctions of Woodward Model B210460 Prop. Governors have Been reported. The malfunction consists of a progressive decrease in the top RPM Range. If your governor malfunctions in this fashion, do not fly the airplane until the governor has been replaced.

Woodward has an improved design that prevents this malfunction. If your governor needs replacement, purchase a new governor from the factory. Return the old governor to the factory and full credit will be allowed.

BELLANCA AIRCRAFT CORPORATION

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC612-763-6668

February 6, 1970

SERVICE LETTER NO. 53

TO: ALL OWNERS OF MODELS 17-31, 17-31TC, 17-31A, 17-31ATC

SUBJECT: ALTERNATOR COOLING HOSE

AIRCRAFT AFFECTED: MODELS 17-31, SERIAL NO. ALL
17-31TC, SERIAL NO. ALL
17-31A, SERIAL NO. 32-15 thru 32-21
17-31ATC, SERIAL NO. 31004

The 1" ID x 11" long flexible air hose connecting the alternator to the air inlet on the engine baffle has been known to chafe on the alternator electrical terminals. Within the next 25 hours of operation, this hose should be replaced with one 15" long. The longer hose should be secured to some engine component in such a way that it remains clear of the alternator terminals.

If you no longer own this aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 54

Date: February 20, 1970
Revision:

TO: Owners of Model 17-30 Aircraft

SUBJECT: Tailpipe Rework and Adjustment

AIRCRAFT AFFECTED: From S/N 30006 through S/N 30139

In order to preclude the possibility of muffler failure, the reinforcements per attached sketch SK2-1010 must be installed, and adequate clearance between the muffler attachment tube and the tailpipe should be established. The tailpipe is held in place on the muffler assembly by a clamp with a dowel pin to allow freedom of movement.

A large number of the subject aircraft have already had their mufflers reworked. If this reinforcement has not been made, it should be made as soon as possible. 191478 and 191479 Reinforcements can be obtained at no charge by contacting the Factory.

If the muffler tube fits over the tailpipe too tightly, the inside dimension of the muffler tube can be increased by placing a 2 3/8" rod or mandrel on the inside and tapping around the outside of the muffler tube with a brass hammer.

Until the reinforcements are made, the mufflers should be visually inspected each 10 hours. All aircraft should be checked before each flight, by seeing that the tailpipes are free to move in order to prevent breakage.

If you do not have the facilities to do this rework, and wish to return your mufflers and tailpipes to the Factory, we will rework them and return them to you as quickly as possible with no charge to you other than transportation.

If you no longer own this aircraft, please forward this letter to the new owner.

Encl: SK2-1010 Drawing

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 55

Date: February 20, 1970
Revision:
Page: 1 of 1

TO: Owners of Model 17-30 Aircraft

SUBJECT: McCauley Service Bulletin #72 (Spinner)

AIRCRAFT AFFECTED: Model 17-30 S/N 30001 through 30249

Enclosed are copies of McCauley Propeller Service Bulletin No.72, and No. 72-1, regarding replacement of certain spinner bulkheads along with the procedure for obtaining replacements. If your aircraft is equipped with one of the spinner model affected, please comply with the bulletins.

Many aircraft have already had the C-4025 front bulkhead installed. If yours has not, the McCauley Parts Kit can be obtained by contacting us.

If you no longer own the aircraft, please forward this letter to the new owner.

Encl: McCauley Propeller Service Bulletins No. 72 and No. 72-1

BELLANCA

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC612-763-6668

February 27, 1970

SERVICE LETTER NO. 56

TO: BELLANCA OWNERS

SUBJECT: FLAP CABLE ATTACHMENT

AIRCRAFT AFFECTED: Model 17-30, 17-30A: S/N 30001 THRU 30256
Model 17-31, 17-31A: S/N 32-1 THRU 32-17
Model 17-31TC, 17-31ATC: S/N 31001 THRU 31003

All aircraft having the flap cable attachment at the flap bellcrank (inboard end of flap) made with a clevis pin should be changed within the next 50 hours of service. The clevis pin should be replaced with a clevis bolt as follows:

Hardware needed:

(2) AN23-11 Clevis Bolts

(4) AN960-10L Washers

(2) AN310-3 Nuts

(2) AN380-2-2 Cotter Pins

PROCEDURE:

Remove the clevis pins. Install the clevis bolt with the head toward the inboard end with one AN-960-10L washer under the head. Install another AN-960-10 washer and AN-310-3 nut and tighten nut until it bottoms in the threads. Install the AN-380-2-2 cotter pin in the nearest castellation that fits.

Hardware can be obtained by ordering from the factory, using the enclosed Parts Request Card.

If you no longer own the aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC612-763-6668

February 27, 1970

SERVICE LETTER NO. 57

TO: OWNERS OF BELLANCA MODELS 17-31, 17-31TC, & 17-31A

SUBJECT: IMPROVED FUEL PUMP COOLING

AIRCRAFT AFFECTED: Model 17-31 Ser. 32-1 Thru 32-14
Model 17-31TC Ser. 31001 Thru 31003
Model 17-31A Ser. 32-15 Thru 32-18

Service Kit No. SK348-1028 is available from the factory for improved cooling of the fuel pump and subsequent vapor elimination. Install the kit per the drawings furnished with the kit. The kit will be provided by the factory at no charge. If you no longer own the aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION

ENCL: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P. O. Box 624 Phone AC612-763-6668

June 26, 1970

SERVICE LETTER NO. 58

TO: OWNERS OF BELLANCA MODEL 17-31, 17-31TC, 17-31A & 17-31ATC

SUBJECT: ALTERNATE AIR DOOR REPLACEMENT

AIRCRAFT AFFECTED:

MODEL 17-31	ALL SERIALS
MODEL 17-31TC	ALL SERIALS
MODEL 17-31A	THROUGH SERIAL 32-29
MODEL 17-31ATC	THROUGH SERIAL 31007

There have been instances of failure of the alternate air door attributed to insufficient closing pressure. An improved door with higher spring pressure has been designed and is available from the factory for installation.

The new door should be installed as soon as possible, and at least within the next 25 hours of operation after receipt of this letter. The parts will be furnished by the factory at no charge. Order the parts with the enclosed order card.

Installation instructions will be furnished with the parts.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC612-763-6668

August 2, 1970

SERVICE LETTER NO. 59

TO: OWNERS OF BELLANCA MODELS 14-19-3A, 17-30, 17-31, and 17-31TC

SUBJECT: THROTTLE CONTROL REPLACEMENT

AIRCRAFT AFFECTED:	THROTTLE CONTROL AFFECTED:
MODEL 14-19-3A SER. 4229 THRU 4342:	BELLANCA P/N 191390-2 (Arens #345-001-178)
MODEL 17-30, S/N 30001 THRU 30162:	BELLANCA P/N 191390-6 (Arens #345-001-182)
MODEL 17-30, S/N 30163 THRU 30243:	BELLANCA P/N 191390-7 (Arens #345-001-200)
MODEL 17-31, S/N 32-1 THRU 32-14:	BELLANCA P/N 191390-7 (Arens #345-001-200)
MODEL 17-31TC, S/N 31001 THRU 31003:	BELLANCA P/N 191390-7 (Arens #345-001-200)

There have been instances of failure of the throttle control cable on some models equipped with Arens Controls. The throttle control, if not rigged precisely, can fail in fatigue of the cable where the cable attaches to the vernier housing. Arens has available a revised design that precludes the problem. The identifying part numbers of the controls affected are listed above together with the block of serial numbers of the affected aircraft of each model.

At or before the next annual inspection, all throttle controls affected must be replaced with the new style Arens Control. The new control is available from the Bellanca Factory. Purchase the replacement control from the factory and return the old control. Full credit will be allowed owners of models 17-30, 17-31, & 17-31TC when the old control is returned. New controls will be made available to owners of model 14-19-3A at cost provided the old control is returned.

All replacements must be made within one year of the date of this letter. The enclosed Parts Request Card may be used for ordering your control.

Many of the affected aircraft have already had their controls replaced with a control of another type. These controls do not have to be changed. The new controls are identified by a gold coloring at the telescoping end. Make sure your cable is one of those affected before you remove it. Credit will not be allowed on any others.

When rigging the new control, be sure the knob is rigged no more than 1/8" from the end of the housing with the throttle full open.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

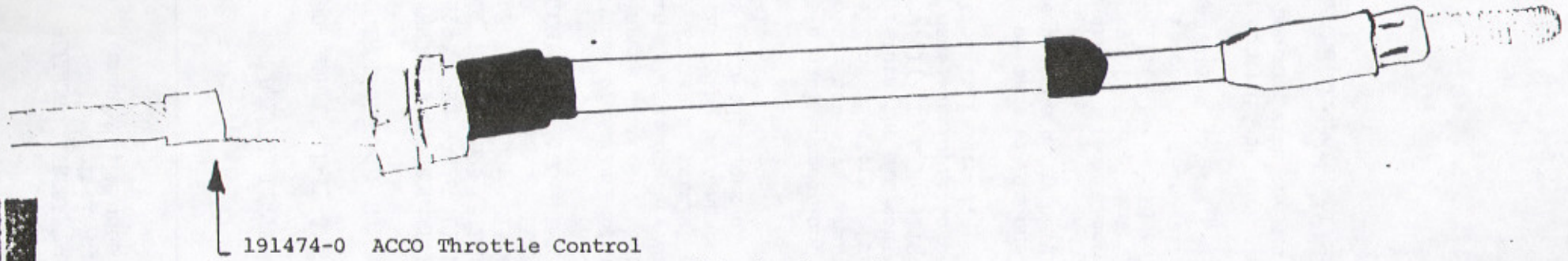
BELLANCA AIRCRAFT CORPORATION
Box 624 Municipal Airport
Alexandria, Minnesota 56308

August 2, 1970

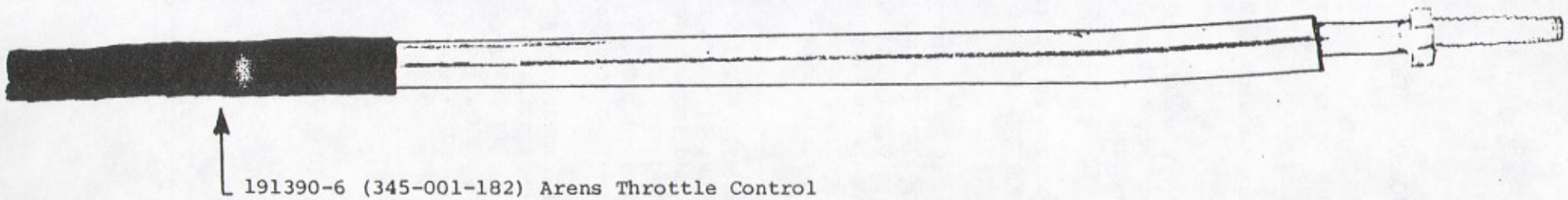
SUPPLEMENT TO SERVICE LETTER NO. 59

AIRCRAFT AFFECTED:

MODEL 17-30, S/N 30001 THRU 30162:
Many of these aircraft were originally equipped with the ACCO Throttle Control, or have had it installed in the field. Please make sure your aircraft is equipped with an Arens Control before ordering. We cannot give credit for any ACCO Controls replaced in error.



191474-0 ACCO Throttle Control
This control does not need to be changed.



191390-6 (345-001-182) Arens Throttle Control

This control needs to be changed.

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624

Phone AC612-763-6668

August 2, 1970

SERVICE LETTER NO. 60

TO: ALL OWNERS OF MODELS 14-19-3A, 17-30, 17-31, 17-31TC, 17-30A (See Serials), 17-31A (See Serials), & 17-31ATC (See Serials).

SUBJECT: TRIM TAB DRIVE ROD REWORK

AIRCRAFT AFFECTED: ALL SERIALS MODELS 14-19-3A, 17-30, 17-31, 17-31TC, & 17-30A THRU SER. 30275, 17-31A THRU SER. 32-30, & 17-31ATC THRU SER. 31006.

To preclude fatigue of the tab drive rod the following rework must be accomplished within the next 100 HRS. of operation. For those aircraft under our warranty as of the date of this letter, we will furnish the parts required at no charge. For those aircraft manufactured beyond this warranty period, the parts required will be supplied at a cost of $5.25.

PARTS REQUIRED:

1 Universal Joint P/N 195628
2 Screws AN21-10A
2 Nuts AN 365-640
4 Washers AN960-6L
4 Rivets AN430AD3-8
Drawing: SK1234789-5001

DESCRIPTION OF REWORK:

1. Lower the headliner enough to gain sufficient access to the area immediately aft of the tab drive gearbox.
2. Remove the two rivets attaching drive rod to the gearbox drive shaft.
3. Disconnect the drive rod at the aft end (at the drive sprocket on models equipped with electric trim) and slide the drive rod aft at least 3.5".
4. Cut 2" off the forward end of the drive rod housing.
5. Slide the drive rod forward and cut 1.69" off the forward end. Save the 1.69" section. Cut an additional inch off the forward end of the drive rod and discard.
6. Insert the 1.69" section 1.19" into the gearbox drive shaft. Rivet drive rod and drive shaft.
7. Insert one end of the "U" joint over the .50" exposed stub. Using the holes in the "U" joint as a guide, drill & install the screw.
8. Insert the aft portion of the drive rod in the other end of the "U" joint and repeat (7).
9. Reconnect the drive at the aft end and reinstall upholstery.

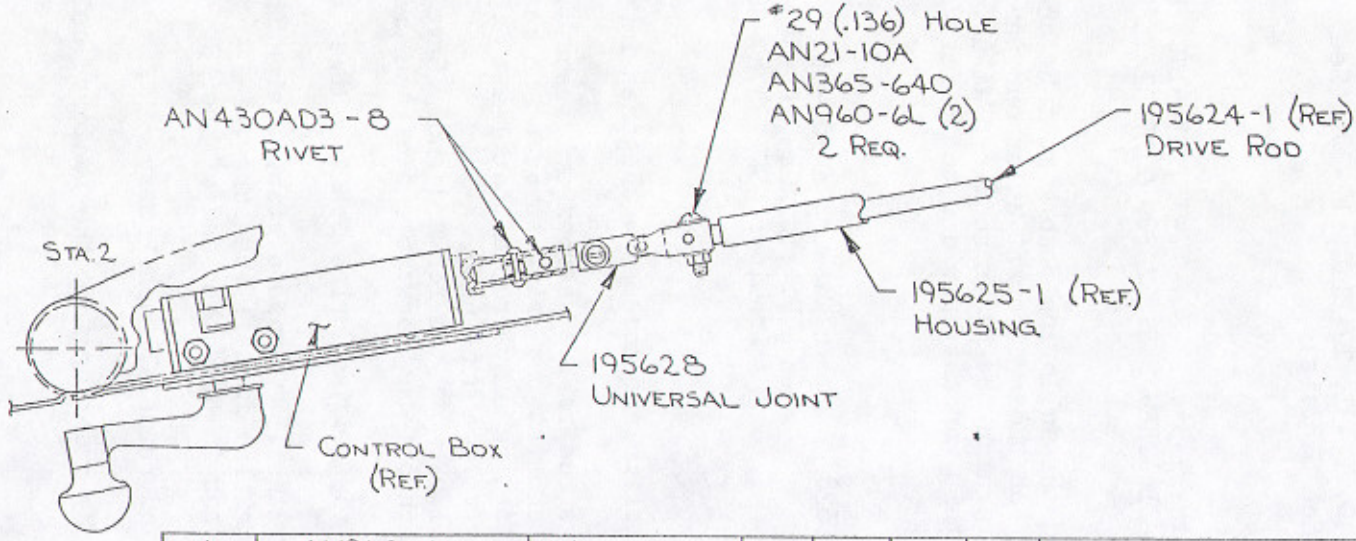
This Service Letter Kit can be obtained by ordering from the factory, using the enclosed Parts Request Card.

If you no longer own the aircraft, please forward this letter to the present owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

TWENTY FOUR MONTH WARRANTY PERIOD STARTS WITH DATE OF MANUFACTURE.



(32)

4	AN960-6L	WASHER							
2	AN365-640	NUT							
2	AN21-10A	SCREW							
1	195628	UNIVERSAL							
			DIA.	THICK	WIDTH	LENGTH	MATERIAL		SPEC.
			STOCK SIZE						

DESCRIPTION OF REWORK:

1. Lower the headliner enough to gain sufficient access to the area immediately aft of the tab drive gearbox.
2. Remove the two rivets attaching drive rod to the gearbox drive shaft.
3. Disconnect the drive rod at the aft end (at the drive sprocket on models equipped with electric trim) and slide the drive rod aft at least 3.5".
4. Cut 2" off the forward end of the drive rod housing.
5. Slide the drive rod forward and cut 1.69" off the forward end. Save the 1.69" section. Cut an additional inch off the forward end of the drive rod and discard.
6. Insert the 1.69" section 1.19" into the gearbox drive shaft. Rivet drive rod and drive shaft.
7. Insert one end of the "U" joint over the .50" exposed stub. Using the holes in the "U" joint as a guide, drill & install the screw.
8. Insert the aft portion of the drive rod in the other end of the "U" joint and repeat (7).
9. Reconnect the drive at the aft end and reinstall upholstery.

UNLESS OTHERWISE NOTED
TOLERANCES:
FRACTIONAL ±1/32
DECIMAL ±.010
ANGULAR ± 1/2
FINISH: BELLANCA SPEC.

REWORK - TRIM TAB CONTROL ROD

SERVICE LETTER No. 60

DRAWN	CHECK	APP'D	SCALE	
RB	CH	[illegible]	NONE	SK1234789-5001
7-31-70	7-31-70	8-3-70		

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC612-763-6668

March 31, 1971
Rev. A April 26, 1971

SERVICE LETTER NO. 61A

TO: OWNERS OF BELLANCA MODEL 17-30

SUBJECT: FUEL BOOST PUMP PRESSURE REDUCTION

AIRCRAFT AFFECTED: MODEL 17-30; All Serials

The fuel boost pump, if operated continuously, or, if inadvertantly placed in the "ON" position, may seriously affect engine operation by exceeding the engine driven pump inlet pressure limit. To provide the desired high boost pressure for starting and further, to add a means of safe continuous pump operation, Bellanca has designed a two speed system for the pump. With this system, either speed can be used, as desired, for starting on the ground or restarting in the air. The low position can be left on as required for purposes of purging the system of vapor. Extended periods of continuous operation is not recommended.

The system consists of a 3 position switch and a 3 OHM resistor which is connected in series with the pump circuit when the switch is in the up position. Full voltage is connected to the pump when the switch is down. The center position is "OFF."

A Service Kit (SK2-1040) is available from the factory to accomplish this change at a cost of $5.00. The kit can be ordered with the enclosed parts order card. If you desire, you may make up your own kit and install it per the enclosed schematic. The hardware required is:

3 position toggle switch, 2FC54-73 Carling or equivalent.
3 OHM 20 watt resistor, 1802C-Type 200 Ohmite or equivalent.
Placard.
Switch Guard

In order to provide a means of operating the boost pump and not exceeding the engine pump limits, it is mandatory that this system be installed on the models affected. On or before the next annual inspection, install Bellanca Service Kit (SK2-1040) or its equivalent.

Some serials already have a 3 position switch. Please determine this first, and then order the service kit, LESS SWITCH, at a cost of #3.00.

If you no longer own the aircraft, please forward this to the new owner.

BELLANCA AIRCRAFT CORPORATION

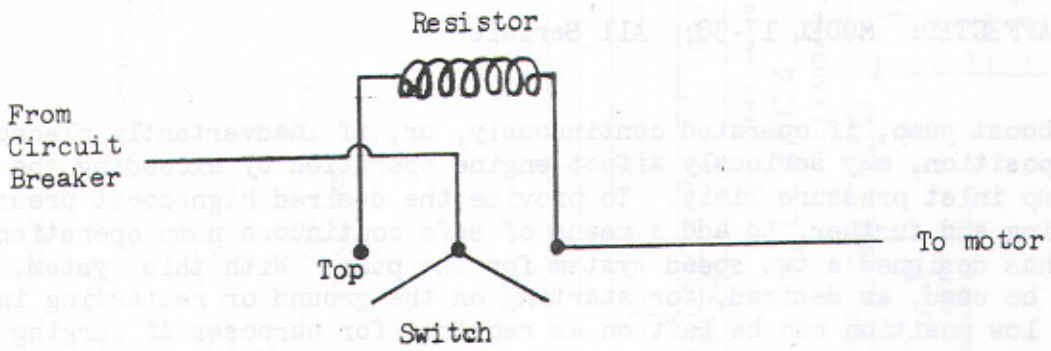
Encl: Parts Request Card
Schematic

SCHEMATIC

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Rev. A, April 26, 1971

SERVICE LETTER NO. 61A



Resistor may be supported by the switch terminals

REV. A Deleted 14-19-3 & 14-19-3A, Added Switch Guard

BELLANCA

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-763-6668

April 5, 1971

SERVICE LETTER NO. 62

TO: OWNERS OF BELLANCA MODELS 17-30A, 17-31A, 17-31ATC

SUBJECT: GEAR RETRACTION HYDRAULIC PRESSURE SWITCH

AIRCRAFT AFFECTED: MODEL 17-30A, SERIAL NO.'S 30263 THRU 30324
MODEL 17-31A, SERIAL NO.'S 32-15 THRU 32-34
MODEL 17-31ATC, SERIAL NO.'S 31008 THRU 31012
MODEL 17-31, SERIAL NO.'S 32-14 ONLY

Consistant with Bellanca's policy of continuously improving its products for greater utility and user satisfaction, certain of these improved features are offered to existing owners as service kits. The subject service kit improves the action of the landing gear retraction system at the end of the retraction cycle and simplifies landing gear rigging considerably.

Gear retraction was previously terminated when all three up limit switches had been contacted. Service Kit No. SK4789-5002 and 5003 provides a system where the gear retracts, the system builds to a set hydraulic pressure and a hydraulic pressure switch turns off the motor.

This system provides a more positive up lock and reduces the gear up rigging to zero. Reliability is also increased since fewer of the electrical components will be exposed to the exterior.

Installation instructions and electrical hookups are provided with the kit.

The kit is available for purchase from the factory by using the enclosed parts request card. The kit price is $48.00. This special price will be in effect for one year.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-763-6668

April 5, 1971

SERVICE LETTER NO. 63

TO: OWNERS OF BELLANCA MODELS 17-30A, 17-31A, 17-31ATC

SUBJECT: ALTERNATE STATIC SOURCE REQUIREMENT

AIRCRAFT AFFECTED: (Parts 1 & 2) Model 17-30A Serial No. 30263 thru 30268, 30270. 30273 thru 30279, and 30281: Model 17-31A Serial No. 32-15 thru 32-25, and 32-27 thru 32-30: Model 17-31ATC Serial No. 31004 and 31005.
(Part 2) Model 17-30A Serial No. 30269 and 30271: Model 17-31A Serial No. 32-26: Model 17-31ATC Serial No. 31006 and 31007.

The F.A.A. has interpretated the regulations concerning static pressure systems such that static system ice protection is required whether operations are VFR or IFR. One means of showing compliance is by use of an alternate static source. Bellanca Service Kit No. SK234789-7001 will be supplied without charge to provide the alternate source. The kit can be ordered from the factory with the enclosed parts request card(s).

Part 1: Within 60 days from the release date of this letter, obtain and install Bellanca Service Kit No. SK234789-7001 per the instructions included. This must be done for the airplane to comply with regulations.

Part 2: At the next available opportunity, but within 60 days from the release date of this letter, obtain and install altimeter correction card, Bellanca Part No. 197297, as near the altimeter as available panel space will permit.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 64A

Date: 4-6-71
Revision: 6-3-71
Page: 1 of 1

TO: Owners of Bellanca Model 17-30

SUBJECT: Fuel Boost Pump Drain

AIRCRAFT AFFECTED: Model 17-30 Serial No. 30002 thru 30065 (Pump Model 4020-A2A), Model 17-30 Serial No. 30066 thru 30216 (Pump Model 10050-A)

The Weldon brand fuel boost pump used on the affected aircraft will sometimes leak fuel into the electric drive motor when the pump seals become sufficiently worn. Drain ports are provided in the pump body which can be used to pass this leakage overboard.

It is recommended that the bottom port of this pump be plumbed to carry this fuel overboard. Hardware will consist of an AN fitting with a short piece of tubing from the pump to the exterior of the airplane. Since this hardware is readily available at modest cost, the factory will not offer kits. Drawing SK2-1037 is enclosed to owners of record of the affected aircraft. This drawing is available, on request, to dealers and repair stations.

This will not replace normal proper maintenance. If fuel is discovered coming from this line, seal wear is indicated and the seals should be replaced.

If you no longer own the airplane, please forward this letter to the new owner.

Encl: Drawing SK2-1037
Sht. 2 of 2

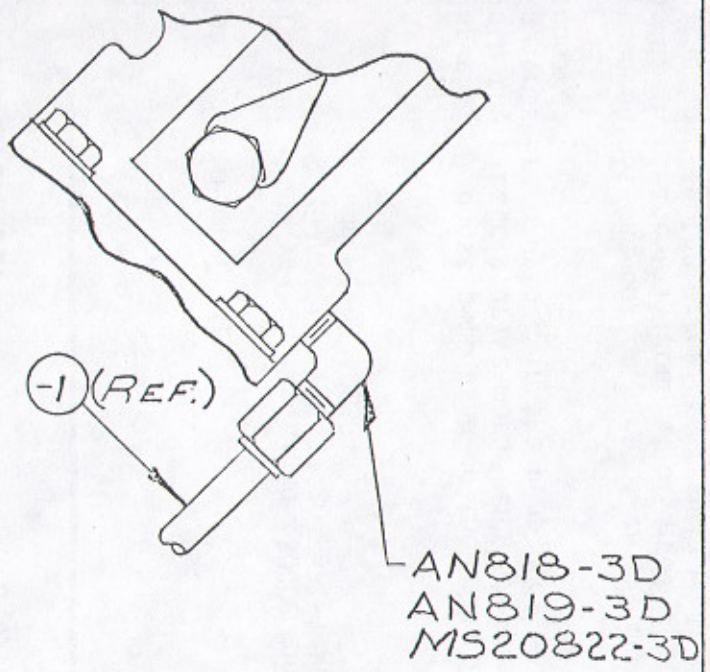
BELLANCA AIRCRAFT CORP.

DRAWING CHANGE NOTICE

FORM BE 101

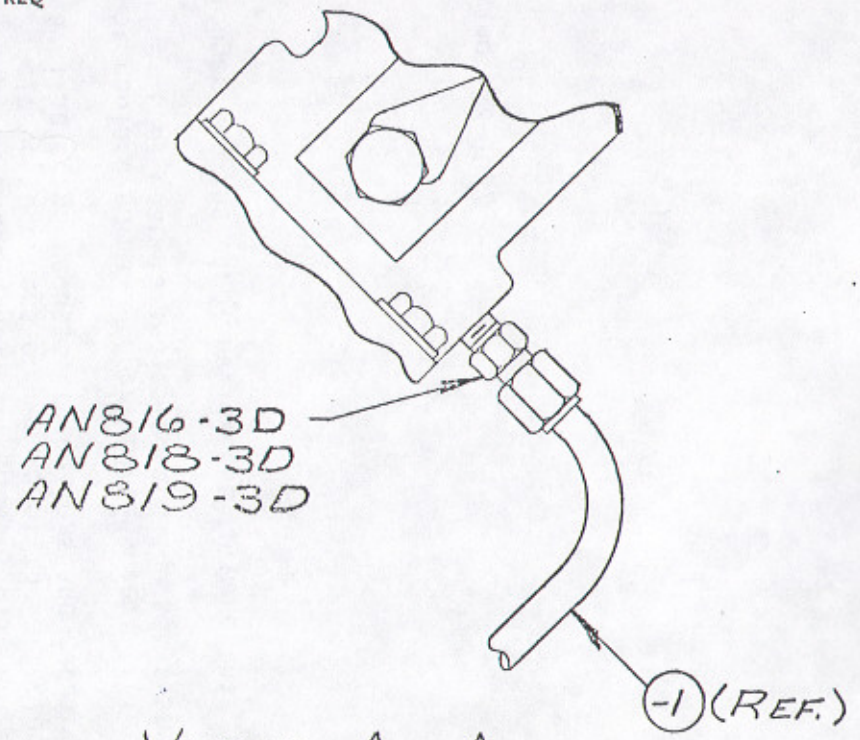
TITLE: DRAIN FUEL PUMP (WELDON)	Engineering Dept. Alexandria, Minnesota	SK2-1037 SHT. 2 DRAWING NUMBER	17-30 MODEL	1 DCN NUMBER
REASON: FACILITATE INST'L.	DWG. REV. LETTER A	CHANGE EFFECTIVE ON 900606 - 930216	CUSTOMER ☐ BELLANCA ☒	VENDER ☐
THIS NOTICE TO BE USED AS PART OF DWG AND SUPERSEDES PARTS AS SHOWN		REV A REV B	REQUESTED BY	

WAS



VIEW A-A

REQ



VIEW A-A

ADD NOTE:

5: AIRCRAFT MAY BE EQUIPPED WITH A .25 INCH DRAIN LINE, TO DRAIN PAN. IF SO, USE .25 INCH LINE, BUT EXTEND LINE TO DRAIN AS SHOWN IN VIEW B-B.

(38)

DRAWING CHANGE NOTICE

ISSUE	DATE	BY	SEC	CHK	PROJ	STR	STD	APPROVALS
REV A								
REV B								
FIRST	6-18-71	CAH	CJ	MH				WB

PARTS DISPOSITION AFTER REVISIONS

	REWORK			SCRAP			NOTED		
		A	B		A	B		A	B
REVISIONS									
PREFORMED STOCK									
IN PROCESS									
FINISHED PARTS									
IN ASSEMBLY									

DRAWING CHANGED

BY	DWG. REV
CH	DATE

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-763-6668
April 6, 1971

SERVICE LETTER NO. 65

TO: OWNERS OF BELLANCA MODELS 17-30 and 17-31 and 17-31TC

SUBJECT: IMPROVED RETRACTION SYSTEM OPERATION

AIRCRAFT AFFECTED: MODEL 17-30 SERIAL NO. 30123-30240
MODEL 17-31 SERIAL NO. 32-1 THRU 32-13
MODEL 17-31TC SERIAL NO. 31001 THRU 31003

In line with Bellanca's policy of continuously improving its products for greater utility and user satisfaction, certain of these improved features are offered to existing owners as service kits. The subject kit SK234-5004 provides additional overcenter travel of the retraction links and removes the system down hydraulic lock. There have been known instances where heat expansion in the trapped fluid would create hydraulic pressure sufficient to prevent gear retraction. SK234-5004 will remove this possibility and provide more reliable operation. This kit is available from the factory if needed and can be obtained by ordering with the enclosed parts request form. The price of the kit is $44.00. This price will be in effect for one year.

