PATHS TO WORLD FELLOWSHIP
Communications in the Netherlands
by D. H. Rodrigues

- HIGHWAYS
- RAILROADS
- MAILS
- TELEPHONE
- TELEGRAPH
- RADIO
COMMUNICATIONS AND PUBLIC OWNERSHIP

In the following pages the American reader will meet with many enterprises which in the United States are operated under private ownership but which in The Netherlands are operated under a state-controlled Authority, comparable to such American Authorities as T.V.A., Tunnel Authority, Port Authority, etc.

In The Netherlands, there is an Authority for the postal, telegraph and telephone services; for the railways; for the technical administration of broadcasting. Of the coal mines, the oldest ones are owned privately, but the majority, known as the State Mines, are under an Authority. Public utilities such as gas, water, electricity supply, streetcar services, are controlled by the municipalities, the provinces and, in some rural sections, by the state.

All State Authorities are appointed by the Crown. They are politically independent and are not influenced by any change of Cabinet or fluctuations in the States-General (Parliament).

This concentration of communications and public utilities in the hands of the government is not the outcome of what at present is termed the urge toward nationalization. Most of the laws bringing these services under state control were submitted by or adopted under Liberal or Conservative Cabinets. It was the people themselves who, through their elected legislature, have demanded that enterprises serving the national interest must function unhampered by competitive factors, threats of strike, or political influence.

Nevertheless, commerce based on free enterprise and free competition had always been and still is the backbone of Holland's economy. The people of The Netherlands are a democratic people. Fused into a nation through affinity of principles and interests, they have never ceased to resent and reject any form of authority whose power exceeds the boundaries of legitimate administration and government.

The welding together, first of divergent population groups into communities, cities and provinces, and later of provinces into one nation, has been a slow and often painful process, disrupted again and again because of mutual apprehension lest too much power be placed into the hands of any single group and imperil the freedom of the individual.

The nation's history has been a succession of struggles for the preservation of individual rights, first against the burdens imposed by dukes, earls and landowners; then against the supremacy of the large cities; and finally against the oppression and enslavement by a foreign ruler. Holland's War of Independence was a war for the protection of individual rights, individual freedom of conscience, of speech and of action. Her Declaration of Independence, proclaimed in 1581, states that "When a Prince oppresses his people, violates their rights and tramples on their liberties, as though they were slaves, then he is not a Prince but a tyrant." Such a prince — or government — the Dutch would and will not tolerate.

Yet, jealous as the Dutch are of these individual rights, including that of free enterprise, they believe that the national interests can best be safeguarded when enterprises serving each and every citizen, are administered or controlled by their government.

The proof of the pudding is in the eating. The almost unbelievably rapid recovery from the catastrophic war devastation of Holland's railway, telegraph, telephone and radio networks; of her bridges and highways, of her coal, gas and electricity resources, could not have been brought about but for the planning and co-ordination by a central authority, which was not hampered by competition among the many fields of reconstruction and whose single aim was the restoration of all services for the benefit of all the people. Now, except for a few remaining shortages, Holland's public utilities are functioning once more at, or better than at, prewar level.

June, 1949.

CONTENTS: Communications and public ownership — From plank road to speed highway — Highways of steel — Messengers sure and swift — Words flung around the earth.

"PATHS TO WORLD FELLOWSHIP" is one of a series of illustrated publications by D. H. Rodrigues, Press Officer of the Netherlands Information Bureau, on the way of life in The Netherlands: her economic, social and cultural development, past and present; her objects and efforts for the future.
THE first roads in The Netherlands were built about 1800 B.C., or 3,750 years ago. Remnants of these roads have been found in the eastern provinces of Friesland, Groningen and Drente. Presumably they were laid as short cuts through swamp sections. Their foundation consisted of layers of willow twigs and their upper structure was composed of small tree trunks placed side by side and fastened together and to the roadbed in primitive fashion.

Today, 3,750 years later, roadbeds of willow twigs, even though in improved form, are still being used in road construction in many sections of The Netherlands. They also were used by the Romans when they annexed the Lowlands at the beginning of the Christian era and built their military roads.

There still is in existence, in the National Library at Vienna, a roadmap which was copied in the thirteenth century from an original map dating back to the fourteenth century. The military roads, three in number, ran along or near the large rivers through the Lowlands. It is along these roads that the Romans built their fortresses and developed their commercial centers. Apart from these, there were no roads fit to be called by that name.

It was the Romans, also, who introduced the use of cobblestones as road pavement. After the fall of the Roman empire in about the year 500, the highways they had built became neglected. There was no longer any need for military transports, and since traffic was carried exclusively by horses and other pack-animals, their unshod feet found the going easier on soft-surface roads. The earthen roadway took the place of the hard Roman way. Roadbeds were no longer built.

And as it was in the sixth century, so it remained through the Middle Ages, through the Renaissance, and almost up to the industrial period of the nineteenth century. The three Roman military roads became commercial highways, although through many periods they regained their strategic value. Many a battle has been recorded in history for the possession of stretches of the roads. If there was any improvement at all in highway transportation, this lay solely in the fact that, with the development of political authority, a modest measure of protection and safety for travelers could be established, while the upkeep of the roads, such as it was, became the responsibility of towns and villages along the roads.
Traveling in the Ninth Century

But the armies which Napoleon sent to invade the Lowlands had to use the same roads that had been built by the Romans. There had been no change, in the 1,800 years that separate the two invasions, in the transportation system. Army troops, both Roman and French, traveled on foot or on horseback, and the coach in which Napoleon traveled was essentially the same as the one used by Julius Caesar. When Holland was freed of French domination in 1814, her road system did not exceed 300 miles.

The particularly backward condition of Holland’s road system as compared to those of other European countries was due to a large extent to the circumstance that river and canal transportation was close at hand practically everywhere. Most passenger and freight traffic was carried by barge.* Where no waterways were available, people traveled in crude, rumbling horse-drawn carts, which made their way as best they could through the sand or wet clay. These open carts, on their lumbering, flat-spoked wheels, offered no protection against rain or cold; their seats were wooden planks. There was no regular delivery or travel services between towns until the seventeenth century.

