

The information for these presentations comes from a series of informational booklets published by His Majesty's Stationary Office in the 1940's. This is one of a number of books that were bought by my father during WW2. They were sold [usually for 6d or 1s] to keep people informed of various theatres of war and as a boost to morale.

These books have now been donated to the Imperial War Museum archives and other organisations, grateful thanks are due to Arthur for his sterling work in scanning them to digital format, which I appreciate, was no easy task.

PJS

# THE POST OFFICE WENT TO WAR

by

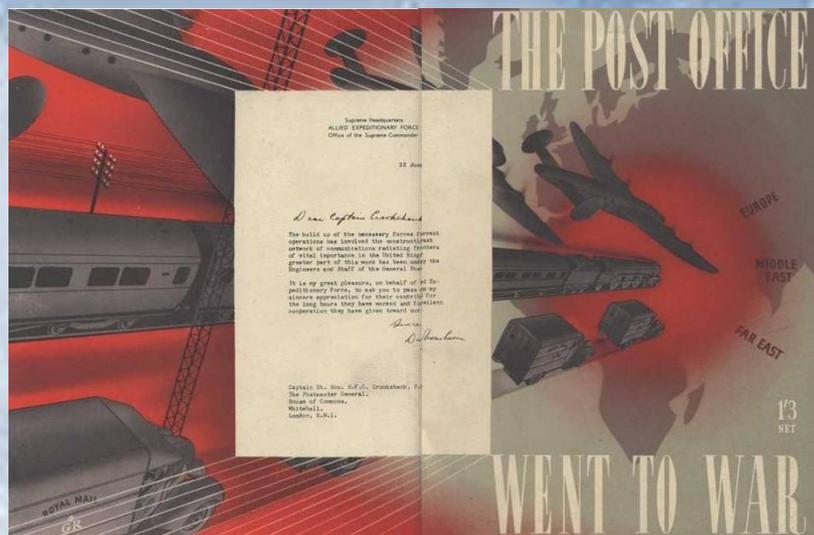
**Ian Hay**

HIS MAJESTY'S STATIONERY  
OFFICE

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Published 1946

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Below is a copy of the letter which is 'shown' on the front cover of the book

Supreme Headquarters  
ALLIED EXPEDITIONARY FORCE  
Office of the Supreme Commander

22 June 1944

Dear Captain Crookshank

The build up of the necessary forces for the current operations has involved the construction of a vast network of communications radiating from key centers of vital importance in the United Kingdom. The greater part of this work has been undertaken by the Engineers and Staff of the General Post Office. It is my great pleasure, on behalf of the Allied Expeditionary Force, to ask you to pass on to them my sincere appreciation for their contribution and for the long hours they have worked and for the excellent cooperation they have given toward our success.

Sincerely

Dwight D. Eisenhower

Captain Rt. Hon. H.F.C. Crookshank, P.C., M.P.,  
The Postmaster General,  
House of Commons,  
Whitehall,  
London, S.W. 1

A WORD TO



THE READER

G.K. Chesterton, in one of his Father Brown stories, describes how a detective on the trail of a suspicious character once kept watch on a certain block of flats for a whole morning without observing a single individual enter or leave. And yet a man had been in and out under his very eyes. He was the postman, and the postman is so much part of an urban landscape that a highly trained observer did not even notice him.

All of which is symbolic of our attitude to our Public Services, and to the Post office in particular. So long as these function normally we are almost unconscious of their existence; just a man with a perfectly sound heart is quite unaware that he possesses a heart at all. It is only when the heart misses a beat - or when one letter or postcard in twenty million goes astray - that we become Post Office conscious, and sit down and write indignant letters to our local paper about Government inefficiency.

When, at the request of the Postmaster General, I set out to compile this little record of Post Office service during the years of War, I did so equipped with nothing beyond the profound ignorance and mild disfavour which distinguishes the majority of the British public in its attitude towards Government institutions.

My researches have involved me in much travel and innumerable contacts with all sorts and conditions of Post Office workers.

I rise from my task a confirmed Post Office fan.

Ian Hay

# Chapter I

*THROUGHOUT our history as a nation it has been our cheerful habit to declare war first and then prepare for it.*

*This, besides involving the hasty creation of various new Government Departments - gradually and painfully achieving efficiency by the only method feasible in the circumstances, that of trial and error - throws a sudden and heavy strain upon those already existing, by compelling them to intensify their activities to almost unmanageable proportions.*

## IMMINENT DANGER OVERHEAD

THE OUTBREAK of war on September 3<sup>rd</sup>, 1939, though it failed to dislocate the Post Office machine, submitted its working to an incalculable strain.

Fifteen per cent of the staff vanished into the Forces during the first week. A large number of these were young men.

Then came the blackout, an especially heavy handicap upon an institution whose working hours run all through the night. Letter sorting is carried on in many cases under a glass roof - the great sorting-office at Mount Pleasant resembles a railway station in this respect - and since adjustable blackout material could not be obtained in sufficient quantities, these roofs had to be blacked-out permanently. This involved the perpetual use of artificial light, as well as insufficient ventilation. The postman, mail porters and van-drivers employed on outdoor and station work had to conduct much of their business groping about in the dark, without lamps, and it became difficult to convoy the mails to the railway stations in time to connect with their trains.

As for actual delivery of the mails, the first thing that happens in war-time from the Post Office point of view is that, with the population dispersed throughout the country to military centres or munition factories, millions of people change their address; and having changed it, embark upon an orgy of affectionate correspondence with those left at home, thereby increasing the labours of sorters and postmen beyond measure.

And at any moment this department or that might be called upon to deal with a rush order. For instance, when *H.M.S. Courageous* was sunk early in the war a thousand Post Office Bank books had to be replaced forthwith, for until they received them the survivors were penniless.

Provisionally no bombs fell in the first six months, and during that time the Post Office had opportunity to make provision firstly for the more complete linking up by telephone and telegraph of Home Defences, especially Fighter and A.A. Command, with every aerodrome, gun centre and searchlight centre in the country. [We shall have a good deal more to say about that later.] Secondly, steps were taken, so far as human prevision could ensure it, to provide alternative routes and circuits in the event of the damage which was bound to come [for electrical plant is the most vulnerable of targets] to the telecommunication services of the country in general.

A.R.P. services were organised in all departments, and the Post office in due course contributed a highly efficient contingent of the Home Guard, raised within a few days of Mr Eden's appeal and distributed into zones corresponding with the Regional organisations of the Post Office.



*Fifty thousand officials joined the Post Office Home Guard.*

The Post Office Home Guard, it may be noted, was a truly democratic force, for a man's rank therein did not necessarily correspond with his status in the Post Office. Its main function was the defence of the Post Office telegraph and telephone systems in the event of an invasion, and a definite quota was kept perpetually on duty for this end, those not so employed at the moment being fitted into the general defence scheme of the district. Volunteers were forthcoming from all parts of the United Kingdom, and no less than 50,000 joined up - about four divisions in fact.

## II

Then came the bombing. It began with the Battle of Britain in the summer of 1940. Then on September 7<sup>th</sup> came the Blitz proper, during which London was bombed for ninety-two consecutive nights. V1's and V2's followed as the years went by, and each of them took their toll of Post Office plant and personnel.

There is no need here to tell an inhabitant of a British city what an air-raid is like. Our narrative is concerned only to describe the experiences of the Post Office and its servants during some of those visitations.

Mention has already been made of the difficulty of carrying out the collection, sorting, and delivery of the mails under black-out conditions. To ordinary difficulty was now added acute danger to life. During one night alone in September, 1940, twenty-three London post offices were hit, and at one time or another every London railway terminus was put temporarily out of commission.

This meant that the mails for a particular destination could not be despatched from their usual point of departure, but had to travel from other termini by an alternative route, or be conveyed by road to some station further down the line. Thus, when Waterloo Station was rendered unapproachable, the mails for the south-west were despatched from Clapham Junction or Wimbledon, or, at the height of the devastation, from as far afield as Surbiton or Woking. And, of course, no one knew until the last moment what station, if any, would be incapacitated at a given moment. In other words, the postal services during the nightmare period were one long series of hasty improvisations - a perpetual *ad hoc*.

The same difficulties applied to incoming mail. But whatever had happened during the night, somehow or other about breakfast, or not long after, the grateful Londoner found his letters in his letter-box - if he still possessed a letter-box. Perhaps not all of us realised in those days how far the regular appearance of the postman, with his cheerful morning face and reassuring fables of enemy planes shot down, went to restore the confidence and hope of many a sorely tried little household.

Even more vulnerable to raid damage was the Post Office telephone system.



London is dotted through the telephone exchanges, and is itself one vast underground network of telephone wires, connecting some 6000,000 subscribers. Raid damage to these services can be of two kinds. A bomb may fall upon an exchange, destroying or damaging enough equipment to disconnect 10,000 subscribers at one single blow, or it can fall in a street and sever a bunch of underground cables containing thousands of wires. The latter is the lesser disaster of the two; still, to identify and join up all those broken ends on either side of the break, especially since the location of the break may be a crater filled with water or sewage, is no light or pleasant task. For this reason the attempt to join up the broken ends was occasionally abandoned, and the break by-passed, so to speak, by inserting extra lengths of cable across or around the obstruction.

Then there was the personal danger to which the switchboard operators were exposed. Switchboard rooms are usually situated at the top of a building, which increased the risk. Fortunately most London telephone exchanges are now automatic, and the subscriber, by simple dialling, can make local calls without any human aid at all. But all Trunk and Toll exchanges are still largely hand-operated, and here the danger was extreme and the strain terrifying.

Despite this, practically 100 per cent. of the switchboard girls volunteered to remain at their posts during alerts, and were as good as their word.

As time went on a small number of "last ditch" operating positions were installed in protected accommodation in most exchanges; but because of their limited capacity, the operators continued to work in the normal switch-room even during periods of imminent danger, lest the calls of those subscribers who regarded a heavy air raid as a suitable occasion upon which to ring up their friends, might delay an urgent call for help or an important communication for the Defence Services.

### III

London bore the brunt of the bombing throughout the war, but practically every one of the great provincial centres, especially the seaports, took its turn. It was in London though, as the focal point of our national communication system, that these visitations were most acutely felt.

We will take the Provinces first.



Birmingham was the earliest sufferer, and then Coventry. The raids started in August, 1940, with, at first, comparatively small dislocation of the Post Office services; but they rapidly increased in violence.

On November 14<sup>th</sup>, 1940, there occurred the now notorious raid which devastated the city of Coventry and added a new verb to the language of terrorism to "coventrate." The raid lasted for eleven hours and all public services were dislocated. Incendiary bombs fell upon the Head Post office and Sorting Office buildings, but were extinguished by the Post Office staff. A fire in the Telephone Manager's office was kept under control by the engineering staff until the fire services were able to deal with the matter. 23,000 "faults" were created in the telecommunication services and 4,500 subscribers had their telephones put out of action.

Thanks, however, to anticipatory measures taken long before the war began, Coventry was not left entirely cut off from communications with the outside world; for "The Defence telecommunications Control Circuit," we are told, "continued to function throughout the raid, a circumstance of which Regional Commissioner, A.R.P. services, and the civic authorities were able to take full advantage."

The worst experience of Birmingham, eighteen miles away, came a week later. Birmingham is a very large city indeed, and hitherto the damage had been less concentrated; on this occasion the East Building of the Head Post office was twice hit and the Telegraph Instrument Room wrecked. Fortunately there were no casualties, and emergency services were immediately put into motion from reserve premises already prepared. But telephone cables and ducts were badly damaged. So terrific was the force of some of the explosions that a group of 4-inch steel pipes were afterwards found protruding vertically from the pavement to a height of 8 feet bent over at the top into various fantastic shapes - "the whole," says the report, "presenting the appearance of a hydra-headed monster."

Whilst other Midland towns were attacked with varying degrees of violence, one or two surprisingly escaped practically scatheless.

The Luftwaffe now turned its attention to the south and west. In the first of a series of savage assaults on Bristol [on the night after the Birmingham raid, one branch post office was completely demolished and another gutted.

The Central Telephone Exchange was ringed with fire, which however, was kept under control by the tireless efforts of the staff until the City Fire Service could attend. In this way equipment on which the whole of the West of England depended for its telephone service was saved from destruction. About 3,000 telephones were put out of action.

In a later raid on Bristol in the early hours of Saturday, December 6<sup>th</sup>, 1940, the Head Telegraph Office was destroyed. Nevertheless, a new public office was opened on Monday morning at the usual hour, while the telegraph service was maintained in the basement and without any noticeable break in service.

Even more disastrous to communication services was the raid on Southampton a week later. The upper floors of the Central Telephone Exchange with all their equipment were burnt out, and the Head Telegraph Office was badly damaged.

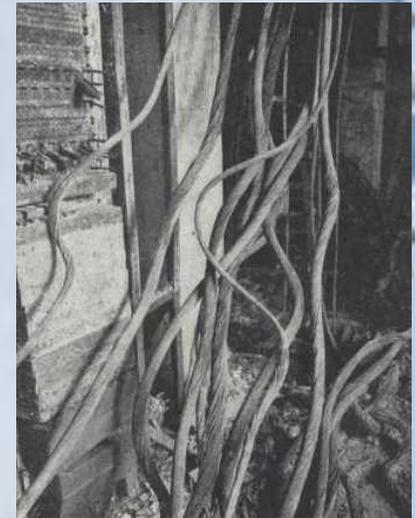
At Plymouth and Devonport five devastating raids occurred within a fortnight. But "The Plymouth Telephone Exchange premises were saved, after being completely surrounded by fire, and now stand as an island monument amid a sea of total destruction covering fifteen acres. The Devonport Post Office and Telephone Exchange were completely destroyed by fire. But the Post Office engineers were on the road before daybreak, carrying out a pre-arranged scheme for restoring vital defence communication services, while others repaired breaks in the cables in the numerous craters on the road.

With the beginning of 1941 the enemy switched his operations further west. South Wales had its first experience, and a heavy experience it was. The Head Post Office at Cardiff was put out of action by blast. The railways were cut in numerous places, and mails had to be conveyed by road across the gaps. Swansea suffered even more, for the centre of the town was destroyed. Two branch post offices were completely demolished, and Telephone House hit by a bomb which penetrated all floors and set fire to the basement.

But somehow, in city after city, through all the confusion and terror of those devastating experiences, Post Office officials carried on somehow, from high to low. One night in January a postman-driver while clearing a pillar-box in the village of Blackpill, on the coast-road between Swansea and Mumbles, was mortally wounded by a shell-splinter during the height of a raid. But he declined to be moved until full arrangements had been made for the conveyance of the solitary mailbag for which he was responsible to its proper destination. Then he consented to be conveyed to hospital, where he died - one of a thousand unsung devotees to duty in those splendid days.



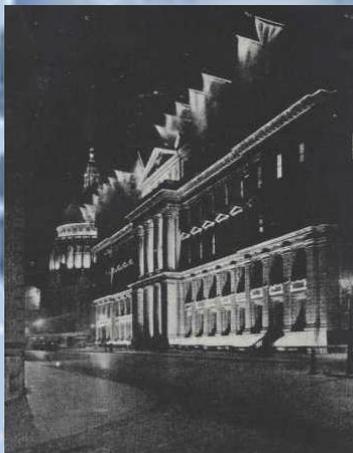
*Cables stripped of lead cover and insulation by fire.*



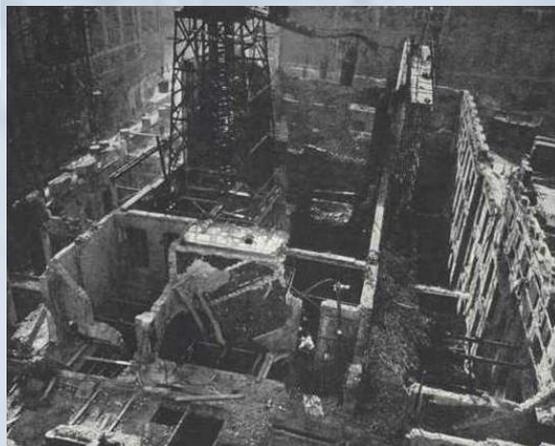
*Joining up after a raid.*

So the tale went on - Portsmouth, Clyde-side, Sheffield, Belfast, Liverpool, Manchester, with occasional return visits. There is no need to repeat it at length, for it varies little except in detail. Men and women died, post offices and telephone exchanges were destroyed or damaged, but somehow the mails were delivered and emergency switchboards set working, usually within a few hours.

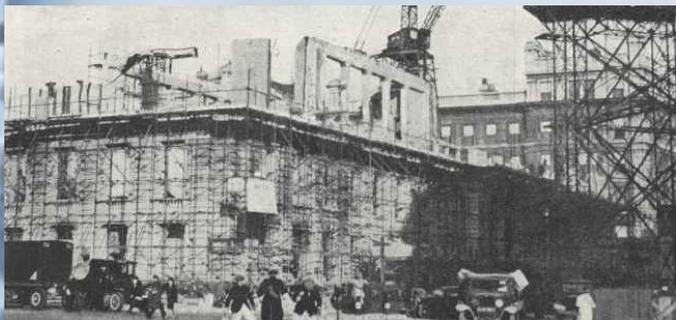
The last heavy raid of what may be called the Blitz proper took place on May 10<sup>th</sup>, 1941, when the House of Commons was burnt out. But at this point our new night-fighters made their *debut* and turned the scale, and the country as a whole enjoyed a comparative respite for a year or more.



*Central Telegraph Office pre-war days..*



*C.T.O. after the fire.  
[scanned in two sections]*



*C.T.O.  
reconstructed*

#### IV

During this period the Post Office, whose energies on the telecommunications side had been mainly absorbed hitherto in the maintenance and extension of the Defence Services [of which the public knew little or nothing at the time but about which I shall have a good deal to say hereafter], was able to devote itself in part to overtaking the arrears of service due - considerably overdue - to the private sector.

But in early 1942 the Luftwaffe, goaded into action by our methodical and increasingly successful long-distance bombing excursions, came back, this time upon those strange, aimless visitations which came to be known as the Baedeker raids - on Canterbury, Bath, York, Exeter, and other historic and ecclesiastical centres.

These old Cathedral Cities, with their narrow streets and half-timbered buildings, became veritable death-traps upon such occasions. At Exeter, twelve members of the Post Office staff including some women, were trapped in the basement telegraph office. The surrounding buildings were in flames, and the Post office over their heads a raging furnace; the doors of the emergency exits were red-hot. Nevertheless, the staff pressed on with the despatch of urgent messages, and even contrived from time to time to keep Bristol informed of their personal situation. "Thanks to the pre-arranged emergency organisation set up between Regional Headquarters and the A.R.P. Controllers concerned, no loss of life or serious injury occurred."

About this time an unexpected burden added itself to the tribulations of the Post Office Staffs. The names of the places raided, instead of remaining wrapped in mystery until a certain level had elapsed, were now proclaimed as soon as they occurred. The result was an avalanche of enquiry telegrams from anxious friends and relations. The number of telegrams delivered in Bath on a normal day is about 500; on the day after the announcement of the raid at 16,250 had to be dealt with. One more raid during this period may be mentioned here, for the manner in which its results were met and countered is typical of a hundred other instances of routine heroism. The following is extracted from the official report:-

#### May 8: HOME COUNTIES REGION

*Great Yarmouth.* Cobholm Island Sub-Post Office was badly damaged during the raid. The sub postmistress, a widow, at about 3 a.m. accommodation for the Post office in a neighbouring private house. Here she opened up business at 9 a.m. and carried on as though nothing untoward had happened. Her devotion to duty and her concern for her customers, especially the old age pensioners, is a good example of the spirit displayed by Post office servants during these trying times.

#### V

The most shattering raid of all, so far as Post Office property and equipment were concerned, took place on the night of Sunday, December 29<sup>th</sup>, 1940, when the City of London was set ablaze to an extent unequalled since the Great Fire itself 274 years before - except that this time St. Paul's escaped. At one moment 1,500 fires were raging at once. The area with which we are particularly concerned was St. Martin's-le-Grand and its environs, the very heart of the British postal and telegram system. The buildings chiefly affected were the Central Telegraph Office, which stands on the opposite of Newgate Street from St. Paul's Tube Station, and the Wood Street Building, just north of Cheapside a few hundred yards away, which housed three great automatic Telephone Exchanges - London Wall, Metropolitan, National, and an essential part of two other Exchanges - City and Central.

At first the staff had to deal mainly with showers of incendiary bombs, which were extinguished without much difficulty. A more serious danger was the threat of fire spreading from adjacent buildings, already well alight. Their chief handicap, however, was the low pressure of the water in the hoses, for every hydrant in the City was in use that night, and in 1940 there was none of the emergency water-tanks which became such a familiar feature of our streets later on.

Presently, about seven o'clock, a high-explosive bomb fell close to Wood Street building, blowing in doors and windows and admitting a rain of whirling embers and flaming *debris*. But the grim battle never slackened, while down in the shelter the operating staff stuck to their job at the emergency manual switchboard; for calls of the kind that have to be completed manually, even at an automatic exchange, were still coming in. Indeed some "overflow" traffic was actually being dealt with in the switchroom on the sixth floor, almost untenable through smoke and heat.

By this time the surrounding streets were a roaring furnace, and little hope remained of saving the building or its precious equipment. At ten o'clock Police and Fire Brigade officers gave the word to "abandon ship." Even then four diehards, together with three firemen, remained and fought on - without water now, for the supply had failed altogether - until after midnight, when they were peremptorily ordered to leave the building. Just after the last man left, a blazing wall collapsed and blocked the last road out.

The fire raged the whole of the next day, Monday, and it was not until Tuesday that an estimate could be made of the danger or, much more important, the steps to be taken for immediate establishment of a substitute telephone service.

Nearly 15,000 exchange lines had terminated in the Wood Street Building. With whole streets lying in ruins all round, it was obvious that many of these stood no need of immediate attention; but the remainder, some 10,000 in all, had to be restored somehow. This was contrived, chiefly by connecting up the subscribers concerned with other Exchanges round about, and by re-opening the old Clerkenwell Manual Exchange which had been closed down after conversion to automatic working, but which had been left standing to meet any such emergency. The old Clerkenwell Exchange was renamed "Kelvin."

Much labour was involved in the clearing away of endless rubble and the pumping out of water, as well as in the laying of emergency cables; so a large extra staff of engineers was brought in, many from provinces. These had to be fed and a canteen was established in the neighbourhood and kept open all round the clock; for the work never ceased, even in the blackout.

Progress in the work was at times retarded by the fact that many of the workers were strangers to each other and to London. A Welshman at one end of the circuit and a Highlander at the other, we are told, sometimes found themselves involved in mutual difficulties of a linguistic character.

But in less than ten days time the communicational crisis was past. The more important subscribers - Government office and outstanding City houses - had been given service, while a hundred telephone call-boxes were set up in what was left of Cheapside and Moorgate Street for the general public. From that moment the work rehabilitation moved to a steady and triumphant conclusion.

"To have finished it in the time," remarked a workman at the conclusion of his labours, "has been a man's job. I wouldn't have missed it for anything."

Such was the spirit of 1940 - 41.



