

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

Number SA2462WE

This certificate, issued to Kenney Engineering

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 * of the Regulations. * See Continuation Sheet(s)

Original Product — Type Certificate Number A-718/A-767
Make: AEROSTAR (Erco, Forney) *
Model: *
* See Continuation Sheet(s)

Description of Type Design Change:

1. Installation of Main Gear Wheel Fairings in accordance with Kenney Engineering Sealed Master Drawing List No. KE2-100.
2. Installation of Nose Gear Wheel Fairings in accordance with Kenney Engineering Sealed Master Drawing List No. KE2-100.

NOTE: Items 1 and 2 above are eligible for installation separately or in conjunction with each other.

Limitations and Conditions: This approval should not be extended to other specific airplanes of these models on which other previously approved modifications are incorporated unless it is determined that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of that airplane.

Refer to Continuation Sheet(s) for additional Limitations and Conditions. Supplemental Type Certificate Continuation Sheet(s) are a part of this Certificate.

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 30 April 1971

Date issued

Date of issuance 8 MAR 1972

Date amended

By direction of the Administrator



(Signature)

Acting Chief, Aircraft Engineering Division

United States of America
 Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate
 (Continuation Sheet)

3 MAR 1970

Number SA2452WE

MAKE	MODEL	ORIGINAL TYPE CERT. NO.	CERTIFICATION BASIS
Aerostar (Erco)	415-C	A-718	CAR-4a
Aerostar (Erco)	415-CD	A-718	CAR-4a
Aerostar (Erco)	415-D	A-787	CAR-3 **
Aerostar (Erco)	E	A-787	CAR-3 **
Aerostar (Erco)	G	A-787	CAR-2 **
Aerostar (Forney)	F-1	A-787	CAR-3 **
Aerostar (Forney)	F-1A	A-787	CAR-3 **
Aerostar (Alon)	A-2	A-787	CAR-3 **
Aerostar (Alon)	A2-A	A-787	CAR-3 **
Aerostar (Mooney)	M10	A-787	CAR-3 **

Limitations and Conditions (Continued):

1. Installation is approved only on aircraft Serial Numbers 813 and up.
2. Nose Gear Wheel Fairing installation is eligible only on aircraft which have Nose Gear Fork Assemblies per: Erco Drawing No. 415-34023; Forney Drawings Nos. F34371 or F34381; or Mooney Drawing No. 530052.
3. Main Gear Wheel Fairing installation is eligible only on aircraft which have Main Landing Gear Assemblies per: Erco Drawing No. 415-33201; Forney Drawing No. F33201; or Mooney Drawing No. 520012.

** CAR-3 effective 15 December 1946 with no amendments, no exemptions.

PAINT APPLICATION

The fiberglass components are finished in a very glossy Gel-Coat resin and need be painted only for matching or decorative purposes. Due to the extremely smooth texture of the Gel-Coat, paint will not adhere unless the surfaces are lightly wet sanded with 300 or 400 grit Wet-or-Dry sandpaper. A primer coat is not necessary.

The aluminum parts should be cleaned with lacquer thinner or MEK solvent, then sprayed with zinc chromate primer before painting. It is recommended that all aluminum parts be zinc chromated to prevent eventual corrosion.

AIRCRAFT PREPARATIONS

Before installing the fairings, check the condition of the rubber "donuts" in the main gear, if the plane is not equipped with Belleville type springs. If the donuts are badly deteriorated and compressed, the plane will sit much lower than normal. Although this condition will not interfere with the installation, the fairings are designed to look their best when the main gear position is normal (distance between the top of the tire and the bottom of the wing should be between 8" and 8 1/2"). *

The rubber stop blocks on the strut which restrict maximum downward travel of the main gear in flight should also be inspected and replaced, if necessary.

Brake hoses should lie snugly against the strut arm so that they will not abrade against the interior surfaces of the fairings. The brake line at the top of the strut, where it enters the wing, may have to be repositioned slightly to clear the stabilizing link brackets which clamp to the strut at this point. The brake lines are quite soft and can easily be bent by hand.

The nose gear should be inspected for looseness in the torque links (or "scissors") and worn wheel bearings. Any additional weight added to a nose fork of any plane will characteristically amplify any tendency to shimmy caused by excessive free play. A snubbing cable to limit downward extension of the nose gear will not only improve in-flight appearance but will also increase the mechanical advantage of the torque links at the moment of ground contact.