Installation instructions are included in the kit.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-763-6668

April 7, 1971
Rev. March 21, 1972

SERVICE LETTER NO. 66

TO: OWNERS OF BELLANCA MODELS 14-19-3, 14-19-3A, 17-30, 17-31, 17-31TC, 17-30A, 17-31A, 17-31ATC

SUBJECT: RAISED FUEL DRAINS

AIRCRAFT AFFECTED:	KITS NEEDED
MODEL 14-19-3 ALL SERIALS	A, B, C
MODEL 14-19-3A ALL SERIALS	A, B, C
*MODEL 17-30 ALL SERIALS	A, B, C, E
MODEL 17-31 ALL SERIALS	A, B, D, E
MODEL 17-31TC ALL SERIALS	A, B, D, E
MODEL 17-30A, SERIAL NO. 30263 THRU 30275	A, B, C, E
MODEL 17-31A, SERIAL NO. 32-15 THRU 32-29	A, B, D, E
MODEL 17-31ATC, SERIAL NO. 31004 THRU 31006 -	A, B, D, E

*Kit E Req. Only for Serials 30035 thru 30262

To preclude the possibility of damaging the fuel system in a wheels up landing, it is recommended that owners of the above aircraft install Bellanca service kits listed above.

The kits consist of the necessary instructions and hardware to revise the drains such that all are within the airplane contour. The kit also features a remote controlled valve for draining the strainer.

The kits can be obtained from the factory by ordering with the enclosed parts request card. The prices of the kits are:

Kit A:	$ 5.00
Kit B:	$ 2.00
Kit C:	$26.00
Kit D:	$20.00
Kit E:	N/C

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-763-6668

Sept. 10, 1971

SERVICE LETTER NO. 67

TO: OWNERS OF BELLANCA MODELS 17-30, 17-30A, 17-31, 17-31A, 17-31TC, & 17-31ATC

SUBJECT: FLAP BELLCRANK STIFFENER

AIRCRAFT AFFECTED: MODEL 17-30 SER. 30123 & UP
MODEL 17-30A SER. 30263 THRU 30345
MODEL 17-31A SER. 32-1 THRU 32-36
MODEL 17-31ATC SER. 31001 THRU 31014

Current Bellanca models have a stiffening bracket added to the flap actuator bellcrank which adds rigidity to the system, and aids in rigging the flap position switches. A kit is available from the factory for adding this stiffener to the above aircraft. It is recommended that this rework be accomplished. Service Kit No. SK234789-2003 is available for this at a price of $5.00. The kit can be obtained from the factory by using the enclosed parts request card. The price will remain in effect for one year.

If you no longer own the aircraft, please forward the letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

December 3, 1971

SERVICE LETTER NO. 68

TO: OWNERS OF BELLANCA MODELS 17-30A, 17-31A, & 17-31ATC

SUBJECT: FUEL LINE REPLACEMENT

AIRCRAFT AFFECTED: MODEL 17-30A Ser. 30394 Thru 30403, 30405
MODEL 17-31A Ser. 32-53
MODEL 17-31ATC Ser. 31022 Thru 31025

As soon as possible, replace the main fuel line that runs from the firewall to the engine driven pump, Aeroquip Hose P/N 359-8D-0153, with Bellanca Hose P/N 198003-10. Further flight before replacement is not recommended. This replacement is to preclude the possibility of the 359-8D-0153 hose kinking and restricting fuel flow to the engine driven pump, with the resultant possibility of reduction or loss of power.

When the compliance card and the replaced hose are returned to the factory, full credit for the enclosed invoice will be issued.

BELLANCA AIRCRAFT CORPORATION

Encls: Service Letter compliance Card
Invoice

BELLANCA

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

January 25, 1972

SERVICE LETTER NO. 69

TO: OWNER'S OF BELLANCA MODELS 17-30A, 17-31A, & 17-31ATC

SUBJECT: IDENTIFICATION OF STATIC SYSTEM DRAIN

AIRCRAFT AFFECTED: MODEL 17-30A, SER. 30280, 30282 THRU 30392
MODEL 17-31A, SER. 32-31 THRU 32-52
MODEL 17-31ATC, SER. 31009 THRU 31021

The aircraft listed above have a static system drain valve located in the left wing root area. The valve used is a type used by some manufacturers as a fuel drain valve. To prevent confusion as to the function of this valve, install the enclosed placard adjacent to the valve. Placards are now being installed at the factory. If your aircraft is properly placarded, disregard this notice. These placards will be made available at no charge for a period of 6 months from the date of this letter.

If you no longer own the aircraft, please forward this letter, and placard, to the new owner.

NOTE TO DEALERS AND REPAIR STATIONS: Placards were sent to owners of record. This letter is for your information.

BELLANCA AIRCRAFT CORPORATION

Encl. Placard

BELLANCA AIRCRAFT CORPORATION
MUNICIPAL AIRPORT
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

June 7, 1972

SERVICE LETTER NO. 70

TO: OWNERS OF BELLANCA MODELS 17-30 & 17-30A

SUBJECT: Mc CAULEY PROPELLER SERVICE BULLETINS NO'S 94 & 94-1

AIRCRAFT AFFECTED: MODEL 17-30, ALL
MODEL 17-30A, SER. 30263 THRU 30380

Enclosed are copies of Mc Cauley Service Bulletins No. 94 and 94-1, which affect both Mc Cauley Propellers and Spinners on Bellanca 17-30 and 17-30A Aircraft.

If you have not already complied with these bulletins, it is recommended that you do. Some of the higher serial numbered Model 17-30A aircraft may have had these Service Bulletins complied with before delivery. It is recommended you check your aircraft before ordering the kit. The proper Mc Cauley Kit can be obtained from Mc Cauley Industrial Corporation, FAA Approved Propeller Repair Stations, or Bellanca Aircraft Corporation.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl:
Mc Cauley Service Bulletins 94 & 94-1

BELLANCA AIRCRAFT CORPORATION
MUNICIPAL AIRPORT
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

June 7, 1972

SERVICE LETTER NO. 70

TO: OWNERS OF BELLANCA MODELS 17-30 & 17-30A

SUBJECT: Mc CAULEY PROPELLER SERVICE BULLETINS NO'S 94 & 94-1

AIRCRAFT AFFECTED: MODEL 17-30, ALL
MODEL 17-30A, SER. 30263 THRU 30380

Enclosed are copies of Mc Cauley Service Bulletins No. 94 and 94-1, which affect both Mc Cauley Propellers and Spinners on Bellanca 17-30 and 17-30A Aircraft.

If you have not already complied with these bulletins, it is recommended that you do. Some of the higher serial numbered Model 17-30A aircraft may have had these Service Bulletins complied with before delivery. It is recommended you check your aircraft before ordering the kit. The proper Mc Cauley Kit can be obtained from Mc Cauley Industrial Corporation, FAA Approved Propeller Repair Stations, or Bellanca Aircraft Corporation.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl:
Mc Cauley Service Bulletins 94 & 94-1

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 71

Date: 6-8-72
Revision:
Page: 1 of 1

TO: Owner's of Bellanca Models 17-30

SUBJECT: Fuel Boost Pump Switch Replacement

AIRCRAFT AFFECTED: Model 17-30--S/N's 30002 thru 30216

Subsequent to the issue of Bellanca Service Letter No. 61A, it was discovered that some boost pump models would not produce the desired results when modified per the service letter instructions. The pump models affected are Weldon Models 4020-A2A and 10050A. These were used on all serials up through 30216. Owners of aircraft having pumps of these models should comply as follows.

Retain the single speed feature (single action off-on switch) except replace the switch with a momentary "on" type (spring loaded to return to "off"). This switch is available from the factory at a cost of $3.00. Please use the enclosed parts request card for ordering.

Owners of aircraft up through serial No. 30216, complying with this letter, that have ordered and received the original hardware kit, may return the kit for refund. Drawing SK2-1040 Sht. 2 describes the required changes and is supplied with the kit.

Aircraft with serial No.'s 30217 through 30262 were equipped with Airborne Manufacturing pumps, Model 2B6-9 and should comply with the instructions of Service Letter No. 61A as originally stated.

Encl. Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

June 8, 1972

SERVICE LETTER NO. 72

TO: OWNERS OF BELLANCA MODELS 14-19-2, 14-19-3, 14-19-3A and 17-30

SUBJECT: FLEXIBLE HOSES

AIRCRAFT AFFECTED:		KIT
	MODEL 14-19-2, SERIAL NO. 4001 THRU 4105	NO. 72-2
	MODEL 14-19-3, SERIAL NO. 4106 THRU 4228	NO. 72-3
	MODEL 14-19-3A, SERIAL NO. 4229 THRU 4342	NO. 72-3A
	MODEL 17-30, SERIAL NO. 30001 THRU 30262	NO. 72-30

Flexible Hose Assemblies for replacing the flexible hoses in the engine compartment as referred to in F.A.A. Airworthiness Directive 72-1-1 are now available.

These hoses may be purchased in kits from the factory by ordering with the enclosed parts request card. These kits contain both the fuel and oil hoses, except for model 17-30 which requires only the fuel supply hose. The prices of the kits are:

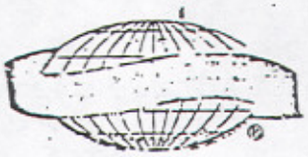
Kit No. 72-2
Kit No. 72-3
Kit No. 72-3A
Kit No. 72-30

Many F.A.A. Approved Repair Stations can make the replacement hose assemblies for you. Many of the older aircraft may already have had some or all of their hoses replaced with acceptable hoses. If you only require certain hoses, they can be purchased as needed.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card



McCauley Industrial Corporation

PARKER AVE. AT HOWELL • BOX 7, ROOSEVELT STA. • DAYTON, OHIO 45417
Area Code 513 263-3541 • Cable Address: McCauley

SERVICE BULLETIN NO. 72

DOA APPROVED 15 SEPTEMBER 1969

NECESSARY AND REQUIRED ACTION

TO: Bellanca Aircraft Company, FAA Approved Propeller Repair Stations, and McCauley Distributors.

SUBJECT: Bellanca Spinner Improvement.

SPINNER MODELS AFFECTED: PD-3867, PD-3766, D-3867, and D-3766.

AIRCRAFT MODELS AFFECTED: Bellanca 17-30

CONDITION:

1) Some D-3865 and D-3764 bulkhead and fillet assemblies, which are part of the spinner models affected, have been found with cracks. This has been attributed to a possible lack of stability caused by the front spinner support (contributing factor).

2) The C-3862 spinner support and B-3631 adapter have been replaced with a C-4025 front bulkhead. Installation of this new front bulkhead will provide sufficient stability to prevent any cracking in the rear bulkhead.

CORRECTION, PROCEDURE, AND IDENTIFICATION:

1) Remove all (27) A-1635-39 installation screws and A-1638-9 washers. Hold these for re-installation. Remove spinner dome.

2) Remove C-3862 spinner support and B-3631 adapter and any B-3863 spacers that may have been used; these may all be discarded.

3) Remove the propeller cylinder mounting screws and hold for re-installation. The A-1638-9 cylinder mounting washers are to be discarded.

4) Install C-4025 front bulkhead as illustrated on the spinner installation drawings No. D-3766 and D-3867. A-1638-25 washers are used to replace the original washers which have been discarded. Re-lockwire the cylinder mounting screws. Apply layer(s) of A-4078-1 tape.

NOTE:
Obtain McCauley Parts Kit No. PL-4096-1 for PD and D-3867 Spinners and PL-4096-2 for PD and D-3766 Spinners. Each kit contains sufficient parts for the correction of one spinner and each kit has a copy of the installation drawing (No. D-3766 or D-3867).

McCauley Industrial Corporation
PARKER AVE. AT HOWELL • BOX 7, ROOSEVELT STA. • DAYTON, OHIO 45417
Area Code 513 263-3541 • Cable Address: McCauley

SERVICE BULLETIN NO. 72-1

DOA APPROVED 13 OCTOBER 1969

NECESSARY AND REQUIRED ACTION

From: Bellanca Aircraft Company, FAA Approved Propeller Repair Stations, and McCauley Distributors.

Subject: Bellanca Spinner Improvement.

SPINNER MODELS AFFECTED: PD-3867, PD-3766, D-3867, and D-3766.

AIRCRAFT MODELS AFFECTED: Bellanca 17-30.

Since the issue of Service Bulletin No. 72 dated 15 September 1969, it has been found necessary to add an inspection requirement. This Service Bulletin No. 72-1 is being issued as a supplement to the original bulletin.

ON — the original bulletin, after item (2) under "CORRECTION, PROCEDURE, AND IDENTIFICATION" add the following:

NOTE:

Remove the propeller from the engine shaft. Remove the rear spinner bulkhead (D-3764 or D-3665). Examine both sides of bulkhead for signs of cracks, paying particular attention to the surfaces clamped between the propeller and engine shaft. Replace any cracked bulkheads. Reinstall rear bulkhead and propeller.

McCAULEY INDUSTRIAL CORPORATION

BELLANCA

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

April 27, 1972

SERVICE LETTER #73

TO: OWNERS OF BELLANCA MODELS 17-30A, 17-31A, & 17-31ATC

SUBJECT: FUEL STRAINER DRAIN VALVE REWORK

AIRCRAFT AFFECTED: MODEL 17-30A; SER. 30375, 30387 THRU 30452
MODEL 17-31A; SER. 32-50 THRU 32-71
MODEL 17-31ATC; SER 31020 THRU 31034

There have been instances where fuel seepage has developed around the stem of the P/N 191876 fuel strainer drain valve.

This valve assembly should be reworked per Bellanca SK789-1045. Parts, drawings, and instructions are being provided at no charge by the factory. Bellanca is recommending this modification be accomplished as soon as possible, but no later than within the next 25 flight hours. As soon as this modification has been completed, please fill out the enclosed SERVICE LETTER COMPLIANCE CARD, sign and return it to the factory.

If you no longer own the aircraft please return the kit to the factory and advise us of the name and address of new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: SK789-1045 Service Kit
Service Letter Compliance Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

August 24,1972

SERVICE LETTER #74

TO: OWNERS OF BELLANCA MODELS 17-30A, 17-31A, & 17-31ATC

SUBJECT: ALTERNATOR WARNING LIGHT REWORK

AIRCRAFT AFFECTED: MODEL 17-30A, SER. 30400 THRU 30471
MODEL 17-31A, SER. 32-53 THRU 32-86
MODEL 17-31ATC SER 31023 THRU 31040

There have been cases of the relay in the alternator warning light circuit burning out and causing the light to remain on giving the false signal that the alternator is not charging. This can be prevented by protecting the relay coil with an 18 OHM, 1 watt resistor installed per the attached schematic. The resistor may be obtained locally or ordered from the factory at no charge. The no charge condition will be kept in effect for 6 months from the date of this letter.

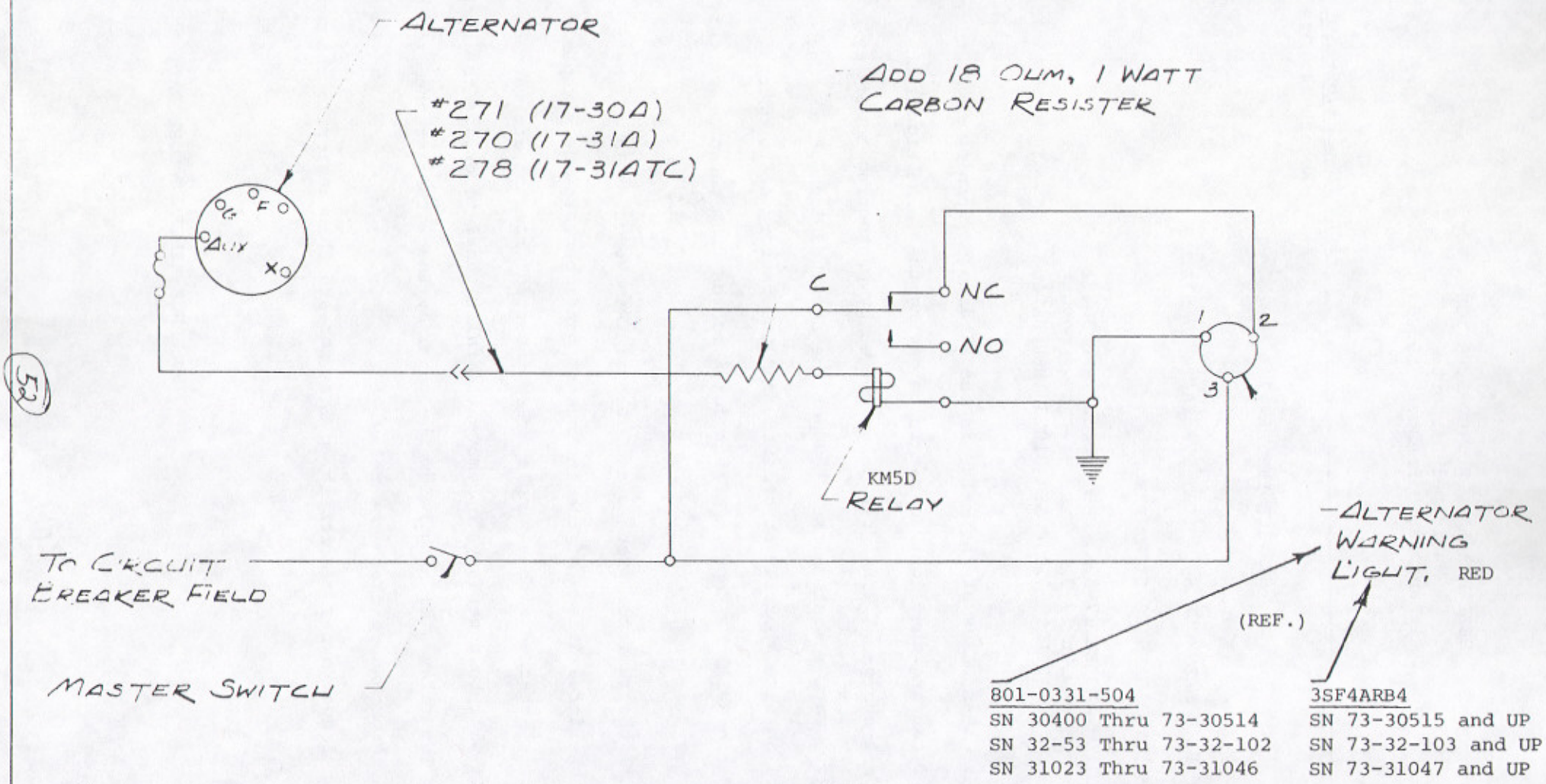
To install the resistor proceed as follows: Remove the relay. The relay is located on the forward face of the instrument panel beneath the airspeed indicator, and is attached with a single screw inserted from the aft face of this panel. It will be necessary to remove the false panel to expose the head of the screw. The relay will hang below the panel by the wires attached to it. Install the resistor and reattach the relay.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Schematic

(51)



52

SCHEMATIC-
ALTERNATOR WARNING LIGHT REWORK
(SERVICE LETTER #74)

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

January 3, 1973

SERVICE LETTER NO. 75

TO: ALL BELLANCA 17-30A OWNERS

SUBJECT: ENGINE AIR FILTER BOX ON CONTINENTAL ENGINES

AIRCRAFT AFFECTED: MODEL 17-30A: S/N 30263 THRU 73-30489

To prevent the possibility of the spacer washers inside of the air box being ingested into the engine, because of retainer bolt breakage, it is recommended that the airbox be visually inspected for cracks and security of attachment within the next 10 hours of operation and that the airbox be modified per Bellanca Service Kit No. SK7-1048 within the next 50 hours. Parts, drawings and instructions are being provided at no charge by the factory.

Service Kit No. SK7-1048 will be made available at no charge for a period of one (1) year from the date of this letter. Order the kit with the enclosed parts request form.

If you no longer own the aircraft, please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone AC 612-762-1501

January 4, 1973

SERVICE LETTER NO. 76

TO: OWNERS OF BELLANCA MODELS 14-19-3, 14-19-3A, 17-31, 17-30, 17-31TC, 17-30A, 17-31A and 17-31ATC.

SUBJECT: BRACKET-NOSE GEAR DRAG STRUT

APPLIES TO:
MODEL 14-19-3 Ser. 4180 Thru 4228
MODEL 14-19-3A All Serials
MODEL 17-30 " "
MODEL 17-31 " "
MODEL 17-31TC " "
MODEL 17-30A Ser. 30263 - 73-30524
MODEL 17-31A Ser. 32-15 - 73-32-103
MODEL 17-31ATC Ser. 31004 - 73-31047

There have been a few instances of the Drag Strut Bracket cracking in the bend area and around the mounting holes.

Visual Inspection with a 10 power magnifying glass should be made after thoroughly cleaning the brackets and surrounding area of the firewall. (See Drawing SK12346789-4012 on reverse side of this letter for areas to inspect.)

These brackets should be inspected within the next 25 hours and every 100 hours thereafter.

If any cracking is found, new brackets can be obtained from the factory. Order parts with the enclosed order form.

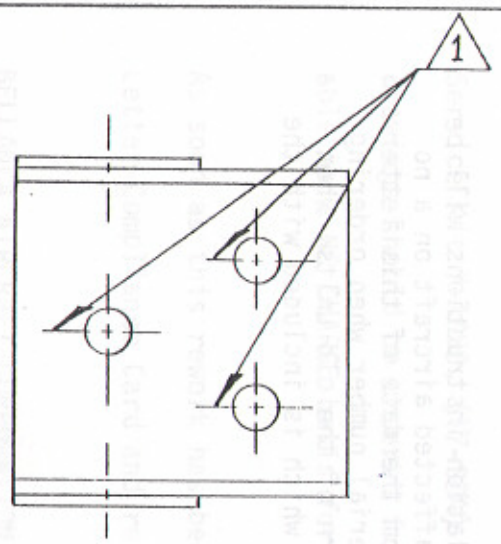
When installing new brackets it is advised that the left hand bracket be installed first. The left hand bracket has the two top holes oversize. Tighten only the bottom bolt in the left hand bracket. Run a .312 dia. rod through the drag strut attaching hole over to the right hand bracket. It may be necessary to shim the right hand bracket for proper alignment.

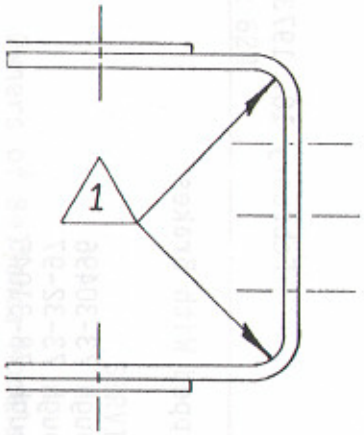
For Models 14-19-3, 14-19-3A, and 17-30 thru SN 30227, Part Numbers for brackets are: SK126-4013, Left Hand, and 194383-10 Right Hand. For Models 17-30 SN 30228 thru 30262,all 17-31, 17-31TC, 17-30A, 17-31A, 17-31ATC are: 194383-0 Left Hand, and 194383-10 Right Hand. After new brackets have been installed it will no longer be necessary to inspect them other than during normal routine inspections.

If you no longer own this aircraft please forward this letter to the new owner.

BELLANCA AIRCRAFT CORPORATION

Encls: Parts Request Card





(65)

2: VISUAL INSPECTION WITH A 10 POWER MAGNIFYING GLASS.

1 AREA TO BE INSPECTED FOR CRACKING.

NO REQ	PART NO		SPEC

LET	CHANGE	DRAWN	DATE

REVISIONS

UNLESS OTHERWISE SPECIFIED
DECIMAL
ANGULAR
FINISH

CFH 11/17/72 JAW 12-21-72 APPV. 12-22-72

SCALE
FULL SIZE

BRACKET-
STRUT DRAG
INSPECTION

SERVICE LETTER NO. 76

SK12346789-4012

BELLANCA

BELLANCA AIRCRAFT CORPORATION
BOX 624
ALEXANDRIA, MINNESOTA 56308

Service Letter #77 February 10, 1973

SUBJECT: Rudder Pedal Shaft Assemblies Equipped With Brakes

Aircraft Affected:

17-30A	S/N 30346 through	73-30496
17-31A	S/N 32-37 through	73-32-97
17-31ATC	S/N 31015 through	73-31045

It is recommended that owners of the above listed aircraft immediately inspect the rudder pedal shaft assembly for cracks where the vertical tube is welded to the horizontal tube. Cracks, if any, would appear on the aft side of the horizontal tube, or the side which is toward the pilot. If aircraft is equipped with dual brakes, both sets of rudder pedal shaft assemblies should be inspected. Inspection can be accomplished by pulling carpet back and spreading the foam insulation around pedal base at floorboard and using an adequate light.

Should cracks be found, aircraft should not be flown until pedal shaft assembly has been replaced.

It is recommended that all rudder pedal shaft assemblies equipped with brakes be replaced within the next 100 hours of flight time.

New rudder pedal shaft assemblies and installation instructions will be made available by the factory for the above affected aircraft on a no cost basis for a period of six (6) months from the date of this letter. Owners should give registration number and serial number when ordering pedal shafts. Credit will be issued on return of the old units, when accompanied by the completed compliance card which is included with the replacement pedal shaft.

BELLANCA AIRCRAFT CORPORATION

BELLANCA AIRCRAFT CORPORATION
MUNICIPAL AIRPORT
ALEXANDRIA, MINNESOTA 56308

Box 624 Phone 612-762-1501

March 15, 1973

SERVICE LETTER NO. 78

TO: Owners of Bellanca Models 17-30A & 17-31A

SUBJECT: Right Hand Tail Pipe 17-30A
Left Hand Tail Pipe 17-31A

APPLIES TO: Model 17-30A Serial No. 73-30515 Thru Serial No. 73-30539
Model 17-31A Serial No. 73-32-103 Thru Serial No. 73-32-111

To increase the flexibility of the connection of the tail pipe to engine mount and to eliminate the possibility of tail pipe mount breakage, tail pipes on the above effected aircraft should be reworked as per Bellanca Service Kit 7-1050, (17-30A) & 8-1051 (17-31A). Kit hardware and drawings should be ordered from Bellanca factory and will be made available on a NO CHARGE basis for six (6) months from date of this letter.

As soon as this rework has been accomplished, please fill out the Service Letter Compliance Card and return it to the factory.

BELLANCA AIRCRAFT CORPORATION

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone 612-762-1501
April 18, 1973

SERVICE LETTER NO. 79

TO: Owners of Model 17-30A, 17-31A and 17-31ATC

SUBJECT: Fuel Pressure Gauge Line and Oil Pressure Gauge Line

AIRCRAFT AFFECTED: Model 17-30A Serial No. 73-30515 thru Serial No. 73-30561
Model 17-31A Serial No. 73-32-103 thru Serial No. 73-32-115
Model 17-31ATC Serial No. 73-31047 thru 73-31057

The above listed Aircraft are equipped with 1/8" I.D. Aluminum lines from the fire wall to the Oil & Fuel Pressure Gauges. Due to the small diameter of these lines, we have encountered problems in getting a proper flare at the fittings. In line with Bellanca's policy of improving its' products for better user satisfaction, Bellanca is making available a Service Kit to change these lines to flexible hose, to eliminate the possibility of leakage inside the cabin area. Service Kit SK789-1052 is available from the factory on a no cost basis along with a labor allowance of $25.00, provided the "Service Letter Compliance Card" is completed and returned to Bellanca along with the name and address of the person to receive refund prior to July 15, 1973. The Kit can be obtained by using the enclosed Parts Request Card.

Procedure or instruction for replacement will accompany each set of replacement hoses.

BELLANCA AIRCRAFT CORPORATION

Encl: Parts Request Card

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone 612/762-1501

December 18, 1973

Service Letter 80

SUBJECT: Tachometer Markings

AIRCRAFT EFFECTED: 17-31A Serial Numbers 32-15 through 32-102
17-31ATC Serial Numbers 31004 through 31046

The tachometer markings on the above aircraft do not agree with those shown in the flight manual.

Before replacing the enclosed revision pages in your flight manual, please check to make sure that the tachometer markings agree with the revised pages.

BELLANCA AIRCRAFT CORPORATION

Revision #6, Page 4, Dated 9/18/73

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624

Phone: 612/762-1501

December 18, 1973

Service Letter 81

SUBJECT: Main Fuel Selector Quantity Placard

AIRCRAFT EFFECTED: 17-30A Serial Number 30315 through 30514
17-31A Serial Number 32-35 through 32-102
17-31ATC SErial Number 31013 through 31046

The fuel quantity placard at the main fuel selector handle do not agree with that shown in the flight manual.

Before replacing the enclosed revision pages in your flight manual, please check to make sure that the placard agrees with the revised pages.

BELLANCA AIRCRAFT CORPORATION

Revision #5, Page 7a, Dated 12/6/73 (17-30A)
Revision #7, Page 7a, Dated 12/6/73 (17-31A)
Revision #7, Page 7a, Dated 12/6/73 (17-31ATC)

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624

Phone: 612/762-1501
December 18, 1973

Service Letter 82

SUBJECT: Manifold Pressure Gauge Markings

AIRCRAFT EFFECTED: 17-31ATC Serial Numbers 73-31047 through 73-31071

The flight manual for the above aircraft does not give the red radial marking at 29.5 inches Hg for the manifold pressure gauge.

Before replacing the enclosed revision pages in your flight manual, please check the manifold pressure gauge to make sure it has the red radial marking at 29.5 inches/Hg.

BELLANCA AIRCRAFT CORPORATION

Revision #2, Page 1 - 2 of 7, Dated 10/29/73

BELLANCA

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

Box 624 Phone: 612/762-1501

May 30, 1974

Service Letter 83

SUBJECT: Vacuum Pump

AIRCRAFT EFFECTED: 17-30A, S/N 74-30669 thru 74-30700
17-31A, S/N 74-32-138 thru 74-32-140
17-31ATC, S/N 74-31088, 74-31091
thru 31099

The above aircraft were delivered with the vacuum pump muffler, related fittings and hose deleted intentionally since it was found there was no measureable difference in cabin noise with the muffler removed. However, due to the possibility of cleaning solvent, or other foreign matter getting into the vacuum pump, we are now installing a 90° elbow fitting in the vacuum pump exhaust port.

It is recommended that at the next 50 hour or 100 hour inspection, an Airborne 1K1-6-10, 90° elbow or equivalent be installed on these aircraft. Also, any aircraft that has had the vacuum pump muffler removed in the field should have this fitting installed.

