



U.S. Department of
Transportation
Federal Aviation
Administration

MAJOR REPAIR AND ALTERATION

(Airframe, Powerplant, Propeller, or Appliance)

Form Approved
OMB No. 2120-0020

For FAA Use Only

Office Identification

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act 1958)

1. Aircraft	Make Cessna	Model A185F
	Serial No. 18502213	Nationality and Registration Mark N3946Q
2. Owner	Name (As shown on registration certificate) Mennen, Paul	Address (As shown on registration certificate) 1452 Owen Sound Dr. Sunnyvale, CA 94087

3. For FAA Use Only

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~(As described in item 1 above)~~~~~			<input type="checkbox"/>	<input checked="" type="checkbox"/>
POWERPLANT				<input type="checkbox"/>	<input type="checkbox"/>
PROPELLER				<input type="checkbox"/>	<input type="checkbox"/>
APPLIANCE	Type			<input type="checkbox"/>	<input type="checkbox"/>
	Manufacturer			<input type="checkbox"/>	<input type="checkbox"/>

6. Conformity Statement

A. Agency's Name and Address Brian Stout 13395 Foothill Ave. San Martin. CA 95046	B. Kind of Agency <input checked="" type="checkbox"/> U.S. Certified Mechanic <input type="checkbox"/> Foreign Certified Mechanic <input type="checkbox"/> Certified Repair Station <input type="checkbox"/> Manufacturer	C. Certificate No. A & P 2100211
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D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Date April 26, 2004	Signature of Authorized Individual
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7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is APPROVED REJECTED

BY	<input type="checkbox"/> FAA Fit Standards Inspector	<input type="checkbox"/> Manufacturer	<input checked="" type="checkbox"/> Inspection Authorization	Other (Specify)
	<input type="checkbox"/> FAA Designee	<input type="checkbox"/> Repair Station	<input type="checkbox"/> Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection April 26, 2004		Certificate or Designation No. 2100211	Signature of Authorized Individual 	

NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

8. Description of Work Accomplished

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

Removed original wing lift strut fairings. Installed Horton STOL Craft Kit No. C185-61

wing lift strut fairings in accordance with STC SA4121SW and Horton Data List #5

dated 1-27-94.

Weight and balance change negligible.

-----END-----

Additional Sheets Are Attached

Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Number SA4121SW

This certificate, issued to Horton STOL Craft
 Wellington Municipal Airport
 Wellington, KS 67152

HORTON S/N: 5661-1295

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 3 of the Civil Air Regulations.

Original Product — Type Certificate Number: 5A6, 3A13, 3A24
Make: Cessna
Model: 180 Series, 182 Series, 185 Series

Description of Type Design Change:
 Add wing strut fairings and/or contour wing struts according to Data List #3 dated 1/27/94, for the 182 models; Data List #4 dated 1/27/94, for the 180 models; and Data List #5 dated 1/27/94, for the 185 models, or later FAA approved revision.

Limitations and Conditions:
 Compatibility of this modification with other previously approved modifications must be determined by the installer.

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

Date of application: April 15, 1980

Date reissued: 11/27/94

Date of issuance: May 5, 1980

Date amended: 7/22/82; 4/29/85;
 3/12/86 Revision 3,

By direction of the Administrator 7/15/94



Ronald K. Rathgeber
 (Signature)

Ronald K. Rathgeber, Actg Mgr Airframe
 Wichita Aircraft Certification Office

(Title)

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

SUPPLEMENTAL TYPE CERTIFICATE AUTHORIZATION

Horton, Inc., a Kansas Corporation, is the Holder of (STC):

Supplemental Type Certificate No(s).

SH4121SW

for the modification of:

Cessna
185

Holder hereby grants permission for "GRANTEE":

Model

Name:

Bob Mennen

Company:

Address:

1452 Owen Sound Dr

Address:

City/State/Zip:

Sumner CA 94087

to use this Supplemental Type Certificate modify the following specific "AIRCRAFT":

Cessna Model

185

Manufacturer's Airframe Serial No.

18502213

FAA Registration Number

N3946Q

but only as permitted by the STC.

The permission granted hereunder is specific to the listed Aircraft only. Guarantee may not transfer or assign this authorization to any third person or entity without the prior written consent of Horton, Inc. (Holder).