*Alone amid ruins. Wood Street Building in which 15,000 telephone lines terminated---*

*---and the operator didn't even answer.*





Top Picture:

*Rowland Hill still on his pedestal.*

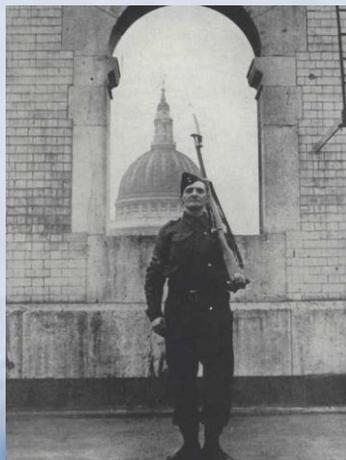
*Sir Rowland Hill KCB, FRS (3 December 1795 - 27 August 1879) was an English teacher, inventor and social reformer. He campaigned for a comprehensive reform of the postal system, based on the concept of penny postage and his solution of prepayment, facilitating the safe, speedy and cheap transfer of letters. Hill later served as a government postal official, and he is usually credited with originating the basic concepts of the modern postal service, including the invention of the postage stamp.*

Source: Wikipedia



*Bird's Eye view of the damage*

*On guard at St. Martin's - le - Grand.*



## VI

The Central Telegraph Office, the heart and centre of the whole British telegraph system, was completely gutted the same night.

There will be more to say about the C.T.O. later in this narrative; it will suffice to mention here that it acted as a clearing-house for the inland telegram system of the British Isles and the overseas telegraph services. It housed within its five storeys an enormously valuable electric plant and employed a staff of 3,000.

Like the Wood Street Building close by, it was set on fire by burning *debris* blown in from adjacent buildings. A great effort was made to save it, and in the end some at least of the more portable electric apparatus was evacuated.

But though by the following morning the C.T.O. itself had been reduced to a shell, its soul went marching on. As early as 1938 - long before the Munich crisis, in fact - the possibility of such a lethal visitation as this had been fully considered, and it had been determined by the Post Office authorities that whatever else happened to London there must be no complete disruption of telegraph services at this focal point. Accordingly a reserve telegraphic instrument room containing 100 circuits was established far underground in the reinforced cellars of King Edward Building next door; and as the C.T.O. collapsed in ruins, the spare equipment flashed into action.

This sufficed for all Defence priorities, but not for the full public services. Hence the notices which one encountered on so many hoardings and inside so many public vehicles about that time:- "*Don't telegraph - write!*" Within six months, however, four subsidiary telegraph stations, known as Ring Offices, had been set up around the outskirts of London - at Addiscombe, Hendon, Acton, and Stratford; and these, in conjunction with the C.T.O., had been reconstituted to the extent of two storeys, were sufficient to restore the telegraph services to normal so far as equipment was concerned. But not, alas - manpower! That is another story, and will unfold later. This chapter, however must not close without some reference to two indispensable arms of the Post Office Defence Forces during this hazardous period - the Headquarters Medical Staff Fire Fighters and First Aiders.

As regards the first of these, the implications of air warfare and its particular impact upon Post Office Services had been well thought out before hostilities began, and a miniature Medical Department had been set up in the secure depths of King Edward Building. It functioned by night and day, and proved an immense boon through the whole raid periods. Later it rendered invaluable service in two other and unforeseen directions - as a dormitory for Post Office workers whose homes had been destroyed, and a general hospital for those who had "gone sick" [usually with only too good cause] and could not be accommodated in the already overcrowded hospitals of London. Thus the Post Office looked after its own, in wards established both in K.E.B. and Mount Pleasant, with the devoted aid of the Post Office doctors and their home-trained nursing staff.

Firefighting teams, too, were organised betimes. Volunteers were everywhere on hand - at Faraday Building there was one team composed entirely of women - and a high standard of efficiency was demanded and attained. To-day in many a badly blitzed town you may observe a single building standing up, gaunt and solitary, amid an ocean of desolation. That is the local Post Office, preserved from destruction by its own particular firefighting staff.

Such is the tale of the Second Great Fire of London. It has been told here in some detail because the courage and initiative with which it was faced and mastered are but a pattern and reproduction of what was going on all over the country.

# Chapter 2

## GENERAL POST

IT IS MANIFESTLY impossible to appreciate the changes involved in Post office routine and the special demands imposed upon its personnel and equipment by a state of total war unless we possess some working knowledge of the scope and complexity of the Post Office services in time of peace. This is especially necessary since most of us are strange incurious - in other words grossly ignorant - regarding the organisation and functions of our national nervous system, for that is what the Post Office represents.

In my Word to the Reader mention was made of 20,000,000 letters or postcards. That figure represents roughly the average number posted and delivered in the United Kingdom in a single day.

And while we are on the subject of postal statistics let us have a few more, and get them over.

The General Post Office is the largest single employer of labour, most of it highly skilled labour, in the country. It possessed 24,000 post offices, 5,800 telephone exchanges and over 50,000 telephone call-offices, serving nearly 4,000,000 telephone instruments. It maintained over 17,000 motor vehicles and over 20,000 bicycles.



All this involved not merely ownership, but manufacture [or purchase], storage, and repair. These commitments were supervised by three separate Departments - Contracts, Stores, and Factories.

With the outbreak of war the responsibilities of all three were enormously increased. In the first place all material had to be dispersed against the hazard of air attack, and emergency stocks laid to meet the inevitable increase in wastage.

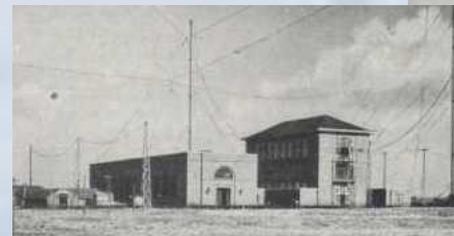
The long experience of the Post Office in the production of certain types of equipment was placed at the disposal of the Government. Its experience, for instance, in outfitting postmen enabled it to provide uniforms required by the Ministry of Home Security for the Civil Defence Services. It lent a hand, too, in the successful operation known as "Pluto" - the provision of submarine oil pipeline. The Stores Department even supplied several hundred bicycles to the Admiralty.

Lastly, since the ordinary Post office contractors were unable to meet the whole of the enormously increased war-time demand for telecommunication equipment, the Post Office tackled the problem at first hand, and set up its own factories for the production of telegraph and telephone switchboards, together with a good deal of novel and secret apparatus for the use of Defence Network.

But there is only one figure which the reader should bear in mind, and keep on bearing in mind - the figure 73,000. That represented the Post Office Staff absent on Active Service.



*Rugby Radio. One of the most powerful wireless stations in the world. It has masts 820 ft. high.*



In addition to what may be called Post office business proper - the conveyance of mails, the issue of stamps and money orders and the despatch and delivery of telegrams - the G.P.O. in 1939 controlled the entire telephone service of the country, except in Hull and in the Channel Islands. The telephone service had been taken over 27 years previously from a private company and was now undergoing expansion on national lines. A systematic campaign was in progress to make the telephone as essential an adjunct to a British household as the kitchen stove. A thousand salesmen continually toured the country, enlisting subscribers and rendering the British public telephone-minded. Conspicuous red telephone kiosks were springing up everywhere, and public fancy was being tickled by such ingenious novelties as the golden-voiced TIM.

Wireless telegraphy had come to its own, and not only telegraphic but telephonic communication with distant parts of the globe had become a matter of everyday business routine. The main Post Office Radio Station at Rugby, one of the most powerful in existence, with its twelve masts 820 feet high, provided a novel and stimulating spectacle for travellers approaching by train from the south.

The Post office wireless stations round our coasts also kept regular touch with ships at sea. Whether it is a trawler fishing in the White Sea, a luxurious cruiser halfway round the world, a whaler in the Antarctic, or a small coaster in home waters, the Post Office maintains constant touch with it. In peace-time [but in peace-time only] many ships can communicate with homes on shore by radio telephone as well. But the most important service of these stations, especially in the stormy waters round our coasts, is the provision of assistance to vessels in difficulty or distress. Throughout the war this service has proved invaluable firstly in cases of submarine and surface raider attack, and secondly in summoning aid for aircraft crews brought down on the sea.

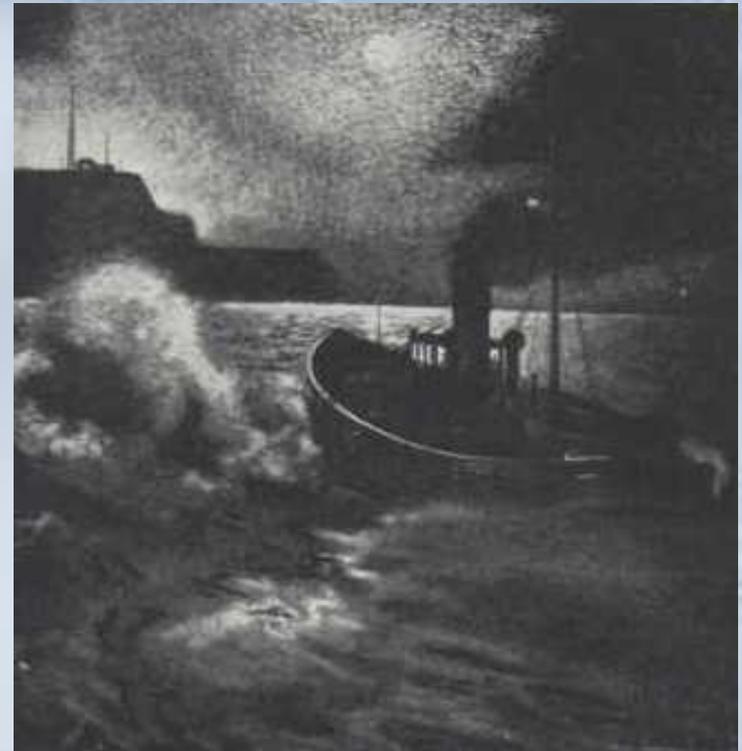
Since 1935, too, the Post Office has taken an ever increasing amount of work, chiefly financial, from the shoulders of various Government Departments. In addition to its own Post Office Savings Bank the Post Office to-day functions as the recipient of various taxes and duties owed to the Revenue collecting Departments - motor licences, dog licences, Income Tax stamps, for instance - and pays out on behalf of the Ministries concerned Old Age Pensions, Widows' and Orphans' Pension and Navy, Army and Air Force Pensions and Allowances.

The demands of total war have increased some of these responsibilities to an astronomical degree. By 1945 the Post office was paying in Service pensions and Separation Allowances alone nearly £8,000,000 a week, while Savings Bank deposits had increased from £500,000,000 to £1,600,000,000.

These figures are set down mainly for the delectation of those capable of absorbing them; as for the rest, few people really understand figures and nobody remembers statistics. Nevertheless, a further word must be spoken on this subject.

War-time finance, whereby both the income and expenditure of the national Treasury have been raised to fantastic heights, and "token payments" have covered the disbursement of untold millions, is a mystery too deep for any but experts, and can be respectfully eschewed as a topic for discussion here. But some mention of the National Savings Campaign must certainly be made, because that vast undertaking has been responsible for a proportionate increase in the labours of the Post office, especially that end of the counter at which the business of the Post Office Savings Bank is conducted.

In other words, the Post Office has been employed throughout the war as custodian of the war savings of the people - in Savings Bank deposits, Defence Bonds, Savings Certificates and humble Savings Stamps.



*Post Office Coast Wireless Station.*

The whole country has contributed, and not only this country but others - Allied Nationals, Indians, Americans, and even Nationals of enemy countries resident in Great Britain. His Majesty's Forces made a notable effort; indeed the Savings Branch of the Army swelled to such proportions that it accounts had ultimately to be transferred to the War Office.

And not before it was time, the Post Office was contending with grievous staff and accommodation shortages. Upwards of 700 members of the Savings Department alone, men and women, had joined the Forces. Beside this, numerous members of the Savings Department staff had been lent to other Government Departments.

But it was the growth of work that told chiefly, and this had to be made up by the employment of temporary staff and part-timers more than 7,000 in all. Yet, despite their unfamiliarity with a complicated job and their own domestic preoccupations, the new-comers rose to the occasion and were soon working like veterans.



*Counter Training Staff. Instruction is under rigid and realistic lines.*

## II

One of the principal points of human contact between the Post Office and the public is the post office counter, and the public is prone to judge the postal services generally from the attitude of the young ladies behind it. The postal authorities are well aware of the fact, and even amid the stress of total war do their best to produce as competent and acceptable an article as possible.

This brings us to Counter Training Centres. The largest of these is in London, and is situated in that unromantic but businesslike thoroughfare the Euston Road. Let us make a brief tour of some of the classrooms.

Each class, we note, is limited to eight pupils. These are almost entirely girls, though occasionally a man past middle age or a disabled soldier figures among them. The instructors are of both sexes, with women predominating.

In the first room a woman instructor is giving a lecture on the Post Office Savings Bank. Each pupil has before her a savings bank book, together with a formidable collection of all forms, dockets, and slips essential to such mysteries. The instructress elucidates these one by one, and her disciples are encouraged to ask questions.

Next door another instructor, an elderly man this time, is lecturing on Registration of Letters and Postal Packets. Registered mail is the pampered bantling of the G.P.O. It is segregated from everything else, each address is entered in a book, a receipt is given, and all letters and parcels are kept in a locked cage while passing through the office.

The lecturer has just posed a little conundrum. "Here is a gold watch," he says, "waiting to be registered. Under what category does it travel?"

Each pupil promptly buries her young nose in her copy of *The Post Office Guide* - majestic volume which you may observe any day upon any Post Office counter. Presently one of the girls finds the answer. "As jewellery," she announces.

"Right. Now, at whose risk does it travel? Look that one up."

So it goes on, from classroom to classroom. In the next one we visit a talk being given on Overseas Parcels, and the multifarious regulations governing limit of weight, customs declaration, and censorship. In the next the subject is C.O.D. deliveries - parcels delivered by the Post Office on behalf of tradesmen at the customer's door. Query, does the postman collect the money, or some specially appointed official? The answer is that the postman collects on goods having a value of £10 or less; for anything higher the customer must go to the Sorting Office and complete the transaction himself.

The last room in the passage is occupied, a little surprisingly by a class of Wrens in uniform, undergoing special instruction in the handling of Fleet Mail - of which more will be heard later.

But it is at the close of each lecture that the real interest and excitement begins, for then we proceed from words to deeds.

At the end of each classroom stands a complete replica of a post-office counter, with brass grille, cash-drawer, date-stamp, scales, stamp book, and the inevitable *Post Office Guide*. Hither our class repairs, to indulge in a game fascinating to children of every growth - playing at shop.

But this game is played under rigid and realistic rules. One of the pupils takes her stand, with a slightly conscious air, behind the counter; a second approaches the front, carrying perhaps a parcel or a letter. She is impersonating a member of the public. The other six stand by; their turn will come presently. The instructress exercises benevolent supervision over all.

The transaction may be a simple one, but it has to be thorough. The customer, we will say, wishes to send a small parcel to Ipswich. The girl behind the counter weighs it, makes sure it is for an island address, says what the cost will be, tears the necessary stamps out of the stamp book [there is a right and wrong way of doing this], takes the money, pushes the stamp under the grille and gives change. The point to observe is that the parcel is a real parcel, the stamps are real stamps [though purposely defaced, as are the postal orders in the drawer], and the money is real money. This is to accustom the pupil to find her way readily about stamp book and teach her to give change quickly and accurately.

Throughout this interview the waiting six have to ask pertinent questions. What are the limits of weight and dimension permitted to an ordinary parcel? Would it have been cheaper to send this parcel by letter post? If a parcel goes astray can a customer demand compensation? Is a clerk ever justified in refusing to accept a parcel?

The answers to these and all of these posers is buried somewhere in the *Post Office Guide*, and if the girl behind the counter does not know a particular answer she ought at least to know where in the *Guide* to look for it.

Sometimes the instructress intervenes to hurl some special spanner of her own into the works. Supposing a customer, she asks, were to proffer and unwrapped tennis-racket with a mere tie-on label attached, could that be accepted? The answer is Yes, because a tennis-racket unwrapped is a perfectly inoffensive weapon, incapable of hurting fellow-parcels in transit. If it had been a carving-knife or a pair of skates that would have been different.

Rather surprisingly the pupil behind the counter knows this answer, and gives it without reference to the *Guide* and with obvious satisfaction.

But pride goes before a fall. "You spoke then in a sharp and superior voice," says the instructress. "You as good as told the customer that she was asking a stupid question. Every customer is entitled to a polite answer, however you may feel about it. We'll have that transaction again."

And we do. During the encore I converse with the instructress.

"We're very particular about standard of manners behind the counter," she says. "We have to be. Goodness knows we get enough unreasonable complaints to deal with without asking for reasonable ones! The girls do their best, but it isn't always easy, especially for the Temporaries and Part-timers. And then the customers! Have you ever tried to imagine what the British public looks like from the other side of a post-office counter on a busy day - and every day's a busy day when there's a war on - all tapping the counter, or trying to get served out of turn! Some of the new girls get quite frightened. But they grow used to it, and after a bit they can keep smiling even at the end of a long day. They make surprisingly few slips too. But I sometimes wish the public would remember a few of these things."

### III

In due course the pupils sit for an examination. If successful, and after a brief period as a looker-on, a girl finds herself assigned to a full time job behind the grille. She has her own till, which probably contains as much as £250 in notes, stamps and cash at any given time, and she is accountable for every penny. At the end of each day she has to balance her stock to ensure that there is no balance against her. All of which involves a good deal of totting up of figures during spare moments.

Post Offices fall into three categories. There is the head or District Post office, a sort of local G.H.Q., which in addition to transacting general Post Office business, is also a sorting centre. In London probably the most august of these is the South-Western District Office, near Victoria Station. It handles all the official Whitehall correspondence, together with that of the Houses of Parliament and of Buckingham Palace itself. London has over 100 Sub-district offices, which are the local sorting and delivery centres.

Then there are the ordinary Branch Post offices - the kind most of us use every day. There are more than 200 of these in London alone. The class of business they do varies a good deal with the locality. In the working class districts in larger cities the busiest end of the counter during the war was that devoted to Allowances and Pensions. Here as much as £6,000 a week would be paid out to soldiers' dependants. Perhaps the busiest purely postal branch office was Charing Cross Post Office in the Strand, London, for here was where visiting foreigners and country cousins repaired to buy postage stamps for their innumerable letters and postcards home.

Third comes the Sub-Post Office, tucked away generally as an adjunct to some other business - the local greengrocer's, perhaps. The proprietor of a sub-post office is not a salaried official like a branch office worker. He receives an annual allowance calculated on the amount of postal business done by him; and he provides accommodation, staff, and fittings. In normal times some tradesmen rather like to have a sub-post office on their premises; it helps their regular line.

The Post Office is beset by staffing difficulties even at normal times, for the simple reason that postal traffic fluctuates in a manner sufficient to try any permanent establishment, however elastic.

For instance, a wet Sunday in any large town means a bursting pillar-box in every street on Monday morning; the average citizen having abandoned his Sunday walk in order to overtake arrears of correspondence.

These difficulties are increased almost to nightmare proportions in war-time. Normally, Post Office employees are mostly men - sorters, mailbag handlers, drivers, postmen, and of course, the large engineering staff.

With the coming of war thousands of these are spirited away to sterner duties: in the huge Parcel Section at Mount Pleasant in London, by 1944, all actual sorting had to be done by novices who had taken the places of regular sorter.

A Government Department in need of staff has to apply for it, like humbling institutions, to the Ministry of Labour. Thus, the Post Office was constrained in due course to delegate the greater part of its work, some of it very strenuous work indeed, to "non-directable women." This official designation is not so derogatory as it sounds: it merely means that these ladies must be volunteers, above or below a certain age and, therefore, exempt from "direction." Most of them ranked as "temporary" workers employed for the duration only, and were not eligible for a pension. Presently, all over the country, women were sorting letters, handling parcels, driving vans, repairing motor vehicles in Post Office garages and trampling the roads as postmen in all weathers.

Even so the supply of Post Office labour was found to be nothing like equal to the demand, so "part-timers" had to be bought in. It was difficult to train these, for they were busy on domestic work as well, and had neither the time nor the energy for a thorough course of instruction. [Any one of them might already have spent a couple of hours standing in a fish queue before coming to the Post Office training school that morning.] But they did their best, and one's best is a lot. Some of them were borrowed for short periods from the Services, and since a sailor or soldier is never so happy as when he is doing something which is not his proper job, these worked with a will.

At the time of the Christmas rush all help was acceptable. Age and youth were equally welcome. At one sorting table in London a week before Christmas these eyes beheld, in the course of a single afternoon, a retired bank manager in grey spats, an elderly spinster from South Kensington, a policeman off duty, the mother of a family from Palmer's Green, a "clippie" in uniform, and a host of schoolchildren [or "juveniles"] including a pair of indistinguishable twin-sisters from a school in Tottenham, all working like veterans and obviously enjoying the job. Over 80,000 meals were served in the canteen that week.

All over the country, in great centres like Manchester and Glasgow, Liverpool and Birmingham, similar scenes of ordered turmoil were being enacted, and by Christmas morning, war-time or no, not a letter or parcel had been left undelivered.

Before conducting this introductory survey of the Post office in war-time it will be interesting to remind ourselves that the postal services of our country are now just over 300 years old. In 1635 King Charles I enjoined one Thomas Withering to organise a State Service for the Conveyance of Private Letters from London to Chester, Holyhead, and thence to Ireland "and to bring back answers from all places on that road within six days." That service maintained [and expanded to an extent undreamed of by King Charles or Mr Withering] in good times and in bad ever since.



*After the London Fire. Telegraph messengers accepting messages in the street.*



*Tramping the roads as postmen in all weathers.*

# Chapter 3

## LONDON ONLY

MOUNT PLEASANT is the largest Post Office in the world, and few Londoners have seen it. It occupies a site some nine acres in the Borough of Finsbury not far from Gray's Inn Road, midway between King's Cross and Farringdon Street Stations.

Its name, as Artemus Ward might have said, is "rote sarcastik," for at the beginning of the nineteenth century "Mount Pleasant" was a huge rubbish heap which stood upon some rising ground overlooking the Fleet River, outside the walls of London City. In due course the Mount itself disappeared and its site was occupied by a House of Correction known as Cold Bath Prison. It was a debtors prison as late as 1885. A Post office building began to take its place a year or two later, but did not achieve final form until 1934, when the present imposing premises, housing some 6,000 or 7,000 Post Office workers, were completed.

During the war an acreage of such extent was not likely to go scot free from the bombs of the industrious Hun, and Mount Pleasant was hit altogether nine times.

The most disabling of these blows was dealt by a single bomber and a single bomb, which, on June 18<sup>th</sup>, 1943, completely gutted the Parcels Section, a building of three storeys. The section was moved *pro tem.* to the Agricultural Hall, Islington, but was back after a year. The new Parcels Section is still something of a makeshift, comprising only one storey above ground and lacking most of the latest time-saving gadgets; but, with its uninterrupted floor-space it could, and does, handle a mighty volume of postal traffic for all that. The sorting-floor alone covers two-and-a-half acres.

London's largest postal services are centred in Mount Pleasant and the King Edward Building [already mentioned] in the heart of the City. K.E.B., as it is usually called, takes care of the District known as E.C. [and many other places] for London addresses, and houses the highly important Foreign Section responsible for despatching the great bulk of the correspondence addressed to places abroad.