BELLANCA AIRCRAFT CORPORATION

(62)

BELLANCA

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 624 Phone: 612/762-1501
July 15, 1974

SERVICE LETTER #84

FAA APPROVED

TO: All Viking Owners

SUBJECT: Viking Cabin Door Lock

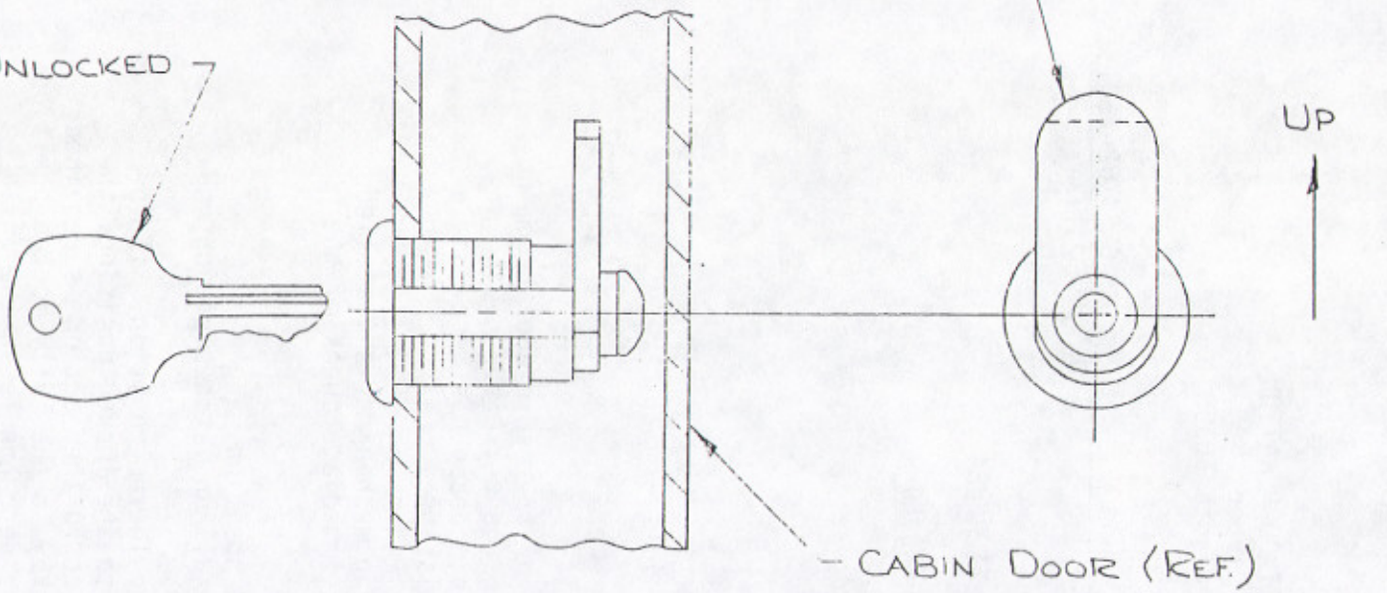
AIRCRAFT EFFECTED: All Viking Models

There have been several instances of the cabin door becoming inadvertently locked when removing the key after having unlocked the door. As a result, cabin occupants were unable to leave the aircraft without assistance.

To establish that your door locking mechanism is installed correctly, Bellanca recommends an immediate check of the door and lock as follows:

(1) Turn the key to the unlocked position.
(2) Turn the door handle to the full un-latch position and hold it there.
(3) Turn the key back towards the locked position. If the key will only turn part way to the locked position, the installation is correct and no further action is required.
(4) If you are able to turn the key to the fully locked position (key about vertical) with the door handle in the full un-latch position, the locking cam inside the door is installed incorrectly. If this is the case, the upholstery must be removed and the locking cam re-installed correctly as shown on the attached page.

BELLANCA AIRCRAFT CORPORATION
Customer Service Department



NO. REQ.	PART NO.	NAME	DIA. / THICK / WIDTH / LENGTH STOCK SIZE	MATERIAL	SPEC.

UNLESS OTHERWISE NOTED
TOLERANCES
DECIMAL ±.010
ANGULAR ±1/2°
FINISH: ELLANCA SPEC.

CABIN DOOR LOCK

SERVICE LETTER # 84

LET.	CHANGE	DRAWN	DATE	APPV'D

REVISIONS

DRAWN	CHECK	APPV'D	SCALE
RB 7-8-74	EFH 7-19-74	July 1974	DO NOT SCALE DWG. NONE

SK1234739-6012

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 624 Phone: 612/762-1501

July 7, 1975

Rev. A: August 11, 1975

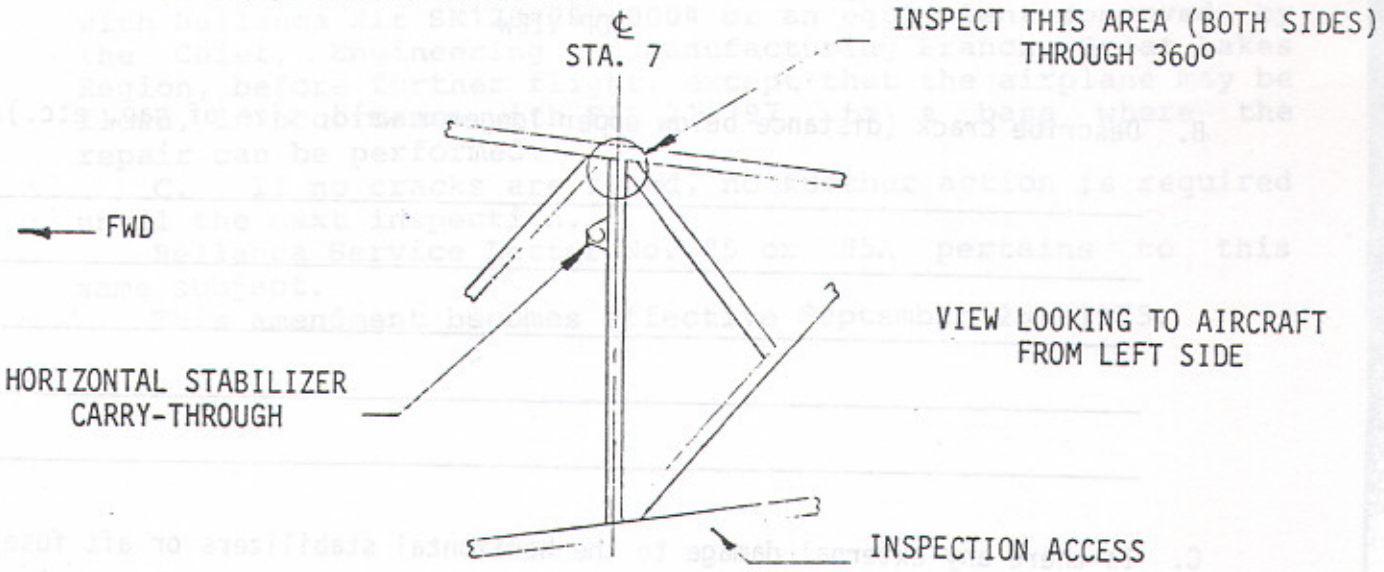
SERVICE LETTER #85A

TO: ALL VIKING OWNERS

SUBJECT: Horizontal Stabilizer Fuselage Attachment Tube 190202-37 Inspection and Repair

AIRCRAFT AFFECTED: All 14-19-3A, 17-30, 31, 31TC, 30A (through S/N 76-30811), 31A (through S/N 76-32-163) and 31ATC (through S/N 76-31124) Models.

There have been a few instances where the subject vertical tube within the fuselage, which connects the horizontal stabilizer carry-through to the upper fuselage longeron, has shown signs of cracking. The cracks have appeared just below the weld on either the right, left or both sides. The following sketch identifies the potential crack area.



If your aircraft has 300 hours or more total service time, please inspect this area within the next 25 hours on your aircraft to insure that it is in a safe condition and report your findings to the Bellanca Service Department by phone or on the attached return form. Use a dye penetrant to inspect the entire area including the longerons and other adjacent truss members.

If cracks are found, repair the crack per the Bellanca Service Kit SK1234789-0004 before the aircraft is returned to service. A special flight permit pursuant to FAR 21.197 is required to allow ferrying of the aircraft to a facility where the required maintenance can be performed. If no cracks are found, return Compliance Card to Bellanca Aircraft Corporation and re-inspect the aircraft each 100 hours until Kit SK1234789-0004 is installed.

(1 of 5)

SERVICE LETTER # 85A INSPECTION RETURN FORM

AIRCRAFT MODEL_____ N_____ S/N_____

OWNER_____

ADDRESS_____

PHONE_____

AIRCRAFT TOTAL TIME_____

INSPECTION DETERMINATION

A. Show the extent of cracks on the vertical tube in the sketch(s) below.

☐ No Cracks (Return Compliance Card Only)

☐ Cracks Found As Indicated Below

☐ Left Side ☐ Right Side

TOP VIEW

B. Describe crack (distance below upper longeron weld, size of gap, etc.):

_____

_____

_____

_____

_____

C. Is there any external damage to the horizontal stabilizers or aft fuselage (including tail skid)?_____

_____

_____

_____

75-20-06 BELLANCA: Amendment 39-2372. Applies to Model 17-30, 17-30A (S/N 30263 through S/N 76-30811), 17-31, 17-31TC, 17-31ATC (S/N 30004, S/N 31004 through S/N 76-31124), 14-19-3A, and 17-31A (S/N 32-15 through S/N 76-32-163) airplanes certificated in all categories.

Compliance required upon accumulation of 300 hours time in service or within the next 25 hours time in service from the effective date of this Airworthiness Directive (whichever occurs later) unless already accomplished, and thereafter at intervals not to exceed 100 hours time in service from the last inspection until Bellanca Kit SK1234789-0004 is accomplished.

To detect cracks in either vertical side fuselage tube (F. S. 7), which is adjacent to the horizontal stabilizer carry-through, in the area near the upper fuselage longeron, accomplish the following:

A. Inspect the vertical tube for circumferential cracks at the upper weld, and between the upper weld and the horizontal stabilizer carry-through tube, all around the tube.

B. If cracks are found, repair and modify in accordance with Bellanca Kit SK1234789-0004 or an equivalent approved by the Chief, Engineering and Manufacturing Branch, Great Lakes Region, before further flight, except that the airplane may be flown, in accordance with FAR 21.197, to a base where the repair can be performed.

C. If no cracks are found, no further action is required until the next inspection.

Bellanca Service Letter No. 85 or 85A pertains to this same subject.

This amendment becomes effective September 26, 1975.

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 624 Phone: 612/762-1501

July 8, 1975

SERVICE LETTER #86

FAA APPROVED

SUBJECT: Fuel Boost Pump Modification

AIRCRAFT AFFECTED: 17-31 - S/N 32-1; 17-31TC - S/N 31002 through 31003;
17-31A - S/N 32-21 through S/N 75-32-161 except 32-25;
17-31ATC - S/N 31004 through S/N 75-31120 and 30004.

There have been several reports of starting difficulties with the above Lycoming powered aircraft using an Airborne electric fuel boost pump. This condition generally occurs during unusually high ambient temperatures and is associated with a vapor locked electric fuel boost pump. The boost pump pressure in the dry (air/vapor) condition is less than that required by the Bendix Fuel Injector Servo.

This potential vapor locking problem can be eliminated with the installation of Service Kit #SK3489-1057. This provides a fuel by-pass at the boost pump, which purges the system of air/fuel vapor.

Installation Time - Approximately 3 to 4 Man-Hours

NOTE

When ordering kit, the aircraft serial number MUST be included.

THE BELLANCA PILOT

VOL. VII, No. 4 " AT HOME IN THE AIR " MAY - JUNE 1976

Bellanca Aircraft Corporation, Municipal Airport, Alexandria, Minn 56308

P.O. Box 624 Phone: 612/762-1501

FAA APPROVED April 12, 1976

SERVICE LETTER #87A

SUBJECT: Wing Inspection (Annual/100 Hour)

AFFECTED AIRCRAFT: All Models--14-19-2, 14-19-3, 14-19-3A, 17-30, 17-31, 17-31TC, 17-30A, 17-31A and 17-31ATC

The Bellanca wing has achieved an outstanding reputation for superior strength and durability. This reputation is due to the wing's unique wood design and Bellanca's hand-crafted assembly methods. The entire wing is submerged in a water resistant wood sealer, covered with dacron fabric and externally sealed with several coats of paint to protect the wing against moisture. However, there have been isolated cases where wood decay has occurred which may compromise the structural integrity of the wing and required extensive repairs. It is most probable that this condition would never have developed had the aircraft been properly inspected at regular intervals (annual/100 hour inspections) and preventive maintenance performed when required. This can be attested by the many Bellancas flying for more than thirty years.

Decay-producing fungi may, under conditions that favor their growth, attack the wood in the wing; the result is a condition designated as decay. Decay can occur at temperatures that favor growth of plant life in general. Serious decay occurs only when the moisture content of the wood is above the fiber saturation point (average 30 percent). These conditions are especially prevalent in the Southeastern United States. Only when previously dried wood is contacted by water, such as provided by rain, condensation, or contact with wet ground, will the fiber saturation point be reached. The wood used in the Bellanca wing is dried to 8-12% and provides a reasonable margin of safety against fungus damage. The water vapor in humid air alone will not wet wood sufficiently to support significant decay, but it will permit development of some mold. <u>If excessive moisture is not allowed to enter the wood fibers, there is virtually no limit to the wing's structural life expectancy</u>.

The procedures presented herein describe a progressive inspection and are intended to accomplish the following.

A. Inspect the entire exterior surface of the wing to determine if it is possible for water to contact and/or enter the wood structure inside the wing.

B. Inspect the interior of the wing to determine if water has been present inside the wing or if there are any signs of wood decay.

C. If either of the above are found, continue the inspection an additional step to determine that the wood structure is free of decay and structurally sound.

D. Incorporate modifications to the wing which will help prevent water from entering the wing or being retained by the wing.

This Service Letter describes the inspection procedures and wing modifications related to a standard production aircraft. It may not apply directly to aircraft which are modified in the field and a few production aircraft which varied slightly from standard design. If the Service Letter does not apply directly to your aircraft, contact your Authorized Bellanca Service Center.

PART I: ANNUAL/100 HOUR WING INSPECTION PROCEDURE

To ensure the structural integrity of the wood, the following inspection procedures are required by the Federal Aviation Regulations and Bellanca Aircraft.

1. Exterior Surface Inspection

1.1 Inspect the entire exterior surface of the wing including the wheel well for the following characteristics.

a. Signs which indicate that the wood immediately below the fabric is soft or contains excessive moisture (i.e. swollen). Soft wood may be located and/or confirmed by depressing the wing's surface in the vicinity of the area in question with a rounded, blunt instrument and comparing its hardness of that of good wood. Note that the areas being compared must have identical substructure.

b. Signs which indicate that the fabric/paint is delaminating from the wood surface (bubbles, discoloration, boils, soft spots and other surface flaws).

c. Cracks or breaks in the paint. Water is prevented from entering the wing by the fabric/paint barrier. Any cracks in this barrier, no matter how small, may

compromise its ability to prevent water from entering the wood inside the wing.

d. Exterior damage which would allow water to penetrate the fabric/paint barrier and enter the wood.

The surface features described in the above items a, b, and d may be accentuated by illuminating the surface with a light source placed at a shallow angle.

The following technique may be used by an experienced inspector to detect soft and/or decayed wood in the wing spars. Tap the wing directly above and below both spars with a small rounded, blunt instrument approximately the size of a small pocket knife. Start at the outboard end and move inboard, listening to the sound generated by the wing. The sound quality will change slowly. If the change is abrupt or if the sound is not resilient, the wood directly below the surface may have decay.

1.2 PAY SPECIAL ATTENTION TO THE FOLLOWING AREAS WHILE PERFORMING THE EXTERIOR SURFACE INSPECTION DESCRIBED IN PARAGRAPH 1.1.

a. Wing-root area inboard of landing gear, top and bottom surface, and in region of forward and aft spars.

b. Wing-walk area including adjacent wing surface.

c. Area in proximity to the edge of the inboard fuel tank covers including the screws which are used to secure the cover to wing.

1.3 Mark the areas which have the characteristics described in paragraph 1.1 and refer to paragraph 3 for additional inspection procedures.

2. Interior Inspection

2.1 Remove all inspection/access covers to include the following.

a. Leading edge wing root fairing.

b. Rear spar attachment access cover (top).

c. Lower wing root fairing.

d. All inspection/access covers on lower wing surface.

e. Landing light lens cover, retainer and light mounting assembly.

f. Remove flaps or cut inspection hole in bottom surface of wing as per Drawing SK-2009 for inspection of aft rear spar attach fittings on both wings.

g. Inboard fuel tank fuel sender access cover.

2.2 Using a flashlight and mirror, inspect the entire interior of the wing for the following characteristics.

a. Wood decay.

b. Water and/or wood stains.

c. Pooled dust/dirt which may indicate evidence of previous standing water.

d. Rust or corrosion on metallic surfaces.

e. Wood discoloration.

f. Detectable moisture.

2.3 PAY SPECIAL ATTENTION TO THE FOLLOWING AREAS WHILE CONDUCTING THE INTERIOR INSPECTION OF THE WING WITHIN THE LIMITS OF ACCESSIBILITY AS DESCRIBED IN PARAGRAPH 2.1.

a. Entire exposed wing structure inboard of root rib including inside surface of upper and lower skins, root end of the spars and root rib. This area may be viewed through the aft spar upper attachment access cover and leading edge wing root and lower wing root fairings. Probe inspect the root end of the spars as accessible through the aft spar upper attachment access cover and leading edge wing root and lower wing root fairings. Reference paragraph 3 for a recommended technique. The upper portion of both spars may be probed by using an awl which has been formed with a 90 degree angle 1½ inches from the tip.

b. Forward face of the forward spar assembly, top and bottom, from wing root to Rib Station 3. This area may be viewed through the gap between the fuselage and wing lower surfaces.

c. Aft face of the aft spar assembly, top and bottom, from wing root to Rib Station 5. This area may be viewed through the inspection cover described in paragraph 2.1 f (Drawing SK-2009) or the lightening holes at Rib Station 2 aft of the spar assembly, flap removed, if the inspection cover is not installed; and the access holes just forward of the flap between Rib Station 2 and 6.

d. Flap stops and adjoining structure at Rib Stations 2 and 8.

e. Inspect areas inside the wing and along the inboard and trailing edge of the wing where the fabric terminates (especially in the wing root and flap area) for the characteristics described in paragraph 2.2. Insure that there are no places where the fabric is bonded to the wood in such a manner that would allow moisture to be caught and/or trapped between the fabric and the wood.

f. Forward face of forward spar top and bottom in vicinity of landing light.

2.4 Make note of any areas which have the characteristics described in paragraph 2.2 and refer to paragraph 3 for additional inspection procedures.

2.5 Be certain that all drain holes on bottom of wing are completely open and free of burrs and/or pieces of fabric which would cause water to be retained inside the wing.

2.6 Inspect integrity of foam rubber seal between fuel tank and upper wing skin at all fuel tank fill ports. Reseal if necessary using G.E. 108 RTV Silicone Rubber Adhesive/Sealant or equivalent.

3. Moisture Test and Probing Inspection

If the inspection described in paragraphs 1 and 2 identify any questionable areas (i.e. those areas identified per paragraphs 1.3 and 2.4), continue the progressive inspection by testing these areas per the following procedures.

A. Test for soft/decayed wood with sharp probe.

B. Test for moisture content using suitable resistance type moisture meter (Model G-2, Delmhorst Instrument Company, Boonton, New Jersey, or equivalent).

The probing inspection is designed to identify decayed wood by penetrating it with a sharp object such as an awl or sharp pocket knife. You may wish to "calibrate" yourself and your probe instrument by testing known good wood of a quality equal to that used in the wing; you may also calibrate your probe in a non-critical area of the wing such as the forward face of the rear spar (spruce) just inboard of Rib Station 14 and accessible through the inspection cover at the same location. Note that the wing is constructed with several different kinds of woods, each of which have noticably different hardness.

If you suspect that the spars have decay near the top and/or bottom surface, you may remove a small plug of the wing skin (1/16 inch thick or 1/8 inch thick) to probe inspect the spar material directly. Sharpen a ¼ inch drill bit so that its point angle is very flat and provide it with a stop which prevents it from penetrating to a depth greater than the thickness of the skin; test the drill bit on a separate piece of plywood to insure that it cuts clean and penetrates the proper amount. If the probing inspection indicates good wood, the plug must be replaced using standard repair procedures such as FAA AC 43-13-1A.

If the inspection described in paragraphs 1.2 part c gives you reason to suspect that there may be decay in the fuel tank area, a more thorough inspection may be conducted by removing the fuel tank covers.

If moisture content is below 15% and the wood is solid as determined by probing, the structure can be considered airworthy. If moisture content is 15% or above and the wood is solid as determined by probing, the structure can still be considered airworthy but repetitive inspections of suspected areas are required every 15 days until moisture content is below 15%. Moisture content will decrease provided no additional water is allowed to enter wood fibers. Bellanca recommends that the drying process be assisted by directing warm, dry air over the entire suspected area, taking moisture readings daily; do not allow the moisture content to go below 10%. All deficiencies which would allow water to come in contact with wood fibers MUST be corrected prior to exposing the aircraft to high moisture conditions.

If probing indicates soft or decayed wood, the affected structural members must be replaced. The repairs may be accomplished with reference to the following documents.

a. FAA AC 43-13-1A: Acceptable Methods, Techniques and Practices AIRCRAFT INSPECTION AND REPAIR, Department of Transportation, Federal Aviation Agency 1972; available through Government Printing Office.

b. ANC-18: Design of Wood Aircraft Structures, Chapter 4 Detail Structural Design, Munitions Board Aircraft Committee June, 1951; copies of this document may be obtained from the Naval Publication and Forms Center, Philadelphia, Pa., copies of Chapter 4 may be obtained from Bellanca Aircraft Corporation.

c. Bellanca Aircraft Corporation Engineering Drawings; the specific drawings required will depend on the affected structural components.

Contact your Authorized Bellanca Service Center for assistance.

PART II: WING MODIFICATIONS

1. Provide additional wing drainage as follows.

   a. Provide drain holes through plexiglass lens and retainer inboard aft corner and through inboard rib and corner blocks if not already accomplished per Drawing SK-2009.

   b. If not already accomplished, drill additional drain holes in the bottom surface of the wing per Drawing SK-2009. Take special care in locating new drain holes (see note 2 on drawing).

2. Remove fuel sender access covers on upper inboard wing surface if not already accomplished per Part I paragraph 2.1. After inspecting this area for the characteristics described in Part I paragraph 2.2, reinstall the cover using a caulking compound such as 3M Sealer Part No. 8650; the caulking compound must be compatable with wood, dacron and butyrate/polyurenthane paint and should set up slightly but not become firm so as to make removal of the cover difficult. Apply the caulking compound liberally (fill the wood screw holes) to insure that water cannot enter the wing interior. Wipe excess caulking from the cover after it is secure.

3. Seal aft spar upper attachment access cover, and leading edge wing root and lower wing root fairings per Drawing SK-2009. Apply caulking compound to the leading edge fairing and rear spar access cover liberally to insure that water cannot enter the wing interior. Wipe excess caulking from the covers after they are secure.

BELLANCA SERVICE LETTER 87A

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
AERONAUTICAL CENTER
P. O. BOX 25082
OKLAHOMA CITY, OKLAHOMA 73125

April 14, 1976

Airworthiness Directive

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulation, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety. They are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (FAR 39.3).

76-08-04 BELLANCA: Amendment 39-2583. Applies to Bellanca Models: 14-19-2, 14-19-3, 14-19-3A, 17-30, 17-30A, 17-31, 17-31A, 17-31TC and 17-31ATC certificated in all categories.

Compliance required as indicated.

To detect deterioration in wood wing, accomplish Part I and Part II of Bellanca Aircraft Corporation Service Letter No. 87A dated April 12, 1976, as follows:

(a) For airplanes which have been produced prior to the preceding eleven months comply with Part I within the next 10 hours time in service, or within the next 30 days, whichever occurs first after the effective date of this Airworthiness Directive, unless already accomplished.

(b) Comply with Part II not later than 13 months after the effective date of this AD.

(c) After the initial inspection specified in (a), comply with Part I at each annual inspection required by Federal Aviation Regulations Part 91.

If wood deterioration is detected, repair must be accomplished in accordance with FAA Approved Standard Practice AC 43-13-1A or FAA approved equivalent and/or manufacturer's recommendations prior to further flight except that the airplane may be flown in accordance with FAR 21.197 to a base where the repair can be performed.

The manufacturer's Service Letter No. 87A identified and described in this directive is incorporated herein pursuant to 5 U.S.C. 552 (a)(1). All persons affected by this directive who have not already received the documents from the manufacturer may obtain copies upon request from Bellanca Aircraft Corporation, Box 624, Municipal Airport, Alexandria, Minnesota 56308.

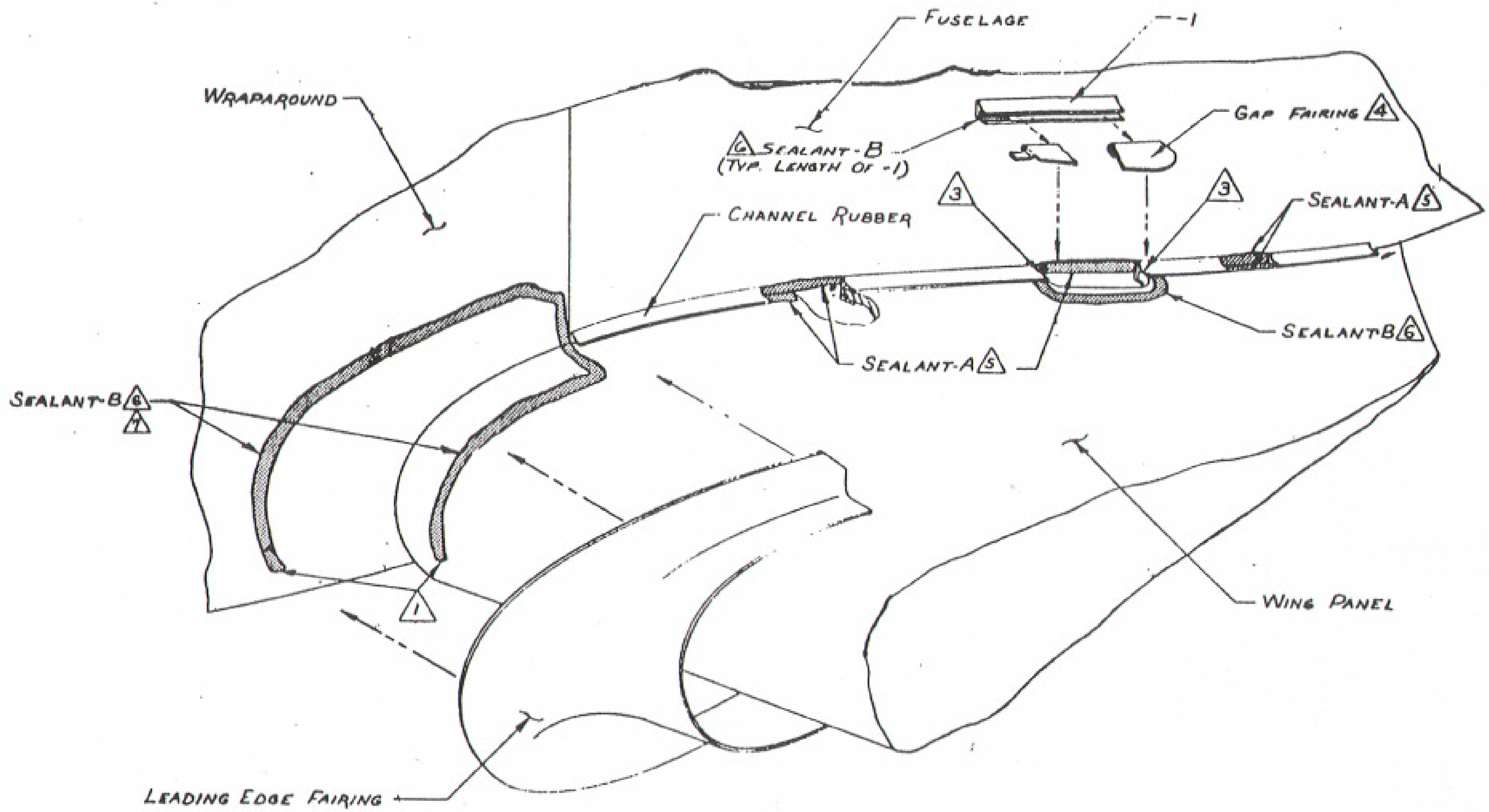
These documents may also be examined at the office of Regional Counsel, Great Lakes Region, 2300 East Devon Avenue, Des Plaines, Illinois 60018 and at FAA Headquarters, 800 Independence Avenue, S.W., Washington D.C. A historical file on this AD which includes the incorporated material in full is maintained by the FAA at its headquarters in Washington D.C. and at the Great Lakes Region Engineering and Manufacturing Branch, 2300 East Devon Avenue, Des Plaines, Illinois 60018.

This amendment becomes effective April 22, 1976.

NOTE: Address inquiries regarding this AD to:

DOT, Federal Aviation Administration
Eng. & Mfg. Branch, AGL-210
2300 East Devon Avenue
Des Plaines, Illinois 60018

(76)



77

NOTES:

1 – SEALANT TO EXTEND APPROX. 2.0 INCHES BELOW LEADING EDGE.

2 – LEFT HAND SHOWN RIGHT HAND TYPICAL.

3 – CUT CHANNEL RUBBER EVEN WITH GAP FAIRING OPENING. SEAL ENDS OF GAP FAIRING CHANNEL RUBBER & WING CHANNEL RUBBER TOGETHER WITH SEALANT A.

4 – REWORK GAP FAIRING BY BENDING FLANGE AS SHOWN, BEFORE INSTALLING CHANNEL RUBBER.

5 – SEALANT-A IS A SILICONE RUBBER ADHESIVE SEALANT WHICH BONDS TO AND IS COMPATIBLE WITH WOOD, DACRON AND BUTERATE/POLYURETHANE, AND WHICH REMAINS PLIABLE AFTER SETTING UP TO A RUBBER LIKE CONSISTENCY.

6 – SEALANT-B IS A CAULKING COMPOUND WHICH IS COMPATIBLE WITH WOOD, DACRON AND BUTERATE/POLYURETHANE, AND WHICH DOES NOT BECOME FIRM SO AS TO MAKE REMOVAL OF THE COVER DIFFICULT.

7 A CLOSED CELL FOAM SEAL TAPE IS CONSIDERED EQUIVALENT TO SEALANT-B IN THIS AREA.

REQ	PART NO	NAME	DIA	THICK	WIDTH	LENGTH	MATERIAL	SPEC.
N/R	8G50	SEALANT-B					3M OR EQUIVALENT, SEE NOTE 6	
	-1	CHANNEL RUBBER				8	#3504 BLACK NEOPRENE, PAWLING RUBBER CORP.	
N/R	RTV-108	SEALANT-A					G.E. OR EQUIVALENT, SEE NOTE 5	

DRAWING, DESIGN AND OTHER DISCLOSURES, PROPERTY OF
BELLANCA AIRCRAFT CORP.
ALEXANDRIA, MINN U.S.A.