*Applies only to Kit No. KE2-100

WEIGHT AND BALANCE DATA

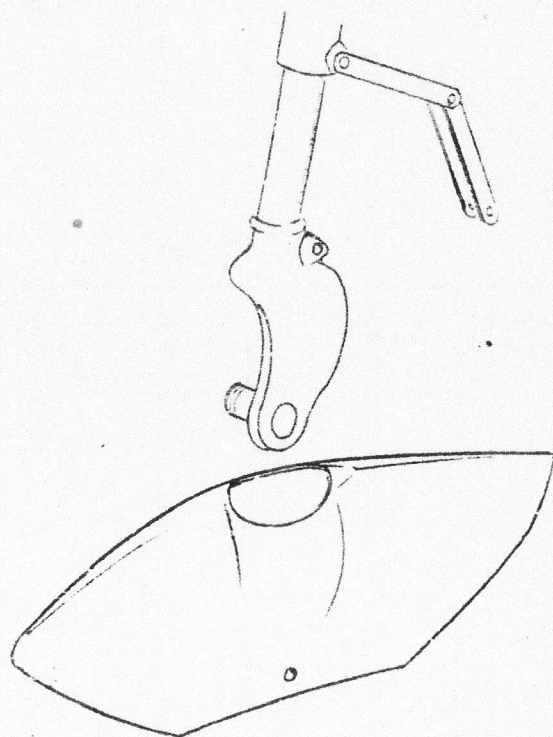
Item	Added Weight	Moment
Left main gear	5.00	+44
Right main gear	5.00	+44
Nose gear	<u>2.20</u>	-16
Total added weight	12.20	

NOTE - Installation does not change aircraft empty CG

KENNEY ENGINEERING
P.O. BOX 1451

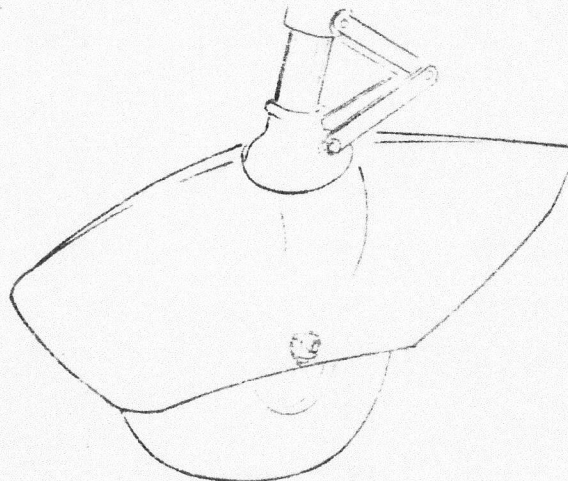
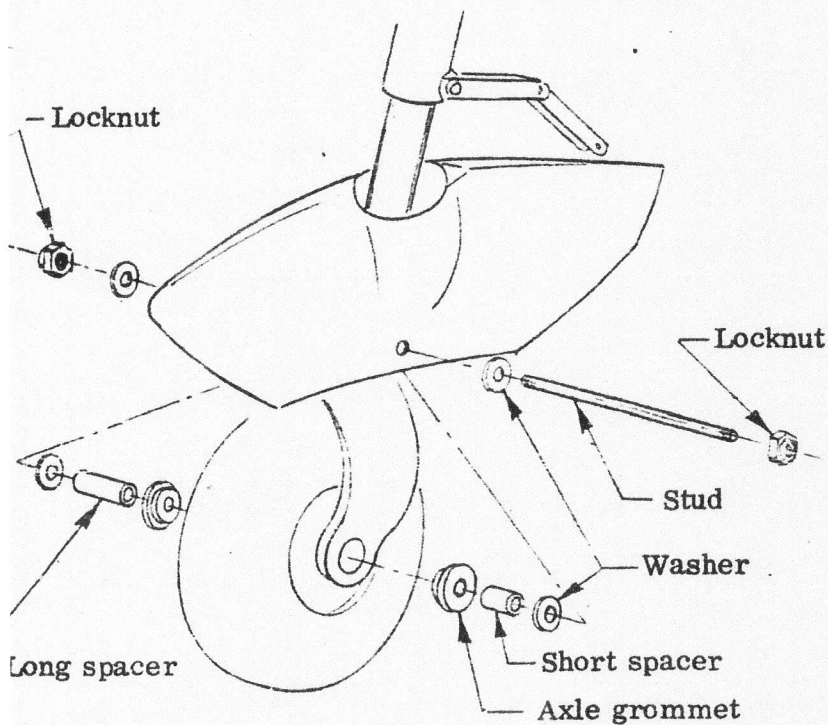
STEP #1

Weight down tail of plane so that the nose wheel is off the ground. Remove the wheel. Disconnect the nose gear "scissors" where they attach to the fork. Do not allow the strut to extend beyond its normal limit.



