TRANSLATION

A E R O S P A T I A L E

B T A OFFICE

BOURGES WORKS

S E R V I C E B U L L E T I N

TYPE: STAMPE SV 4 (All types)

1st March 1971

(DEF/044)

SERVICE BUILETIN No.1

SUBJECT: STAMPE AIRCRAFT -

Replacing the main lower wing attachment tie rods on the fuselage.

I - GENERAL

A - Apolicability -

Aircraft : STAMPE SV-4 (All types)

Component : Fuselage (main attachment fitting tie rods)

Assembly : Tie rods reference STAMPE No. 44 880

B - Purpose -

SAFETY -
To stop deterioration by ageing of a vital connection by strengthening and improvement to its fatigue resistance.

C - Definition -

The existing tie rods are to be removed. They must be disposed of. The new tie rods are in drawn steel of high strength. Their ends have special nuts with an I.S.O rolled thread. The protruding extremities have a squared section so that a 6 mm fork spanner can be used.

D - Application -

1) On aircraft which are cleared for aerobatics must be embodied before flights are resumed.
The life of a new tie rod is 500 flying hours (see letter STAe/A5 No. 33 097 of 20th March 1970)
Additional conditions: carrying out the work detailed in the Major Inspection Schedule approved on 20th October 1970 by the Secretary General of Civil Aviation (see para. K page 3).

2) On aircraft other than those specified previously:
Mandatory embodiment during the next major inspection or by anticipating this according to the condition of the tie rods.

3) On all spares wherever they were supplied from.

E - Approval -

The embodiment of this modification, approved by letter STA/A5 No. 33 9 of 14th April 1970, is a condition for themaintenance of the airworthiness state of the aircraft (see para. 9 page 3).

F - Labour -

Qualified known staff: at least two people.

G - Supply of the kits -

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In accordance with the technical definition of the SNI Aerospatiale.

H - Spares -

According to requirements (see life, para. D.1 page 2).

I - Tooling -

Standard aircraft riggers tools.
Clinometer or equivalent.
Tension meter for adjusting the wing rigging.
Wooden board for adjusting the incidence.
Cradle of local manufacture to lift and support the fuselage and the upper wings when the lower wings are removed.

J - Weight and centre of gravity variation -

Not affected.

K - Reference -

Decision to embody given in Airworthiness Directive 70-35 from the General Secretary of Civil Aviation, distributed on 25th March 1970 by the Bureau Veritas.

II - INSTRUCTIONS FOR EMBODIMENT OF MODIFICATION -

A - Work to be done - See Drawing I - page 10

1 - Preparation -

a) In the case of Major Inspection -

The aircraft is dismantled and is suitably trestled.
Work is carried out during the fuselage inspection.
The compression legs of the main undercarriage, if they are still connected, must be suspended (the wheels must not touch the ground).

b) Anticipated work -

- Empty the fuel and close the taps.
  Take the aircraft inside sheltered from wind and weather.
  Display clearly the placards "No Smoking".
  Check that the magneto switches are in the "OFF" position.
  Ensure that the shut off cock of the starter air bottle is closed.
  Remove the electrical battery, if any.
  Check the condition of the engine extinguisher bottle and protect the trigger mechanism from an unintentional operation.
- Put the aircraft on two cradles: one in front, lined with felt padding supporting the fuselage below the front frame, the other at the back under the tail wheel.
  The height is to be such that the main wheels are just clear of the ground and that the fuselage is in the flying position in anticipation of the re-assembling when this level is required for the rigging adjustment.

2 - Dismantling -

a) Support the upper and lower wing tips.

b) Remove the fairings between the wings and the fuselage.

c) Disconnect the aileron control cables in the fuselage.

d) Disconnect at the nearest connection to the fuselage and at the strut root, the two Pitot pipes.

e) Slacken the aileron liaison rigging and disconnect them from the lower ailerons.

f) Slacken and then disconnect the outer wing rigging on the lower wings. Disconnect the struts from the lower wings.

WARNING: Do not disturb the rigging of the centre section.

g) Remove the front and rear pins of the lower wing attachments to the fuselage.
Protect the threads when extracting.

WARNING: Each lower wing weighs about 25 kg.
Ensure that disengagement from the fittings is done without damage to the fittings and that there is no tendency for the fuselage to move on its trestles.

h) Clean the surroundings of the fittings, reference 1 and 2 (see Drawing 1). Do not use trichlorethylene, acetone or carbon tetrachloride.
Use a neutral detergent of the Teepol type, or if necessary white spirit, to be sponged off after it is applied.

i) Measure the dimension [L] to 0.5 mm (see drawing in appendix) and note this dimension

j) Remove the split pins and unscrew the four nuts on the two existing tie rods.
Pull out the tie rods being careful not to damage the inside of the fuselage.
The removed tie rods and their bolts must be disposed of.

