AMENDMENT RECORD SHEET

To record the incorporation of an Amendment List in this publication, sign against the appropriate A.L. No. and insert the date of incorporation.

A.L. No.	AMENDED BY	DATE
1		
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5	L. G. Harding	14.5.54
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9		
10	H. Mills	8/9/54
11	L.J. Carpenter	8/12/54
12	"	
13	"	18/12/54
14	"	10/5/55
15	G. W. Clark	16/11/55
16	L.T.H.	2/9/56
17	W. J. Stevens	22/2/57
18	W. J. Stevens	15/3/57
19	J. Orley	2.9.57.
20		11/4/57.
21		
22	J. Orley	30/7/57
23	J. Orley	14.5.58
24		23.3.59
25	W. J. Stevens	25/10/60
26	W. J. Stevens	25/10/60
27	R. Harvey	2/1/62
28	W. J. Stevens	4/12/63
29	W. Boyle	14.6.66
30	P. Cox	2-12-76
31	J. Smith	20.1.77
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NOTE TO READERS

The subject matter of this publication may be affected by Defence Council Instructions, Servicing schedules (Volume 4 and 5), or " General Orders and Modifications " leaflets in this A.P., in the associated publications listed below, or even in some others. If possible, Amendment Lists are issued to correct this publication accordingly, but it is not always practicable to do so. When an Instruction, Servicing schedule, or leaflet contradicts any portion of this publication, the Instruction, Servicing schedule, or leaflet is to be taken as the overriding authority.

The inclusion of references to items of equipment does not constitute authority for demanding the items.

Each leaf, except the original issue of preliminaries, bears the date of issue and the number of the Amendment List with which it was issued. New or amended technical matter will be indicated by black triangles positioned in the text thus:— ◀——▶ to show the extent of amended text, and thus:— ▶◀ to show where text has been deleted. When a Part, Section, or Chapter is issued in completely revised form, the triangles will not appear.

The reference number of this publication was altered from A.P.2534E, Vol. 1 to A.P.116B-0408-1 in December 1965. No general revision of page captions has been undertaken, but the code number appears in place of the earlier A.P. number on new or amended leaves issued subsequent to that date.

LIST OF ASSOCIATED PUBLICATIONS

	Old A.P.	*A.P. Code*
I.L.S. (Ground)—FGRI.18017	2534F	116C-0401
I.L.S. (Air) First line test equipment:		
*Test set Type M*39	—	116B-0410
*Test set Type M*41	—	116B-0411
Test set Type 391	*part of* 2534G	116B-0412
I.L.S. (Air) Bay test equipment:		
Test rig (installation) Type 5	*part of* 2534G	116B-0413
Signal generator Type 69	*part of* 2534G	116B-0414
Signal generator Type 62 *and* 62*A*	2563BN	116B-0416
Mixer unit Type 20	*part of* 2534G	116B-0415
*ILS/VOR signal generator Type M*58 ...	*part of* 2534G	116B-0417

LIST OF CONTENTS OF VOLUME 1

PRELIMINARIES

PART 1—GENERAL INFORMATION

PART 2—SERVICING

PART 3—FAULT DIAGNOSIS

PART 4—SYSTEM INFORMATION

LEADING PARTICULARS

GENERAL DESCRIPTION

Airborne installation of three receivers for reception of I.L.S. localizer, glidepath, and marker transmissions.

FUNCTION

Airfield approach aid.

OPERATING PRINCIPLES

The vertical pointer of a crossed-pointer meter indicates lateral deviation from the line of the runway and the horizontal pointer indicates deviation from the angle of approach; the aircraft is flown to hold the pointers crossed at the centre. Marker signals received at three fixed points along the approach path operate a flashing light or are heard as audio tones.

OPERATING FREQUENCIES

Localizer—any twelve spot frequencies from thirty-nine 100 kc/s spaced channels in range from 108·1 Mc/s to 111·9 Mc/s.

Glidepath—any of twelve spot frequencies from twenty 300 kc/s spaced channels in range from 329·3 to 335 Mc/s.

Marker—fixed tuned at 75 Mc/s.

TYPE OF RECEIVER

Localizer—double superhet with first i.f. at 28·6 Mc/s and second i.f. at 2 Mc/s.

Glidepath—double superhet with first i.f. at 54 Mc/s and second i.f. at 6·6 Mc/s.

Marker—low gain TRF.

CONSTRUCTION

Localizer and marker receivers are carried in three sub-assemblies making up the receiver R.1964; glidepath receiver is formed from three sub-assemblies making up receiver R.1965; local oscillators for both glidepath and localizer receivers are carried in the separate control unit.

POWER SUPPLIES

Aircraft DC (27V nominal) 230W; HT is generated by rotary transformers, and LT, at 19V, is taken from a voltage regulator.

MAIN ITEMS OF INSTALLATION

Description	Stores Ref.	Alternative Installation Description
Localizer receiver Type R.1964	10D/17818	Type R.1964B
Glidepath receiver Type R.1965	10D/17819	Type R.1965B
Control unit Type 705	10L/263	Type 705A
Junction box Type 157	10D/17815	Type 157A
Junction box Type 158	10D/17816	Type 158A
Junction box Type 159	10D/17817	Type 159A
Junction box Type 164	10D/17921	
Indicator electrical Type 7	10Q/61	
Voltage regulator Type 60	5U/5418	

TEST EQUIPMENT

Test set Type 391	10S/16374
Test rig (installation) Type 5	10S/16378
Mixer unit Type 20	10D/17844
Signal generator Type 69	10S/16377
Signal generator Type 62	10S/16318
Signal generator CT.53	10S/16160
Signal generator Type 56 (or CT.218)	10S/647 (10S/16780)