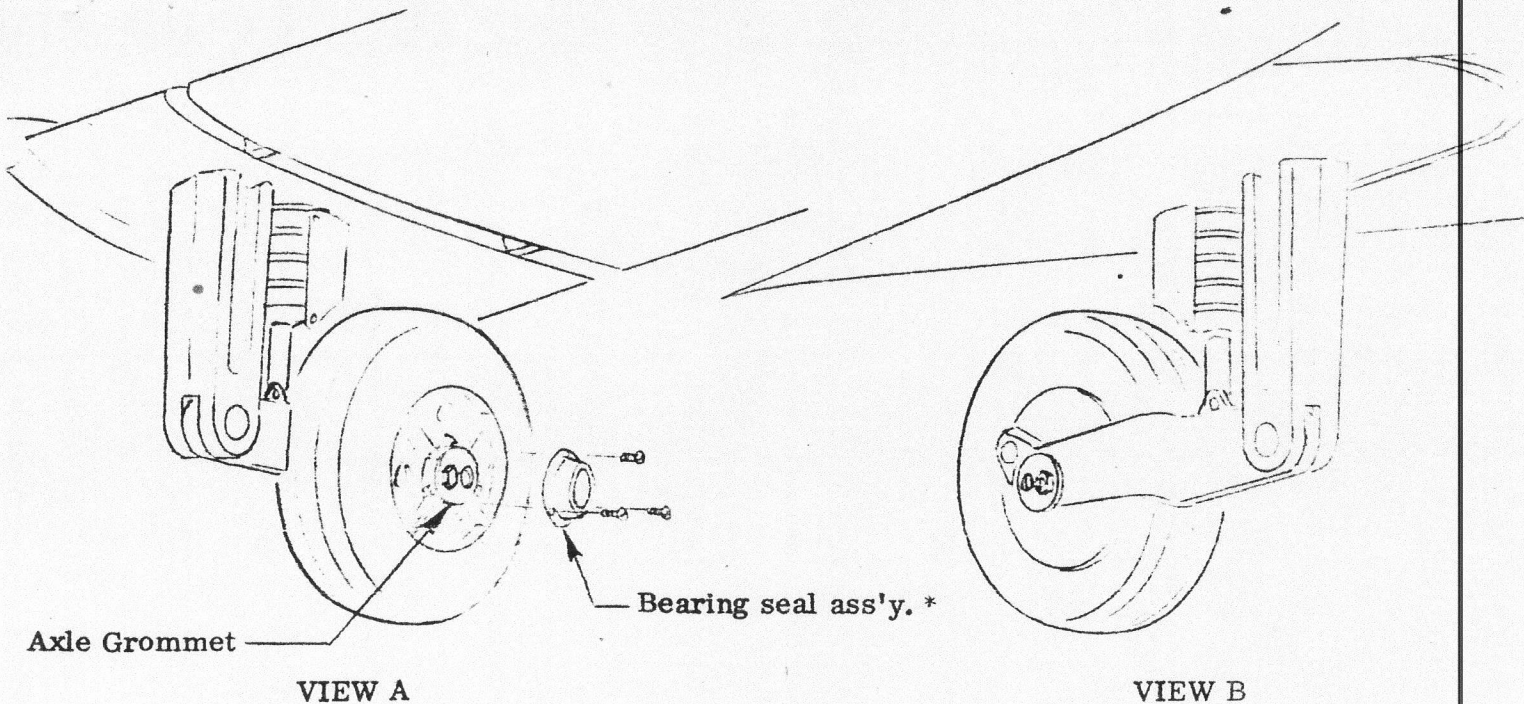
STEP #2

Slip fairing up over the fork and strut. Replace the nose wheel and secure it. Slide the fairing down over the fork and wheel. Insert the fairing stud through the left side of the fairing, through inner washer and the short spacer, through left axle grommet, through right axle grommet and long spacer, and then through inner washer and out the right side of the fairing. Check that the axle grommets are seated properly before securing the stud with washers and locknuts on outer sides of the fairing.