UNLESS OTHERWISE NOTED

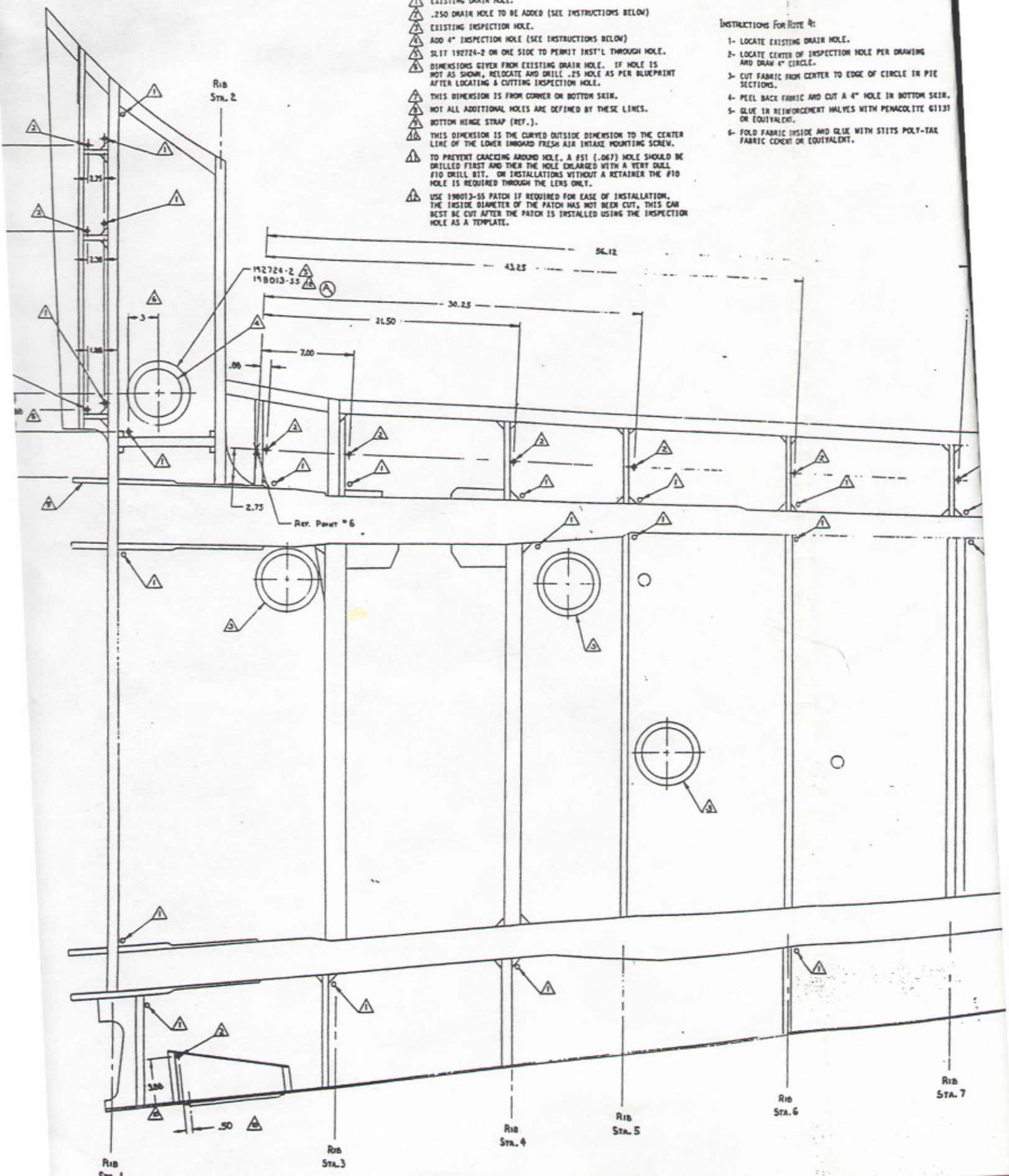
WING INSPECTION & DRAIN HOLE INST'L.

NOTES:

1. EXISTING DRAIN HOLE.
2. .250 DRAIN HOLE TO BE ADDED (SEE INSTRUCTIONS BELOW)
3. EXISTING INSPECTION HOLE.
4. ADD 4" INSPECTION HOLE (SEE INSTRUCTIONS BELOW)
5. SLIT 192724-2 ON ONE SIDE TO PERMIT INST'L THROUGH HOLE.
6. DIMENSIONS GIVEN FROM EXISTING DRAIN HOLE. IF HOLE IS NOT AS SHOWN, RELOCATE AND DRILL .25 HOLE AS PER BLUEPRINT AFTER LOCATING & CUTTING INSPECTION HOLE.
7. THIS DIMENSION IS FROM CORNER OR BOTTOM SKIN.
8. NOT ALL ADDITIONAL HOLES ARE DEFINED BY THESE LINES.
9. BOTTOM HINGE STRAP (REF.).
10. THIS DIMENSION IS THE CURVED OUTSIDE DIMENSION TO THE CENTER LINE OF THE LOWER INBOARD FRESH AIR INTAKE MOUNTING SCREW.
11. TO PREVENT CRACKING AROUND HOLE, A #51 (.067) HOLE SHOULD BE DRILLED FIRST AND THEN THE HOLE ENLARGED WITH A VERY DULL #10 DRILL BIT. ON INSTALLATIONS WITHOUT A RETAINER THE #10 HOLE IS REQUIRED THROUGH THE LENS ONLY.
12. USE 198013-55 PATCH IF REQUIRED FOR EASE OF INSTALLATION. THE INSIDE DIAMETER OF THE PATCH HAS NOT BEEN CUT. THIS CAN BEST BE CUT AFTER THE PATCH IS INSTALLED USING THE INSPECTION HOLE AS A TEMPLATE.

INSTRUCTIONS FOR NOTE 4:

1- LOCATE EXISTING DRAIN HOLE.
2- LOCATE CENTER OF INSPECTION HOLE PER DRAWING AND DRAW 4" CIRCLE.
3- CUT FABRIC FROM CENTER TO EDGE OF CIRCLE IN PIE SECTIONS.
4- PEEL BACK FABRIC AND CUT A 4" HOLE IN BOTTOM SKIN.
5- GLUE IN REINFORCEMENT HALVES WITH PENACOLITE G1137 OR EQUIVALENT.
6- FOLD FABRIC INSIDE AND GLUE WITH STITS POLY-TAK FABRIC CEMENT OR EQUIVALENT.



INSTRUCTIONS FOR NOTE 2:

1- DUE TO THE MANUFACTURING TOLERANCE REQUIRED FOR ASSEMBLING THE WING PANEL AND CHANGES IN WING PANEL CONSTRUCTION, THE DIMENSIONS GIVEN FOR LOCATING THE NEW DRAIN HOLES MAY VARY FROM THOSE GIVEN. TO INSURE THAT NO STRUCTURAL MEMBERS ARE DAMAGED, THE FOLLOWING STEPS SHOULD BE FOLLOWED.

1.1- MARK THE POINTS PER DRAWING DIMENSIONS AND NOTES AND DETERMINE THAT THEY CLEAR RIBS AND SPARS BY DIMENSIONING TO THE INTERNAL STRUCTURE OF EACH WING ITSELF.

1.2- DRILL ALL HOLES INITIALLY WITH A 1/16" DIAMETER DRILL BIT, USING A 3/16" STOP TO PREVENT POSSIBLE DAMAGE IF MISLOCATED.

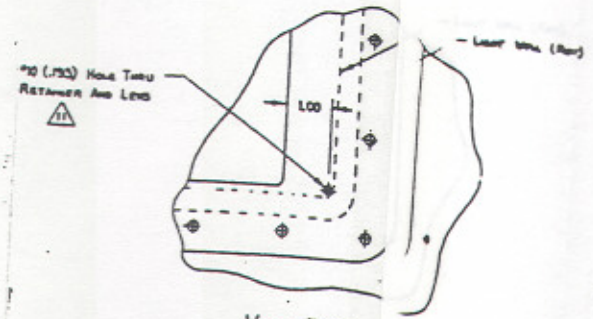
1.3- AFTER DRILLING PILOT HOLE, DETERMINE THAT SUFFICIENT CLEARANCE EXISTS FROM ADJACENT RIBS AND SPARS BY PROBING WITH A WIRE THROUGH HOLE.

2- DRILL OUT PILOT HOLE WITH 1/4" DIAMETER DRILL BIT. REPOSITION HOLE IF NECESSARY TO ENSURE POSITIVE CLEARANCE FROM STRUCTURAL MEMBERS.

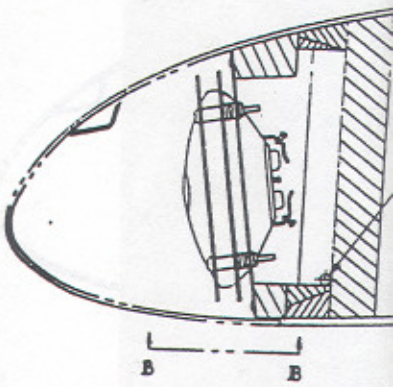
3- APPLY PLYWOOD WOOD SEALER AROUND EXPOSED EDGE OF HOLES.

4- TO AID IN DETERMINING THE LOCATION OF NEW DRAIN HOLES A CHALK LINE MAY BE USED BETWEEN THE FOLLOWING REFERENCE HOLES/POINTS:

REF. HOLE #1 TO REF. POINT #2
REF. HOLE #3 TO REF. HOLE #4
REF. POINT #5 TO REF. POINT #6 (9)

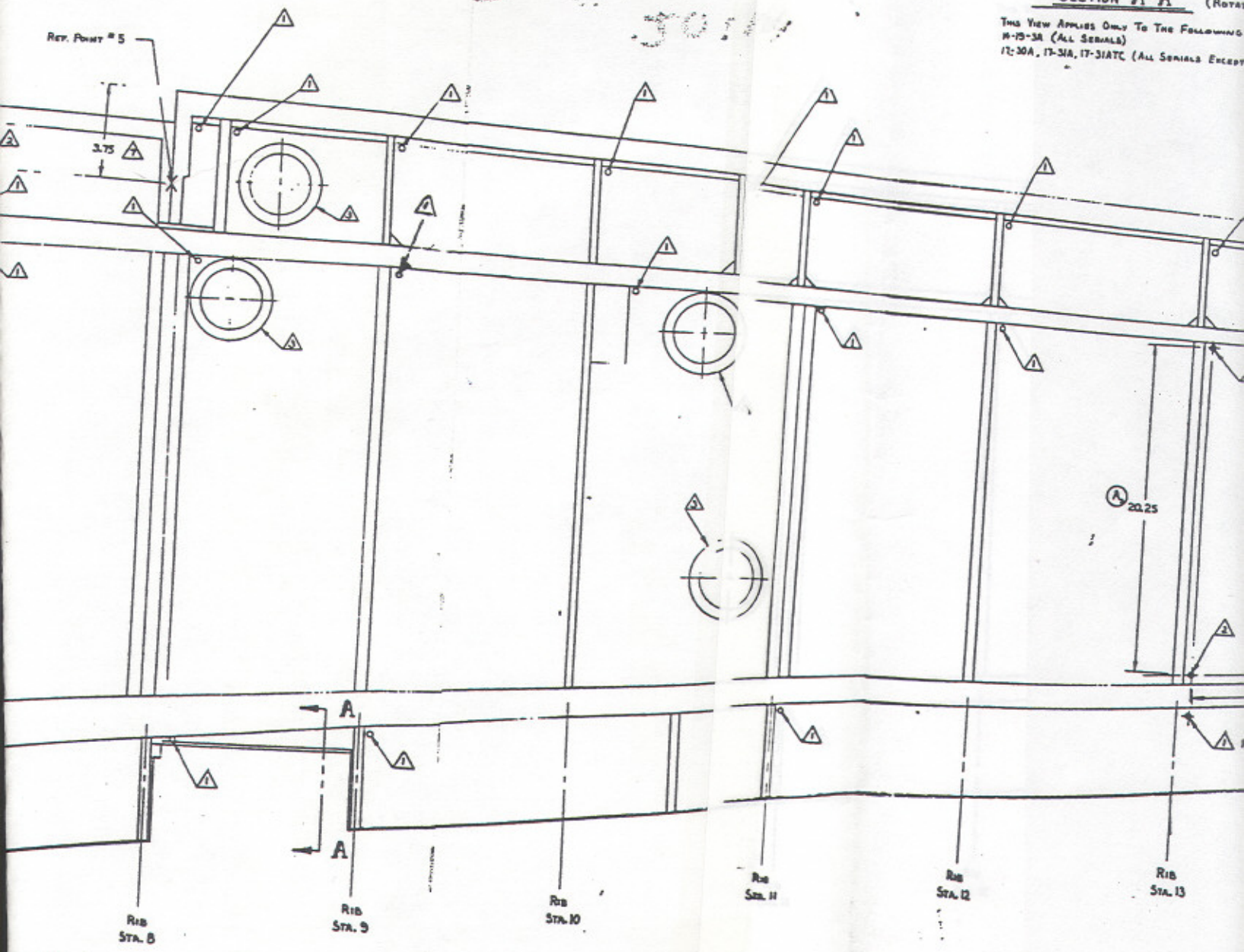


VIEW B-B



SECTION A-A (ROTA

THIS VIEW APPLIES ONLY TO THE FOLLOWING
M-19-3A (ALL SERIALS)
17-30A, 17-31A, 17-31ATC (ALL SERIALS EXCEPT

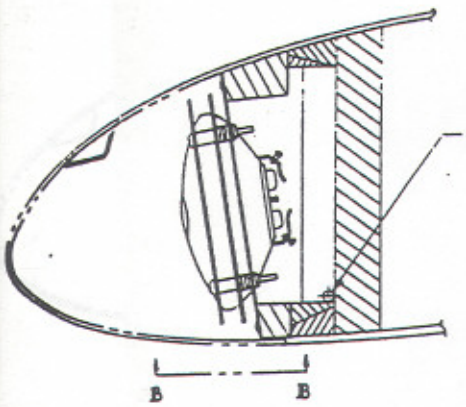


L/H SHOWN - R/H TYPICAL

TOP SKIN REMOVED FOR CLARITY

cut here

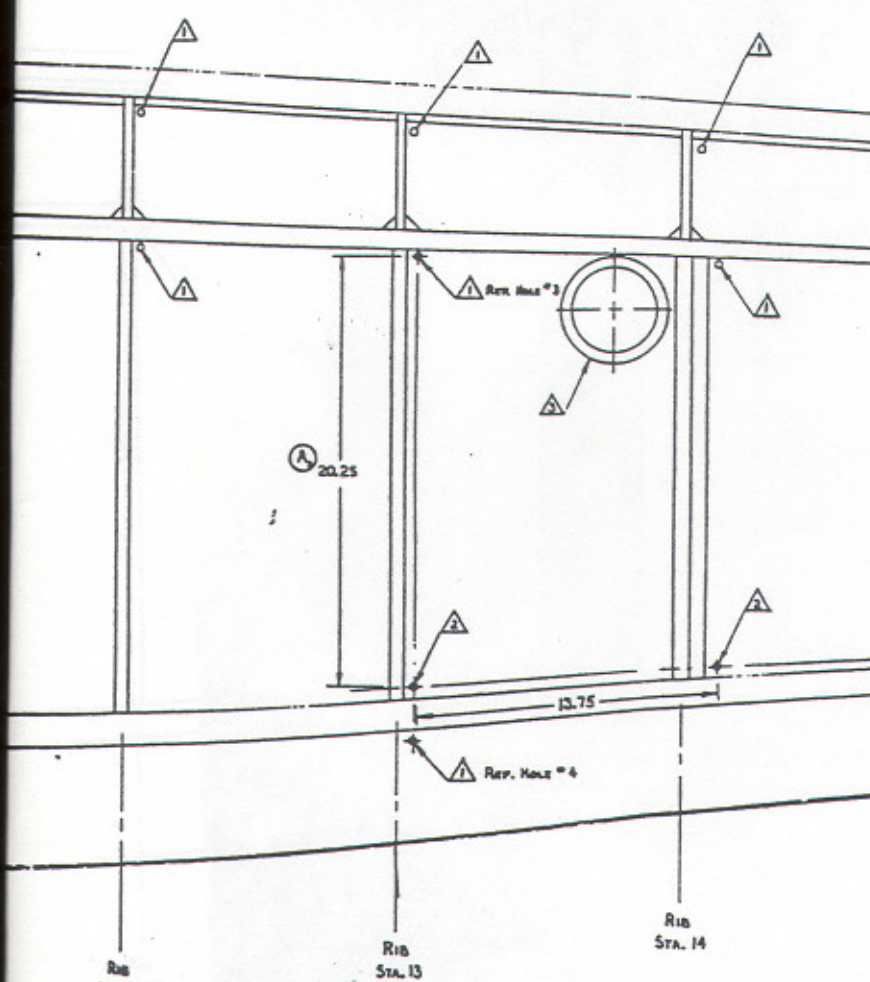
A/R	198013-55	
1	193134	
1	192724-1	
LJ DES	PART NO	



SK-200
Sht.

Section A-A (Rotated CW 90°)

This View Applies Only To The Following Models:
16-19-3R (All Serials)
17-30A, 17-31A, 17-31ATC (All Serials Except Where #10 Hole Is Apparent



NOTE: The Bellnca-Champion Club has copies of the Bellanca Engineering Study No. 838 that is referenced on these next 3 pages as BER 838. It covers the subject of spar butt cracks in mathmatical terms with useful descriptions for those with more then a casual interest in the subject. Order info. below.

September 22, 1975

Mr. Al Trone
Bellanca Aircraft Corp.
Alexandria, Minnesota 56308

Dear Al:

Bellanca Engineering Report No. 838 was written by me 8/25/69 to deal with the problem of wing spar cracks. This report has since been revised to show certain conditions not discussed in the original report were not critical. It was known that these conditions were not critical at the time the report was written but they were not documented. Anyway, nothing in any of the revisions change the original analysis.

The original analysis shows that for the rear spar 8 of the 10 bolts must be effective in the spruce. This would mean that any cracks in the butt end of the spar, in the area of the bolts, must not extend beyond the second bolt on the lower fitting and not beyond the third bolt on the upper fitting. This is because on the lower fitting the load is toward the butt end and on the upper fitting the loads are away from the butt end for the positive loading condition. The negative load is not critical since it is approximately half the positive value. For the forward spar all 10 bolts must be effective in the spruce. This means no cracks in the lower fitting area and a crack must not extend beyond the first bolt on the upper fitting. Cracks in the middle of the spar should not extend more than 1/2 the dimension of spar depth. This would be approximately 5 inches on the front spar and 4 inches on the rear spar. This is due to the shear carried in the center of the spar.

If you have any other questions or if I can be of further service please feel free to call.

Sincerely,

Ken Foreman

Ken Foreman

KF:jb

Enclosure

BER 838 ordering information
Request publication BER 838 from:

Airdance Inc.
P.O. Box 708
Brookfield WI 53008-0708

Price is $8.80 for members
7.50 non members

Include $1.00 P&H unless part of a larger order for which shipping has already been charged.

VISA/MC orders can be phoned in (24 hr ans.) leave name address card #, Exp. date, Home Tel. #, and specify publications you want.

NOTES:

1. EXISTING DRAIN HOLE.
2. .250 DRAIN HOLE TO BE ADDED (SEE INSTRUCTIONS BELOW)
3. EXISTING INSPECTION HOLE.
4. ADD 4" INSPECTION HOLE (SEE INSTRUCTIONS BELOW)
5. SLIT 192724-2 ON ONE SIDE TO PERMIT INST'L THROUGH HOLE.
6. DIMENSIONS GIVEN FROM EXISTING DRAIN HOLE. IF HOLE IS NOT AS SHOWN, RELOCATE AND DRILL .25 HOLE AS PER BLUEPRINT AFTER LOCATING & CUTTING INSPECTION HOLE.
7. THIS DIMENSION IS FROM CORNER ON BOTTOM SKIN.
8. NOT ALL ADDITIONAL HOLES ARE DEFINED BY THESE LINES.
9. BOTTOM HINGE STRAP (REF.).
10. THIS DIMENSION IS THE CURVED OUTSIDE DIMENSION TO THE CENTER LINE OF THE LOWER INBOARD FRESH AIR INTAKE MOUNTING SCREW.
11. TO PREVENT CRACKING AROUND HOLE, A #51 (.067) HOLE SHOULD BE DRILLED FIRST AND THEN THE HOLE ENLARGED WITH A VERY DULL #10 DRILL BIT. ON INSTALLATIONS WITHOUT A RETAINER THE #10 HOLE IS REQUIRED THROUGH THE LENS ONLY.
12. USE 198013-55 PATCH IF REQUIRED FOR EASE OF INSTALLATION. THE INSIDE DIAMETER OF THE PATCH HAS NOT BEEN CUT, THIS CAN BEST BE CUT AFTER THE PATCH IS INSTALLED USING THE INSPECTION HOLE AS A TEMPLATE.

(A2)

INSTRUCTIONS FOR NOTE 4:

1- LOCATE EXISTING DRAIN HOLE.

2- LOCATE CENTER OF INSPECTION HOLE PER DRAWING AND DRAW 4" CIRCLE.

3- CUT FABRIC FROM CENTER TO EDGE OF CIRCLE IN PIE SECTIONS.

4- PEEL BACK FABRIC AND CUT A 4" HOLE IN BOTTOM SKIN.

5- GLUE IN REINFORCEMENT HALVES WITH PENACOLITE G1131 OR EQUIVALENT.

6- FOLD FABRIC INSIDE AND GLUE WITH STITS POLY-TAK FABRIC CEMENT OR EQUIVALENT.

INSTRUCTIONS FOR NOTE 2:

1- DUE TO THE MANUFACTURING TOLERANCE REQUIRED FOR ASSEMBLING THE WING PANEL AND CHANGES IN WING PANEL CONSTRUCTION, THE DIMENSIONS GIVEN FOR LOCATING THE NEW DRAIN HOLES MAY VARY FROM THOSE GIVEN. TO INSURE THAT NO STRUCTURAL MEMBERS ARE DAMAGED, THE FOLLOWING STEPS SHOULD BE FOLLOWED.

1.1- MARK THE POINTS PER DRAWING DIMENSIONS AND NOTES AND DETERMINE THAT THEY CLEAR RIBS AND SPARS BY DIMENSIONING TO THE INTERNAL STRUCTURE OF EACH WING ITSELF.

1.2- DRILL ALL HOLES INITIALLY WITH A 1/16" DIAMETER DRILL BIT, USING A 3/16" STOP TO PREVENT POSSIBLE DAMAGE IF MISLOCATED.

1.3- AFTER DRILLING PILOT HOLE, DETERMINE THAT SUFFICIENT CLEARANCE EXISTS FROM ADJACENT RIBS AND SPARS BY PROBING WITH A WIRE THROUGH HOLE.

2- DRILL OUT PILOT HOLE WITH 1/4" DIAMETER DRILL BIT. REPOSITION HOLE IF NECESSARY TO ENSURE POSITIVE CLEARANCE FROM STRUCTURAL MEMBERS.

3- APPLY PLYWOOD WOOD SEALER AROUND EXPOSED EDGE OF HOLES.

4- TO AID IN DETERMINING THE LOCATION OF NEW DRAIN HOLES A CHALK LINE MAY BE USED BETWEEN THE FOLLOWING REFERENCE HOLES/POINTS:

REF. HOLE #1 TO REF. POINT #2
REF. HOLE #3 TO REF. HOLE #4
REF. POINT #5 TO REF. POINT #6

(8)

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CENTRAL REGION
OFFICE LOCATION: 4747 TROOST
MAIL ADDRESS: 601 EAST 12TH STREET
KANSAS CITY, MISSOURI 64106

In reply refer to CE-212

10 FEB 1970

Mr. W. R. Shackelford
Chief Engineer
Bellanca Aircraft Corporation
P. O. Box 624, Municipal Airport
Alexandria, Minnesota 56308

Dear Mr. Shackelford:

The technical data submitted with your letter of 4 February 1970 has been incorporated in BER 838, Analysis of a Wing Spar Repair for Cracks Due to Weathering.

BER 838 is satisfactory; however, the following description of crack locations and limitations are for clarification:

1. No cracks are allowed in bolt holes of the front spar.

2. Cracks may exist in the first two bolt holes of the rear spar.

3. Cracks are allowed in the spruce up to 3.0 inches in length from the butt-end but must be in the area between the hinge straps.

4. No crack shall intersect a bolt hole except for Item 2.

5. No cracks are allowed in the web-plates.

Sincerely,

Vincent V. Reinert

FOR JOHN A. CARRAN, Chief
Engineering & Manufacturing Branch

Using all 10 bolts @ 1009o for the front Spar:

Allowable Limit Bearing Load $_{fwd}$

$P = [\frac{1}{4}.15(10)(.375)][(1.5)(.5)(4700) + (.2185)(.67)(23,500) + (.3125)(.67)(3400) + (.53)(.67)(3$

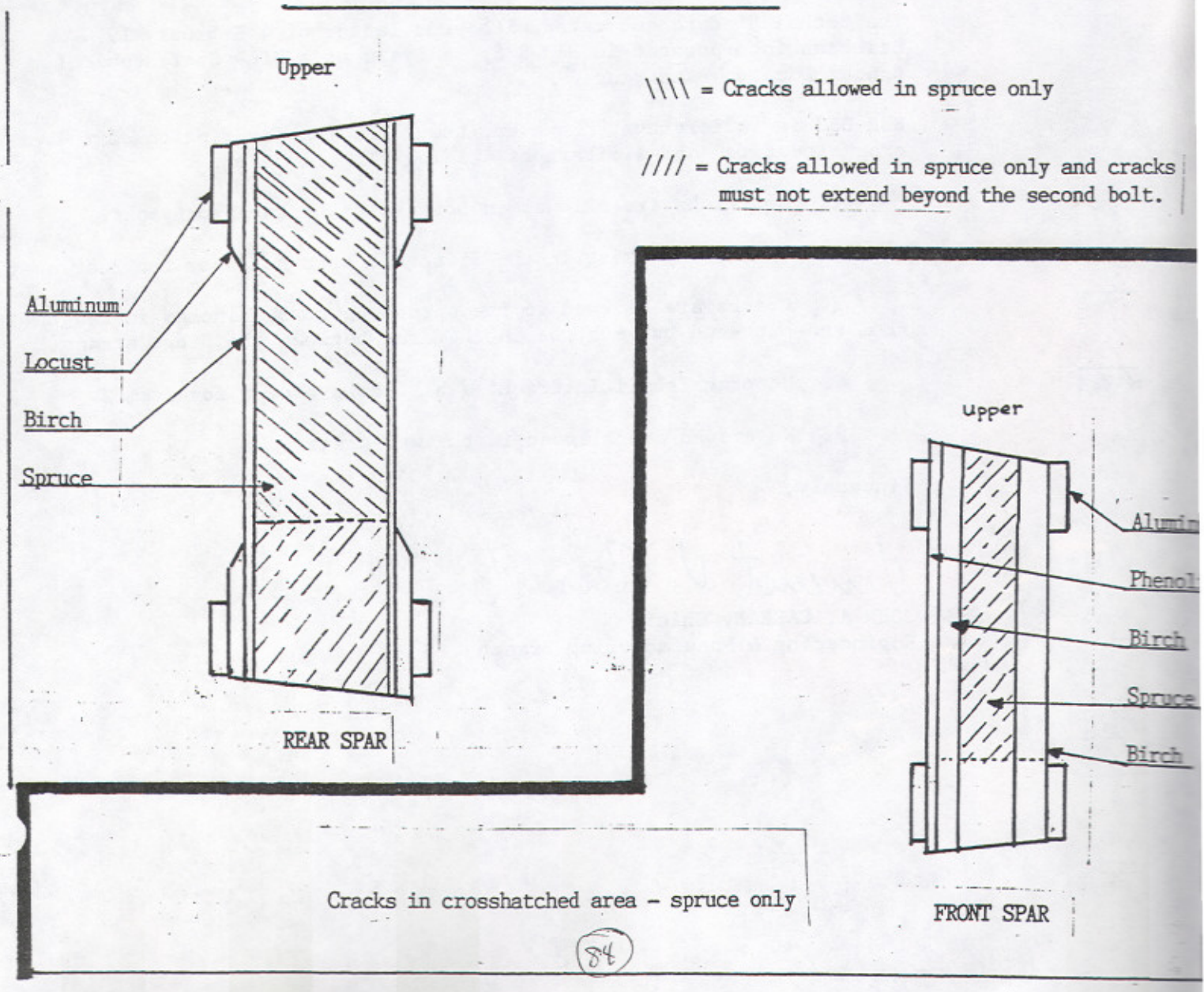
$= 29000$

Ultimate Bearing Load $_{fwd}$ = $1.35(29,000)$ = $39,200$

factor of safety $_{fwd}$ = $\frac{39,200}{38,000}$ = 1.03

Therefore, the front spar must be 100% effective for all 10 bolts. No cracks may be allowed in the front spar. The rear spar, however, may have cracks in the spruce only if they do not extend (outboard - .ed) beyond the second bolt and do not penetrate the compression plates.

PICTORIAL PRESENTATION OF DAMAGE ALLOWANCE



BELLANCA

SERVICE INSPECTION BULLETIN

February 16, 1970

TO: Bellanca Owners

MODELS AFFECTED: All

SUBJECT: Spar Inspection Aid

Some Bellanca models, depending on age and environment, may show checking at the base of the wing spars. These generally have no affect on airworthiness of the aircraft but, nevertheless, might require attention. The allowances and limitations shown in this inspection aid are based on Bellanca Report No. 838 which was submitted to and approved by the Federal Aviation Agency.

If checks are found in the base of the spar, the sealant should be cleaned off by scraping or abrading the wood. The spar should be examined as to the nature and extent of the cracks. Cracks are permissible in the spruce material located between the wing attach straps on the front spar and are allowed anywhere in the spruce material of the rear spar. Checks may extend outboard as far as the second bolt.

After inspection, the surface should be resealed using 3M brand sealer,
* Type EC-1375 Parts A and B. This sealer can be obtained from the factory. EC-1375 is a viscious material and is best applied by buttering the mix onto the surface with a disposable spatula. One pint is sufficient for sealing the spars on one airplane.

* 3M TYPE EC-1239, PARTS A AND B IS AN APPROVED ALTERNATE.

Encl.

BELLANCA AIRCRAFT CORPORATION, ALEXANDRIA, MINNESOTA 56308 / 612-762-1501

NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D.C.

ISSUED: March 3, 1976

Forwarded to:

Honorable John L. McLucas
Administrator
Federal Aviation Administration
Washington, D.C. 20591

SAFETY RECOMMENDATION(S)

On March 2, 1975, at Newton, New Jersey, two persons were killed in the crash of a Bellanca Model 17-30 airplane, N4723V, after the right wing separated from the aircraft. The National Transportation Safety Board determined that the probable cause of this accident was related to inadequate inspection of the aircraft. Our investigation also disclosed a potential wing maintenance problem which requires corrective action by the Federal Aviation Administration.

Structural examination of this airplane's all-wood wing disclosed significant decay of the right front spar. It was obvious from the rusty fasteners, drying checks, and surface stains that water had leaked inside the wing. Consequently, sections of the failed right wing were sent to the United States Department of Agriculture's Forest Products Laboratory at Madison, Wisconsin, for further examination. The laboratory's technical staff substantiated the fact that the front spar was moderately to heavily decayed as a result of fungus infection; they believed, after considering the conditions associated with the accident airplane, that this decay would have required 2 years or longer to develop. The airplane was manufactured in 1967 and had been parked outside for several years.

The deterioration, according to the Forest Products Laboratory, would have required standing water in the wing spar area. Since the design of the wing would normally prevent entrapment of water, even under adverse environmental storage conditions, water probably leaked into the wing's interior as a result of a maintenance-related mechanical impairment, e.g., cracked paint, fabric or plywood wing covers. Cracked fabric near the mahogany plywood cover over the inboard main fuel tank, and especially along the seam of the cover, is particularly suspect since fabric cracks are often caused by cracks or other faults in the mahogany cover itself. Usually,

(86)

the cover must be removed so that the wing spars can be inspected more thoroughly. Water may also leak through deteriorated or improperly installed seals around the neck of the fuel filler pipe. A relatively large recess surrounds the pipe, which could hold a significant amount of water.

