Bell Telephone Manufacturing Company

HISTORY OF BTM, 1882 - 1982

A history of the Bell Telephone Manufacturing Company, Antwerp Belgium
Gives a very narrow view into the equipment manufactured by BTM as the focus is on the physical history of the company.
In 1986 ITT sold BTM and most of its European telephone holdings to a group that formed Alcatel-Alsthom (now Alcatel-Lucent).

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www.kelloggtelephone.com

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26 December 2008

Bell Telephone Manufacturing Company

1882-1982

Bell Telephone Manufacturing Co - Antwerp - Belgium
A Belgian company associated with ITT

Reçu

Anvers, le 14 décembre 1891

A Monsieur P. Willis Dir.
à la Bell Tel Mfg Co. S/V.

Monsieur le Directeur.

Bell Telephone Manufacturing Company
SOCIETE ANONYME

ASSOCIEE A LA
WESTERN ELECTRIC COMPANY

ADRESSE TÉLÉGRAPHIQUE :
MICROPHONE ANVERS
CODES : LIEBER'S
BENTLEY'S
TÉLÉPHONES : N° 2701
N° 4331

W.E.A. 494A 20.000 9-10-20

COMPTE CHEQUES POSTAUX N° 16570

EN RÉPONDANT BIEN REFÉRER A JS/Es.G

ANVERS, le 28 décembre 1920.
RUE BOUDEWYNS, 18

Monsieur F. POTTIER
TEMPLEUVE

Bell Telephone Manufacturing Co.
(SOCIÉTÉ ANONYME)
18, Rue Boudewyns,
Anvers

ADRESSE TÉLÉGRAPHIQUE
MICROPHONE, ANVERS.

Reçu de la Bell
No. 69, représentan
frs 250.00 --

Bell Telephone Manufacturing Company
(Société Anonyme)
établie à Anvers.

Constituée par acte passé devant Me Fréd. Aug. Gheyzens, notaire à Anvers, le 26 avril 1882 et
publié aux annexes du Moniteur Belge du 11 mai suivant sous le N° 1118,
ayant trente ans à partir du 25 mars 1907 par acte passé devant Me Fréd. Aug. Gheyzens
le 25 mars 1907 et publié aux annexes du Moniteur Belge du 11 avril suivant sous le
primitivement de 1.000.000 frs. divisé en 1000 actions de deux cent cinquante francs
par la création de 16000 actions nouvelles de deux cent cinquante francs
assemblée générale extraordinaire des actionnaires, réunie le 25
Fréd. Aug. Gheyzens à Anvers à la même date, a été
avril suivant sous le N° 20111.

minatif de 800 actions.
entièrement libérés.

deux cent cinquante francs chacune, N°s
mme suite à l'augmentation de capital
en vertu des pouvoirs lui conférés par
apital social étant ainsi porté à

n administrateur,

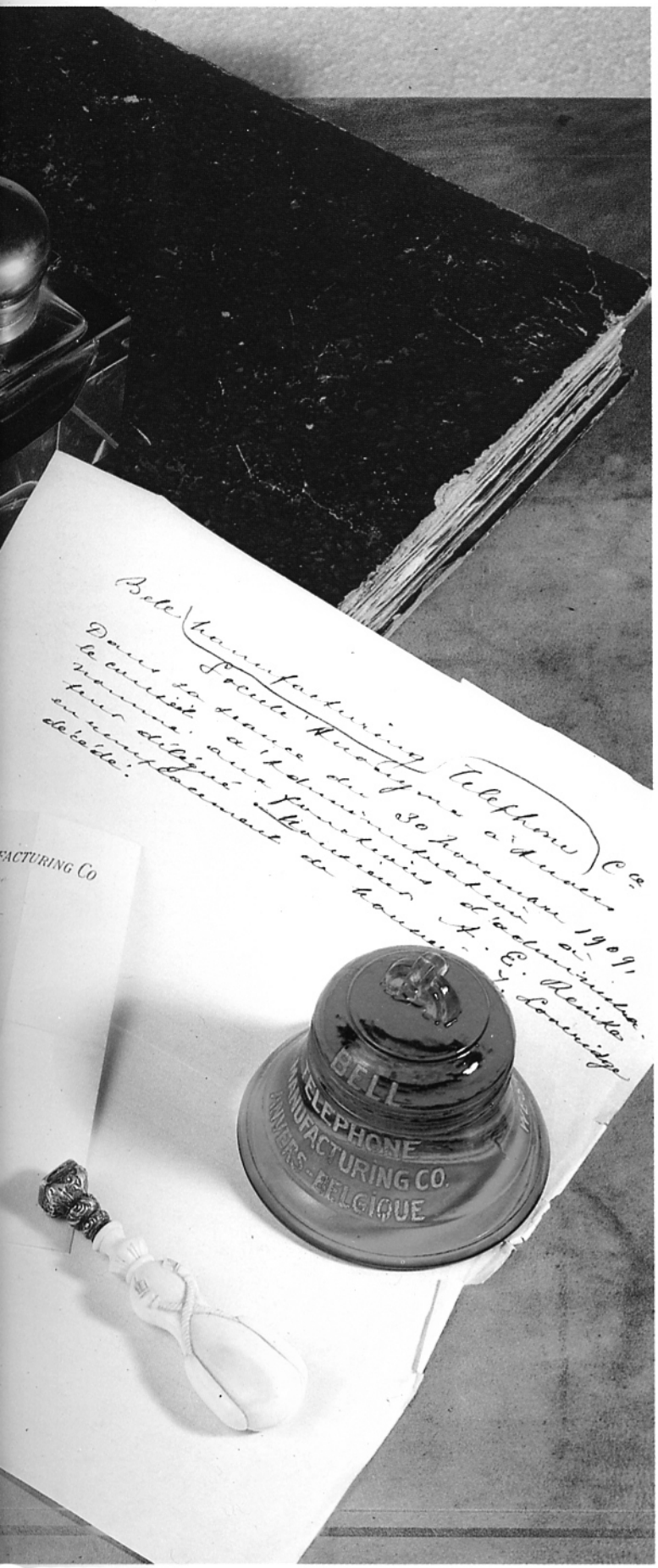
Bell Telephone Manufacturing Co.
(Société Anonyme)
18, Rue Boudewyns,
Anvers

Adresse Télégraphique
Microphone, Anvers.

Reçu de la Bell Telephon Mfg Co.
Un titre provisoire N° 61, représentant
Quarante Actions entièrement libérées par
frs 250.-

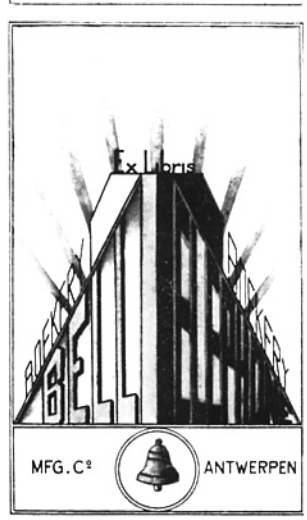
Anvers le 9 Mars 1904.

A. R. Reinemann

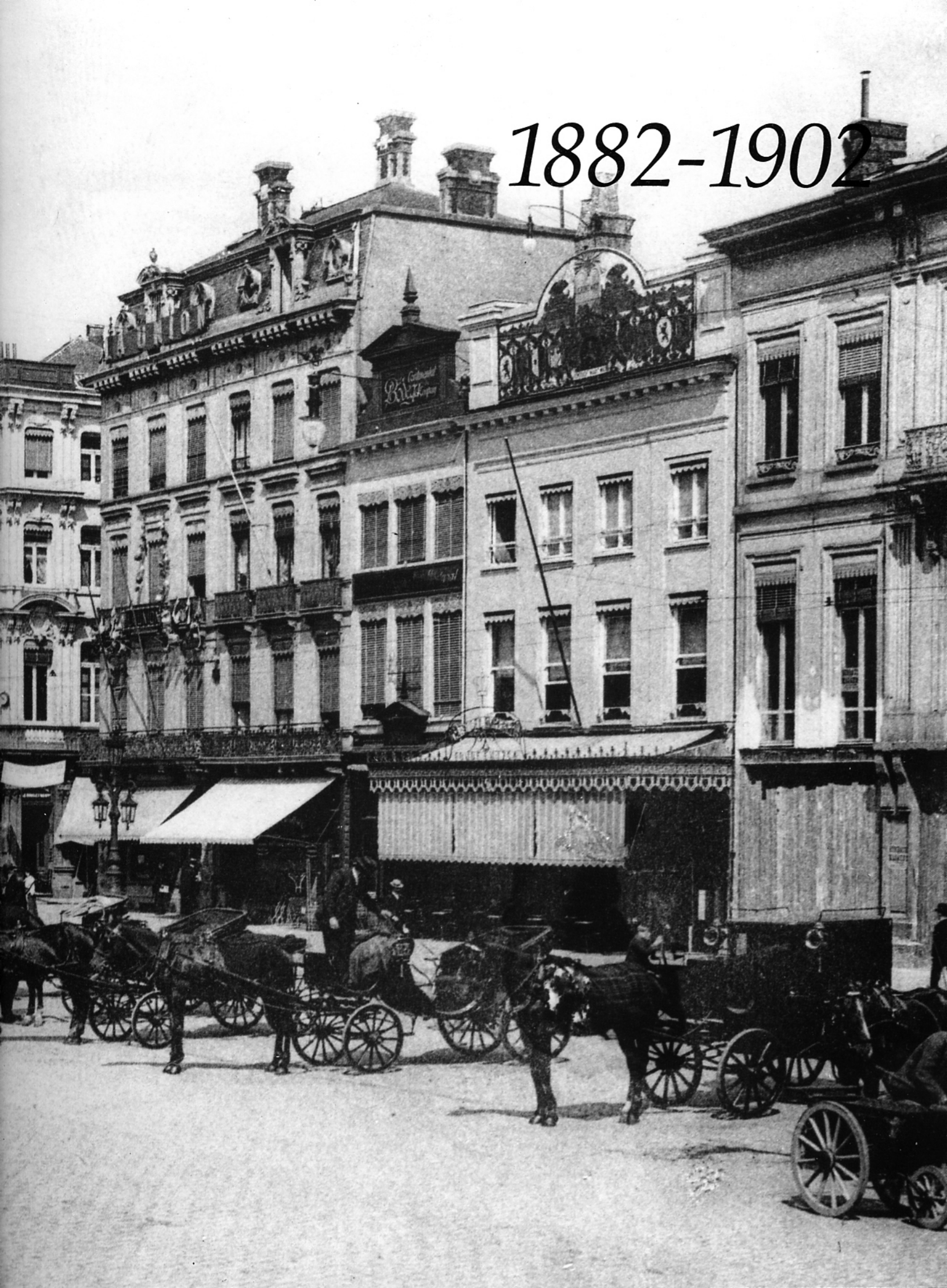


It should come as no surprise that only a few details are known about the early years of Bell Telephone Mfg Co (BTM) – it is inevitable for any company going back over a hundred years. Companies are founded to get on with a particular job; and the pressures of achieving successful growth leave no time for cultivating posterity's interest.

So it was with little pomp or ceremony that BTM was founded on April 26, 1882. One hundred years ago. One hundred years...




QUO VADIS
JULIEN
ORFEVRERIE
NORMAL
CADEAUX
CHEMISES
910



1882-1902

1 1882 ① B.

Anvers le 27 Avril 1882.—

Première Séance du Conseil d'administration—

1° Sont nommés pour une année

Président M. L. Van den Bert

Secrétaire M. L. Wells

Ces nominations déclarant accepter.

2° Les administrateurs sortant d'après l'article N.° 17 des Statuts, sont dans l'ordre de sortie après tirage au sort: 1° L. Wells 2° J. C. De Groof 3° M. Wells 4° L. De Groof 5° L. Van den Bert.

3° D'après l'article 53 de la loi sur la Société M.r Wells est nommé administrateur délégué En cas d'absence de M.r Wells Monsieur J. C. De Groof le remplacera dans ses fonctions

4° Provisoirement la Caisse sera déposée à la Banque Nationale

5° Jusqu'à nouvel ordre le conseil d'administration se réunira tous les vendredis à 3 heures au siège social Rue Dambruggen N.° 278.—

L. Van den Bert

L. Wells

J. C. de Groof

Secrétaire

Minutes of the first meeting of the board of directors.

Establishment... capital... interests

Bell Telephone Mfg Co Ltd, (BTM) was established on April 26, 1882 in the study of Mr. **F.A. Gheysens,** notary public, in Antwerp; it was an ambitious undertaking.

In the whole of Belgium there were less than 2000 telephone subscribers, and in most other countries the situation was much the same.

Yet the founders set themselves the goal: "to manufacture, sell, purchase and rent telephone and telegraph equipment and everything else directly or indirectly related to electricity".

The founders were **Francis Welles,** a 27 year old representative of the Western Electric Company, **Louis De Groof,** a 42 year old representative of the International Bell Telephone Company, and a few local citizens **Arthur Van den Nest, Alexis Mols, Ernest** and **Maximilien Grisar** and **Jacques Osterrieth.**

The Registered Office was a rented house, N° 278 Dambruggestraat in Antwerp, where the first meeting of shareholders took place on April 27, 1882.

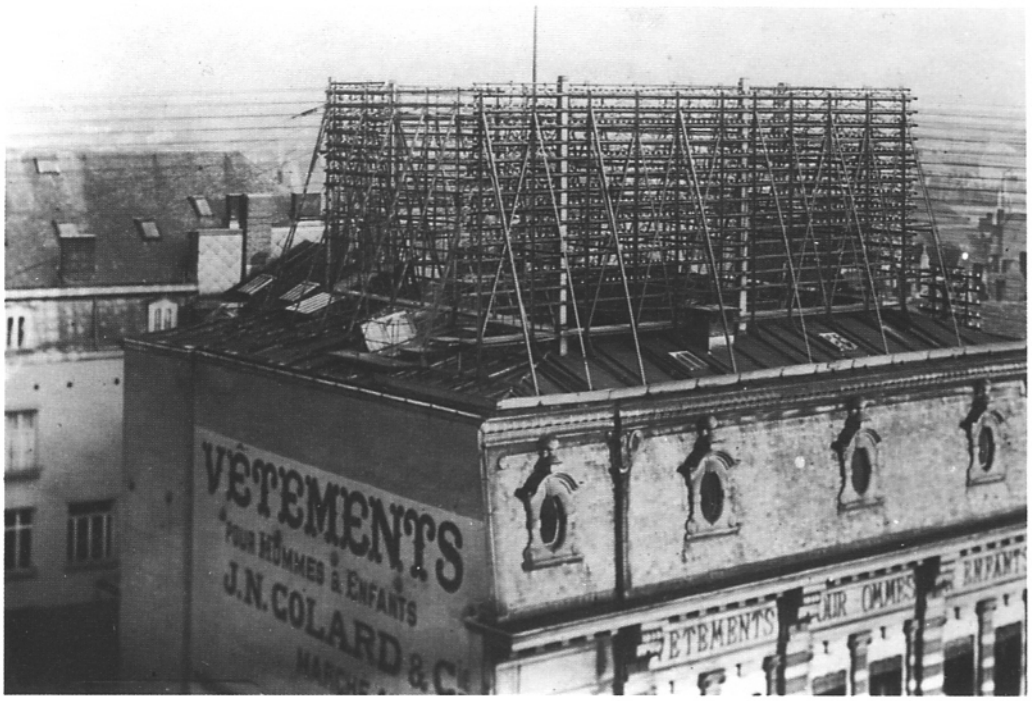
The Board of Directors was: **A. Van den Nest** (chairman), **Francis Welles** (managing director), **A. Mols** (secretary), **J.C.** and **L. De Groof** and **J. Stappers;** a few months after the foundation **J.C. De Groof** was appointed second managing director to assist **Francis Welles.**

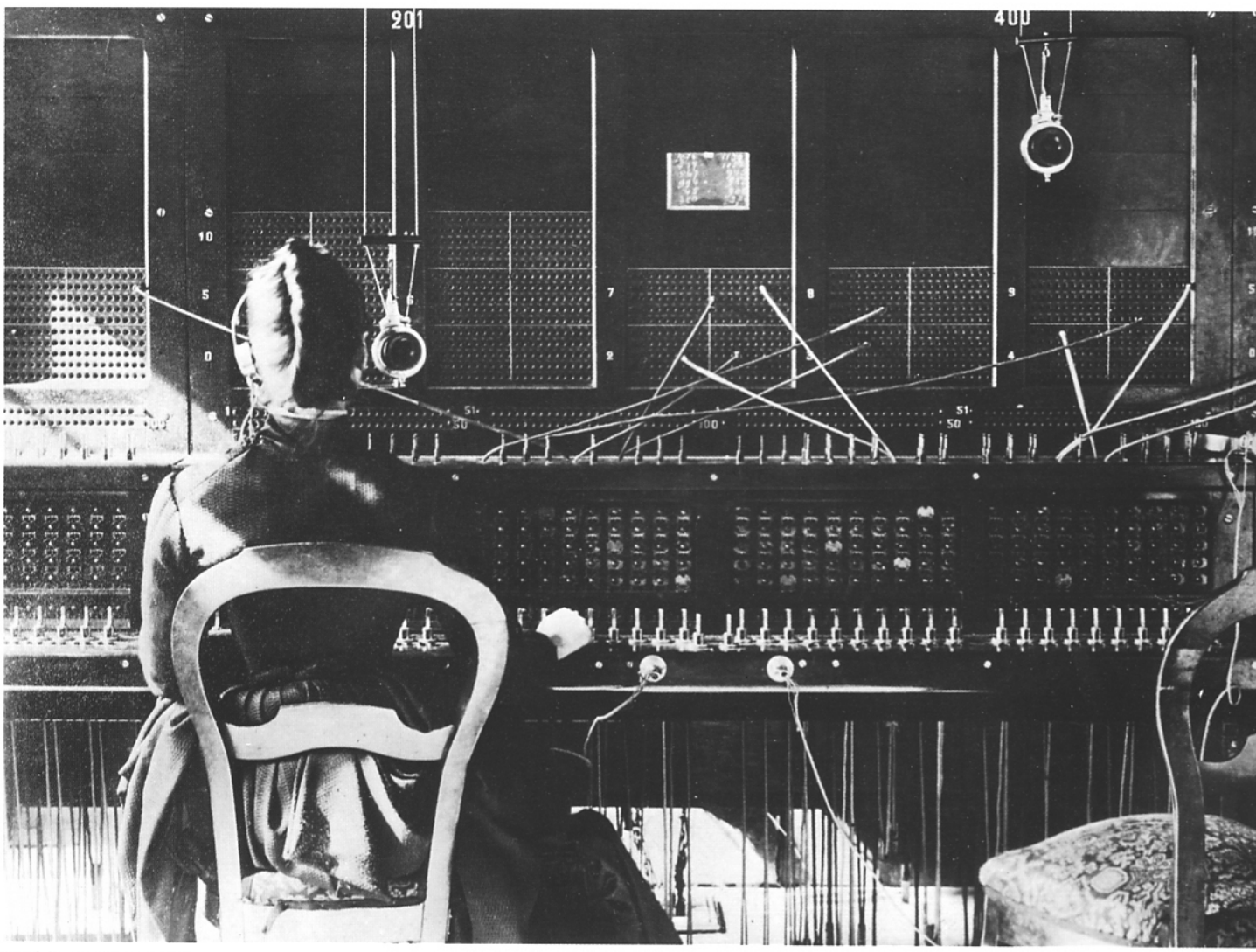
Francis Welles.