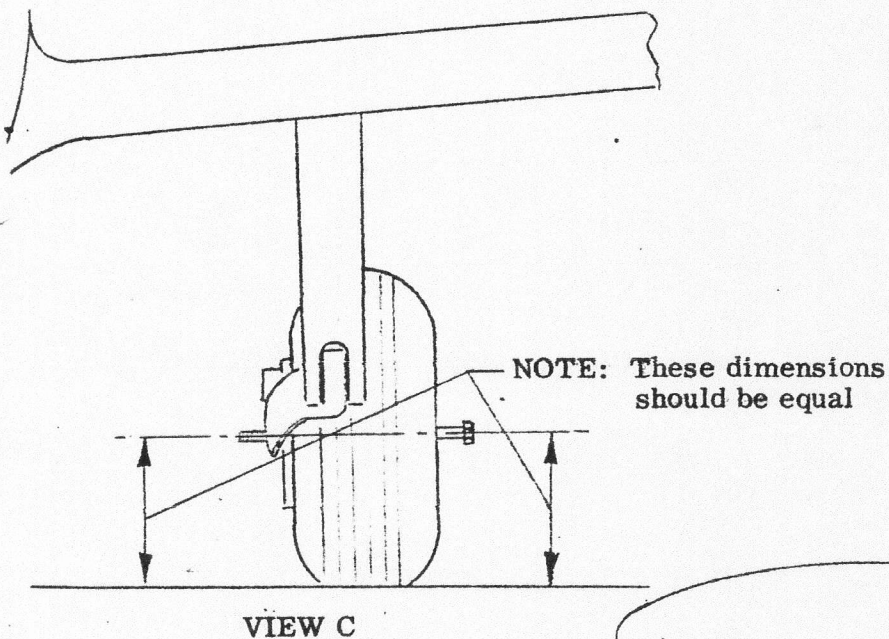
STEP #3

Re-attach the "scissors" to the fork. Check that the wheel rotates freely. Remove the tail weight and lower the nose of the plane into normal position.

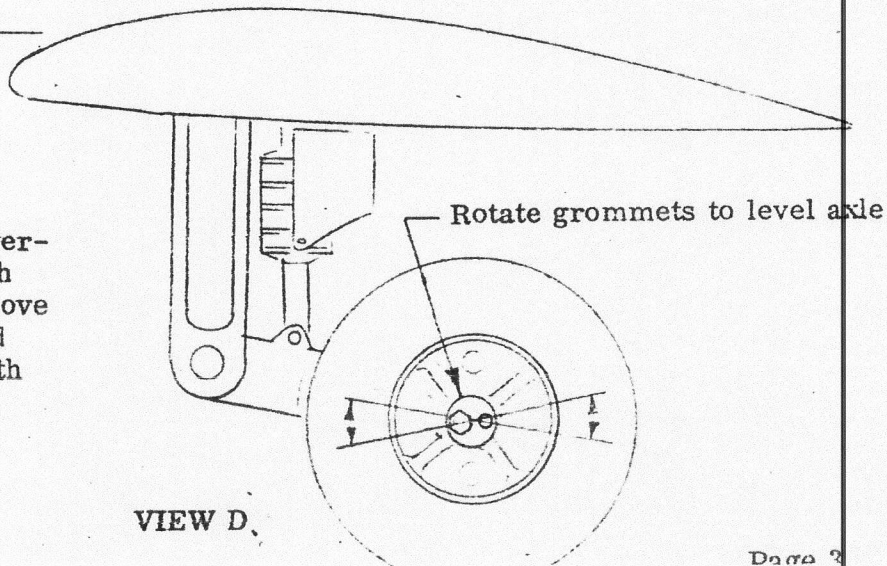


STEP #1

Remove and discard hub cap and strut fairing. Re-position the wheel nut cotter pin, if necessary, so that it is in a vertical position and will not interfere with the fairing axle and stud. Mount the axle grommets with the stud passing through the forward set of holes (Views A and B). Before tightening locknuts or the stud, insert the fairing axle through the aft set of holes (View C) and check that the fairing axle is level. The axle can be leveled by rotating the axle grommets slightly in opposite directions (View D) and then tightening the nuts of the stud.



*NOTE: On Alon and subsequent versions of the Aircoque equipped with Cleveland wheels and brakes, remove and discard bearing dust cap. Add bearing seal assembly supplied with kit.