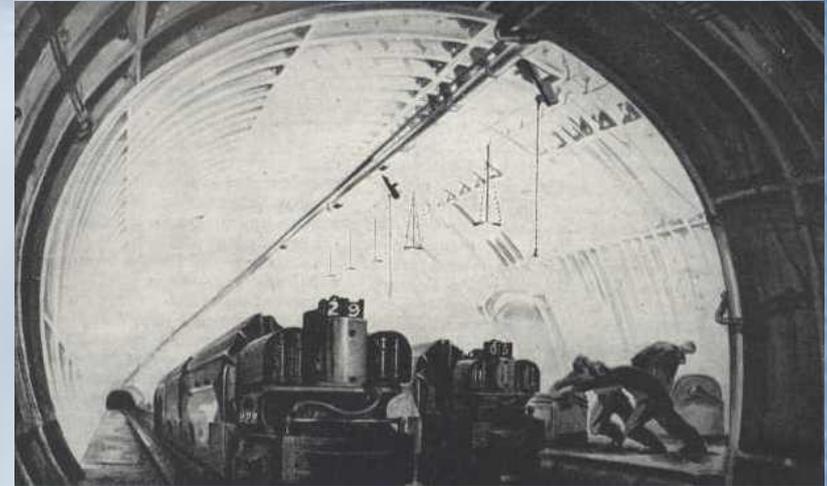
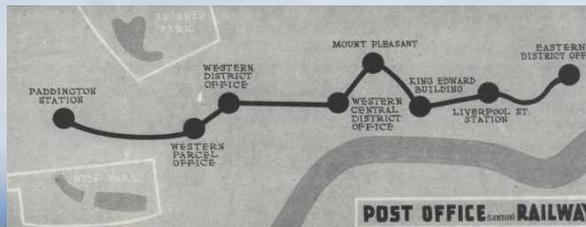
But for the moment we are concerned with Mount Pleasant.

### II

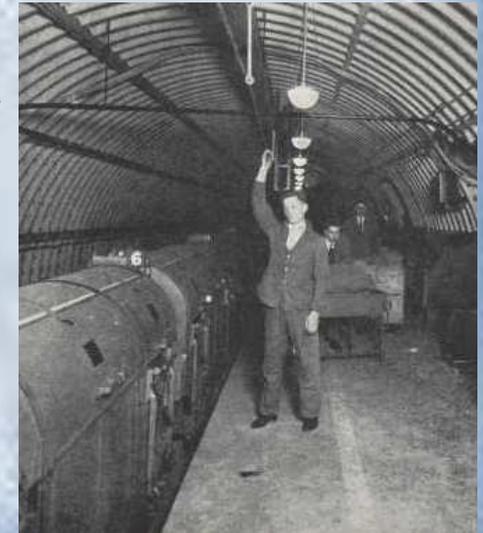
The Mount Pleasant Building, besides the vast Parcels Section, also houses the Inland Section - in other words the section which deals with the letters for the Provinces, and for that matter letters passing through London from one provincial district to another..

Beneath Mount Pleasant lies the largest and most important station of the Post Office Railway, an institution which deserves more than a passing word.

Most of us have heard vaguely of the existence of such a railway, but few have seen it. It runs from east to west at an average depth of 70 feet - like the ordinary Tubes.



*The trains are driverless.*



*Signalling the control cabin that the train is ready to proceed.*

*The Post Office has its own underground railway, 70 ft. below London's streets.*

In fact, it is a miniature Tube in itself, though it carries no passengers - not even an engine driver.

It has a gauge of two feet and is six and a half miles in length. It starts in Whitechapel under the Eastern District Office, not far from Liverpool Street L.N.E.R. Station, which absorbs all the postal traffic to and from Essex, East Anglia, and in more peaceful days the continental mails of the Harwich route. The next station lies under the King Edward Building itself. Next comes Mount Pleasant, then the Western General District Office, somewhere near the junction of Holborn and New Oxford Street; after which the railway follows the line of Oxford Street into the heart of W. 1, as represented [doubly] by the Western District Office in Wimpole Street and the Western Parcel Office in Bird Street. Last of all come the Paddington G.W.R. Station, and the link between East and West is complete. The Railway is fed additionally all along its route by postal round vans from outlying London Post offices and main line railway stations.

The railway is electronically operated, and the movement of the trains is controlled from a switch-cabin on the platform of each station. It maintains a four-minute service each way all day and part of the night. You can follow the progress of each train upon a luminous chart in the switch-cabin; and you will note that the moment a train passes from one section of the line into the next, the section just vacated ceases to be illuminated; which means that the current in that section has been cut off and the line has "gone dead"; in other words that the train behind will be brought automatically to a standstill and cannot proceed until the train in front is a safe distance ahead.

A train itself consists normally of an electric locomotive and a low flat-car carrying four mailbag containers, each of which can be detached separately. Frequently the train is lengthened to two cars, or eight containers, and the whole train, with its continuous row of hooded containers, bears a pleasant resemblance to one of those "caterpillars" so popular upon merry-go-rounds of country fairs, whose passengers, for want of a dark tunnel in which to shriek and hold hands, are obligingly supplied by the management with an over-arching self-operated canopy of canvas.

Each of the eight stations has a number, and each container is labelled with the number of the station to which it is bound, white for letter-mail, blue for parcels.

Let us suppose that we are standing on the island platform of Mount Pleasant, on the west-bound side. A train from K.E.B. runs in, slowing automatically from about forty miles an hour, its speed between stations, to eight. One of the containers is seen to be bearing a blue label with the number 4 on it. Four happens to be the number of Mount Pleasant Station, so when the train stops the container is detached, trundled on its casters to an ingenious contrivance which overturns it and empties it on to a rising conveyer band, or stepless escalator, which carries the bags to the sorting floor above.

During the war the Post office Railway, in addition to its normal duties, made its own contribution to the Post Office war effort. It furnished an admirable air-raid shelter and dormitory: a series of cots, hinged to the wall by one end, being pulled down and set right across the track when the long day's work was done and the conductor-rail had gone dead for the night.

It also figured as a minor casualty. In December, 1944, a V2 rocket bomb fell in Bird Street, between Selfridges and the Western District Parcels Office. Besides putting this important parcels office out of action just before Christmas, it damaged a water-main, which flooded the station of the Western District Parcels Office, nearly 80 feet below, to a depth of 18 inches. But the Post Office Railway is prepared for most emergencies, and the station was soon pumped clear.

### III

Mail-sorting may sound a simple business, but in some respects it gives the Post office more trouble than do such highly technical mysteries as the telegraph and telephone. There are several reasons for this.

The first is that postal mail is made up of objects of every conceivable size, shape and weight - letters, airgraphs [war-time only] packets [including newspaper packets], and parcels - and it is impossible to deal with these by purely mechanical devices, because a machine, however ingenious, can only do one standard uniform job. So in mail-sorting the human hand and the human eye have to be called in, and neither is infallible.

Mail falls roughly into three categories - letters, postal and newspaper packets, and parcels, and each calls for different methods of sorting.

Letters are first "faced" - arranged right way up, with the stamp in the right-hand top corner - and are then fed in handfuls into a clattering little stamp cancelling machine composed chiefly of perpendicular rollers bearing the imprint [in reverse] of the name of the office of posting, the date, and the little wavy lines which cancel the stamp. These, revolving at tremendous speed, draw the letters through the machine at the rate of 600 a minute, and each emerges, bearing all the familiar postmarks, ready for primary sorting. [Do you remember the attractive little "victory bells" which adorned your letters after VE or VJ day? These were laid on by a special cancelling stamp].



*Victory Bells Stamp found at:  
[postalheritage.org.uk](http://postalheritage.org.uk)*

In large establishments like the Inland Section at Mount Pleasant this sorting takes place at long tables. Each sorter, a few feet apart from his neighbour, has before him a set of little shelves, rather like a miniature Welsh dresser, and at intervals along each shelf are printed labels, a glance at which makes clear the meaning of the word "primary." There are twenty-four of them, bearing such destinations as *Scotch, Liverpool, N.W. [N. of Crewe], Surrey, Ships*, and the like.

The sorter's task here is obvious enough. he has to arrange the letters lying in the great pile before him under their appropriate label. "Scotch," for instance, denotes all letters for Scotland except Edinburgh and Glasgow, each of which has its own label; while "Western" denotes a variety of counties served by the Great Western railway.

A certain number of letters have to be ranged under a label marked "*Unobliterated*," which means that they must have fresh stamping treatment because they have somehow escaped the attentions of the stamp-cancelling machine.

Of course letter-sorting is not all plain sailing. The British nation are the most happy-go-lucky and casual of correspondents, and their sins in this respect are visited upon the postal worker. Special staffs have to be maintained to cope with indecipherable or unintelligible addresses, letters insufficiently addressed, or [Yes!] not addressed at all. *Pte. T. Atkins, B Company, B.L.A.* is not an exaggerated sample, and there is on record the case of a foreign seaman who wrote a letter to an address [laboriously printed] at ARIJABA, which turned out to be "Harwich Harbour."

Secondary sorting follows, in which we get down from the general to the particular. First, all letters of a single designation - say *Surrey* - are collected from primary sorting tables and despatched to another part of the floor for sub-division. They travel in flat baskets of uniform size, along a series of moving overhead-belts fitted with an ingenious contrivance which detaches each basket from the main line, so to speak, at the right moment, and slides it down to the *Surrey* sorting table. Here stands the *Surrey* sorter, to whom the geography of that county is an open book, and who speedily distributes the pile among pigeon-holes marked *Croydon, Guilford, Surbiton*, or perhaps bearing the name of some centre from which mail is distributed among a number of villages.

After that it is merely a matter of typing the letters in bundles, putting them into the right bag, and despatching the bags to the platform outside the building, where the mail-vans are waiting to convey them to the railway stations or to the Post Office Railway platforms beneath the building. Everything, of course, has been done at top speed.

When, however, the postal and newspaper packets are handled, due allowance has to be made for their angular and unaccommodating disposition. On arrival at the office, as they are too big for the little flat baskets, they travel instead along a moving band inside what looks like a large gas-main suspended in mid-air over the stamping table. Here they are seized and swiftly hand-stamped.

Then comes the primary sorting. Something larger than the letter-sorting shelves is required here. Let us follow the fortunes this time of all packets addressed to Scotland.

In front of the sorters runs a long metal counter, its surface divided into openings a foot square and a foot deep. Each of these bears its own label, and every time a sorter picks up a packet addressed to Scotland he throws it - and it astonishing how unerringly he does so - into the opening labelled *Scotch*.

But it does not stay there long, for every three minutes the bottom drops out of all the receptacles so labelled, and deposits the Scottish packets simultaneously upon yet another moving band beneath the floor, which discharges them later on to rising bands and ultimately by overhead route to what may be termed [employing a phrase pleasantly reminiscent of the Great North Road in peace-time motoring days] *Scotch Corner*, there to undergo Secondary Sorting.

Thirty seconds later the bottoms will drop out of another set of receptacles, despatching packets for *Surrey* or *Eastern Counties* to their own particular section of the sorting floor; and so on throughout the cycle of three minutes. In other words, the packets are conveyed to twenty-four separate secondary sorting points without any kind of human assistance whatever.



Undelivered letters & parcels.



#### IV

But perhaps the Parcels Section is the most interesting of all, firstly because parcels call for handling and accommodation on the grand scale, and secondly because there is always something intriguing and human about the mere sight of a parcel.

The time to enjoy the Parcel Section to the full is during the week before Christmas in war-time, when some millions of the inhabitants of this island, living away from home in slit-trench or munition-workers' billets, all send one another Christmas presents by parcel force.

Outside in the chilly December mist the scarlet vans stand backed-up wheel to wheel against a concrete platform. They are being unloaded by enthusiastic "part-timers." Here is a team of uniformed members of the R.A.F. They are having a grand time. As each bag is removed from the van it is opened, up-ended, and its contents are shot down an opening in the platform. Here the inevitable conveyer-band receives them and carries them up a steeply graded tunnel to the sorting office.

Let us repair thither and watch their arrival.

We find ourselves in a vast hall, across one end of which runs a wooden ramp [or *glacis*, to employ the official term]. It is inclined at an angle of 45 degrees and looks about 60 feet long. Its entire face is covered with a brown cataract of descending parcels, which appear suddenly from over the horizon, as it were, and then come sweeping down. The general effect is that of a river-weir in flood time.

At the foot of the weir stand a serried row of sorters, including a number of trousered ladies. These seize the parcels as they come, pile them into great wheeled baskets, and trundle them swiftly to an appointed point on the great floor.

In due course the parcels are ready for their destination labels. The label room is a sight in itself. It contains labels for every postal centre in the British Empire, beginning with Aden and ending with Zanzibar. These are all different colours or combinations of colours, for the assistance of African or Asiatic dockhands whose acquaintance with the written word may be distant and uncertain.

All parcels, whether from the collecting vans or the Post office Railway, were at one time conveyed direct, by underground conveyors, from Primary Sorting *glacis* to the secondary sorting points. But the bomb of June, 1943, already mentioned, put an end to these underground conveyors and the parcels have instead to be wheeled to the secondary sorting points.



Many coloured labels.

People with nothing better to do are fond of writing to their local newspaper, especially in war-time, to complain of the late delivery, of this or that letter or parcel, especially to a soldier serving overseas.

"I have sent fourteen parcels," writes an indignant materfamilias, "to my lad in India, and not one has reached him. I expect somebody in the Post Office could tell where they have got to!" she concludes darkly.

In truth many people in the Post Office could inform her, if only they knew who she was or where she was, that her parcels are probably reposing in that section of the G.P.O. popularly known as the Dead Letter Office; and they could read her a little lecture on a certain subject. For a single letter or parcel to go astray is neither here nor there, and happens in normal circumstances very, very seldom; but for fourteen of them to do so, especially all consigned to the same individual, automatically brands the sender as one of the grand army of Insufficiently Addressers - and their is Legion, for they are many. During the war some 3,000 insufficiently addressed letters reached the Army Post office [at its Research Section in Nottingham] every day!

Let us pay a visit to that part of the sorting floor, either at Mount Pleasant or any other great postal centre throughout the country, in order to study the workings of the Dead Letter Office.

In a general way returned letters and parcels fall into four definite categories - *Insufficiently addressed, Addressee Left, Not known, or House Empty.*

A returned letter is comparatively easy to deal with, because the identity of the sender can usually be discovered inside - or at any rate some indication thereof, such as "Mum," or "Sam" or "Lily" or "Babs," or "Doodles." If there is an address as well the letter is placed in an envelope and marked "Returned Postal Package" and despatched forthwith to the owner of the signature that it bears, however intimate - to the public embarrassment of "Doodles" at the family breakfast table.

But parcels are another story, because for some reason parcels are seldom accompanied by the name [or at least the address] of the sender, and if they are, are written too often upon a tie-on label which has detached itself early on the journey.

Another handicap to the safe delivery of parcels is that not ten per cent of the inhabitants of our Island know how to tie up a parcel. Come over to Heartbreak Corner and look. Here is where burst and broken parcels are salvaged and repacked at the expense of the tax-payer by a specially trained band of experts.

Wrapping material in war-time is flimsy enough, but public faith in the virtues of brown paper, however attenuated, appears to be undiminished. Here is, or was, a parcel of apples. Apples are knobby and unyielding things, and the only safe way of sending them by post is in a box. But in this case the sender has merely placed a small heap of apples upon a thin sheet of brown paper, wrapped the paper roughly round them and tied up the whole with string; so tightly that each apple is pressed hard enough against the surrounding paper to enable it, sooner or later, to burst its way through. The result is an empty parcel at the top of the mailbag and a collection of loose, naked apples at the bottom.

These are collected and repacked by skilled hands and forwarded to their destination [if the address has survived], accompanied by a printed label which states, in stern but not unmerited reproof:- *Found Open or Damaged and Officially Secured.*

But many parcels, consisting of shattered glass, perished dainties, or broken toys, are beyond hope. That is why they call it Heartbreak Corner.

Now to return to our undamaged but officially undelivered parcels. All that can be done with these is open them, tabulate their contents, lay them by, and hope. Meanwhile they are stored in what is called the Property Room, against the time [sometimes as long as two years] when hope will be officially abandoned and the goods sold by auction to cover the cost of storage.

Everything is entered in a book and fully described; or, if it is easier to depict than describe, such as an elaborate metal casting, a remarkably neat little sketch is made of this.

It is a motley collection. Clothing, hats, bed-linen, tools, toys, hot-water bottles, a Highland Officer's claymore; hundreds of fountain pens, all labelled and numbered.

In other words, our casual method of packing and addressing parcels is only equalled by our sublime indifference to their fate if they go missing. And all the time a highly organised department is waiting patiently to hear from us - as we could discover by consulting the *Post Office Guide*, or, for that matter, asking a question across the counter. But no, we write an anonymous complaint to a newspaper instead, and our property remains Undeliverable and Unclaimed.

In war-time one class of parcel presents a particular problem - namely the packets of tobacco and cigarettes which may be despatched duty-free to our Forces overseas. These are convenient to send, for all you have to do is hand an address and the requisite sum across a tobacconist's counter, and a standard packet will forthwith be despatched to your own particular sailor, soldier or airman.

But if, as frequently happens, the packet cannot be delivered - possibly because the addressee has become a casualty or been transferred to some other quarter of the globe - and the local authority sends it back, the nice question now arises "Who is to have the packet?" Not the tobacconist, for he has already been paid; not the sender, for he has paid duty. The Post Office solves the problem by handing the packet over to the Customs Authorities.

Mention of duty reminds us that at Mount Pleasant and some other large provincial post offices the Customs and Excise authorities maintain their own Custom House. This is particularly helpful in war-time, for Thomas Atkins abroad is an inveterate and prodigal shopper and gift-sender. And into these Custom Houses pours a steady stream of the gold of Ophir, the perfumes of Arabia, and as often as not the glittering products of Brummagem, on its way to innumerable sweethearts and wives at home.

Members of the Forces abroad are allowed to send home duty free a certain quantity of dutiable articles, but to do this they must get a special label from the Commanding Officer and attach it to the parcel. In the absence of this label the Customs Officials assess the duty which the Post Office collects when it delivers the parcel!

## VII

In the City and West Central Districts of London observant persons may have noted that pillar boxes are furnished with double mouths, marked respectively *London and Abroad* and *Country*. This is a form of pre-primary sorting, because letters for London and Abroad got to King Edward Building in the City, whilst Mount Pleasant, as we have seen handles the letters destined for the Country.

In peace-time, mail for the Fleet in Foreign Waters is relatively small in quantity, for then our Royal Navy is limited in size. Not so in time of total war, when the number of vessels flying the *White Ensign* runs up into thousands. The big hall in K.E.B., housing the Foreign Section, is crowded with mailbags labelled with the names not of ports but of ships -names not merely of regular Naval units, but of great ocean liners converted into transports, cargo vessels carrying munitions of war all over the face of the globe, humble fishing-craft serving as tenders, or minesweepers thousands of miles from their home bases; together with an unnumbered and often unspecified flotilla of new and semi-secret motor-boats, ducks, and landing-craft. Each has its mailbag, but as already noted, the destination of the bag is not revealed, yet.

This is for security reasons. It would never do to let the enemy know the present whereabouts of the *Queen Mary*, for instance; so during sorting the destination of a bag is indicated by a code number only, though there is no secret about the ship to which it is consigned. But the actual destination tag is only affixed at the last moment by men who can be trusted infallibly with such vital secrets. Then, for good measure, each bag is enclosed, upside down, in another bag bearing a label which does *not* carry the name of the ship.

Throughout this war the Fleet in Foreign Waters increased steadily in size and personnel, as more and more vessels were released from Home Waters for service against the Jap. Failing Singapore, Colombo became a port of vast importance though the fact was not advertised.

## VIII

A Robert Louis Stevenson character describes somewhere how, in default of anything else to read, he spent an entire evening studying an old copy of Whittaker's Almanac -"from which," he comments, "I derived more concentrated information than I shall ever be able to use in this life."

The same might also be said of that majestic publication *The Post Office Guide*, already mentioned, with this difference, that if each one of us were compelled to read it through at least once, the information thus derived would not only be of lasting use to us but would lighten considerably the labour of all young ladies behind post office counters.

The place where they know all the answers to all questions is the Enquiry Office at King Edward Building, which is manned by beings of uncanny omniscience and the patience of saints.

Some of the queries put to them are normal and natural enough. First comes an enquirer who has just discovered the existence of Airgraphs. To what countries can they be sent, and are they available both to the Services and civilians? [We could almost answer that one ourselves].

Exactly how, asks the next comer, should a letter be addressed to a private soldier serving in an infantry battalion in the Middle East? This is a question which should be asked far, far oftener.

Next comes a spate of enquiries as to what may and may not be enclosed in parcels sent overseas from home. Can food be included? The answer to this one is an emphatic No. Well, drink? An equally emphatic negative.

"But - medicine can be sent, of course?"

"What do you mean medicine? Whisky?"

"Er -yes."

"I thought so. Not on your life!"

These are routine questions, and their name is legion. But others have a certain originality. A sergeant's wife asks, apropos the ban on food parcels, whether she is permitted to send her husband some dog biscuits.

"I don't think he'd enjoy them very much, you know," replies the pundit behind the counter, gently. "They're made of ---"

"Oh, he's not going to eat them himself. They're for a little dog that he liberated last week in a French village."

"Liberated!" The old Army touch! Let us hope she was allowed to send the biscuits.

Enter next a young person with blonde hair and bare legs.

"My boy friend's in the Navy, and he's coming home on leave. Has he arrived yet? You don't know? But you *ought* to know. His address is 'Care of G.P.O., London.' And isn't this the G.P.O.?"

Unanswerable - and unanswered, for want of corroborative detail. She does not even know the name of her friend's ship.

Lastly we come to that section of the community which regards a Government Department as a repository for domestic confidences and personal problems. [The Ministry of Information, thanks to its deceptive title, suffers most severely from these, but the Post Office runs a good second]. For instance:-

A temporarily embarrassed individual presents himself at the counter and asks, in a confidential undertone, if the Post Office can let him have, *immediately*, "a bit of my Income Tax Post-War to be going on with." He is undecieved as humanely as possible

An elderly lady of somewhat eccentric appearance is the next caller. She is disposing, she announces, of all her surplus cats. Would the Post Office like them? Milk, she adds, will present no problem, as the cats have all been brought up on Bovril.

The final applicant is an apologetic school-teacher who has "tried simply everywhere for weeks" and failed. Could the Post Office let him have a blackboard and easel? The Post Office, as it happens possesses quite a number of these, but has not to spare. They were all needed at the Counter Training Centres so the applicant turns sorrowfully away, his last hope gone.

