

EKCO P150

Four-valve battery operated super-het portable receiver covering medium and long wavebands.

Circuit.—There are separate frame aerial windings for M.W. and L.W. Each is shunted by a trimmer condenser (T2 and T4 respectively), and the L.W. winding is shorted out on M.W. The first section of the gang condenser tunes the frame and across this input circuit is an I.F. filter, consisting of C2 and L1 in series. The A.V.C. connection is through R2, decoupled by C3, to the bottom of the frame windings.

V1 is a triode-hexode frequency-changer with a tuned grid oscillator circuit. The M.W. and L.W. windings are trimmed by T1 and T3 respectively, and the fixed padding condensers being C9 and C10. There is also a fixed condenser C8 across the L.W. winding.

The two I.F. transformers have adjustable cores and fixed parallel capacities. The secondaries of each have extra sections closely coupled to the primaries. V2 is the I.F. valve and both its input and output circuits are conventional.

V3 is a double-diode triode used in a straightforward manner for demodulation, A.V.C. and L.F. amplification. The signal diode load resistors R4 and R5 are returned to L.T. +, the rectified signal being tapped off through C18 to VR1, the volume control. The slider goes, of course, to the triode grid.

The A.V.C. diode is fed from V2 anode through C13. The load, R8, together with the bottom of VR1, goes for bias to between R11 and R12, two resistors in the negative H.T. lead.

V4 is a Q.P.P. output valve consisting of two assemblies in one bottle. A centre-tapped secondary feeds the two grids, the centre point going to L.T. +, while the filament is at chassis potential.

The centre-tapped primary of the output transformer has a parallel tone condenser, C20 and others, C21 and C22, from each end down to chassis.

A condenser, C23, is connected between H.T. + and L.T. +, and both H.T. +

CIRCUIT DIAGRAM

E. K. Cole, Ltd., do not permit us to publish the circuit diagram of this receiver. The material below has been specially prepared, however, so that few difficulties should arise on this account.

The circuit description is particularly detailed and the component tables give the purposes as well as the values of the parts.

and L.T. — circuits are broken by the off switch.

Batteries.—The recommended batteries are an Exide CUYUK 2 v. accumulator, and a Drydex H1146 90-v. battery. (Bias is automatic.) L.T. consumption is .5 amp.; H.T., 8.5 ma.

Chassis Removal.—The frame aerial and output transformer leads have to be unsecured. To avoid confusion it is advised to connect a 12-in. extension to each lead as it is disconnected and to immediately reconnect. This will also make the chassis ready for testing.

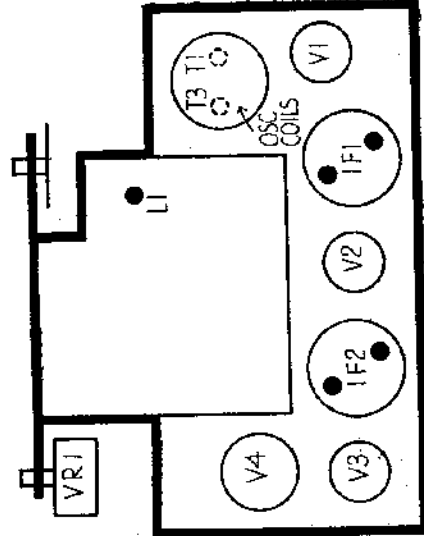
The order of connections on the output transformer is: yellow, black, blue, red, blue.

It is not necessary to remove the handle. When reassembling, close the gang and make sure pointer registers on 1,000 metres.

GANGING

I.F. CIRCUITS.—Adjust cores at 465 kc. I.F. FILTER.—Tune to 500 m. and inject 465 kc. signal by means of loop of wire placed near frame aerial. Adjust L1 core for minimum reading.

M.W. BAND (190-550 m.)—Tune to and inject (by means of external loop)



This diagram identifies the parts on top of the P150 chassis and indicates the positions of the oscillator trimmers, which are underneath. The aerial trimmers are at the top of the cabinet.

250-m. signal. Adjust T1 while rocking gang and then T2.