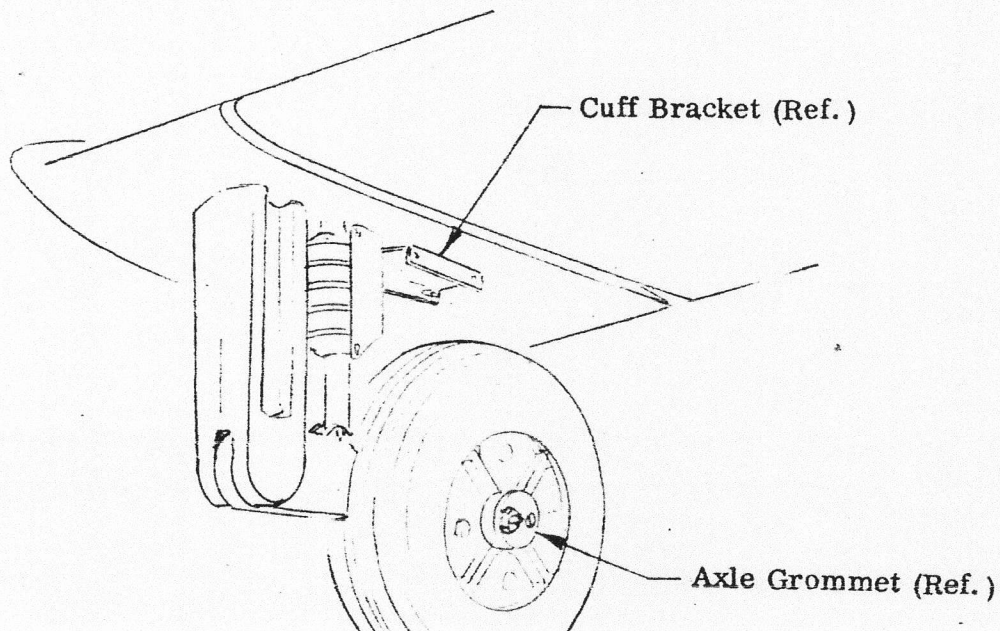
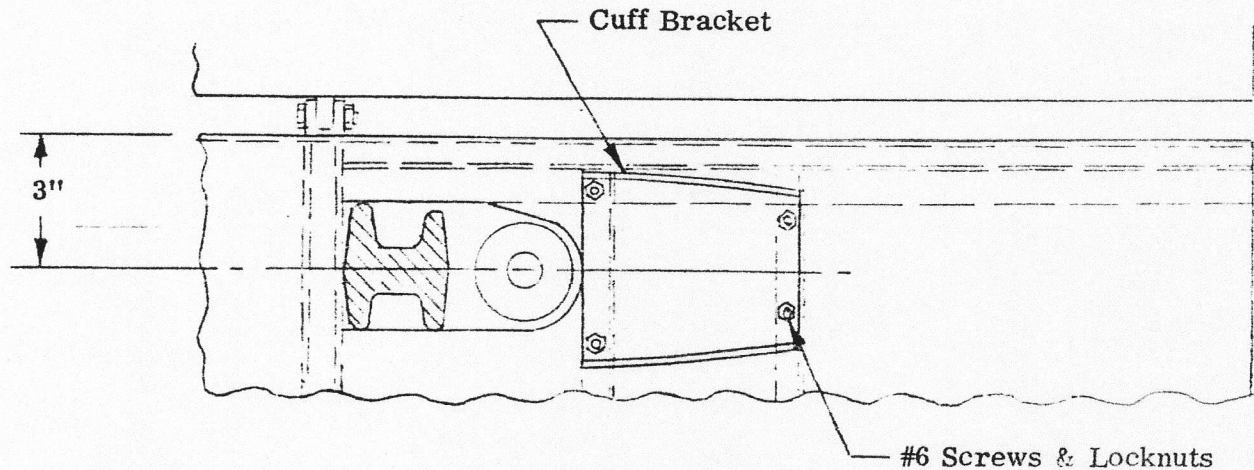
INSTALLATION - ERCOUPE MAIN GEAR FAIRINGS

STEP #2

Remove the wing-to-center section cover strips. Raise and support the left wing of the plane so that the main gear is fully extended; NOTE: An automobile type hydraulic jack may be used if placed about a foot inboard of the main gear strut, directly under the main spar. A short length of 2 x 4, padded to protect the wing from scarring, should be placed between the jack and the main spar.

Using a pencil, mark a line on the bottom of the wing 3" inboard from the edge of the center section. This line should extend aft about 6" from the edge of the clearance hole for the strut oleo. Place the cuff bracket on the bottom of the wing so that the centerline marked on the bracket aligns with the line marked on the bottom of the wing. The forward edge of the bracket should align with the aft edge of the oleo clearance hole. Using the bracket as a template, mark the location of the four mounting holes and then drill four 5/32" diameter holes. NOTE: Before drilling, check that the hole locations are in line with the rivet patterns of the internal wing stiffeners.

