AUSTER TECHNICAL NOTES

No 3 Issue 1

AUSTER Mk IV (4) and Mk V (5) CARBURETTOR HOT AIR CONTROLS

Most Auster Mk 4 and Auster Mk 5 owners will be aware that their aircraft are normally powered by a Lycoming 0-290-3 engine. A few owners may be aware that this particular engine was initially designed and produced by Lycoming as a military ground power unit. However during World War 2 a quantity of these engines were supplied by the U.S.A. to the U.K. as Lend/Lease items and were used for installation in military Auster Mk IV and Mk V aircraft. This was due to the unavailability of De-Havilland Gipsy Major Series 1 engines as almost all of the Gipsy Major 1 engines being produced at that particular time had been allocated for Tiger Moth production.

Towards the end of World War 2 the Lycoming O-290-3 engine was approved for aircraft use under the authority of the American Federal Aviation Administration by the issue of Type Certificate Data Sheet No E-229 which states in Note 5 (d) that the following conditions must be complied with when the O-290-3 engine is installed in a certificated aircraft. The first condition is to delete the –"3" from the engine Data Plate (situated at the forward end of the engine oil sump) and re-stamp same with the letter "C", thereby re-designating the engine as a Lycoming O-290-C and secondly the engine Data Plate has to be further stamped with the with the Type Certificate Data Sheet No "229". The aforementioned alteration does not appear to have been generally carried out in the U.K. and it is quite unusual to find a Data Plate that is in compliance.

However during military service the Auster Mk IV was powered by the Lycoming O-290-3 engine and the Auster Mk V was powered by the Lycoming O-290-3/1 engine, the suffix "/1" being added by Taylorcraft Aeroplanes England Ltd (later Auster Aircraft Ltd) to identify that the "/1" engine, when supplied to the Air Ministry as an Engine Change Unit (that is an engine complete with all its ancillary items) was only suitable for installation into the Auster Mk V. The aforementioned was due firstly, to the fact that that the Carburettor Hot Air Control on the Carburettor Air Intake Box Assembly on the Auster Mk V operated in the OPPOSITE sense to that of the Hot Air Control on the Auster Mk IV. The aforementioned resulted in the situation where the Carburettor Hot Air Control on the Auster Mk IV had to be PUSHED IN for HOT AIR whereas the Carburettor Hot Air Control on the Auster Mk V had to be PULLED OUT for HOT AIR. Secondly, the Lycoming O-290-3/1 engine was fitted with a Vacuum Pump in order to operate the Gyro Instruments in the Auster Mk V Blind Flying Panel. (The Auster Mk IV was not fitted with a Blind Flying Instrument Panel).

After the end of World War 2 the Auster Mk IV and Mk V aircraft that remained in military service were sold by the Air Ministry on to the civil market where they were designated as Auster Mk 4 and Auster Mk 5 aircraft, but as one may realise that over the subsequent years, Auster Mk 4 engine installations have been fitted into Auster Mk 5 aircraft and vice-versa. Additionally individual Carburettor Air Intake Box assemblies have no doubt been changed between the two aircraft types and if one was not familiar with the two different operational aspects of these air intake box assemblies, then error could easily occur. Also the Carburettor Hot Air Control between the cabin and the Carburettor Air Intake Box Assembly would not necessarily highlight any problem, due to the control being of simple design and construction, consisting of a Bowden Outer Cable with a Piano Wire inner, the length of the cable being adaptable to both installations without alteration. In view of the aforementioned it is not difficult to realise that the carburettor hot air facility could be operating in the opposite sense to that annotated on the Control Knob in the cabin.

Although there appears to have been very few reports of carburettor icing problems with Auster Mk 4 and Auster Mk 5 aircraft, there have been a number of reports of poor performance, therefore it is advisable that owners of Auster Mk 4 and Auster Mk 5 aircraft, when fitted with a Lycoming O-290-3(C) engine check their Carburettor Air Intake Box Assemblies to determine as to whether or not they have a PUSH FOR HOT AIR or alternatively a PULL FOR HOT AIR facility installed. Additionally the carburettor Hot Air Control Knob in the cabin should be checked for the correct annotation on same in relation to the operation of the Carburettor Hot Air Intake Box found fitted. The diagrams shown on Pages 3 and 4 of this Technical Note will provide additional clarification when checking same.

Auster Service Bulletin No 8 Item 2, dated September, October, November 1947 also refers to this subject, but as this Bulletin was issued soon after the release of Auster Mk IV and Mk V aircraft on to the civilian market by the Air Ministry, it does not take into account the possibility of interchanging Engine Installations and Carburettor Air Intake Box Assemblies, between the two aircraft types over the subsequent years.

The above information ALSO applies to Auster Mk 4 and Auster Mk 5 Series aircraft that have been modified to install a Lycoming 0-290-D Series engine or Lycoming 0-320 Series engine or similar type of engine where the original Auster Mk IV/Auster Mk V Carburettor Air Intake Box Assembly has been retained as part of the alternative power plant installation.