Travelogue of an official mission. This is how, in 1564, the mayor and the treasurer of the prosperous town of Oudewater traveled to Brussels on a mission for their city. The distance between Oudewater and Brussels is approximately 100 miles, but it is more than probable that the roads leading from one town on their journey to another were not direct roads but wound their course around swamps and other obstacles. On a Friday morning at eight o’clock, the flourmiller Gerrit Pietersz came with his open cart to the mayor’s home and, for the price of six stuyvers (six times five cents) drove the two men to the nearest town of Schoonhoven. Dropping them at the gate of the town, Gerrit Pietersz returned to Oudewater. The two officials walked through Schoonhoven, followed by two porters carrying their luggage. At the other end of town, they took a boat across the Lek River. At the other bank they found a cart to drive them to Papendrecht. Again a walk across town and again a river crossing. Then they were in Dordrecht, a city of considerable size. The cross-town walk to the Meuse River was long and tiresome.

In Dordrecht they found seats on a sailboat to Oudenbosch. From there, a cart drove them over the sandy grounds of North-Brabant province to Antwerp. A last cart brought them to Brussels, where they arrived late on Sunday night. Says a Dutch historian, “They made the whole trip in three days. It was a fairly fast journey and it is a mistake to believe that traveling in the sixteenth century went at snail’s pace.…” (The historian wrote this in 1871). “Traveling was not always a matter of lazy, rumbling and creaking carts on an uneven road, where three times each hour the cart tipped over, or the travelers had to help to remove obstacles from the roads or pull the horse and cart through a ditch.” The historian observes that at the time he writes about, conditions had improved considerably, although in winter the roads still were under water. “Even if our travel wagons were but open carts and even if people sat on wooden benches, the journey was usually very fast.…”

The total cost of the official journey, including porters, ferries, dike tolls and bridge tolls, was 71 stuyvers and four duyten (pennies). The return journey was even cheaper: 59 stuyvers and no duyten. Total expense for the mission: six guilders and 10½ duyten (approximately three dollars). However, the expense account for “hotel” accommodation was separate. For one night spent at the inn of Willebrord Visschers’, they spent: dinner for two, six stuyvers; beer, two stuyvers; wine, five stuyvers; sleeping accommodation, two stuyvers; total 15 stuyvers ($0.30).

The first travel guide. The advent of the mail-coach brought some improvement and at least some measure of regularity in travel. By 1660, there was a regular twice-daily mail and passenger service between Amsterdam and The Hague. Later, similar services were established from Amsterdam to Arnhem and Groningen.
Nevertheless, traveling remained a venturesome undertaking. Members of the family and numerous friends came to see the traveler off and to wave him Godspeed as he settled inside the coach, with his luggage and his basket full of good food. The traveler also needed a passport to travel from one city to another.

There even appeared in those days the first predecessor of the modern travel guide. It was the "Travelbook through the United Netherlands Provinces and the bordering Realms and Kingdoms thereof; Comprising, Beside a detailed description of the Cities, a list of the Barge and Coach Routes — Compiled with extreme effort by Jan ten Hoorn, Bookseller. . . ." The book begins with a lengthy prayer for the travelers in which God's protection is asked against "murderers and Robbers, poisoned air and evil sickness, against battle and accident." With the help of this book the traveler knew exactly when to change from barge to coach, where for certain stages of the journey he would be able to rent a cart, where he would have to hitch a ride from a miller or peddler, or cover the section on foot.

Private carriages and coaches came into use very slowly. Only the extremely rich had their own carriages. In the middle of the seventeenth century, when the Dutch were already counted among the richest nations in the world, only few of the Amsterdam merchants dared defy the Calvinist curbs against excessive display of luxury and show themselves in the streets in their private coaches. They had to use pretexts and subterfuges to overcome the prejudices of the clergy. Finally, they passed an ordinance allowing anyone entering the city in a coach to continue the journey to his home or place of work. Since most of these merchants had their country homes outside the city, the clergy had to stifle their objections when one after another of the merchants availed himself of the privilege.

The diligence makes its bow. In the late 1700's a new era of traveling dawned with the introduction of the diligence or stagecoach. It was a great improvement over the old rumbling mailcoaches whose first concern was the carrying of mail so that little attention was given to the comfort of travelers. The diligence soon became the latest word in speed, punctuality, elegance and passenger comfort. With a speed twice that of the canal-borne passenger barge, it brought the towns closer to each other and made vacation and weekend traveling accessible to the well-to-do. As happened in the United States, poets and novelists became entranced with the romanticism surrounding the stagecoach; there is hardly a nineteenth-century novel in which some of the action is not laid in a diligence. Then, too, the hoop-skirts of the times made entering and leaving the coach somewhat of an embarrassment to the ladies and of sly enjoyment to frivolous-minded gentlemen and to the cartoonists of that day.

The growing popularity of the diligence naturally led to a gradual expansion of the highways. In 1814, Holland still had only the 300 miles of highways along which her history had evolved. In 1820 the first highway Amsterdam-Utrecht was opened. The eastern provinces of Overijssel, Drente, Friesland and Groningen saw their first highways between 1820 and 1827.

Roads became better when, in the early nineteenth century, the Scotch engineer John MacAdam introduced the principles of proper water drainage for subsoil surface, together with a thin superstructure of selected stone materials made watertight with clay with the help of a roadroller. Because of its modest use of materials, the cost of construction and maintenance of this type of road was light.

When the building of the first Dutch railroad in 1839 ushered in a prolonged period of feverish railway construction, public and official interest in highways sagged. Yet, many decades had to pass before the diligence was completely to vanish from the scene. As long as train services remained limited to main lines between the principal cities, the diligences were busier than ever before carrying travelers between the railway...
centers and the surrounding towns and villages. In such cities as Arnhem, Zwolle, 's-Hertogenbosch, the stage-coaches gathered four times each day around the railway station to await the arrivals of the trains from Amsterdam, The Hague and Rotterdam. But as the railroads expanded their network constantly farther over the country, the last of the diligences became museum pieces and another romantic period in Holland's history came to an end.

For many decades, the railways and steam-tramways (see following article) monopolized all mail and passenger traffic and took over a considerable share of canal-borne freight transport. Naturally, highways fell into disuse and neglect; the only traffic they carried were the farmers' waggons bringing their products to nearby markets.

Birth of a highway system. As late as 1916, the hardened surface of even such a prominent highway as that between Amsterdam and Haarlem was only fifteen feet wide; many of Holland's roads had a hard-surface width of no more than ten or eleven feet. These roads were in no way equipped to meet the swift development of automobile traffic, which was, in the course of a few decades, to transform even the most sedentary of people into restless nomads. To make conditions worse, several of these roads had been narrowed still further to make room for the construction of steam-tramways. The principal roads were paved with bricks or cobblestones, but the majority had only a gravel surface.