This authorization is intended to meet the requirements of 49 U.S.C. § 44706

"Holder"

Horton, Inc.
421. N West Road
Wellington Airport
Wellington, KS. 67152

By:

John Diebold

STATE OF KANSAS)

)§

SUMNER COUNTY)

This instrument was acknowledged before me on the

By

As the

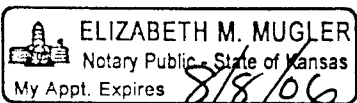
25 day of Nov, 2003

John Diebold

President

of Horton, Inc.

Elizabeth M. Mugler
Notary Public



My appointment expires:

August 8th, 2006

WING STRUT FAIRING INSTALLATION

KIT NO. C185-61

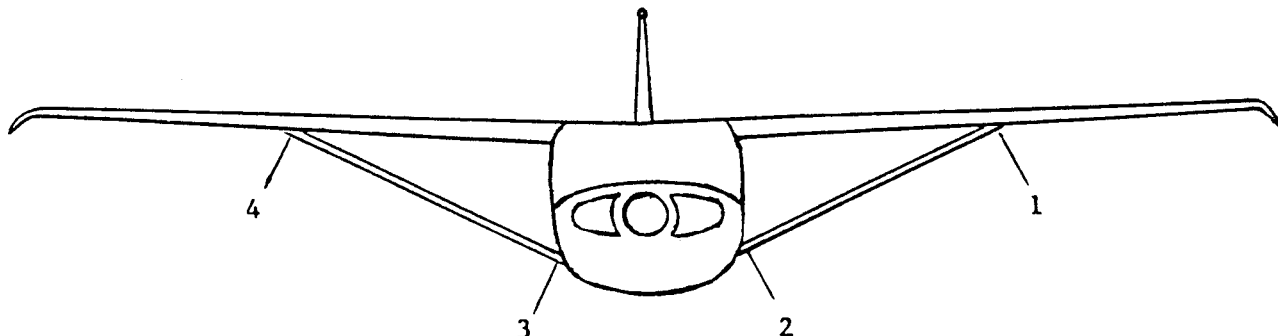
Flow separation exists at each end of the wing struts. Installation of this kit reduces the flow separation at the junctions of the struts to the wings and the fuselage by directing most of the air under the strut to slow down the air flowing through the junction. This kit properly installed, should increase the cruise speed by two MPH.

It is recommended that the installation instructions be read completely and understood before starting the installation.

1. The wing strut fairings are now a two piece fairing that is held together with 4 ea. AN507-832R8 screws. The two top fairing are mounted to the bottom of the wing with 4 ea. AN507-832R8 countersunk screws and A3135-017-24A countersunk washers. They should use the front two existing riv-nuts and two new riv-nuts will have to be installed for the back two mounting screws. The bottom two fairings are mounted to the fuselage with 2ea. AN507-832R8 countersunk screws and 2ea. A3135-017-24A countersunk washers. They should mount to the two existing riv-nuts that the old fairings was mounted to.

The wing strut fairings are numbered C185-62-1 through 4 and are located on the airplane as shown in the diagram.

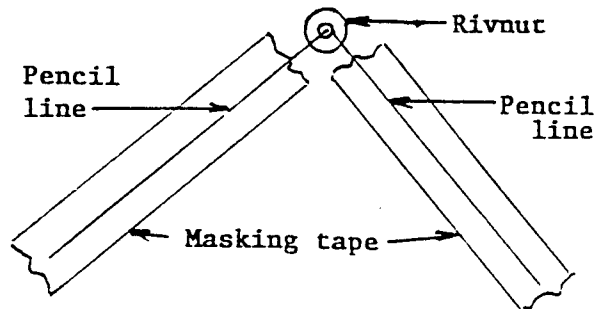
LOOKING AFT



2. Remove the old wing strut fairings. To avoid destruction of the Cessna wing strut fairings, it is necessary to remove the wing struts. If the wing strut is removed the foam blocks, discussed later, can be more easily installed. Of course the wing must be supported if the wing strut is removed. Some of the early model aircraft didn't have wing strut fairings!

3. With the Cessna fairings removed and the wing struts in position, slip the new wing fairings into position and install the four screws to hold the two halves together. Trim the top edges of the fairings at the wing and at the fuselage, if necessary to get a good fit and to allow the fairings to slide into position. On the upper fairings, the tie-down fitting should align with the slot in the fairing. At the fuselage, the rear of the fairing (flange) should be about $3/8$ " below the cabin door sill.

4. With the fairing trimmed to fit, the matching attachment holes in the fairings will be located. At each attachment hole (Riv-nut) on the wing and fuselage, apply two strips of masking tape directed at the hole - outside of the area covered by the fairing. Draw a straight line on each strip to intersect the center of the hole.