Alexis Mols.

Arthur Van den Nest.

European headquarters of the International Bell Telephone Company Ltd in Antwerp.





Multiple switchboards.

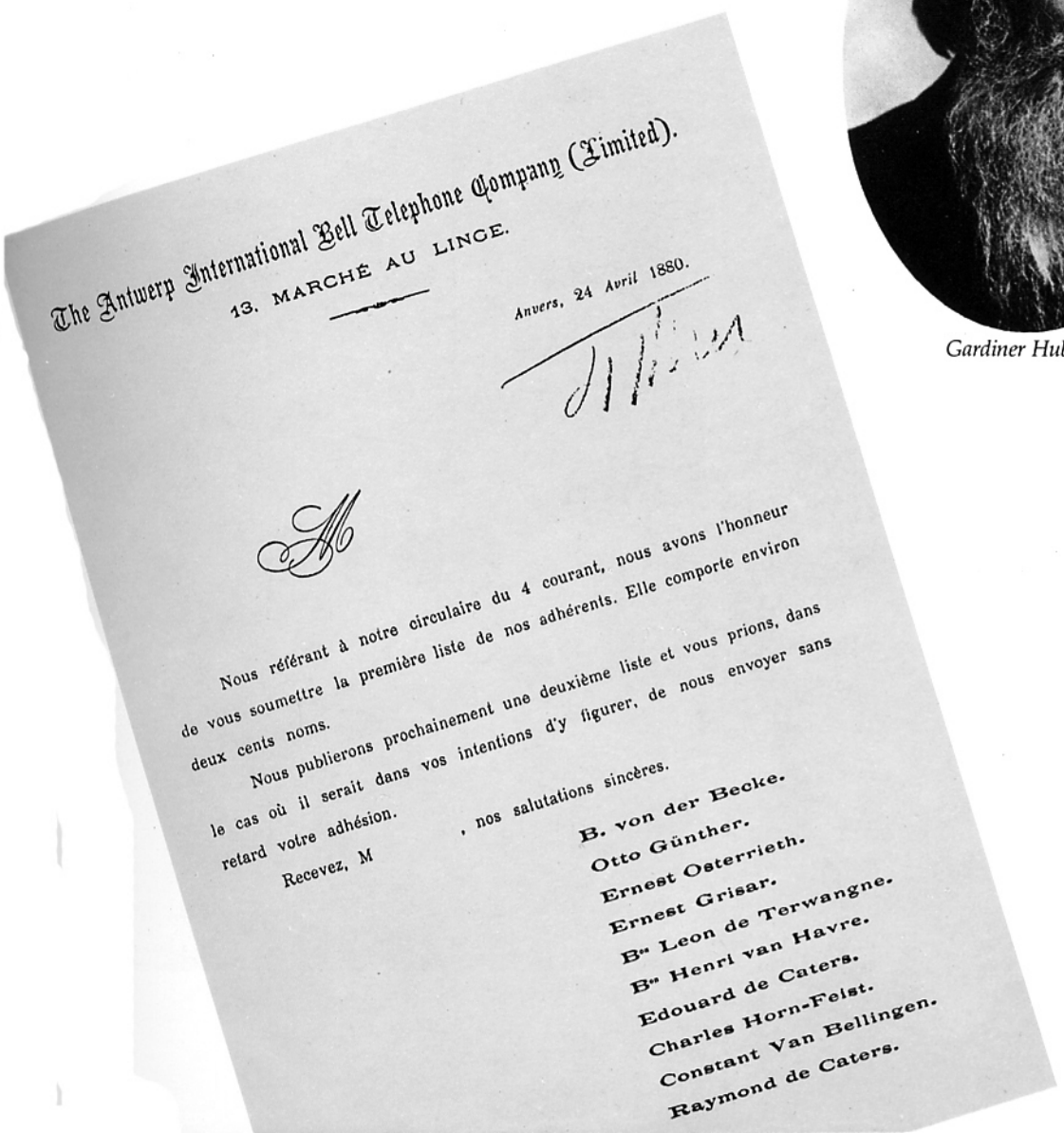
The 4000 shares constituting the initial capital of 1 million Belgian francs were mainly divided between the Western Electric Company and the International Bell Telephone Company, who took respectively 2160 and 800 shares, with **Gardiner Hubbard,** father-in-law of **Alexander Graham Bell** taking up 200.

The International Bell Telephone Company was founded in New York in 1879 by **Gardiner Hubbard** with the intention of introducing the telephone into Europe. In 1880 it set up a European headquarters in the Lijnwaadmarkt in Antwerp, where the local telephone exchange was installed. It had obtained a number of concessions from the Belgian Government for the setting up and the exploitation of local telephone networks. I.B.T.C. did not have its own production facilities and imported the equipment for its networks mainly from the U.S.A. Originally, the equipment was purchased from manufacturers of the American Bell Telephone Company such as Williams and Gilliland and later Western Electric, who became the Bell System's official supplier in 1882.

Western Electric, the main shareholder, brought the Bell Telephone Mfg Co of Antwerp the right of use of all the patents and the technology necessary for the successful production of telephone equipment on an industrial basis.

In 1890, Western Electric purchased all the shares held by the International Bell Telephone Company and the local shareholders of Bell Telephone Mfg Co. Following this transaction, Western Electric obtained a double representation on the Board of Directors. The **De Groof** brothers would soon leave the Board to start their own rival firm.

Gardiner Hubbard.



The Antwerp International Bell Telephone Company (Limited).

13, MARCHÉ AU LINGE.

Anvers, 24 Avril 1880.

Nous référant à notre circulaire du 4 courant, nous avons l'honneur de vous soumettre la première liste de nos adhérents. Elle comporte environ deux cents noms.

Nous publierons prochainement une deuxième liste et vous prions, dans le cas où il serait dans vos intentions d'y figurer, de nous envoyer sans retard votre adhésion.

Recevez, M , nos salutations sincères.

B. von der Becke.
Otto Günther.
Ernest Osterrieth.
Ernest Grisar.
Bⁿ Leon de Terwangne.
Bⁿ Henri van Havre.
Edouard de Caters.
Charles Horn-Feist.
Constant Van Bellingen.
Raymond de Caters.

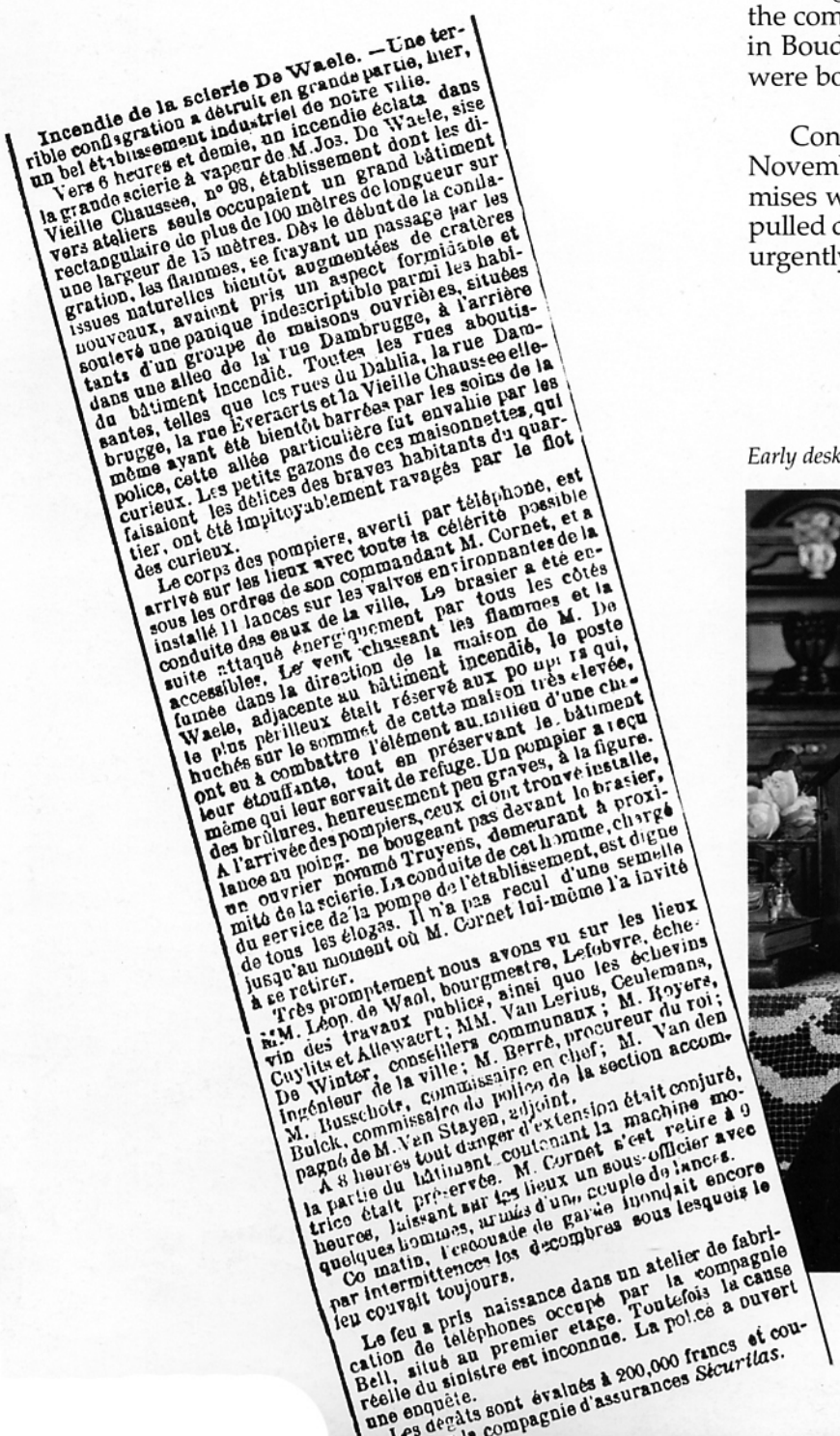
Buildings... production

Initially, the workshops were on the premises of the International Bell Telephone Company above a sawmill in the Oude Steenweg. Seven I.B.T.C. employees were taken over by Bell.

These workshops were completely destroyed by fire on July 22, 1882, but manufacturing continued in workshops in the Ankerrui, temporarily hired from Hoskin/Black & Co.

In August 1882, the Board of Directors entered into negotiations for the purchase of ground to build the company's own workshops. The chosen site was in Boudewijnsstraat, where plots of 916 and 340 m² were bought.

Construction of the first factory started on November 13, 1882, and by autumn 1883, the premises were ready for occupation. (This building was pulled down just a few years ago to make space for an urgently needed car park).



Incendie de la scierie De Waele. — Une terrible conflagration a détruit en grande partie, hier, un bel établissement industriel de notre ville.

Vers 6 heures et demie, un incendie éclata dans la grande scierie à vapeur de M. Jos. De Waele, sise Vieille Chaussee, n° 98, établissement dont les divers ateliers seuls occupaient un grand bâtiment rectangulaire de plus de 100 mètres de longueur sur une largeur de 15 mètres. Dès le début de la conflagration, les flammes, se frayant un passage par les issues naturelles bientôt augmentées de cratères nouveaux, avaient pris un aspect formidable et soulevé une panique indescriptible parmi les habitants d'un groupe de maisons ouvrières, situées dans une allee de la rue Dambrugge, à l'arrière du bâtiment incendié. Toutes les rues aboutissantes, telles que les rues du Dahlia, la rue Dambrugge, la rue Everaerts et la Vieille Chaussee elle-même ayant été bientôt barrées par les soins de la police, cette allée particulière fut envahie par les curieux. Les petits gazons de ces maisonnettes, qui faisaient les délices des braves habitants du quartier, ont été impitoyablement ravagés par le flot des curieux.

Le corps des pompiers, averti par téléphone, est arrivé sur les lieux avec toute la célérité possible sous les ordres de son commandant M. Cornet, et a installé 11 lances sur les valves environnantes de la conduite des eaux de la ville. Le brasier a été ensuite attaqué énergiquement par tous les côtés accessibles. Le vent chassant les flammes et la fumée dans la direction de la maison de M. De Waele, adjacente au bâtiment incendié, le poste le plus périlleux était réservé aux pompiers qui, huchés sur le sommet de cette maison très élevée, ont eu à combattre l'élément au milieu d'une chaleur étouffante, tout en préservant le bâtiment même qui leur servait de refuge. Un pompier a reçu des brûlures, heureusement peu graves, à la figure. A l'arrivée des pompiers, ceux ci ont trouvé installé, lance au poing, ne bougeant pas devant le brasier, un ouvrier nommé Truyens, demeurant à proximité de la scierie. La conduite de cet homme, chargé du service de la pompe de l'établissement, est digne de tous les éloges. Il n'a pas recul d'une semelle jusqu'au moment où M. Cornet lui-même l'a invité à se retirer.

Très promptement nous avons vu sur les lieux MM. Léop. de Waal, bourgmestre, Lefebvre, échevin des travaux publics, ainsi que les échevins Cuylits et Alleyaert; MM. Van Lerius, Ceulemans, De Winter, conseillers communaux; M. Hoyere, Ingénieur de la ville; M. Berré, procureur du roi; M. Busschots, commissaire en chef; M. Van den Bulck, commissaire de police de la section accompagné de M. Van Stayen, adjoint.

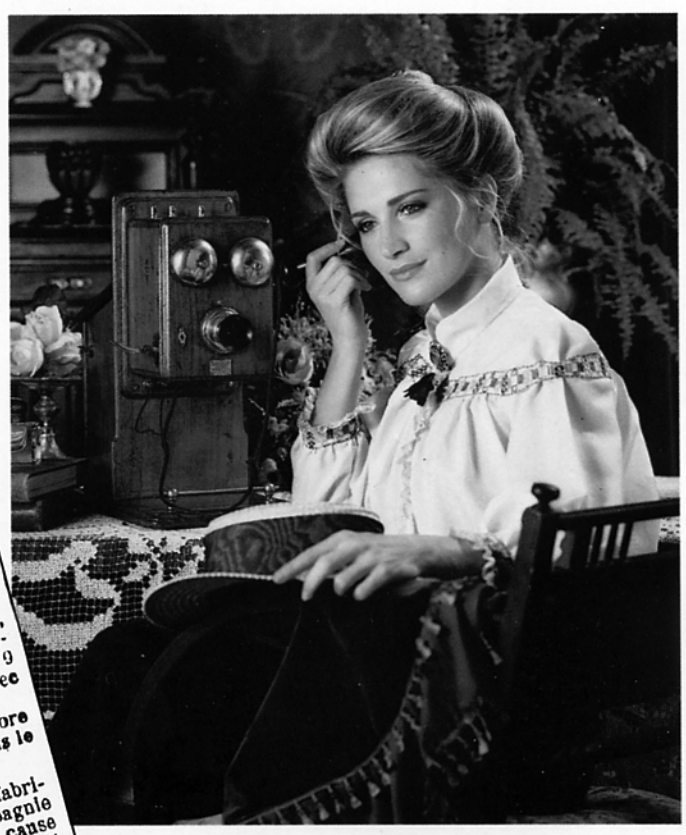
A 8 heures tout danger d'extension était conjuré, la partie du bâtiment contenant la machine motrice était préservée. M. Cornet s'est retiré à 9 heures, laissant sur les lieux un sous-officier avec quelques hommes, armés d'une couple de lances.

Ce matin, l'écouade de garde inondait encore par intermittences les décombres sous lesquels le feu couvait toujours.

Le feu a pris naissance dans un atelier de fabrication de téléphones occupé par la compagnie Bell, situé au premier etage. Toutefois la cause réelle du sinistre est inconnue. La police a ouvert une enquête.

Les dégâts sont évalués à 200,000 francs et couverts par la compagnie d'assurances *Securitas*.

Early desk set.



Anvers le 26 Août 1882

Monsieur le Président et Messieurs les membres de
la Députation permanente de la province d'Anvers

Messieurs

J'ai l'honneur de vous demander l'autorisation d'établir sur la
parcelle 1665 V S= F du cadastre, rue Baudouyns, n° 9, une fabrique d'objets
mécaniques entrant dans la composition des appareils téléphoniques et électriques,
et ce d'après le plan de distribution ci annexé en double expédition, en même temps
que le plan cadastral également en double expédition indiquant les immeubles
compris dans le rayon de Cent mètres.

J'ai également l'honneur de vous demander l'autorisation d'établir
dans ladite fabrique une machine à vapeur horizontale de la force de 30 chevaux
alimentée par une chaudière inexplosible Système Du Mayer de la force de 30
chevaux dont vous trouverez également le dessin ci joint en double expédition.

Les parois de la chaudière seront revêtues comme vous le verrez sur ce plan
en fonte et en maçonnerie. On emploiera à la consommation de la chaudière
le charbon minéral.

Les appareils sont destinés à actionner les machines outils confectionnant
des pièces mécaniques diverses entrant dans la composition des appareils téléphoniques
et électriques.