In 1920 a new highway policy was adopted that demanded not only a nationwide expansion of the road system but also the complete reconstruction of every road already in existence. To meet the enormous expenses for this project, a road tax was introduced in 1926 which later was replaced by automobile and gasoline taxes. Between 1926 and 1938, the government spent 225 million guilders to carry out its National Road Plan, while the construction of 15 highway bridges across the large rivers demanded an additional expenditure of 60 million guilders. Now, The Netherlands may point to a highway system that bears comparison with that of any other country.

Roadbuilding problems. One of the greatest difficulties of road construction in The Netherlands is the condition of the subsoil which in a large part of the country is very soft. Especially in the western and northern provinces the upper layers of the subsoil consist in many places of soft clay and peatbog. These layers are often to be found to a depth of thirty-five feet and more and are sometimes so soft that it is possible to push a 15-foot pole entirely into the ground with one hand.

Sometimes, the fen or clay is dredged out and replaced with tremendous loads of sand. Or the sand is poured on top of the clay into which it penetrates until they form a solid mass.

A second system in use is the so-called "floating" foundation, which is nothing else than the willow-wig matting used by Holland's early inhabitants, 3,750 years ago. As it is made today, this matting consists of an upper and lower roster of logs, with layers of twigs filling the space between them. This is laid directly over the clay or fen, after which sand is poured on top of it. In this type of construction, the road will settle gradually in its entirety, until the roster is covered by water and thereby remains preserved. The process of sinking of the road takes about a year.

The third and most costly process is that of building, at a great depth, a wooden or concrete flooring on piles driven into the subsoil. The sandlayer covering the flooring is utilized for drainage pipes, cables, etc.

Roads that make driving pleasant. Altogether, the highway system consists of:

- 1,860 miles of primary roads (four or six traffic lanes)
- 2,480 miles of secondary roads (two or three traffic lanes)
- 3,330 miles of tertiary roads
- 11,000 miles of non-classified, surfaced roads.

20,070 miles
Generally speaking, the primary roads are built and maintained by the government; the secondary roads by the provinces and the tertiary roads by the municipalities (streets inside the communities are not included).

The most important of the primary roads are 125 feet wide; many of these highways are bisected by a five-foot strip of grass with a five-foot-high hedge. This hedge, besides adding to the beauty of the landscape, protects night drivers against glaring headlights from oncoming cars.

Traffic circles have been constructed at all important intersections. The largest of these is near Utrecht, in central Holland. Here, the highways from north, south, east and west converge and separate without a single intersection.

Sufficient space has been left at both sides of practically all highways for additional lanes, to meet eventual growing demands of the traffic.

Rubber roads prove their value. Some six years before the start of the Second World War, road engineers made their first experiments with rubber roads. Similar tests had already been made in Java and other Indonesian islands. The new roads consist of a mixture of asphalt and a new type of powdered rubber.

Naturally enough, very little attention was given during the war years to the upkeep of these roads. In addition, they were almost daily subjected to the most destructive type of traffic imaginable — military traffic. In Holland, the German Wehrmacht swept across these roads with their tanks and other heavy equipment. The Japanese did the same over the Indonesian roads. At the end of the war, the Allies came to Holland with equipment even heavier than the German.

Remarkably enough, the roads have shown no sign of wear or tear for over ten years. Resembling newly laid asphalt roads, they have retained their elasticity,
adhesion and water-resistance. In Java they have withstood wide ranges of temperatures and the destructive influence of the tropical climate.

What A.N.W.B. stands for. That so much has been accomplished in comparatively so short a time, is due to a very large extent to the activities of a very old Dutch organization, the A.N.W.B. (Bicyclers Association). Founded in 1863, when bicycling started its permanent wave of popularity, the A.N.W.B. progressed with the times. Although it never discarded its old name, it gradually included in its activities such interests as sailing, yachting, motoring and private aviation. It installed an excellent system of roadsigns and route guides which makes it all but impossible even for the stranger to lose his way. As extra precaution the motorist will find, a few hundred feet ahead of the signpost and only five feet from the ground, a warning sign that such a signpost will be encountered.

The latest (postwar) addition to the A.N.W.B.'s activities is the road patrol, a really remarkable feature and an invaluable service to the motoring public. Since its start in April 1946 the road patrols (Wegenwacht) on their yellow motorbikes with sidecars have covered more than three million miles, rendering mechanical aid, repairing flat tires, providing gasoline, not only to the A.N.W.B.'s 200,000 members but to every motorist, completely free of charge. Carrying fire extinguishers, they have saved hundreds of burning cars. They put special warning signs on icy roads, regulate traffic in case of accidents, and rescue people whose car has run into a ditch or canal.

As in all other countries, automobile traffic, both for pleasure and utility, has increased manifold during the two decades preceding the war:

<table>
<thead>
<tr>
<th>Year</th>
<th>Private cars</th>
<th>Autobusses</th>
<th>Trucks</th>
<th>Truck-trailers</th>
<th>Motorcycles</th>
<th>Bicycles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1925</td>
<td>19,000</td>
<td>1,800</td>
<td>9,700</td>
<td>—</td>
<td>27,800</td>
<td>2,223,000</td>
</tr>
<tr>
<td>1938</td>
<td>100,000</td>
<td>4,100</td>
<td>51,000</td>
<td>9,500</td>
<td>65,500</td>
<td>3,800,000</td>
</tr>
<tr>
<td>1949</td>
<td>91,000</td>
<td>4,900</td>
<td>71,000</td>
<td>79,000</td>
<td>79,000</td>
<td>3,000,000</td>
</tr>
</tbody>
</table>

The almost phenomenal change that has occurred during that period in Holland's domestic transportation system is demonstrated by the tremendous increase in highway freight transportation:

<table>
<thead>
<tr>
<th>Year</th>
<th>Before First World War</th>
<th>1920</th>
<th>1930</th>
<th>1938</th>
<th>1947</th>
<th>1948</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>1.7 million tons annually</td>
<td>2.1</td>
<td>34.6</td>
<td>63.0</td>
<td>93.0</td>
<td>110.0</td>
</tr>
<tr>
<td>1930</td>
<td>1920 2.1 &quot; &quot; &quot; &quot; &quot; &quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1938</td>
<td>1920 34.6 &quot; &quot; &quot; &quot; &quot; &quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1947</td>
<td>1920 63.0 &quot; &quot; &quot; &quot; &quot; &quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1948</td>
<td>1920 93.0 &quot; &quot; &quot; &quot; &quot; &quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1948</td>
<td>1920 110.0 &quot; &quot; &quot; &quot; &quot; &quot;</td>
<td></td>
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</tbody>
</table>

One and one-half century of transport service. Until 1927, this freight was carried almost exclusively by an old Dutch firm, Van Gend & Loos, whose name for 150 years has been linked as closely to the nation's economic development as the names of Wells Fargo and the American Express Company have been to that of the United States. Started in 1796 as a horse-and-buggy delivery service, Van Gend & Loos became a household word in the field of transportation, both passenger and freight. The firm's mailcoaches and diligences at one time covered the highways of The Netherlands and Belgium. With the advent of the railways, the firm applied itself exclusively to freight, gradually replacing its horse-drawn carts with motorized trucks.