One certificated repair station, which has extensive Bellanca maintenance experience, disclosed that 6 of the approximately 300 Bellanca airplanes it inspected during the last 2 years had substantially decayed wing interior structures. In each of these six cases, the fabric was cracked; the impaired structure was confirmed only after the mahogany plywood fuel tank cover was removed. These cases demonstrate that a thorough external inspection is important, and that an occasional more detailed examination of the wing interior is necessary.

As a result of the above accident, the Bellanca Aircraft Corporation prepared Service Letter No. 87 to emphasize the importance of proper wing maintenance to prevent wood decay and to provide a detailed procedure for inspecting the exterior and interior surfaces of the Bellanca wing. In addition, the service letter provides for additional inspection holes and drain holes. The service letter indicates that if moisture is prevented from entering the wood fibers there is virtually no limit to the structural life expectancy.

In view of the decay found in the right front wing spar of the accident airplane; the fact that similar deterioration was evidenced during inspection in 6 of approximately 300 airplanes; and the potential for decay in other Bellanca airplanes, the National Transportation Safety Board recommends that the Federal Aviation Administration:

> Issue an Airworthiness Directive requiring mandatory compliance with Bellanca Aircraft Corporation's Service Letter No. 87, applicable to all Bellanca airplanes having wings similar to those on Bellanca Model 17-30. (Class II--Priority Followup.)

TODD, Chairman, McADAMS, THAYER, BURGESS, and HALEY, Members, concurred in the above recommendation.

By: Webster B. Todd, Jr.
Chairman

(87)

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. 88
FAA APPROVED
Date: September 22, 1975
Revision:
Page: 1 of 1

SUBJECT: Wing Flap Actuating Cable

AIRCRAFT AFFECTED: 17-30 and 17-30A S/N 30123 and Subsequent; 17-31 and 17-31A--A11; 17-31TC and 17-31ATC--A11

There have been a few instances where the flap actuating cable has failed with the flaps in the full down position. The resultant split flap condition, though undersirable, is controllable with the application of opposite aileron control.

To eliminate this potentially dangerous condition, Bellanca Aircraft Corporation recommends that the flap cables (connects directly to flap actuating arm) be inspected during each preflight inspection by the pilot. If signs of rusting or fraying near the swaged end fitting is evident, the cable must be replaced prior to the next flight.

Replacement cables are stainless steel, which has a greater resistance against corrosion as compared to the existing galvanized steel cables.

The following part numbers for each model are as follows:

Replacement Stainless Steel Cable P/N 195598-50

17-30	S/N 20123 Through 30262
17-30A	S/N 30263 Through 73-30600 Except 73-30561
17-31	S/N 32-1 Through 32-14
17-31A	S/N 32-15 Through 73-32-127
17-31TC	S/N 31001 Through 31003
17-31ATC	S/N 31004 Through 73-31066

Replacement Stainless Steel Cable P/N 195598-40

17-30A	S/N 73-30561, 73-30601 Through 76-30803
17-31A	S/N 73-32-128 Through 76-32-161
17-31ATC	S/N 73-31067 Through 76-31122

(88)

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 624 Phone: 612/762-1501

August 11, 1976

FAA APPROVED

SERVICE LETTER #B-89

SUBJECT: Lower Nose Gear Door

AFFECTED AIRCRAFT: Model 17-30A, S/N 76-30797 through 76-30840

There have been a few cases where the aluminum flange on the lower nose gear door has cracked at the lower attachment screw hole. A 4130 steel doubler (Service Kit SK7-4016) is available to correct this problem. The doubler attaches to the door as indicated in the drawing SK7-4016. Inspect this part on your aircraft; if it shows evidence of the above and/or you wish to replace the part to avoid a possible future inconvenience, contact the Bellanca Service Department.

- OVER -

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 69 Phone: 612/762-1501

SERVICE LETTER #B-90

SUBJECT: Rajay Service Letter No. 21A

AFFECTED AIRCRAFT: Model 17-31TC; 17-31ATC

The attached Rajay Service Letter No. 21A is submitted to inform you of a possible Rajay turbocharger exhaust turbine housing crack problem. Bellanca Aircraft Corporation recommends that you have your aircraft inspected as indicated in the letter.

(90)

RAJAY INDUSTRIES, INC.

A Subsidiary of The Texstar Corporation

FAA APPROVED

SERVICE LETTER

No. 21A
(SUPERSEDES SERVICE LETTER No. 21 DATED MAY 15, 1976)

DATE: AUGUST 9, 1976

SUBJECT: INSPECTION OF TURBOCHARGER TURBINE (EXHAUST) HOUSINGS

EQUIPMENT AFFECTED: ALL AIRCRAFT ENGINES EQUIPPED WITH RAJAY TURBOCHARGERS

DISTRIBUTION TO: AIRCRAFT AND ENGINE MANUFACTURERS – AIRCRAFT OPERATOR AND AIRCRAFT MODIFICATION AND MAINTENANCE BASES

TIME OF COMPLIANCE: AT THE NEXT ENGINE MAJOR OR TURBOCHARGER OVERHAUL, WHICHEVER COMES FIRST.

REASON:

HAIRLINE CRACKS HAVE BEEN DISCOVERED IN THE TONGUE AREA OF THE TURBINE HOUSING INLET IN RAJAY TURBOCHARGER MODELS 301E10, 315F10, 325E10, AND 325EF10. THESE TURBOCHARGER ARE FITTED WITH TURBINE HOUSING PART NUMBERS TC 59-11, TC 60-11, AND TC 82-11 AS APPLICABLE. INVESTIGATION INDICATES THIS CRACK DOES NOT PROPAGATE RAPIDLY THEREFORE DOES NOT APPEAR TO BE A PRESSING AIRWORTHINESS ITEM. EXAMPLES IN HAND INDICATE NO EXTERNAL DISTRESS APPARENT IN UNITS THAT HAVE BEEN IN SERVICE UPWARDS TO 10 YEARS.

PURPOSE:

INSPECTION FOR HAIRLINE CRACKS IN THE TURBINE HOUSING INLET IN RAJAY TURBOCHARGER MODELS 301E10, 315F10, 325E10, AND 325EF10. THESE TURBOCHARGERS ARE FITTED WITH TURBINE HOUSING PART NUMBERS TC 59-11, TC 60-11, OR TC 82-11 AS APPLICABLE.

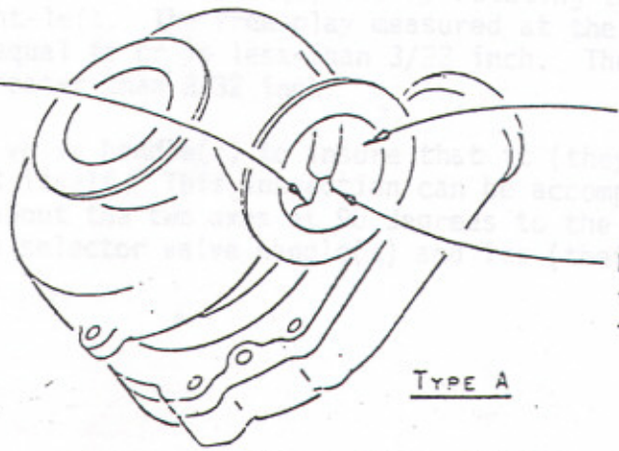
INSTRUCTIONS:

IT IS RECOMMENDED THAT THE INSPECTION SCHEDULE OF THIS LETTER BE PUT INTO EFFECT AND CONTINUED UNTIL THE UNIT IS REPLACED WITH PART No. TC 59-11 "E" CHANGE OR LATER, TC 60-11 "D" CHANGE OR LATER, OR THE TC 82-11 "A" CHANGE OR LATER, APPROPRIATE TO THE TURBOCHARGER MODEL.

REPLACEMENT OF THE SUBJECT UNIT SHOULD BE MADE AT ANY TIME THE CRACK IS OBSERVED TO EXTEND BEYOND 3/4 INCH IN LENGTH IN TYPE A CRACKS AND OVER 2 INCHES IN TYPE B CRACKS. (SEE SKETCHES BELOW)

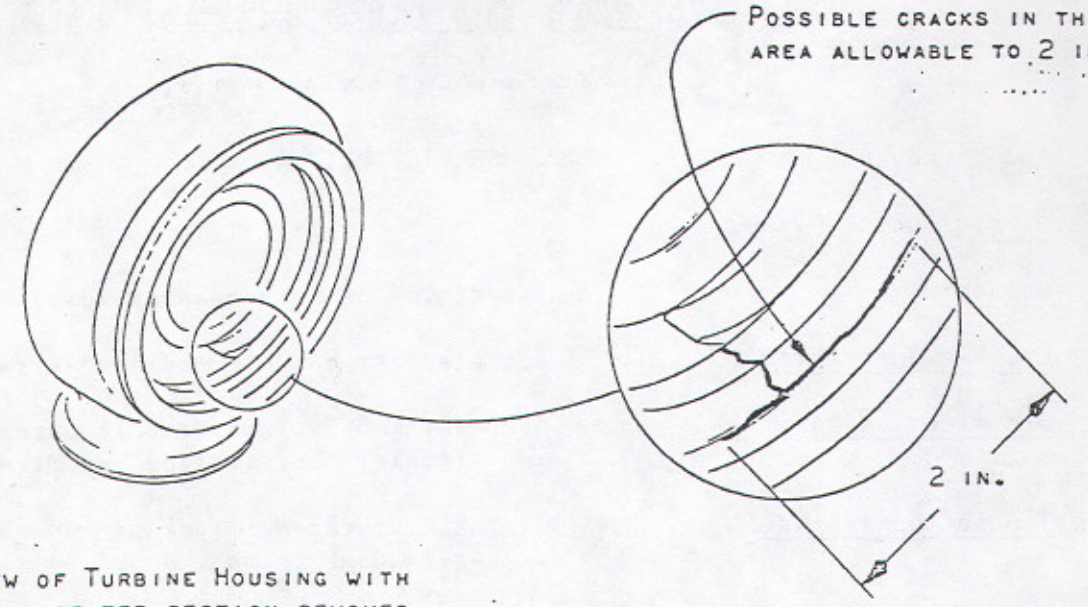
CAUTION

DO NOT MISINTERPRET THE PARTING LINE OF THE CASTING IN THIS AREA TO BE A CRACK.



TYPE A

2600 EAST WARDLOW ROAD / P.O. BOX 207 / LONG BEACH, CALIFORNIA 90801 / PHONE (213) 426-0346



VIEW OF TURBINE HOUSING WITH TURBO CENTER SECTION REMOVED.

ENLARGED VIEW OF CRACKED AREA

TYPE B

IT IS RECOMMENDED TO REPORT THE INSPECTION FINDINGS BY COMPLETING THE MALFUNCTION OR DEFECT REPORT, FAA FORM 8330-2, AND TO SUBMIT IT TO THE LOCAL FAA GENERAL AVIATION DISTRICT OFFICE.

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-91A
FAA APPROVED
Date: March 22, 1977
Revision: April 16, 1979

SUBJECT: Inspection of Fuel Selector Valve Handle(s) Assembly

AIRCRAFT AFFECTED: 14-19-2, 14-19-3, 14-19-3A, 17-30, 17-31, 17-31TC, 17-30A, 17-31A, 17-31ATC; All Serial Numbers

It has come to our attention that some aircraft are not receiving adequate inspection of the fuel selector valve-handle assembly(s) during the annual/100 hour inspections. As a consequence of this, a few cases of excessive wear in the fuel selector valve handle(s) have been reported. To insure that this excessive wear is eliminated before a problem arises, Bellanca Aircraft Corporation recommends that the following inspections/repair be performed:

1. Accomplish INSPECTION I as soon as possible to determine if the fuel selector valve handle(s) in your aircraft has (have) acceptable free-play.

2. If it (they) have excessive free-play, perform the INSPECTION/REPAIR II as soon as possible.

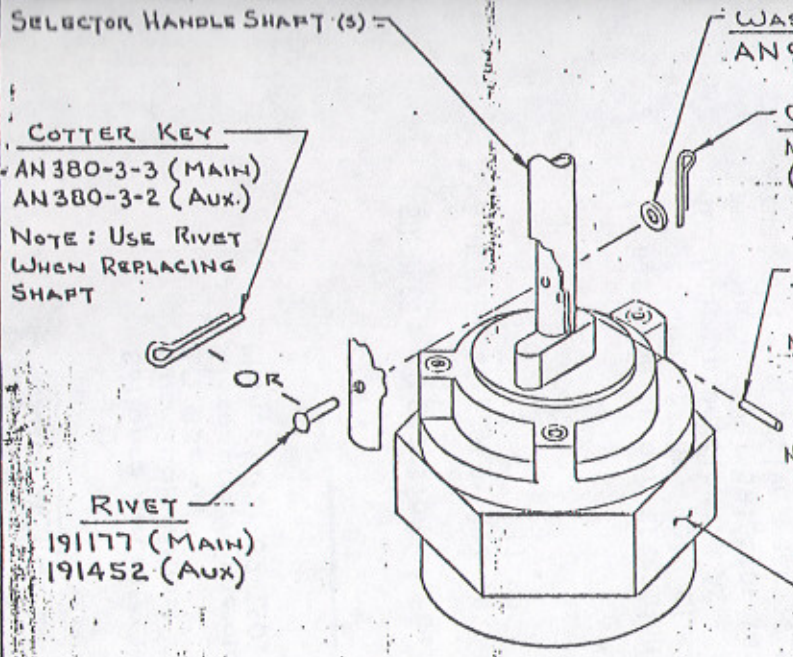
3. If it (they) have acceptable free-play, perform the INSPECTION/REPAIR II at the next and subsequent annual/100 hour inspections.

INSPECTION I

Move the selector valve handle(s) to a tank detent and measure the amount of free-play at the selector valve handle(s) tip by rotating the handle about its shaft axis, left-right-left. The free-play measured at the handle tip is acceptable if it is equal to or is less than 3/32 inch. The free-play is excessive if it is greater than 3/32 inch.

Inspect the selector valve handle(s) to insure that it (they) are securely attached to the shaft itself. This inspection can be accomplished by rotating the valve handle(s) about the two axes at 90 degrees to the shaft. Any detectable free-play between the selector valve handle(s) and its (their) shaft is considered excessive.

- over -



FUEL SELECTOR HANDLE SHAFT ATTACHMENT - TYPICAL MAIN AND AUXILIARY FUEL SELECTOR VALVE.

ACCESS TO THE FUEL SELECTOR VALVE (S).

INSTALLATIONS PRIOR TO SEPT 1972 (SEPERATE MAIN & AUX. VALVES)

MAIN SELECTOR: RAISE SEAT & REMOVE ACCESS COVER

AUX. SELECTOR: REMOVE ACCESS COVER FROM THE FRONT FLOOR BOARD.

INSTALLATIONS AFTER SEPT 1972 (SINGLE MAIN & AUX. VALVE)

REMOVE THE ROYALITE CONSOLE BETWEEN THE SEATS

NOTE: SEE INSTRUCTIONS - over -

NO. REQ.	PART NO.	NAME
1	31-S-094-0375	INDEXING PIN
1	AN960-3	WASHER
1	MS24665-5 (AN380-1-2)	COTTER KEY
1	191452	RIVET
1	191177	RIVET

DIA.	THICK	WIDTH	LENGTH	MATERIAL	SPEC.
STOCK SIZE					

BELLANCA AIRCRAFT CORP.

ALEXANDRIA, MINN. U.S.A.

UNLESS OTHERWISE NOTED
TOLERANCES:

DECIMAL ±.010
ANGULAR ± 1/2
FINISH: BELLANCA SPEC.

INSPECTION OF FUEL SELECTOR VALVE HANDLE(S) ASSEMBLY (SERVICE LETTER B-91A)

LET.	NOTE	DRAWN	DATE	APPV'D
B	ADDED .062 HOLE AND SAFETY WIRE CALLOUT FOR INDEXING PIN	MJT	4/16/79	B.J.M. 17/APR/77
A	CORRECT DRAWING: MS24665-5 WAS AN380-1-8	MJT	9/20/77	B.J.M. 20/SEP/77

DRAWN	CHECK	APPV'D	SCALE	
C.L.B.	MJT	BJM	NO SCALE	SK123456789-1062 SHT.1
3-2-77	3/2/77	3/2/77		

over

INSPECTION/REPAIR II

Perform the inspection/repair per SK123456789-1062 to insure that the fuel selector valve assembly (1) is complete, (2) consists of the correct parts, (3) is correctly assembled, (4) does not have excessive wear, and (5) is reworked to include safety wiring of indexing pin.

The Service Letter describes inspection procedures which apply to a standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

SK123456789-1062 Sht. 2

INSPECTION/REPAIR OF

FUEL SELECTOR VALVE HANDLE(S) ASSEMBLY

1. Gain access to the fuel selector valve as noted.
2. Note the position of the selector handle(s).
3. Remove the rivet (or cotter key) attaching the fuel selector handle shaft(s) to the selector valve(s).
4. Remove the handle shaft(s) and visually inspect the rivet (or cotter key) hole and (if applicable) the indexing pin slot for wear.
5. Wear is considered excessive and the handle shaft(s) are to be replaced if there is any observable elongation of either the rivet (or cotter key) hole or the indexing pin slot.
6. Visually inspect the rivet (or cotter key) hole in the valve assembly stem(s) for wear and replace if there is any observable elongation.
7. The indexing pin(s) (used after March 1966) should not rotate or move in any direction when checked by hand and should extend fully into the selector valve such that it is flush with the opposite side of the stem. Replace the pin with the enclosed hardware (31-S-094-0375 indexing pin) if movement is evident or if it does not extend fully into the selector valve stem.
8. On aircraft originally equipped with indexing pin(s) (after March 1966), rework selector handle shaft(s) as shown.
9. Reassemble using the enclosed hardware (191177 (main) or 191452 (auxiliary) rivet, AN960-3 washer, AN380-1-8 cotter key). Take care to reposition the handle(s) in the same position as noted in 2. Safety wire indexing pin.

INSPECTION/REPAIR II

Perform the inspection/repair per SK123456789-1062 to insure that the fuel selector valve assembly (1) is complete, (2) consists of the correct parts, (3) is correctly assembled, (4) does not have excessive wear, and (5) is reworked to include safety wiring of indexing pin.

The Service Letter describes inspection procedures which apply to a standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

SK123456789-1062 Sht. 2

INSPECTION/REPAIR OF

FUEL SELECTOR VALVE HANDLE(S) ASSEMBLY

1. Gain access to the fuel selector valve as noted.
2. Note the position of the selector handle(s).
3. Remove the rivet (or cotter key) attaching the fuel selector handle shaft(s) to the selector valve(s).
4. Remove the handle shaft(s) and visually inspect the rivet (or cotter key) hole and (if applicable) the indexing pin slot for wear.
5. Wear is considered excessive and the handle shaft(s) are to be replaced if there is any observable elongation of either the rivet (or cotter key) hole or the indexing pin slot.
6. Visually inspect the rivet (or cotter key) hole in the valve assembly stem(s) for wear and replace if there is any observable elongation.
7. The indexing pin(s) (used after March 1966) should not rotate or move in any direction when checked by hand and should extend fully into the selector valve such that it is flush with the opposite side of the stem. Replace the pin with the enclosed hardware (31-S-094-0375 indexing pin) if movement is evident or if it does not extend fully into the selector valve stem.
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9. Reassemble using the enclosed hardware (191177 (main) or 191452 (auxiliary) rivet, AN960-3 washer, AN380-1-8 cotter key). Take care to reposition the handle(s) in the same position as noted in 2. Safety wire indexing pin.

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-92
FAA APPROVED
Date: March 22, 1977
Revision:
Page: 1 of 1

SUBJECT: Overvoltage Relay/Parking Brake Cable Clearance

AFFECTED AIRCRAFT: Model 17-30-----S/N 30202 thru 30262
Model 17-31-----S/N 32-1 thru 32-14
Model 17-31TC---S/N 31001 thru 31003
Model 17-30A----S/N 30263 thru 30360
Model 17-31A----S/N 32-15 thru 32-41
Model 17-31ATC--S/N 31004 thru 31016

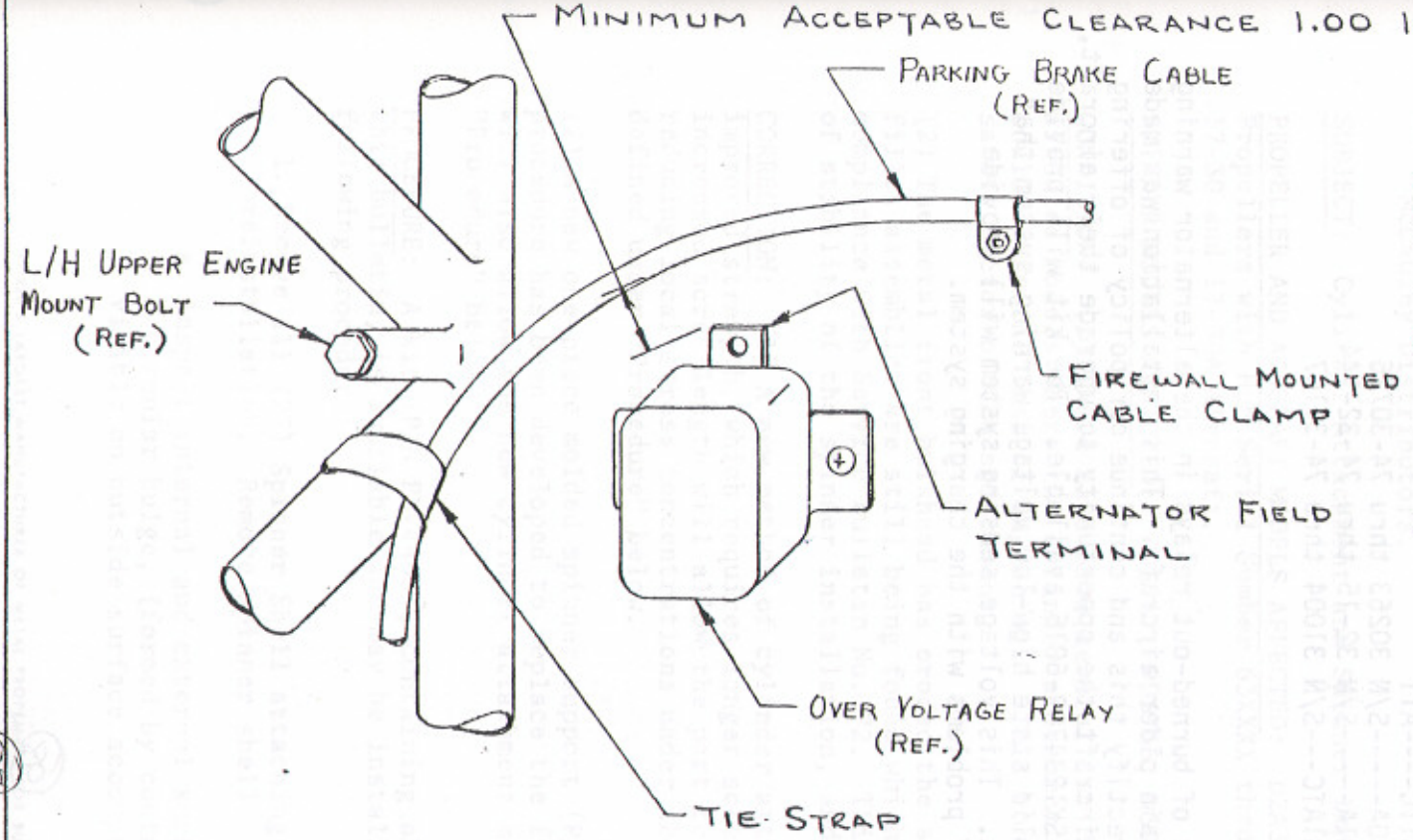
Bellanca has received a report where the parking brake cable shorted the alternator field terminal of the overvoltage relay. The short could cause a high charge rate which could damage the battery if the condition exists for any length of time.

Bellanca Aircraft Corporation recommends inspection of the parking brake cable in the area of the overvoltage relay to eliminate this potentially damaging condition. The relay is located on the cabin side of the fire-wall on the pilot's side. The attached drawing, SK234789-6016, shows the relative location of the relay and the cable as well as the proper routing of the cable. Also inspect for adequate clearance between all other potential grounds and the overvoltage relay terminals and provide non-conductive shielding for the terminals if required.

This Service Letter describes inspection procedures which apply to a standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

Encl: SK234789-6016

(96)



1. INSPECT FOR PROPER ROUTING AND SECURING OF PARKING BRAKE CABLE.
2. INSPECT FOR ADEQUATE CLEARANCE BETWEEN ALL POTENTIAL GROUNDS AND OVER VOLTAGE RELAY TERMINALS
3. CORRECT ROUTING OF PARKING BRAKE CABLE AND PROVIDE NON-CONDUCTIVE SHIELDING ON THE OVER VOLTAGE RELAY TERMINALS IF REQUIRED

(2b)

NO. REQ.	PART NO.	NOMEN	DIA.	THICK	WIDTH	LENGTH	STOCK SIZE	MATERIAL	SPEC.

UNLESS OTHERWISE NOTED
TOLERANCES:
DECIMAL ±.010
ANGULAR ± 1/2°
FINISH: BELLANCA SPEC.

OVER VOLTAGE RELAY/ PARKING BRAKE CABLE CLEARANCE

LET.	CHANGE	DRAWN	DATE	APP'D
	REVISIONS			

DRAWN	CHECK	APP'D
WB	MJ	AV
2-21-77	2/21/77	2/28/77

SCALE
DO NOT SCALE DWG.
NONE

SK234789-6016

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-93
FAA APPROVED
Date: March 22, 1977
Revision:
Page: 1 of 1

SUBJECT: Retrofit Hi-Lo Voltage Warning System

AFFECTED AIRCRAFT:
Model 14-19-3A---All
Model 17-30------All
Model 17-31------All
Model 17-31TC----All
Model 17-30A-----S/N 30263 thru 74-30726
Model 17-31A-----S/N 32-15 thru 74-32-144
Model 17-31ATC---S/N 31004 thru 74-31107

We have received a few reports of burned-out relays in the alternator warning light system installed in certain older aircraft. This installation was made on 1973 and 1974 models. To rectify this and continue our policy of offering all owners of older Bellanca aircraft the opportunity to upgrade their aircraft, we are making the Service Kit SK1234789-6015 available. The kit will provide your aircraft with the same solid state high-low voltage warning system that is used on the current Vikings. This voltage sensing system will provide early more reliable warning of problems with the charging system.

McCauley Industrial Corporation
PARKER AVE AT HOWELL • BOX 7, ROOSEVELT STA. • DAYTON, OHIO 45417
Area Code 513 263-3541 • Cable Address: McCauley

SERVICE BULLETIN NO. 94

DOA APPROVED 28 JULY 1971

NECESSARY AND REQUIRED ACTION

This Bulletin Replaces Service Bulletin 66, Dated 22 January 1968, Service Bulletin 72, Dated 15 September 1969, and Service Bulletin 72-1, Dated 13 October 1969.

TO: Bellanca Aircraft Company and FAA Approved Propeller Repair Stations and McCauley Distributors.

SUBJECT: Cylinder Attachment and Spinner Improvement.

PROPELLER AND AIRCRAFT MODELS AFFECTED: D2A34C58/90AT-8 and D3A32C90/82NC-4 Model Propellers with Hub Serial Number 63XXXX through 712778, as installed on Bellanca 17-30 and 17-30A Aircraft.

SPINNER MODELS AFFECTED: PD3867, PD3766, D3867, and D3766.

CONDITION: (1) There have been several incidents with propellers similar to the affected models where the cylinder attachment with (8) screws has failed, which could cause the loss of engine oil. This condition requires an increase in the safety factor of the attachment.

(2) The metal front bulkhead has eroded the spinner shell and cracked bulkhead and fillet assemblies are still being found which should have been corrected by compliance with Service Bulletin No. 72. This condition is indicative of the lack of stability of the spinner installation, and must be corrected.

CORRECTION: (1) A new method of cylinder attachment has been developed for improved strength, which requires longer screws, tubes, and a retaining ring. The increased screw length will allow the part to yield over a long length, thereby reducing local stress concentrations under the head of the screws. This method is defined under "Procedure" below.

(2) A new one-piece molded spinner support (P/N 4383) and a specific installation procedure has been developed to replace the front bulkhead (aluminum spinning), which will also allow the new cylinder attachment method to be used. This is defined under "Procedure" below.

PROCEDURE: A kit (P/N PL-4403), containing all of the parts required to comply with this bulletin, is available and may be installed by an A & P mechanic with the following procedure:

1. Remove all (27) Spinner Shell attaching screws and washers and retain these for reinstallation. Remove spinner shell.

   a. Inspect internal and external surfaces of shell. Replace shells which have a circular bulge, (formed by contact with the metal front bulkhead), visible on outside surface accompanied by fretting or galling on inside.

Continued on Page 2

2. Remove the 8 or 14 screws and washers which attach cylinder and front spinner bulkhead to the propeller hub. Discard the metal front bulkhead (Fig. 1A) or the two-piece plastic support (Fig. 1), whichever is present, and all screws and washers. It is not necessary to remove the propeller cylinder.

3. Install the new type screws, tubes and ring as shown in Fig. 2. Tighten screws with torque wrench to 30-35 pound-inches torque and lockwire with .032 corrosion resistant wire.

   NOTE: Fig. 2 shows a typical (14) screw type installation. On models that have provisions for only 8 screws, install in similar manner and discard excess screws and tubes.

4. Remove propeller from engine shaft. Remove rear spinner bulkhead.

   a. Examine both sides of bulkhead for signs of cracks, paying particular attention to the surfaces clamped between propeller and engine shaft. If cracks are found, replace the bulkhead.

5. Install rear bulkhead between propeller and engine flange and reinstall propeller assembly using a new hub to engine shaft o'ring (P/N A-1633-3) and (6) new nuts, (P/N A-1639-2) supplied in the kit. Propeller installation torque is 65-55 ft. lbs.

6. Center several of the shims (P/N B-3410-16 or -32) inside plastic support and press onto propeller cylinder. Lightly press shell against spinner support, check alignment of shell holes with holes in bulkhead, and adjust total number of shims until shell holes are approximately 1/2 hole from alignment with bulkhead holes. Push hard on shell until holes are aligned, install (4) screws and washers approximately equally spaced, and relax force. Install remaining screws and washers.

   NOTE: This operation requires two people.

COMPLIANCE:

Regardless of the number of hours of service all affected propellers and spinners shall be corrected within the next 100 hours of service. Proper entry indicating bulletin compliance shall be made in the aircraft and engine/propeller log books.

PARTS AVAILABILITY:

A kit (McCauley Part Number PL-4403) to comply with this bulletin is available from McCauley and contains the following parts:

1 ea.	B-4342	Ring
14 ea.	A-1635-70	Screws
14 ea.	B-4354	Tubes
1 ea.	C-4383	Support - Spinner
1 ea.	B-3410-16	Shim - Spinner Support
4 ea.	B-3410-32	Shim - Spinner Support
1 ea.	A-1633-9	O'Ring
6 ea.	A-1639-2	Nut

OBSOLETE TYPES

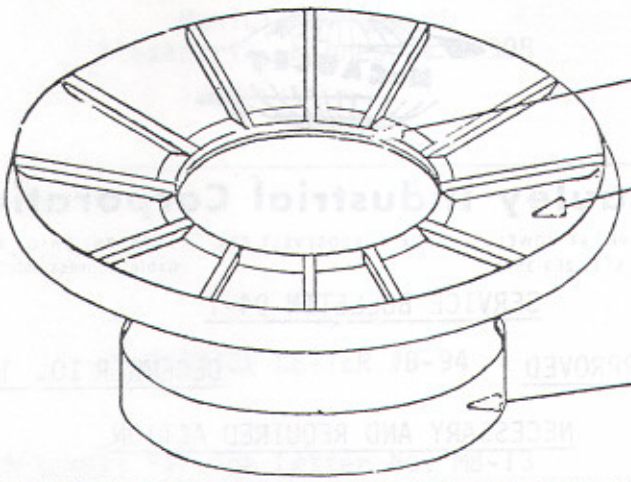


FIGURE 1.