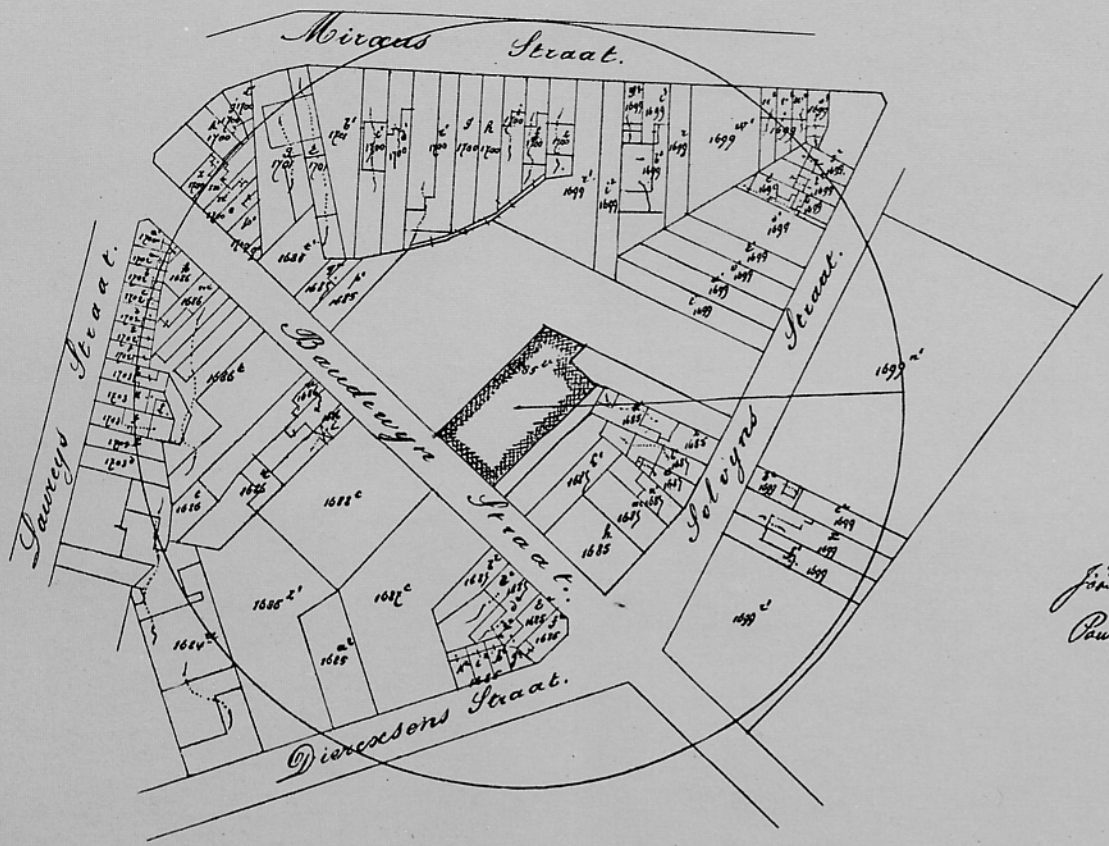
Les distances sont indiquées sur les plans. La cheminée sera établie
en maçonnerie.

La pression maximum à laquelle on travaillera sera cinq
atmosphères. Agréez, Messieurs, l'expression de ma haute considération

Pour le Conseil d'administration de la Bell Telephone Manufacturing Cº
L'administrateur délégué
F. de Wolles

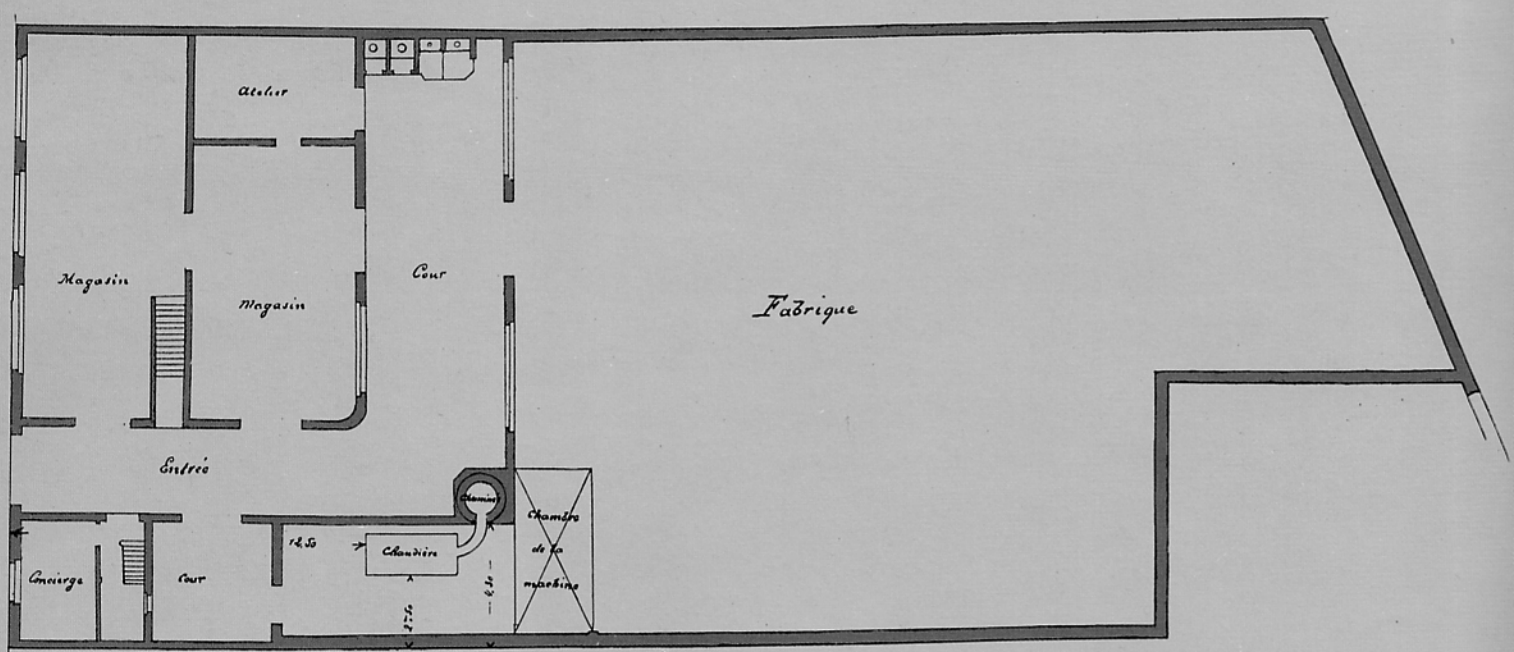
Adresse : Mr F. Welles, rue Dambrugge 273. Anvers.

Building licence application.



Extrait
uit het kadastraal plan der gemeente
Antwerpen.
Wijk F.

Délivré à ma demande le 26 Août 1892
Pour la Bell Telephone Manufacturing Cie
L'administrateur délégué
F. H. Welles
J. H. Welles

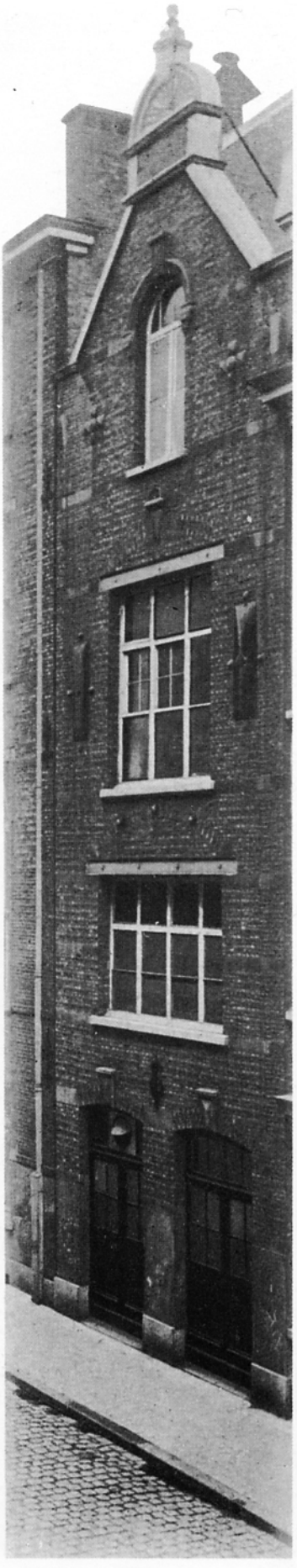


Ground-plan first factory.

The first own workshops consisted of a two storey building; the upper floor was given over to offices whilst on the ground-floor were the storeroom, assembly and packing departments, the engine room, the machine department and the porter's lodge. A 30 HP steam engine provided the necessary power. Thirty-five workers, eight of them women, were involved in production.

A few months later an extension was already being planned: additional ground was purchased for building a sawmill and a wood store.

Factory in 1883.

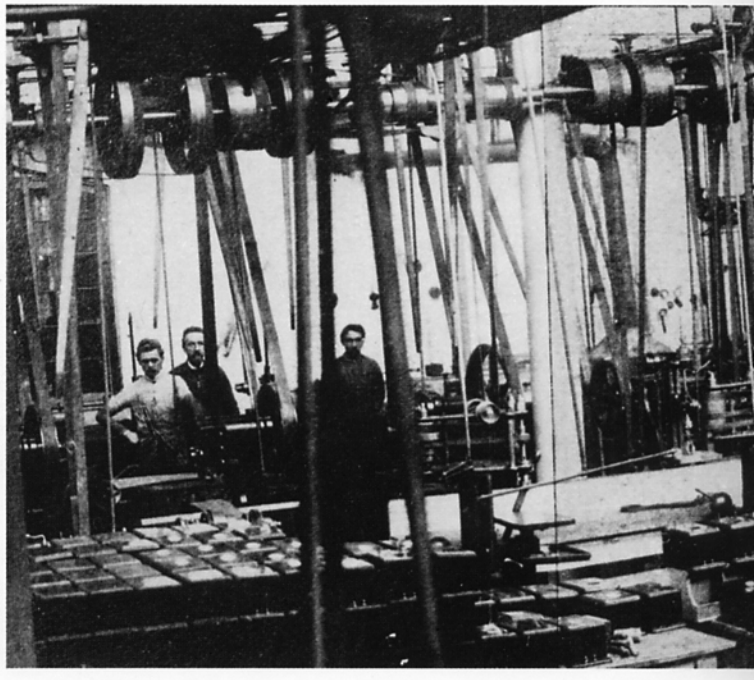


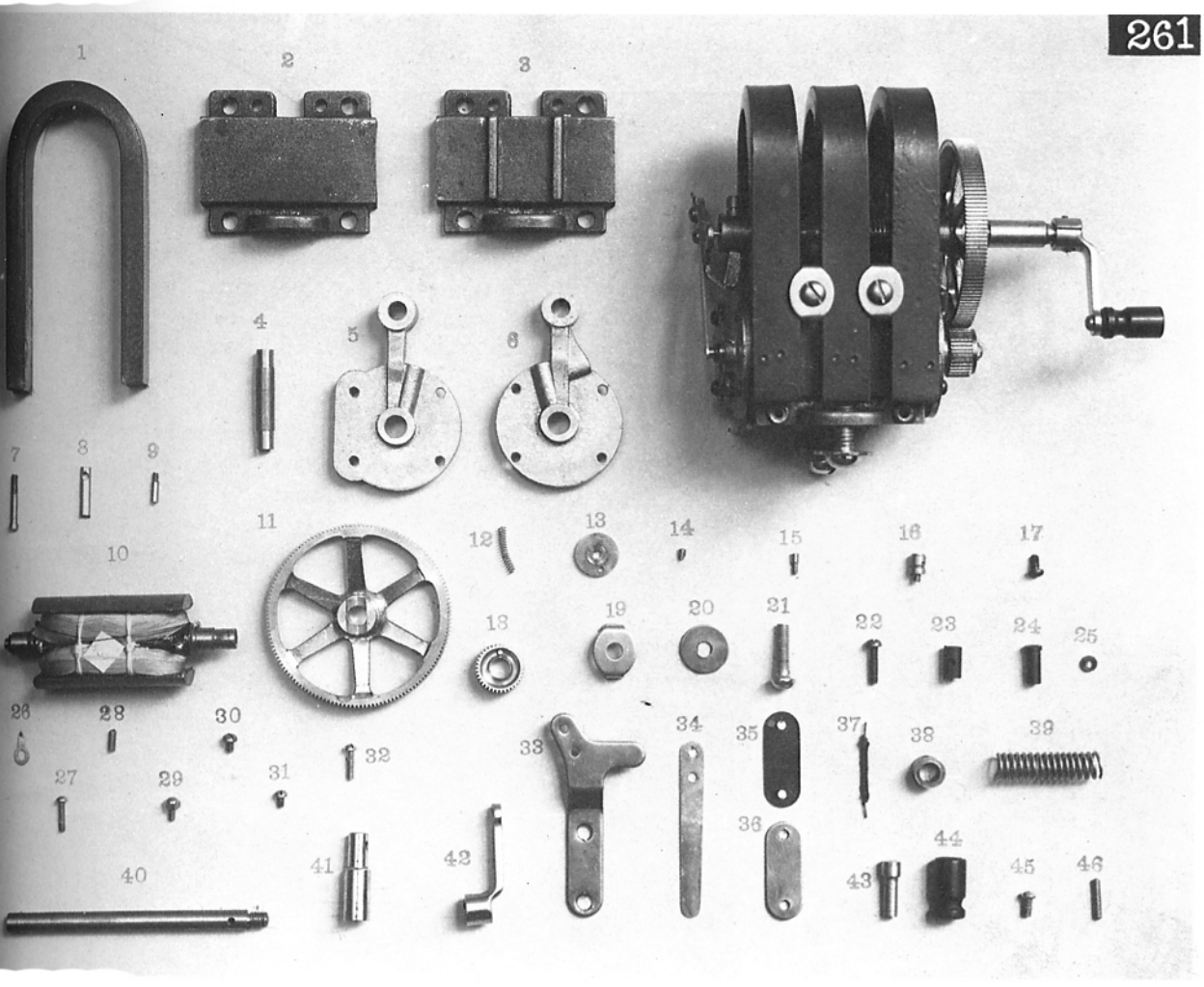
Extension of 1888.

The multiple system, a second generation manual telephone exchange, was a remarkable export success and led to further expansion. In September 1887, a plot of 1187 m² was acquired on the other side of Boudewijnsstraat. All future major expansion would be carried out on that side of the street where the main building now stands.

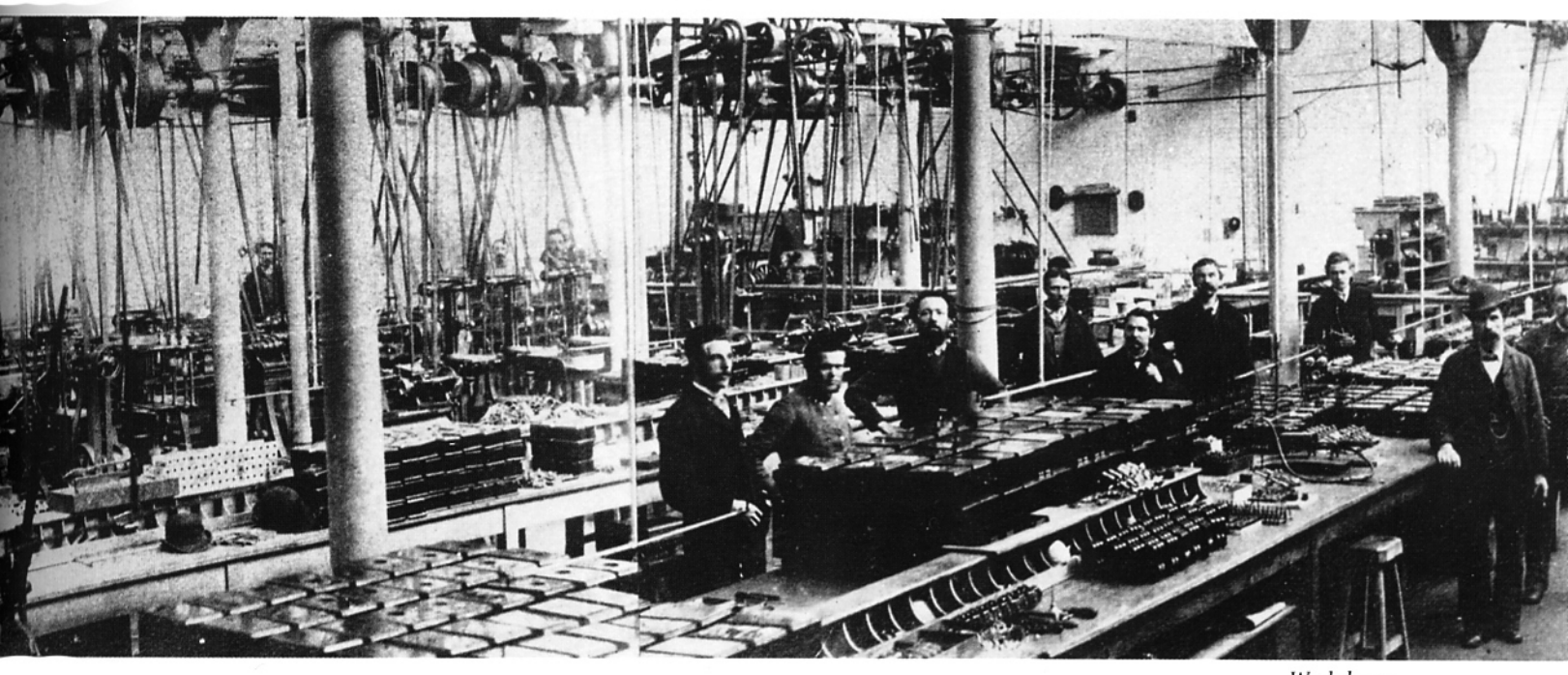
In 1888, two more floors were added to the original building, and in 1896 the firm acquired ground adjoining Solvijnsstraat. A four-floor building was erected at the corner of the Boudewijnsstraat and the Diercxsensstraat.

No efforts were spared to keep ahead of technical and organisatory developments. The first plant manager, **Duncan Dewar,** went on regular study trips to gather information about the progress made in the telecommunications industries abroad. Licences were purchased, new machines were built in the company's workshops and new talent was recruited. **John Balthazar Christoffel** and **Trophime Delville** widened the commercial and technical horizons.



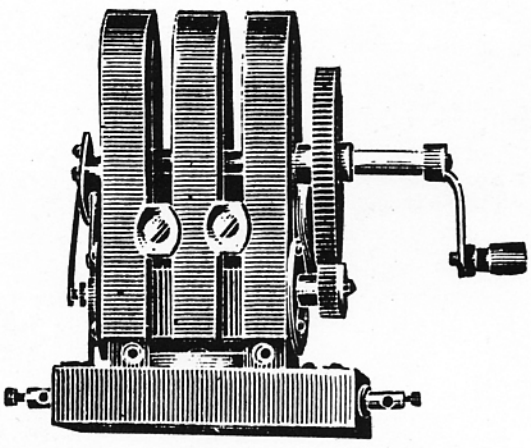


The Antwerp magneto.



Workshops.

Telephone set of 1882 with "Blake transmitter" and "Bell receiver".



Accession No. 5.114

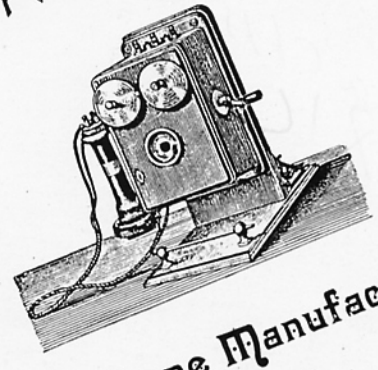
Catalogues of Western Electric Company, No. XII. Antwerp Telephone List.

ACCESSION No. 5,111 1 1

Telephonic Apparatus.

Appareils Téléphoniques.

Telephonische Apparate.



Bell Telephone Manufacturing Co.

ANTWERP.

Western Electric Co.

CHICAGO. NEW YORK. BOSTON.

59 Moorgate Street, LONDON, E. C.

Products... markets

The concessions obtained by the International Bell Telephone Company in various European countries ensured, right from the start, a promising export market.

The telephone sets initially manufactured by the company, were wall sets with magneto generator, equipped with "Blake transmitters" and "Bell receivers".

