LINEAR AMPLIFIER INDEX

١.	General				
1.1 1.2 1.3	Introduction CAUTION - Mode switch Specifications				
2.	Not Used				
3.	Brief Description				
3.1 3.2 3.2 3.4	General Mechanical Supplies Signal Circuits				
4.	Brief Description - Servo System				
4.1 4.2 4.3 4.4 4.5	Block diagram (Dwg D 03–00079) Signal Conditions Normal operations Channel Change Servo operation				
	4.5.1 Tune 4.5.2 Load				
5,	Technical Description				
5.1	Power Supply				
	5.1.1 High Voltage Supply5.1.2 Power Control Unit				
5,2	Power Control Unit - Sequence				
	5.2.1 Starting sequence 5.2.2 Bias Fail 5.2.3 HT Overcurrent 5.2.4 High SWR 5.2.5 Airflow switch 5.2.6 Relay supply 5.2.7 AUX supply 5.2.8 Fils, bias & Minor HT 5.2.9 AC Mains supply 5.2.10 Remote indication				

5.3 Amplifier Supplies

- 5.3.1 Fils, bias & Minor HT primary
- 5.3.2 Filaments
- 5.3.3 Bias regulator
- 5.3.4 Major HT Monitor
- 5.3.5 Bias fail
- 5.3.6 Minor HT Regulator

5.4 Driver Stage

- 5.4.1 Valve conditions
- 5.4.2 Signal conditions
- 5.4.3 Phase comparator
- 5.4.4 Neutralising

5.5 PA Stage

- 5.5.1 Valve conditions
- 5.5.2 Signal conditions
- 5.5.3 Load comparator
- 5.5.4 Neutralising
- 5.5.5 Feedback

5.6 SWR Detector

5.7 Diode Matrix

5.8 Load & ALC Detectors

- 5.8.1 Power supply
- 5.8.2 Load comparator
- 5.8.3 ALC
- 5.8.4 Tune ALC
- 5.8.5 SWR Bridge
- 5.8.6 SWR Trip

5.9 Control Logic

- 5.9.1 Command detector Amp
- 5.9.2 Tune command gate
- 5.9.3 Initiate channel change
- 5.9.4 Timer
- 5.9.5 Signal lamp
- 5.9.6 Completion of tune

5.10 Servo AMP (Tune) 5.10.1 Coarse AMP Servo balance indicator 5.10.2 5.10.3 Fine AMP 5.10.4 Inhibit gate 5.11 Servo AMP (Load) 5.12 Gate Switch Facility 6. Set Up Procedure - Sub Assemblies Factory use only 7. Test And Alignment 7.1 General 7.2 Visual Examination 7.3 Test Equipment 7.4 Channel Selection (MULTI) Channel Selection (SINGLE) 7.5 7.6 Preliminary Adjustments 7.7 Tuning, Neutralising & Loading (MULTI) 7.7.1 General Tuning & Preliminary loading 7.7.2 7.7.3 Neutralising 7.7.4 Loading 7.8 Tuning, Neutralising & Loading (SINGLE) 7.8.1 General 7.8.2 Tuning & preliminary loading Neutralising 7.8.3 7.8.4 Loading 7.9 ALC Level Adjustment

7.10

7.11

SWR Bridge Balance

Notes on adjustment and operation

8. PARTS LIST

8.1 Linear Amplifier

- 8.1.1 Main Chassis
- 8.1.2 Load, ALC & SWR Amplifier PCB
- 8.1.3 Servo Preset PCB Multi channel only
 8.1.4 Servo Amplifier PCB Multi channel only
- 8.1.5 Bias Regulator PCB
- 8.1.6 Minor HT Regulator PCB
- 8.1.7 SWR Bridge PCB
- 8.1.8 Diode Matrix PCB Multi channel only

8.2 Power Supply

- 8.2.1 Power Control Unit Chassis
- 8.2.2 Relay Interlock PCB
- 8.2.3 Start Relay PCB
- 8.2.4 Power Supply Chassis

9. LIST OF DRAWINGS

Block Diagram	D03-00079
Circuit Diagram	B 0 4-00102 (1KW)
Circuit Diagram	B04-00313 (500W)
Power Supply CCT	C04-00103 (1KW)
Power Supply CCT	C04-00549 (500W)

Assembly Drawings

SWR Bridge	E08-00145			
Diode Matrix	D08-00146			
Load, ALC & DET	D08-00147	-	00750)	Serial No's
Servo AMP	D08-00148	_	00751)	44 onwards
Bias Regulator	D08-00149		,	
Minor HT Regualtor	D08-00150			
Relay Interlock	D08-00151			
Driver Stage	D08-00161			
Transmitter Cabinet Loom	D08-00577			

 Tuning Chart (Grid)
 10-00027 (1KW)

 Tuning Chart (PA)
 10-00028 (1KW)

 Tuning Chart (Grid)
 10-00030 (500W)

 Tuning Chart (PA)
 10-00031 (500W)

I. GENERAL INFORMATION

1.1 Introduction

The type 7010 LINEAR AMPLIFIER is intended for use as a base HF SSB/AM transmitter, driven by a type 7021 HF SSB/AM EXCITER, housed in the same cabinet. Output powers of 1 KW PEP or 500W PEP versions are available (others to special order). The transmitters are either single channel or multi-channel (up to six), the single channel being manually tuned. The multi-channel transmitters are automatically servo-tuned on channel change. Both version are pre-wired for remote control.

When placed into service the run-up procedure is fully automatic eliminating operator errors in sequencing. The transmitter is completely protected against any antenna condition ranging from absolute short circuit to completely open circuit and attempted operation of the transmitter under such conditions cannot cause damage. In addition to full metering of essential parameters at the front panel, a continous SWR indication is provided.

The cabinet rear door contains an air filter to ensure a dust free flow to the PA valve cooling system. The system is protected against air flow failure.

The linear amplifier is mounted on slides and may be extended from the cabinet for servicing. It is still operational in this position. Gate safety switching has been eliminated by careful construction.

Adequate warning labels are affixed to panels under which lethal voltages are accessable.

The type 7010 may carry "CODAN" or "EILCO" brand names. It is type approved by the APO.

1.2 CAUTION - MODE Switch

The mode transmitted (A3H or A3J) is selected by a switch at the rear of the Exciter.

This switch must be returned to the correct position after tests or measurements have been performed.