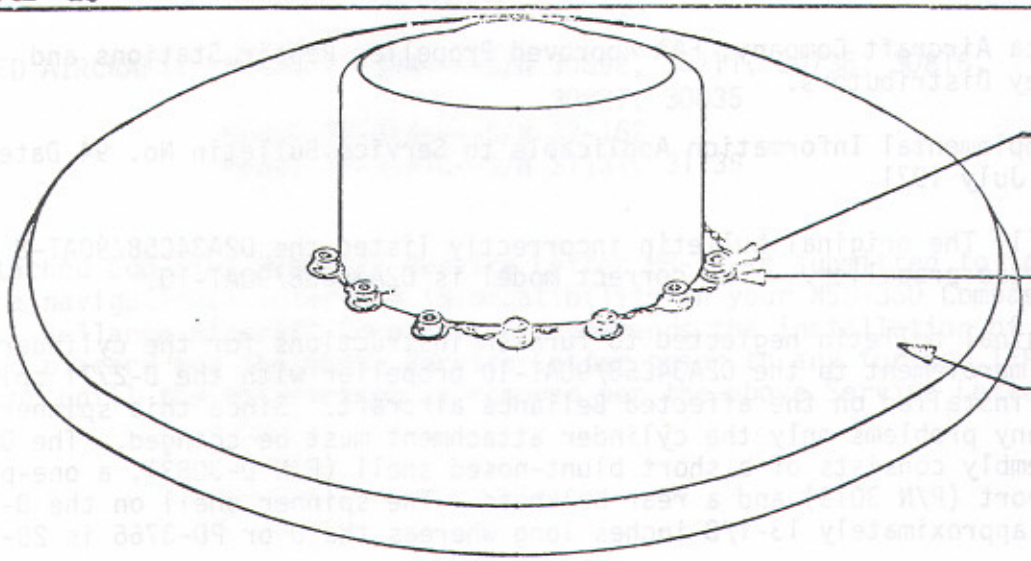


FIGURE 1A.

NEW METHOD

(14 CYLINDER SCREWS SHOWN COULD BE 8)

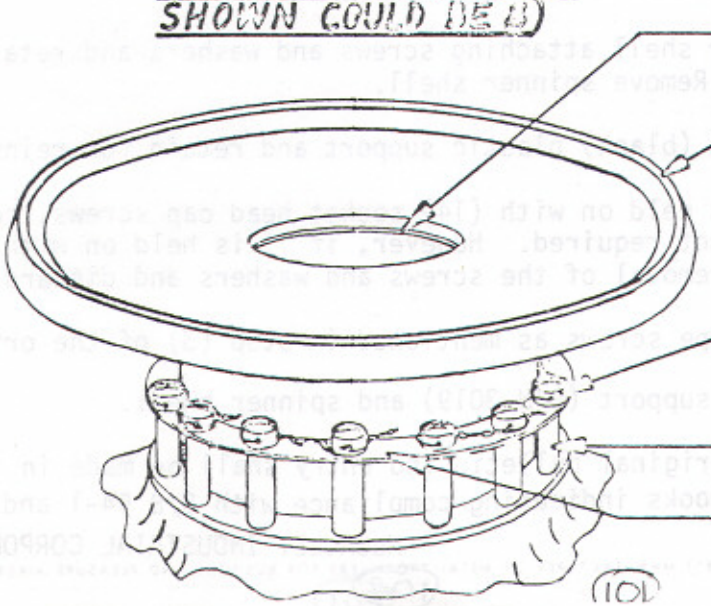


FIGURE 2.

McCauley Industrial Corporation
PARKER AVE AT HOWELL • BOX 7, ROOSEVELT STA • DAYTON, OHIO 45417
Area Code 513 263-3541 • Cable Address: McCauley

SERVICE BULLETIN 94-1

DOA APPROVED DECEMBER 10, 1971

NECESSARY AND REQUIRED ACTION

TO: Bellanca Aircraft Company, FAA Approved Propeller Repair Stations and McCauley Distributors.

SUBJECT: Supplemental Information Applicable to Service Bulletin No. 94 Dated 28 July 1971

CONDITION: (1) The original bulletin incorrectly listed the D2A34C58/90AT-8 model as the affected propeller. The correct model is D2A34C58/90AT-10.

(2) The original bulletin neglected to furnish instructions for the cylinder attachment improvement to the D2A34C58/90AT-10 propeller with the D-2771 spinner assembly as installed on the affected Bellanca aircraft. Since this spinner has not caused any problems only the cylinder attachment must be changed. The D-2771 spinner assembly consists of a short blunt-nosed shell (P/N D-3083), a one-piece plastic support (P/N 3019) and a rear bulkhead. The spinner shell on the D-2771 assembly is approximately 13-1/8 inches long whereas the D or PD-3766 is 20-1/4 inches long.

CORRECTION:(1) On the original bulletin and under the heading of PROPELLER AND AIRCRAFT MODELS AFFECTED, use an ink pen to obliterate the numeral 8 and add the numbers 10, so as to have the model read D2A34C58/90AT-10.

(2) For this type of installation do not order PL Kit 4403 as it is not suitable. Instead, order PL Kit 4388 which contains (8) each A-1635-70 screws and B-4354 tubes, and (1) each B-4342 ring only. The following procedure can be accomplished by an A & P mechanic, without removing propeller from the aircraft.

PROCEDURE:

(1) Remove the spinner shell attaching screws and washers and retain these for reinstallation. Remove spinner shell.

(2) Remove the 1-piece (black) plastic support and retain for reinstallation.

(3) If the cylinder is held on with (14) socket head cap screws, compliance with this bulletin is not required. However, if it is held on with only (8) screws, proceed with the removal of the screws and washers and discard them.

(4) Install the new type screws as mentioned in step (3) of the original bulletin.

(5) Reinstall plastic support (P/N 3019) and spinner shell.

COMPLIANCE: Same as original bulletin and entry shall be made in the aircraft and engine/propeller log books indicating compliance with S/B 94-1 and A.D. 68-8-1.

McCAULEY INDUSTRIAL CORPORATION

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 69 Phone: 612/762-1501

May 18, 1977.
FAA APPROVED

SERVICE LETTER #B-94

SUBJECT: Edo-Aire Mitchell Service Letter No. MB-13

AFFECTED AIRCRAFT: Model 17-30A----S/N 30692, 30711, 30736, 30816, 30827, 30835
Model 17-31A----S/N 32-162
Model 17-31ATC--S/N 31131, 31135

The attached Edo-Aire Mitchell Service Letter MB-13 is submitted to inform you of a navigational interface incompatibility in your NSD-360 Compass System. Bellanca Aircraft Corporation recommends the installation of the enclosed placard per the above Service Letter prior to any further IFR flight or until the restriction is removed per the above Service Letter.

SERVICE BULLETIN

NO MB-13

FAA-DER APPROVED

DATE 4-18-77

TO Owners of Edo-Aire Mitchell NSD-360 Compass Systems and Edo-Aire Mitchell Distributors

SUBJECT Interface Incompatibility with Certain Navigation Receivers/ Converters

EDO-AIRE MITCHELL

It has been determined that an interface incompatibility may exist in certain NSD-360 Compass System installations that do not use the Edo-Aire Mitchell AK423, 1C707, or 1C707-1 VOR/Localizer Converters.

The affected NSD-360 Compass Systems contain one of the following navigation instruments:

P/N 52D136-0020	52D136-1020	52D137-1020
52D136-0120	52D136-1120	52D137-1120
52D136-0220	52D136-1220	52D137-1220

The interface incompatiblity does not exist with systems using navigation instruments other than those listed above, nor with the NSD-360A Compass Systems. The NSD-360A systems do not use any of the navigation instruments listed above.

The interface incompatibility also does not exist with the ARC IG832-( ) or IG895-( ).

In those installations where the incompatibility does exist, it is possible for a defective VOR Navigation Signal that is not suitable for navigation to be displayed with the navigation (NAV) flag hidden from view thus indicating to the pilot that the signal is reliable when in fact it is not reliable.

The incompatibility is caused by the NSD-360 being designed to be used with VOR/LOC Converters having a "gated" To-From function. A gated To-From output is one that is blocked during NAV flag visible conditions thus preventing display of the "TO" arrow or "FROM" arrow. A gated To-From is required so that the combined To-NAV-From meter in the NSD-360 will give correct information when unsatisfactory navigation signals are present.

EDO-AIRE MITCHELL • P. O. BOX 610 • MUNICIPAL AIRPORT • MINERAL WELLS, TEXAS 76067 • (817) 325-2517

(104)

The following equipment is known to have the NAV Flag incompatibility:

NSD-360 Compass Systems with the above listed Navigation Instrument Part Numbers	if used with	Collins VIR-351 King KN-77, KN-74, KNC-610 Narco OC-10, OC-110 Omni Converters

EFFECTIVE IMMEDIATELY:

The NSD-360 is not to be used as a primary IFR VOR/Localizer Navigation Instrument, unless it is used with an Edo-Aire Mitchell AK423, Omni Converter, P/N 1C707, or P/N 1C707-1. The VOR/Localizer Left-Right data may continue to be used but displayed Flag information must be cross checked with the #2 system to assure validity of the presentation. The Compass Data, and Glide Slope Data displayed on the NSD-360 are not affected and may continue to be used as primary IFR instrumentation. This restriction may be removed by installing a NAV Flag Adapter , P/N 1C775, furnished with Parts Kit PKMB-13. Parts Kit PKMB-13 will be furnished at no charge.

For the affected aircraft, Placard, P/N 13A895, must be installed on the instrument panel, as close as practical to the NSD-360 Navigation Instrument, prior to any further I.F.R. flight, or until the restriction is removed by installation of the NAV Flag Adapter, P/N 1C775.

INSTALLATION OF NAV FLAG ADAPTER, P/N 1C775:

1. The 1C775 NAV Flag Adapter is a small light weight unit (0.3 lb.). It is to be mounted on existing structure between the instrument panel and forward cabin bulkhead or firewall, near the rear of the NSD-360 Navigation Instrument.

2. Using Drawing No. 1C775 as a guide, locate an area with sufficient space and structure to support the NAV Flag Adapter, and mark and drill two .173 dia. (No. 17 drill) holes.

3. Secure the unit to the aircraft structure, using two each of the 8-32 screws, washers, and nuts supplied with PKMB-13.

4. Drawing No. 63D337-2 shows the interconnect wiring between the NSD-360 navigation instrument and the 1C775 NAV Flag Adapter. The four wires indicated, which are a part of the cable bundle to CD-106 of the NSD-360, are to be intercepted approximately six inches from CD-106, and the leads of Adapter Cable, P/N 30C550, are to be connected as shown on Drawing No. 63D337-2. Plug the CD-151 Plug of the 30C550 Cable into the CD-151 Receptacle of the 1C775 NAV Flag Adapter. Route the cable to CD-106 of the NSD-360, leaving sufficient service loop to adequately secure the cable. Cut the wire leads to the proper length and connect to the NSD-360 cable leads as shown using eight 29S59 butt splices. The ground lead of the 30C550 Cable should be routed to a convenient airframe ground. The A+ lead should be connected to the circuit breaker of the navigation receiver that is associated with the NSD-360. Do not connect the A+ to the NSD-360 circuit breaker!

5. All cables should be routed clear of flammable fluid and oxygen lines. Secure cables to airframe with AN742 cushion clamps within a maximum spacing of 18 inches to prevent damage and allow full freedom of controls. All open cable connections and interconnections, shall be protected with a suitable insulating sleeve which shall be secured in accordance with good aviation wiring practices. Polyvinyl chloride sleeving material is an acceptable insulator. Ref. AC 43.13-1A, Chapter 11.

Approved Edo-Aire Mitchell Distributors may apply for labor reimbursement for the installation of PKMB-13. This labor reimbursement is for a maximum of two hours at approved labor rates per aircraft installation, and is available only through approved Edo-Aire Mitchell Distributors. Flight Adjustment should not be required as a result of this modification.

When ordering the Parts Kit and/or submitting claims for labor reimbursement under this Service Bulletin, MB-13, the following information must be included:

1. Aircraft Owners Name.

2. Aircraft Model, Serial Number, and Registration Number.

3. NSD-360 Navigation Instrument Part Number.

4. NSD-360 Navigation Instrument Serial Number.

If the above data is not available at the time of order, the PKMB-13 will be shipped at $75.00 net, to be credited to customer's account when the data is received by Edo-Aire Mitchell.

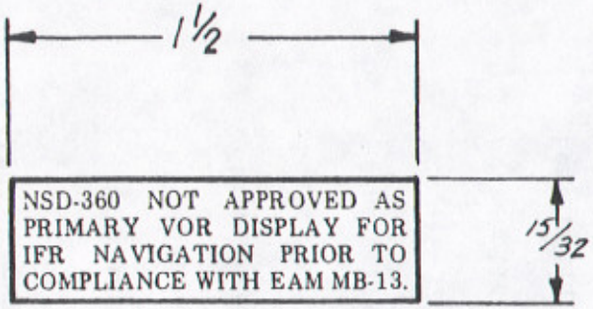
After the completion of the installation of NAV Flag Adapter, P/C 1C775, this service bulletin shall be placed with the aircraft service records and a log book entry made to reflect compliance with Edo-Aire Mitchell Service Bulletin, MB-13.

Tom Healy
Director, Products and Service
EDO-AIRE MITCHELL

PARTS LIST FOR EDO-AIRE MITCHELL SERVICE BULLETIN MB-13

Item No.	Part Number	Description	Quantity
1.	1C775	NAV Flag Adapter	1
2.	30C550	Cable Assembly	1
3.	3S464	Screw, AN525-832-R8	2
4.	4S205	Washer, AN960-8	2
5.	2S34	Nut, #8-32 ESNA, AN365-832	2
6.	29S59	Butt Splice	8
7.	MB-13	Service Bulletin	1

EDO-AIRE MITCHELL MINERAL WELLS TEXAS		TITLE PLACARD		DWG. NO. 13A895			
DRAWN C. KITCHENS	DATE 12-22-76	USED WITH SERVICE BULLETIN, MB-13. IC 775, NAV FLAG ADAPTER (NSD-360 COMPASS SYSTEMS)	SCALE NONE	REV	DESCRIPTION	BY	DATE
CHECKED E. Cameron	DATE 12-23-76			-	RELEASED PER E.O. 9276	HWH	1-20-77
ENGINEER H.W. Holman	DATE 12-23-76	MATERIAL NOTED	FINISH N/A				
APPROVAL IRWIN	DATE 12 23 76						



(801)

NOTES:

1. MATERIAL:
   AVERY SELF-ADHESIVE DIE CUT LABEL FOR PRINTING, 1" x 2 3/4 RETANGULAR P/N 5562. GOTHIC LETTERS. TRIM TO 1 1/2 x 15/32
2. VENDOR:
   AVERY LABEL COMPANY, A DIVISION OF AVERY PRODUCTS CO.
   MONROVIA, CALIF. 91016
   OR: ELMHURST, ILL.
   NEW BRUNSWICK, N.J.
3. REFERENCE: SERVICE BULLETIN #MB-13, DATED

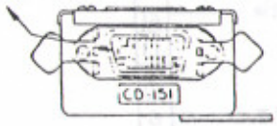
TOLERANCES UNLESS OTHERWISE SPECIFIED:	
DECIMALS XXX:	± .005
DECIMALS XX:	± .010
FRACTIONS:	± 1/64
ANGLES:	± 0° 30'
REMOVE BURRS AND BREAK SHARP EDGES .010	
DO NOT SCALE DRAWING	

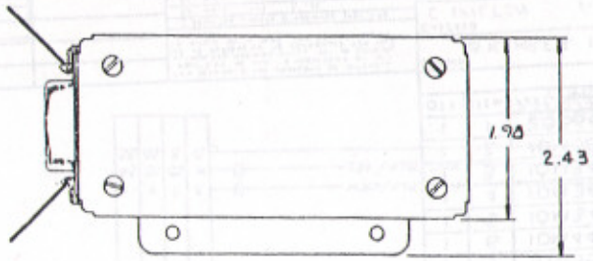
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
—	RELEASED PER E.O. 9198	1-19-77	

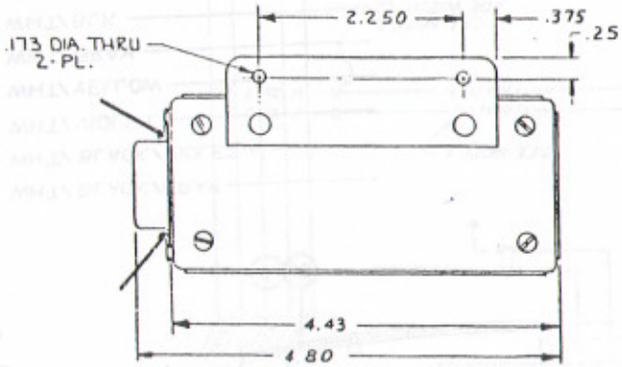
CD-151

NAV FLAG(+) INPUT FROM CONV.	1	8	TO/FROM(+TO) OUTPUT TO PIN 33 OF NSD-360
NAV FLAG(-) INPUT FROM CONV	2	9	TO/FROM(+TO) INPUT FROM CONV.
NAV FLAG(-) OUTPUT TO PIN 7 OF NSD-360	3	10	N/C
TO/FROM(+FROM) OUTPUT TO PIN 34 OF NSD-360	4	11	N/C
NAV FLAG(+) OUTPUT TO PIN 8 OF NSD-360	5	12	A+(14/28V)
GROUND	6	13	N/C
N/C	7	14	TO/FROM(+FROM) INPUT FROM CONV.

RECEPTACLE, 14-PIN
AMPHENOL # 57-40140
MATES WITH AMPHENOL
57-30140







NOTES:
1. WT.:
2. REFER TO 12A345 FOR ENGINEERING SPECIFICATIONS.
3. REFER TO 91A307 FOR DATA SHEET.
4. REFER TO 63C504 FOR SCHEMATIC.
5. WEIGHT: 0.3 LBS.

REFER TO 79C269 FOR FINAL ASSEMBLY DRAWING

QTY	ITEM	PART NUMBER	DESCRIPTION

LIST OF MATERIALS

DRAWN	J. PATTERSON	11-3-76
CHECKED	C. WILTON	11-13-76
ENGINEER		11-29-76
APPROVED		1-19-77

MATERIAL: N/A

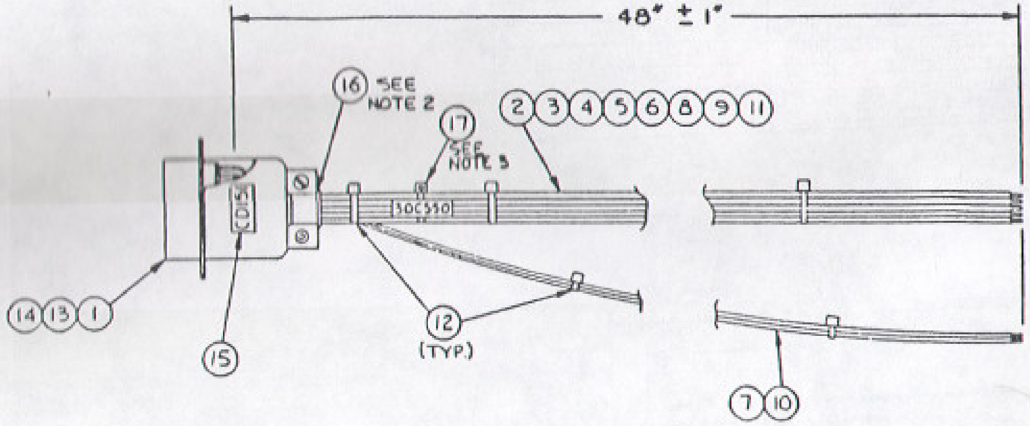
EDO-AIRE MITCHELL
MINERAL WELLS, TEXAS

TITLE: NAV FLAG ADAPTER OUTLINE DRAWING

SIZE: C | DWG NO | REV

(101)

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
—	RELEASED PER E.O. 9266	2-3-77	[illegible]



1	*22 AWG WHT/BLACK/GRAY
2	*22 AWG WHT/BLACK/VIOLET
3	*22 AWG WHT/VIOLET
4	*22 AWG WHT/YELLOW
5	*22 AWG WHT/GRAY
6	*22 AWG WHT/BLK
7	
8	*22 AWG WHT/ORANGE
9	*22 AWG WHT/BLACK/ORANGE
10	
11	
12	*22 AWG WHT/RED
13	
14	*22 AWG WHT/BLACK/YELLOW

QTY	ITEM	PART NUMBER	DESCRIPTION
1	17	425254	MARKER TIE, PANDUIT
1	16	11M263	POLYURETHANE TAPE, 1/16 THK. x 1/2 WD x 1 3/4 LONG (SEE NOTE 2)
1	15	13A891	LABEL, CD-151
A/R	14	10M85	SOLDER
A/R	13	11M267	TUBING, HEAT SHRINKABLE, 3/32 DIA.
A/R	12	425253	TIE WRAP, PANDUIT MINIATURE, P/N PLT1SM
1	11	10M347	WIRE, 22 AWG, WHT/BLK/YELLOW, 48" LONG
1	10	10M339	WHT/RED
1	9	10M346	WHT/BLK/ORANGE
1	8	10M352	WHT/ORANGE
1	7	10M351	WHT/BLK
1	6	10M446	WHT/GRY
1	5	10M340	WHT/YELLOW
1	4	10M369	WHT/VIOLET
1	3	10M349	WHT/BLK/VIO
1	2	10M380	WIRE, 22 AWG, WHT/BLK/GRY, 45" LONG
1	1	28566	PLUG, 14 PIN, AMPHENOL #57-30140

LIST OF MATERIALS

NOTES:

1. STRIP & TIN ALL WIRES 1/8" INCH.
2. TAPE TO BE WRAPPED AROUND WIRES AND BETWEEN PLUG CLAMP TO INSURE WIRE STABILITY.
3. P/N 30C550 TO BE IMPRINTED ON MARKER TIE.

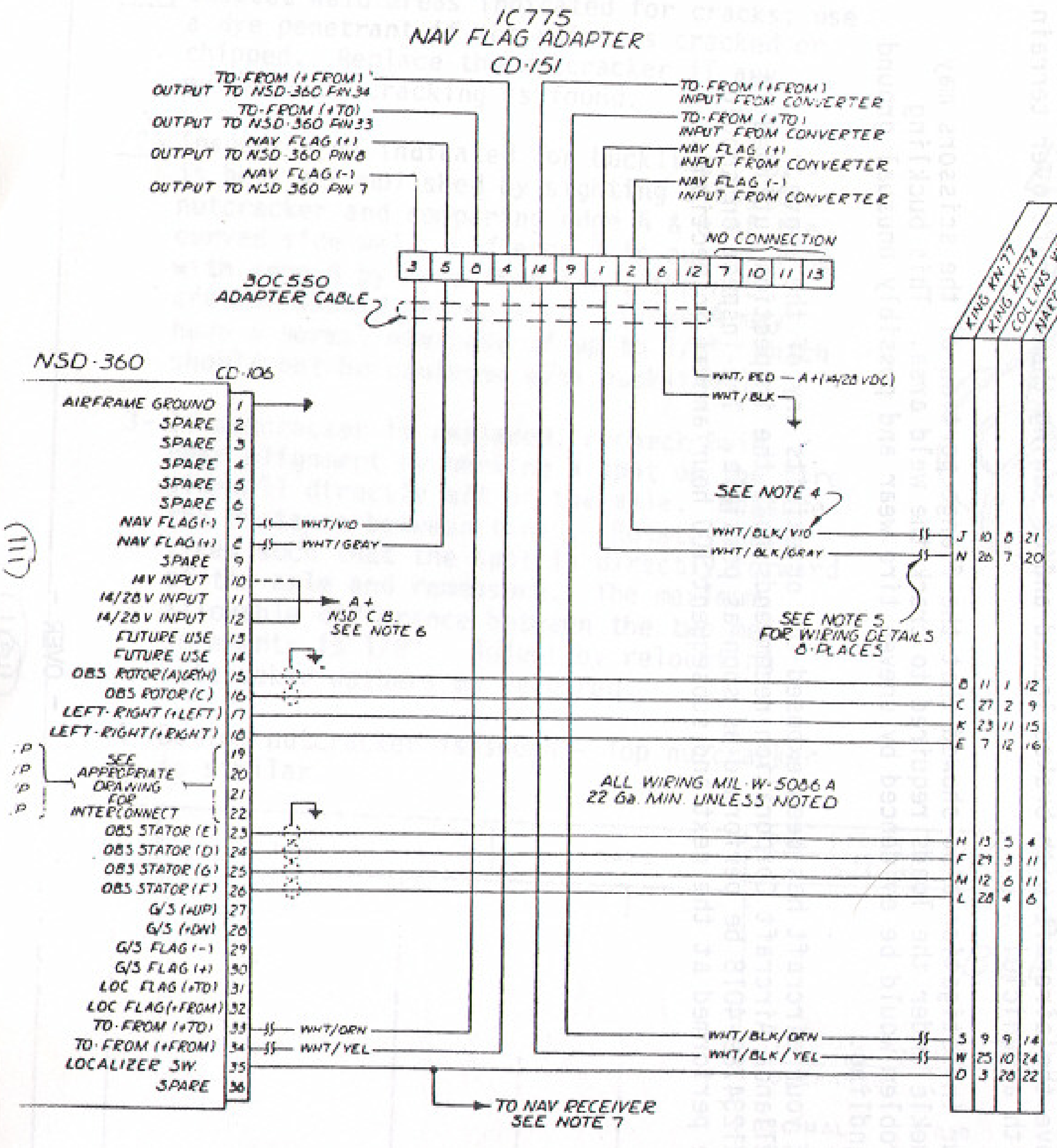
DRAWN	B KEHRER 1-20-77
CHECKED	C WILTON 1-22-77
ENGINEER	1-22-77
APPROVED	WRW 1-22-77
MATERIAL	N/A
NEXT ASSY	
USED ON	

EDO-AIRE MITCHELL
MINERAL WELLS, TEXAS

TITLE: ADAPTER CABLE FOR IC775 TO VOR/LOC CONVERTER & NSD360

SIZE: C | DWG NO: 30C550 | REV:

(110)



NOTES FOR INSTALLATION OF VARIOUS NSD-360'S & IC775 NAV FLAG ADAPTER WITH VARIOUS VOR/LOC CONVERTERS:

1. THIS DRAWING IS USED WHEN THE NSD-360 COMPASS SYSTEM IS USED WITH CONVERTERS OTHER THAN THE EDO-AIRE MITCHELL OMNI CONVERTER, P/N IC707. THESE INSTALLATIONS REQUIRE THE IC775 NAV FLAG ADAPTER BETWEEN THE NSD-360 AND CONVERTER AS SHOWN.
2. REFER TO 68509 CENTURY IV SERVICE MANUAL OR 68595 OMNI CONVERTER SERVICE MANUAL, PAGE 2-3 FOR WIRING INFORMATION ON NON-SLAVED 52D136'S WITH SERIAL NUMBERS ENDING IN NO LETTER SUFFIX OR SUFFIX "A".
3. REFER TO CONVERTER MFGS INSTRUCTIONS FOR ADDITIONAL WIRING REQUIREMENTS.
4. WIRE COLOR CODES SHOWN REFER TO 30C550 ADAPTER CABLE.
5. REFER TO SERVICE BULLETIN MB-13 OR TO NSD-360 BULLETINS NO'S 479, 600 OR 668 FOR ADDITIONAL WIRING REQUIREMENTS AND INSTALLATION INSTRUCTIONS.
6. FOR 14V INPUT, JUMPER 10, 11 AND 12.
7. PIN 35 ON CD-106 GROUNDS WHEN LOCALIZER FREQUENCY IS SELECTED. SOME RADIOS SUPPLY A+, IN THESE CASES A RELAY WILL BE REQUIRED.

REVISIONS: REVISED PER E.O. # 9856

EDO-AIRE MITCHELL
MINERAL WELLS, TEXAS

INTERCONNECT, NSD-360 WITH VARIOUS VOR/LOC CONVERTERS & IC775 NAV FLAG ADAPTER

SIZE D — DWG NO. 63D337-2 — SHEET 1 OF 1

APPLICATION

BELLANCA AIRCRAFT CORPORATION
Municipal Airport
Alexandria, Minnesota 56308

P.O. Box 69 Phone: 612/762-1501

August 15, 1977

FAA APPROVED

SERVICE LETTER #B-95

SUBJECT: Main Gear Scissors Inspection

AFFECTED AIRCRAFT:

14-19-3A--All	17-30A--S/N 30263 thru 30859
17-30-----All	17-31A--S/N 32-15 thru 32-169
17-31-----All	17-31ATC--S/N 31004 thru 31138
17-31TC---All	

We have received a few reports of cracks in the weld areas of the main gear scissors. The cause for this problem is excessive loads. The excessive loads can be generated by hard landings, excessive braking, attempting to move the aircraft with brakes locked and/or towing the aircraft over terrain with a vehicle.

Our investigation also showed that the flange portion of the scissors may buckle under the loads required to crack the weld area. This buckling problem would be evidenced by uneven tire wear and possibly unusual ground handling.

If your aircraft has been exposed to, or exibits any of the above, Bellanca Aircraft Corporation recommends that the inspection outlined in SK1234789-4018 be performed as soon as possible. The inspection should be performed at the next and subsequent 100 hour/annual inspections.

- OVER -

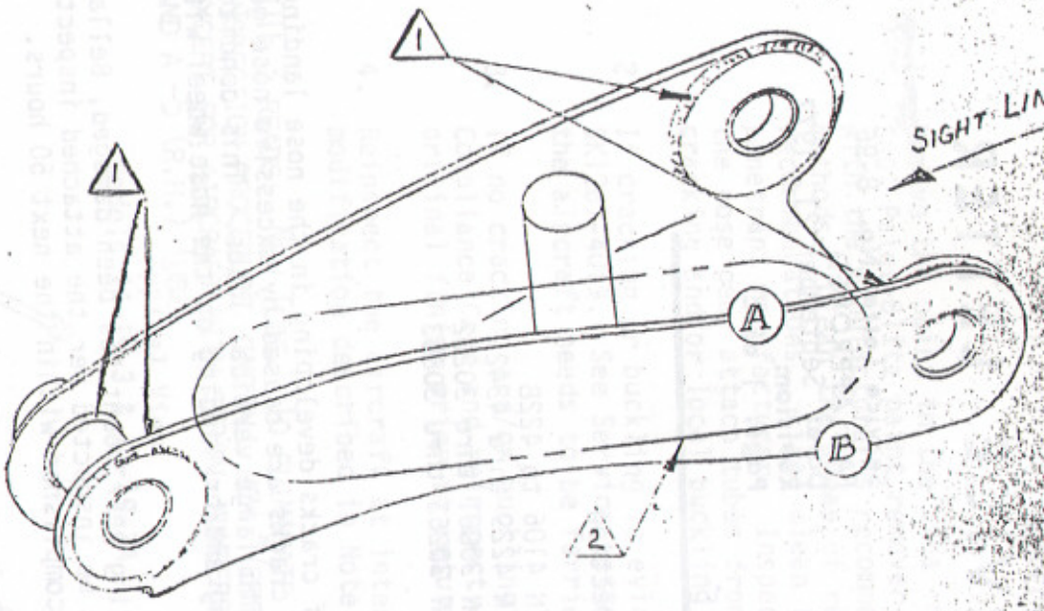
NOTES:

1. Inspect weld areas indicated for cracks; use a dye penetrant if the paint is cracked or chipped. Replace the nutcracker if any evidence of cracking is found.