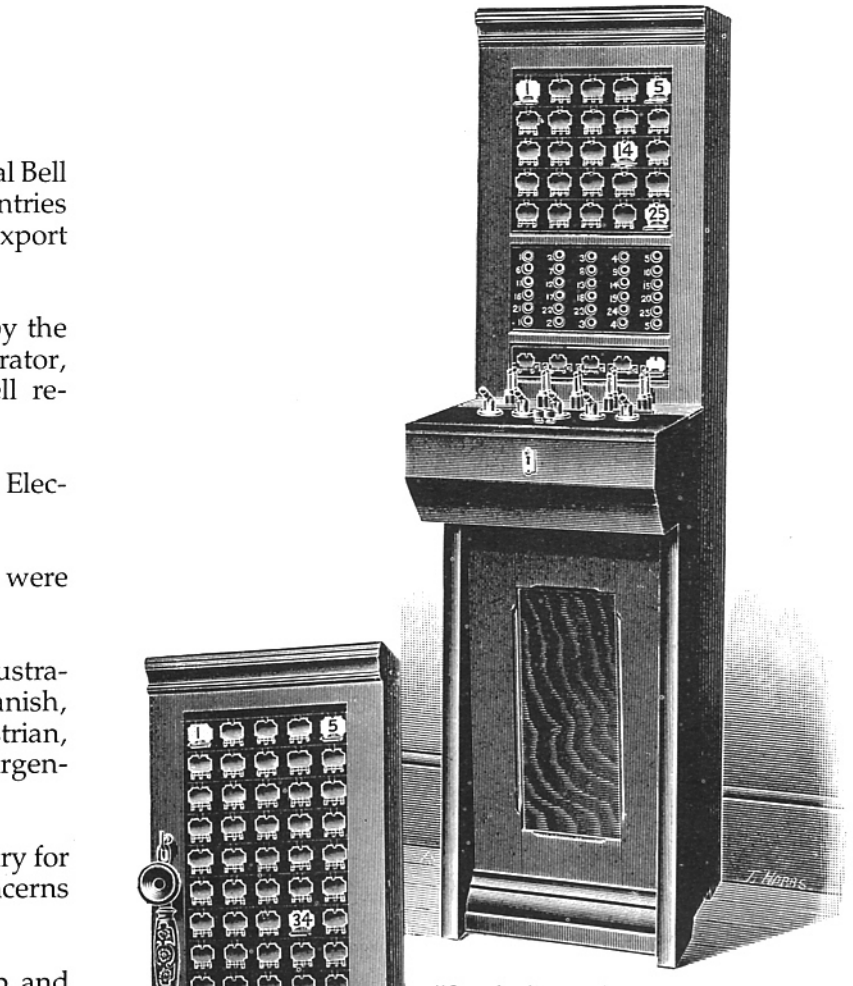
The first switchboards were of the Western Electric "Standard" type.

On the initiative of **Francis Welles,** agents were appointed in various countries.

BTM products were introduced on to the Australian, British, Swedish, German, Norwegian, Danish, Dutch, Italian, Greek, Hungarian, Russian, Austrian, Egyptian, Panamanian, Japanese, Chinese, Argentine and Swiss markets.

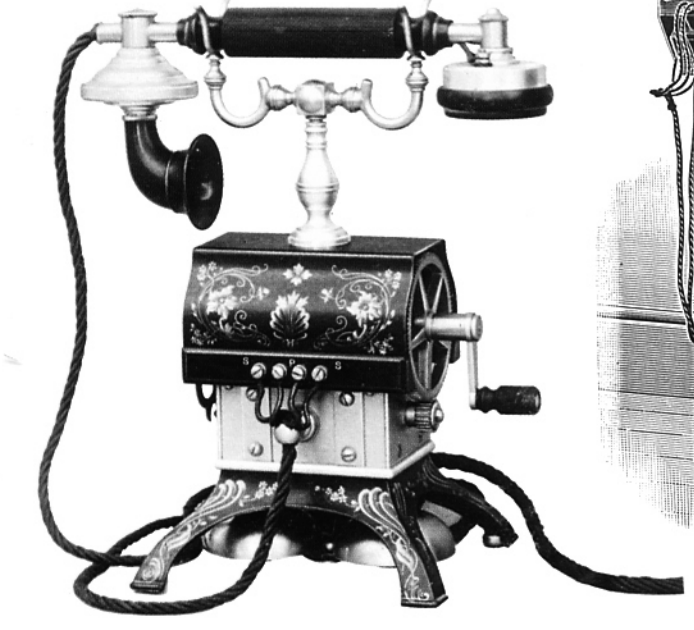
These international markets made it necessary for the firm to guarantee the utmost care as concerns quality, reliability and finish of the products.

In 1886, BTM was allocated the setting up and installing of the first local telephone network to be operated by the Belgian Government at Ostend. This exchange was equipped with **Standard switchboards.**



"Standard" switchboards.

Desk sets for local battery exchanges.



In 1884, a diversification of the production into **multiple switchboards** developed by **Leroy B. Firman** was considered. This new system made the connections in the exchange both quicker and more flexible, it also greatly simplified the operator's work. However, it was not until 1887 that the company started production of these switchboards in earnest. The multiple switchboards installed by BTM in 1886 in the Antwerp exchange of the "Société belge du téléphone Bell" as a replacement of the Gilliland switchboards were still partly of U.S. manufacture.

1893: The Belgian government repurchased the network concessions granted in 1883 and simultaneously took over various local networks. Discussions were held with the government regarding the extension of the telephone networks throughout the country and the standardisation of equipment in which BTM was to play an important part.

Around the turn of the century.

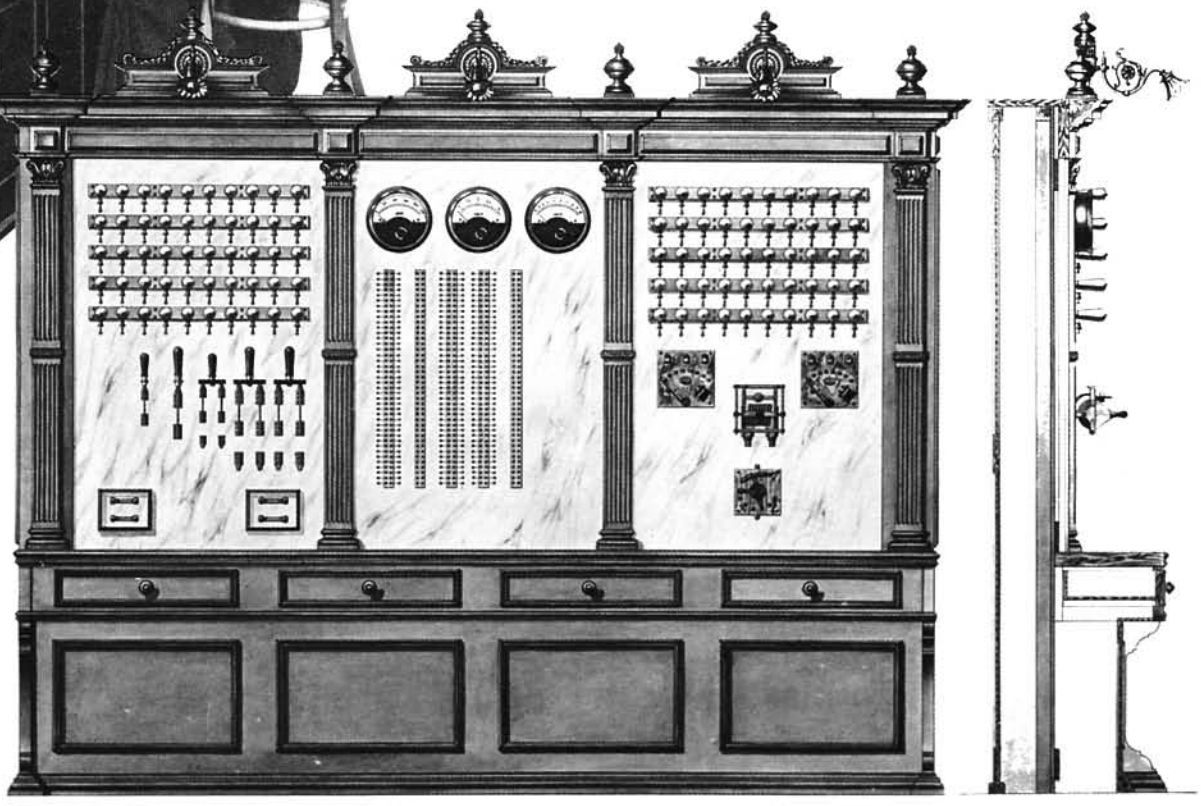
Before the turn of the century the necessary patents were obtained for the then revolutionary common battery system which heralded drastic changes in network operation and equipment.

In this system the batteries and magnetos, with which the telephone sets were equipped became superfluous. The microphone supply was derived from a common accumulation battery in the exchange. To call the exchange one just had to lift the handset: this simplified the construction of the telephone sets, reduced maintenance and made faster connections in the exchange possible.

In 1898 a first common battery exchange was installed for testing purposes on the company's premises.

Telephone set for common battery system.

PBX.



Power board.

Pioneers.

People...

The success of BTM would have been impossible without its employees: from the very beginning they shared in the commitment of their company to the new industry.

Men such as **Domien Ronsmans,** who in 1932 celebrated 50 years of service with BTM, bore witness to the excellent social relations within the firm:

"(...) the relationship between the bosses and the staff was one of real camaraderie expressed in various ways. The men had great fun in the yard competing in weight lifting performances. We had opened a savings account to finance trips and outings. Later on we had a regular collection for cases of sickness and hardship. This was the cornerstone for the health insurance fund within our factory".

This mutual insurance fund is still in existence in 1982, in the form of the standard insurance scheme.

Some facts drawn from the very first years of the company's existence such as employer contributions to a fund set up and managed by the employees, participation in hospital expenses, and the installation of dust removing equipment in the sawmill, clearly show that for that time, management was very progressive.

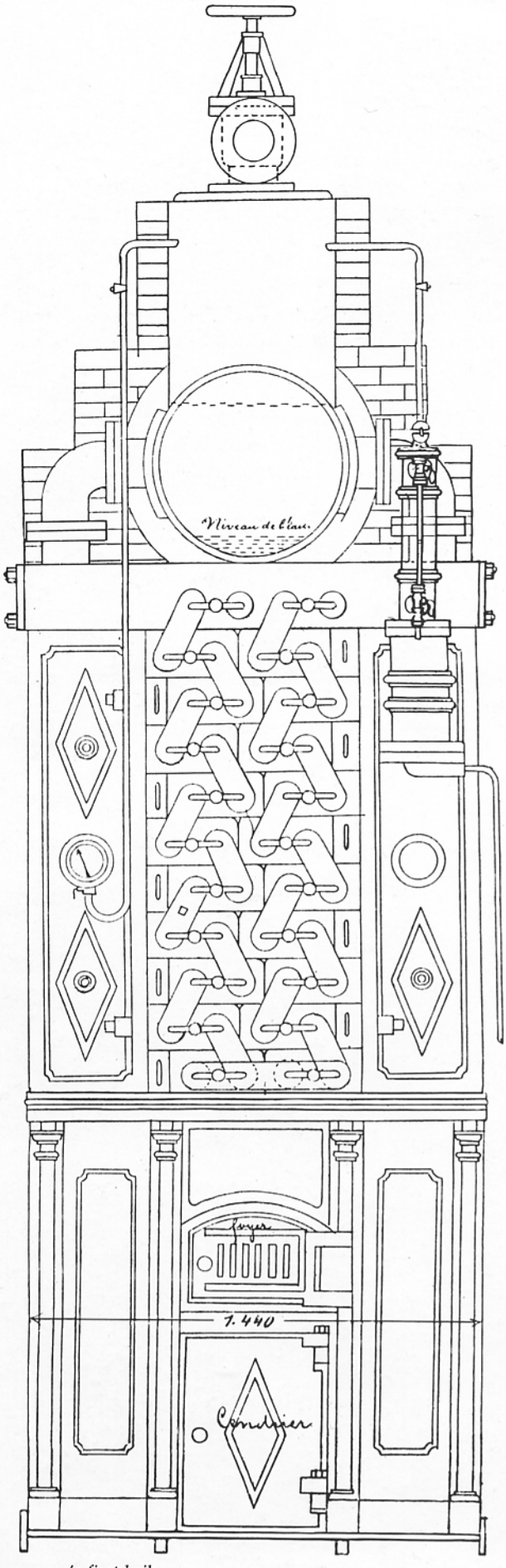
In 1891, long before the law on industrial accidents, Bell Telephone had set up an accident fund into which they paid annually one percent of the total wages.

The employees took pride in their work, most of them wanted to own their tools and bought them from the firm on weekly instalments.

The first workshop located above the sawmill in the Oude Steenweg was rented for 325 francs from **J. De Waele,** a local lumber merchant, who also supplied the necessary power.

A ladder at the side of the house leading to a window converted into a door was the only access. The hardening and tempering equipment for the tools and parts was located in the cellar below.

Mutual assistance in cases of sickness and hardship via "De Vereenigde Werklieden der Bell Telephone Manufacturing Company" founded in 1887.



The company's first boiler.

On August 26, 1882 **Francis Welles** and **J.C. De Groof** as managing directors submitted a request for a building licence which was granted on September 27, 1882. The customary enquiry had not given rise to major objections from the sparsely populated quarter.

However, a Mr. **C.L. De Leger** felt justified in:

"submitting a protest because such factories are very detrimental to the neighbourhood for the following reasons:
1° I have provided three adjoining houses with good drinking water but as the copper in the factory corrodes it presents the danger of seeping into the ground and polluting the source of the drinking water.
2° An engine capable of producing thirty horse power causes important vibrations and shocks, and produces a lot of dirt and soot, so that it would be impossible to bleach a good piece of linen without it being covered in black residue.
3° I am being disturbed enough as it is by the machine of Jakobus De Laat which was installed next to my house, and further by the tramway company employees who wash and grease their cars from crack of dawn until at least 8 or 9 a.m.

Mr. **H. Stoop** put forward similar objections and added:

"Not everyone is keen on the heavy thunder that so rapidly follows the lightning, and the more electric apparatus the more we will attract lightning and obviously the heavier the thunder will be".

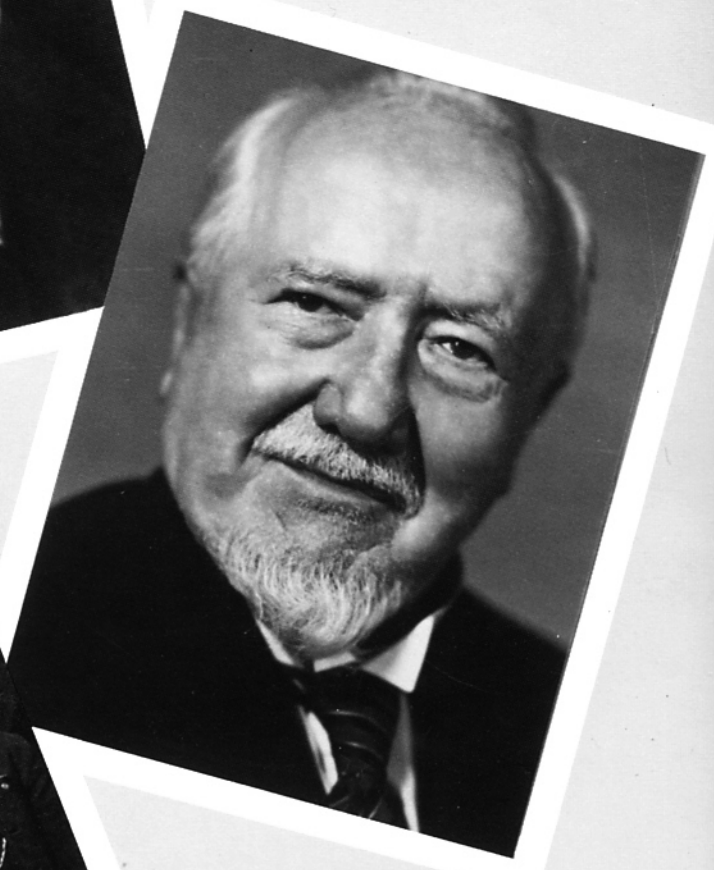
Throughout the years the employees developed their own jargon. For example the metal polishers were soon baptised "redskins" – due presumably to the red power used to give the metal its special gloss.

The urge for social activities among BTM employees soon became evident. In 1885 the so-called "Telephone Employees Club" was set up. The activities of this informal personnel club cannot be traced with certainty. However, before the turn of the century sports and cultural activities had been organised, so that we may readily accept that this forerunner to the "Royal Bell Telephone Personnel Club" had accomplished pioneering work in the field of company sports.

Woodworkers.

The "Téléphonisten Club" of 1885, pioneers in company club activities.

John Balthazar Christoffel.



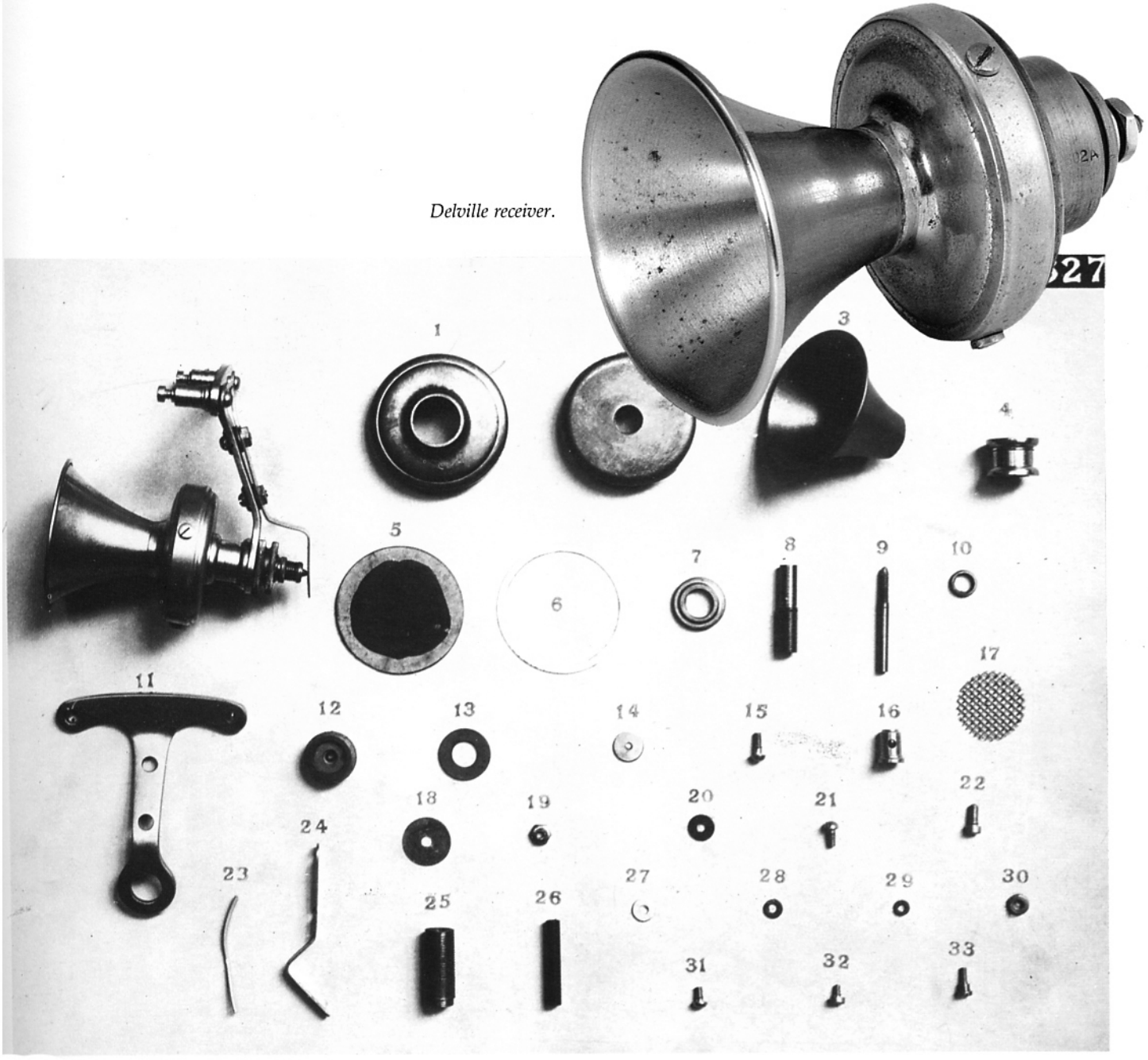
Trophime Delville.