L.W. BAND (1,000-2,000 m.)—Tune to and inject 1,200-m. signal and adjust T3 for calibration and T4 for maximum output.

The two aerial trimmers are at the top, inside the cabinet.

VALVE VOLTAGES

V.	Type.	Electrode.	Volts.	Ma.
1	TP25	Anode Screen	75 42	.3 .75
2	VP23	Grid Anode Screen	75 42 42	1.52 .3 .3
3	KL33DD	Anode	62	4
4	QP25	Anodes (A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A28, A29, A30, A31, A32, A33, A34, A35, A36, A37, A38, A39, A40, A41, A42, A43, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A61, A62, A63, A64, A65, A66, A67, A68, A69, A70, A71, A72, A73, A74, A75, A76, A77, A78, A79, A80, A81, A82, A83, A84, A85, A86, A87, A88, A89, A90, A91, A92, A93, A94, A95, A96, A97, A98, A99, A100, A101, A102, A103, A104, A105, A106, A107, A108, A109, A110, A111, A112, A113, A114, A115, A116, A117, A118, A119, A120, A121, A122, A123, A124, A125, A126, A127, A128, A129, A130, A131, A132, A133, A134, A135, A136, A137, A138, A139, A140, A141, A142, A143, A144, A145, A146, A147, A148, A149, A150, A151, A152, A153, A154, A155, A156, A157, A158, A159, A160, A161, A162, A163, A164, A165, A166, A167, A168, A169, A170, A171, A172, A173, A174, A175, A176, A177, A178, A179, A180, A181, A182, A183, A184, A185, A186, A187, A188, A189, A190, A191, A192, A193, A194, A195, A196, A197, A198, A199, A200, A201, A202, A203, A204, A205, A206, A207, A208, A209, A210, A211, A212, A213, A214, A215, A216, A217, A218, A219, A220, A221, A222, A223, A224, A225, A226, A227, A228, A229, A230, A231, A232, A233, A234, A235, A236, A237, A238, A239, A240, A241, A242, A243, A244, A245, A246, A247, A248, A249, A250, A251, A252, A253, A254, A255, A256, A257, A258, A259, A260, A261, A262, A263, A264, A265, A266, A267, A268, A269, A270, A271, A272, A273, A274, A275, A276, A277, A278, A279, A280, A281, A282, A283, A284, A285, A286, A287, A288, A289, A290, A291, A292, A293, A294, A295, A296, A297, A298, A299, A300, A301, A302, A303, A304, A305, A306, A307, A308, A309, A310, A311, A312, A313, A314, A315, A316, A317, A318, A319, A320, A321, A322, A323, A324, A325, A326, A327, A328, A329, A330, A331, A332, A333, A334, A335, A336, A337, A338, A339, A340, A341, A342, A343, A344, A345, A346, A347, A348, A349, A350, A351, A352, A353, A354, A355, A356, A357, A358, A359, A360, A361, A362, A363, A364, A365, A366, A367, A368, A369, A370, A371, A372, A373, A374, A375, A376, A377, A378, A379, A380, A381, A382, A383, A384, A385, A386, A387, A388, A389, A390, A391, A392, A393, A394, A395, A396, A397, A398, A399, A400, A401, A402, A403, A404, A405, A406, A407, A408, A409, A410, A411, A412, A413, A414, A415, A416, A417, A418, A419, A420, A421, A422, A423, A424, A425, A426, A427, A428, A429, A430, A431, A432, A433, A434, A435, A436, A437, A438, A439, A440, A441, A442, A443, A444, A445, A446, A447, A448, A449, A450, A451, A452, A453, A454, A455, A456, A457, A458, A459, A460, A461, A462, A463, A464, A465, A466, A467, A468, A469, A470, A471, A472, A473, A474, A475, A476, A477, A478, A479, A480, A481, A482, A483, A484, A485, A486