THE ROYAL OBSERVER CORPS GAZETTE

Vol. 2. No. 6 JUNE 1948

THE OFFICIAL ORGAN OF THE ROYAL OBSERVER CORPS

THE COMMUNICATIONS SYSTEM OF THE ROYAL OBSERVER CORPS

A considerable problem was created by the reconstruction of the Royal Observer Corps as an essential part of the defence system of Great Britain. Many of our readers are anxious to start live training, but find that in many cases, posts and operations rooms are not yet connected by telephone. When this article has been read, they will realize just what has had to be done to provide the necessary network of telephone lines for the proper functioning of our raid-reporting system.

From Land's End to John o' Groats

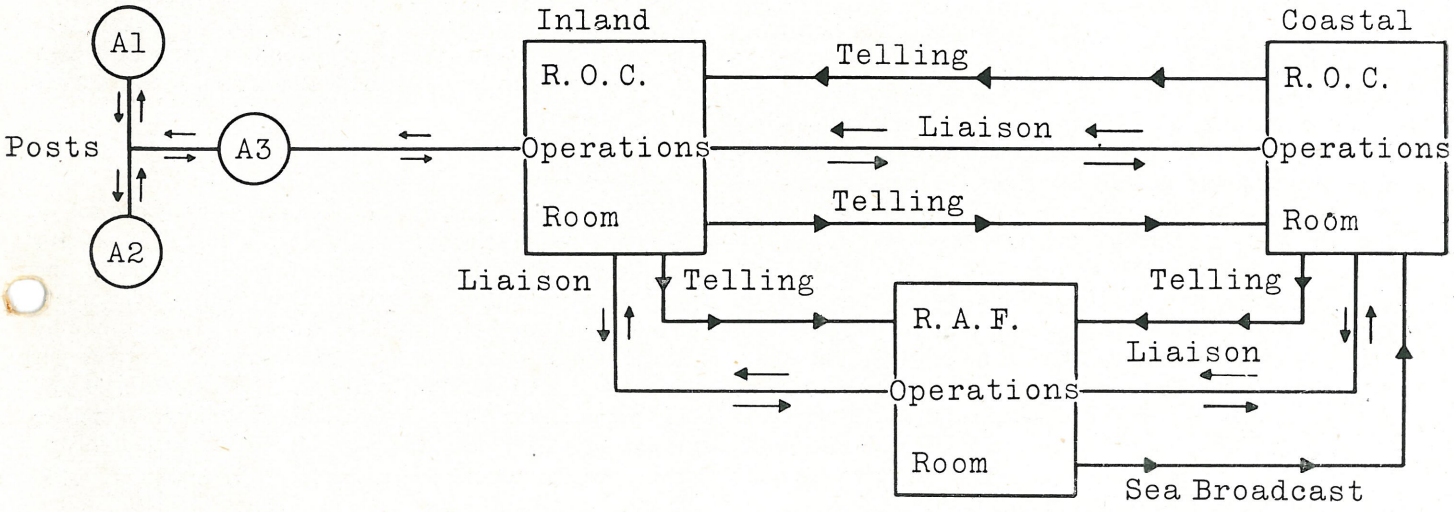
SPREAD ACROSS the face of England, Wales, and Scotland there are 1,420 Royal Observer Corps posts, each of which must be linked by telephone with its parent R.O.C. operations room (formerly called centre). Each operations room must itself be linked with adjacent ones, and also with appropriate Royal Air Force operations rooms.

The Royal Observer Corps telephone communications network has two main parts. The first is what we might call the internal system, and links each post to its appropriate operations room, and one operations room with another. The second part, which we can call the external system, provides the means of passing the information gathered by the Royal Observer Corps on to the appropriate operations rooms of the Royal Air Force.

The Cost

During the war, lines were, of necessity, permanent, and were technically termed " private wires." A private wire is the term applied to a telephone line which joins one place with another without going through the public telephone system. It is sometimes called a " tie-line." The installation and use of private wires is a very expensive business, as all such lines have to be rented from the Post Office.