The growing competition of highway transportation forced the railway companies to add truck transport to their services. In 1927, the two principal railway companies organized the A.T.O. — Algemene Transport Onderneming, or General Transport Enterprise. Later a merger took place of A.T.O. and Van Gend & Loos.

Apart from its rapidly growing domestic highway transport, A.T.O. maintains a far-reaching international truck transport system. With 150 American trucks and 40 trailers it maintains regular hauling services to and from Antwerp, Brussels, Paris, Prague, Vienna, Warsaw, Basle, etc. These trucks cover the long and mountainous distances with clocklike precision, usually travelling in convoys of six or seven trailer-trucks. And so, as once Netherlands sailing ships carried the world’s freight across the oceans, Dutch trucks now carry this freight through the mountains and valleys of Western Europe.

Internation Trucking Freight

<table>
<thead>
<tr>
<th>Year</th>
<th>1938</th>
<th>900,000 tons</th>
<th>1947</th>
<th>600,000 tons</th>
<th>1948</th>
<th>900,000 tons</th>
</tr>
</thead>
</table>

Still more traffic problems. A review of Holland’s transportation system would be incomplete if no mention were made of a modest, yet economically and socially intensely significant vehicle: the bicycle. In spite of the close networks of railways, automobile highways and waterways, the nine million people of The Netherlands had among them, in 1939, no less than four million bicycles, or one bicycle for every two persons (infants under two and folks over 90 do not use bicycles in Holland). The present number of bicycles is over three million.

The smooth, level roads through the Lowlands — with hardly a rise or decline except bridges, overpasses and...
underpasses — are, as it were, a challenge to bicycle riders. Bicycle paths at the sides of the highways are an inseparable part of the road system. Traffic police in the large cities are as busy untangling the bicycle traffic as are the cops at Forty-Second and Fifth Avenue in New York City. Literally everybody uses a bicycle, for business, for pleasure, or for both. The banker, the baker, the schoolma'am and cheesemaker go to work on their bikes.

The Dutch bicycle is different from bikes in other countries. The Dutch ride their bikes as a horseman rides his horse, stately and dignified. The steering bar is placed high, so there is no back-distorting stooping, neither is there any desire nor opportunity to use the bike as a racing vehicle. The law demands that the rear wheel have a mudguard, which must be white and four inches wide; it also must carry, at night, a red light.

Commuters' stations near the large cities present an odd spectacle during the "in-between" hours. There usually is a number of cars parked near the station, but their number is far exceeded by that of the bikes that are parked on the platform awaiting the return of their commuter-owners. Also, when city folks go on a weekend trip, they simply pedal to the railway station, deposit their bikes in a special freight car — carried for that purpose — take them out on arrival at their destination and go pedaling through the woods or along the beaches.
The Netherlands was not the first European country to introduce the new-fangled invention of transporting travelers in carriages pulled by a steam engine along parallel iron rails. But neither was it the last. The first railway was opened in England in 1825, in France in 1830 and in the United States in 1831. Then came Belgium, Germany, Austria and Russia. Holland followed in 1839.

Generally speaking, the Dutch were not at all enthusiastic over this innovation that threatened to disturb the leisure dispensed by the diligence and the passenger barge. It was King Willem I, who, with unusual farsightedness and on his own initiative, appointed a committee to devise ways and means for the building of a railroad. The outcome was that a Railway Bill was presented to the Second Chamber of the States-General (Parliament), where it was defeated, forty-six to two.

Meanwhile however, there were in Amsterdam three merchants who believed that railways would improve the transportation and distribution of their merchandise. When they obtained a concession for the building of a railway line between Amsterdam and Haarlem, their project caused commotion and vexation, especially among the great thinkers of that day. There were protest meetings everywhere, and a wellknown poet even warned that "the railway would give wings to communism." But the three men went ahead and, in 1837, founded the Holland Iron Railway Company.

On September 20, 1839, the first train consisting of ten carriages transported some three hundred guests eleven miles between Amsterdam and Haarlem, in precisely thirty-five minutes. The time would have been better still if the two engines that pulled the train, appropriately named Rapidity and Eagle, had managed to stay together. But Rapidity bolted, leaving the Eagle and her brood of ten behind on the tracks until she could be brought back and recoupled.

Tenacity versus rapacity. What caused the railway company its biggest headache was the lack of any suitable law of eminent domain permitting condemnation or expropriation. Unlike the United States where the railroads preceded and stimulated the settling of empty territories, The Netherlands, especially the western part, was already well populated and had reached that state of development where every acre of soil was under cultivation. The building of railways necessitated the purchase of farmland and rights of way for which the owners could and did demand practically any price that struck their fancy. Prices of twenty-five times the actual land value were often asked and sometimes paid.

There was the amusing case of Mijnheer Vandergaag who owned a little lane of about 300 square yards which the railway company needed for its line from Delft to Rotterdam. The company offered one hundred guilders. Vandergaag demanded 20,000 guilders, an unheard-of price for those days. For over two years the case languished in the courts; the company completed all of the remainder of the line but could not run its train because of Vandergaag's refusal. Finally, the company decided to build the line around the small property. For four days the trains used the small circular route; then Vandergaag capitulated. Compelled by public resentment, he ceded the lane to the company without any indemnification whatsoever.
(Above): Opening of first railway, Amsterdam-Haarlem (September 20, 1839)

(Below): Mijnheer Vangergaag capitulates
Despite these and other obstructions, the building of new railway lines continued at tremendous pace. From all parts of the country came applications for concessions. From 1842 on, there was hardly a single year that did not witness the opening of a new line. In 1865 alone, six new lines were opened; in 1866, six lines; in 1868, eight lines. Three or four opening ceremonies a year was the average. It would, in fact, be easier to enumerate the years between 1842 and 1890 in which no new railways were put into use.