2. Inspect area indicated for buckling. This is best accomplished by sighting along the nutcracker and comparing edge A & B of the curved side wall. If edge A is out of line with edge B by more than 1/8", the nutcracker should be replaced. (Edge A may have a normal waviness of up to 1/8", which should not be confused with buckling.)

3- If nutcracker is replaced, recheck main gear alignment by marking a spot on the tire sidewall directly aft of the axle. Measure the distance between tires. Rotate the tires such that the spot is directly forward of the axle and remeasure. The maximum allowable difference between the two measurements is 1/8". Adjust by relocating nutcracker washers as required.

4- Bottom nutcracker is shown - Top nutcracker is similar.



PART NO.	NAME	DIA	THICK	WIDTH	LG	STOCK SIZE	MATERIAL	SPEC.

BELLANCA AIRCRAFT CORP
NEW MORIA, MINN. U.S.A.

UNLESS OTHERWISE NOTED
TOLERANCES.

DECIMAL ± .010
ANGULAR ± 1/2
FINISH: BELLANCA SPEC.

INSPECTION - NUTCRACKER, MAIN LANDING GEAR
SERVICE LETTER B-95

NO.	CHANGE	DRAWN

DRAWN	CHECK	APPV'D
[illegible]	WB	AW
3/22/77	[illegible]	7/01/77

SCALE
DO NOT SCALE DWG.
NONE

SK12346789-4013

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-96
FAA APPROVED
Date: September 21, 1977
Revision:
Page: 1 of 2

SUBJECT: Nose Landing Gear Mount Inspection

AFFECTED AIRCRAFT: Model 14-19-3---S/N 4106 to 4228
14-19-3A--S/N 4229 thru 4342
17-30-----S/N 30001 thru 30262
17-30A----S/N 30263 thru 30853

We have received a number of reports of cracks developing in the nose landing gear mount on the above aircraft. The cracks are caused by excessive nose gear side loads, either alone or combined with large vertical loads. This condition could be generated by high speed turning and/or landing on the nose wheel with a large drift angle.

To determine if your aircraft nose landing gear mount has been damaged, Bellanca Aircraft Corporation recommends that it be inspected per the attached inspection procedure. This inspection is to be accomplished within the next 50 hours.

If cracks or tube buckling is found, repair the mount per SK1267-4019 before the aircraft is returned to service. A special flight permit pursuant to FAR 21.197 is required to allow ferrying of the aircraft to a facility where the required repairs can be performed. If no cracks or buckling are found, return the enclosed Compliance Card to Bellanca Aircraft Corporation and reinspect the aircraft at intervals not to exceed 100 hours until the modification described in Note 3 of SK1267-4019 is accomplished.

Encl: Nose Landing Gear Mount Inspection Procedures

- OVER -
(114)

NOSE LANDING GEAR MOUNT
INSPECTION PROCEDURES

1. Remove the paint in the area indicated and inspect using a dye penetrant. Use 6801 Paint-Blitz paint remover (Martin Senour Paints) or equivalent in accordar with the manufacturer's recommendations to remove the paint. Do not use abras. methods. Clean the areas of residue paint remover per the manufacturer's recommendations. Final clean the areas per the recommendations of the dye penetrant manufacturer. Inspect using a 10X magnifying glass completely around the nose gear attach tubes from the weld to approximately 2" below the weld for cracking and/or local buckling of the tubes.

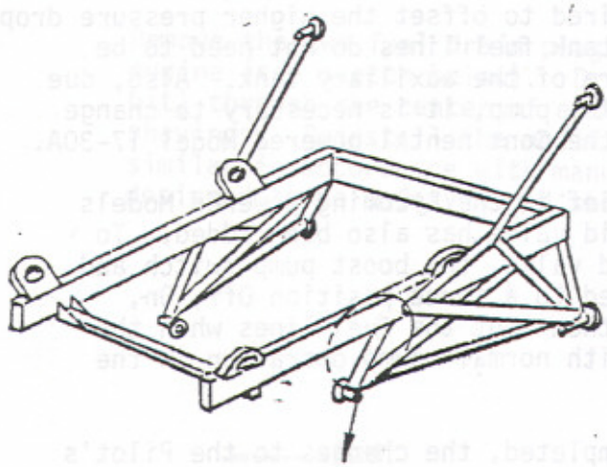
2. If cracking or buckling is evident, replace the tube per Bellanca Service Kit SK1267-4019. See Service Letter regarding special flight permit required if the aircraft needs to be ferried prior to repair.

3. If no cracking and/or buckling of the tubes is found, return the enclosed Compliance Card and reinspect as specified. Repaint the stripped areas to the original finish prior to returning the aircraft to service.

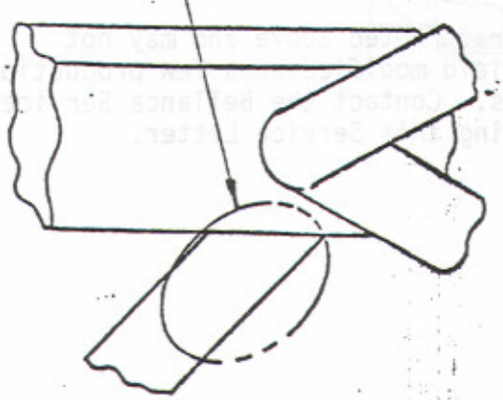
4. Reinspect the aircraft at intervals not to exceed 100 hours, or until the modification described in Note 3 of SK1267-4019 is accomplished.

NOTE 3 READS: NEW TUBE. TO ELIMINATE THE NEED TO CONTINUE SERVICE LETTER B-96 INSPECTION PROCEDURE, INSTALL NEW "VERTICAL" TUBE AS SHOWN. THIS IS A -1 TUBE, EXCEPT FOR AIRCRAFT WITH SERIAL NUMBERS 30487 AND UP, WHICH WILL USE A -4 (L.H.) AND A -5 (R.H.) TUBE.

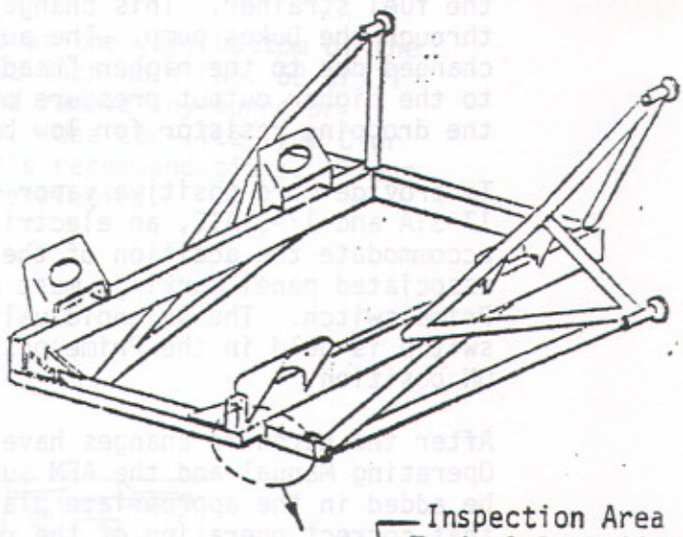
Typical View
Models 14-19-3 & 14-19-3A



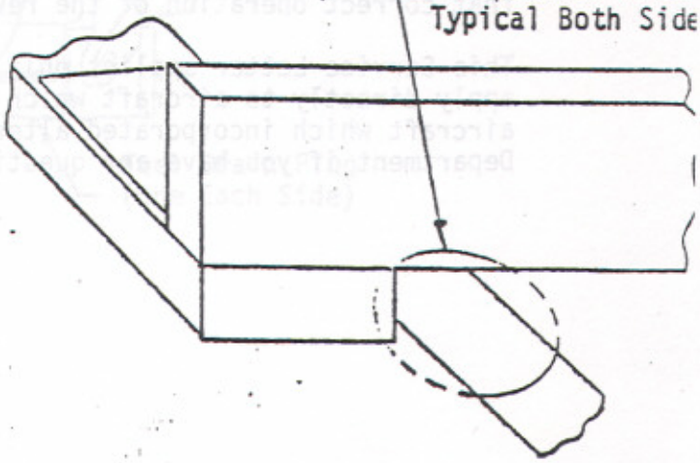
Inspection Area
Typical Both Sides



Typical View
Models 17-30 & 17-30A



Inspection Area
Typical Both Side



BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-97

Date: November 4, 1977
Revision:
Page: 1 of 1

SUBJECT: Dukes Electric Boost Pump Retrofit

AFFECTED AIRCRAFT: Model 17-30A----S/N's 30498, 30515 to 30855
Model 17-31A----S/N's 32-103 to 32-170
Model 17-31ATC--S/N's 31047 to 31138

Our Service Reports have indicated that the Airborne electric fuel boost pump has had a less than satisfactory field record. To improve this, Bellanca Aircraft Corporation is making available Service Kit SK789-1063 which provides for the replacement of the Airborne pump with a Dukes electric fuel boost pump.

In addition to the pump change, it is necessary to change the main tank 3/8" diameter fuel lines to 1/2" diameter fuel lines from the belly quick drain to the fuel strainer. This change is required to offset the higher pressure drop through the Dukes pump. The auxiliary tank fuel lines do not need to be changed due to the higher "head" pressure of the auxiliary tank. Also, due to the higher output pressure of the Dukes pump, it is necessary to change the dropping resistor for low boost on the Continental powered Model 17-30A.

To provide more positive vapor lock relief in the Lycoming powered Models 17-31A and 17-31ATC, an electric solenoid valve has also been added. To accommodate the addition of the solenoid valve, the boost pump switch and associated panel markings must be changed to a three position Off, On, Prime switch. The solenoid valve will then vent the fuel lines when the switch is held in the Prime position, with normal pump operation in the ON position.

After the hardware changes have been completed, the changes to the Pilot's Operating Manual and the AFM supplement included in the Service Kit must be added in the appropriate places to complete the Service Kit and insure that correct operation of the revised fuel system is understood.

This Service Letter applies only to the aircraft noted above and may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-98
FAA APPROVED
Date: March 10, 1978
Revision:

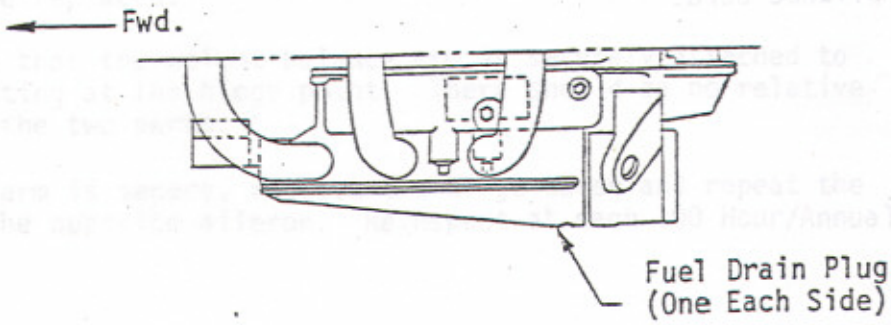
SUBJECT: Lycoming Induction Drain Provisions

AFFECTED AIRCRAFT: Model 17-31-----All
Model 17-31A----S/N's 32-15 thru 32-170
Model 17-31TC---All
Model 17-31ATC--S/N's 31004 thru 31146

Perform the following modifications to provide positive draining of the induction system at or before the next 100 Hour/Annual Inspection.

1. Standard and Turbo Lycomings

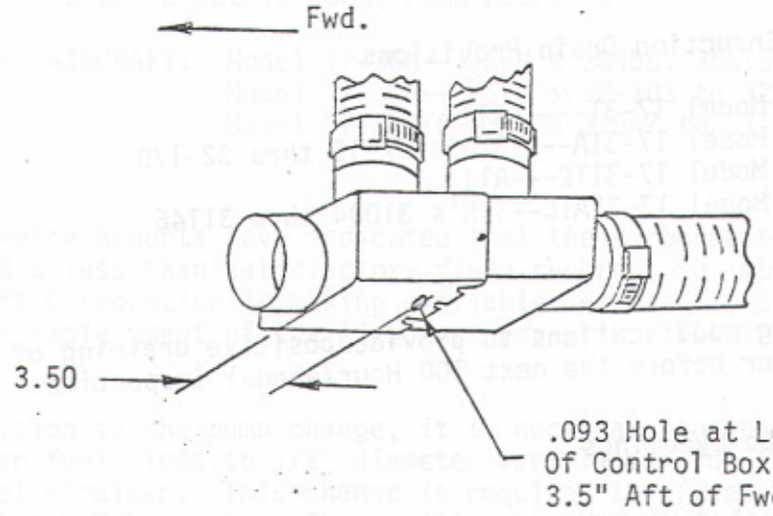
Remove the two fuel drain plugs located at the very bottom of the engine (see sketch below). Drill a .062 inch hole (No. 52 drill bit) through the center of each plug and remove any burrs or shavings. Reinstall the modified plugs. Use Loc-Tite Type C or similar in accordance with manufacturer's recommendations. Plugs designed to be safety wired should be resafetied.



- over -

2. Turbo Lycoming Only

Remove the induction tubes from the front of the turbo control box located on each side of the engine (see sketch below). Drill a .093 inch hole (No. 42 drill bit) at the low point of control boxes as shown below. Remove any burrs or shavings and reinstall induction tubes.



This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter. After completion of this Service Letter, fill out and return the enclosed Compliance Card.

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-99
FAA APPROVED
Date: July 20, 1978
Revision:

SUBJECT: Aileron Balance Weight Inspection

AFFECTED AIRCRAFT:

14-19-3---All	17-31TC---All
14-19-3A--All	17-30A----S/N 20263 thru 30303
17-30-----All	17-31A----S/N 32-15 thru 32-34
17-31-----All	17-31ATC--S/N 31004 thru 31010

Bellanca Aircraft has received a few reports of loose or broken aileron balance weight attachment screws. The inspection procedure described herein should be performed within the next 30 days or 10 hours of flight. If the inspection determines that a repair is required, the repair must be accomplished prior to further flight. Repeat the inspection at the next and subsequent 100 Hour/ Annual Inspections or until the repair procedure has been completed.

INSPECTION PROCEDURE

1. Remove the aileron center hinge cover plate from the bottom of the aileron.

2. Rotate the aileron up to expose the aileron balance weight.

3. Check to insure that the lead weights are securely attached to the balance arm. If not, tighten the mounting screws until secure. NOTE: This is a routine maintenance item which should be checked at each 100 Hour/Annual Inspection. If unable to achieve a secure mounting due to excessive deformation of the lead weight, the weight should be replaced.

4. Check to insure that the weight balance arm is securely attached to the aileron fitting at the hinge point. There should be no relative motion between the two parts.

5. If the balance arm is secure, replace the hinge cover and repeat the inspection on the opposite aileron. Reinspect at each 100 Hour/Annual Inspection.

5. If the balance arm is secure, replace the hinge cover and repeat the inspection on the opposite aileron. Reinspect at each 100 hour/annual inspection.

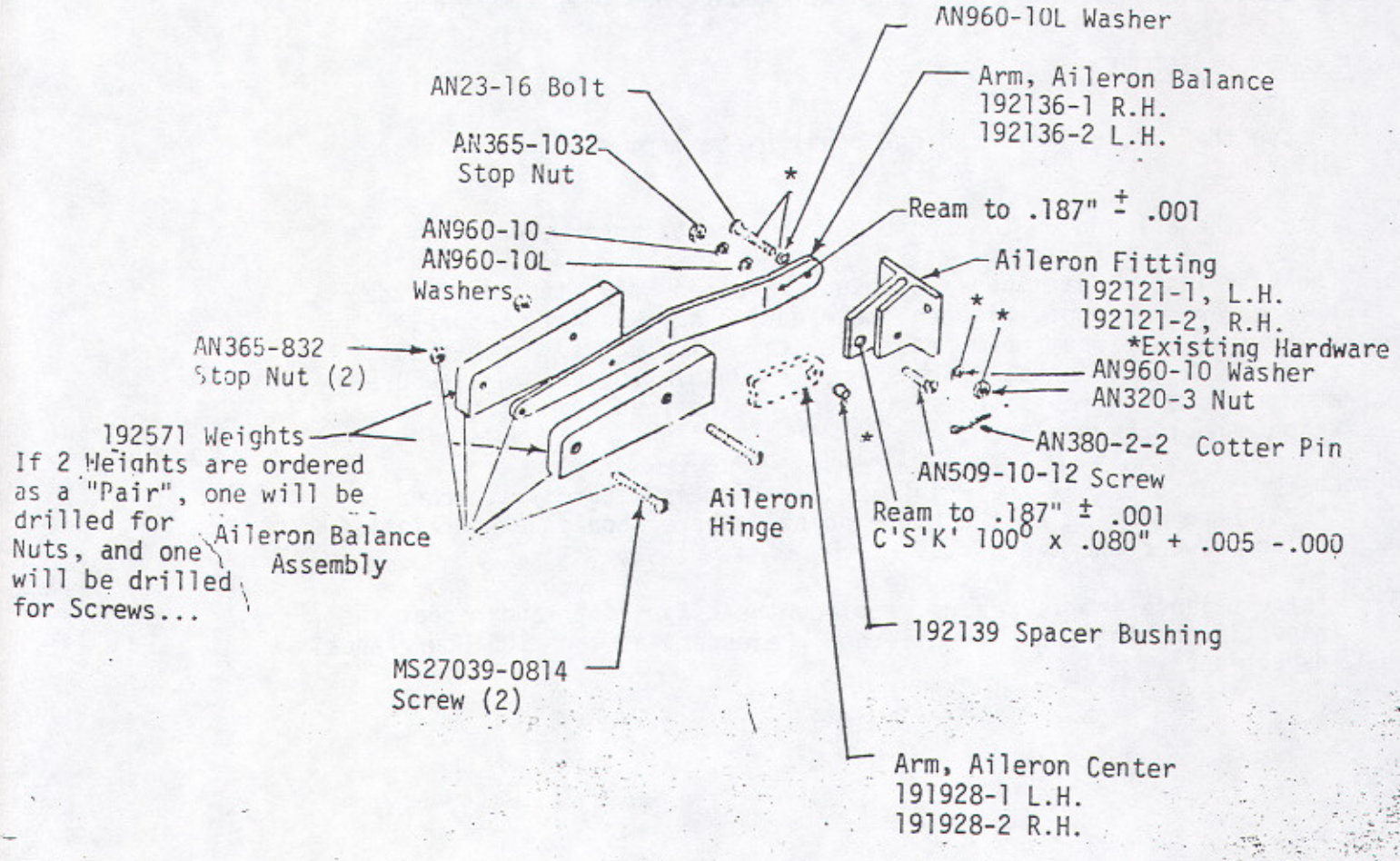
6. If the balance arm is loose, perform the repair procedure prior to further flight.

REPAIR PROCEDURE

1. Remove the balance arm and the aileron fitting from the aileron. This will require making a small slit in the fabric on the bottom of the aileron aft of the aileron spar to gain access to the backing nuts.

2. If the hinge bolt hole in either the balance arm or the aileron fitting is elongated, replace the affected part.

3. If the forward attach screw holes are elongated, it may be possible to rework parts by reaming the forward attach screw holes and recountersinking the hole in the aileron fittings per the following sketch. If after rework the elongations are not completely removed, the parts should be replaced.



4. Reassemble the parts using the hardware specified in the above sketch. Insure that the countersunk screw is flush with the aileron fitting face.

5. Install the aileron fitting into the aileron. Inspect to insure that the countersunk screw head cannot interfere with the correct operation of the aileron hinge.

6. Repair the aileron fabric in accordance with the procedures of AC-43-13-1A and refinish as required.

7. Reinstall the aileron hinge cover and repeat the repair procedure on the opposite aileron.

This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-100
FAA APPROVED
Date: May 3, 1979
Revision:
Page: 1 of 2

SUBJECT: Air Filter Bowl Latch Inspection and Replacement

AIRCRAFT AFFECTED: Model: 17-31A----S/N's 32-130 thru 32-172
17-31ATC--S/N's 31072 thru 31153

COMPLIANCE: On or before the next 100 Hour/Annual Inspection.

INTRODUCTION

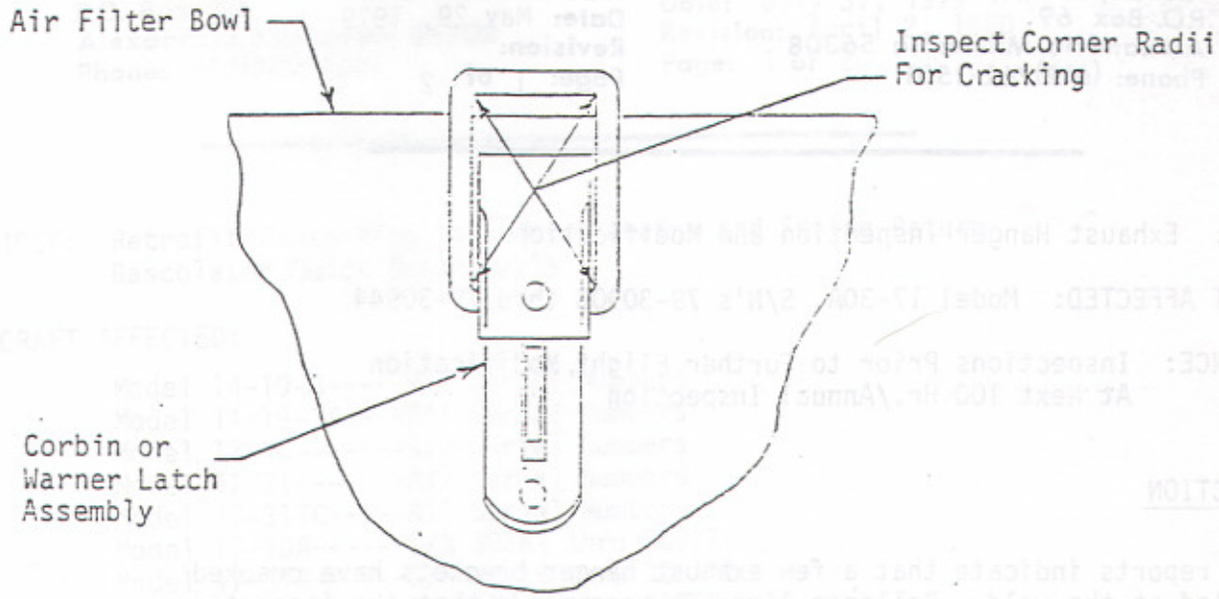
Service reports indicate that the air filter bowl latches are occasionally failing in the loop bend radius. Bellanca recommends that the inspection presented herein be performed at or before the next 100 Hour/Annual Inspection and at each subsequent inspection until the latches are replaced with the 191973-0 latch.

This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact our Bellanca Service Department if you have any questions concerning this Service Letter.

INSPECTION

Detach the induction air hoses attached to the air filter bowl and remove the filter bowl from the aircraft. Visually inspect each of the four latch loops in the corner radii as shown in the sketch below. If cracks are found or suspected, replace the latch assembly.

over (122)



LATCH REPLACEMENT

To remove the old latch assembly, carefully drill out the two attachment rivets. Replace the latch assembly with the Bellanca P/N 191973-0 latch assembly (four per aircraft required). Rivet the new latch assembly to the air filter bowl using MS20470AD-4-5 (AN470-4-5) rivets, using the old rivet holes to align the latches.

Reinstall the air filter bowl and air induction hoses.

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-101
FAA APPROVED
Date: May 29, 1979
Revision:

SUBJECT: Exhaust Hanger Inspection and Modification

AIRCRAFT AFFECTED: Model 17-30A, S/N's 79-30906 thru 79-30944

COMPLIANCE: Inspections Prior to Further Flight, Modification At Next 100 Hr./Annual Inspection

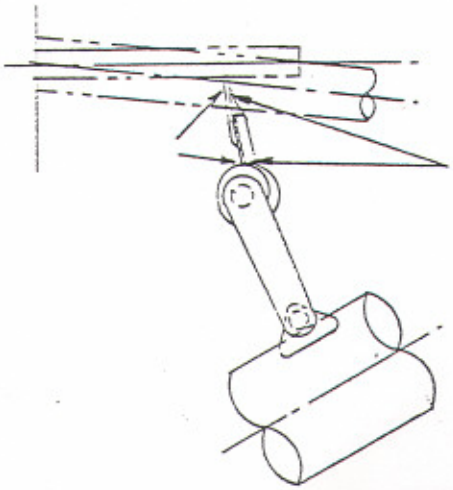
INTRODUCTION

Service reports indicate that a few exhaust hanger brackets have cracked and failed at the weld. Bellanca Aircraft recommends that the inspection presented herein be performed prior to each flight until the exhaust hanger bracket has been modified as presented herein.

This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

INSPECTION

Prior to each flight, open the cowl flaps and visually inspect the exhaust hanger brackets for signs of cracks in the areas shown in the sketch below. If cracks are found, remove and replace the bracket with the 201079 bracket prior to further flight.



Inspect Both Sides at Edge of Weld Bead

BELLANCA SERVICE LETTER

Bellanca Aircraft Corporation
Municipal Airport
P.O. Box 69
Alexandria, Minnesota 56308
Phone: (612)762-1501

Service Letter No. B-102A
FAA APPROVED
Date: July 31, 1979
Revision: April 2, 1980

SUBJECT: Retrofit Flush Wing Tank Quick Drains and Spring Return Gascolator Quick Drain Cable

AIRCRAFT AFFECTED:

Model 14-19-3-----All Serial Numbers
Model 14-19-3A----All Serial Numbers
Model 17-30-------All Serial Numbers
Model 17-31-------All Serial Numbers
Model 17-31TC-----All Serial Numbers
Model 17-30A------S/N 30263 thru 30977
Model 17-31A------S/N 32-15 thru 32-172
Model 17-31ATC----S/N 31006 thru 31155

COMPLIANCE: Bellanca recommends that the retrofit presented herein be accomplished at the owner's discretion.

INTRODUCTION

Bellanca Aircraft recommends that (1) the most inboard drain plug for each wing tank (i.e. right main, left main, right auxiliary, left auxiliary) be replaced with a flush mounting quick drain valve and (2) the quick drain cable to the fuel strainer be replaced with a new spring return cable. These changes will provide for a more convenient preflight inspection.

This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

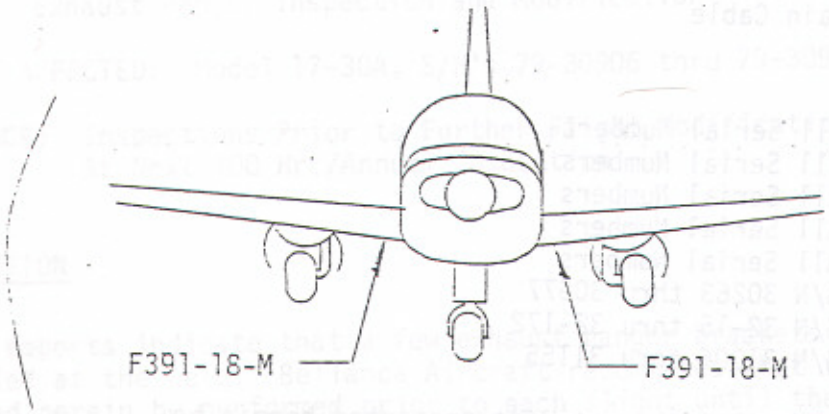
- OVER -

BELLANCA AIRCRAFT CORPORATION
Box 69 Municipal Airport
Alexandria, Minnesota 56308

INSTALLATION PROCEDURE, WING TANKS QUICK DRAIN VALVE

1) Drain both wing tanks.

2) Remove inboard wing tank drain plug or existing quick drain for aircraft which have not complied with Service Letter No. 66: Raised Fuel Drains, and replace with F391-18M quick drain valve.



SPRING RETURN GASCOLATOR QUICK DRAIN VALVE

Installation of the spring return gascolator quick drain valve is accomplished per the following SK drawings.

Model 14-19-3-----All Serial Numbers	SK1267-1031
Model 14-19-3A----All Serial Numbers	SK1267-1031
Model 17-30-------All Serial Numbers	SK1267-1031
Model 17-31-------All Serial Numbers	SK3489-1038
Model 17-31TC-----All Serial Numbers	SK3489-1038
Model 17-30A------S/N's 30263 thru 30977	SK1267-1031
Model 17-31A------S/N's 32-15 thru 32-172	SK3489-1038
Model 17-31ATC----S/N's 31006 thru 31155	SK3489-1038

Certain earlier models utilized gascolator quick drain valves and other parts not shown on these SK drawings and/or were modified per Service Letter No. 66: Raised Fuel Drains, to include other parts. Bellanca recommends that the appropriate SK drawing be compared to the specific aircraft to determine which parts are necessary to conform the installation to that shown on the SK drawing.

BELLANCA SERVICE LETTER

Bellanca, Inc.
P. O. Box 964
Alexandria, MN 56308
Phone: (612) 762-1501

Service Letter No. B-104
Date: February 6, 1984

SUBJECT: Rerouting Right Magneto "P" Lead

AFFECTED AIRCRAFT:
14-19-3----All Serial Numbers
14-19-3A---All Serial Numbers
17-30------All Serial Numbers
17-31------All Serial Numbers
17-31TC----All Serial Numbers
17-30A-----S/N 20263 thru 30993
17-31A-----S/N 32-15 thru 32-172
17-31ATC---S/N thru 31155

COMPLIANCE: Bellanca recommends that the modification presented herein be accomplished on or before the next 100 hour/annual inspection.

The left and right "P" leads are presently routed from magnetos to the ignition switch through the cannon plug on the left hand side of the firewall. Bellanca, Inc. recommends that (1) both "P" leads be replaced with high temperature shielded wire and (2) the "P" lead from the right magneto be rerouted through the firewall according to instructions given in Service Kit No. SK-1067. This change will improve the ignition system redundancy.

This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

SERVICE LETTER

Bellanca, Inc.
Municipal Airport
P. O. Box 964
Alexandria, MN 56308
Phone: (612) 762-1501

Service Letter No. B-105
FAA Approved 2/2/87
Date: 2/2/87
Revision:

SUBJECT: Fuel Cap and Fuel Filler Well (Scupper) Drain Inspection

AIRCRAFT AFFECTED:

Model 14-19	All Serial Numbers
Model 14-19-2	All Serial Numbers
Model 14-19-3	All Serial Numbers
Model 14-19-3A	All Serial Numbers
Model 17-30	All Serial Numbers
Model 17-31	All Serial Numbers
Model 17-31TC	All Serial Numbers
Model 17-30A	All Serial Numbers
Model 17-31A	All Serial Numbers
Model 17-31ATC	All Serial Numbers

INTRODUCTION

It has been brought to our attention that some aircraft are not receiving adequate inspection of the fuel caps and the fuel filler well (scupper) drains. Fuel caps that do not seal properly and or plugged fuel filler well (scupper) drains can result in contamination of the fuel system. Bellanca, Inc. recommends that the following inspection be performed.