In times of peace, any means which will reduce cost have to be considered. So a system has been devised whereby a



telephone system for the Royal Observer Corps can be set up at a moment's notice, using part of the Post Office public network. This has been done by means of what are termed " emergency circuits." These are normal Post Office traffic circuits in every-day use, which, in cases of emergency or during an R.O.C. exercise, can be switched by the exchanges through which they pass, to link up the required posts and operations rooms of the Royal Observer Corps. But to start at the beginning . . .

Post Equipment

Since the observer posts are the first link in the reporting chain, we will begin by talking about their equipment. Posts are usually grouped in clusters of three or four on a party or omnibus line. This is to enable each post within a cluster to have two-way speech with any of its neighbouring posts and also with its parent operations room. The telephone line at the post ends at a terminal box within the post itself, and to this a field telephone is connected. The other end of the post telephone line emerges at its appropriate position on the main plotting table in the R.O.C. operations room.

Any complaints?

From time to time there are complaints that the level of speech on the post-to-operations room circuits is too low for comfortable work ; it is a fact that speech level is not always all that could be desired. A good level of speech may depend on many things : the number of posts in a cluster, the distance over which the circuit is routed, or whether speech amplifiers are used in the circuit. A great improvement in the quality of speech would result, however, if personnel using head-and-breast sets, or hand microphones, would bring the mouthpiece of the instrument close up to the mouth and speak directly into it.

The Ops. Room

The amount of telephone apparatus necessary fully to equip a R.O.C. operations room is considerable. On the main plotting table each plotter has under his control a three position switchboard (that is, one with three keys), through which he is able to speak to the posts of his particular cluster, and through which he can, if necessary, link up two neighbouring clusters. The plotter is also able to speak directly to the post controller, who sits on the balcony of the operations room.

The post controller has, possibly, the largest switchboard in the operations room—perhaps with as many as 20 lines. From his position the post controller is able to monitor all post circuits and all the broadcast circuits which come into the operations room from other groups.

In command of a R.O.C. operations room is the duty controller. He, too, has a switchboard—of from 10 to 12 lines—through which his operations room is linked, for liaison purposes, to the R.O.C. liaison officer at the appropriate sector operations rooms of the Royal Air Force. The duty controller also has a direct line to the Post Office exchange, which is useful for communicating with the police and civil defence units, and for making contact with posts if the ordinary means of communication fail.

Sitting next to the duty controller is the assistant duty controller. He has a switchboard similar to that of the duty controller. His lines, however, connect with adjacent R.O.C. operations rooms for liaison purposes. These lines are in fact the means by which inter-centre liaison is maintained. Many will recall that during the last war inter-centre liaison proved quite a problem, though it was eventually solved.

The duty controller, the assistant duty controller, and the post controller are all inter-connected through their individual switchboards, and can thus maintain close touch.

No Back Answers

In connection with R.O.C. operations room telephone equipment, two other circuits must be mentioned. Both of these are " uni-directional broadcasts," that is to say, those operating them are only able to speak, but cannot receive messages.

The first broadcast circuit is that of the inter-centre teller, who, as his title implies, " tells " plots to other operations rooms as may be necessary. The receiving end of these broadcasts is at the long-range board of adjacent R.O.C. operations rooms.

The second broadcast circuit is that of the sector operations centre teller (formerly main teller), whose job it is to keep Royal Air Force operations rooms informed of plots.

If any information put out on these two broadcast circuits has to be questioned, it is done via the inter-centre liaison lines through the assistant duty controller in the case of the inter-centre teller, or through the duty controller in the case of the sector operations centre teller.