## Chapter 4

### MILITARY MAIL

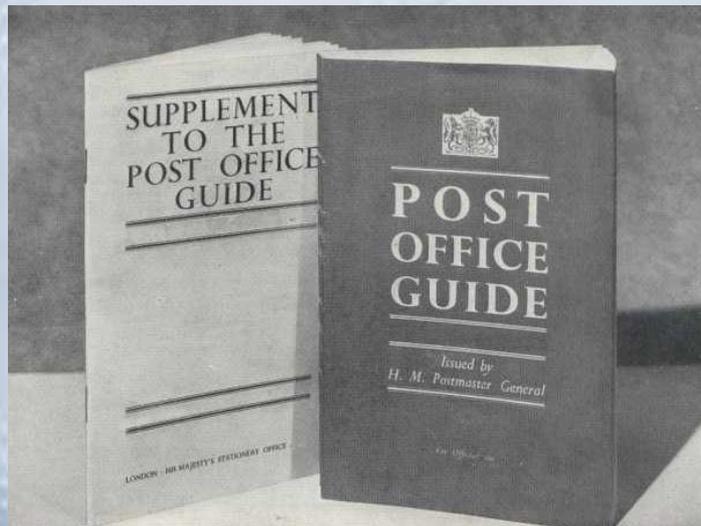
"THE ARMY POSTAL SERVICE HAS BEEN ONE OF THE UNADVERTISED MARVELS OF THE WAR."

The above refers not to the Second but the First World War, and is a quotation from a novel entitled *The Willing Horse*, written by a British officer, apropos of life on the Western Front in 1915. In 1945 a copy of that heartfelt testimonial, printed in large letters and framed, might have been observed hanging in the office of the Officer Commanding the Army Postal Centre in Nottingham. In fact, it was observed there by its own author.

But why Nottingham? Because during the Second World War Nottingham was the main home working centre of the Army Post Office, which also looks after mail for the R.A.F.; and from Nottingham, especially after D day in 1944, an ever-increasing spate of letters, newspaper-packets, and parcels was projected on to the continent of Europe, addressed to Thomas Atkins of the B.L.A. or his opposite number in the R.A.F.



*Wrens sorting mail for the Fleet.*



*Mail being sorted at Tobruk*



*An advanced Army Post Office in Italy.*

A great building formerly devoted to the manufacture of Nottingham's most famous textiles was one of the principal centres of activity, and provided a sorting-floor not unworthy to be compared with Mount Pleasant itself. It was manned [if that is the word] by hundreds of A.T.S. girls, augmented by men unfitted for active service, and controlled by G.P.O. officials who had enlisted in the R.E. Postal Section. [Many of these had served on the Army Reserve in peace-time.]

To Nottingham came mail from hearths and homes from all over the country; and thence were despatched something like a million parcels and 3,000,000 newspaper packets a week. As for letters, they were as the sands of the sea. Packets and parcels are seaborne, but practically all letters now travel by air.

The work of primary and secondary sorting has already been described, but Army Post Office routine presents certain features of its own, because it serves mobile forces. Observe these girls, for instance, sorting postal packets. For this they employ what is called an H fitting, which is a sort of monster wooden gridiron on legs, and shaped something like a capital H.

Each opening in the gridiron - and there are forty-two of them - is a foot square, and beneath each of them hangs a gaping mailbag destined for a different military unit. The girls stand on opposite sides of the cross-bar of the H, sorting the pile of packets heaped on the table before them - the table forms the cross-bar - and hurling each packet into its appropriate bag. The outlying bags hang eight or ten feet away, but practice in this exercise appears to have made perfect. One would hesitate to challenge any of these young ladies to a game of bucket-quits.

All are in uniform, which gives the scene a pleasing air of military precision. They seem to enjoy their work too; they chatter incessantly, or sing, without letting up for a moment.

And the Army Post Office has its own way of doing certain things, like every other branch of the service. Insufficiently addressed mail, for instance [and, as already mentioned, there is plenty of it] is sent to the Regimental Records Office of the addressee concerned, to have its deficiencies amended from the man's own file; and, of course, this involves a delay in delivery which is no fault of the Post Office.

But there is little delay otherwise. On the Western Front during the First World War, when the trench-line in Flanders lay static for months or even years on end and ships plied regularly and unmolested across the English Channel, mail was delivered at Divisional Headquarters almost as regularly and as speedily as in Whitehall itself, and was sent up with the ammunition and rations the same evening. It was no uncommon thing round about midnight to find one's front-line dugout a copy of a London daily paper of that morning's date.

But a modern battle is no longer an affair of impregnable trenches and routine stalemate: it is a gigantic game of chess played at lightning speed over a board a hundred miles square; and it is by no means easy to locate in that maelstrom the particular pawn to whom a particular postal packet is consigned.

Yet it could be done, and the A.P.O., on its mettle as ever, did it. In September, 1944, during those breathless weeks when the British Army was storming its way from Caen and the Falaise Gap to Brussels, a test was taken of the length of time employed to deliver some 50,000 letters consigned to the B.L.A. The average time per letter, from posting to delivery, worked out at two-and-half days.

Again, the Returned Letter Section of the Army Post Office was [and always is] presented with a very special problem in the case of letters addressed to men who have become casualties.

Great care must be exercised here, out of consideration for the feelings of relatives. The invariable practice is to hold these returned letters back until next-of-kin have been officially notified, in a sympathetic telegram, by the War Office or Air Ministry. After that the letter is duly returned to the sender, bearing the sorrowful endorsement; "*It is regretted that this letter cannot be delivered, owing to the addressee having become 'deceased' - or 'wounded,' or a 'prisoner of war.'*"

A thoughtful and much appreciated gesture.

Now for the sailor. As we have already seen, most of the mail for the Fleet in Foreign Waters is handled at King Edward Building near St. Martin's-le-Grand, London. The remainder is dealt with at a special Admiralty Fleet Mail Office at Reading. But for the home Fleet, whose base is situated in the north of Scotland, a special provision is made, as we shall see in Chapter 8.

Mail for the R.A.F. presents somewhat less difficulty for the Army Postal Service, because our airmen usually possess something denied to the Navy and Army - a more or less permanent address to which they can return when the day's [or night's] work is done.

Now we come to that special and particular branch of the Post Office activity, letters and parcels for prisoners of war.

Such parcels fell into two main groups; those emanating from the Red Cross Societies and those posted by firms holding a censorship permit, the latter group including the parcels of duty-free cigarettes and tobacco, and parcels of books, gramophone records and other comforts. The collection and despatch abroad of both groups was a Post Office responsibility. The parcels were packed six to a bag, which was then tied, labelled, sealed and stored at convenient centres against the day when the usual unobtrusive notification should come through that shipping space was available. Every available foot of shipping was eagerly taken up, and despatches were made ranging from a few hundred bags at a time to the record for any one ship of 136,992 bags.

Some of the bags were transferred to the docks by road, but the volume of traffic was so great that it was generally necessary to run special trains: on the occasion of one despatch no less than seventeen such trains were required. During the period March 1941, to May, 1945, a grand total of 26,250,000 parcels were despatched abroad.

As innumerable British wives and parents had good cause to know, Red Cross parcels fell into two categories. There were the parcels made up and supplied by the Red Cross itself, and consigned to Geneva by the thousand for general distribution; and the so-called Next-of-Kin parcels, which might be sent once a quarter from a prisoner's own home and addressed to him personally, These could contain practically anything but food.

The Red Cross's own parcels fell into certain definite groups. There was the Standard Food Parcel, distributed to prisoners in normal health; there was the Invalid Diet Parcel; there were even parcels containing special food for Indian prisoners. These were all consigned to the International Red Cross Headquarters in Geneva, and that amazing institution, with something like 20,000,000 prisoners of all nationalities and from both sides on its carefully maintained files, seldom failed to deliver the goods.

There were parcels, too, containing special diet or surgical supplies - an artificial limb, perhaps - addressed to a particular prisoner. Each type of parcel had its own Red Cross depot. Clothing parcels, for instance, were made up at St James' Palace. The largest depot of all was in North Row, Park lane, which despatched to Mount Pleasant 20,000 Standard Food Parcels every week.

So far all was plain sailing: the real problem was to get this vast traffic conducted safely through enemy-occupied territory or across enemy-controlled waters into Switzerland. Difficulties varied with the fluctuations of war. The worst period came after the whole of France was occupied by the Germans and the Mediterranean closed to Allied shipping by Italian intrusion into the field of hostilities. But the parcels thanks to the British Navy, the Red Cross, and the unremitting perseverance of the Post office, got through somehow, and by 1944, with French soil freed from the invader, could be conveyed to Switzerland more or less without enemy hindrance.

Letter mail, being less bulky and so less difficult to transport, presented fewer problems. We were helped here- and this applied to parcel traffic also - by the fact that the enemy was equally anxious to secure postal and parcels facilities for his own nationals interned in Britain or Canada; so by 1941, a reciprocal working arrangement had been reached by which letter mail [each way] was conveyed by the British air service between Britain and Lisbon, in return for conveyance by the German air service between Lisbon and Germany. About 200,000 letters were conveyed from Britain each week.

But in the Far East the lot of British prisoners and internees was cruelly hard, for the conduct of the Japanese in the matter of postal facilities was callous and inhuman to the degree only to be expected of that sub-human race. Although they agreed "in principle" to admit Red Cross parcels they placed so many obstacles in the way that in practice only a few got through, while correspondence was limited to a single intermittent postcard of twenty-five words - mainly for the convenience of the Japanese censors. Postal traffic the other way, needless to say, was almost negligible, and the condition of British prisoners and internees in Japanese camps remained for years a matter of unhappy conjecture. It was not until 1945, when the Americans and British under General MacArthur reoccupied the Philippines and liquidated various prison camps, and the British under Lord Louis Mountbatten reoccupied Burma and recovered almost a thousand prisoners, that the whole grim story began to trickle through.

In due course sick and wounded soldiers, sailors, airmen and merchant seamen, repatriated from Germany and the East, began to arrive in Britain. Here the Post Office was able to offer a final and much appreciated gesture, as the following quotation from a London morning paper in early 1945 will show:-



*Types of letters for the forces.*

*For the second time within a few days the "Arundel Castle" arrived tonight in the Mersey with wounded and sick men repatriated from Germany. There were 764 British, Dominion, and other Servicemen, and 70 men of the Merchant Navy. . . . The first man to go on board was a Post Office official, who collected postcards and telegrams from the men. They were dealt with by special delivery.*

It is doubtful the postmen had to knock twice on this occasion.

### III

As the war progressed and our commitments in Africa, India and Burma grew heavier and heavier, and the distance of our fighting forces from home farther and farther, it became necessary to devise some system of mail delivery for the Middle and Far East which would not involve a voyage of four months round the Cape of Good Hope. Thus, the iron hand of circumstance during those crowded, hectic, intensive years created for the forces an airmail service which for speed and regularity could bear comparison with anything achieved in peace-time.

Most of the credit for this belongs to the R.A.F. and the Post Office, but respectful acknowledgement must be made of the assistance rendered by one Benito Mussolini; who, by declaring war on Britain and France in June, 1940, closed the Mediterranean and Suez Canal to Allied seaborne traffic.

This meant that mail for British soldiers in the Middle and Far East had to travel round the Cape - a detour of about 12,000 miles - and a letter to Cairo or Bombay might take anything from three to six months to get there.

But in the early years of the war few transport aircraft were available and not much space could be spared for mails. The problem was how to send a hundred or more letters in the space that would ordinarily be required for one.

So the possibilities of micro-photography were invoked, and the airgraph was born. It may be interesting to follow one of these through its various incarnations, or "processes." Here is the picture.

The sender begins by asking at his local post office for an airgraph form. This is handed to him with a stern injunction not to fold or crease it, and to write distinctly. Next, having written what he wants to say, he hands it back over the counter. [In many rural communities where it is firmly believed that the local postmistress has both the time and the inclination to delve into private correspondence, many people prefer to send their airgraph to London direct, where, presumably, the affairs of Nether Boreham are of no particular interest to anybody]. Anyhow it gets to K.E.B., and here the really interesting part of the work begins.

First of all the forms are numbered consecutively by hand-stamp, so that any airgraph lost or damaged in transit may be identified and replaced. The stamping is done by Post Office women workers, and at amazing speed. [No machine can match the combination of a swift right arm and a deft feminine left-hand thumb and finger.] Then men and women of the Army Postal Service sort them for the various arms of the service and the different theatres of war.

The form is now ready to be photographed, in miniature. A girl is seated before what looks like a flat-topped metal desk, with a slit in its surface just wide enough to admit a single form. Below the surface just wide enough is a 16-millimetre movie camera, and each form, upon being dropped down the slit, automatically switches on an electric light which illuminates it just long enough - a fraction of a second - to be photographed by the camera. The final result is a strip of film 100 feet long and 16 millimetres wide, displaying a continuous succession of 1,700 airgraph photographs. The whole affair, with the little metal container in which it is coiled, weighs  $5\frac{1}{2}$  ounces. If these letters had been sent by ordinary letter-post and in their original form, they would have weighed 50 lbs.

Reduced to this minimum of size and weight, the airgraphs next travel by aeroplane to their destination. Here the process is reversed: the film negative is thrown by a projecting machine on to a moving strip of sensitized paper, the result this time being a series of positive photographs of the original forms, of the size familiar to all to-day.

The strip is now cut up; each airgraph print is enveloped, either by hand or by an ingenious machine which slaps a neat little cover round it - this saves the time and labour of slipping it into an envelope - and all is ready for delivery.

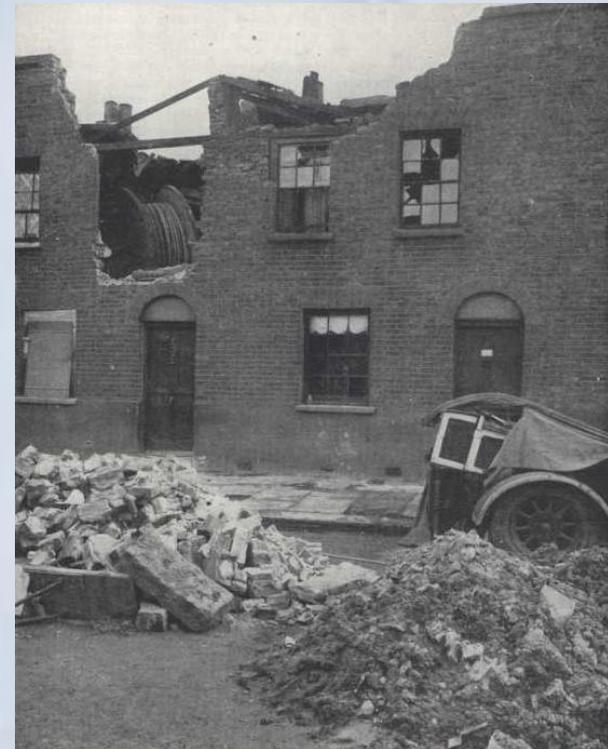
As a further boon to sundered hearts and households, an airgraph form was ultimately made available upon which it was possible to reproduce a photograph. Thus many a proud father was accorded a pre-view of a baby whom he could not hope to encounter in the flesh for months even years. The airgraph service was discontinued in July, 1945, being no longer necessary. Some 330,000,000 had been sent and received.

The Americans had developed an airgraph service of their own, known as V mail, and our Post Office in 1945 arranged for the processing of 500,000 of these a day for them - a notable indication of the number of American soldiers stationed in this country.

As more aircraft became available the airgraph was followed, and eventually superseded, by the now familiar blue-grey Air Letter or buff Forces Letter, which required no processing at all, weighed nearly 200 to the pound [compared with half an ounce, the weight of a single ordinary mail letter] yet offered three whole pages upon which to write. At one time over 4,000,000 of these lightweight letters were being sent from this country each week. Before the end of the war all letters up to one ounce for the Forces abroad were being carried by air.

At first restricted to the Forces, airgraphs and air letter services were gradually extended to civilian use. In 1945, 600,000 civilian air letters were being despatched to thirty-three different countries every week.

The air letter undoubtedly has come to stay; and when normality returns to our daily doings it seems probable that sea-borne postal services will have dwindled for the most part, permanently, to postal and newspaper packets and parcels.



*Underground cable reaches the top floor, the result of a bomb.*

# Chapter 5

## WIRES & WIRELESS

THIS HAS BEEN an Electricians' war. In our own case, without the quickening aid of modern telecommunications the swift and perfectly co-ordinated movements of troops, ships and aircraft which distinguished the African campaign, and in particular the Allied liberation of Occupied Europe, could never have come to birth. We should still be groping our way to victory by the slow and tortuous path of siege warfare.

The Post Office designed, installed and maintained the greater part of the elaborate network of communications set up in this country, and assisted the fighting services in the design and production of telecommunications equipment used in the field. A substantial percentage of the Post Office technical, research and operating staff was absorbed into the signal units of the Forces; while month by month, all over the country, Post Office engineers laboured to repair the perpetual wastage of war and provide yet more channels of communications and the conveyance of air-raid warnings.

We can best realise the full extent of the Post Office contribution to the defence of our Island by paying a visit to Bentley Priory, the Headquarters of Fighter Command throughout the war.

The Priory stands on high rolling ground near Stanmore, commanding a prospect of the distant spires and chimneys of north London, with a middle-distance of red-roofed suburbs intervening. To our right lies another hill, easily recognisable, by the slender church spire which crowns it, as Harrow. Bentley Priory itself is a considerable 18<sup>th</sup> century mansion, and it is said that Lady Hamilton once sat for her portrait to Romney on its sunny southern terrace.

The Priory was established as the Communication Centre and Headquarters of Fighter Command in 1936. Close by its Glenthorn, the Headquarters of the Anti-Aircraft Command; and it was from Bentley and Glenthorn that Dowding and Pile and the Immortal few fought the Battle of Britain.

The focal centre of the whole vast establishment - apart from its operating and technical personnel it employs upwards of 400 Waafs - is the Operations Room. We shall have occasion to visit other such homes of mystery in the course of this narrative, so it will suffice to mention here that the Operations Room at Bentley Priory is unique in being the only Communication Centre in complete and universal touch with all defence stations and information sources of the country - the kingly of the lot. The work of the other centres is more local and circumscribed.

An interesting adjunct of Fighter Command should be mentioned here. This is the "Filter Room," for sorting out items of information respecting the approach of enemy aircraft. News of this usually emanates either from the Royal Observer Corps, a brotherhood of remote and lonely watchers of the skies, isolated [in a species of glorified grouse-butt] upon hilltops and headlands throughout the British Isles: or from the device [of which more hereafter] known as Radiolocation, or RADAR. The information gathered by these is passed to what are known as Filter rooms, which perform a double duty: they swiftly classify approaching aircraft as "hostile," "doubtful," or "friendly," and inform accordingly.

The Operation Room at Bentley Priory was the only one in the country capable of displaying tracks of aircraft over the *whole* of Great Britain and the sea approaches to it. The principal purpose of this Room was to enable the Commander-in-Chief to observe the broad "air picture," and to co-ordinate the activities of the Army and Navy, and of other commands of the Royal Air Force. We shall have more to say about such pictures later.

Each Fighter Group and Sector was responsible for a defined geographical area. In order to control the aircraft operating from the aerodromes in those areas, radio telephone facilities were provided. In addition a "Fixer service" was employed, which consisted of a number of Direction Finding Stations, so distributed that they were able to obtain a bearing on the "speech transmissions" from Fighter aircraft. From these bearings it was possible to "fix" the position of the aircraft.

In addition to the vast landline telephone communications network provided by the Post Office for raid-reporting, a complex teleprinter network was also installed. Bentley Priory became one of the centres of this network.

### II

With the approach of D day came demands for still further equipment, and the resources of the Post office were stretched to the limit. An orgy of construction was demanded, in order to facilitate the control of the D Day invasion. It involved not only the laying of hundreds of miles of cable, but the installation of switchboards, telephones and teleprinters at innumerable points along the south coast of England.

Presently the Allied Forces stood upon the soil of France, and must be electrically linked along ever-lengthening lines of communication, with Headquarters at home. Straight-way the engineers got to work again. New cross-Channel cables were laid, and presently in the telephone exchange at Bentley Priory [and elsewhere] you might have beheld a great new switchboard at which Waaf operators were handling direct calls between Home and the Allied Forces invading North-West Europe. By VE. Day there was direct communication both by telephone and teleprinter with Brussels, Stuttgart, Hamburg, or wherever Montgomery's men had penetrated. Similar facilities were provided for the Americans on an equal scale.

### III

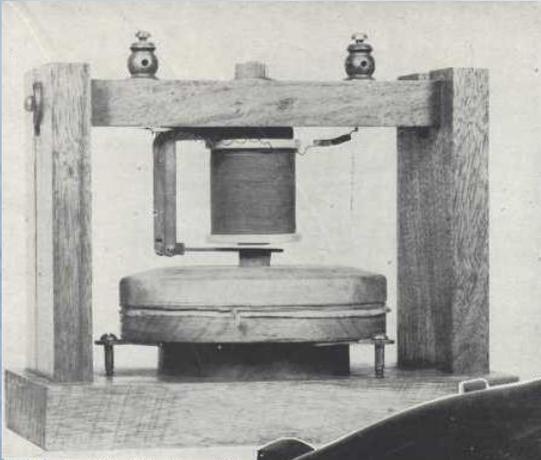
Such frequent reference has been made throughout our story to "Telecommunications" - with more, I promise you, to come - that it would perhaps be as well to step aside for a moment and explain some of the implications of the term - what it is all about in fact.

Let us begin *ab ovo* - in other words, with the earliest days of the electro-magnetic telephone, invented some seventy years ago by a Scottish engineer, Alexander Graham Bell - an instrument whose universal employment to-day has altered the entire balance of human relationships, whether in diplomacy, commerce, love or war.

Its basic design is easily comprehended. The human voice, impinging upon a thin metal disc, causes the disc to vibrate. The vibrations produce corresponding variations in a minute electric current. These variations are communicated to the other end of the wire with incredible speed, and there on a second disc faithfully reproduce the vibrations of the first. The human ear does the rest.

To make a telephone call in the 'eighties' of the last century [19<sup>th</sup>] was something of an adventure. The instrument itself was attached to a wall, and you spoke into a hole in a varnished wooden box.

You began by pressing a small white button, which rang a bell in you local exchange, probably the village tobacconist - this was before the Post Office took over the telephone services of the country - and when the proprietor of that establishment could snatch sufficient leisure from the calls of legitimate business, he came along to the telephone and asked If You Were There. You replied that you Were, and asked for "Central."



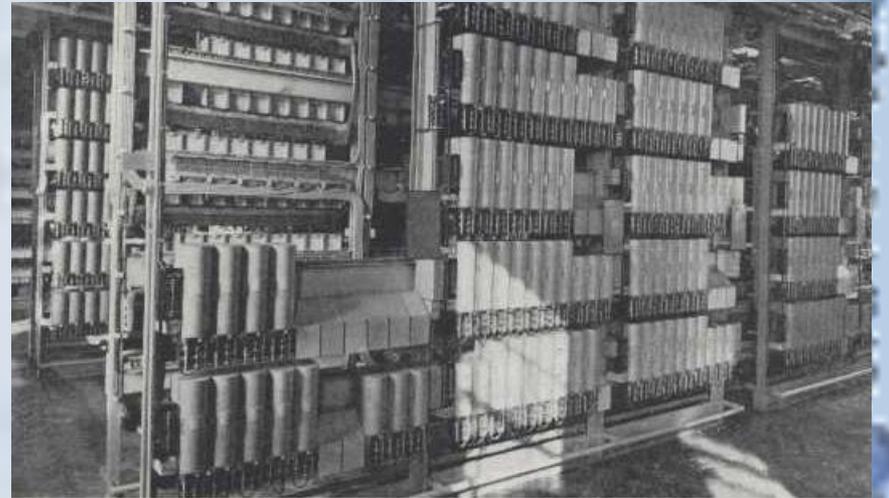
*Left: Graham Bell's telephone.*



*Manchester First Telephone Exchange.*



*Modern dial telephone.*



*Inside an Automatic Telephone Exchange.*



*Not Organ Pipes but Underground Cables serving a telephone Exchange.*

*Faraday Building. The hub of the Trunk and International Service.*



In due course there burst upon your ear the clamour of innumerable voices uplifted in argument, entreaty, or imprecation. That meant that you were now through to Central, and the reason for the babble was that in those days no return wires were employed: the current was "earthed" at both ends and completed itself across country, so to speak, as best it could, with a resulting underground tangle of cross-currents and scrambled conversations in which the participants had to bellow lustily to make themselves heard.