The Carburettor Hot Air Intake Box Assembly for the Auster Mk IV (4) is Part No GA 6183 Drawing No DGF 17.

The Carburettor Hot Air Intake Box Assembly for the Auster Mk V (5) is Part No JA 6739 Drawing No DJF 26.

The Carburettor Hot Air Control on the Auster Mk IV (4) is the central control knob of a group of three, which are situated directly below the left hand side of the instrument panel, immediately to the left of the main engine controls. The Control Knob "CARB HEAT PUSH ON" is Part No G 6204 Drawing No AGF 173.

The Carburettor Hot Air Control on the Auster Mk V (5) is situated below and to the right of the centre line of the instrument panel and is the upper right hand knob of the main engine controls, directly to the right of the mixture control. The Control Knob "CARB HEAT PULL ON" is Part No J 6288 Drawing No AJF 37

Auster Mk IV and Auster Mk V designations were applied to the aircraft when they were originally designed and operated as Military aircraft, but when the aircraft were later converted for civil use, the designations Auster Mk 4 and Auster Mk 5 were applied.

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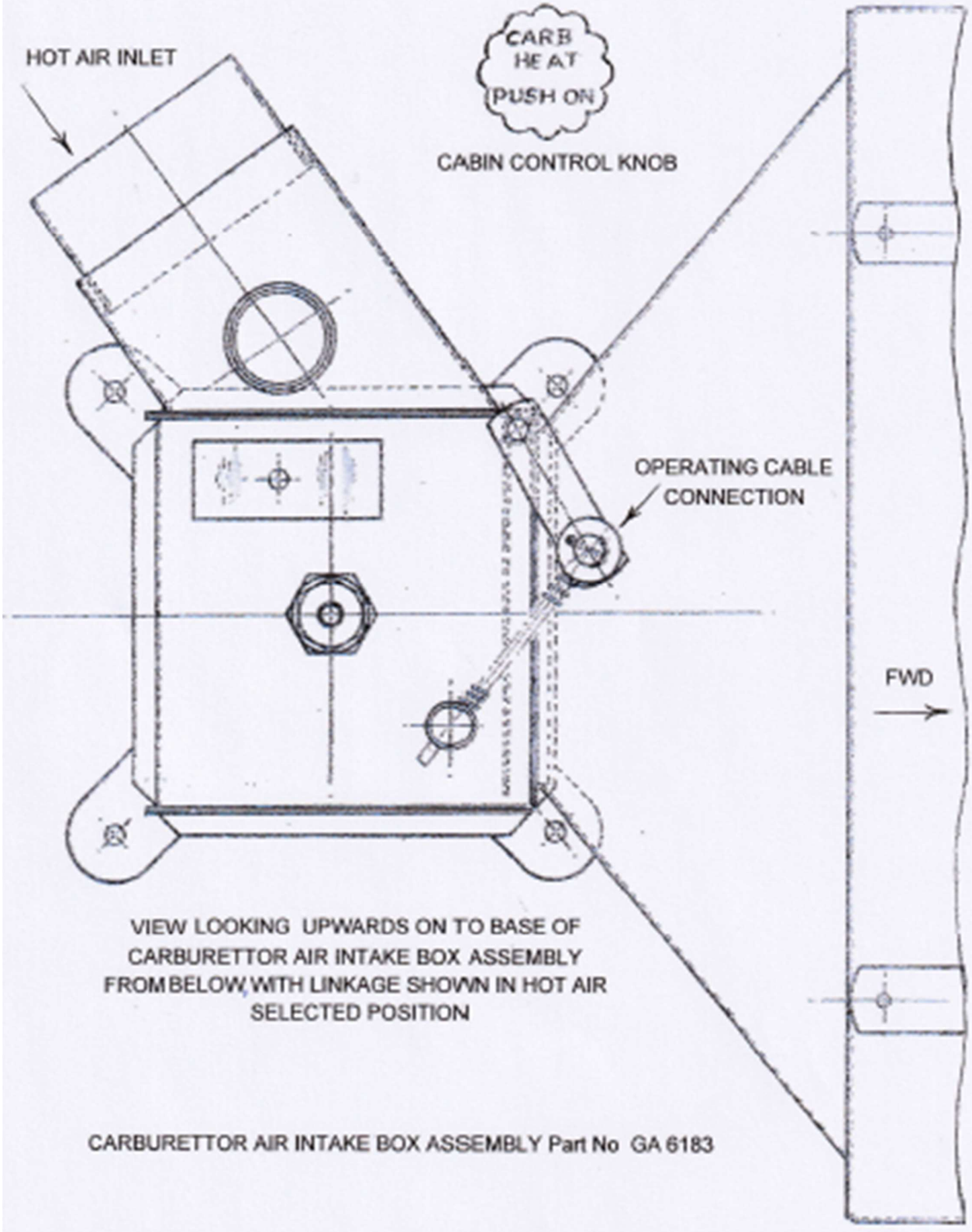
AUSTER Mk IV (4)