Division of Labour

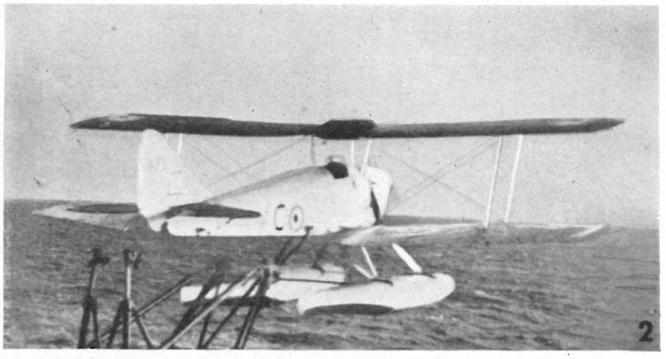
During the war, the traffic over some inter-centre telling circuits was so great that two tellers were used. The main plotting table was divided in such a way that the traffic was more or less equally divided between the two.

To provide some indication to tellers on these broadcast circuits that the line over which they are speaking is " live," side-tone is provided ; that means the teller can hear himself, or herself, speak. In addition to side-tone there is what is called the " pip-tone," which is a single pip—very much like that of the B.B.C. time signal, but rather softer—which occurs every 30 seconds. If the pip is not heard, the line has to be treated as dead. The pip-tone originates in an oscillator, which can also be used to pulse the master colour-change clock.

The Radar Link

This picture of the Royal Observer Corps network of telephone communication would not be complete without mention of the means by which the plots come to the operations room (long-range board) from the " sea table " of the Royal Air Force operations rooms. This is done by means of another broadcast circuit called the sea broadcast, which carries all the " early warning " information of aircraft approaching from the sea. The information, of course, originates in the coastal radar station, and is passed only to those R.O.C. operations rooms which control areas embracing the coastline.


1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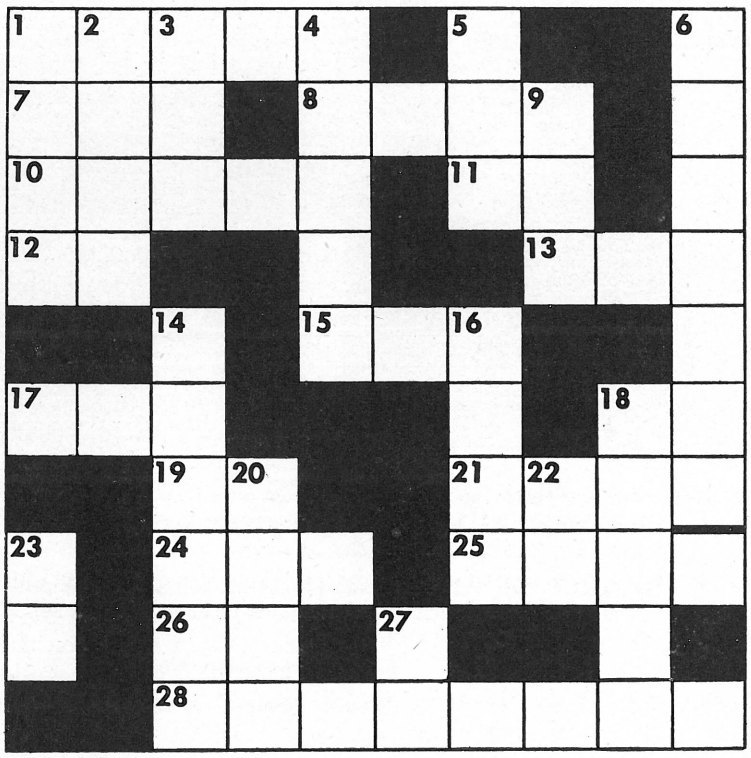
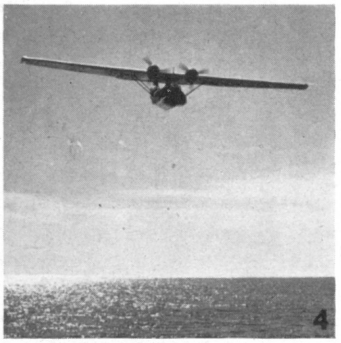
PUZZLE CORNER

This Crossword Puzzle was sent in by Obs. Officer H. J. Francis, of 28/1 Group, R.O.C.