**Bridges everywhere.** Whenever and whatever the Dutch build, their task is always made more complicated and costly because of the ubiquitous water factor. It is possible that even the railway authorities have given up counting the total number of railway bridges that cross Holland's large and small rivers, waterways, canals, streams, polder ditches and marshes. The dimensions of these bridges run the complete scale from short spans across the drainage ditches surrounding most farms, to the 5,000-foot, 14-span Moerdijk Bridge between Rotterdam and Antwerp which it took six years to build.

By 1890 Holland's railway network was virtually completed, with the greatest extension taking place in the preceding decade. Before 1900, the principal lines were connected with those in Belgium and Germany, enabling the Dutch to participate in international traffic. Additions to the network made since then have been mostly of a local nature. The network now has a total length of 2,313 miles.

Logically enough, with the rapid progress of motorized highway transportation, many of the smaller rural lines have become obsolete or have lost much of their former importance. A number of short feeder lines have already been discontinued.

The same tendency can be observed in the steam-tramway net, an institution which is peculiarly Dutch. These steam-tramways, which must not be confused with streetcars or trolleys in city streets, maintain services in rural sections; they usually connect a number of smaller towns and villages. In former decades they also served local traffic between cities and neighboring villages.

For over seventy years the steam-tramway has brought an air of repose to the rustic scene. As the little choo-choo and its six or eight cozy little tramcars plodded their placid way, at a speed of no more than 15 or 20 miles an hour, they could be halted whenever a passenger wanted to alight in front of his farm or a wayfarer signaled to be taken aboard. For farmer's wives, going to town for their shopping, the steam-tramway was the most convenient way of traveling and a choice occasion for the exchange of gossip.

The first of these rural lines was built in 1880. By 1919 they comprised some 1,800 miles, and as late as the 1920-1930 period new additions were made. But in other sections of the country, the automobile and the truck have brought this type of service to decay. Many lines have already been replaced by bus services; by 1939, the network had been reduced to 1,200 miles, while each new year brings the nostalgic obituaries of once cherished lines. With the tremendous postwar development of bus and truck service, oblivion will soon overtake the remaining lines, which are now used mainly for freight transport. Already they have entirely vanished in North-Brabant province, on Walcheren Island, in large sections of Limburg province.

**A Railways Authority.** Until the end of the nineteenth century, exploitation of the railways was in the hands of various small and large companies, causing disintegration of services and unsound competition. For this reason, the government gradually withdrew most of the concessions, until only two companies remained, the Holland Iron Railway Company and the Company for Exploitation of State Railways. Although maintaining the principle of competition, these two companies operated the principle networks, using each other's lines, stations and equipment. In 1917, the two companies merged in order to meet the growing competition from water-borne and truck transportation. Gradually, services were extended to include both passenger buses and freight trucks (see previous article). In 1937, finally, they were taken over by a new corporation, the Netherlands Railways, with the government as the principal stockholder but operating as an independent agency. The administration of the Netherlands Railways is not in The Hague, seat of all government departments, but in Utrecht.

It was in 1930 that the Dutch railways started their process of modernization and of rejuvenation which, in less than ten years, brought about a transformation which may well be called a metamorphosis. What was accomplished in these ten years can be judged from the very prominent position the railways held before the war among the nations of Europe with respect to efficiency, speed, safety and equipment.

Heavy steam locomotives and diesel-electric engines, new freightcars, reconstructed roadbeds; these made fast and punctual freight transportation one of the outstanding services. Special-type freight cars were put into use for fruits, meats, vegetables, coal, liquids, cattle, etc. Large-capacity metal loading cases that could be lifted from truck to freightcar, reduced loading and unloading time to a minimum.

Electrification of the railways, which was begun as early as 1909 with the line Rotterdam-The Hague-Scheveningen, has been proceeding on increasing scale. If it had not been for the interruption of the war years, electrification of the main network would have been an accomplished fact by now. As things stand at present, it is expected that the last mainline will be electrically operated in 1951, with diesel-electric engines for secondary roads and the steam locomotive all but eliminated.

The tragic story of the almost total destruction and looting of this equipment during the last months of the war need not be retold here. Thanks to the combination of American help and Dutch energy, most of the damage has been repaired. Stolen locomotives and freightcars have been returned. New rolling stock has been and is being built. There still remain some gaps to be filled, but except for these, the Dutch railways...
have resumed and in many respects exceeded their pre-war performance.

Survey of rolling stock:

<table>
<thead>
<tr>
<th></th>
<th>1939</th>
<th>1946</th>
<th>1948</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam locomotives</td>
<td>903</td>
<td>605</td>
<td>816</td>
</tr>
<tr>
<td>Passenger coaches</td>
<td>1,739</td>
<td>353</td>
<td>581</td>
</tr>
<tr>
<td>Mail and baggage cars</td>
<td>1,424</td>
<td>190</td>
<td>679</td>
</tr>
<tr>
<td>Freight cars</td>
<td>28,421</td>
<td>4,360</td>
<td>17,357</td>
</tr>
<tr>
<td>Electric coaches</td>
<td>547</td>
<td>167</td>
<td>429</td>
</tr>
<tr>
<td>Diesel-electric coaches</td>
<td>157</td>
<td>29</td>
<td>57</td>
</tr>
</tbody>
</table>

In a small country such as The Netherlands where the cities lie closely together, the modern lightweight multiple-unit diesel-electric train, with its fast speed and rapid acceleration and deceleration, has proved exceptionally suitable. Just before the war the Netherlands Railways operated some 40 of such trains, mostly in three-car sections, with the motive power in the center unit.

This unit carries two diesel engines and multiple unit electric controls, enabling the railroad to run the train in either direction at high speed or couple two or more trains in one unit. Only one operator is needed in either case. The train carries 164 passengers and develops a top speed of 95 miles an hour and a cruising speed of 70 miles an hour. It weighs 108 tons and has 820 horse-power. The trucks which deliver the power to the train have six wheels instead of the conventional four. Also, a single train of nine cars can be split into three sections to serve scattered outlying suburbs.

So advantageous is this type of train that American transportation experts have recommended their use in the United States as a a means to reduce passenger service costs. According to the New York Times of June 12, 1949, a report will soon be published on the study of European long and short haul passenger transportation made by Mr. Stanley Berge, Associate Professor of Transportation at Northwestern University; in this report, special emphasis is laid on the Dutch diesel-electric train.

Mr. Berge has found that the economies of this train has been proved in nineteen years of operation. "The cost of operating was 61 guilders a mile as against 130 guilders a mile for the steam train, a reduction of about 54 per cent," the preliminary report stated.