Caretaker Hippoliet Van de Wege(r) in state.

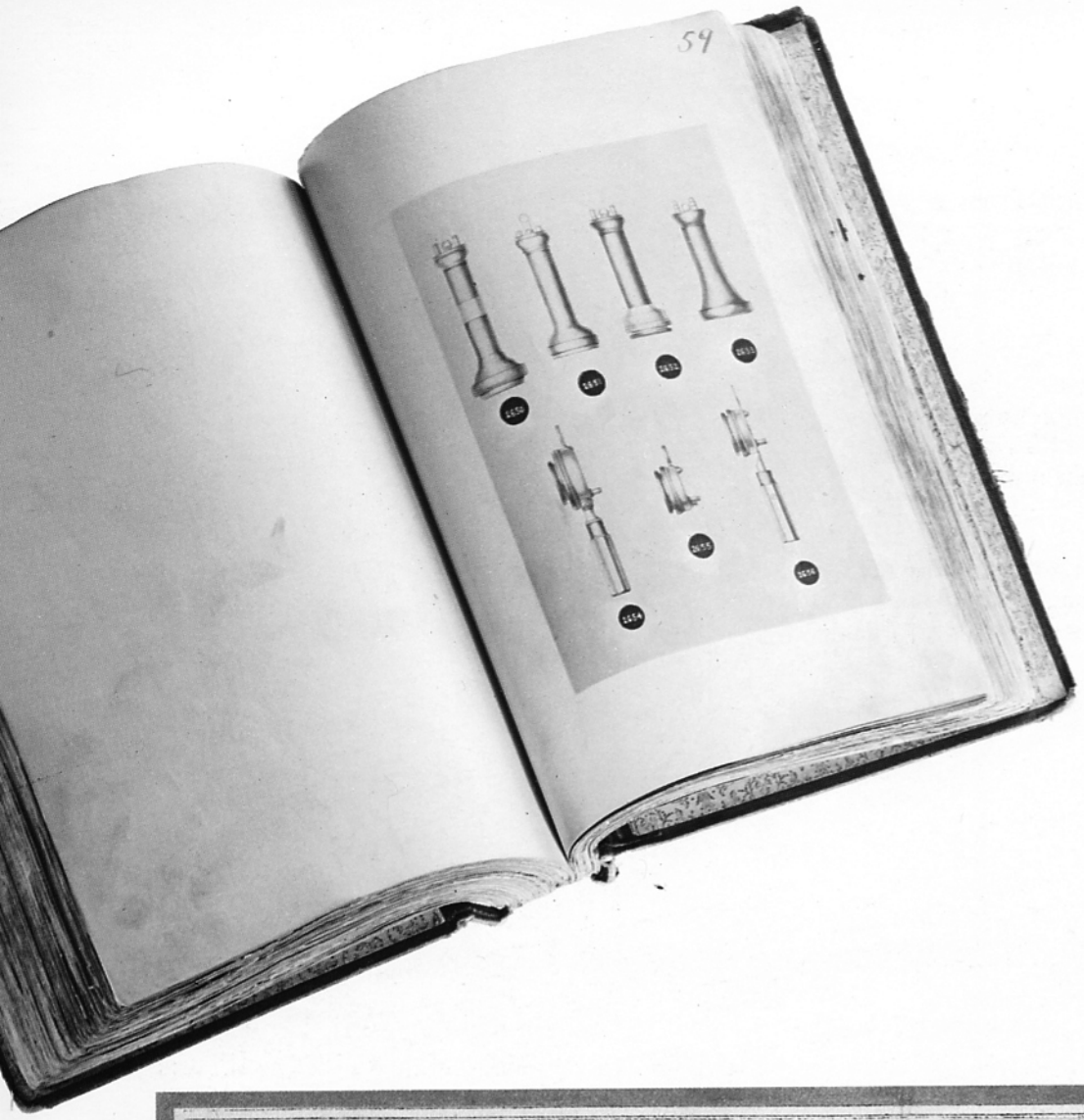
John Balthazar Christoffel, a born salesman, who had joined the company at the beginning (1891) opened many new markets in his capacity as Commercial Manager. Notably: India, South America, China...

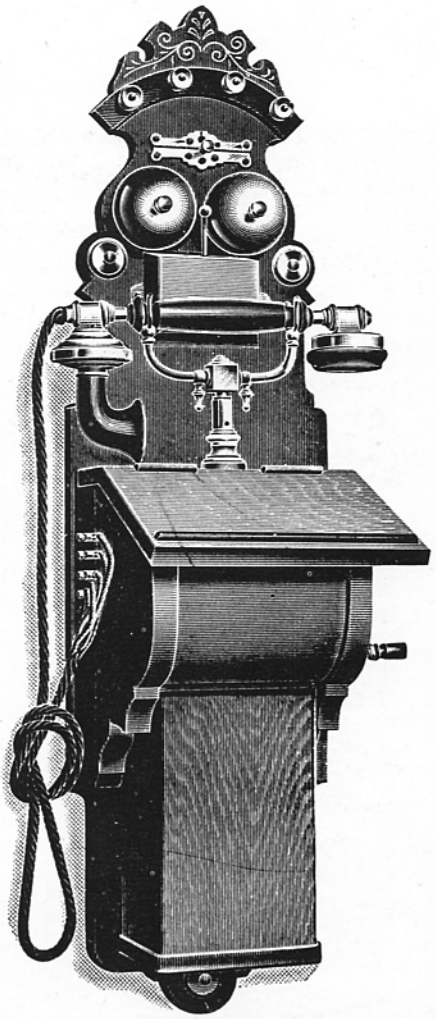
Trophime Delville, engineer-director, had made his mark with the Telegraph Administration before joining BTM. In 1894, he developed a new type of microphone, which was named after him and which was sold throughout the world in tens of thousands.

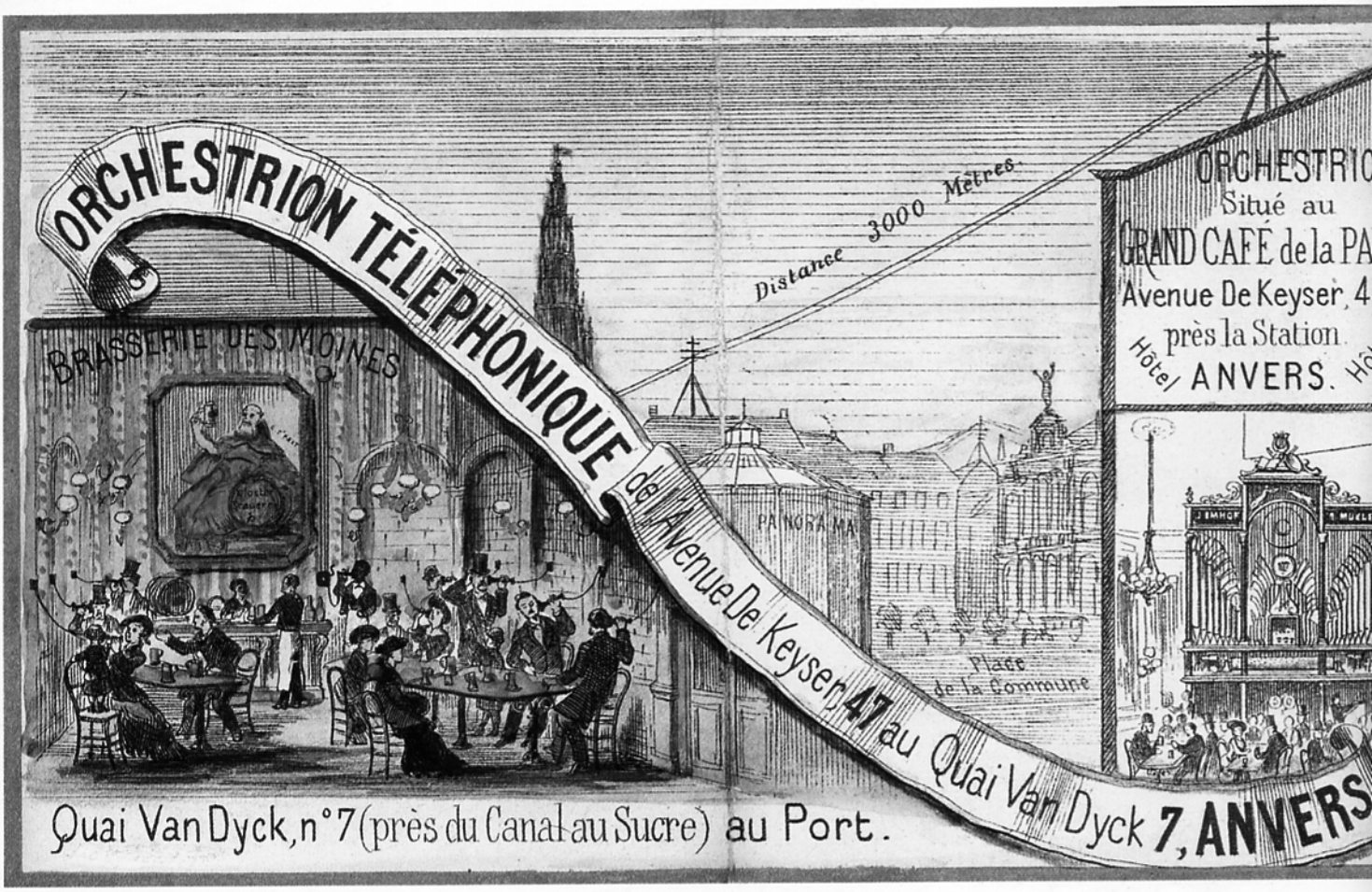
Hippoliet Van de Wege, a porter who joined BTM in 1896, was highly respected – he paid out the wages and recruited new workers in consultation with the foremen.



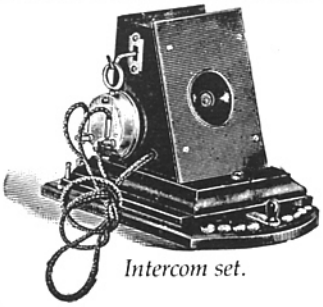
Delville receiver.



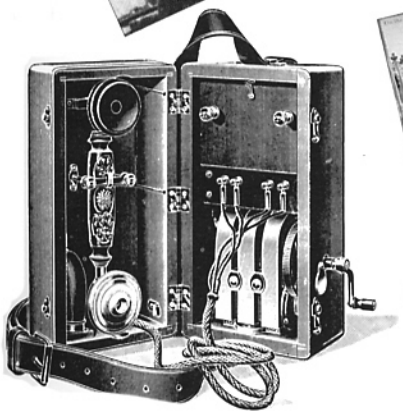



ORCHESTRION TÉLÉPHONIQUE de l'Avenue De Keyser 47 au Quai Van Dyck 7, ANVERS
BRASSERIE DES MOINES
Distance 3000 Mètres
ORCHESTRIO
Situé au
GRAND CAFÉ de la PA
Avenue De Keyser, 4
près la Station
Hôtel ANVERS.
PANORAMA
Place de la Commune
Quai Van Dyck, n° 7 (près du Canal au Sucre) au Port.

Celebrating 50 years mutual fund in 1937; three of the founders.



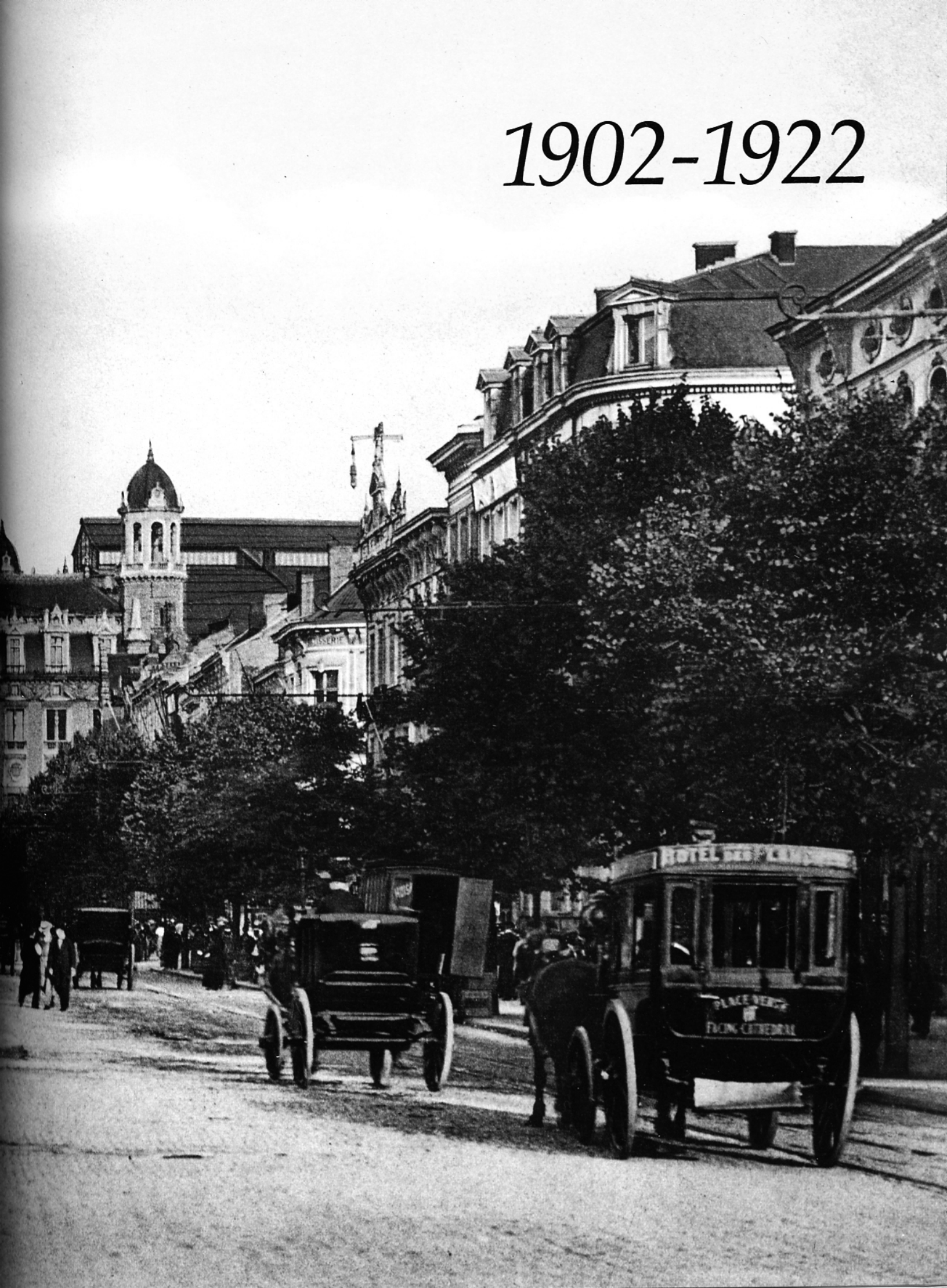
Intercom set.

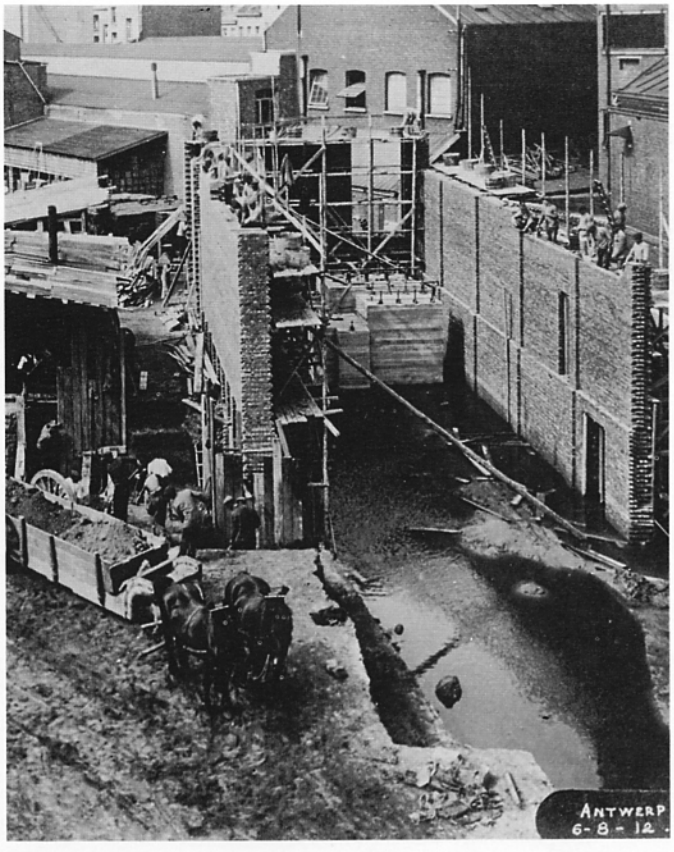


Mobile telephone set.


3
288

1902-1922





Extension of 1912.

Switchboard assembly.