, A487, A488, A489, A490, A491, A492, A493, A494, A495, A496, A497, A498, A499, A500, A501, A502, A503, A504, A505, A506, A507, A508, A509, A510, A511, A512, A513, A514, A515, A516, A517, A518, A519, A520, A521, A522, A523, A524, A525, A526, A527, A528, A529, A530, A531, A532, A533, A534, A535, A536, A537, A538, A539, A540, A541, A542, A543, A544, A545, A546, A547, A548, A549, A550, A551, A552, A553, A554, A555, A556, A557, A558, A559, A560, A561, A562, A563, A564, A565, A566, A567, A568, A569, A570, A571, A572, A573, A574, A575, A576, A577, A578, A579, A580, A581, A582, A583, A584, A585, A586, A587, A588, A589, A590, A591, A592, A593, A594, A595, A596, A597, A598, A599, A600, A601, A602, A603, A604, A605, A606, A607, A608, A609, A610, A611, A612, A613, A614, A615, A616, A617, A618, A619, A620, A621, A622, A623, A624, A625, A626, A627, A628, A629, A630, A631, A632, A633, A634, A635, A636, A637, A638, A639, A640, A641, A642, A643, A644, A645, A646, A647, A648, A649, A650, A651, A652, A653, A654, A655, A656, A657, A658, A659, A660, A661, A662, A663, A664, A665, A666, A667, A668, A669, A670, A671, A672, A673, A674, A675, A676, A677, A678, A679, A680, A681, A682, A683, A684, A685, A686, A687, A688, A689, A690, A691, A692, A693, A694, A695, A696, A697, A698, A699, A700, A701, A702, A703, A704, A705, A706, A707, A708, A709, A710, A711, A712, A713, A714, A715, A716, A717, A718, A719, A720, A721, A722, A723, A724, A725, A726, A727, A728, A729, A730, A731, A732, A733, A734, A735, A736, A737, A738, A739, A740, A741, A742, A743, A744, A745, A746, A747, A748, A749, A750, A751, A752, A753, A754, A755, A756, A757, A758, A759, A760, A761, A762, A763, A764, A765, A766, A767, A768, A769, A770, A771, A772, A773, A774, A775, A776, A777, A778, A779, A780, A781, A782, A783, A784, A785, A786, A787, A788, A789, A790, A791, A792, A793, A794, A795, A796, A797, A798, A799, A800, A801, A802, A803, A804, A805, A806, A807, A808, A809, A810, A811, A812, A813, A814, A815, A816, A817, A818, A819, A820, A821, A822, A823, A824, A825, A826, A827, A828, A829, A830, A831, A832, A833, A834, A835, A836, A837, A838, A839, A840, A841, A842, A843, A844, A845, A846, A847, A848, A849, A850, A851, A852, A853, A854, A855, A856, A857, A858, A859, A860, A861, A862, A863, A864, A865, A866, A867, A868, A869, A870, A871, A872, A873, A874, A875, A876, A877, A878, A879, A880, A881, A882, A883, A884, A885, A886, A887, A888, A889, A890, A891, A892, A893, A894, A895, A896, A897, A898, A899, A900, A901, A902, A903, A904, A905, A906, A907, A908, A909, A910, A911, A912, A913, A914, A915, A916, A917, A918, A919, A920, A921, A922, A923, A924, A925, A926, A927, A928, A929, A930, A931, A932, A933, A934, A935, A936, A937, A938, A939, A940, A941, A942, A943, A944, A945, A946, A947, A948, A949, A950, A951, A952, A953, A954, A955, A956, A957, A958, A959, A960, A961, A962, A963, A964, A965, A966, A967, A968, A969, A970, A971, A972, A973, A974, A975, A976, A977, A978, A979, A980, A981, A982, A983, A984, A985, A986, A987, A988, A989, A990, A991, A992, A993