Ultimately, and with ordinary luck, your own bleatings penetrated to the ear of an operator. You asked for a number - something in the nature of two or three figures only in those days - and if there happened to be a spare wire available you got it.

Thereafter the tumult died and you engaged in conversation with a muffled and enormously distant squeak which you dimly recognised as the voice of your correspondent. Then you hung up, pressed a black button to show someone that you had finished, and called it a day.

But now, whatever other exasperations telephoning may involve, there is no need for anyone to shout. Among those who have special cause to be grateful for this mitigation is the telephone-operator herself. Not so very long ago she spent her allotted spell at the switchboard straining her ears in order to grasp the requirements of a distant and inaudible subscriber, or her own vocal chords in trying to shout down a vociferous colleague at either elbow.

But a modern manual telephone exchange is not much more than a sedate whispering gallery. There are no bells; merely a series of tiny glow-lamps twinkling in and out. A row of girls, seated on special chairs and wearing earphones, deftly manipulate plugs as they converse, in the standard "golden voice," with someone perhaps five hundred miles away. Behind them cruises a lady supervisor, ready at any moment to render first aid in the case of difficulties.

That is the surface of things. Now let us proceed behind the scenes and survey the maze of wires which forms the hinterland of every switchboard.

Here, in the domain of the engineer, we are confronted by rack after rack of complicated apparatus rising from floor to ceiling and linked together by a network of cables lying in orderly array in aerial runways and tracing out a complicated pattern, crossing, meeting and dividing, all in the neatest manner imaginable. These racks hold the electro-magnetic relays which control the signal lamps on the switchboard, telling the operators that a call is required or that a conversation has been finished. They also hold the induction coils through which current is fed to the subscriber's telephone, thereby avoiding the individual batteries which formerly were required at each subscriber's telephone installation. Here, also, are massive cross-connecting frames many yards in length, through which the street cables, containing the wires from the subscriber's frames are linked to the exchange switchboards. Each connection is made by a separate pair of wires.

If the installation is of the modern automatic type in which subscribers can dial their own local numbers, the apparatus rooms are still more complicated. Here the relays are arranged in metal boxes which are placed, like books on a shelf, upon racks, from which any one can be removed without affecting the others. These relays respond to the operation of the caller's dial, and enable him to select his correspondent's telephone from amongst, perhaps, 10,000 others.

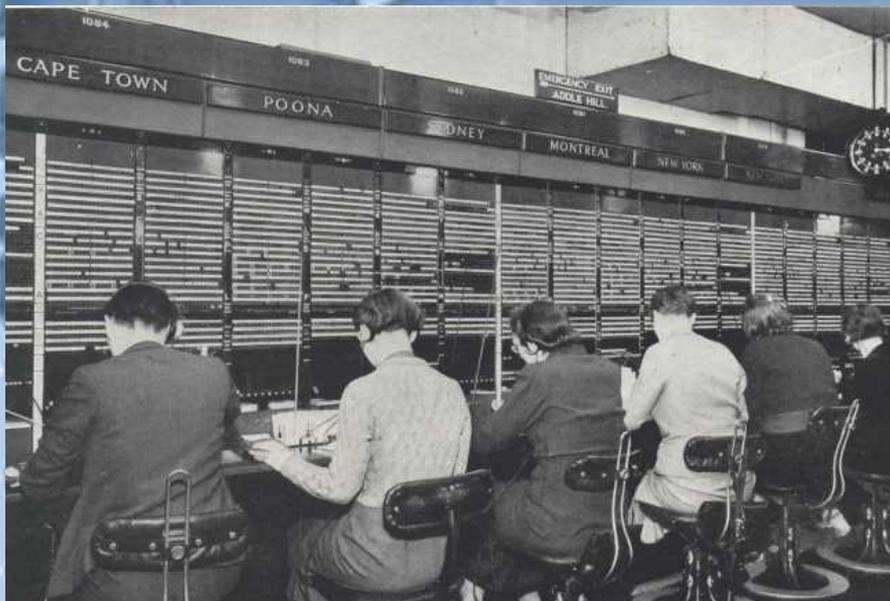
In the main trunk exchanges the metal boxes also contain electronic valves and all the other gear with which broadcasting has made us familiar. These enable one pair of wires to carry as many as twelve separate and distinct conversations, this being effected, as in broadcasting, by the employment of separate "frequencies." Indeed, the most modern cables consist only of one wire, a copper rod placed concentrically within a copper tube forming, as it were, two wires, one inside the other. With this construction 400 or more simultaneous conversations are possible.

Let these details suffice. They are inserted here for the declaration of the electrically minded. The lay reader may [and probably will] pass them by.



*The inspection of complicated Telephone apparatus goes on day and night, by men -  
- and women*





*The International Telephone Exchange, Faraday Building*

#### IV

To study Telecommunications at close-up range we cannot do better than pay a visit to two more great Post Office centres in the neighbourhood of St. Martin's - le - Grand.

The first of these is Faraday Building, which employs a staff of about 4,000. It stands in Queen Victoria Street, and is a substantial building of several storeys, towering almost solitary amid the ruins of the City of London, and out-topped only by its majestic neighbour, St. Paul's Cathedral.

"Faraday" is the nerve-centre of the tele-communication system, so far as telephones are concerned, of the British Isles - or, one might add, Empire. It is the focus and each capital had its own switchboard marked, "Paris" or "Berlin" or "Moscow," and its own special operators. These had to be linguists, but not perhaps to the extent that might be imagined. In putting calls through three languages only used to be employed - English, French and German. French is, so to speak, the official language of Europe, but English [including American] is much more widely used to-day. In our arrangements with Berlin, as a mutual concession to national prestige, either English or German was employed, upon a fifty-fifty basis. [This, it is comforting to reflect, is no longer necessary to-day.]

European calls are carried across the Channel by submarine cables, the speech being amplified by repeaters at the shore-ends to make good the attenuation or loss of volume caused by the cable. These Channel cables are about the maximum distance over which speech currents can be carried; if they were much longer the sound at the distant end would be too faint to be heard even after amplification.

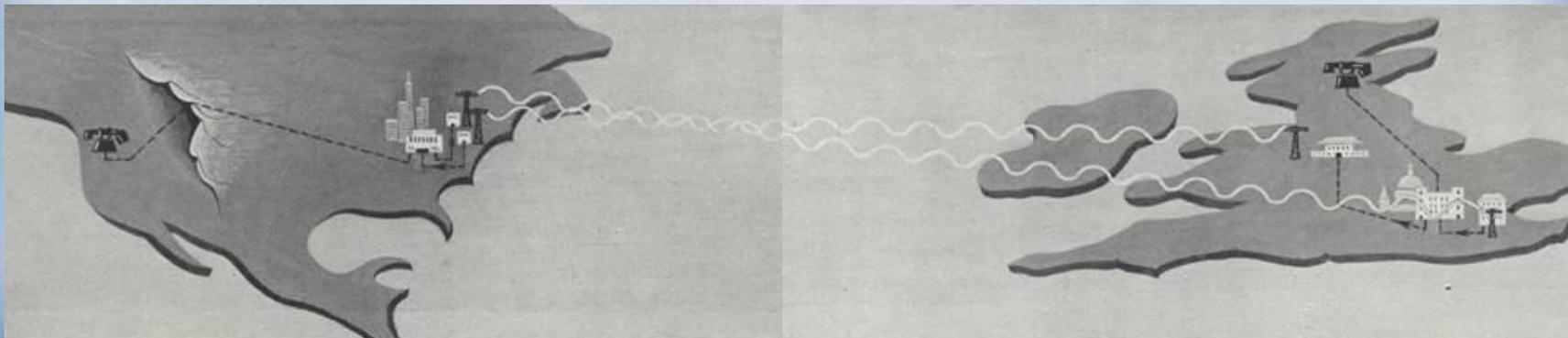
For longer distances recourse is made to the Radio Services, which, when it comes to putting a girdle round the earth, can leave Puck standing.

#### V

However, the average telephone subscriber is not in the least degree intrigued by the wonders of science or the mysteries of long-distance telephoning. His interest lies much nearer home and is entirely personal.

"Why," he has been asking for the past five years, "if I try to get a trunk or toll call put through over a comparatively modest distance, do I have to waste so much time dialling TRU or TOL without even being accorded the courtesy of an acknowledgement from the Exchange? And even when I do, why am I always informed that there will be a delay of several hours? Can't you put up some more wires or something?"

These are justifiable criticisms, though not always just. Let us endeavour to answer them, even though their task involves some further technical detail.



*Trans-Atlantic call*

Firstly, the Defence Services of the country demand and receive complete telephone priority; which is only right, because Defence means only one thing - instantaneous intercommunications. Secondly, it would be useless during the war to "put up more wires" even if the engineers were available to put them up, because if we did more staff would be required to operate them. The perpetual problem of the Post Office to-day is shortage of staff.

Let us take a walk round one of the Trunk switchboard rooms in Faraday Building. Along each board sit a row of operators, murmuring into transmitters hung round their neck and manipulating connecting plugs. Before each girl is a panel studded with tiny glow-lamps. Whenever one of these comes to life that means that another subscriber is ringing up from Holborn, we will say, and that he wants to make a trunk call to Cardiff. The operator pushes a fresh plug in, and asks the subscriber for his number and the trunk number required.

To facilitate quick service the panels on the switchboard are all in "parallel," which means that the call from Holborn will illuminate a lamp on every panel down the line, and can thus be attended to by any operator who happens to be free at the moment. As soon as this is done all the other lamps on this circuit go out, and the rest of the operators are relieved of further responsibility in the matter. Under this organised division of labour an operator should seldom have more than three or four calls awaiting attention at one time, and can thus deal with them in their proper order.

But in war-time many of the operators' stools stand unoccupied, and the glow-lamps opposite to them are winking forlornly in a vain attempt to attract attention. The Exchange is short of operators. That means so much extra work for the devoted band that remains.

Even this should not involve any inordinate delay - so long as the calls are answered in strict rotation. But here comes the rub.

During peak hours - and life is one continuous peak hour in Faraday Building in war-time - the accumulation of glowing lamps on a given panel is apt to grow so great that the operator can no longer keep pace with them. Not that she does not try. Faced with an ever-increasing array of accusing lights, she keys her energies up to 20 per cent. above normal - this is about the limit of human capacity - and battles resolutely with rising flood. But in vain; the "load" on the panel has now reached "Critical Breakdown Point," which means that the calls can no longer be dealt with on any ordered plan.

It would seem then that we must wait, with what philosophy we can summon, until a sufficiency of operators is released from Service Telecommunication. It ought not to be long now.

## VI

All the girls in Faraday Building are not by any means telephone operators: there is a considerable staff engaged upon work connected with accounting and finance, for after all, telephone calls have to be paid for, whether on the spot or by regularly rendered account.

Local calls are comparatively simple. Either you employ a call-office, where you drop your two pence into the slot and press Button A; or if you are a regular subscriber your call is mechanically registered and charged to your account. But trunk and toll calls are more complicated, and require a more highly trained operator.

Let us revert once more to one of the switchboard rooms at Faraday Building which deals with trunk calls, for which the subscriber is charged according to distance and the time he occupies.

At Faraday Building, as soon as the operator has put a trunk call through and conversation has commenced, an illuminated time-recording apparatus springs into life at the foot of her panel, ticking off the unforgiving minutes in groups of three, with a warning pip-pip at the end of each three-minute period. At the conclusion of the call the time recorder is stopped automatically and the operator notes down the time occupied upon a card on which she has already entered other essential details, such as the subscriber's own number. This card she then inserts into an aperture in her desk, whence it is immediately propelled along a pneumatic tube to the Sorting Desk, from which, after being duly checked and stamped, it is passed to the Commercial Department, which in its turn includes the charge in the subscriber's account.

But we are not all subscribers: many of us pay cash on the nail, employing a call-office for the purpose. Observant persons will have noticed that in these the cash-box offers three slots, for pennies, sixpences and shillings respectively. How does the operator make certain that the required sum is paid in?

Each penny inserted into the box drops on to a lightly coiled steel spring which gives off a resonant "dong." A sixpence in falling, strikes a small bell which produces a shrill "ping." Lastly, a shilling is arranged to strike the bell twice, thus producing two "pings" in succession. An experienced ear takes due note and the call is put through.

## VII

The Central Telegraph Office has already figured in our story as an outstanding victim of the great raid in December, 1940. It has now being rebuilt, to the extent of two storeys, and performs for the telegraph system of our country the same services as those rendered by Faraday Building to the telephone.

The electric telegraph was developed from an origin as humble as that of its younger sister. The original design was that of a simple make-and-break with which, by manipulating a key, you could transmit your message by the various movements of a magnetic needle, or [later] in the dots and dashes of the Morse Code.

To-day it is more usual to employ a teleprinter, which is a sort of long-distance typewriter, upon which the operator can tap out a message of any length over almost any distance - and a duplicate machine at the other end of the circuit reproduces the message either on an endless paper "tape," which can be cut into convenient lengths and pasted on to a telegraph delivery form, or in the page form familiar to readers of news bulletins in clubs and press-rooms.

As at present constituted the C.T.O. dates from 1870, when the State took over from a private company. It houses both Inland and Foreign Telegraph Operating Galleries, as they are called - a reminder of the time when the instruments were operated in galleries running round the public office. They occupy more room today.

The teleprinter superseded no less than four different types of telegraph system, all of a somewhat slow or complicated character. The limit of the output of any of these machines was 35 words per minute. The teleprinter, besides being much more simple to operate, can transmit 65 words in a minute.

The Inland Telegraph Gallery at the C.T.O. is equipped with nearly 500 such instruments; and they are kept busy, for they sometimes have to deal with 200,000 telegrams a day. Eschewing generalities and statistics as usual, let us apply our attention to a single typical instance.

Supposing you or I desire to send an ordinary telegram from South Kensington to an address in Scotland, what exactly happens to it?

The essential requirement throughout is speed. Our telegram, the moment it has been handed over the counter and stamped, is despatched forthwith to the C.T.O. It can arrive there bodily, per pneumatic tube - London is veined with these - by teleprinter, or be telephoned, according to the size and resources of the despatching office. After being sorted and stamped it is carried by a fast-moving conveyor-belt, winding round desks and between tables to the Gallery which deals with the despatch of the telegrams to Scotland. From here it is teleprinted to its destination for delivery.

It should be noted that in Central London itself there is no need to telegraph "local telegrams at all. They can either be telephoned and taken down, or conveyed bodily by the ubiquitous pneumatic-tube system.



*Central Telegraph Office to-day - Teleprinter working*



*Central Telegraph Office in the days of Morse working*

In addition to working the inland telegraph services and the service with Eire, the Post Office runs a number of public telegraph services with the continent of Europe, some by means of overseas cables across the English Channel and the North Sea and others by wireless. It also transmits by wireless telegraphy a great deal of press material which is taken down simultaneously by groups of receiving stations in nearly all parts of the world.

The Post Office accepts telegrams not only for its own European services, but for all parts of the world. These telegrams are sent over the inland system to the offices of the telegraph companies which transmit them abroad. The Post Office also delivers many of the telegrams received from abroad by the telegraph companies.

Last of all - a sort of link between the telegraph and telephone systems - mention must be made of the useful and ever-growing service known in the Post Office as "Phonograms," by which, instead of writing a telegram and handing it across a counter, you dictate it over the telephone to an operator in the Phonogram Section which occupies its own gallery in the C.T.O.



*Phonograms*

The operator takes the message down on a special typewriter fitted with a continuous roll of forms, and despatches it on a conveyor belt to join other telegrams for the same destination, to be sent forward by teleprinter. Delivery of telegrams by telephone is a useful service, particularly for country districts where the Post Office may be some distance away.

But even the Post Office inventions are not infallible. During the recent hostilities a member of His Majesty's Forces stationed in Brussels received from his wife in the north of England a telegram containing the eagerly expected news that he had become a father - a daughter, who it had previously been arranged should be named Christine. [In the other event, Christopher.] Although the operator punctiliously repeated the message back over the telephone before transmitting it, what the newly made parent actually received was the following:-  
*Fifteen had arrived*

## Chapter 6

### ENGINEERS

FROM CHILDHOOD up most of us have taken unconscious pleasure in the Royal Mail red of our pillar-boxes and Post Office mail-vans. Together with the more recent telephone kiosks, they furnish the chief adornment of our sober city streets, especially in London.

Far less decorative but equally romantic, if you trouble to investigate their comings and goings, are the little dark-green service vans which you may observe speeding everywhere upon their innumerable missions, whether it be to deliver a fresh consignment of Post Office equipment or to correct a fault in some remote repeater station.

The sight of these humble but indispensable vehicles should awaken in us a desire to enquire further into the work of the Post Office engineers themselves, and to the considerable aid and comfort which they have rendered to their country's defenders throughout the war.

Actually their labours in this respect began long before 1939. They were setting up special land-lines for the R.A.F. as early as 1925, and the strategic network of intercommunication between Services which they had established by the time the war broke out approached in scope, and later exceeded, that maintained for public use, even though the public services were being continuously extended.

When war came at last, Post Office engineers were immediately absorbed into His Majesty's Forces, reducing the regular staff by nearly 25 per cent.

Fortunately, much valuable spadework had already been accomplished. With the menace of air-raids and their paralysing effect upon intercommunication ever in mind, additional cables had been laid down between important towns over different and alternative routes. Particularly vulnerable spots had been by-passed. Old telephone exchanges were not dismantled but held in reserve. Public trunk lines were earmarked for future use of the Services, and were promptly switched over in September, 1939, and very many more were added between that date and May, 1940.

But in war-time you cannot foresee everything, and in May, 1940, many of these advance arrangements were, at a single stroke, rendered insufficient. No one could have anticipated the complete collapse of France and the consequences thereof - the urgent demand by the authorities for the provision of many new communication facilities and the scrapping or transfer of others. With invasion of our own country now a definite possibility, fresh aerodromes, battery sites, searchlight centres and Radar stations were needed everywhere, and every one of them had to be linked up in a fresh network of intercommunication, all to be provided and installed by the Post Office.

It was a heavy call on an overburdened Service, but the thing was done; by increasing the hours of work, by dilution with unskilled and female labour, and by shutting down on all the construction work - the extension - of the civil trunk services, for instance - which could possibly be postponed. At that agonising moment the demands of the present were - could only be - met by mortgaging the future.



*Post Office Engineering Vans*



Not that the future was neglected, nor the continuous and progressive lessons of experience ignored. War is not only a great teacher but a tremendous stimulator of inventive inspiration. With the restoration of peace and normality the British public will discover that many improvements in Post Office equipment, at present obscured by lack of staff to provide them, were derived from the stimulus of war-time necessity. Trunk telephone services, for instance, were simplified by various new automatic devices, designed to economise personnel.

## II

So much for Practice in general. Let us turn now to a concrete instance of performance.

The duties of Coastal Command consist very largely in protecting Allied shipping in home waters. As in all else, the efficient discharge of this trust depends almost entirely in this electric age upon perfect intercommunications between ship, shore and the heavens above.

To see this for ourselves we are about to pay a visit to a Coastal Command Headquarters. It lies on the east coast of Scotland, and its theatre of operations is that part of the North Sea bounded by Orkney and Shetland, Iceland, the coasts of Norway and Jutland, and a line drawn from Newcastle-on-Tyne to Esbjerg - a pretty considerable parish.

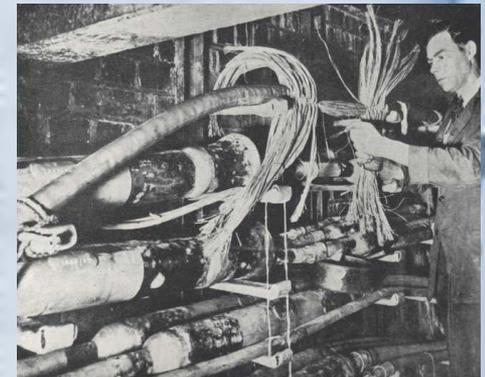
There are other equally important centres at Chatham, Plymouth and Liverpool, but one description, as usual, will suffice for several.

The establishment with which we are concerned is a solid Scottish baronial mansion-house [or "castle"] set amid close-growing trees and laurel bushes at the end of a long winding drive, under the very shadow of the eight wonder of the world, the Forth Bridge. "It may now be revealed" that its name is Pitreavie.

The original designer of the castle and its "policies" would be surprised at its present appearance. Armed sentries stand at the lodge-gates, and all visitors must be identified, coming and going. The usual rash of Nissen huts and unsightly shacks has broken out upon its lawns and flower-beds, and upon the roof of the tower stands a huge mast embellished with gadgets designed to indicate the direction and velocity of the wind, not merely from hour to hour but from minute to minute. To Coastal Command the weather must be an ever-open book.

But its deepest secrets lie underground, and to explore them you have to descend not Thirty-Nine but Ninety-Eight Steps. [I counted them coming up.]

Arrived at the bottom we find ourselves in a new and uncannily silent world, lined with concrete many, many feet thick. Time ceases to exist down here. There is no perceptible difference between night and day and winter and summer, and work goes on all round the clock for seven days a week. The air is conditioned to a uniform temperature and humidity, and "daylight" illumination is supplied by fluorescent lamps. Post Office cables are visible everywhere, running neatly along the smooth walls of innumerable passages.



*Jointing Underground Cables*

The passages themselves appear to be deserted except for a Wren or Waaf carrying that unflinching prop and stay of the female warrior, a tepid cup of tea; but behind the mystic portals which can extend down both sides of the passage can be heard an unceasing hum, partly of dynamos and partly human activity; for down in this fastness, far below the reach of bombs of any denomination, are lodged the switchboards, teleprinters and other mysteries which these cheerful and competent young ladies operate with such deftness and speed.

Wrens and Waafs comprise the greater part of this troglodyte population. The male section are chiefly technical experts or Naval and Air Force Officers. The official designation of the establishment as a whole is that of a Defence Communication Centre, and the lives of thousands of thousands of men afloat upon the face of the North Sea hang upon its smooth and unflinching operation.

It is controlled by the two Services jointly, but this time [for once] the Commanding Officer is not an Admiral but an Air Vice-Marshal. The whole of the equipment, except in the Wireless Room, is furnished and maintained by the Post Office, with a Post Office liaison officer attached to the strength.

### III

The largest and most impressive cell in this underground hive is the Operations Room, a brightly lit hall along one side of which is displayed a vast map of the North Sea, within the boundaries already mentioned. Down in the corner of the map is a chalked notice which say:-

*Situation at 11.00 hours.*

A Waaf has just climbed a step-ladder which is leaning against the north of Scotland, and is sticking little aeroplane silhouettes onto a patch of ocean just north-east of Shetland. When she has finished, the pattern forms a rough square. We turn for enlightenment to the signals to the Signals Officer.