This should be done at the two front holes in the wing and at the two lower holes in the fuselage. The rest of the original holes are not used.

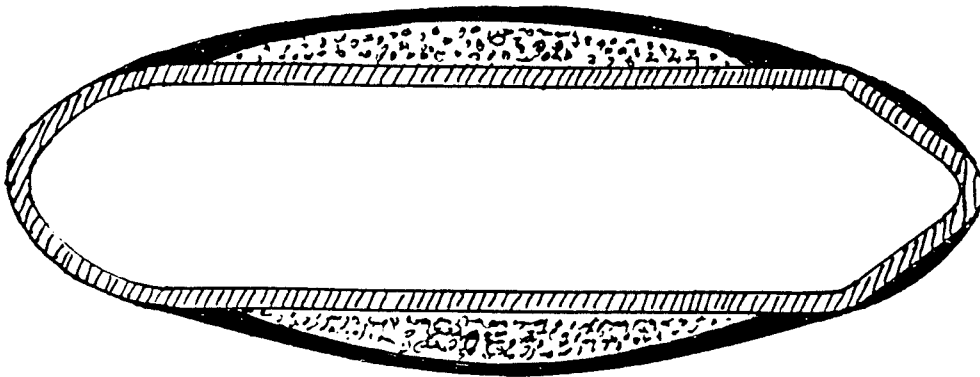
5. Install the fairings on the wing strut with the four screws holding the two halves together tight. With the fairing in position to be mounted permanently, tape to the strut, the wing, and the fuselage.
6. Using a flexible straight edge, draw an extension of the pencil lines on each fairing. The intersection locates the attachment hole. On the two upper fairings, drill two $1/8$ " diameter extra mounting holes on the back half. One at the rear and one between the rear one and the one that is marked. Sometimes there is no way that the existing riv-nuts can be used and new ones will have to be installed for proper mounting. Remove the fairings.

Enlarge the $1/8$ " mounting holes in the wing to $7/32$ " and install the 8-32 riv-nuts.


7. Drill $1/8$ " diameter holes at the pencil line intersections. Place the fairings in position on the strut and note the alignment of the $1/8$ " holes with the riv-nuts. If necessary, the holes in the fairing can be adjusted to match the riv-nuts. The final hole diameter should be around $11/32$ " for the A3135-017-24A countersunk washers and the AN507-832R8 countersunk screws.
8. After the wing strut fairings are fitted and held in position with the attachment screws, draw a pencil line on the wing strut at the end of each fairing. Trim out the tie-down slots to clear any interference with movement of the tie-down fitting. Remove the fairings,, using fine sandpaper, sand the outer surface of the fairings before painting.


INSTALLATION OF THE WING STRUT FILLER

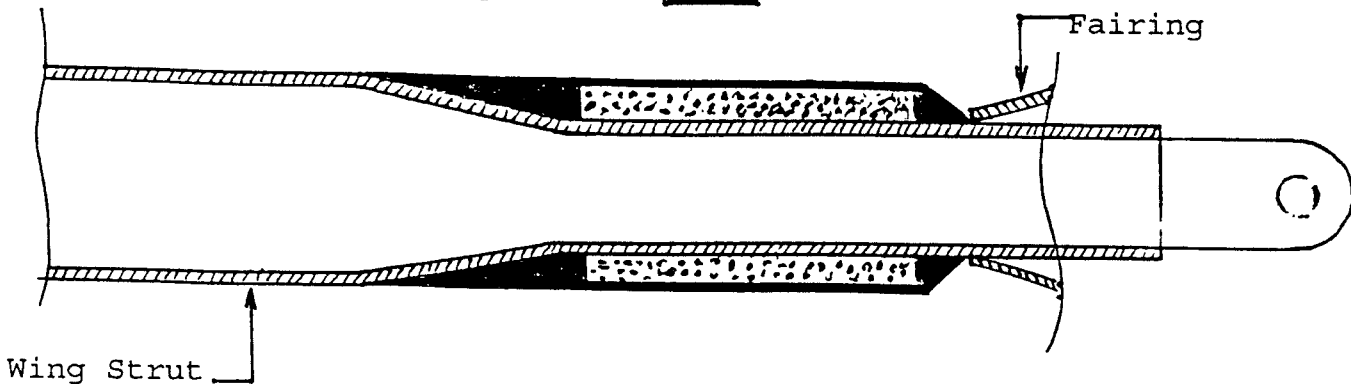
At the wing strut ends, the strut is flattened to accommodate the end fittings. This flat contour causes air separation and drag. The original contour is restored by the addition of contoured foam blocks and polyester filler. The pencil lines on the strut define the edge of the foam, blocks. This operation can be more easily accomplished if the wing struts are removed from the airplane. If this is done, of course the wing must be supported.