, A994, A995, A996, A997, A998, A999, A1000, A1001, A1002, A1003, A1004, A1005, A1006, A1007, A1008, A1009, A1010, A1011, A1012, A1013, A1014, A1015, A1016, A1017, A1018, A1019, A1020, A1021, A1022, A1023, A1024, A1025, A1026, A1027, A1028, A1029, A1030, A1031, A1032, A1033, A1034, A1035, A1036, A1037, A1038, A1039, A1040, A1041, A1042, A1043, A1044, A1045, A1046, A1047, A1048, A1049, A1050, A1051, A1052, A1053, A1054, A1055, A1056, A1057, A1058, A1059, A1060, A1061, A1062, A1063, A1064, A1065, A1066, A1067, A1068, A1069, A1070, A1071, A1072, A1073, A1074, A1075, A1076, A1077, A1078, A1079, A1080, A1081, A1082, A1083, A1084, A1085, A1086, A1087, A1088, A1089, A1090, A1091, A1092, A1093, A1094, A1095, A1096, A1097, A1098, A1099, A1100, A1101, A1102, A1103, A1104, A1105, A1106, A1107, A1108, A1109, A1110, A1111, A1112, A1113, A1114, A1115, A1116, A1117, A1118, A1119, A1120, A1121, A1122, A1123, A1124, A1125, A1126, A1127, A1128, A1129, A1130, A1131, A1132, A1133, A1134, A1135, A1136, A1137, A1138, A1139, A1140, A1141, A1142, A1143, A1144, A1145, A1146, A1147, A1148, A1149, A1150, A1151, A1152, A1153, A1154, A1155, A1156, A1157, A1158, A1159, A1160, A1161, A1162, A1163, A1164, A1165, A1166, A1167, A1168, A1169, A1170, A1171, A1172, A1173, A1174, A1175, A1176, A1177, A1178, A1179, A1180, A1181, A1182, A1183, A1184, A1185, A1186, A1187, A1188, A1189, A1190, A1191, A1192, A1193, A1194, A1195, A1196, A1197, A1198, A1199, A1200, A1201, A1202, A1203, A1204, A1205, A1206, A1207, A1208, A1209, A1210, A1211, A1212, A1213, A1214, A1215, A1216, A1217, A1218, A1219, A1220, A1221, A1222, A1223, A1224, A1225, A1226, A1227, A1228, A1229, A1230, A1231, A1232, A1233, A1234, A1235, A1236, A1237, A1238, A1239, A1240, A1241, A1242, A1243, A1244, A1245, A1246, A1247, A1248, A1249, A1250, A1251, A1252, A1253, A1254, A1255, A1256, A1257, A1258, A1259, A1260, A1261, A1262, A1263, A1264, A1265, A1266, A1267, A1268, A1269, A1270, A1271, A1272, A1273, A1274, A1275, A1276, A1277, A1278, A1279, A1280, A1281, A1282, A1283, A1284, A1285, A1286, A1287, A1288, A1289, A1290, A1291, A1292, A1293, A1294, A1295, A1296, A1297, A1298, A1299, A1300, A1301, A1302, A1303, A1304, A1305, A1306, A1307, A1308, A1309, A1310, A1311, A1312, A1313, A1314, A1315, A1316, A1317, A1318, A1319, A1320, A1321, A1322, A1323, A1324, A1325, A1326, A1327, A1328, A1329, A1330, A1331, A1332, A1333, A1334, A1335, A1336, A1337, A1338, A1339, A1340, A1341, A1342, A1343, A1344, A1345, A1346, A1347, A1348, A1349, A1350, A1351, A1352, A1353, A1354, A1355, A1356, A1357, A1358, A1359, A1360, A1361, A1362, A1363, A1364, A1365, A1366, A1367, A1368, A1369, A1370, A1371, A1372, A1373, A1374, A1375, A1376, A1377, A1378, A1379, A1380, A1381, A1382, A1383, A1384, A1385, A1386, A1387, A1388, A1389, A1390, A1391, A1392, A1393, A1394, A1395, A1396, A1397, A1398, A1399, A1400, A1401, A1402, A1403, A1404, A1405, A1406, A1407, A1408, A1409, A1410, A1411, A1412, A1413, A1414, A1415, A1416, A1417, A1418, A1419, A1420, A1421, A1422, A1423, A1424, A1425, A1426, A1427, A1428