"The purpose of this map," he explains, "is to give those two Controlling Officers" - he indicates a Naval Commander and an R.A.F. Wing Commander enthroned on high above a sea of desks and telephones - "an immediate and complete visualisation of the operational situation in this Control at any given moment. They don't have to read reports or listen to the telephone; all that is done for them by those blokes there" - he indicates the busy telephonists - "and the information they pass out is reproduced in pictorial form by the appropriate Wren or Waaf upon that map. That enable the Controlling Officers to take the necessary action in the shortest possible time."

"That little square of silhouettes up of the Shetlands represents an R.A.F. Reconnaissance Patrol trying to locate a U-boat. As soon as it does so we shall receive a wireless message here, and then the Naval Controller will order out a surface force to do the job, or else the R.A.F. officer will send over a covey of bombers; perhaps both. The one thing that matters is speed, both in communication and action."

And so it goes on. Telephone, teleprinter and wireless messages -orders, queries, situation reports, meteorological reports - pour in from hour to hour, or rather from moment to moment, either for the information of the Centre itself or for distribution elsewhere. Upon special occasions, such as a concerted attack upon the enemy-occupied coast of Norway, or for that matter on D Day itself, the function of the two Controlling Officers was mainly to transmit orders rather than to direct. But normally the initiative is left in their hands.

For instance, besides taking action against intruding U-boats or aircraft, they are responsible for the Rescue Services. At any moment a ship in their area may be disabled, or an aircraft shot down. The news and location of the casualty is promptly indicated on the map, and aid despatched.

The centre itself is merely a unit in a vast network of intercommunications within which messages can be conveyed *instantly* between stations as far apart as Lerwick and Penzance. There is even a special teleprinter switchboard through which the same message can be broadcast, as it were, simultaneously to twenty or thirty different stations from a single machine.

Off course this vast system was not built up in a day, but by 1942 it had come to full growth, and Rosyth could converse with Portsmouth and Whitehall or with any naval or air station in the country or around it.

More than that. Within the domain of the R.A.F., so smooth had the operation grown, Bomber Command was accustomed to hold a conference four times a day, at which invisible Group Captains, hundreds of miles apart, were enabled to exchange news and views as comfortable as if they were all sitting round the same table.

The foregoing, then, presents a typical example of combined operation between the Services and the Post Office - the Services operating equipment provided and installed by Post Office engineers.

Now let us take leave of the estuary and move upwards to the source - in other words, to that Home Mystery, the Post Office Engineering Research Station at Dollis Hill.

We are back in London again. The station stands on high ground a few miles up the Edgware Road, almost the point where Cricklewood leaves off and Hendon begins. It is a conspicuous but most effective camouflaged building, and houses experts in every branch of Post Office engineering, together with their attendant genii - a company of some 800 in all. The establishment was moved here some twenty years ago and has grown in stature and importance ever since.

Most of its researches, fortunately, are too recondite to call for detailed description here, but a superficial outline of its general activities may be attempted.

First of all comes the study of Sound and its laws, an essential adjunct to the production of all telephonic and Radar apparatus, or, for that matter, of telegraphic equipment; for it has now been established that there is no need to maintain separate plant both for telegraph and telephone services, because telegraph messages can be despatched over a telephone cable, using "voice frequency system," - an arrangement whereby a single speech channel can be divided into as many as eighteen separate telegraph channels, each being distinguished from the others by the particular frequency [or note] of the current which it employs.

So the study of sound, carried out at both ends of the scale, ranks as a high priority in the Research Station. There are air vibrations - it is these that give rise to what we understand as sound - which are pitched so high or so low that the human ear simply cannot detect them, though some animal can. [There is a dog whistle on the market which a dog can hear but which the blower of the whistle cannot.] But at Dollis Hill these inaudible "sounds" are measured by a species of acoustic galvanometer, which indicates their existence and intensity by means of a spot of light upon a scale, as one estimates the strength and duration of a weak current along an electric wire.



*The Post Office designed better head-sets for wireless operators in tanks*

And there are certain military problems associated with the volume of sound. There are the combination of noises inside a tank, for instance, so loud that no human voice can penetrate or overtop them. And in total was this is where applied science can be of the utmost practical value.

Down in a deep concrete dug-out at Dollis Hill is an experimental apparatus capable, on the throwing of a switch, of reproducing all the hideous noises indigenous to the interior of a Churchill tank, closed and in full action. When it is in full blast you have to put your fingers in your ears to avoid being deafened.

The question is how, amid this pandemonium, a tank commander is to issue the necessary orders to his crew, or for that matter give ear to radio-telephone messages coming in from out side.

The answer is an elaborate and ingenious head-fitting, electrically operated which excludes from each wearer's hearing sufficient sound to enable him to hear the voice of his neighbour, similarly equipped. Without this apparently simple device co-operative action in tank warfare would be impossible.

#### IV

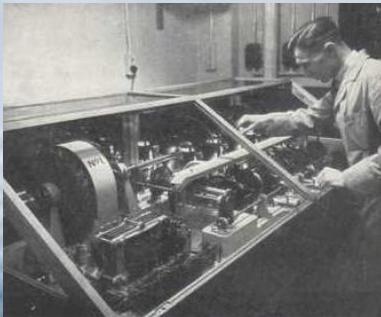
Incidentally, to converse over a field wireless telephone is something of an art in itself. There is no easy give and take here - none of that inconsequent and simultaneous gabble, for instance, which constitutes the ordinary [and apparently quite intelligible] feminine telephone chat.

Over the field wireless telephone the one thing you must not do is speak out of turn. Your observations are being conveyed through space by a one-way radio wave, and until the direction of that wave is reversed it is useless for anyone to answer back. So, when you have finished what you have to say, you shout "Over!" and the wave is switched in your direction. [It may be remarked in passing that in the more elaborate equipment used for the public transatlantic telephone, this switching is done automatically by relays operated by the speakers' voices, and conversation proceeds in the ordinary manner.]

You must also be careful about your articulation, for the wireless telephone is highly unsuited to slovenly speech.

To this end the Research Centre has devised a means of enabling a man to study his vocal shortcomings for himself. He is taken into a small room [containing an inconspicuous microphone] and engaged in apparently casual conversation. At the end of it a loud speaker is switched on, and presents him with a faithful reproduction of his own voice. One sample is usually enough. Some of our stage celebrities would benefit by a short course.

This device is incorporated in the equipment produced by the Post Office for tank crew training centre.



"Tim" - the speaking clock



#### V

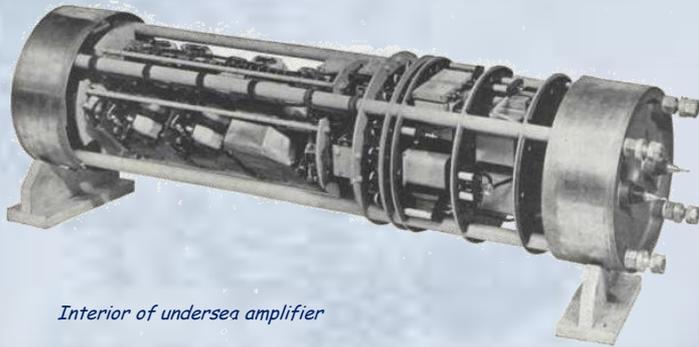
Dollis Hill is entirely a home of research and invention. No apparatus is turned out in bulk: models or samples are constructed in the machine-shop or carpenter's shop and distributed for large-scale reproduction elsewhere.

Some of these models, with their inner workings stripped bare, are a fascinating study; the automatic dial-telephone, for instance. The antics of the nimble little mechanism which, in answer to the seven movements of the caller's finger, first of all selects the right Exchange and then picks out the four figures of the caller's number, have to be seen to believe - and even then they probably will not be.

Then there are the latest types of cable. Mention has been made in these pages more than once of circuits which will carry twenty or thirty conversations at once. At Dollis Hill I was confronted with a section of a super-super cable which can carry no less than 600 such conversations. It is known as a 'coaxial cable', and is laid only between large and busy centres of population.

Very high frequencies have to be used to separate so many conversations, and these high frequency currents flag so rapidly that they need artificial stimulation at intervals of six miles along the route. The stimulation is supplied by an "amplifier" which is a minor miracle in itself. It is installed in a small and unattended building, set in a field or by the roadside, and is entirely automatic in its action. It is even capable, if anything goes wrong, of detaching itself and of switching in a "reserve" to take its place; and if anything cataclysmal happens it immediately rings up Headquarters of its own violation, giving a brief *résumé* of its symptoms for the guidance of the First Aid party when it packs its little black bag.

I mentioned in a previous chapter that it is possible to equip a submarine cable with an amplifier. I saw one of these at Dollis Hill - the last word in telephonic research. It is shaped like an outside oxygen-cylinder, and can be inserted into an ocean cable, when it automatically "refreshes" the circuit, as on land.



*Interior of undersea amplifier*



*Post Office Research Station, Dollis Hill*

## VI

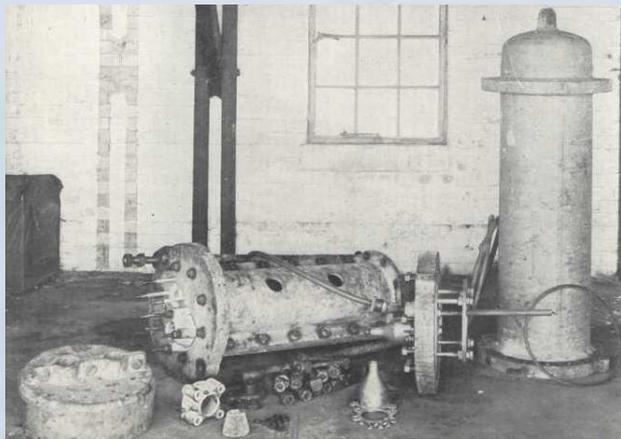
The Radio Section at Dollis Hill employs a staff of 300, whose labours are of considerable importance not only to the radio services of the Post Office itself but to the B.B.C. and the Astronomer Royal.

A wealth of research and invention has recently been expended here upon the employment of quartz-crystal in radio.

There are only two classes of the community to whom mysteries of radio appear to present no problem whatever eminent scientists and small boys - and being neither myself, I shall make no attempt to explain what radio valves are or do; except to mention that, among other things their "oscillations" are employed in the generation of the electro-magnetic waves which animate receiving sets; and that quartz-crystal, shaved down to tiny slips and associated with the valves, will, owing to its peculiar property of being able to express mechanical vibrations in terms of electric vibrations, control the beat of those waves with greater accuracy and regularity than anything yet discovered.

In proof of this assertion I should add that quartz-crystal, which is found chiefly in Brazil and used to cost a few pounds a ton, now costs £10,000.

At Dollis Hill you can see it being sliced and smoothed by various instruments of unerring precision into thousands of such slips for the use of the Post Office Radio, for innumerable wireless sets, and for the astronomical clocks at Greenwich Observatory.



*Outer casing for undersea amplifier*

## VII

Such has been the record of the Post Office engineers during the past six years, whether in practice or performance. Let me close this chapter with a not altogether irrelevant recollection.

The scene is a Naval Signal Centre on the Clyde, a focal point of the Western Approaches. I had paid a similar visit there over thirty years ago, during the last war. Even then the communications system was bewildering enough - flags, searchlights, flash-lamps, and wireless - though obvious child's play to those who operated it.

But in June 1944 most of that had gone, superseded by direct telephone and teleprinter communication, not to mention the mysteries of Radar. Contact was intimate and universal; at Greenock there were seventy-six naval establishments within five miles of this particular centre all in immediate touch with one another.

This is what the Chief Naval Signal Officer had to say about it all:-

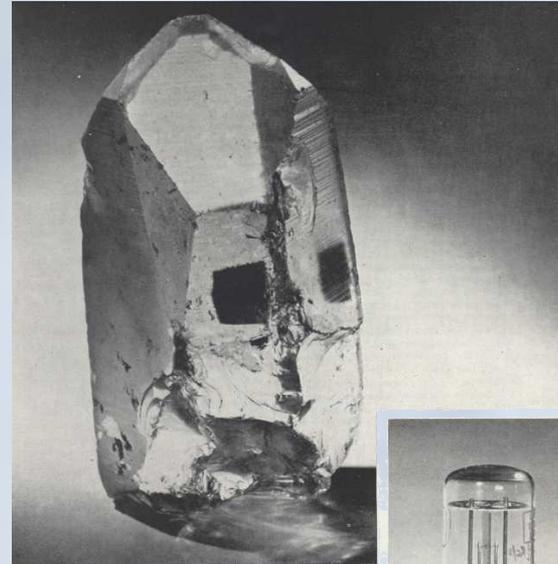
"The chief thing a Signal Officer here has to learn is to leave everything you can expect to the Post Office people: they are the experts. In the first place they will save you endless overlapping. As soon as a Signals Officer takes over a new area his Naval superiors will want him to rush about with temporary telephone wires over trees and roofs of houses, or a contingent from Army Signals. Avoid this like the plague, and call in the Post Office instead."

"Here's a story for you. Once, when there was not enough room for one more ship to anchor in the Clyde, we opened a base in a remote loch on an island in the West Highlands. To establish the necessary communications the local soldiery very kindly ran out seventeen miles of cable for us, laid over the open ground. Unfortunately the natives were very short of aerial wire for their radio sets, so it was not long before that lovely cable was in tatters. Then we did what we should have done in the first place; we called in the G.P.O., who made a thorough and permanent job of it."

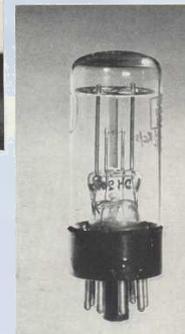
"That is what they always do. They are easy to deal with, too; their methods are surprisingly free from red tape. They make only one stipulation, and that is that they must in all cases receive exact instructions, in writing. And of course they are dead right."

Then he added: "Speaking generally, no words of mine can ever do justice to the war-work of the Post Office so far as I have seen it. The communications system they have built up for us I believe, exceeds in its capacity the whole of their peace-time commercial network."

Which last is nothing more than the truth, and a worthy tribute from one fully qualified to testify.



*Quartz crystal as mined*



*Valve-mounted  
quartz  
oscillator*

# Chapter 7

## "CALAIS VIEW"

THE TROGLODYTE Centre in Scotland recently described is [or was] one of several, very similar, and what has been said about one applies in great measure to the rest.

But there is one particular centre, in England this times, which deserves an honourable mention all to itself - Dover.

There are three reasons for this. In the first place, Dover provided the receiving end, as it were, of the Dunkirk Evacuation in June, 1940, and the effort and initiative demanded of the postal staff [amongst others] during that stark experience was rendered doubly difficult by the fact that no such emergency had ever been contemplated or imagined.

More than a quarter of a million men, battered, half-clothed, leaderless, divided between apathetic exhaustion and incredulous joy over their own deliverance, were passed through the port during that time; and the first thought of everyone one of them on landing was to communicate with his friends and say he was safe.

In normal times the average number of telegrams dealt with by Dover Head Post Office is 800 a day. During the Dunkirk period it ran as high as 4,000. As many as 1,500 were handed in at the little quayside office alone. [Many of us knew that office well in pre-war days; we tottered into it from the Channel steamer to inform our next-of-kin that we had survived the crossing, the most terrible for years, and would like dinner at eight sharp. Then we tottered out to our reserved seat in the Pullman.

The Post Office staff rose to the occasion and got their messages away without appreciable delay. They worked all round the clock: they were too deeply moved by the poignancy of their task to worry about meals or time off. The faces of the gaunt, eager men who thrust the hastily scrawled telegrams across the counter or queued up at the telephone-booths established a priority all their own. So the men and the girls at the teleprinters and switchboards, aided by many a willing volunteer from outside, worked till they dropped.

Telephoning presented a special problem. Most of the calls were trunk calls, and very often before they could be established the caller had been compelled to entrain and depart. But many a kindly operator contrived to complete the call on her own responsibility, while Authority winked the other eye.

One of the strangest features of the Dunkirk story was that many of these reassuring messages came as a complete surprise to their recipients, who were not aware that anything particular had happened at all. The epic defence of the Dunkirk Perimeter while the long, patient queues formed up on the beaches of Dunkirk, had not yet been released as news: many people imagined that the Phoney War was still on. Consequently, when one young soldier succeeded in getting a call through to his affianced in Lancashire and announced: "Eh, lass, I'm back home, and safe!" all he received was a distant reply to the effect that he might have written to announce his coming. "And I haven't heard from you for nigh three weeks," added the aggrieved damsel.

The labours of the Post Office workers, especially at the counter, were further increased by the presence among the troops of a motley throng of French, Belgian, Dutch, Polish, and also some quite unidentifiable refugees, military and civil. Wet through, some of them were wounded all frantic

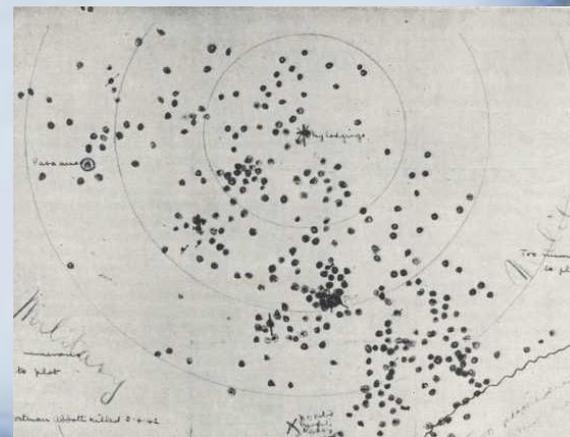
Dover Harbour



with excitement, they speedily got into difficulties amid the intricacies both of our language and our currency. But the counter staff, by the exercise of infinite patience and the ancient art of pantomime, got everything ironed out in the end.

In the letter-sorting offices work was complicated by the arrival of large quantities of foreign mail redeemed from the waters of the Channel and brought in in anything that could float. Many of the bags were riddled and torn by shell splinters and their contents were pulp. But by careful drying and the employment of spirited conjecture, most of the addresses were deciphered and the letters despatched afresh.

That was the Dunkirk evacuation, as indelibly recorded in the memory of Dover Post Office.

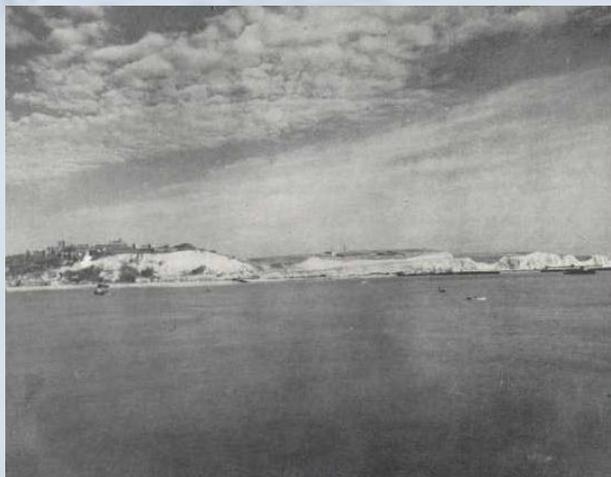


A record, of bombs and shells, kept by the Head Postmaster, Dover

## II

But even the port had been cleared and the last close-packed train had rumbled through Priory Station, there was to be no return for Dover to its ancient tranquillity, for the second of the three reasons previously adduced. German troops occupied the whole of the Pas de-Calais, and this corner of Kent, the nearest point of England to the continent of Europe, lay within easy range of modern artillery fire.

Presently the bombardment began. It was intermittent at first, but as weeks and then months went by and the enemy had time to establish elaborate gun-sites on Cape Grisnez and the heights above Wimereux, it grew in intensity and weight. You have only to take a walk round Dover to-day to realise what stout-hearted inhabitants of the ancient Cinque Port endured for more than four long years.



*The White Cliffs of England*

The first "real flogging" as a Post Office official put it, was administered on August 25<sup>th</sup>, 1940. This did material, but not cataclysmal, damage. What was more serious from the Post Office point of view was that the B.B.C. broadcast the news of the bombardment, with the result that the telegraph and telephone offices were immediately swamped by anxious enquiries from without. The flood did not rise quite so high as during the Dunkirk period, but at one time the teleprinters were putting out 109 messages in an hour.

A few days later came another exciting episode. The Luftwaffe made an extensive raid upon the forest of barrage-balloons suspended over and around Dover. Within half an hour twenty-three of these were shot down in flames, and one of them fell upon the Head Post Office, directly over the telephone exchange. It hung blazing outside the window, and the spectacle, as one of the operators described it, was "somewhat alarming." However, the burning envelope was pushed off the parapet into the street below, and no great harm was done; but the operators had to betake themselves for the first time, for the space of twenty-three minutes, to the emergency switchboard below. The raid was repeated in the evening, and to this day one door-jamb of the Post Office garage and mail-entrance carries the marks of twenty-four machine-gun bullets from a low-flying Messerschmitt. .

But the really bad time came when the long-distance enemy artillery got to work from 15-inch batteries. [It was said that some of these had been brought from the Maginot line.] Two hundred shells came over during September, 1940, - 240 in October, and 700 in November. Hundreds of bombers, too passed over on their way to London, where the Blitz was now at its height. But not all of these reached their objective, for at Dover they encountered the vanguard of our aerial defences. The sky above the Straits was criss-crossed with the trails of a hundred Spitfires, while down below the Ack-Ack batteries gave forth what a Post office official described as a "comforting noise." It was all part of our vast aerial defence scheme, and Dover was proud to be the earliest participant.

The German pilots signified their appreciation of the thoroughness of these arrangements by christening this particular locality "Hell's Corner," and, as such, it gained worldwide celebrity. Indeed, the Dover Postmaster received a letter from an enthusiastic philatelist in Chicago suggesting that in future all mail emanating from Dover should bear the endorsement "Hell's Corner" as a sort of supplementary postmark. He was disarmingly frank about the commercial value of his proposal, and enclosed a large number of envelopes to be so stamped and returned. He received the following reply:-

DEAR SIR, *in reply to your recent letter, . . .*

*I am sorry we have no date-stamp "Hell's Corner," but our lads have stamped "Hell's Corner on Jerry's mind plain enough. Greetings to U.S.A.*

*Your obedient servant--*

.....

The worst disaster to the Dover postal [or rather telecommunication] system fell upon June 28<sup>th</sup>, 1943, when a 16-inch shell scored a direct hit on the Head Post Office, causing general devastation in all departments, completely destroying the telephone exchange, and projecting the entire switchboard on to the floor below. It was late at night - about 11.30 p.m. - and most of the departments, fortunately, were untenanted, but three male telephone operators were killed. By 1.30 a.m. next morning an emergency switchboard had been established in a building close by, and ten days later a complete new telephone exchange was opened in the Post Office itself, on the ground floor, where it remained and functioned until the day of victory.

Now, if you pay a visit to that exchange, you may notice upon the switchboard itself, within easy reach of one of the girl-operators, a little scarlet switch-key. It was through this switchboard that the first warning of an impending raid on Dover was invariably received, and as soon as it arrived the girl nearest the scarlet switch-key pulled it down to give the warning. It was her duty likewise to push the key up again when all was over, and so signal the All Clear.

