A.P.4343C, Vol. 1, Book 3, Sect. 11, Chap. 3 A.L.25, May 60

11.5 in.

10 lb.

11.875 in.

## Chapter 3

# PROPELLER CONTROL CHANNEL, DE HAVILLAND, TYPE Q.1090/1

#### LIST OF CONTENTS Para. Para. Introduction 1 28 Månual operations .... **Description** Auto-synchronizer cut-out .... 29 Relays • • • • Auto-synchronizer minimum limit 31 Magnetic amplifier 30 back-up Magnetic synchronizer unit 4 Manual override of auto-synchroniser 31 Potentiometers .... Synchronizer tacho-lines connection 32 Mounting tray assembly 33 Speed sensitive tacho-lines connection **Operation** 34 Feathering (Q.1090/1 identity A only)Magnetic amplifier Unfeather (Q.1090/1 identity A only)35 Magnetic synchronizer unit Feathering (Q.1090/1 identity B only)36 Installation and removal Unfeather (Q.1090/1 identity B only) 37 Installation 14 38 Step lines Removal 15 Master synchronizer line looping 39 Servicing 16 Suspect components 40 Function tests .... 21 41 Sealed relays Voltage check 23 Potentiometers .... 43 .... Operation of speed sensitive un 24 Rectifiers 46 Actuator electrical locking . 25 Capacitors 49 Synchronizing operations 26 50 Transductors .... Synchronizer sensitivity 27 Transformer 51 LIST OF TABLES Table Table Voltage check .... 6 1 Transductor insulation measurement .... Speed sensitive unit test Transductor resistances .... Synchronizing operations test .... 3 8 Transformer insulation measurement .... Relay coil resistance 4 9 Transformer winding resistances .... Rectifier current tests 5 Test rig equipment 10 LIST OE ILLUSTRATIONS Fig. Fig. Exploded view of Q1090/1 1 4 Wiring diagram Exploded view of inagnetic synchronizer 5 2 Theoretical circuit diagram 6 Connection diagram 3 Test rig circuit .... LEADING PARTICULARS Propeller control channel, Type Q.1090/1 Ref. No. 25L/12672 Overall dimensions— Height (unit only) 7.94 in. Height (including mounting tray and anti-vibration mountings) 9.44 in.

....

....

Depth

Width (4 units mounted)

Weight of unit ....

### Introduction

1. The control channel unit, which works in conjunction with the actuator control unit, Type Q.1089, and the synchronizer switch unit, Type Q.1088, contains the individual propeller r.p.m. control relays and the auto synchronizing relay. The control channel unit also contains a magnetic amplifier network which is designed to give a speed sensitive selection for certain propeller func-

tions, a magnetic synchronizing unit, Type Q.1087, and connecting plugs.

#### DESCRIPTION

#### Relays

2. Eleven sealed relays are mounted on a plate and assembled to the top of a frame unit which also serves as a mounting for the tagboard assembly and the base plate assembly. The relays consist of six 4-pole change-over

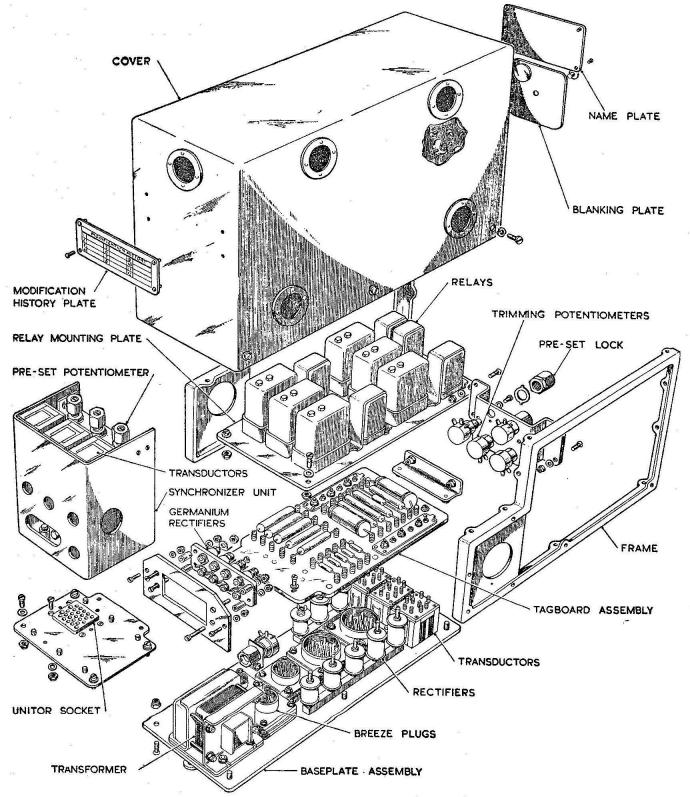


Fig. 1. Exploded view of Q.1090/1