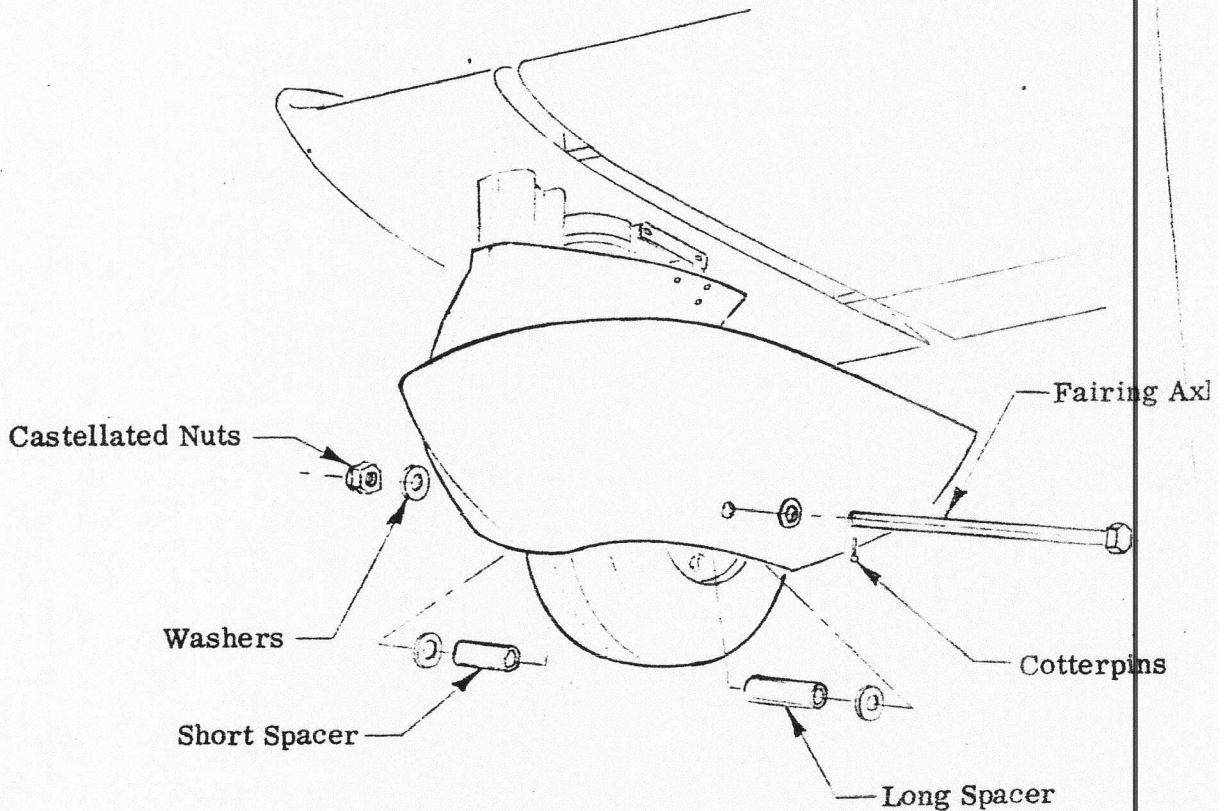
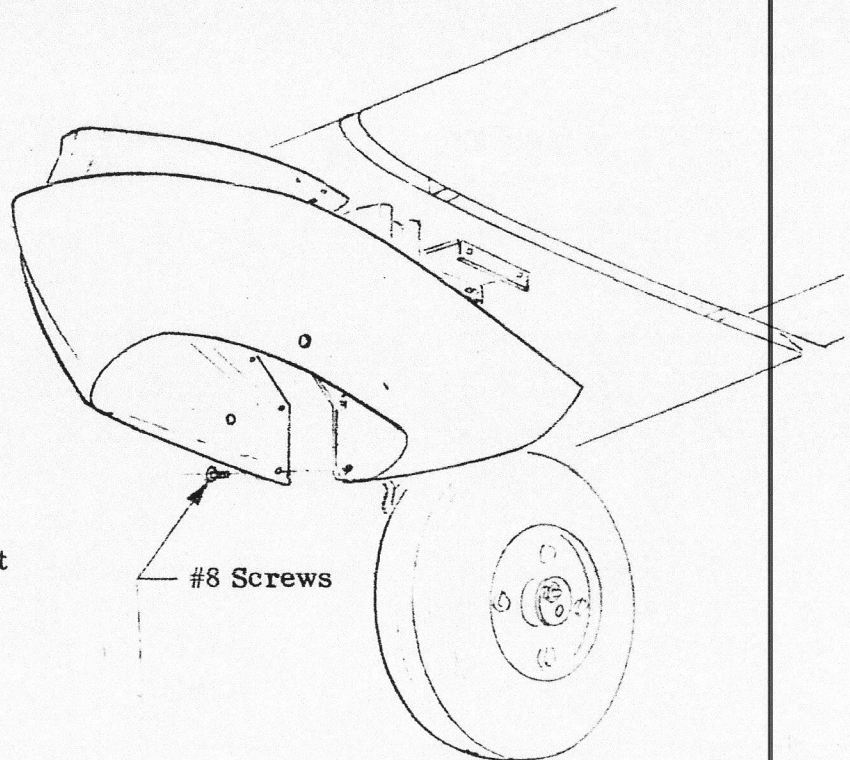
Attach the bracket to the bottom of the wing with four #6 screws and nuts. Install the screws with the heads inside, using a length of safety wire wrapped about twice around the head of the screw. After the nut has been threaded partially onto the screw, the wire can be pulled free. The nut can then be fully tightened by grasping the protruding end of the screw below the nut with vice-grips or pliers.



INSTALLATION - ERCOUCPE MAIN GEAR FAIRINGS

STEP #3

Spring the flap of the fairing apart enough to clear the strut. Slip the fairing over the strut and down over the wheel, as shown.