A railway floating on water. As is the case with the construction of highways, the building of a railway in so watery a terrain as that in the western Netherlands, presents special and seemingly unsurmountable obstacles. It is only after decades of, often disastrous, experience that Dutch railway engineers found the means to prevent the shifting of roadbeds and the consequent sinking of the tracks.

On the railway line Rotterdam — The Hague, one of the busiest in the country, there lies a small stretch of railway, only six miles long, which has been subject to sinking spells for almost a hundred years. When the line was built, the contractors did not know that the fen on which the track was laid, consists of 80 to 90 per cent of water and that the clay with which the fen is mixed, also has a high water percentage. Now that trains have become so much heavier than they once were, this short stretch presents a problem of great magnitude, whose solution has already cost tremendous expenditures.

At first, attempts were made to raise the tract with sand and gravel, but the increased pressure on the lower layers of fen caused the road to sink even deeper; at some places this sand and gravel has reached a height of 15 feet, without bringing a solution. Now railway engineers have been building 60-foot sand embankments at both sides of the track. Since 1937 millions of cubic yards of sand have been pouring into these embankments, and only now the stretch of railway is beginning to assume some solidity. To prevent undulation of the rails, the tract is covered with "slik-slak," a mixture of slags from the blast furnaces and "slik," a fine material obtained from escaping furnace gases. It will be several years until the tract is solid enough to permit the laying of rails capable to carry the present-day heavy equipment. Until then, all trains must pass that particular section at greatly diminished speed.
M E S S E N G E R S S U R E A N D S W I F T

CORRESPONDENCE between individuals is possible only when people can read and write. Since illiteracy among the masses was accepted everywhere as a natural condition almost until the beginning of the modern industrial period, it is obvious that the exchange of written letters and other messages was confined to the exclusive few during the greater part of civilization's history.

The excellent courier services which the Romans had organized in the Lowlands at the start of the Christian era, with their "stationes" or "posta" for the changing of horses, were primarily intended for military intelligence. With the fall of the Roman empire, these services fell into decay, as did civilization itself. The ruling dukes and earls, the bishops, seigneurs and great landowners employed their private messengers for the delivery of their missives.

With the development of commerce in the fourteenth century, the Dutch merchants entrusted their messages to the skippers of river and canal boats, or engaged special couriers for important documents. But until the latter part of the sixteenth century there existed no organized service for the dispatch and delivery of letters. Important cities and merchants sent their special couriers to the sessions of the States-General and often also to other countries to get political information. During war, these couriers were sent to the battlefield to await the outcome, after which they returned as speedily as possible to report to their employers.

It is these couriers around whom some sort of postal service developed gradually. As the art of writing became more widespread and the number of letters to be carried increased in volume, these couriers, instead of travelling themselves, employed others to do the travelling for them. Setting themselves up as postmasters, they opened regular routes to various cities; for example, a postmaster in Amsterdam would open a letter delivery service to Antwerp, and a postmaster in Antwerp would open a similar service to Amsterdam. The couriers were originally not allowed to carry letters on their return journey. This competition naturally increased the cost of delivery which, by the way, was always paid by the addressee.

Only much later, in the first half of the eighteenth century, did someone have the inspiration of letting the couriers meet halfway to exchange their mail, thus cutting both the time and the cost in half. Gradually there came into existence a number of exchange offices. Alphen on the Rhine became the most important meeting place in the country where every night the couriers from Amsterdam, Rotterdam, The Hague, Gouda and Utrecht exchanged their letters and other dispatches.

Desirable plums. Soon these postmasters began to grow wealthy. Since profit was their primary motive, they contracted only for such routes that brought them the greatest advantages. Naturally enough, the rural areas were totally ignored.
In the early 1700's, the cities took the administration of the letter delivery into their own hands. As long as the profits remained relatively modest, the postmasters were left in charge, with a small part of the profit going to the city. But as revenues increased by leaps and bounds, the postmastership became the favorite objective for nepotism. Postmasterships were presented to relatives or friends who never set foot inside a dispatch office, while the actual management was carried out by illpaid employees. Amsterdam has had women, little girls and even infants as postmaster. In 1730, a mayor of Amsterdam gave the postmastership to his infant son as a baptismal present, thus insuring the child of an annual income of 12,000 guilders,—a very large sum for those days. Later, postmasterships were divided into halves, quarters and eights, each part going to a relative or, for the proper remuneration, to a "friend."

When finally public resentment could no longer be ignored, most of the cities voted to transfer authority over the mail to the provincial authorities. In 1754 a uniform for the couriers, or "postilions," was adopted. But for many years there were no profits, since the cities and the postmasters had to be indemnified for the loss of their income. Of proper routing there was no question. Only the important centers were included in the postal service; small towns and rural areas still had to depend on "black market" delivery for their mail. As late as 1817 only the principal routes had a daily delivery; on most other routes mail was carried only twice or three times a week.

The first dated postmark was used in 1829, not for the cancellation of stamps—which were then not even thought of—but for the control of prompt delivery. The postage was still paid by the addressee.

The government steps in. The Postal Law of 1850 put an end to this situation. From that year on, the carrying and delivery of mail became a state function. The policy of making this service a source of the largest possible income made place for the concept that carrying mail is an obligation to the people. The changes were drastic and followed each other in rapid succession. New post offices arose everywhere, the number of postal routes increased from year to year. The newly laid railways helped speed up the services. Postage dues were lowered, although distance as well as weight continued to determine the amount.

On January 1, 1852, the postage stamp made its appearance. Also, in the larger cities letter boxes were placed, which differed but little from the standard type now in use. Mail delivery was increased, in some cities to eight or ten per day. These sudden improvements did not please everybody. Businessmen took a long time getting used to them. The "Economist" of 1858 wrote, "To receive mail so many times a day does not give us any rest and it prevents us from attending to our daily affairs."

The innovations introduced by the Postal Law of 1870 aroused deep interest in other countries. It fixed a uniform postage rate, graduated according to weight alone. A charge of five cents was made for unstamped envelopes. Special delivery made its first appearance. So did the postcard and the money order.

Rural areas were no longer isolated. Even the smallest hamlet had its postal connection. The network of postal routes increased from 12,000 miles in 1860 to 35,000 miles in 1890. Contracts with shipping companies considerably improved the dispatch and reception of overseas mail. The Postal Savings Bank Law was adopted in 1881 and the Parcel Post Law a year later.