SIZES AND WEIGHTS OF PRINCIPAL UNITS

	Weight lb	Size in Width	Height	Depth
R.1964 or R.1964B	17·75	5·9	7·75	14·8
R.1965 or R.1965B	16·25	5·9	7·75	14·8
CU.705 or CU.705A	1·75	5·7	3·8	4·2
JB.157 or JB.157A	2·8	11·8	5·5	4·0
JB.158 or JB.158A	1·5	5·8	5·5	4·0
JB.159 or JB.159A	1·5	5·8	5·5	4·0

PRODUCTION MODIFICATIONS

Receiver Unit Type 118 (10P/13185)

The capacitor 4C2 in the inductor unit Type 184 (10C/18641), being no longer available, is changed on later equipments from a 2-32pf to a 3-14·5pf capacitor of a new type, and capacitor 4C1 in the same unit is changed from 8·2pf to 10pf for the same reason.

The new capacitor (4C2) is fitted on a small bracket so that it is still accessible as before. The inductor unit Type 186 (10C/18643) is changed to inductor unit Type 16348 (10C/26424) on later equipments. This has become necessary because the crystal rectifier Type 2X103G (4 MR2) fitted in the inductor unit Type 186, is no longer available. These inductor units are physically and electrically directly interchangeable.

The following circuit diagrams refer:

Part 1, Chap. 3, Fig. 19
Part 3, Chap. 2, Fig. 6

R.F. Unit Type 74 (10D/17823)

The capacitors 10C1 and 10C2 in the inductor unit type 181 (10C/18638) being no longer available are changed on later equipments, from 1·5—21·5pf and 8·2pf to 3–14·5pf and 10pf respectively. Circuit diagram Part 3, Chap. 3, fig. 4 refers.

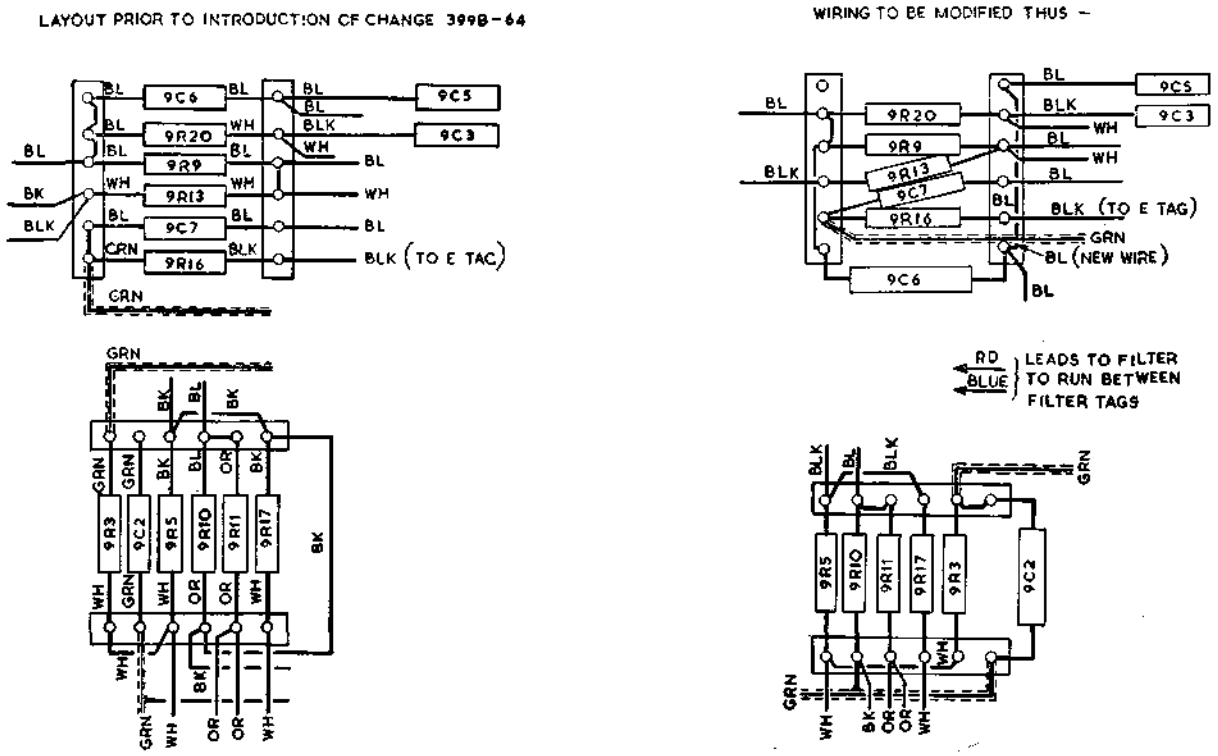
Receiver Unit Type 117 (10P/13184)

The capacitor 3C32 in the filter unit Type 392 (10C/13188) being no longer available is changed on later equipments from a 2–22pf to a 3–14·5pf capacitor of a new type, with a 5·6pf capacitor in addition, connected in parallel with it. The new capacitor (3C32) is fitted on a small bracket so that it is still accessible as before. The following diagrams refer:

Part 1, Chap. 3, fig. 14
Part 3, Chap. 2, fig. 4
Part 3, Chap. 2, fig. 7

L.F. Unit Type 5 (10P/17284)

Because of the increase in permitted length of the capacitors supplied for use in the positions 9C2, 9C6 and 9C7 to 1¾ in. instead of 1¼ in., the layout of the underchassis components has been altered as shown in illustration.



L.F. Unit Type 5 change