3

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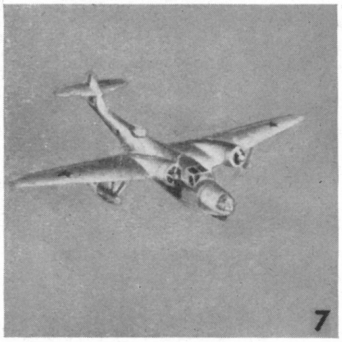
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8

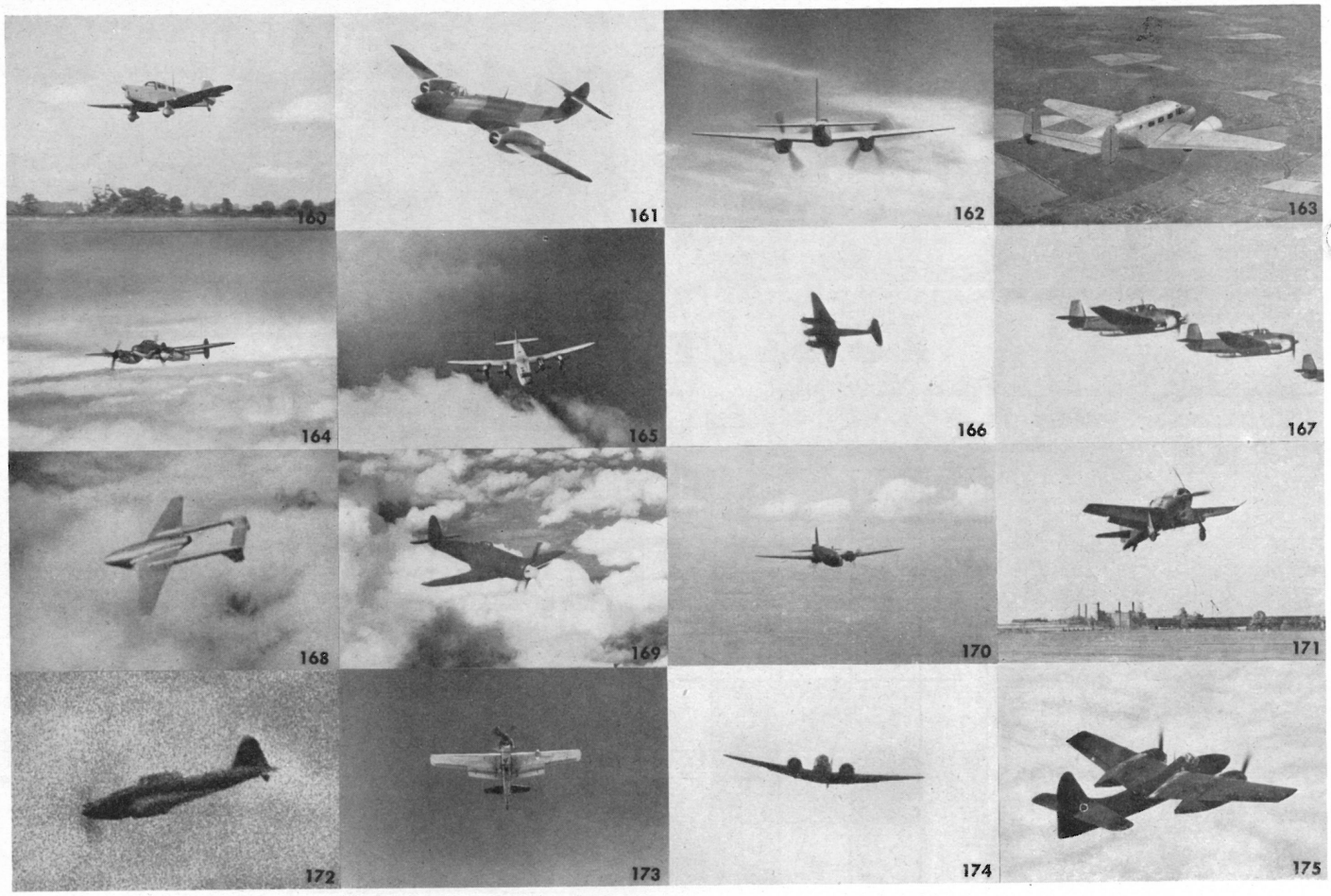
CLUES

ACROSS

1. Photo one.
7. Photo two shorn of royal title.
8. Just before Jig.
10. Read, mark, . . .
11. Skyraider minus one.
12. Rickenbacker's first name shortened.
13. A good one is necessary when bombing ; chickens need one too.
15. Observer's only companion, sometimes.
17. Photo four abbreviated.
18. Unaspirated head-piece.
19. Contracted Russian designer less 10 perhaps photo six will help.
21. Photo eight.
24. A famous office, the purpose of which is the investigation of wrongdoing and the apprehension of wrongdoers.
25. Photo three.
26. Service " Bible."
28. Photo five in the plural.

DOWN

1. Baker's neighbour.
2. Want.
3. Usual prefix for Naval aircraft.
4. Fife and four.
5. The " drink."
6. A scheme with red flares.
9. One of the few Russian flying boats of original design, see photo seven.
14. What the lozenge does on the plaque.
16. R.O.C. Posts are always this.
18. Manchester's famous aircraft firm.
20. Rile (Anagram).
22. One ring, or, it is registered in Belgium.
23. An aircraft short.
27. Belonging to.



Rule 6 : The list of answers headed "Airborne Headaches No. 6" must be sent on a post card to reach Group Headquarters by 31st July, 1948.