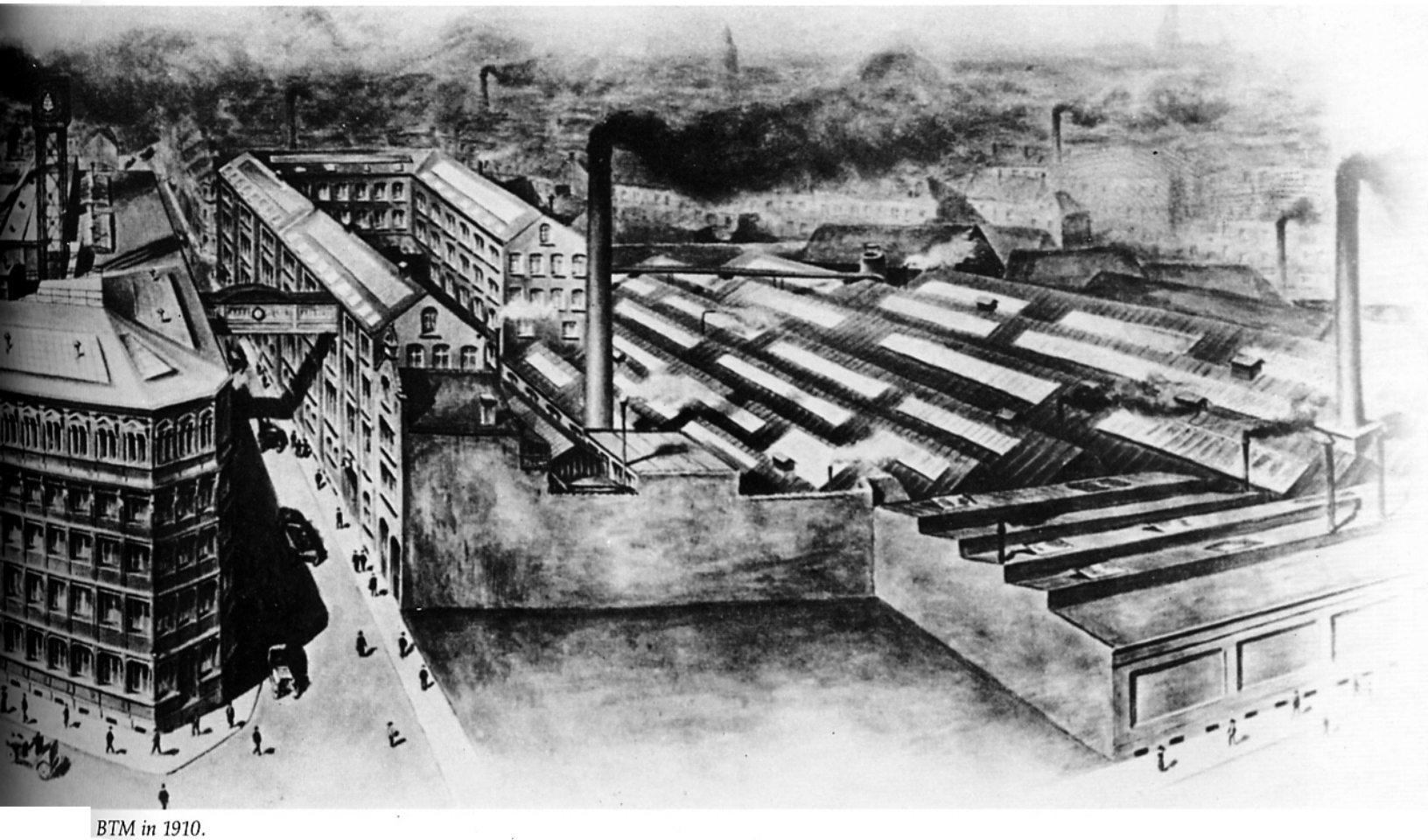
Buildings... production

The success of the common battery system was mirrored in the size of the labour force which increased from around 700 at the turn of the century to 1800 by 1907. In that year, the company's capital was increased from 1 to 5 million Belgian francs.

To expand the production departments, the wood stores of the main factory were moved to premises at Kiel, on the outskirts of the city in 1908.

The two buildings of the main factory in Boudewijnsstraat were interconnected by means of a bridge in 1909. This bridge was pulled down in 1977 when the old building had to make room for the present visitors' car park. (The bridge which now interconnects the buildings on either side of the street is much more recent).

In June 1911, grounds in Diercxsensstraat were purchased to extend the workshops. These were to house a new activity in which great hopes were placed – the automatic telephone exchange.



BTM in 1910.

The outbreak of the first world war forced Bell Telephone to close down on October 9, 1914, but before Antwerp was occupied a great number of drawings, tools and machines were shipped via Holland (where BTM had a subsidiary since 1911) to associated companies in England and the United States. An emergency inventory was made of the machines and equipment left behind. Important documents were packed with precious metals in zinc crates and buried under the floor of the old building. These crates also contained the matrixes for the silver coins which Bell Telephone was to mint for the Belgian Government.

During the last months of the war, part of the factory was converted into a "Nachrichtenwerkstatt" by the occupier and the offices were used as dormitories for soldiers and officers. The factory was looted and the equipment wrecked. The first fifty employees, returning to work on November 14, 1918 to clear up the mess, met with apocalyptic scenes.

The chaotic state of the workshops in 1918 gave little hope that the twenties would become a golden decade.

It was not before 1920 that BTM became fully operational again and the personnel increased to 1500. The biggest steam turbine had to be recovered from a wood alcohol factory far beyond Warsaw and some hundred machines were never traced. The damage to some of the recovered machines was such that repairs could not even be considered.

The chaos of 1918.

The chaos of 1918.

Aktenzeichen: GB.VI.1399.

Ausfertigung.

IM NAMEN DES REICHS

Der V. Senat der Reichsentschädigungskommission in Berlin hat unter Mitwirkung

1. des Justizrats Axster als Vorsitzenden,
2. des Amtsrichters Dr. Welsch
3. des Professors Dr. Darmstädter } als Beisitzer

am 13. Februar 1918 beschlossen:

1. Es wird festgestellt, daß folgende Güter im Namen des Deutschen Reiches beschlagnahmt worden sind:

Laut Beschlagnahmeurkunde der Holzabgabestelle Antwerpen vom 7. August 1916 (Nr. 28963) am 26. - 31. Juli 1916 bei der Firma Bell Telephone Manufacturing in Antwerpen 20523 amerikanische Nußbaumbretter I. Klasse 95 % 10 Zoll und darüber breit.

2. Es wird festgestellt, daß die Firma Bell Telephone Manufacturing Co. in Antwerpen zur Zeit der Beschlagnahme Eigentümerin der Güter gewesen ist.

3. Der Wert dieser Güter wird auf M 81610.10 (in Buchstaben: Einundachtzigtausendsechshundertzehn Mark und 10 ₰) festgestellt.

4. Der Antragstellerin ist durch Beschluß vom 28. September 1916 eine Teilentschädigung von 40 000.— M gewährt worden.

Die Gewährung einer weiteren Entschädigung bleibt

An
die Firma
Bell Telephone
Manufacturing Co.,
Antwerpen.
Rue Boudewyns 18.

Seizure of raw material.

Re-equipment of the workshops.
Some 100 machines were never traced.

Products... markets

On the Continent, Belgium had a European first with its common battery system. The first exchange of this type was cut over in Brussels on November 1, 1902.

The common battery system furnished sufficient proof of the quality and reliability of BTM products. Like the common battery trunk exchange put into operation during the night of May 23, 1908 in Berne which was only replaced by a semi-automatic exchange in July 1937.

An important sales argument was that the common battery system could be used for exchanges with only a few hundred subscribers as well as for exchanges with thousands of subscribers. For public telephony, the transition from a local to a common battery system became economically viable above 450 subscribers.

For towns and cities which were not expected to exceed the 3000 subscribers limit during the first fifteen to twenty years, an exchange of the 2010 type

First common battery exchange on the European continent.

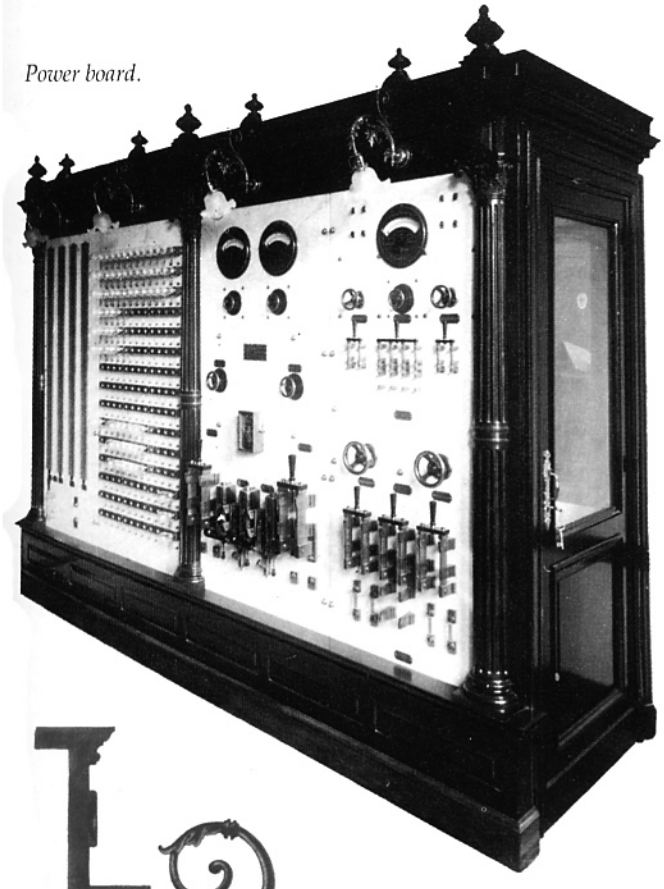
was adequate. This was a simplified version of the original 2001 exchange, intended for up to 10.000 subscribers.

A great number of 2010 exchanges was installed before the first world war e.g. Brescia (600 lines), San Sebastian (1400), La Chaux de Fonds (1500), Winterthur (2400), Soleure (900), Lugano (900), Neuchâtel (1200), Luzern (2400), Pamplona (360), Vevey (900), Schaffhausen (1200), Maastricht (1200), Barcelona (740 and 600), Valencia (2600), and Tönsberg (600).

In private telephony, the common battery system was to complement the local battery system for installations exceeding 50 internal lines.

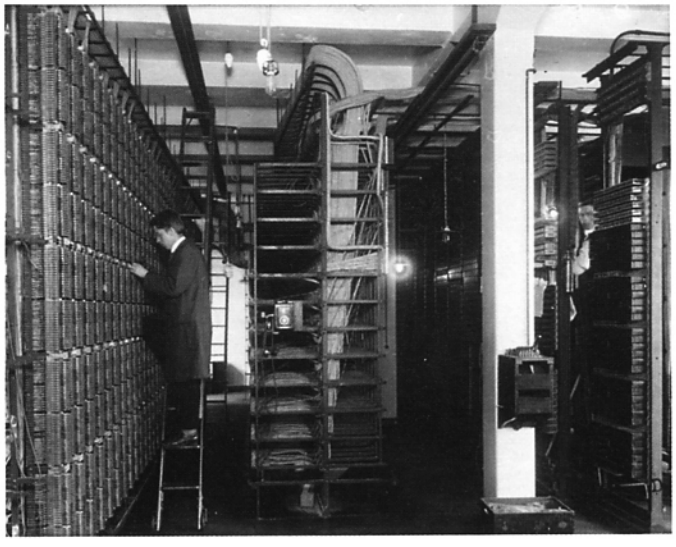
Desk set common battery system.

Power board.



Detail of lightning manual exchange operator position.

The trend towards automatic telephony was growing. Automatic telephone exchanges were not really new; the first automatic exchange developed by the undertaker **Strowger** had already been put into operation on November 3, 1892 in La Porte, Indiana, in the United States.



Rotary exchange at Christiana, Norway.

In Europe, the first automatic exchange had been cut over in 1908 in Hildesheim (Germany). It had been manufactured in Karlsruhe by the "Ludwig Loewe & Cie, Aktiengesellschaft und Deutsche Waffen- und Munitionfabriken" consortium which had obtained the Strowger patents.

Until 1910, no automatic system other than the Strowger system, except the Lorimer system, had been successfully introduced in Europe. Some trial exchanges of the Lorimer system had been set up in Lyon, Paris and Rome. It was only in England, however, that the system was used on a small scale.

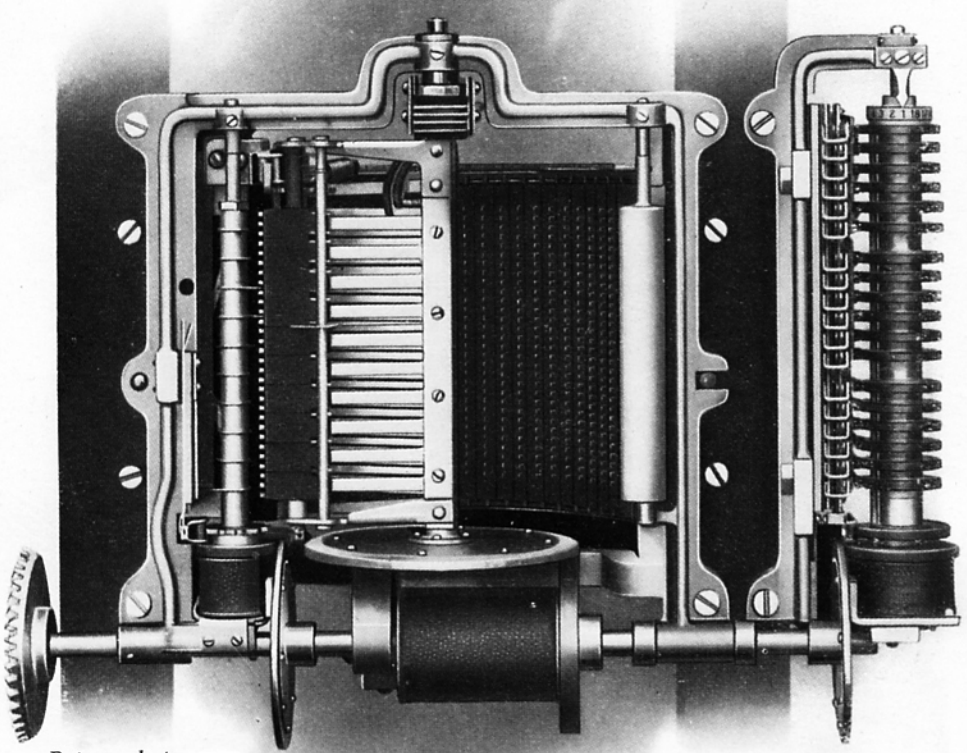
The rather negative attitude adopted towards automatic telephony is remarkable in view of the fact that between 1891 and 1900 no fewer than 57 patents for automatic systems were granted in the United States alone. A change occurred in 1910, however, during the second meeting of the "Bureau international de l'Union télégraphique" held in Paris. The 100 delegates from 21 countries came to the conclusion that automatic systems now offered sufficient mechanical and electrical reliability to meet all the operating requirements and that the acceptance depended only on economics.

For the manufacturers this was a clear encouragement to extend their product range with automatic telephone systems.

Thanks to its relations with Western Electric, Bell Telephone had access to the Rotary system, the development of which was started in 1906 under **Frank Mc Berty.**

In 1911, BTM was even entrusted with the final development of the Rotary system, a challenge which was met with great success.

Orders from England, Switzerland, France, Sweden, Norway and New Zealand hastened the start of production. Semi-automatic exchanges were already installed by 1912 and 1913 in Landskrona (Sweden) and Angers (France). The first fully automatic exchange with a capacity of 2800 lines was put into operation in Darlington (England) on October 10, 1914, the day after BTM's enforced four-year doze began.



Rotary selector.

Many employees who were neither enlisted nor made prisoners of war, found refuge in England, France, the U.S., Norway, the Netherlands and Switzerland where they contributed to the further development and production as well as to the installation of Rotary exchanges. In spite of the war, automatic exchanges were cut over in Dudley (England), Marseille (France), Bergen (Norway), Zürich-Hottingen (Switzerland) and The Hague (The Netherlands).

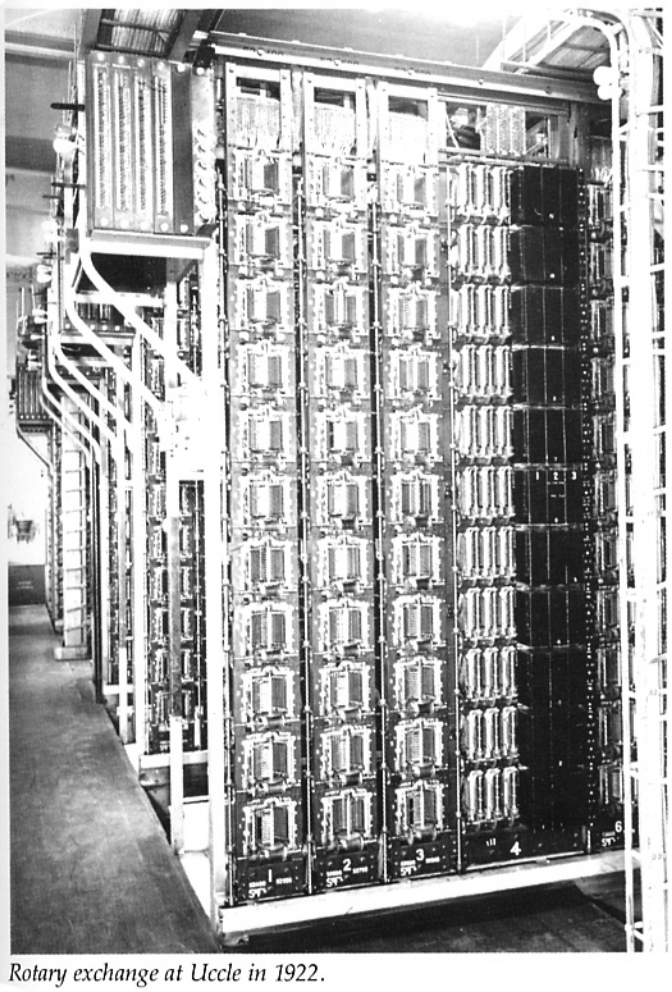
Because of the war a number of orders were cancelled, including that of the German telephone administration for the installation of a Rotary exchange in Berlin-Zehlendorf.

Not only did armistice introduce a new economic situation, it also heralded a striking change in the views of telephone administrations, who now clearly opted for automatic telephony. Large exchanges were no longer to be equipped for manual operation.