Until 1900, letter carriers in rural areas made their deliveries on foot or by horse and buggy. Soon after, the bicycle delivery system was introduced, to be succeeded again by a motorized service. It was at that time that the slogan was adopted, "mailed at night, delivered in the morning." Night mail trains ran to the principal centers of the country; they were supplemented with truck, local train and boat services, so that the slogan became reality for even the smallest and most isolated village. (Because of the state of repair of several railway bridges and the shortage of locomotives and railway material, a few of these night mail connections at present still are subject to some delay).

With the advent of the airmail, the same slogan is now applied to delivery in other European countries. All mail delivered at Schiphol Airport in the evening, is flown to foreign capitals during the night and delivered in the morning.

At the end of the war, The Netherlands, Switzerland and Denmark were the first European countries to consider air transport of mail within Europe as a normal process. All letters and postcards for European countries are shipped by air, without extra postage.

The development of overseas airmail transportation during the postwar years has been of an almost revolutionary nature, mainly the result of the crippling of so many shipping lines and the perfection of long-distance flying. In 1938, airmail to the United States averaged 440 lbs. a month; the present monthly average is 6,600 lbs. Airmail to Indonesia was about 8,800 lbs. a month in 1938; the present monthly average is 77,700 lbs.

The devastating effects of the destruction during the war years are gradually being repaired, as is evident from the following figures:

<table>
<thead>
<tr>
<th></th>
<th>1946</th>
<th>1948</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic mail</td>
<td>1,382</td>
<td>1,500</td>
</tr>
<tr>
<td>parcel post</td>
<td>not functioning</td>
<td>870</td>
</tr>
<tr>
<td>Foreign mail (dispatched)</td>
<td>55</td>
<td>130</td>
</tr>
<tr>
<td>(received)</td>
<td>45</td>
<td>105</td>
</tr>
<tr>
<td>parcel post</td>
<td>1.02</td>
<td>1.90</td>
</tr>
<tr>
<td>Domestic money orders</td>
<td>not functioning</td>
<td>12</td>
</tr>
</tbody>
</table>

(The exchange of foreign money orders was resumed in 1948 but on a modest scale).

The Post Office pays the family bills. Something unique in the way of services rendered by the Netherlands Postal Department is the so-called Giro or checking account system that has been functioning in The
The Dutch Postman is Equally at Home on Water and on Land

The gentleman with the top hat walked his route in the early 1800’s. The postman in the horse-drawn carriage cleared letter-boxes in 1890. Models of other old-time mail carriages are shown at bottom. The remaining photos speak for themselves.
Netherlands since 1917. This system enables the salary earner to pay his bills by check without any cost to himself, and practically without effort, provided he has opened an account with Giro.

When he receives his paycheck, he slips it into a specially colored envelope provided by the Giro department and drops it into the letter box (without stamp). To pay his bills, he writes his giro checks for the landlord, the telephone, gas, electricity, the department store, etc., puts them all together into a similar envelope and drops them into a letter box. The giro department checks them against his account and mails them to the creditors. The next morning the depositor receives a statement of deposits, payments and balance. There are no addresses to be written, no expenses for mailing.

In 1948, the giro service handled some 124 million transactions for its half million depositors. The total deposits at the end of the year amounted to close to 1½ billion guilders. By investing these deposits, the government earned interest totaling 21 million guilders.

The telegraph. In 1844, the same year in which Samuel Morse's invention was put to practical use in the United States, an Amsterdam inventor, Wenckebach, was building a telegraph line along Holland's first railway between Amsterdam and Haarlem. His instrument consisted of a disk containing the letters of the alphabet and a rotating indicator. By breaking off the electric current, the pointer could be made to halt at any desired letter. The line itself was of non-galvanized wire, with primitive insulation materials attached to wooden poles. It was put to public use in December, 1844.

In 1852 it was discarded. On December 1 of that year the first government telegraph network was opened between Amsterdam, Breda, Dordrecht, The Hague and Rotterdam. Morse telegraph instruments were used exclusively. Since then, the development of Holland's telegraph system has kept pace with that in the United States and elsewhere. After the Morse instrument, came the piano-like Hughes apparatus, the Baudot (resembling the modern speed-writing apparatus), and the teletype machines of the present day. The complete automatization of Holland's telex network and its connection with the greater part of Europe will soon be a reality. Several American press agencies now have direct telex communication with Holland's principal cities.

In December of last year, some 900 telex machines were in use. With Hungary, Norway, Austria and Sweden, telex communications have already been resumed.

The telephone. The telephone service in Holland was originally a private enterprise. In 1881 the Netherlands Bell Telephone Company opened its first network in Amsterdam, soon to be followed by networks in 19 other cities. Besides the Bell Company, several concessions were in the hands of other companies. In 1888 Bell built the first inter-city lines. A few years later the government also opened networks for some small-town circuits. Meanwhile the municipalities recognized that the telephone was a public utility and should be operated by the city. Amsterdam, Rotterdam, The Hague and several other cities expropriated their local networks.

There were thus, in 1904, three forms of exploitation: government, municipal and private. When long-distance communication was introduced, the situation became chaotic. The smaller companies were unable to cope with the constant improvements and changes in their networks. Also, several rural sections, being considered financially unprofitable, remained without telephone service.

In 1905 it was decided that the government would take over all existing companies and municipal services. The networks of Amsterdam, Rotterdam and The Hague were the last ones to be included in the government system (1940).

If it had not been for the terrific destruction caused by the war, the Netherlands would now have the most modern, completely automatic telephone system anywhere in the world. At present, repairs and reconstruction have progressed far enough to restore automatic connection to a large part of the country. This automatic connection is not confined to local calls, but embraces the entire Netherlands network.

Automatic long-distance calls. Each city has its own call number. The making of a city to city call is no different from calling a local number. When someone in Goes (southwestern part) wants to call someone in Bedum in the northeast, he dials K 5901, Bedum's number. The K connects him with the group exchange in Rotterdam, the 5 with the group exchange in Zwolle, the 9 with the district exchange in Groningen, the 0 with the zone exchange in the same city, and the 1 with the local exchange in Bedum. He then hears the familiar buzzing, upon which he dials the desired local number.

The cost of such long-distance conversation is recorded automatically. It is based on the local call of three cents for three minutes. An automatic counter calculates two, five, ten, 15 or 20 times the local call for every three minutes, depending on the zone.

During the war, three of the important group exchanges — Zwolle, Arnhem, 's-Hertogenbosch — were blown up. So were the district exchanges in Beilen and Breda. The exchange in Venlo was plundered and left an empty shell. Altogether, 60 exchanges were put out of use. It is now estimated that all reconstruction and complete automatization will have been completed by 1952. In 1948, 17 new automatic exchanges were opened, while 21 exchanges were extended considerably. Holland has now 653 automatic and 382 non-automatic exchanges.

