

AIRWORTHINESS APPROVAL NOTE NO: 24537

APPLICANT: Mr C E Stringer

AIRCRAFT TYPE: Reims Cessna 172L

REGISTRATION NO: G-AZTS                      CONSTRUCTOR'S NO: 0866

CERTIFICATE CATEGORY: Transport Category

**To Approve The Installation Of A Portable Hand Control Bar For Operation Of The Rudder  
And Brakes On The Cessna 172 In Accordance With FAA Approved STC SA 860 SO for  
Certification in the Transport Category (Passenger).**

**1.0     Introduction**

The Reims Cessna 172L is a variant of the Cessna 172 series of four seat high wing aeroplanes which was manufactured under license in France by Reims Aviation. The basic aircraft type has been approved by the CAA for Certification in the General Purpose Category [New Transport Category (Passenger)] by AAN 11927.

This FAA Supplemental Type Certificate introduces a removable control bar which allows hand operation of the rudder and brakes of the aircraft to permit operation by disabled pilots who have no use of their legs. The purpose of this AAN is to approve the installation of this bar on aircraft certificated in the Transport Category.

**2.0     Basis of Approval**

This modification has been approved by the FAA by virtue of the issue of Supplemental Type Certificate Number SA 860 SO against the requirements of the United States Civil Air Regulations Part 3 for installation on Cessna 172 series aircraft only. It is noted that the approval is specific to American constructed aircraft, as evidenced by the reference on the STC to Type Certificate Data Sheet Number 3A12, but it is accepted that the Reims constructed aircraft is identical in all related aspects. This approval of the basic design is acceptable to CAA. Approval on the Reims constructed aircraft is based upon equivalence with the standards approved by the STC.

### **3.0 Description**

This modification consist of a "T" bar clamped by four screws to the rudder pedals. Two hooks hang down and are loosely retained by the rudder pedals. A ring is attached to the upper end of the bar for the operators arm to pass through allowing operation of the throttle and other controls concurrently with the rudder and brakes. The clamps on the rudder pedals are connected to the "T" bar by two rods with spherical bearings at the aft end to transmit the required motion from the bar to the rudder pedals.

Adjustment is provided of the length of the hooks, the screws which transmit the rudder motion, the angle at which the hooks hang and the relative angular position of the operators ring. It is noted that the adjustments are not subject to positive locking.

### **4.0 Technical Investigation**

The basic design of the device is accepted on the basis of equivalence to the approval by FAA. It was established that the rudder travel of the Reims Cessna 172L was the same as that for the American constructed aircraft by reference to the appropriate FAA Type Certificate Data Sheets, and thus that the device would operate correctly and would allow full rudder travel to be achieved.

A physical review of the device on the aircraft showed that the setting up of the device was critical to achieve full rudder travel, and that to transfer the device between aircraft would require a re-adjustment.

The adjustment of the bar has been set for this aircraft by a licensed engineer and "cheat lines" have been introduced to enable it to be identified if the adjustment has inadvertently moved prior to the installation of the bar. Any required adjustment must be carried out by a licensed engineer. It has been demonstrated by the applicant that, once adjusted, the device can be repeatedly installed and that full travel of the rudder can be achieved each time.

Installation of the device in the aircraft must be carried out by a person authorised by CAA to do so to ensure correct fitment. A placard to this effect is installed on the equipment in a conspicuous position (to minimise the possibility of inadvertent installation by unapproved individuals).

The correct adjustment of this device is extremely important to ensure correct operation and will be affected if the rudder circuit is disturbed or after a period of wear. The bar must therefore be associated with a specific aircraft by serial number and the LAMS Schedule for the aircraft amended to require a check of the adjustment (and re-adjustment if necessary) of the bar at each 50 hour check.

The STC requires an FAA approved Flight Manual Supplement to be incorporated in the flight manual which introduces a cross wind limit of 12 knots. (the basic aircraft has a limit of 17 knots).

### **5.0 Flight Testing**

This aircraft has been subject to a flight test by CAA to examine the operation of the device in flight. The operating characteristics of the aircraft with the device installed were considered acceptable. Flight Test Report FTR 9115PM refers.

**6.0 Flight Manual**

With this modification installed, the Flight Manual for the aircraft must incorporate the Union Aviation FAA Approved Supplement Flight Manual for the Cessna 172 dated October 21, 1975.

NOTE: CAA have recorded approval of the above FAA approved Flight Manual Supplement for incorporation into the Cessna 172L 1972 Owners Manual Reference D902-13 as applicable to this aircraft.

When this modification is installed in other variants of Cessna 172, it must be confirmed that CAA have approved the FAA Supplement for incorporation in the Flight Manual applicable to the specific aircraft.

**7.0 Maintenance**

The LAMS Schedule for the specific aircraft must be amended to include the bar used on the aircraft by serial number as part of the aircraft's equipment, and to require it's adjustment to be checked and re-set if necessary at 50 hour intervals. Any adjustment to be carried out by a licensed engineer.

The "cheat lines" must be replaced after any re-adjustment.

**8.0 Approval**

The installation of the disabled control bar in accordance with FAA Approved STC number SA 860 SO is approved for installation and removal on this aircraft registration G-AZTS or on any applicable Cessna 172 variant as stated in the STC provided the device is installed and removed by a person approved by CAA for the purpose (and placarded accordingly), the Maintenance Schedule for the aircraft is amended as defined in section 7.0 this AAN and provided that the aircraft is operated in accordance with the approved Flight Manual, including the supplement as specified in section 6.0 of this AAN.

K D RUSSELL

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For the Civil Aviation Authority

Date 7th September 1994