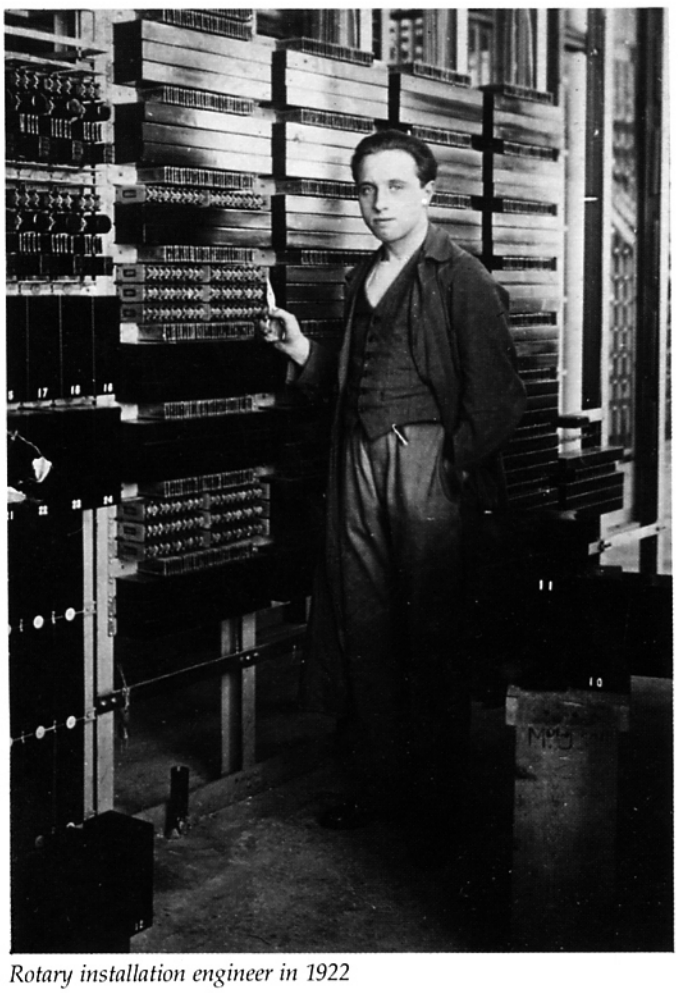
In Belgium too, Rotary was selected and the first automatic exchange was put into operation in Uccle in 1922.

Shortly after the war telephony found an extensive application in railway management where telegraphy was gradually suppressed. In Belgium alone, BTM equipped over 500 km of railway line with train dispatching equipment between October 1921 and September 1922.

Prototype subscriber set for automatic exchanges.



Rotary exchange at Uccle in 1922.



Rotary installation engineer in 1922

BTM gymnasts and wrestlers.

Cycling section in 1912.

BTM football club anno 1912.

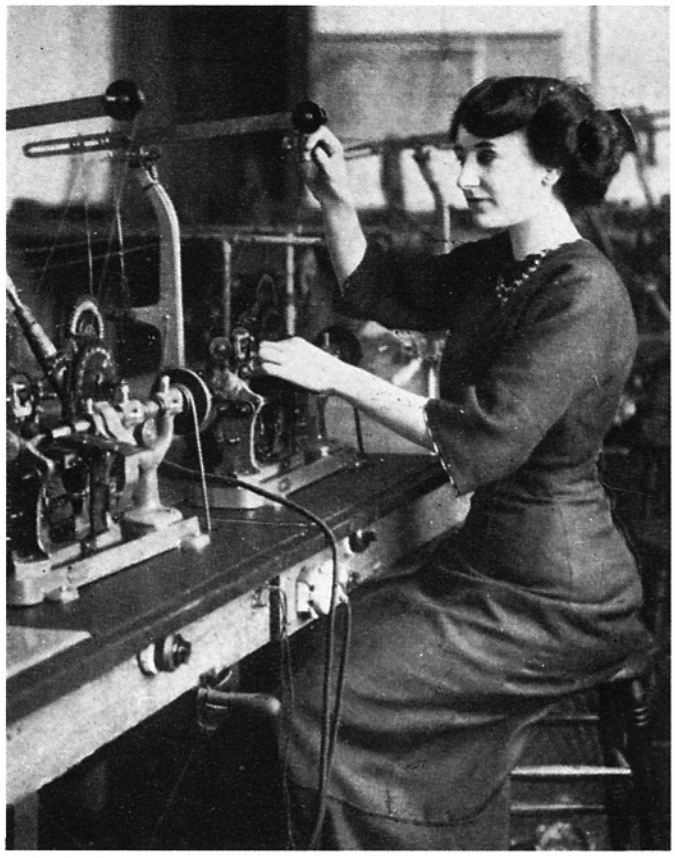
People...

The first BTM initiatives in the field of vocational training were taken in the period 1909-1910 when the then "Master mechanic" gave evening classes to a limited number of colleagues.

Although the seeds of the present Royal Bell Telephone Personnel Club were sown in 1885, with the creation of the "Telephone Employees Club", one would have to wait until 1912 for a really structured club. Upon the initiative of Messrs. **Stoll,** plant manager, and **L. Van Dyck,** head of the cost price department, the "Bell Telephone Athletic and Social Club" was officially founded. Its management was selected by the members. A number of subsidiary sections were set up for cycling, gymnastics, soccer, athletics, drama and music. The "Bell Telephone Cycling Section" organised tourist trips as well as real races.

Neither **Francis Welles,** BTM's founder, nór **Arthur Van den Nest,** the company's first chairman, were to see the difficult war years. In March 1913, **Welles** retired, and **Van den Nest** died in October 1913 to be succeeded by **Alexis Mols.**

At the beginning of the first world war Bell Telephone closed its gates and sent its 2400 employees home with some exceptions like e.g. caretaker **Hippoliet Van de Wege.** Many of the employees who were not mobilised went abroad where they continued their activities with associated companies. In this way, the Rotary system could be developed and supplied.



Coil winding.

Club and identification badges.

The team spirit that characterised the personnel is reflected in the editorial written by **C. Bresseleers** in March 1916, in a "Bulletin de Guerre" published by BTM employees in Paris.

Dear Colleagues and Friends,

"In order to maintain the camaraderie which until now has always existed among the personnel of Bell Telephone Mfg Co Antwerp, we thought you would like to have a list of those names and addresses of our friends, which we have been able to gather. As you can see the greater part has been mobilised and is at present fighting for right and freedom. Let us be proud of them(...)
(...) Enclosed you will also find the names of those who were able to escape enemy usurpation, and whose addresses we have. All indications that will allow us to correct and complete the list are welcome".

A total of four editions of the "Bulletin de Guerre" was published. They were the forerunners to the later company newspaper which was the first to be published in Belgium in March 1920 under the title "Arbeid en Vermaak" (Work and Leisure).

The Royal Bell Telephone Personnel Club played an important part in the foundation in April 1920 of the first regional company sports federation, the "Ligue Sportive du Commerce d'Anvers", which later became the "Koninklijk Sportverbond Antwerpens Handel" (KSAH).

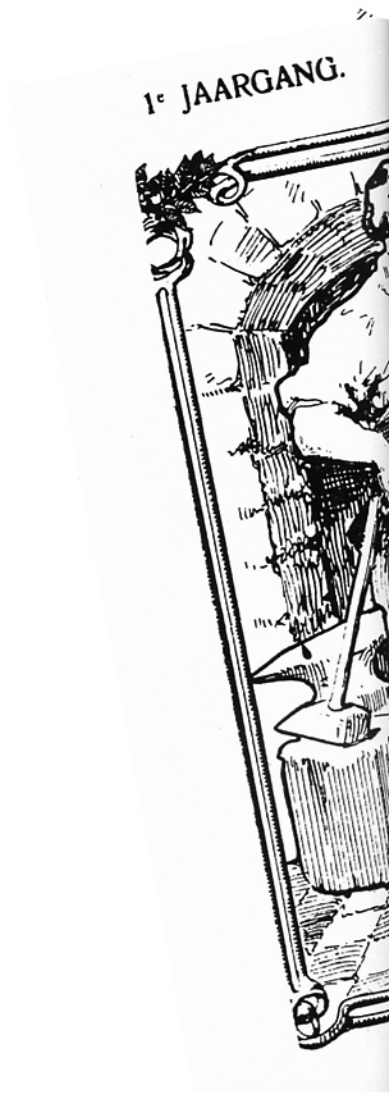
BTM's personnel club still plays a prominent role in the KSAH.

At the meeting of the Board of Directors of September 14, 1922, chairman **Mols** put forward a motion to give employees with 25 years seniority eight days paid holidays – a motion which was accepted unanimously.

The company newspaper regularly encouraged employees to take part in the sports activities. One such call for membership of the Korfball club in September 1922 was formulated as follows:

"Do you realise how beneficial fresh air sports can be to your health? All of you who spend the greater part of the day in the work-shops or offices, glued to your benches, should grasp the opportunity of filling your chests with fresh air".

Jubilee celebration in 1914.



BTM's company newspaper and its forerunner.

N° 1

Bell Telephone Manufacturing Co

18, Rue Boudewyns, 18
ANVERS (Belgique)

MARS 1916

BULLETIN DE GUERRE

Beste Collegas en Vrienden,

Met het doel de gevoelens van solidariteit te onderhou-
, dewelke tot hiertoe altyd bestaan hebben onder he
oneel der Bell Telephone van Antwerpen, hebb
ht u aangenaam te zyn, met u een lyst
de namen en adressen van onze
toe hebben kunnen byeen
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Nr 1.

1 MAART 1920.

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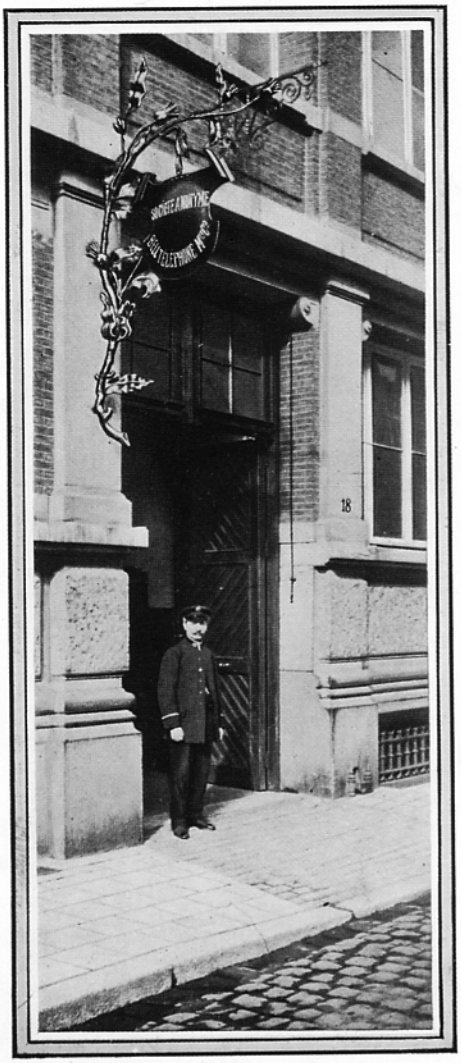
CHTIG GEKOSTUMEERD GALA-BAL

OP ZATERDAG 6 MAART 1920,

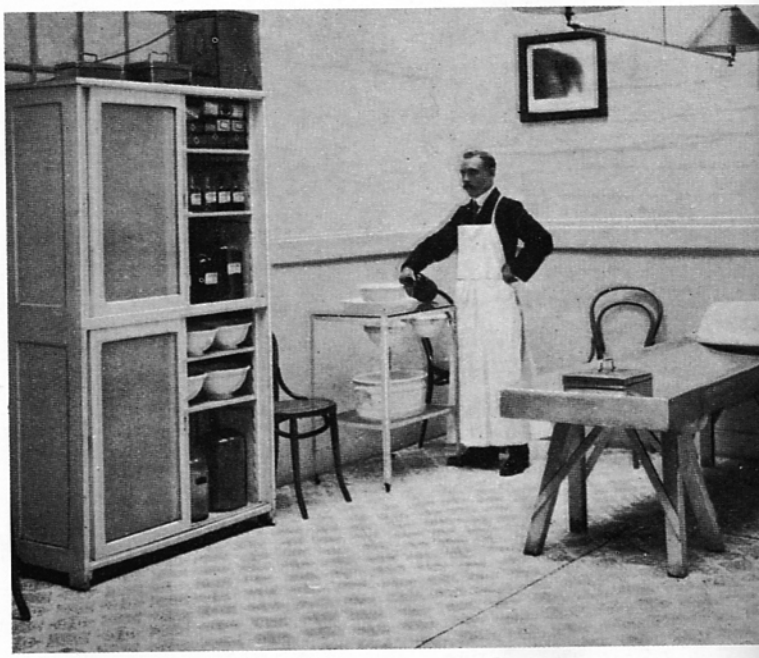
Begin om 6 uur

St-Jacobsmarkt.

RSONEN



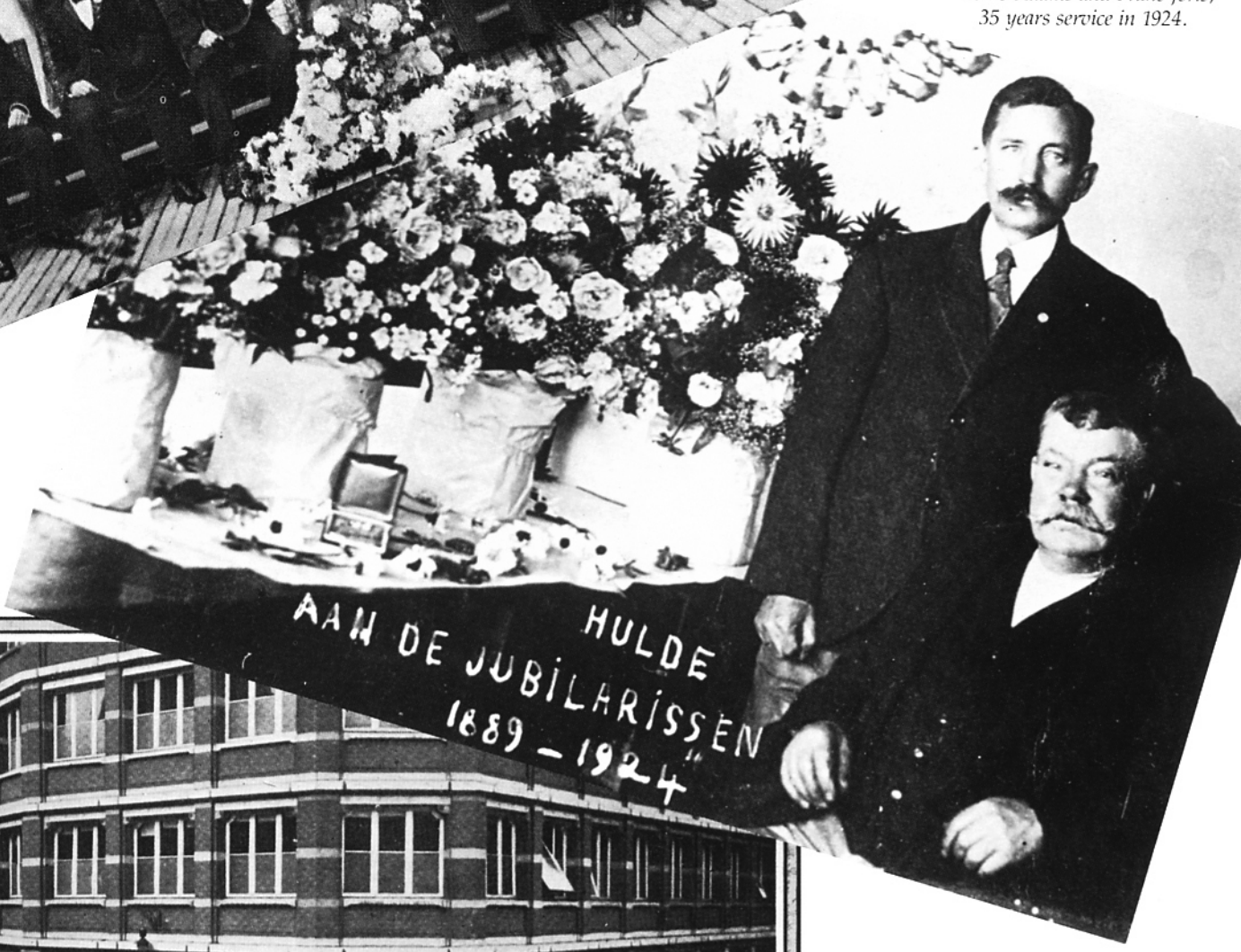
Medical service.



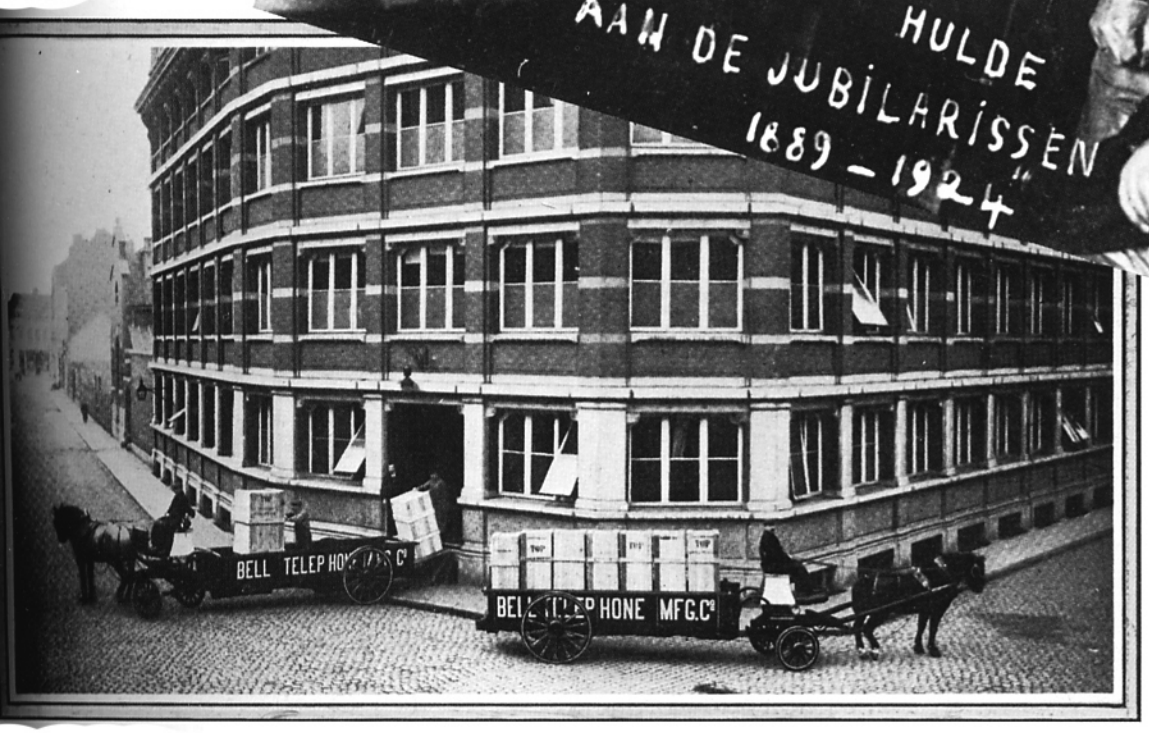
Personnel festival in 1920.

Rotary.

Jubilee celebration.