To-day the sirens are no more, and that switch-key is decked with and elegant rosette of red, white and blue, surmounted by a small card displaying the brief but heartfelt epitaph, R.I.P.

## III

So it went on, year after year. Two thousand eight hundred and seventy shells fell within the Dover area during that time, and the homes of practically every member of the Post Office staff suffered damage, ranging from honourable scars to complete disintegration. One little household was shelled out three times. Further afield St. Margaret's Bay, including its sub-post office, was almost perpetually under fire.

But, despite all, there was a regular delivery of letters every day, and whenever the railway station was out of action outward mails were despatched by road as far as Canterbury. The operating staffs at the counters and switchboards were by this time almost entirely composed of young girls, who showed their mettle time and again. [Only one lapse from grace is reported, and that was

when a young operator, in warning a subscriber during a heavy bombardment that his time was up, inadvertently substituted "number" for "time."] The men, mostly of the Engineering Staff, were kept constantly at work repairing cables and overhead wires, or restoring damaged buildings. Small boys careered about on bicycles, delivering telegrams, alerts or no, and occasionally returning with some "souvenir" not yet cold, to the envy of their unprofessional brethren.

Home Guard, Police, Wardens, the W.V.S. and various welfare services combined in works of necessity and mercy. One elderly member of the Salvation Army was conspicuous in such aid. Ultimately he was killed in the course of his self-imposed duties.

Direct shellfire alternated with bombing and "tip-and-run" raids - machine-gun attacks by yellow-nosed Messerschmitts. These would skim across the Channel close to the surface, whizz sharply up over the cliffs, travel inland a short distance, then wheel round and fly low over the town, spraying death and destruction. Their fire was particularly destructive to Post office overhead wires and telegraph posts.



*Dover Head Post Office*

Then came the era of the V1 flying bombs, dating from a few days after D Day. Their visitation had been to a certain extent expected, and a rearrangement of our aerial defences had been organised in anticipation.

Hitherto the air defences of London had been largely centred in and around London itself, or along the highly vulnerable gap presented by the Thames Estuary. An Ack-Ack Brigade responsible for the defence of that part of the Estuary was stationed at Chatham. Down in the middle of the Estuary itself was dotted a line of "Maunsell Forts" - batteries perched upon a "mystery" towers whose foundation rested upon the bed of the river. These took care of any hostile aircraft which, by steering a middle course, might evade the attentions of the batteries upon the Kent and Essex shores.

By the time the V1 bombs began to arrive innumerable Ack-Ack batteries were in the south-east area, while a serried row of barrage balloons on the Downs behind formed a second line of defence.

Only three of these unpleasant projectiles fell upon Dover: they were aimed at a more distant target. V1 bombs, moreover, being fired from fixed emplacements, follow certain definite "lanes"; these were soon plotted and Ack-Ack dispositions adjusted to the requirements of the situation.

But whenever you shift a battery you shift its communications too, and the re-assembling of the Ack-Ack defences of south-eastern England, involving as it did the installation of entirely fresh telephone, teleprinter and radiolocation circuits, provided the Post Office Engineers, working often side by side with Army Signals, with yet another whole-time job. But the job was done and the V1 beaten.

Incidentally, the appearance of the first V1 over Dover gave the local post-office staff an opportunity to display their ability to meet any emergency, however unexpected. Concluding, not unreasonably, that this new and strange visitant must contain parachute-troops, and that the safety of His Majesty's mails was thereby imperilled, they took immediate steps to have the mails in question conveyed from Post Office to Railway Station under guard - the Home Guard, in fact. The V1's failed their expectation, but those concerned had the satisfaction of knowing that they had shown themselves more than equal to the occasion.

Dover was by this time very much in the public eye, and was cheered in its darkest days by visits from some of the most distinguished persons in the land, including their Majesties the King and Queen, the Prime Minister and Field-Marshal Smuts, His Majesty's Postmaster General and the Director General of the Post Office. Words of praise and encouragement were spoken, and due course a richly merited crops of awards and decorations eventuated, in which the postal workers were singled out for special honour.

Perhaps the worst weeks of the siege - for that was what it amounted to - came right at the end, when the British Liberation Army was racing across France and the German gunners in the Pas de Calais, realising that their days were numbered, fired of their remaining ammunition without pause or discrimination. Casualties and damage were heavier than ever before, but the people of Dover, realising that the occasion called for the courage of a *dernier quart d'heure*, set their teeth and endured to the end.

The last shell fell upon September 26<sup>th</sup>, 1944.

#### IV

Now comes Dover's third claim to Mention in Despatches. Hitherto we have had opportunity only to appraise the endurance and enterprise of all concerned under enemy attack: mention must now be made of the part played by Dover when at long last the tables were turned and the time came to hit back. It was the story of Malta all over again - or nearer home, of Folkestone, Deal and Ramsgate.

Thousands of returning travellers are familiar with the prospect, always a welcome one, presented to their eyes when approaching Dover by sea - the towering white cliffs crowned by the Keep of the ancient Castle, and the town itself nestling snugly below, with the Admiralty Harbour to the left.

To-day, if you gaze upward at the face of the cliff overhanging that harbour, you may observe, about midway between top and bottom, what looks like a railed terrace, from which a few uniformed figures are looking down upon you or across the Straits to the opposite coast. Let us project ourselves into space and join them there.

Having alighted from our magic carpet, we encounter a Signals officer of the Royal Navy enjoying a cup of cocoa outside a doll's house of a Naafi canteen.

"This is what we call Calais View" he explains, after salutations - "and believe me, there have been times when distance lent enchantment to it.

We do believe him, and say so. Shells, bombs, V1's *ad infinitum*.

"Of course when things were hot," he adds, "one could retire indoors. Have a cup of cocoa, and then I'll show you round; and when I've done my bit I'll pass you on to the Army and R.A.F. blokes. We are quite a family."

We accept the proffered cup and advance to the railing. Immediately below us lies the harbour, strangely quiet now. It contains few destroyers or corvettes, but a flock of blunt-nosed landing craft are lined up against the shelving beach, unloading Red Cross motor ambulances direct from the field hospitals on the other side.

Next we lift our eyes and contemplate the opposite coast itself. It lies clear and tranquil in the afternoon sunshine. You can discern the shattered silhouette of Calais, and the low sand dunes that fringe the coast between Calais and Boulogne - even Napoleon's tall column upon the heights above Wimereux.

All is peace: the war is not by any means over, but at least the guns on Grisnez are silent and the V bombs fly no more.

After refreshment, we are introduced to a camouflaged opening in the cliff-face behind us, and within a few minutes, traversing a series of winding passages electrically lit and veined with Post Office cables, we are in the heart of the cliff itself. It is a commodious heart, a subterranean city, in fact, recalling old memories of the Citadel of Verdun, which thirty years ago stood up for six full months against all that the Kaiser could hurl against it. [I once spent a night there in 1918.]

The work here was begun, or rather projected, during the Munich crisis in 1938. From that moment it was realised that, in War Office parlance, the balloon would go up sooner or later; and that whenever that did happen in the south coast of England in general, and certain key-ports thereof in particular, would become the main focus of our warlike activities, whether active or passive.

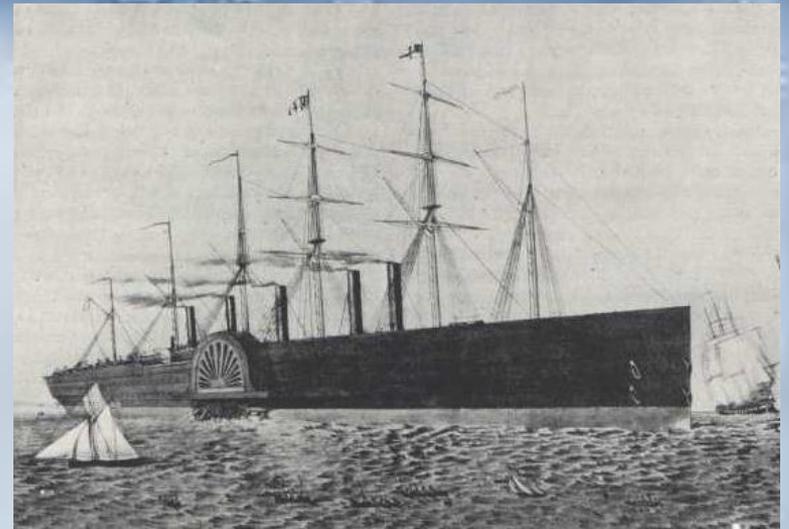
The first essential was a complete system of up-to-date intercommunication between Whitehall and the ports in question. So the Post Office engineers set to work forthwith upon the execution of a long-term plan. Miles of cable were laid down, and vast quantities of telephone, teleprinter and Radar equipment put in hand. Extra cables were even laid across the Straits, but that story comes later - in 1944.

By that date, within the high cliff overlooking Dover Harbour a complete Communications Centre had been constructed, capable of serving as G.H.Q. to an entire Expeditionary Force. A certain amount of accommodation was available already, in underground galleries driven through the chalk nearly a century and a half ago to house French prisoners of war. These now had to be produced, as it were, to infinity; Canadian sappers were entrusted with the job, and a great job they made of it. Toiling like coral insects, they excavated space for three large Operations Rooms one for each arm of the Services and all adjoining; for this was essentially a matter entailing Combined Operations of the closest kind. In addition they provided sleeping quarters, kitchens, canteens and hospital accommodation for the staff of highly trained specialists concerned, not forgetting their ancillary Wrens, A.T.S. and Waafs. The Post Office installed the usual highly sensitised nervous system, and the secret citadel was completed - ready, if need be, to be employed as G.H.Q. for the British Liberation Army on D Day - had the invasion been launched from this area.

But two similar and alternative centres had been constructed at the same time, partly for purposes of last minute decision and partly to keep the Hun guessing, in case any whisper of *Shaeff's* intended visitation should have been wafted across the Channel.

V

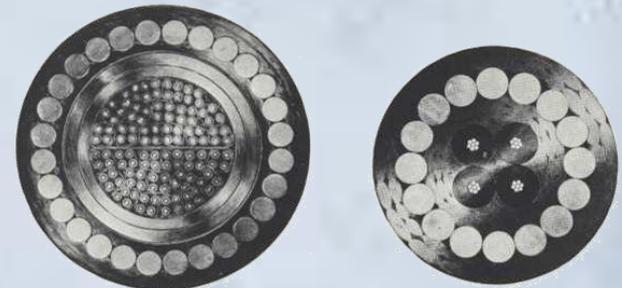
All I knew about submarine cables until quite recently was derived from a fascinating volume, *The Battery and the Boiler*, by that prince of boy's story-book writers R.M. Ballantyne - G.A. Henty was King - which I read and re-read in my early youth, and which described the laying of the first Atlantic cable by the *Great Eastern* nearly a hundred years ago.



"The Great Eastern" off Weymouth on her trial trip

In her day the *Great Eastern* was the largest vessel in the world. She had to be, to find room for about 3,000 miles of cable.

H.M. Telegraph Ship *Ariel* is not as large as that, being of 1,500 tons gross tonnage; and her mission is to lay and maintain Post Office cables round about the United Kingdom. She is "the property of the Postmaster-General.



Sections of Deep Sea Cables, 1932 and 1891

Post Office cable ships are based upon cable depots - at Dalmuir and Faslane on the Clyde, Woolwich and Dover. [The Woolwich depot received a direct hit from one of the last of the V2's and was extensively damaged but not put out of action.] The most conspicuous feature of such a depot is a vast building like a bus garage, wherein the cables are stored and maintained in large circular tanks.

Cables vary in thickness. Long-distance cables should be as light as possible, partly for reasons of space

space and stowage and partly because a cable is at any time liable to be hauled up for repair, and a really heavy cable would be difficult, if not impossible, to raise from the ocean depths. The original Atlantic cable - a specimen of it is still preserved - was 1 inch in diameter. It consisted of a single core of twisted copper wires, enclosed first in gutta-percha, then in hempen skin, and finally in a flexible coat of mail formed by spiral strands of wire, to render it proof against the action of sea-water, or the perforations of that submarine nuisance the teredo or shipworm.

Later, multiple-core cables were made, in order that a number of messages could pass over the cable at one time, the circuits being isolated from each other, so to speak, by insulating the wires. For this purpose gutta-percha and subsequently paper was used, but in the last few years synthetic compounds have been favoured, especially a substance known as paragutta, and more recently, polythene, which to the untutored eye looks like cold candle grease. The most modern cables are of the concentric type to which reference has already been made.

A submarine cable is stored in a circular tank, where it is kept under water, its natural element. A big tank can hold 200 or 300 miles of cable, depending on its size.



*Cable storage tank*

Now let us return to H.M.T.S *Ariel*. She is a modern vessel in every respect, both technically and socially. For instance, she has no fore-castle accommodation: of her ship's company of seventy odd all the ratings are berthed in separate cabins holding two or three apiece. She boasts numerous bathrooms and considerable recreation space. She is propelled by triple-expansion twin-screw engines, and burns oil fuel. In the event of damage by the Act of God or the King's Enemies she can be steered from two or three different places. She is full of fantastic gadgets - for locating cable faults, for gauging the depth of water beneath her [by sound echo], or for showing her exact position on the chart without employing the usual instruments. In these highly modernised ships there is little need to heave the lead: even the sextant is obsolete.

The cable itself is coiled in three circular tanks set in line amidships, and may be of any thickness up to 2 or 3 inches. It is hoisted out by powerful engine on the forward deck, round the drum of which it passes to a sheave set in the ship's bow, over which it is paid out, at the requisite speed, into the waters beneath. Down in the tank itself stand the cable crew, to frustrate any sudden impulse on the part of the cable to tie itself into loops or "bights."

Yes, oddly enough the cable goes over the bow and not the stern. This is because a ship's course is directed not by pointing her nose, as might appear, but by putting her stern over through the agency of the rudder; and if her stern were to be subjected to the drag of a heavy cable trailing behind, it would be almost impossible to steer her. So the cable goes over the bow, passing under the ship's keel as it sinks to the sea-floor.

A cable ship is unique in two respects. In the first, it is the only ship which habitually jettisons its cargo *on route*, and in the second it is from first to last in direct telephonic and telegraphic communication with the shore - that is, so long as all goes well and the cable remains "alive." If it goes dead, this means that a leak, or fault, has developed, and immediate steps must be taken to locate and repair it.

On board the *Great Eastern* this was a laborious business. The continuous existence of life in the cable was indicated by a spot of light reflected from a mirror galvanometer in the instrument room. If this went out that meant trouble, and the great ship was turned round and retraced her course, picking up the cable as she went until vigilant eyes, inspecting it inch by inch, detected the flaw.

To-day, by means of delicate resistance-measuring instruments, the seat of trouble, even in a cable already laid and in regular use, can be located at once. The cable ship betakes herself to the exact spot on the chart; the offending section of cable is fished for and cut by an uncanny mechanism known as a cutting-and-hoisting grapnel, hauled up, and "dealt with summarily."

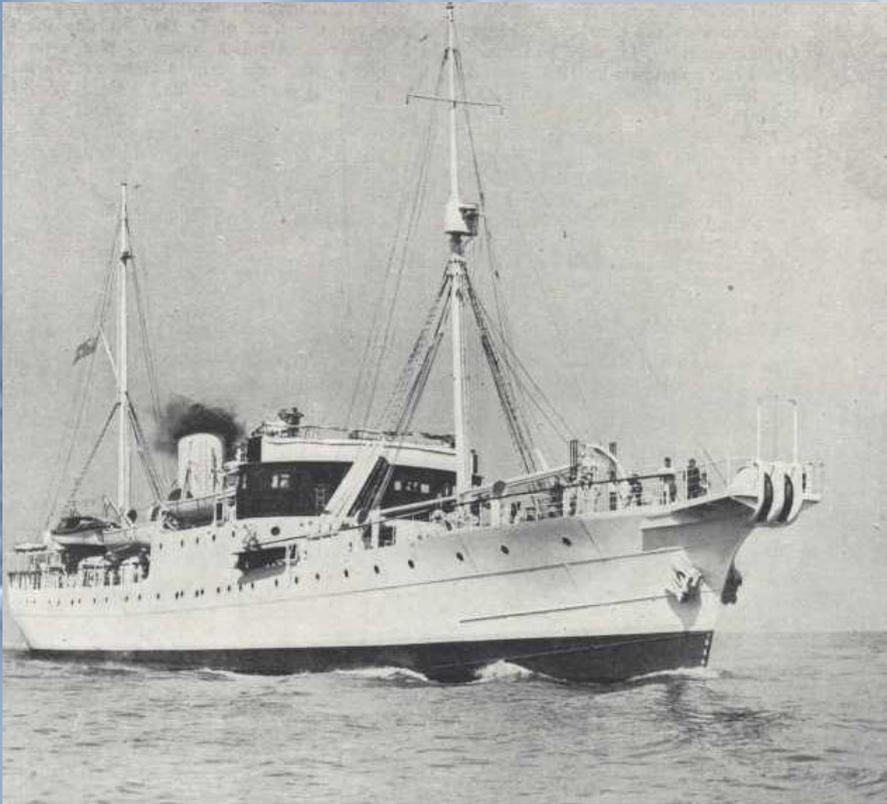
But perhaps the most fascinating place in a cable ship is the chart-room behind the Captain's bridge, for here you may study charts of a unique kind. They represent not the face of the waters but the sea-floor beneath.

Here, for instance, is what may be described as a dehydrated chart of the Straits of Dover scored with a criss-cross of lines which make it look like a gridiron. Those which run from left to right, along the fairway so to speak, need not concern us: they are ocean cables threading the Straits on the long road from various North Sea ports to the Americas and the Indies. Most of them are German, and all of them are "dead," at our behest, for the duration. It is the cross-lines which should interest us, for they are British Post Office cables running from England to France, and most of them emanate from the Dover area.

Here and there upon the face of the chart, always at a point on one of these cables, is a written a date and the name of a ship - *Ariel, Iris, Monarch, Alert*. That means that upon the date indicated one of these four [all cable ships] proceeded to the point in question, hauled up the cable and dealt with it as already described.

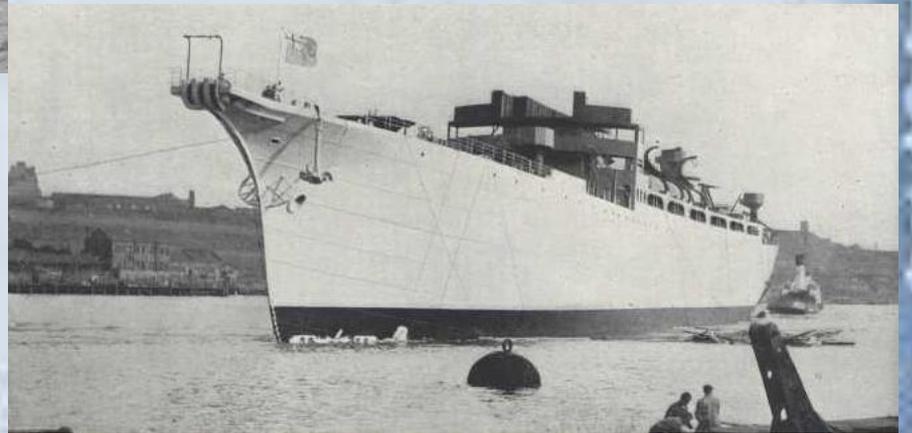
Many of the cables shown here are brand new, and were laid during the war, especially about the time of D Day. Cable ships followed B.L.A. upon D plus 2 day keeping the expedition in direct touch with G.H.Q. at home. Both *Monarch* and *Alert* were sunk, with grievous loss of gallant life among Post Office personnel. But *Ariel* and *Iris*, fortunately, survive and carry on.

A new cable ship was launched on August 9<sup>th</sup>, 1945, and was named *Monarch* to perpetuate a famous and gallant name in the history of submarine cables. She is the largest cable ship afloat, with a gross tonnage of 8,200 tons, and will be employed on cable-laying expeditions beyond the capabilities of the smaller cable-repair ships.



*H.M.T.S. "Iris"*

*The new H.M.T.S. "Monarch" is launched*



# Chapter 8

## FARTHEST NORTH

NOW FOR ONE final visit, and our tale is told.

Time brings its revenges, especially in a period of total war. From 1940 to 1945 Orkney and Shetland, dismissed to oblivion in ancient times as Ultima Thule, or "Back of Beyond," found themselves very much in the picture - even though that picture was kept shrouded, for security reasons, in the northern mists.

It is with Orkney that this closing chapter is concerned. Few of the inhabitants of the adjacent island of Great Britain have ever penetrated to that distant region or made the acquaintance of its sturdy, kindly, independent folk. Its shores in pace-time were reached from London only after an interminable land journey, followed by the crossing of a particularly inhospitable arm of the sea known as the Pentland Firth. So the English holiday-maker [Scottish, too, for that matter] went to Blackpool or Dunoon instead.

As a matter of fact, Orkney first became "news" during what was once known as the Great War, when its strategic importance, from 1914 to 1918, was summed up for most of us in the mystic words, "Scapa Flow." Nobody quite knew where it flowed to; but it was generally understood that it was some sort of haven in which the Grand Fleet could snooze during its off-hours, secure against that new and previously underrated terror of ocean warfare, the submarine.

Once, in the summer of 1917 I had occasion to visit Orkney for myself, and there was revealed to me an archipelago of undulating green islands, where ever the wind blew strongly but where there were compensating days of calm and heavenly sunshine.

The islands all had names - fascinating Norse-sounding names like Hoy and Ronaldshay and Flotta and Shipinsay, and the best of all, Papa Stronsay. Certain of these had been so disposed by Nature as to enclose a sheet of water some ten miles square, providing a safe and roomy anchorage for shipping of every kind. And that was Scapa Flow.

The most considerable of the islands, Mainland [or Pomona], furnished the northern eastern edges of the Flow. On the west lay Hoy, loftier than the rest and buttressed against the Atlantic rollers on its out flank by red cliffs 1,200 feet high. South Ronaldshay and Flotta filled the southern gap. The net result was an almost landlocked harbour pierced here and there by narrow entrances, any of which could be sealed at will.

The difference between the Orkney of that day in 1917 was purely a naval stronghold, from which the Grand Fleet could exercise general supervision over the North Sea and the Jutland coast, together with the sea-lanes that led, between Shetland and Iceland, to the North Atlantic and the American trade routes.

The atmosphere of war was thus confined to the flow itself. Ashore, Orcadia remained as Arcadian as ever, a land of green fields and purple heather, dotted with grazing cattle and sheep and the scratching-ground of innumerable domestic fowls. There was little or no danger of invasion, and the menace of the air was negligible.

But Time Marches On, especially where the invention of new engines of war is concerned. In 1940, after Dunkirk, the strategic situation so far as Orkney was concerned reversed itself completely. The Hun now occupied the whole western coast of Europe from North Cape to Bordeaux, and Orkney, lying

Orkney, lying less than 300 miles from Norway, offered an obvious and convenient springboard for the invasion of Britain itself. Plainly there was no time to lose. An adequate military garrison must be installed, aerodromes laid out, and the anti-aircraft defences reinforced, especially in the neighbourhood of the Flow.

In other words, Orkney must be converted without into a strongly fortified naval, military and air base, equal only in scope and importance to Malta.

And it was so, though not all at once.