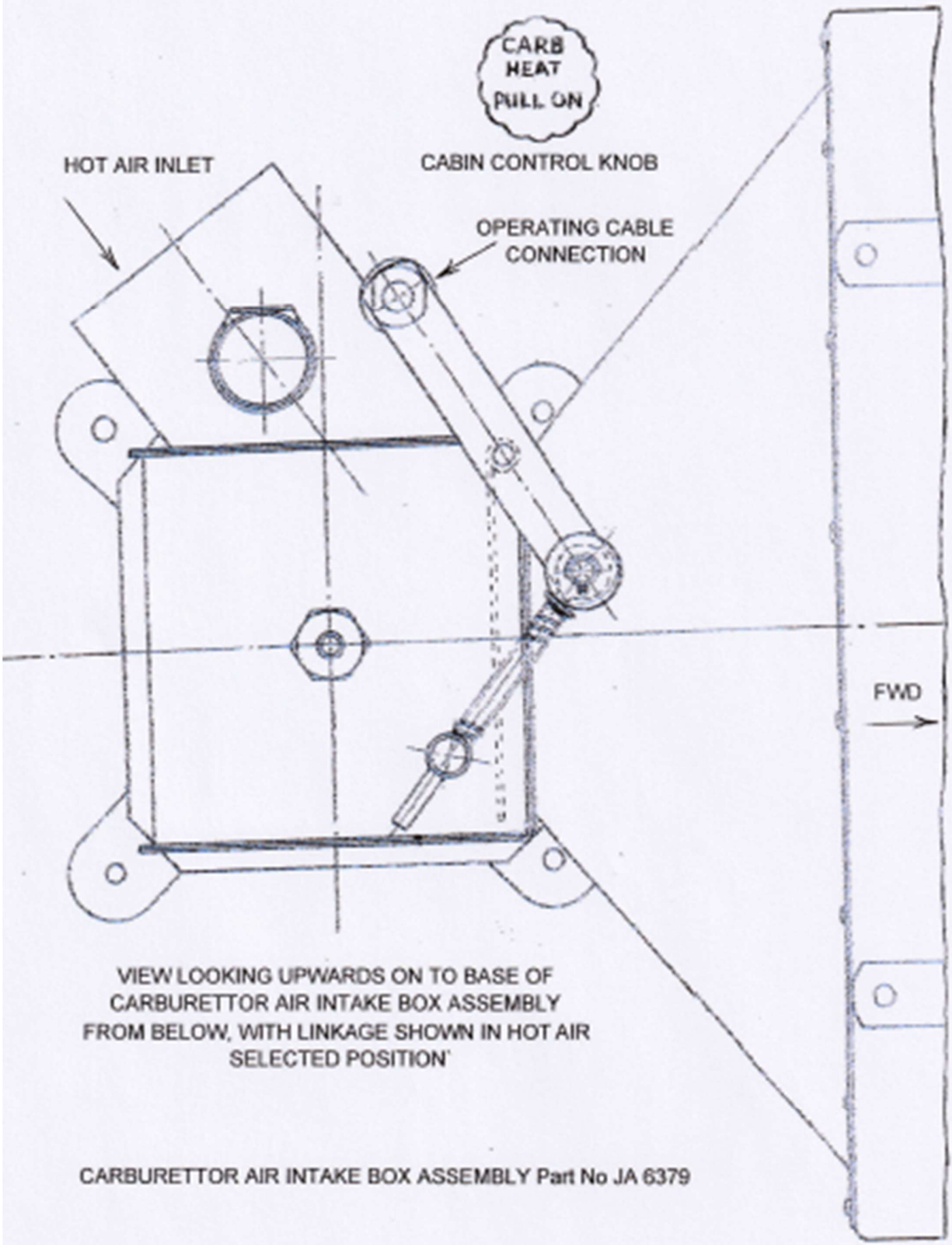


VIEW LOOKING UPWARDS ON TO BASE OF CARBURETTOR AIR INTAKE BOX ASSEMBLY FROM BELOW, WITH LINKAGE SHOWN IN HOT AIR SELECTED POSITION

CARBURETTOR AIR INTAKE BOX ASSEMBLY Part No GA 6183

FIGURE 1

AUSTER Mk V (5)



VIEW LOOKING UPWARDS ON TO BASE OF CARBURETTOR AIR INTAKE BOX ASSEMBLY FROM BELOW, WITH LINKAGE SHOWN IN HOT AIR SELECTED POSITION'

CARBURETTOR AIR INTAKE BOX ASSEMBLY Part No JA 6379

FIGURE 2