3 - Prior checks -

a) Verify the integrity of the attachment fittings, of the fuselage cross member, of the gussets, of the attachment bolts and the wood structure.
In case of defects carry out repairs.

b) Measure the dimension [X] on the two new tie rods (reference 3, cross section B of drawing in the appendix).
Check by subtracting the measurement [X] from the measurement [L] previously obtained, the two measurements [M] are to be equal on the right and left.

NOTE:

- If the dimension [M] is below 2 mm the tie rods are not suitable for the aircraft concerned, and are to be returned with an explanatory note.
- If dimension [M] is close to 7 mm, verify that the special nuts, reference 4, have the necessary thread recess of a depth of 2 mm so as to ensure proper tightening without any possibility of the nut coming to the end of the tie rod thread.
- If measurement [M] is greater than 7 mm the tie rods are not suitable for the aircraft concerned and should be returned with the necessary explanatory note.
- The threads being of the rolled type they cannot be touched up with dies or on a lathe. This could well affect the safety of the aircraft in flight.

4 - Fitting the tie rods -

a) If the tie rods are suitable, ream out to $10.2 \pm {}^{0.06}_{0}$ mm diameter the four bores on the fuselage fitted with the attachment fittings.
Be careful to hold the fitting during the reaming by a temporary bolt of 8 x 60 tightened up in the adjacent hole.
Remove the swarf and slightly trim the entries to the reamed apertures.

b) Smear the length and the threads of the tie rods with MASTINOX 6856 M zinc chromate paste (or equivalent)

c) Without letting the paste dry, insert the first tie rod in its housing, taking care not to bend it or damage the threads.
Keep the two temporary bolts, which have been fitted in the adjacent holes in position.
Check that the ends of the tie rod protrude from the fittings by a length which must be equal on each side of the fuselage (about 0.5 mm).

d) Fit the special nuts, reference 4 avoiding rotation of the tie rods by means of the holding spanner on the squared section of the tie rod designed for this purpose. Put on the nuts without tightening.

e) Take out the two temporary holding bolts and fit the second tie rod in the same way as the first. Put on the nuts without tightening.

f) Tighten the four hexagonal nuts (preferably with a torque spanner) by 1/6th of a turn alternately:
forward left - rear left - rear right - forward right - and so on until a tightening couple is obtained which must not be more than $3 \pm {}^{0.1}_{0}$ m.kg (e.g. $29.4 \pm {}^{1}_{0}$ N.m)

NOTE: The torque figure, if this was exceeded would entail crushing of the in between wood structures. For this reason it is recommended that at a later tightening check of the nuts the torque should be limited to $2.6 + {}^{0}_{0.1}$ m.kg (e.g. $25.5 + {}^{0}_{1}$ N.m) -

g) Insert temporarily, each wing attachment bolt and its nut in the lug of the forward fuselage fitting.
Considering the space, select the best slot in each tie rod nut and bore the rod through the slot with a hole of 2.6 mm.
The drill should be high speed fluted steel. The split pin reference 5 should be fitted.
Remove the wing attachment bolts which had been temporarily inserted.

h) Check the tightness of the two bolts on each fitting adjacent to the tie rod ends. If they tend to be loose they should be taken up carefully and new split pins fitted.

i) Check the tightness and the locking of the 5 connecting bolts of the metal gussets of the fittings on each side of the fuselage.

j) Ensure the corrosion protection by touching up with paint or anti-rust grease, as required.

5 - General Assembly -

a) Check the condition of the components before refitting.

b) Re-assemble the parts removed in reverse order to their dismantling: wings, main pins, struts, rigging, piping, aileron control cables, banking rigging.
Lubricate the mechanical assemblies before fitting.
Check the lockings of pins and bolts.

c) Adjust the airframein accordance with the diehedral, incidence, sweep back, rigging tensions, given in the servicing card or in the aircraft maintenance manual.

d) Adjust the aileron control and the aileron movements.

e) Check for leaks in A.S.I. system

NOTE: For rigging adjustments it is mandatory to use a tension meter and the staff employed must be known to be qualified.

For all work not detailed reference should be made to the technical notes concerned and to the standing requirements.

B - Making fit for flight -

a) Proceed with the approved inspection and enter the modification embodied in the aircraft log book (the fitted tie rods have a life of 500 flying hours)

b) Get the aircraft ready for its test flight:
Re-fit the fairings and covering strips, remove the trestling, fill with fuel and oil, check the starting device, the fire extinguisher, the electrical system, the flying controls, the cockpit clearance (presence of foreign matter or loose parts): the aircraft instruments and all the other normal pre-flight checks.

c) Enter the results of the flight test.
If the behaviour was considered satisfactory proceed to the "V" position for the aircraft.