STEP #4

Insert the fairing axle thru the outboard side of the fairing, thru the inner washer and long spacer, then thru the aft set of holes thru the axle grommets, thru the short spacer and washer, and then out thru the inboard side of the fairing. Secure the fairing axle with washers and castellated nuts. Do not over-tighten the nuts, allowing about 1/16" end play in the fairing axle. Secure nuts in position with cotterpins. Fasten the flap of the fairing

INSTALLATION - ERCOUCPE MAIN GEAR FAIRINGS

STEP #5

Tilt aft end of fairing down for better access and install aft set of brackets of the stabilizing linkage assembly (note that assembly is marked "LH" for left-hand part) to aft end of the fairing sleeve. Use #6 screws and locknuts provided. Attach the cuff guides as shown, under the nuts of the forward set of screws for the brackets. Note that the stabilizing linkage arm faces out.

Washer

Washer

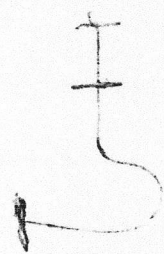
#10 Bolt

Fairing sleeve

Guides

Stabilizing linkage ass

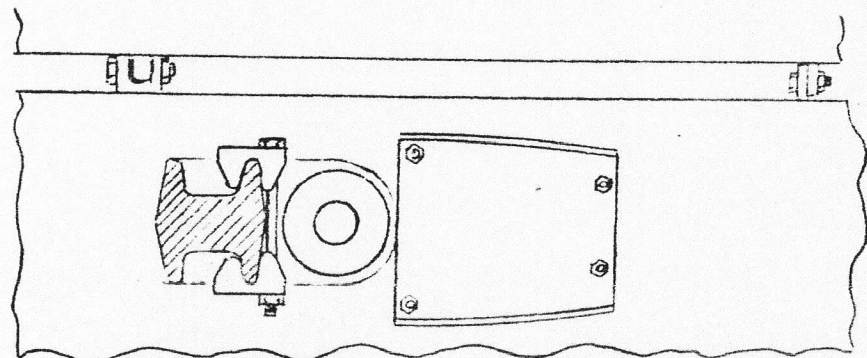
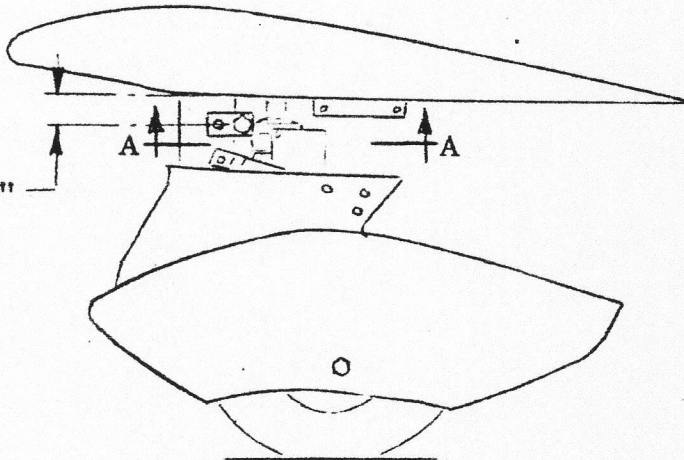
#6 Screws and locknuts



STEP #6

Clamp the forward set of brackets of the linkage assembly to the aft flange of the main gear strut so that the center of the linkage arm pivot bolt is $1\frac{3}{8}$ " below the bottom of the wing. Lower the wing so that the wheel is in normal position. Note that the fairing sleeve remains centered about the strut at both extremes of travel. The fairing can be tilted in or out, as may be required for centering, by removing the fairing, loosening the grommet stud, and rotating the grommets in opposite directions a few degrees to adjust the level of the fairing axle (see View D, page 3).

$1\frac{3}{8}$ "