## II

This brings us to the part, the quite indispensable part, played in the organisation of the Orcadian defence scheme by the Post Office. But before going into routine details, let us consider the effect of the sudden and tremendous upheaval of 1940 upon Orkney itself.

There was a population of about 23,000, destined in the course of two years to be almost trebled. An immediate and increasing strain was thus thrown upon its existing postal services. The islands possessed but two towns Kirkwall and Stromness, each equipped with a full scale post office, postmaster, and modest staff; but throughout the other islands were scattered numerous sub-post offices, most of them housed in a small shop of some kind, where postal business was handled as a sideline.

Collection and delivery of mail presented a difficult problem at the best of times, for Orkney was so cut up by the sea that the most direct route to many outlying postal districts was by ferry or rowing-boat. Some of these obstacles in 1939 had already been surmounted by the use of aircraft: indeed Orkney can boast of being the first postal area in Great Britain to establish a regular internal air-mail service.

Upon this remote and widely scattered community there descended in 1940 a motley host of infantry soldiers, Ack-Ack gunners, searchlight units, dock labourers, and contractor's gangs constructing aerodromes and erecting huts. The Navy, of course, were there already, for the Flow had long been the headquarters of the Home Fleet.

All this exiled throng received letters and parcels from home, and sent even more letters and parcels in return. [Eggs, it appears, became a most prominent article of export.] Between 1938 and 1942 the number of parcels delivered annually grew from 30,000 to 164,000, with letter-mail increases in proportion. This conferred upon Stromness Post Office the dubious distinction of being the office which showed the greatest increase of business in all Scotland. At one time no less than fifty different Service units were sending an orderly each morning to call for mail. So great was the congestion created by these emissaries at the counter that their visitations had to be "staggered."

The chief difficulty, as usual, was to gather sufficient staff, for in war-time, as most of us have a good cause to know, help is hard to get and easy to lose. The first defection from the ranks had already occurred, for at the outbreak of war one of the postal clerks at Stromness had joined up and disappeared overseas. [He has since gained the Military Medal for conspicuous gallantry, thus conferring distinction upon his former profession; but his departure at that time reduced the available staff at Stromness by 33 $\frac{1}{3}$  per cent.]

As the work grew it was found possible for a time to make shift with boys and part-timers. But the boys achieved military age and vanished into the blue, while the part-timers became whole-timers, at rates far beyond anything that the Post Office could offer, in the dockyard or with the contractors' gangs. In the end the bulk of the work was taken over, as elsewhere, by women, and carried out with remarkable efficiency and grit. Soldiers' wives did particularly good service here.



*The tidal race at Scapa*

Emphasis should be laid on the grit, for the work was arduous and unceasing. Overtime, as such, ceased to exist. Everybody just went on until a mail was cleared, it might be towards breakfast-time next morning. Upon a single night during the Christmas season of 1940 no less than 600 sacks of mail were handled in Stromness Post Office alone.

Another and resulting problem was the provision of accommodation for the bags. Every spare corner was utilised both for sorting and storing - cycle-sheds, garages, even retiring-rooms. [You cannot leave His Majesty's Mail lying about in the open.] Party-walls were torn down, pier-shed accommodation begged or borrowed.

Transport was a further difficulty. Letters could travel by air, but parcels had to be conveyed across the Pentland Firth by the passenger and mail drifter *St. Ola*, and some-times the little ship could not accommodate all the mail. Here the Services were helpful, as well they might be. An appeal to a benevolent Movement officer was usually sufficient to procure space for surplus mail-bags in the official ferry-steamer which plied daily between Stromness and Scrabster, the railhead at Caithness. Indeed, friendly co-operation was the order of the day, and the secret of success, in Orkney, from first to last.

### III

One of the severest mass headaches incurred by the postal authorities at this time arose from a suggestion disseminated by a benevolent devotee of Army Welfare that soldiers should register all their letters and parcels, "as I always do."

As a direct consequence the number of registered letters posted in Orkney in a year jumped from about 3,000 to 58,000, and parcels from 676 to over 60,000, with corresponding increases upon the inward route.

As explained elsewhere, every letter and parcel sent by registered post has to be separately handled and entered in a book; so the extra strain imposed upon post-office workers by this well-meaning but catastrophic counsel can be imagined. There was a night upon which the special annexe in Stromness Post Office set aside for registered letters and parcels were filled thrice from a single mail, and the work went on until daylight. One woman member of the staff came on duty at two o'clock next morning. She confessed afterwards that she retained no recollection whatsoever as to how she got home. But she was back on duty again at 2p.m.

Another and unforeseen complication was furnished by a phenomenal rise in the number of telegraph money-orders despatched, especially from one district - the newly jumped-up port and base at Lyness.

In 1938 Lyness was a solitary, snipe-haunted spit of land projecting into the Flow from the island of Hoy, opposite Flotta. By the end of 1942 it was entirely covered by a sprawling "Boom-town" of Nissen huts, shacks, derricks and oil tanks, together with a church, a cinema, various welfare establishments, and, of course, a post office. It was peopled by soldiers, Royal Marines, Wrens, dockyard workers, and contractors' gangs engaged in erecting huts and laying out aerodromes - a total running into several thousands.

All were expatriates, cut off for an indefinite period from their kith and kin; and they soon contracted the habit of sending home a considerable portion of their weekly pay. The most convenient way of putting this commendable practice into effect was by telegraph money-order.

Each and all of these emergencies were dealt with as they arose, and by the end of 1942 had been duly transferred from the region of hasty improvisation to the beaten path of regular routine.

But there was one emergency for which, though it never arose, most careful provision had to be made, and that was the possible invasion and occupation of Orkney itself.

Orkney and Shetland it should be noted, were under the supreme control of the Royal Navy, the Army and Air Force submitting themselves to the authority of "Acos," the Admiral Commanding Orkney and Shetland; and that authority had laid it down that in the event of enemy occupation of the Orkney group as many of the civilian population as possible were to be evacuated to some of the more distant islands.

Here was another and almost final straw for the broad back of the Head Postmaster, for a transference *in toto* of that population's postal amenities, and all that the term implies.



*Scapa causeway*

So a provisional Evacuation Form was issued to each household concerned in which prospective evacuees were invited to state their age, calling, and preference for this island of refuge or that. They were told what to take with them in the way of essential documents and clothing; they were even asked if they wished to be accompanied by dogs, cats, or other pet animals. Finally, they were reminded to turn off the gas, water, and electricity before locking up and assembling on Kirkwall Pier.

In due course the forms were filled in and returned, and the whole scheme, duly cut and dried, was laid by against ultimate emergency. Provision was also made by the Post Office for a large supply of shilling and six-penny postal orders, in case [as might very well happen] the supply of change should run short.

This particular emergency, as it happened, never arose.

#### IV

Mention has been made more than once of the completeness of liaison maintained at all times between the Post office and the Services. And this brings us to the particular relationship existing in Orkney between the Post Office and the Royal Navy.

The home of the sailor is on water, and his frequent goings and comings make it difficult to arrange for any regular delivery or collection of his mail. So special provision had to be made for this floating population.

Mail destined for the land-dwellers at Lyness and elsewhere was disembarked at Stromness [which lay outside the boom which guards the Flow] and distributed from the Stromness Post Office. But the Naval Post Office lay within the Flow itself, upon the former Cape Liner *Dunluce Castle*, the Fleet Mail-ship, so called, and from her you could buy a stamp, send a telegram, or even telephone, as easily as on shore.

Observe her now as she lies at anchor a mile or so out from Lyness, with launches and picket-boats clustered round her like chickens round a hen. It is three o'clock in the afternoon and a particularly busy moment, for the inward mail has recently arrived and the outward mail is ready for shipment.

Within the space upon her after-deck, specially enclosed for the purpose, lie the newly arrived mailbags, each clearly marked with the name of the ship to which it is consigned. [We first made the acquaintance of these, it will be remembered, at Mount Pleasant.] Some of them can and will be distributed forthwith; the rest must wait, for the various units of the vast Home Fleet are very seldom all at home together. To-day, for instance, no destroyers are to be seen: doubtless they are hunting U-boats somewhere, or throwing a party off the coast of Norway.

But wherever they are and whatever they are doing, one thing is certain. When they return [exhibiting possibly some honourable scars], the first thing they will clamour for is mail. So the Post Office always endeavours to be ready, yea, more than ready, for these importunate clients. As often as not the first sight which greets a returning flotilla is the Fleet Mail drifter chugging out to meet it, loaded to capacity with mailbags.

And, of course, the *Dunluce Castle* has to deal with outgoing mails too. These are even now being stowed in the hold of the *St Ninian*, the Fleet ferry-ship, lying along-side and all set to go. The last mailbag is being lowered and the leave-party are on board. [The *St Ninian* combines the offices of leave-ship and mail-carrier.]

Presently the hatches are closed. The crowded little ship casts loose and moves slowly off towards the submarine gateway which guards Hoxa Sound, on her short but not always tranquil voyage to Scrabster. Here the leave-party will be transferred to Jellicoe - or rather *H.M.S. Jellicoe*, the express train which runs daily from Thurso to London, on the longest through journey in Great Britain.

With them will travel the mailbags, conveying messages of comfort and cheer to countless sweethearts and wives.

#### V

One other enterprise should here be mentioned in which the Navy Post Office operated in close accord - the interception of contraband.

Throughout the war, and in particular in the days prior to Pearl Harbour and its historic sequel, and unending gulf-stream of contraband articles - material, that is of value to enemy war effort - flowed stealthily across the North Atlantic in neutral vessels bound for neutral ports, there to be redirected to Germany. These articles came not only in parcels and packets, but even by letter post. Many, of a bulkier nature, were smuggled across under faked manifests and bills of lading.

Sometimes the contraband took human shape. Many a stoker or foc'sle hand with a Swedish name and no papers contrived by this route to convey himself to his native Germany, there to add to the forces of Hitlerism.

So the British Naval Contraband Control Service got to work, with headquarters at Kirkwall, conveniently situated on the eastern side of Mainland. In their quest for contraband conveyed by mail they naturally required and received the aid of the Post office.

The procedure was simple and uniform. A naval officer, with a guard of ten men, would intercept and board a ship from which mail was to be moved for examination. Hatches were taken off and the mail transferred, in the presence of the ship's officers, to the drifter which served as tender. The British Officers checked the bags as they left the hold - there might be as many as a thousand of these - and handed a receipt to the chief officer of the ship.

At Kirkwall the tender was met by Post Office lorries. The bags were then re-checked, this time by the officer and the Post Office official jointly. The postal official then signed a receipt, and the responsibility of the Navy ended until time came for reshipment.



*Christmas Mail for the Fleet on H.M.S. "Dunluce Castle"*

But though the procedure was simple its implications were not. Search for contraband is intensely irritating to neutrals, especially to well-disposed neutrals carrying innocent cargoes. Insistence on the Right of Search at sea has precipitated serious wars before now. It was largely responsible for the bitter but indecisive Anglo-American war of 1812, and it strained Anglo-American relations almost to breaking-point in 1915-16 a fact of which British visitors to the United States during that period were made painfully aware.

But it has to be done, and the men who do it must be endowed with certain conspicuous qualities. The two essentials are patience and good humour in handling the general situation, and the utmost expedition in the examination of the mail itself. And so efficiently and tactfully did the Navy and Post office work together that they contrived from first to last to discharge their responsible and thankless task with the minimum of friction or delay.



*The Admiral inspects the mail*

## VI

There are no trees in Orkney, but to-day there is a wealth of telegraph-poles, and their presence is symbolic of the scientific miracle which has been achieved.

In 1939 Orkney had, of course, long been connected with Scotland and Shetland by cable, though it was not a cable that could accommodate a rush of traffic; and there was an adequate internal telegraph and telephone service within the Orkney group itself. The number of telephone instruments then installed worked out at about seven to each ten square miles. To control this service in 1939 a staff of four sufficed. In 1944, 130 engineers, electricians, and linesmen were required; to whom must be added some forty Italian prisoners of war employed as labourers. The number of telephone instruments in operation now averaged about 500 to each ten square miles.

One of the earliest and most laborious tasks to be undertaken in 1939 as a preliminary to this vast scheme of expansion was that of laying a continuous underground cable right round Scapa Flow, a Perimeter of about a hundred miles. To unwind a stiff cable from its drum and lay it down evenly and lastingly calls for skilled, craftsmanship and considerable technical equipment, including a powerful motor-tractor. An earthenware duct is also desirable, though through which to thread the cable.

But few of these requirements were available in 1939, for they were most urgently needed elsewhere; so the first lengths of cable were buried roughly underground, the unrolling drum being pushed by hand or even towed by oxen.

To-day everything is in place. The cable, comfortably cradled and long ago duplicated, extends right round the Flow, taking to the water when it comes to a ferry-crossing, and maintaining an unbroken circuit. It forms the nucleus of a vast network of telecommunication through which every Ack-Ack battery, every searchlight site, every naval and military operations room, radio-location station or cable hut, even warships at anchor in the Flow, can communicate with one another and, indeed, with stations far beyond the bounds of Orkney, both by telephone and telegraph.

Let us conclude with a brief tour of inspection.

We will begin with a short visit to one of the Post Office cable huts, set in a quiet corner of Mainland. Within this hut the shore-ends of the cables are attached to the submarine cables proper. Along these, telephone and telegraph messages can be transmitted to Scotland, Shetland, and tiny Fair Isle, lying midway between Orkney and Shetland. To Scotland fifty speech-channels and thirty-five telegraph-channels are available; to Shetland sixteen and fifteen respectively, and to Fair Isle three and three. Only four of these, all told, were in existence before the war.

The vital importance of this unpretentious building lies in the fact that it constitutes a bottleneck. A skilful saboteur given a free hand here for five minutes could isolate Orkney from the outside world pretty thoroughly, so it is guarded all round the clock by a detail of Military Police, assisted by watchdogs.

Next, following the land-cable backwards towards its source, we come to the Scapa circle and the Flow itself.

On the way we will pay a visit to a substantial camouflaged building known as the Communications Centre - or less respectfully, "Gaumont British." The upper part is occupied by a large hall, similar in appearance and layout to one of the Fighter Control Stations established throughout Britain at the beginning of the war to deal with visits from hostile aircraft. [There is a similar but much larger centre in the underground fortress which we visited at Dover.]

Waafs in their blue shirt-sleeves sit round a huge table whose top is a large-scale map of the Orkney area, plotting the course of any aircraft in the neighbourhood. Each girl wears earphones which keep her in touch with various sources of outside information; and whenever she receives warning of an enemy [or for that matter friendly] visitation, she places a numbered coloured chip or pointer on the map to indicate the position, altitude and number of the visitations, moving it about from time to time, with a sort of croupier's rake, in accordance with the promptings of Radar.

The scene rather resembles that in the Operations Room of the Coastal Control Station at the bottom of the Ninety-Eight Steps - with this important difference.

In "Gaumont British" we are dealing not with ships but aeroplanes, and a placard saying "*Situation at 11 a.m.*" would be hopelessly inadequate; for the situation here has to be re-appreciated not from hour to hour but from minute to minute. This duty is performed by an ingenious system of colour changes, thus:-

Upon the wall is a large clock, its face divided into twenty sectors covering three minutes each. Each sector is distinguished from the next by being coloured in a different hue, which gives the clock-face a pleasantly harlequin expression. While the minute hand is passing through [say] a red sector, all the chips on the map have to carry a red tag or label. The moment it passes into the next sector - blue, perhaps - the girls round the table immediately exchange the red tags for blue; and so on all round the clock.

Thus the picture can never become "stale," for no situation can ever be more than three minutes old. The Group Captain, looking down from the gallery above, is furnished with a complete visual reproduction of the state of the heavens at any given moment, and can take appropriate action. This he does either by sending up fighters or by passing the word to the Gun Operations Room next door, where Royal Artillery personnel stand waiting, indirect telephone communication with the Ack-Ack batteries. To these batteries the Artillery commander can pass necessary directions, and a series of coloured flashes from an electric chart of the gun sites shows when and how often they are fired.

One last word should be added here about that uncanny device which enables a defending force to detect the proximity of hostile aircraft or submarines - or, for that matter, icebergs. In other words, Radiolocation, or Radar. The Post Office assisted with the development of Radar, fitted much special subsidiary equipment at Radar stations, and installed large numbers of telephone lines between those stations and the various control centres utilising their services. In addition, to this, the Post Office engineers developed and installed equipment for calculating the position and height of aircraft from data given by the Radar receiver; designed and fitted the aerial switching mechanism; and even devised equipment which enabled the "calculator," without human intervention, to transmit its results to distant points by teleprinter.

## VII

Now we come to the Flow itself. Let us embark upon H.M. Drifter *Ocean Pearl*, and take a short cruise among the shipping, great and small.

Upon the forward deck most of the larger warships you may behold a coloured buoy, from which a slim, snake-like length of cable descends over the side into the water. This is the ship's telecommunication link. As soon as she arrives in the Flow the buoy is hoisted on board and contact established with the outside world. Post Office officials still relate with pride how the first American ship-of-war to anchor in the Flow was put into direct telephonic communication with the Navy Department at Washington in exactly six minutes.

The summit of achievement, however, in the matter of naval telecommunication is to be found naturally, on board the flagship, *King George the Fifth* [this was 1944] - or more familiar, *KG5*. In her Signals room you will be shown a switchboard from which the Commander-in-Chief and his staff can communicate by telegraph or telephone with any other station on ship or shore. There is even a teleprinter in direct communication with the Admiralty in Whitehall, over which the C-in-C can transact the business of the Home Fleet at length for as long as the buoy lies upon his foredeck - and so long as the Post Office can maintain the cable in working order.

This is not always easy, for the life of a Scapa cable is subject to certain hazards. Big ships dragging anchor in heavy weather - and the weather in the Flow can be very heavy indeed - are apt to fetch up short upon what is first thought to be a good holding bottom, but which turns out to be a length of Post Office property, suffering from displacement, undue tension, and occasional abrasion.

That accounts for the "puffer" anchored out there in the Flow, flying a signal which indicates that she is "Not under proper control." As a matter of fact she is under perfect control, and the signal merely means, "Busy: please keep clear"; for she is the Post Office Cable Repair Ship, *Glencoy*, engaged upon one of her everlasting first-aid jobs. She has fished up a damaged section of cable, and is busy healing its wounds and correcting "faults" engendered by too intimate contact with the flukes of somebody else's sheet anchor.

Now we land at Lyness Pier again, for we have one final call to make, on the massive flat-roofed building halfway up the hillside above the port, which attracted our attention when first we set eyes on it and has excited our curiosity ever since.

The building is windowless, and as far as one can see, doorless, except for what looks like a row of portholes along the upper floor. In point of fact they light the eyrie and headquarters of "Acos" himself, the Admiral Commanding Orkney and Shetland - the opposite number, as it were, of the C-in-C, Home Fleet, whose Flagship we have just visited.

The lower part of the building is a home Hush. As usual, it is artificially lit, ventilated and heated, and its inmates live and work in complete seclusion from the outside world in a fastness rendered secure, so far as is humanly possible, from bombs and shell-fire; for herein is contained the brain and nerve-centre of the whole Orkney Defence Scheme. Its most prominent feature is a telephone switchboard operated Wrens this time. There is also a teleprinter exchange to which units wishing to telegraph at length can apply for the next free wire.

Finally, on ascending to the flat roof, which commands a glorious view of Scapa Flow and the surrounding islands, you will find the Radio Station supplemented by a sort of deckhouse equipped to transmit, from a gigantic Morse flash-lamp, signals visible for miles in clear weather.

"In other words," remarks the Signals Officer in charge, "we can communicate from here by telephone, teleprinter, wireless, buzzer or visual, with almost anywhere."

## VIII

Such is the history of the great self-contained, Orkney Defence Scheme built up between 1940 and 1942; and of its unique telecommunications system. Thus equipped, the Orcadian fortress, even if cut off by the enemy from all contact with Great Britain, could have continued to function and operate, like Malta, *ad infinitum*.

The Post Office staff which contributed so notably to the perfection of the scheme was housed in its own Hostel - a pleasant little quadrangle of white one-storey buildings, complete with sleeping quarters, dining-halls and recreation-rooms for about a hundred workers of various grades - sixteen. Engineering Supervisors twenty postal staff, and some seventy skilled engineering workmen.

Lastly, if you pay a visit to the little telephone exchange of adjacent Kirkwall, you may meet a lady supervisor who was the first to receive a decoration for carrying on with Post Office routine unflinchingly during an air-raid - about the first air-raid in which bombs were dropped on British soil - on March 16<sup>th</sup>, 1940. Certain of her colleagues were also cited for bravery. I have set down this Orcadian saga in considerable detail and of set purpose for two reasons. The first is that the tremendous concentration of effort, energy and force in this area - so remote, yet so dangerously close - during the most critical years of the war has never, so far, been revealed to the British people; the second, that it furnishes a picture in miniature of Combined Operations by all three Services with the Post Office acting as the fourth, but by no means superfluous, wheel to the coach.

The glory of the Orkney Defence Scheme is departed now, let us hope forever. But they were great days while they lasted.



*H.M.S. King George V*

### ***THE SUMMING UP***

SO ENDS our tale - the tale of how the Post Office went to war, by land, sea and air.

No attempt has been made to pick out any group or individual for special commendation: indeed not a single name is mentioned in this narrative; but what has been said of the few goes for all. Teamwork has been the key-word - or, if you prefer, Combined Operations.

As already noted 73,000 men and women of the Post Office joined the Services on the outbreak of war, or soon after. Of these 3,800 will never return. Of those who remained in Post Office service upon the home front, perpetually exposed to what may be described as civilian war-risks, a further 413 gave their lives.

It should be added that in the course of the war over 700 decorations and awards were conferred upon Post Office workers of all grades.

The names of these will be perpetuated no doubt, in a Roll of Honour. But the glory and the praise belong not to them alone but to all who served.

Here a special word must be said regarding the peculiar service and sacrifice of Post Office employees, in common with all other representatives of organised Labour, during the past six years - service, because all obeyed the call of national duty without question, and sacrifice because in the course of that duty, they were called upon to surrender, for the time being, much personal freedom of action and certain hard-won rights and privileges.

Thousands of Trades Unionists were required like the rest of us, to submit themselves to "direction" into duties which they would not have chosen for themselves, and further, to abandon their cherished right to protect their own interests by the established principle of collective bargaining.

And since human liberty was at stake they did not hesitate: they put their rights and privileges into cold storage for the duration and merged their whole energy in the common cause. The result was total victory, won by a united nation.

The Post Office workers went to work like the rest. How they quitted themselves is recorded in these pages. From first to last they did whatever was asked of them, and more, whether their station was up on the bridge or down below the waterline. The ship went forward, and that was all they cared about.

In one point only they adhered resolutely to union tradition - in making provision for the relief of distress within their own community. Throughout the war a generous fund was maintained from the regular contributions of all concerned, to provide aid and comfort for the dependants of Post Office servants who had lost their lives overseas or their homes through enemy action over Britain.

Their story is all of a price with the general spirit of that time - of the epic of the Six Year War. Much of that epic will remain unsung. Still, Post Office workers - regular, temporary, part-time - will be well content to remember that throughout those testing years, despite shortage of staff all round, lack of experience among many, and enemy interference from first to last, they kept the wheels turning and the ship in commission until victory dawned on a stricken but thankful world.



# WORLD WAR II

1939 - 1945



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