Rule 7 : Group Headquarters will forward answers so as to reach Area Training Officers by 7th August, 1948.

RESULT OF AIRBORNE HEADACHES Nos. 1 and 2

The undermentioned Posts and Centre Crews are to be congratulated on sending in an all-correct solution to Airborne Headaches Nos. 1 and 2:

Airborne Headaches No. 2

Group	Posts
1	D.2, M.3
2	H.1, O.3
3	H.4, M.3
4	R.2, Q.3, Y.2, S.2, Crew 1
17	L.2
18	K.1
19	S.2, X.2, Y.4, Y.2, R.3
5	B.1, B.2, D.2, F.4, G.2, H.3, H.4, J.3, Crew 1
6	P.2, S.1, T.3
8	B.1
9	O.2, S.2
10	B.3, G.1, G.3, H.2, H.4, J.1, J.2, J.3, J.4, K.4
11	F.1, H.3, K.3, M.4
12	H.3 Q.1, L.2
14	A.1, A.3, F.3, G.1, K.2, K.3, L.1, M.2, M.3
15	G.2, J.3, L.2
30	K.3, K.4, M.1
31	K.2, M.2
33	A.4, C.4
34	G.3, J.3
36	A.2, B.2, C.1, C.3, D.2
38	B.2
7	B.2, D.4, E.1, H.2, J.4
26	N.1, M.1
27	B.1, E.2, F.2, M.3
28.2	C.3
29	N.1, Q.2, T.2, V.1
32	A.3, K.2
20	Q.2
21	G.1, G.4, K.3, M.4
22	Crew 1, J.1, J.3, P.3, R.3
23	D.3, G.2, H.1, K.1, M.3
24	L.4, T.2
25	E.1
28.1	Q.2

Airborne Headaches No. 1

Group	Posts
4	S.2
17	F.2
26	O.3, S.1, A.3, C.3
28.2	A.3, C.3
29	P.1, W.3
23	D.1, H.1, K.1, K.2, M.2
5	B.1, B.3, C.1, G.2, H.3
6	S.1
8	Q.1, W.2, X.3
9	X.2
10	G.3, G.4, M.1
11	M.4
14	L.1
30	K.4, M.2

Last month's complete crossword

The Intermediate Test as seen by Sessions