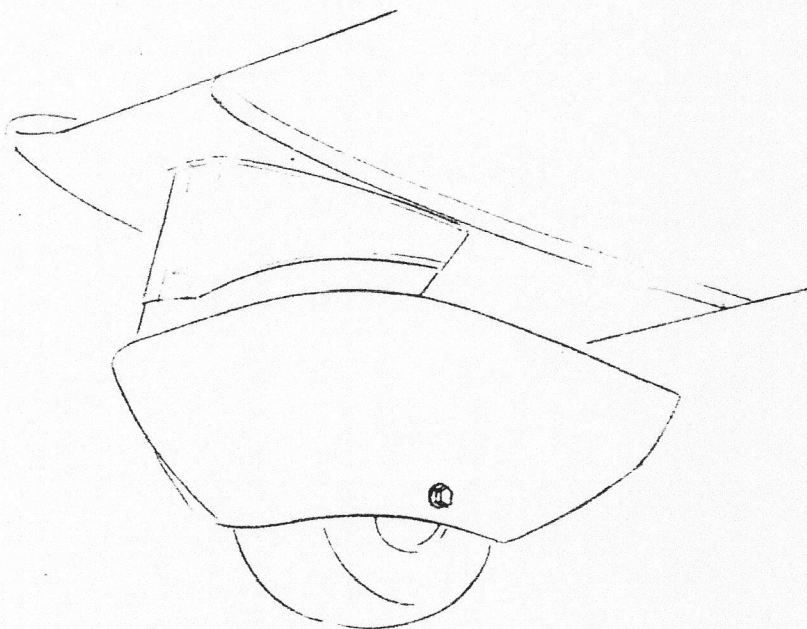
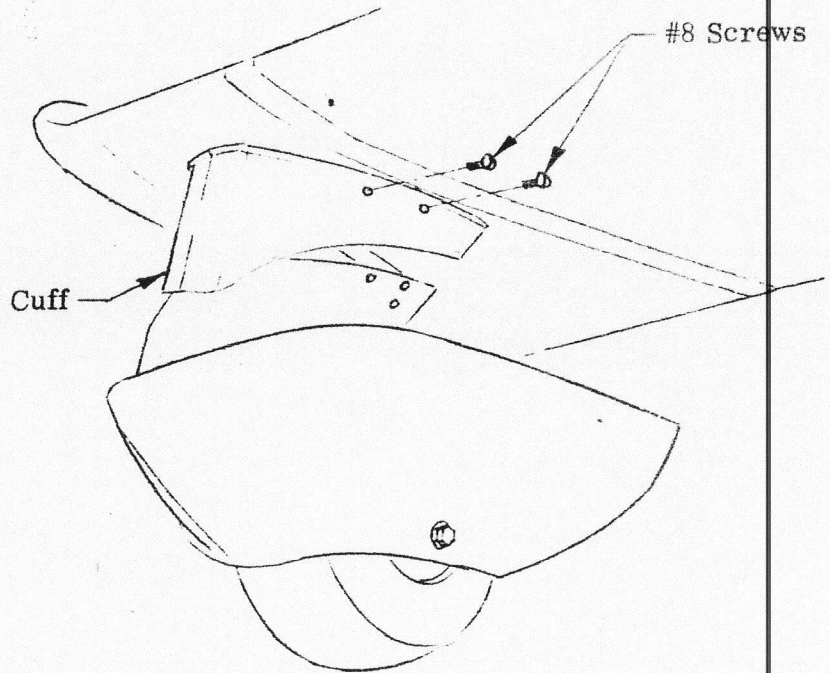


VIEW A-A

INSTALLATION - ERCOUBE MAIN GEAR FAIRINGS

STEP #7

With the wing raised so that the wheel is extended about half of its full travel, attach the cuff to the bracket on the wing with four #8 pan-head screws. Raise the wing so that the wheel is fully extended and check that the oleo limit-stop rests on the rubber stop-block on the strut. If the cuff prevents full gear extension by excessive interference at the forward lip of the cuff, remove the cuff and lower the linkage arm brackets on the strut an additional 1/4" to 1/2". Re-install the cuff and check that the wheel will fully extend.



STEP #8

Slowly lower the wing, checking that the cuff does not cause interference as the strut compresses. The cuff should slip easily over the guides (the guides may require slight re-forming by hand to assure that the cuff will be properly deflected around the sleeve of the fairing). Raise the wing again and then lower it abruptly, as in landing, to verify proper functioning. Repeat all foregoing procedures for installation of fairing on the right gear.

PARTS BREAKDOWN - MAIN GEAR FAIRING

1.	KE2-101-3	Fairing (LH)	13.	51B464	Fairing Axle Bolt
2.	KE2-101-4	Fairing (RH)	14.	KE2-102-7	Stud
3.	KE2-101-7	Cuff (LH)	15.	AN310-5	Castellated Nut
4.	KE2-101-8	Cuff (RH)	16.	AN3-4	Bolt
5.	KE2-102-3	Axle Grommet	17.	AN365-632	Locknut
6.	KE2-102-9	Strut Bracket	18.	AN365-516	Locknut
7.	KE2-102-11	Fairing Bracket (LH)	19.	AN365-1032	Locknut
8.	KE2-102-12	Fairing Bracket (RH)	20.	AN515-6-12	Screw
9.	KE2-102-13	Stabilizer Link	21.	AN526-6-6	Screw
10.	KE2-102-17	Cuff Bracket (LH)	22.	AN526-8-6	Screw
11.	KE2-102-18	Cuff Bracket (RH)	23.	AN3-5	Bolt
12.	KE2-102-21	Cuff Guide	24.	AN3-33	Bolt