, A1429, A1430, A1431, A1432, A1433, A1434, A1435, A1436, A1437, A1438, A1439, A1440, A1441, A1442, A1443, A1444, A1445, A1446, A1447, A1448, A1449, A1450, A1451, A1452, A1453, A1454, A1455, A1456, A1457, A1458, A1459, A1460, A1461, A1462, A1463, A1464, A1465, A1466, A1467, A1468, A1469, A1470, A1471, A1472, A1473, A1474, A1475, A1476, A1477, A1478, A1479, A1480, A1481, A1482, A1483, A1484, A1485, A1486, A1487, A1488, A1489, A1490, A1491, A1492, A1493, A1494, A1495, A1496, A1497, A1498, A1499, A1500, A1501, A1502, A1503, A1504, A1505, A1506, A1507, A1508, A1509, A1510, A1511, A1512, A1513, A1514, A1515, A1516, A1517, A1518, A1519, A1520, A1521, A1522, A1523, A1524, A1525, A1526, A1527, A1528, A1529, A1530, A1531, A1532, A1533, A1534, A1535, A1536, A1537, A1538, A1539, A1540, A1541, A1542, A1543, A1544, A1545, A1546, A1547, A1548, A1549, A1550, A1551, A1552, A1553, A1554, A1555, A1556, A1557, A1558, A1559, A1560, A1561, A1562, A1563, A1564, A1565, A1566, A1567, A1568, A1569, A1570, A1571, A1572, A1573, A1574, A1575, A1576, A1577, A1578, A1579, A1580, A1581, A1582, A1583, A1584, A1585, A1586, A1587, A1588, A1589, A1590, A1591, A1592, A1593, A1594, A1595, A1596, A1597, A1598, A1599, A1600, A1601, A1602, A1603, A1604, A1605, A1606, A1607, A1608, A1609, A1610, A1611, A1612, A1613, A1614, A1615, A1616, A1617, A1618, A1619, A1620, A1621, A1622, A1623, A1624, A1625, A1626, A1627, A1628, A1629, A1630, A1631, A1632, A1633, A1634, A1635, A1636, A1637, A1638, A1639, A1640, A1641, A1642, A1643, A1644, A1645, A1646, A1647, A1648, A1649, A1650, A1651, A1652, A1653, A1654, A1655, A1656, A1657, A1658, A1659, A1660, A1661, A1662, A1663, A1664, A1665, A1666, A1667, A1668, A1669, A1670, A1671, A1672, A1673, A1674, A1675, A1676, A1677, A1678, A1679, A1680, A1681, A1682, A1683, A1684, A1685, A1686, A1687, A1688, A1689, A1690, A1691, A1692, A1693, A1694, A1695, A1696, A1697, A1698, A1699, A1700, A1701, A1702, A1703, A1704, A1705, A1706, A1707, A1708, A1709, A1710, A1711, A1712, A1713, A1714, A1715, A1716, A1717, A1718, A1719, A1720, A1721, A1722, A1723, A1724, A1725, A1726, A1727, A1728, A1729, A1730, A1731, A1732, A1733, A1734, A1735, A1736, A1737, A1738, A1739, A1740, A1741, A1742, A1743, A1744, A1745, A1746, A1747, A1748, A1749, A1750, A1751, A1752, A1753, A1754, A1755, A1756, A1757, A1758, A1759, A1760, A1761, A1762, A1763, A1764, A1765, A1766, A1767, A1768, A1769, A1770, A1771, A1772, A1773, A1774, A1775, A1776, A1777, A1778, A1779, A1780, A1781, A1782, A1783, A1784, A1785, A1786, A1787, A1788, A1789, A1790, A1791, A1792, A1793, A1794, A1795, A1796, A1797, A1798, A1799, A1800, A1801, A1802, A1803, A1804, A1805, A1806, A1807, A1808, A1809, A1810, A1811, A1812, A1813, A1814, A1815, A1816, A1817, A1818, A1819, A1820, A1821, A1822, A1823, A1824, A1825, A1826, A1827, A1828, A1829, A1830, A1831, A1832, A1833, A1834, A1835, A1836, A1837, A1838, A1839, A1840, A1841, A1842, A1843, A1844, A1845, A1846, A1847, A1848, A1849, A1850, A1851, A1852, A1853, A1854, A1855, A1856, A1857, A1858, A1859, A1860, A1861, A1862		