The number of telephones is 530,000 (on the basis of population, comparable to 8½ million in the United States), with a waiting list of 70,000. The waiting is mainly for equipment which before the war was supplied by the German concern of Siemens and Halske in Berlin. With this source of supply cut off, the entire automatization project had to be revised. The new district exchange at Arnhem will be equipped by the Bell Telephone Company. British, Swiss and Netherlands concerns are building installations for other new exchanges.
TO EXPLAIN to the American reader the pattern of domestic broadcasting in The Netherlands is a rather complicated task, there being few features which the American and Dutch systems have in common.

The Dutch do not allow commercial broadcasting. Instead, radio programs are provided by radio associations representing the various religious and political groups. These are A.V.R.O. (non-party and non-denominational); V.A.R.A. (Labor Party); R.K.O. (Catholic); N.C.R.V. (Calvinist); V.P.R.O. (Liberal-Protestant); and I.K.O.R. (Inter-Church). Each association prepares its own programs. Each has its own buildings, its own producers, scriptwriters, and other personnel. To each association the government has allocated a certain amount of radio time on either of the two transmitters, Hilversum I and Hilversum II (Hilversum is the center of all broadcasting activities). All radio associations are united in a federation which co-ordinates the programs. About one-half of all radio time must be used for programs sponsored by all associations collectively.

Since the end of the war, radio receivers must have a government license for which the owner pays twelve guilders (about $5.00) a year. The license fee is collected through the P.T.T. (Posts, Telegraph, Telephone Services). Before the war, radio receivers were not licensed. The expenses for personnel, equipment, artists, etc. were borne by the individual associations. However, their ability to produce high-level programs was conditioned by the economic and financial standing of their members. One or two organizations could thus produce programs which the smaller ones could not afford. This led to controversies, so that after the liberation the government ruled that all associations would receive equal shares of the collected license tax.

A unique feature of Holland's broadcasting system are its two relay stations, one in the north and one in the south. Under normal conditions, the two transmitters, Hilversum I and II, would cover the entire nation quite easily, but since liberation a Russian station has come on the air which practically blankets Hilversum II. The two relay stations now pick up and relay the broadcasts to their respective areas. To doubly insure that all residents of Holland can listen to their favorite programs, the government controlling body has arranged for a complete transfer of all daily schedules each month from Hilversum I to Hilversum II and vice versa.

Radio-wire service. In addition to the regular radio receiver sets, the Dutch have also a system similar to the Music by Musak method used in the United States. This subscription service originates at the Telephone Exchange in The Hague. The loudspeaker with which the subscriber is provided, gives him a choice of four programs: Hilversum I and II, a B.B.C. transmission and a fourth choice from one of the many broadcasts from European countries.

There are at present some 1,115,000 private radios in Holland, with literally thousands waiting to buy a radio set. The number of subscribers to the wire service totals some 500,000.

Pioneers in international radio communications. As early as 1904, radio station Scheveningen established connections with ships at sea. Since the station was equipped with a Telefunken installation, the regulations of the Marconi Company forbade ships operating Marconi equipment to contact the Dutch station. As the station was maintained solely for the safety of ships, the Dutch insisted that it should be available for all, regardless of monopoly or system. The Netherlands view pre-
vailed. At the radio conference held in 1907 at Berlin, freedom of airways became internationally recognized. It was the P.T.T. also that initiated the use of shortwaves in communications with ships. After an early and successful experiment, shortwave receivers and transmitters were installed at Scheveningen that maintained contact with ships in every part of the globe, provided the ship itself carried a shortwave radio.

In 1923 the first antenna was erected at Kootwijk, in the Veluwe hills east of Utrecht, for direct radio transmission to the Indies (now Indonesia), while a receiving station was built at the North Sea coast near Noordwijk. Only two years later, an experiment was made with a small shortwave transmitter of only a few hundred watts, which gave excellent contact with the Indies. As a result, the first long-distance commercial radio-telegraph communication could be established that same year.

In 1927, Queen Wilhelmina spoke for the first time to the peoples of Indonesia over a radio telephone. After several experiments with transmitting and receiving sets in the laboratorium of the P.T.T., two-way conversation was initiated later that same year, and in February 1928, the radio-telephone service between Holland and the overseas islands was officially opened. This 7,000 mile telephone communication, the longest in the world, created quite a stir among foreign radio experts everywhere.

When the Second World War broke out in 1939, similar connections were established with New York, Rio de Janeiro and Buenos Aires. Kootwijk became one of the world's important radio centers, with 17 shortwave and four longwave transmitters. The receiving station at Noordwijk was constantly extended. Practically all transmitting and receiving instruments have been developed and built by the P.T.T. itself; many of its innovations and inventions have aroused great interest among foreign experts. The ships' radio at Scheveningen, since transferred to Ijmuiden, also greatly increased its activities; shortly before the war it operated thirteen short and longwave transmitters. It also introduced two telephone transmitters especially for fishing and small coastal vessels that could not afford radio-telegraph installations. These communications made it possible for these small vessels to carry on two-way conversations with other ships at a not too far distance.

"Radio Nederland." One postwar institution which has met with wide response from many parts of the world is the "Radio Nederland World Broadcast," which transmits daily newscasts, music programs and topical information to all continents. By means of the turnstile-antennas these programs are beamed at various periods of the day to different parts of the world, in Dutch, English, Spanish and Malayan. Emanating from the studios at Hilversum, a morning program (10 to 11 A.M.) is directed to Australia, New Zealand and the Pacific area. In the afternoon a half-hour program is broadcast to Southeast Asia, and, somewhat later, to South Africa and continental Europe.

Other programs are beamed to Central and South America, and also, naturally, to the United States and Canada. The best reception obtained in this country is via the 31.28 Meter band, between 9:30 and 10:30 P.M. (Eastern Standard Time). Other bands on which the Netherlands programs can be heard are the 25.57 Meter and the 49.79 Meter bands.

"The "Happy Station" program, a one and a half-hour feature broadcast on Sundays and Wednesdays at 10 P.M., has created a considerable following in all parts of the globe. A steady stream of favorable comment from remote locations in South America, Alaska, Australia and Africa, as well as from many parts of the United States, bears testimony to both the excellent reception and the program itself.
Aangeboden
door de Directie Voorlichting Buitenland
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