I. DURING PREFLIGHT INSPECTION

1. Visually inspect the fuel filler well (scupper) area for any indication of standing water or fuel. If any standing water or fuel is observed it should be removed prior to opening the fuel cap. Inspect the fuel filler well (scupper) drain tube for blockage. If any blockage is observed or suspected, probe the length of the drain tube with a .062 inch diamter by 18 inch long (wing tanks) 30 inch long (fuselage auxiliary tank) wire. The wire should be passed through the entire length of the drain tube by inserting the wire at one end of the drain tube and removing it from the opposite end.

2. Check the condition of the fuel cap as follows.

   A. Aircraft with metal twist-on fuel caps.

      Visually inspect the fuel cap gasket for deterioration (cracking, hardness, etc.). Install the fuel cap. Check the cap to be certain it makes a tight seal. There should be no looseness or freeplay in either the up and down or rotation directions.

- OVER -

B. Aircraft with Thermos type expansion seal fuel caps.

Visually inspect the fuel cap expansion seal (rubber body) for deterioration (cracking, hardness, etc.). Install the fuel cap and secure the tab to the locked position. Check the cap to be certain it makes a tight seal. There should be no looseness or freeplay in either the up and down or rotation directions. If the fuel cap is loose, tighten the seal. The amount of tension placed on the expansion seal can be adjusted by rotating the fuel cap locking tab.

II. DURING ANNUAL/100 HOUR INSPECTION

1. Perform the preflight inspection described in part I of this Service Letter for each fuel cap and fuel filler well (scupper) drain; correct any deficiencies.

2. Probe the length of each fuel filler well (scupper) drain tube, as described in part I of this Service Letter.

3. Aircraft with Thermos type expansion fuel caps.

A. Remove the fuel caps from the fuel tanks and cover the fuel filler neck so that no contamination can get in the tank.

B. Place the fuel caps on a level surface and position the locking tabs in the locked position. Fill the depression in the metal plate on the top of the fuel cap with water and allow it to stand for five minutes. Visually inspect the fuel cap for any evidence of leakage around the locking tab. Remove the water and wipe the fuel cap dry.

C. Disassemble the fuel cap by unscrewing the locking tab. Visually inspect the inside of the expansion seal for evidence of moisture. If moisture has leaked into the interior of the expansion seal, replace the rubber washer P/N 192770-1 which seals the locking tab. Inspect the interior of the expansion seal and the rubber washer for deterioration. Inspect the metal parts of the fuel cap for corrosion. Assemble the fuel cap and repeat step B.

D. Install the fuel caps on the airplane and repeat the preflight inspection described in section I, paragraph 2 B of this Service Letter.

This Service Letter describes inspection procedures which apply to a standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporated alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter.

Bellanca, Inc.
P.O. Box 964
Alexandria, MN 56308
Phone: (612) 762-1501

Service Letter No. B-106
Date: 26 September 1989
Page: 1 of 2
FAA Approved

SUBJECT: Inspection Main Landing Gear Front Spar Drag Strut Fitting

AFFECTED AIRCRAFT: The following model/serial number aircraft with more than 500 hours time in service.

14-19-3----All Serial Numbers
14-19-3A---All Serial Numbers
17-30------All Serial Numbers
17-31------All Serial Numbers
17-31TC----All Serial Numbers
17-30A-----S/N 30263 thru 89-301007
17-31A-----S/N 32-15 thru 78-32-172
17-31ATC---S/N 31004 thru 79-31155

COMPLIANCE: Bellanca recommends that the inspection presented herein be accomplished on or before the next 100 hour/annual inspection and thereafter at each 100 hour/annual inspection until existing P/N 194153-10 is replaced with new P/N 194153-30 or -40.

Bellanca has received several reports of cracks in the P/N 194153-10 Main Landing Gear (MLG) Front Spar Drag Strut Fitting. The cracks are caused by high spin-up loads (hard touch-down at high speeds), heavy braking, and/or improper tightening of the fitting-to-spar attach bolts. These conditions cause local deformations of the fitting near a weld, precipitating a small crack. Once the crack has started, local deformations and the crack will grow with repeated loadings, even though the loadings are not excessive. The local deformations reduce the MLG down lock overcenter. If the condition is not detected and corrected, the MLG may collapse because the overcenter down lock is lost or because the 194153-10 fitting itself fails. The inspection presented herein can be conducted with the fitting assemblies installed on the airplane.

Bellanca recommends that the MLG Front Spar Drag Strut Fitting be inspected for cracks and local deformation as follows. Place jacks under the aircraft. Do not apply loads to the landing gear components, particularly the drag strut, as it is possible to move the drag strut to overcenter and cause the landing gear to collapse. Figure 1 describes the 194153 fitting parts. Clean the aft face of the -1 Fitting with Stoddart solvent and a brush. Inspect for cracks adjacent to the welds which join the -1 Fitting to the -2 Fitting and -3 Brace near the lower aft attachment bolt holes. Use liquid penetrant inspection technique and a magnifying glass. If any crack is found, replace the assembly with a new fitting assembly P/N 194153-30 or P/N 194153-40, as applicable, prior to further flight.

Lay a straight-edge alongside the lower aft attachment bolts as shown on Figure 2. Use an 0.030 inch gauge to look for evidence of local deformation (dimpling) in the -1 Fitting. If any deformation greater than 0.030 is found, replace the assembly with a new fitting assembly P/N 194153-30 or P/N 194153-40, as applicable, prior to further flight.

NOTE: 194153-30 IS LEFT HAND
194153-40 IS RIGHT HAND

- OVER -

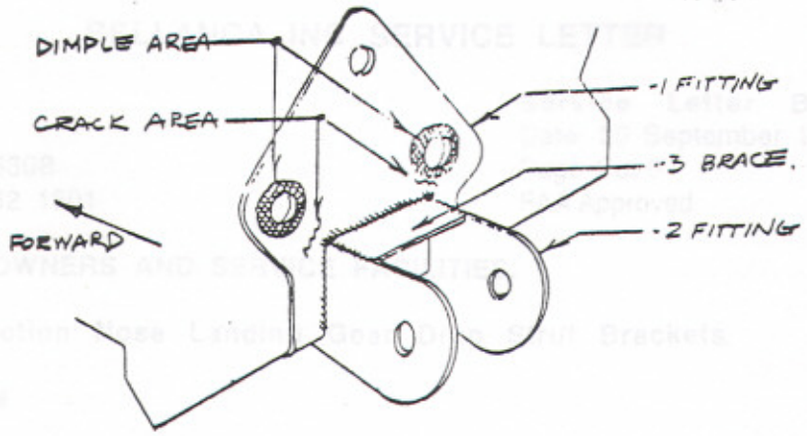


Figure 1: P/N 194153 Drag Strut Fitting Critical Inspection Areas

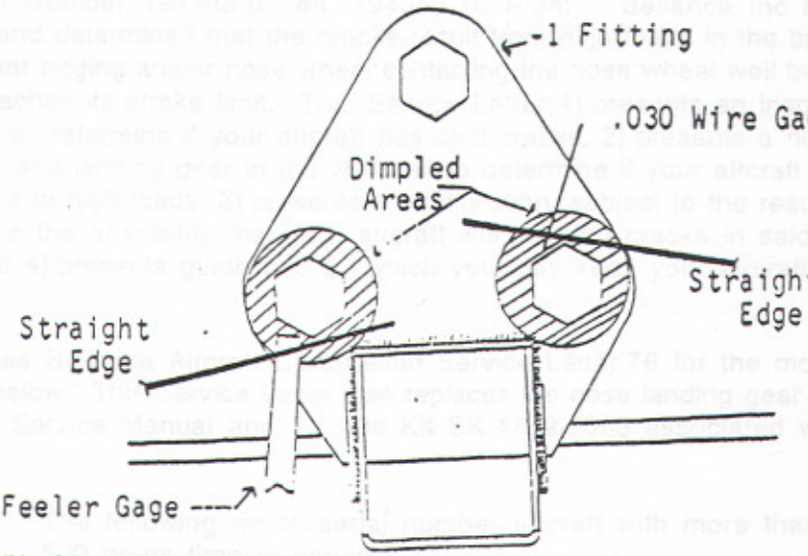


Figure 2: EXAMPLES OF MEASURING DEPTH OF DIMPLED AREAS

The -30, -40 Fittings can be distinguished from a -10 Fitting by measuring the -1, -2 Fitting and -3 Brace part thickness: -10 part thickness is 0.062 inches, -30, -40 parts thickness is 0.100 inches. A 0.040 shim P/N 194167-2 Shim Spar Bracket is available to provide proper fit between the 194153 fitting and the forward spar.

If the inspection does not indicate any evidence of cracks or excessive local deformation in the -1 Fitting apply zinc chromate or Epibond primer as necessary to protect the part. Check/adjust the drag strut for correct overcenter using the procedure presented in the Bellanca Service Manual. If the overcenter is out of tolerance, inspect the remaining landing gear parts for cause and repair/replace as necessary.

This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporate alternate designs. Contact the Bellanca Service Department if you have any questions concerning this Service Letter

BELLANCA INC SERVICE LETTER

Bellanca Inc
PO Box 964
Alexandria, MN 56308
Telephone: 320 762 1501

Service Letter B-107
Date: 20 September 1995

FAA Approved

TO: BELLANCA OWNERS AND SERVICE FACILITIES.

SUBJECT: Inspection Nose Landing Gear Drag Strut Brackets

1 INTRODUCTION

The FAA has notified Bellanca Inc of several reports of cracks in the Nose Landing Gear (NLG) Drag Strut Brackets (Part Number 194383-0 Left, 194383-10 Right). Bellanca Inc has investigated this problem and determined that the cracks result from high loads in the brackets due to incorrect landing gear rigging and/or nose wheel contacting the nose wheel well before the nose gear actuator reaches its stroke limit. This Service Letter 1) presents an inspection procedure of the brackets to determine if your aircraft has said cracks, 2) presents a nose landing gear rigging check and landing gear in the well test to determine if your aircraft brackets are being exposed to high loads, 3) presents a modification, subject to the results of the tests, which will reduce the possibility that your aircraft will develop cracks in said brackets in the future, and 4) presents guidelines by which you may keep your aircraft in service.

This Service Letter replaces Bellanca Aircraft Corporation Service Letter 76 for the models and serial numbers listed below. This Service Letter also replaces the nose landing gear up rigging instructions in the Service Manual and Service Kit SK 4789-5003 associated with Service Letter 62.

2 AFFECTED AIRCRAFT: The following model/serial number aircraft with more than 500 hours time in service.

Model 17-30	SN 30123 - 30262
Model 17-31	SN 32-1 thru 32-14
Model 17-31TC	SN 31001 - 31003
Model 17-30A	SN 30263 thru 78-30905, except 76-30824
Model 17-31A	SN 32-15 thru 78-32-172
Model 17-31ATC	SN 31004 thru 79-31155

This Service Letter describes procedures which apply to standard production aircraft. It may not apply directly to aircraft which have been field modified or a few production aircraft which incorporate alternate designs. Contact the Bellanca Inc Service Department if you have any questions concerning this Service Letter.

3 COMPLIANCE

Bellanca Inc recommends that the NLG Drag Strut Brackets inspection presented herein be accomplished upon completion of the first 500 hours total time in service, or within the next 50 hours time in service after the effective date of this service letter. If the brackets do not have cracks and are not bent, if the NLG Drag Strut meets inspection requirements, and the nose landing gear installation meets the Preliminary NLG-In-The-Well test, Preliminary NLG

Cylinder Down test, and the NLG Drag Strut overcenter is properly adjusted, the aircraft may be returned to service and no additional special inspections are required.

If either of the brackets are cracked or bent, it/they must be replaced and the nose landing gear must be checked/adjusted to correct rigging prior to the next flight.

If the brackets are not cracked or bent but the nose gear installation does not meet the Preliminary NLG-In-The-Well test or Preliminary NLG Cylinder Down test, the nose landing gear installation rigging deficiencies must be corrected and the drag strut brackets must be inspected as presented in this service letter every 50 hours after the initial inspection until the right bracket is replaced with a new zero time PN 194650-0: Bracket.

If the nose landing gear installation does not meet the final NLG-In-The-Well test, the nose gear cylinder must be modified to limit its stroke prior to the next flight.

4 NLG DRAG STRUT BRACKET INSPECTION

Place the aircraft on jacks with wheels off the ground. The NLG Drag Strut Brackets are located on the forward side of the firewall and attach the nose landing gear drag strut to the fuselage primary structure at Fuselage Station 1. Remove the bolts attaching the drag struts to the brackets. Thoroughly clean the brackets in-place. Visually inspect the brackets for cracks with a ten power magnifying glass concentrating in the areas shown in figure I, ie: below the center bolt and along the flange radius. If cracks are found, replace the brackets with new parts (PN 194650-0 right side, PN 194383-0 left side) using the alignment procedure described in Section 5: Installation New Brackets.

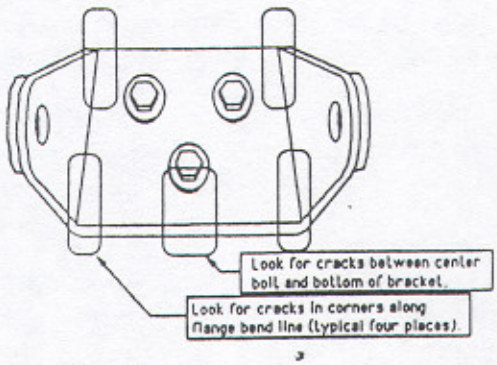


Figure 1: Critical Inspection Areas
(View Looking Up and Aft)

Determine if the brackets are bent by placing a 1 1/4 inch straight edge along the lower edge of the bracket; if there is more than a 1/16 inch gap between the straight edge and the bracket surface, it is considered bent. Visually verify that the bracket flanges are 90 +/- 3 degrees to the aft face If a bracket is bent, replace it with new parts (PN 194650-0 right side, PN 194383-0 left side) using the alignment procedure described in Section 5: Installation New Brackets.

Check the brackets to verify that their attachment bolts are secure. If the brackets are not secure, the brackets must be secured using the alignment procedure described in Section 5: Installation New Brackets.

If the brackets are secure and not cracked or deformed, install the bolts attaching the drag struts to the brackets and go to Section 6. Nose Landing Gear Drag Strut Inspection.

5. INSTALLATION NEW BRACKETS

Verify security of aircraft on jacks with wheels off the ground.

Conduct the following alignment check to determine if the axes of the left and right drag strut bolts are aligned. Misaligned bolts can cause the attachment brackets to distort during the nose gear retraction/extension cycle and cause high stresses. Remove the bolts connecting the left and right sides of the upper drag strut (see Note 3) to firewall brackets. Clean or replace the bolts if they are corroded; replace the bolts if they are worn. Check both drag strut bushings for wear; replace if worn. Insert a 5/16 X 14 inch straight rod into the left bushing. The rod should line up with the right bushing +/- 1/4 inch. Repeat this procedure with the right drag strut bushing. The drag strut is distorted if either bushing centerline is outside this tolerance; repair or replace as required.

Install a new bracket or align an existing bracket as follows: 1) install the bracket(s) with bracket to firewall bolts finger tight, 2) install opposite side drag strut attach bolt, 3) shim (see Note 4) and rotate the bracket so that its drag strut attachment bolt slides freely into it with hand pressure only (after the bracket to firewall bolts are secure), 4) repeat the process for the opposite side even though that side may have previously been in alignment. It may be necessary to remove the airplane left bracket and drill the two top holes oversize to 0,312 inches maximum. Reattach the drag strut.

Warning - do not retract the landing gear until actuator stroke limits are checked as described in the following sections of this service letter. Failure to do so may cause excessive loads and damage the drag strut brackets.

If you replaced the right hand bracket, accomplish Section 6: Nose Landing Gear Drag Strut Inspection then go to Section 8: Drag Brace Over Center Test and Adjustment.

6. NLG DRAG STRUT INSPECTION

Verify security of aircraft on jacks.

Inspect the nose landing gear installation including the upper and lower leg assemblies, upper and lower drag struts, over-center spring assembly and engine mount. Replace/repair parts as required.

Remove the bolt(s) connecting the upper and lower drag struts. Clean or replace the bolt(s) if it is corroded. Replace the bolt(s) if it is worn. Check bushings for wear; replace if worn. Lubricate the bolt(s) and reinstall. The bolt should slide into position with hand pressure only. If the bolt(s) cannot be installed with hand pressure only, some component of the landing gear installation is distorted and requires repair or replacement; accomplish same. Install and secure the bolt(s).

Remove the bolt connecting the lower drag strut to the upper landing gear leg. Clean or replace the bolt if it is corroded. Replace the bolt if it is worn. Check bushings for wear; replace if worn. Lubricate the bolt and reinstall. The bolt should slide into position with hand pressure only. If the bolt cannot be installed with hand pressure only, some component of the landing gear installation is distorted and requires repair or replacement; accomplish same. Install and secure the bolt.

Warning - do not retract the landing gear until actuator stroke limits are checked as described in the following sections of this service letter. Failure to do so may cause excessive loads and damage the drag strut brackets.

7. PRELIMINARY NLG DRAG STRUT RIGGING CHECK

Check/Inflate nose wheel tire to 35 psi. Verify security of aircraft on jacks with wheels off the ground.

If the nose gear installation passes both of the following tests, go to Section 8: Drag Brace Overcenter Test and Adjustment.

7.1 Preliminary Nose-Wheel-In-The-Well Test

Conduct the following Nose-Wheel-in-the-Well test prior to making any modifications to determine if your NLG has been rigged in a way which could cause large Drag Strut Bracket loads: 1) clear the area around all three landing gear, 2) turn the master switch on and retract the landing gear, 3) check to see how firmly the nose wheel contacts the nose wheel well by attempting to rotate the wheel with one hand, 4) extend the landing gear and turn the master switch off. If you are unable to turn the nose wheel when it is up in the well, the nose landing gear is improperly rigged and may have caused fatigue damage to the right Drag Strut Bracket; you need to go to Section 8: Drag Brace Overcenter Test and Adjustment. If you can turn the wheel, continue with Section 7.2: Preliminary NLG Cylinder Down Test..

7.2 Preliminary NLG Cylinder Down Test

Remove the bolt attaching the nose gear cylinder to the upper nose gear leg. Verify that the actuator is at its stroke limit: 1) verify landing gear switch in down position, 2) turn master switch on, 3) break overcenter momentarily to turn electrohydraulic powerpac on, 3) turn the master switch off. The cylinder rod end hole center should be 1/32 to 1/16 inches short of the attach bolt hole center. If the NLG cylinder retracts beyond this amount, it is improperly rigged and it may be possible to subject the NLG Drag Strut Bracket to high loads during the down cycle.

Adjust the nose gear cylinder rod end but leave it disconnected until the overcenter test is complete.

8. DRAG STRUT OVERCENTER TEST AND ADJUSTMENT

Verify security of aircraft on jacks with wheels off the ground. Disconnect the NLG cylinder if it has not already been done.

Check overcenter of the drag strut by stretching a taught string between the centerline of the upper leg and firewall attach bolts, right side and left side, and measuring the out-of-plane distance between these strings and the bolt connecting the forward and aft drag struts.

Aircraft Model 17-30 SN 30123 thru 30240, Model 17-31 SN 32-1 thru 32-13 and Model 17-31TC SN 31001 thru 31003 were rigged with a 1/8 inch overcenter at the factory, had hydraulic down locks and use up limit switches. Service Letter 65 and Service Kits SK234-5004 and 4010 were issued to upgrade this rigging to a later configuration eliminated the hydraulic down lock, added an up pressure switch and increased the overcenter. Bellanca Inc recommends that these changes be incorporated into the landing gear at this time if they have not already been accomplished. If your aircraft does not have the Service Letter 65 changes and you choose not to incorporate same, the overcenter on your aircraft should remain 1/8 inch.

The overcenter for the above serial number aircraft which have been upgraded with Service Letter 65 and the remaining aircraft of this service letter should be 1/4 to 5/16 inches below the string. Adjust the overcenter extension assembly (see Note 1) to achieve the required overcenter. Adjust the down limit switches to make at one-half overcenter

If you adjusted the overcenter, you need to repeat the NLG cylinder down test and readjust if required.

9. NLG CYLINDER DOWN TEST AND ADJUSTMENT

Verify security of aircraft on jacks with wheels off the ground.

Remove the bolt attaching the nose gear cylinder to the upper nose gear leg. Verify that the actuator is at its stroke limit: 1) verify landing gear switch in down position, 2) turn master switch on, 3) break overcenter momentarily to turn electrohydraulic powerpac on, 4) turn the master switch off. The cylinder rod end hole center should be 1/32 to 1/16 inches short (forward) of the upper nose gear leg attachment bolt hole center. Adjust/Secure nose gear cylinder rod end as required.

10. NLG-IN-THE-WELL TEST AND NLG CYLINDER MODIFICATION

Verify security of aircraft on jacks with wheels off the ground.

Slowly retract the landing gear until the nose wheel just touches the wheel well using the following procedure: 1) place landing gear switch in the up position, 2) locate an observer at the nose gear, 3) turn master switch on until nose wheel moves to approximately 12 inches from contacting the nose wheel well, 4) jog the master switch until the wheel is within inches of touching the well, 5) manually move the nose wheel and/or the main gear (pull main gear down to move nose wheel up) until the nose wheel just touches the well. It should be possible to turn the wheel with one hand noting some friction between the wheel and the well. Warning - do not allow the pump to move the nose wheel to contact the well and develop up pressure; failure to do so may cause excessive loads and damage the drag strut brackets. Install a dial indicator to measure motion between the nose gear cylinder and cylinder rod as illustrated in figure 2.

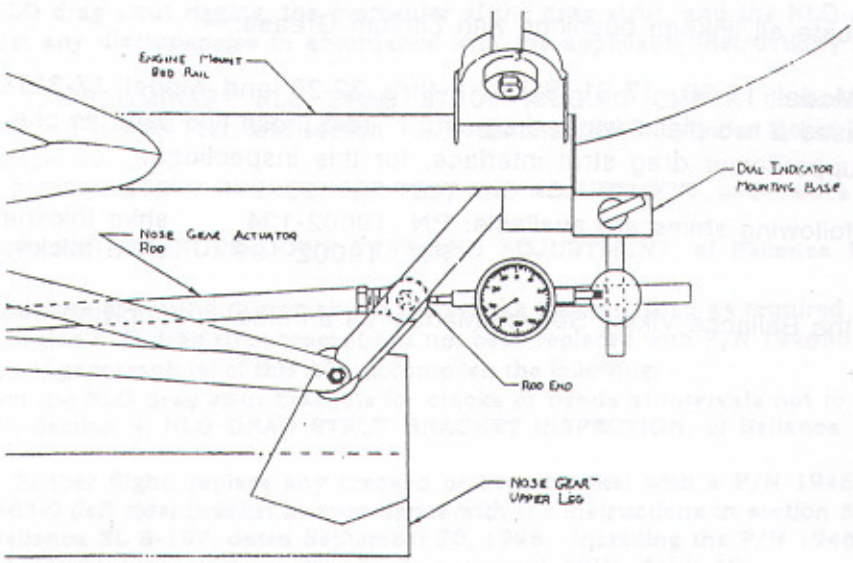


Figure 2: Dial Indicator Set-up (Model 17-30A Shown)

Deflate the nose gear tire by removing the valve core. Turn the master switch on and allow the electrohydraulic power pack to move the landing gear to the full up position. Note the nose gear cylinder rod motion. Place the landing gear switch in the down position and allow the landing gear to move to the down and locked position; check for three green lights. Turn the master switch off. Install nose wheel valve core and inflate the nose wheel tire to 35 psi.

If the nose gear cylinder rod motion is greater than 0.015 inches, the cylinder internal stroke limiting sleeve must be replaced with a new sleeve PN 195577-4 .

Some of the Model 17-30A SN 30263 thru 30324, Model 17-31 SN 32-14, Model 17-31A SN 32-15 thru 32-34 and Model 17-31ATC SN 31008 thru 31012 aircraft were field modified with Service Letter 62 and SK 4789-5003; these field modified aircraft have a SK4789-5003-1 spacer installed in addition to a sleeve. The PN 195577-4 sleeve replaces both this spacer and the sleeve.

Remove the nose gear cylinder and cap hydraulic lines. Clean cylinder. Remove end plugs and withdraw piston from cylinder. Caution - Observe and follow the instructions on the placard on cylinder barrel which states CYLINDER IS SPRING LOADED, USE CAUTION DURING DISASSEMBLY. Check all O-ring seals and replace as required. Remove old sleeve and press-in new sleeve. Reassemble cylinder in opposite order. Install cylinder in aircraft.

Conduct nose gear in the well test as previously described. Adjust up limit switches if installed. The nose wheel should be within 3/4 inch of the well to just contacting the well when the nose gear cylinder bottoms-out. You should be able to rotate the tire with one hand when the system is in the full up position (up limit switch or up hydraulic pressure switch made). Check the system for leaks. If the nose gear installation does not meet the above criteria, contact the Bellanca Inc service department.

NOTES

1. Overcenter Extension Adjustment: Model 17-30 SN 30001 thru 30262 were equipped with PN 196340 Extension Assembly Nose Gear; Models 17-31 and 17-31TC were equipped with PN 194229 Extension Assembly Nose Gear. These extensions are not externally adjustable and must be modified internally. See SK234-4010..

2. Lubricate all linkage bushings with Lithium Grease.

3. All Model 17-30, 17-31 SN 32-1 thru 32-20 and Model 17-31TC SN 31001 thru 31004 used a two piece upper drag strut. Treat these two parts as one part, properly connected at the upper/lower drag strut interface, for this inspection.

4. The following shims are available: PN 19002-134 shim thickness 0.063 inches,
PN 19002-199 shim thickness 0.032 inches.

5. Use the Bellanca Viking Service Manual as an aide in complying with this service letter.

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
**Federal Aviation
Administration**

96-18-07 BELLANCA, INCORPORATED: Amendment 39-9731; Docket No. 95-CE-54-AD.

Applicability: The following airplane models and serial numbers, certificated in any category:

Model	**Serial Numbers**
17-30	(30123 through 30262)
17-30A	(30263 through 78-30905, except 76-30824)
17-31	(32-1 through 32-14)
17-31A	(32-15 through 78-32172)
17-31TC	(31001 through 31003)
17-31ATC	(31004 through 79-31155)

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required initially upon accumulating 500 hours time-in-service (TIS) or within the next 50 hours TIS after the effective date of this AD, whichever occurs later, unless already accomplished, and thereafter as indicated in the body of this AD.

To prevent failure of the nose landing gear (NLG), which, if not detected and corrected, could result in loss of control of the airplane during landing operations, accomplish the following:

(a) Inspect the NLG drag strut brackets for cracks or bends in accordance with the instructions in section 4, NLG DRAG STRUT BRACKET INSPECTION, of Bellanca Service Letter (SL) B-107, dated September 20, 1995. Prior to further flight, replace any cracked or bent bracket with a part number (P/N) 194650-0 (right side) bracket or a P/N 194383-0 (left side) bracket in accordance with the instructions in section 5, INSTALLATION NEW BRACKETS, of Bellanca SL B-107, dated September 20, 1995.

(b) Inspect the NLG installation, including the upper and lower leg assemblies, upper and lower drag struts, over-center spring assembly, and engine mount for corroded or worn bolts in accordance with the instructions in Section 6, NLG DRAG STRUT INSPECTION, of Bellanca SL B-107, dated September 20, 1995. Prior to further flight, replace any corroded or worn bolts.

(c) Check the NLG drag strut rigging, the overcenter of the drag strut, and the NLG cylinder actuator stroke limit, and adjust any discrepancies in accordance with the applicable instructions contained in the following:

(1) Section 7, PRELIMINARY NLG DRAG STRUT RIGGING CHECK (including section 7.1, Preliminary Nose-Wheel-in-The-Well Test, and section 7.2, Preliminary NLG Cylinder Down Test), of Bellanca SL B-107, dated September 20, 1995.

(2) Section 8, DRAG STRUT OVERCENTER TEST AND ADJUSTMENT, of Bellanca SL B-107, dated September 20, 1995.

(3) Section 9, NLG CYLINDER DOWN TEST AND ADJUSTMENT, of Bellanca SL B-107, dated September 20, 1995.

(d) If any discrepancies are found during any of the checks accomplished as required by paragraph (c) of this AD, and the right side NLG drag strut bracket has not been replaced with P/N 194650-0 (accomplished as possible requirement of paragraph (a) of this AD), accomplish the following:

(1) Reinspect the NLG drag strut brackets for cracks or bends at intervals not to exceed 50 hours TIS in accordance with Section 4, NLG DRAG STRUT BRACKET INSPECTION, of Bellanca SL B-107, dated September 20, 1995.

(2) Prior to further flight, replace any cracked or bent bracket with a P/N 194650-0 (right side) bracket or a P/N 194383-0 (left side) bracket in accordance with the instructions in section 5, INSTALLATION NEW BRACKETS, of Bellanca SL B-107, dated September 20, 1995. Installing the P/N 194650-0 (right side) bracket eliminates the repetitive inspection requirement in paragraph (d)(1) of this AD.

(3) The P/N 194650-0 (right side) bracket may be installed at any time to eliminate the repetitive inspection requirement of this AD.

(e) Check the NLG retraction (NLG-In-The-Well Test) in accordance with the instructions in Section 10, NLG-IN-THE-WELL TEST AND NLG CYLINDER MODIFICATION, of Bellanca SL B-107, dated September 20, 1995. If the nose gear cylinder rod motion is greater than 0.015 inches, prior to further flight, replace the cylinder internal stroke limiting sleeve with a new sleeve, P/N 195577-4, in accordance with the instructions in Section 10, NLG-IN-THE-WELL TEST AND NLG CYLINDER MODIFICATION, of Bellanca SL B-107, dated September 20, 1995.

(f) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(g) An alternative method of compliance or adjustment of the initial or repetitive compliance times that provides an equivalent level of safety may be approved by the Manager, Chicago Aircraft Certification Office, 2300 East Devon Avenue, Room 232, Des Plaines, Illinois 60018. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Chicago Aircraft Certification Office.

NOTE 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Chicago Aircraft Certification Office.

(h) The inspections, modifications, and replacements required by this AD shall be done in accordance of Bellanca Service Letter B-107, dated September 20, 1995. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Bellanca, Incorporated, P.O. Box 964, Alexandria, Minnesota 56308; telephone (612) 762-1501. Copies may be inspected at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(i) This amendment becomes effective on October 25, 1996.

FOR FURTHER INFORMATION CONTACT:

Steven J. Rosenfeld, Aerospace Engineer, Chicago Aircraft Certification Office, 2300 East Devon Avenue, Room 232, Des Plaines, Illinois 60018; (847) 294-7030; facsimile (847) 294-7834.