

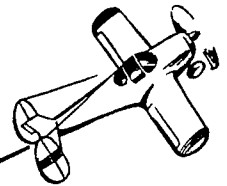
Ercoupe BULLETIN

ERCOUPE
SERVICE
BULLETIN

No. **20**

REVISION: A
09/01/2008

SUBJECT: Ailerons—Reinforcement of



It has been found desirable to increase the strength of the aileron balance weight bracket to beam attachment. As is our policy, the information necessary to incorporate the improvement in delivered Ercoupes is presented. The modification required to obtain the added service life is the addition of two reinforcement plates to each aileron. It is recommended that this bulletin be complied with not later than the next 100 hour inspection except where visual inspection shows the immediate need of a repair.

Effective Ercoupe serial number 3785, the aileron assembly was redesigned to strengthen the assembly at this location, therefore, the affected Ercoupes are serial nos. 113 to 3784, inclusive, with the exception of the following, that also have new design incorporated:

| | | | | | | |
|------|------|------|------|------|------|------|
| 3719 | 3726 | 3738 | 3745 | 3756 | 3765 | 3774 |
| 3720 | 3729 | 3741 | 3747 | 3759 | 3767 | 3777 |
| 3723 | 3732 | 3742 | 3750 | 3762 | 3768 | 3780 |
| 3724 | 3735 | 3744 | 3753 | 3764 | 3771 | 3783 |

An Aileron Reinforcement Kit is available for complying with this Bulletin.

1. Removal of Ailerons:

α. Remove aileron as follows:

- (1) Disconnect push rod (415-52034) from aileron control horn (415-16013) by removing cotter pin (415-52070-7), shear nut (415-52070-13), plain washer (415-52070-18) and bolt (415-52070-11).
- (2) Remove aileron from wing by removing eight elastic stop nuts (415-14000-2) and truss head screws (415-14000-3) from hinge attachment to wing.

2. Removal of Aileron Balance Assemblies:

α. Remove balance assembly from aileron by removing two self-locking nuts (415-00002-13) and truss head screw (415-00002-32) from forward end of balance plate, and the two truss

head screws (415-00002-32) from aft end of balance plate.

3. Installation of Aileron Beam and Skin Reinforcement Plates: (415-16039-5) and (415-16039-6) (Ref. Page 4. Fig. 1)

α. Install aileron beam and skin reinforcement plates as follows:

- (1) Clean the aileron beam and lower skin of dirt and grease in the area where plates will be added.
- (2) Drill relief holes at the ends of any cracks.
- (3) Drill out the three 100° countersunk rivets from the aileron beam and lower skin seam at the balance assembly attaching flange. See 1 on Figure 1, page 4.
- (4) Locate the beam reinforcement plate using screws or fasteners through the two balance assembly attaching holes to hold plate in place, and drill three No. 40 holes through this plate, using original holes as template.
- (5) Insert Cleco buttons or other type fasteners in these three holes. Drill four No. 29 (.136) holes through aileron beam using the beam reinforcement plate as a template. See 2 on Fig. 1, page 3.
- (6) Remove the beam reinforcement plate and locate the skin reinforcement plate, using four screws through the balance assembly attaching holes to hold plate in place.
- (7) Drill three No. 40 (.098) holes through this plate, using original aileron lower seam holes as template.
- (8) Insert Cleco buttons or other type fasteners in these three holes.
- (9) Drill two No. 29 (.136) holes through skin using holes in reinforcement plate as template. See 3 on Fig. 1, page 3.

- (10) Remove skin reinforcement plate and burr all holes.
- (11) Replace both reinforcement plates, using Cleco buttons or other type of fasteners to hold plates in place.
- (12) Rivet beam reinforcement plate to beam, using four Dupont Explosive Modified Brazier Head Rivets (DR134A-8) (Red) (Marked as 2 in Fig. 1, page 3). Dupont rivets should be set with a Dupont Riveting Iron; however, a heavy duty electric or torch heated soldering iron may be used as a substitute.
- (13) Rivet the skin reinforcement plate to the lower skin using two Dupont Explosive Modified Brazier Head Rivets (DR134A-10) (Blue) (Marked as 3 in Fig. 1, page 3.)
- (14) Countersink the three holes in the lower side of the skin reinforcement plates 100°

and rivet both reinforcement plates along lower aileron beam flange using three 100° countersunk rivets (AN426-AD3-4).