CROSS SECTION THROUGH FLATTENED AREA OF WING STRUT

Foam blocks 

Polyester or Epoxy Filler 



LENGTHWISE SECTION THROUGH END OF WING STRUT

1. If the paint is in good condition, the foam blocks can be bonded over the paint; however, it is better to remove the paint with paint remover. The flat portion of the strut should be wet sanded with 400 grit fine sandpaper to clean and roughen the surface. This should be accomplished over the foam block contact area. The portion of the foam block extending over the transition should be sanded on the flat side to maintain the outside contour of the strut. Some of this transition may be filled with the polyester filler.
2. Mix a small amount of filler and apply to the flat side of the foam block. Work the filler into the foam pores with a putty knife. Spread a thin lay of filler on the corresponding area on the wing strut. Since the filler hardens rapidly, depending upon temperature, it may be necessary to apply only two blocks at a time. The blocks can be held in position with masking tape until the polyester filler hardens.
3. With a putty knife, apply filler to the outside of the foam blocks and around the edges of the blocks. This material will harden quickly and can then be filed and sanded.

Sand and fill until the original strut contour is restored and a smooth surface of polyester filler covers the foam and is feather-edged into the contour of the strut.

4. Paint the wing struts and fairings and install the fairings.

HORTON, INC.
Wellington Municipal Airport
Wellington, Kansas 67152
800-835-2051 316-326-2241

INSTALLATION INSTRUCTIONS
C185-61
Sheet 5 of 5.

WING STRUT FAIRINGS KIT

KIT NO. C185-61 STC NO. SA4121SW

FIT CESSNA 185'S 1961 THROUGH 1985
Cessna 185 thru A185F

PART	PART NO.	NO. REQUIRED	NO. SHIPPED
Strut Fairing	C185-62-1	1 ea.	<u>1</u>
Strut Fairing	C185-62-2	1 ea.	<u>1</u>
Strut Fairing	C185-62-3	1 ea.	<u>1</u>
Strut Fairing	C185-62-4	1 ea.	<u>1</u>
Foam Blocks	C182-62-10	8 ea.	<u>8</u>
Counter Sunk Washers	A3135-017-24A	12 ea.	<u>12</u>
Counter Sunk Screws	AN507-832R8	12 ea.	<u>12</u>
Riv-nuts	A8-75	12 ea.	<u>12</u>
Installation Instructions	C185-61	1 ea.	<u>1</u>

FAA Approved STC SA4121SW

Kit Serial No.

SG61-1295

Date of Manufacture

11-25-83

Inspected By

RLP

WEIGHT AND BALANCE INFORMATION

Weight: 2.0 lbs.

Arm: 27.0 in.

Moment +54.0 in-lbs.

ACKNOWLEDGEMENT

HORTON, Inc.
Wellington Municipal Airport
Wellington, KS 67152
(800) 835-2051

NO. C02074-000
PAGE:01
DATE:11/25/03
HI 00001

Customer No. 360011
FLIGHT BONUS NOVEMBER
SALES

Ship To No.
PAUL MENNEN
1452 OWEN SOUND DRIVE
408-737-8192
SUNNYVALE, CA 94087
ATTN: PAUL MENNEN

ORDERED	PURCHASE ORDER NUMBER	SHIP VIA	F.O.B.	TERMS	SLS		
11/25/03		UPS GROUND		COD PER CK	HSE		
LINE	QTY	ORD	UM	PART NO	SCHEDULED	PRICE/UNIT	UM
00001	1	EA		3-C185-61 HORTON LOW DRAG WING & STRUT FAIRING KIT	11/25/03	435.00	00EA
				1973 CESSNA 185 S/N 18502213 REG #N3946Q			
				OWNER INFO: PAUL MENNEN 408-737-8192			
				INSTALLER INFO: JAMES REYNER PALO ALTO A/P			
				FAA APPROVAL STC SA4121SW	KIT S/N		
				DATE OF MANUFACTURE <u>11-25-03</u>	INSPECTED BY		
				UPS GROUND COD PER CK OK \$457.50			
00002	1	EA		3-FREIGHT FLIGHT BONUS FREIGHT	11/25/03	22.50	00EA
	2			* ORDER TOTAL *		457.50	

5661-1295
REP