4. Installation of Aileron Balance Assemblies:

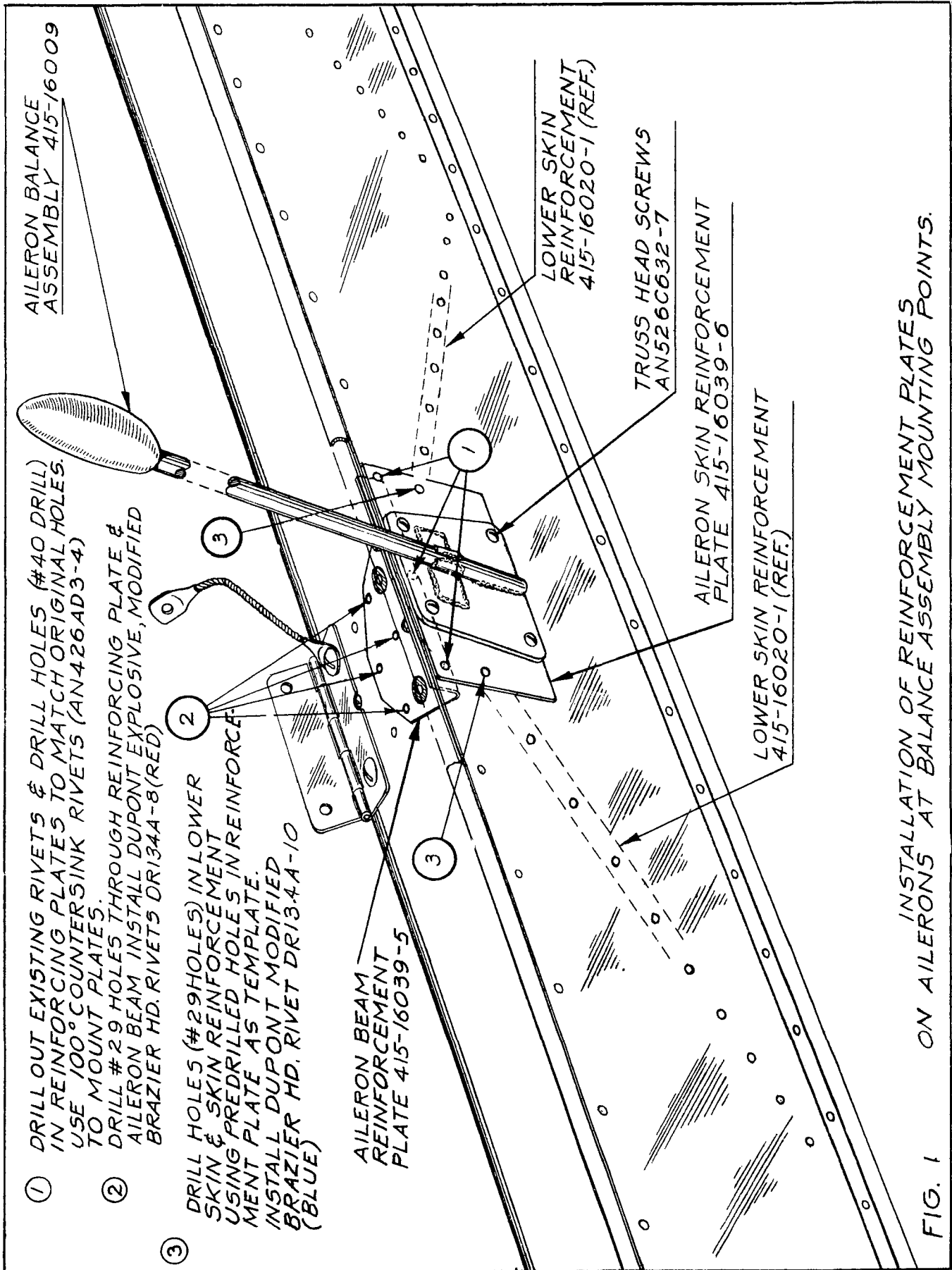
- α. Re-install the aileron balance assembly using the four new truss head screws (AN526C632-7), and original self-locking nuts and anchor nuts.

5. Installation of Ailerons:

- α. Re-install ailerons in reverse order of Paragraph 1. The aileron bellcrank pushrod must have free motion in either direction when ailerons are neutral, so that there is no binding of the Heim Unibal rod end bearings when aileron is displaced to full limits. Check rigging of ailerons in accordance with Memorandum No. 36.

The Aileron Reinforcement Kit, Part Number 415-16039, consists of the following:

| <i>Nomenclature</i> | <i>Part Number</i> | <i>No. Req.</i> |
|---|--------------------|-----------------|
| Plate; Beam Reinforcement | 415-16039-5 | 2 |
| Plate; Skin Reinforcement | 415-16039-6 | 2 |
| Rivet; Dupont Explosive Modified Brazier Head (DR134A-8) (Red) | 415-16039-1 | 8 |
| Rivet; Dupont Explosive Modified Brazier Head (DR134A-10) (Blue)..... | 415-16039-2 | 4 |
| Rivet; 100° Countersunk (AN426AD3-4)..... | 415-16039-3 | 6 |
| Screw; Truss Head (AN526C632-7)..... | 415-16039-4 | 8 |



① DRILL OUT EXISTING RIVETS & DRILL HOLES (#40 DRILL) IN REINFORCING PLATES TO MATCH ORIGINAL HOLES. USE 100° COUNTERSINK RIVETS (AN426AD3-4) TO MOUNT PLATES.

② DRILL #29 HOLES THROUGH REINFORCING PLATE & AILERON BEAM. INSTALL DUPONT EXPLOSIVE, MODIFIED BRAZIER HD. RIVETS DR134A-8 (RED)

③ DRILL HOLES (#29 HOLES) IN LOWER SKIN & SKIN REINFORCEMENT USING PREDRILLED HOLES IN REINFORCEMENT PLATE AS TEMPLATE. INSTALL DUPONT MODIFIED BRAZIER HD. RIVET DR134A-10 (BLUE)

AILERON BEAM REINFORCEMENT PLATE 415-16039-5

LOWER SKIN REINFORCEMENT 415-16020-1 (REF.)

TRUSS HEAD SCREWS AN526C632-7

AILERON SKIN REINFORCEMENT PLATE 415-16039-6

LOWER SKIN REINFORCEMENT 415-16020-1 (REF.)

AILERON BALANCE ASSEMBLY 415-16009

FIG. 1 INSTALLATION OF REINFORCEMENT PLATES ON AILERONS AT BALANCE ASSEMBLY MOUNTING POINTS.