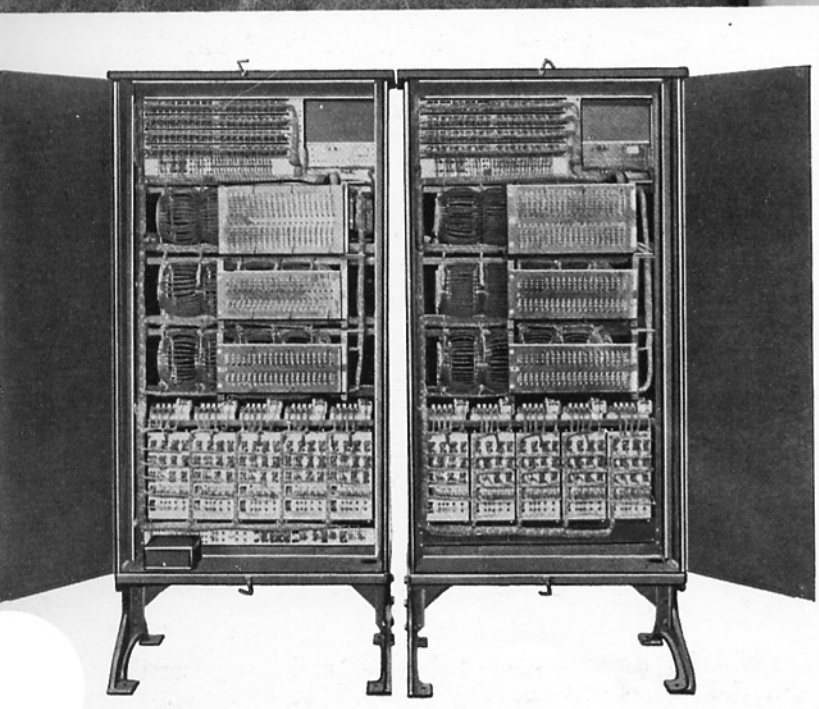


Louis Adams and Frans Joris, 35 years service in 1924.



1922-1942

Wall telephone set for automatic exchanges.



A 70 line PABX.

HOUSE TELEPHONE DIRECTORY

TABLE OF CONTENTS

CITY LINES

TELEPHONE Nº	LOCATION
778.00 (10 lines)	Offices and Factory, rue Boudewyns, 18
730.86	Show-room, rue Boudewyns, 2
776.28	Garage, rue St. Laurent, 107
734.33	Factory, Hoboken
781.99	Sportground, Hoboken

Company phone directory.

Products... markets

In the twenties, BTM booked a flow of orders for Rotary exchanges from Belgium, Switzerland, the Netherlands, Norway, Hungary, France, Denmark, Spain, Rumania, China, Egypt, Brazil, Italy and New Zealand.

In France, for example, the French PTT issued a call for bids in October 1925 for the introduction of automatic telephony to Paris. Of the five initial candidate manufacturers only two were short-listed. Finally, in October 1926, the Rotary system was chosen. One of the determining factors was the conviction with which the Rotary system was demonstrated by **Albert Damoiseaux,** who had contributed to the development of the system at BTM since 1913.

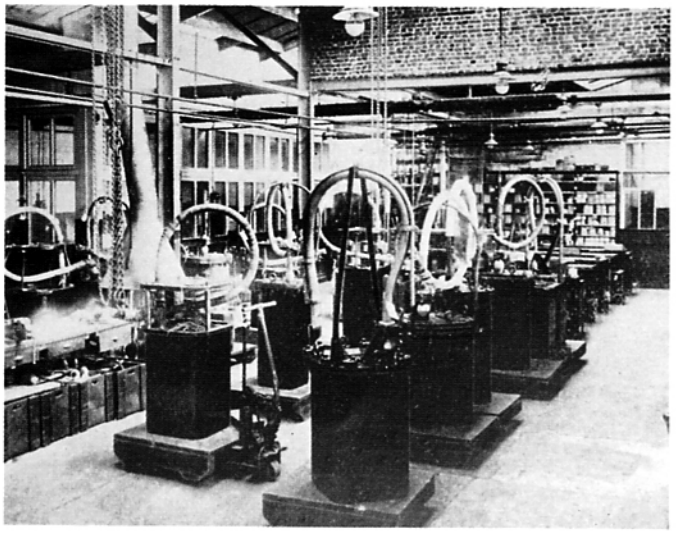
The many French PTT technicians who watched his demonstrations in the Avenue de Breteuil in Paris were so enthusiastic about Rotary that they defended it in a report issued by the "Commission Centrale des Mécaniciens des PTT" and offered to the members of the special Commission of enquiry.

Engineers and technicians of many countries contributed to the development and installation of the first Paris exchange which was baptised Carnot. Most of them were trained by **Damoiseaux.** In September 1928, the first 6000 Rotary lines in Paris were put into operation; quite a performance, and for which many workers put in over 80 hours a week.

The Carnot exchange had an expected lifetime of 25 years; it remained operational for 40.

In rented workshops in the Museumstraat, a new field was entered with the production of transmission equipment in which loading coils and repeaters initially represented the major part. On April 30, 1926, the first loading coil pot was manufactured for the Brussels-De Panne cable.

In September 1925, the European Western Electric Companies, like Bell Telephone Mfg Co, were associated to the International Telephone and Telegraph Corporation set up in 1920. In the scope of this association, BTM was allocated a major part in the modernisation and extension of the Spanish telephone network.



Production loading-coils.

In the twenties and thirties automatic telephony developed continuously and with increasing success; nor was it limited to public telephony.

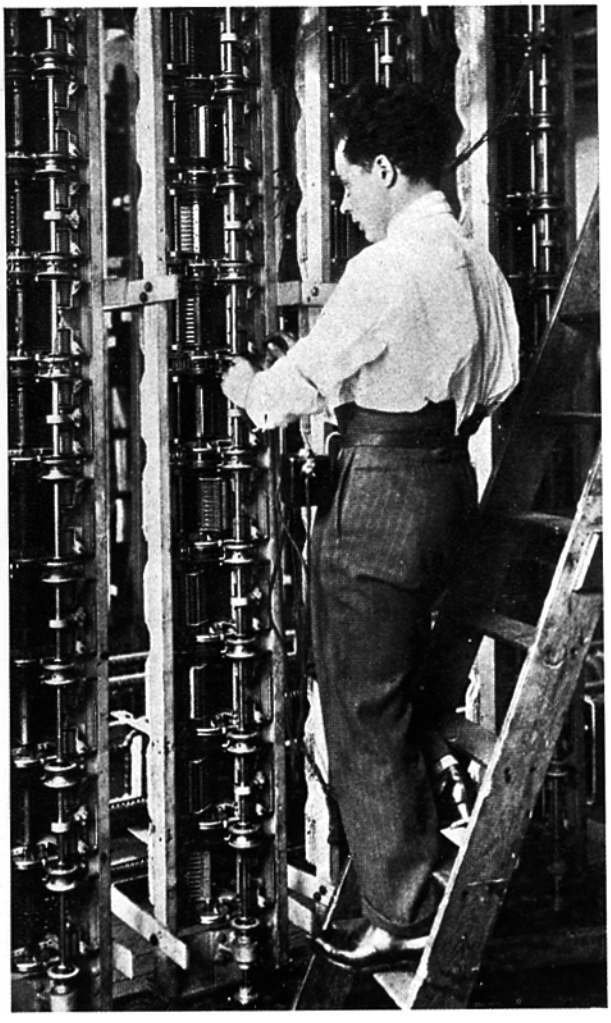
In private telephony there was also an increasing demand. By March 1922, Bell had already installed 15 automatic 400 line Rotary PABX's type 7000, in eight countries.

The first exchanges of the successful Rotary 7D type were installed in 1926. They were the result of lengthy studies related to automatic exchanges for rural telephony. The 7D system allowed the economical installation of automatic telephone exchanges with a limited capacity in less populated areas. For telephone subscribers in such areas this meant that the telephone was available 24 hours a day, a facility rarely offered with manual operation. The limited number of night calls did usually not justify permanent attendance of small rural manual exchanges.

The original version of the Rotary system, the so-called 7A, was greatly improved by the replacement of friction drive by gear drive. The new version called 7A1 was also characterised by a horizontal sequence switch, a new type of finder and a more rational circuit structure which considerably reduced installation work.

Nothing, least of all the full order book, suggested that Bell Telephone would also suffer severely under the economic world crisis, which left its mark on the thirties.

Rotary test.



Despite the economic recession, technical developments were continued. In the darkest days of the crisis, the Rotary 7A2 system was developed. Characterised by simplified circuits, a new type of finder and a more compact assembly (reducing the space by 30 %) this system was first installed in Bucharest.

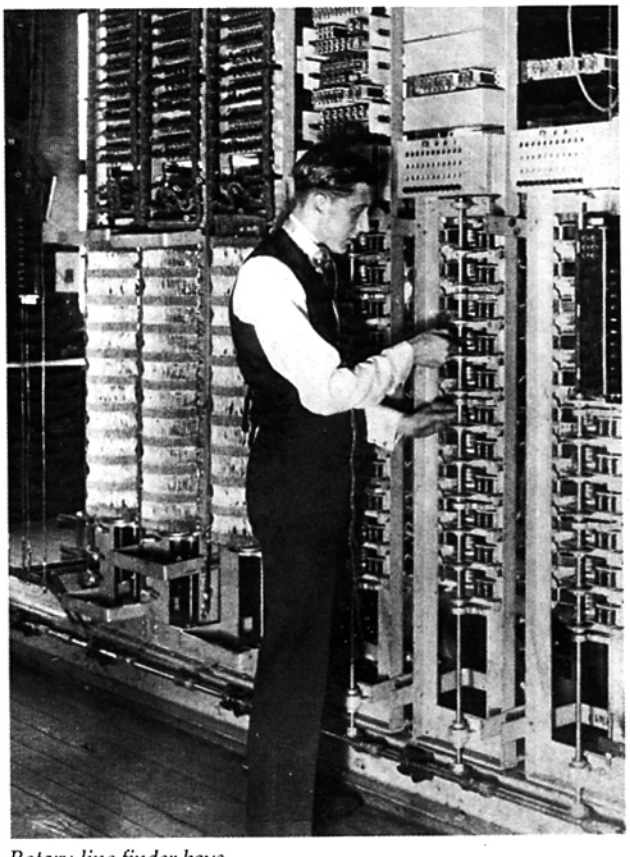
The great breakthrough of the 7A2 system occurred in 1935 when it was chosen for the network extension of Rio de Janeiro. The success of this equipment was such that even before the second world war, similar exchanges were installed in Belgium, Peru, Mexico, Norway, Denmark, New Zealand and Egypt. By 1939, a total of 2.120.000 Rotary lines were operational in 41 countries.

With the deepening economic recession Bell Telephone became very vulnerable. For many years the firm had been heavily dependent on export orders placed by public administrations.

To overcome the shortfall the company pursued a policy of product diversification into consumer durables.

Within the framework of this programme, BTM and many of its affiliates embarked on radio projects, a popular new medium.

Refrigerators, a "summer product".



Rotary line finder bays.

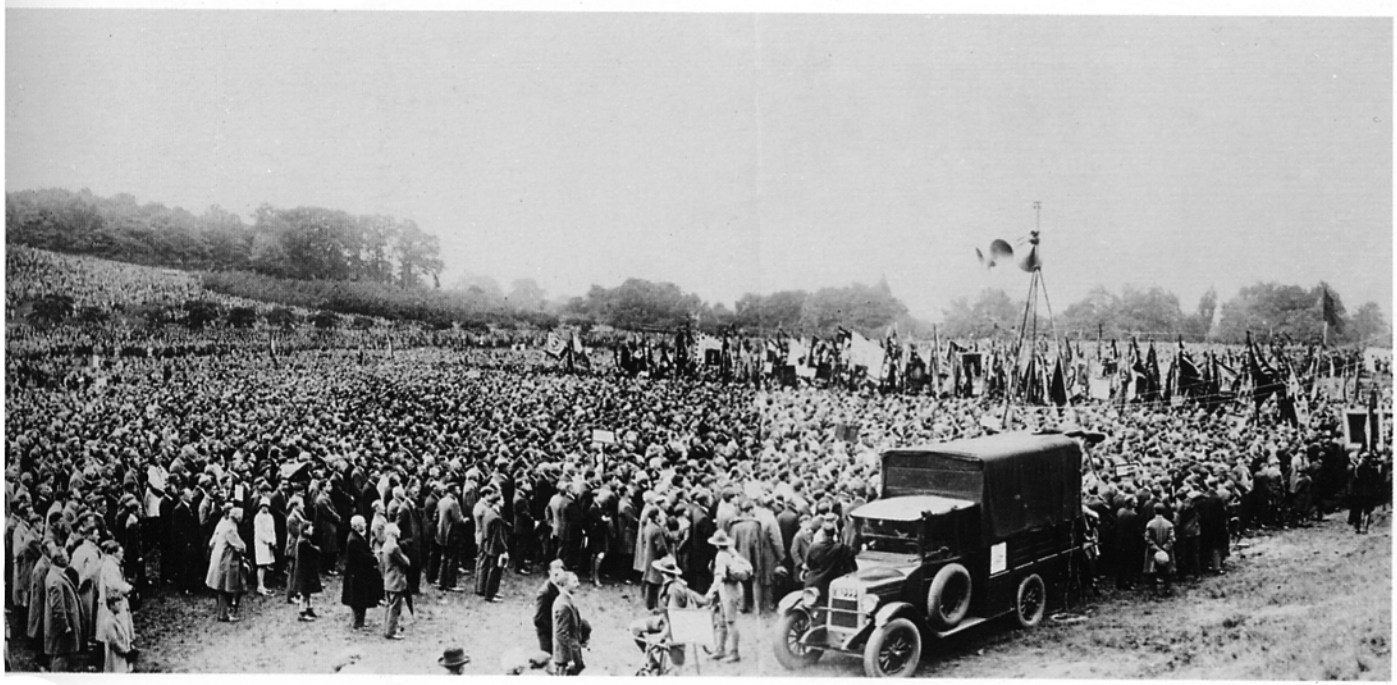
The diversification was not limited to radios and loudspeakers but included radio transmission stations and "Public Address" systems. Many buildings were equipped with a P.A.S. and even some luxury liners such as the legendary "Belgenland".

The setting up of "Public Address" installations for specific events became an activity in its own right. The most spectacular were for the public radio broadcasting of football matches such as Holland-Belgium, for which thousands of listeners gathered in the city centre.

Radio sets were seasonal products for which the market boomed in the autumn and winter. For the "dead" season a summer product had to be found. The choice fell on industrial and household cooling equipment which could be manufactured with the existing machine-park in the same way as the radio sets.

Radio-receiver.

Public address system.



At a later stage the diversification activities were extended to air-conditioning. A number of smaller products was also brought on to the market such as electric motors, magneto-generators, grinding tools and exposure meters. The production of light bulbs was also started.

In the field of radio transmission equipment BTM made its mark with the installation of the broadcasting centre of the national Institute for Radio Broadcasting in Brussels, which was put into operation in 1938.

No fewer than 173 radio transmission stations were using equipment manufactured in Antwerp.

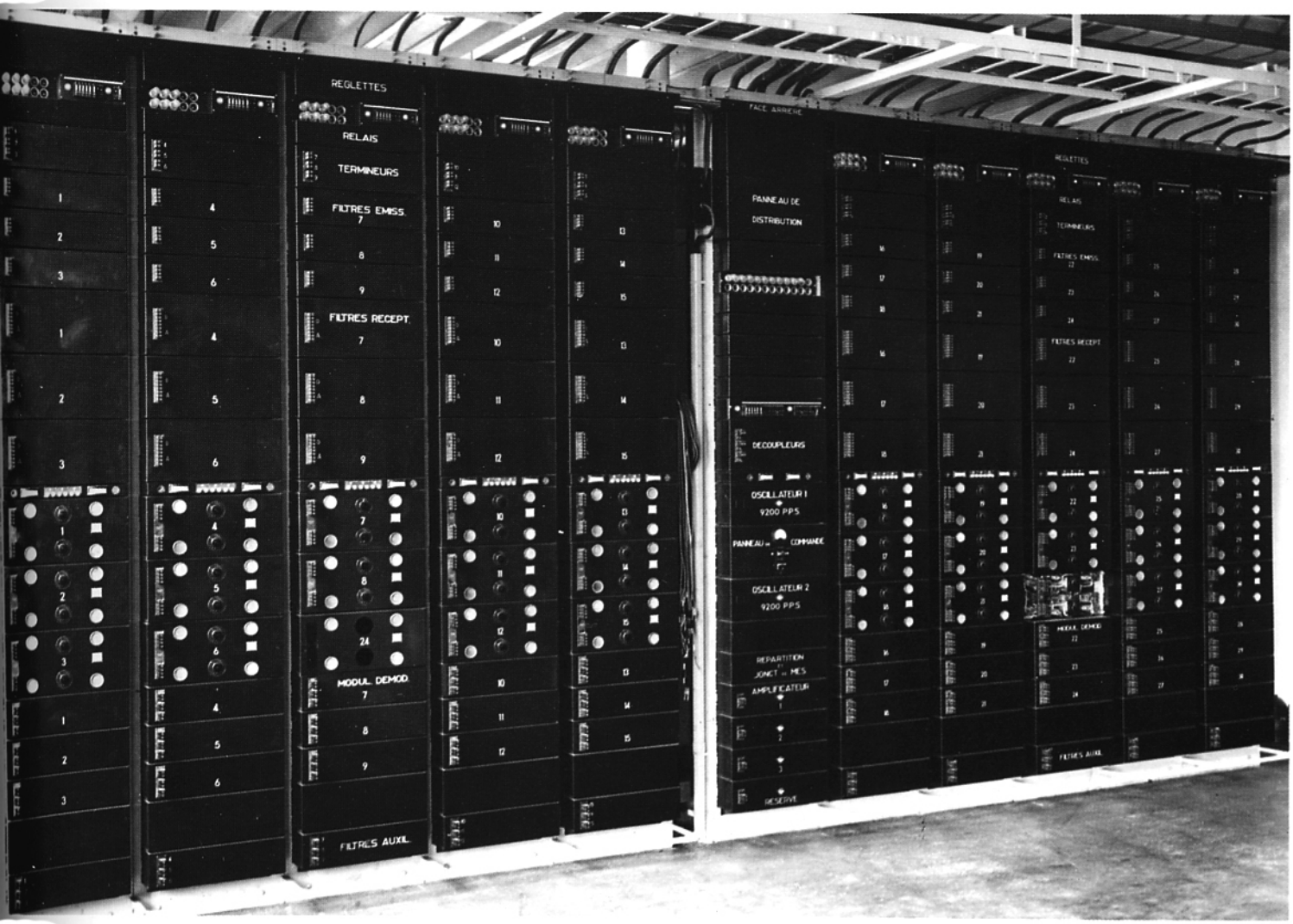
A variety of carrier wave systems were installed in 1938. The first connection was the 1 + 1 system between De Panne (Belgium) and St. Margarets (United Kingdom).

During 1937 and 1938 the activities rose to the level known before the crisis and it looked as if a period of expansion laid ahead.

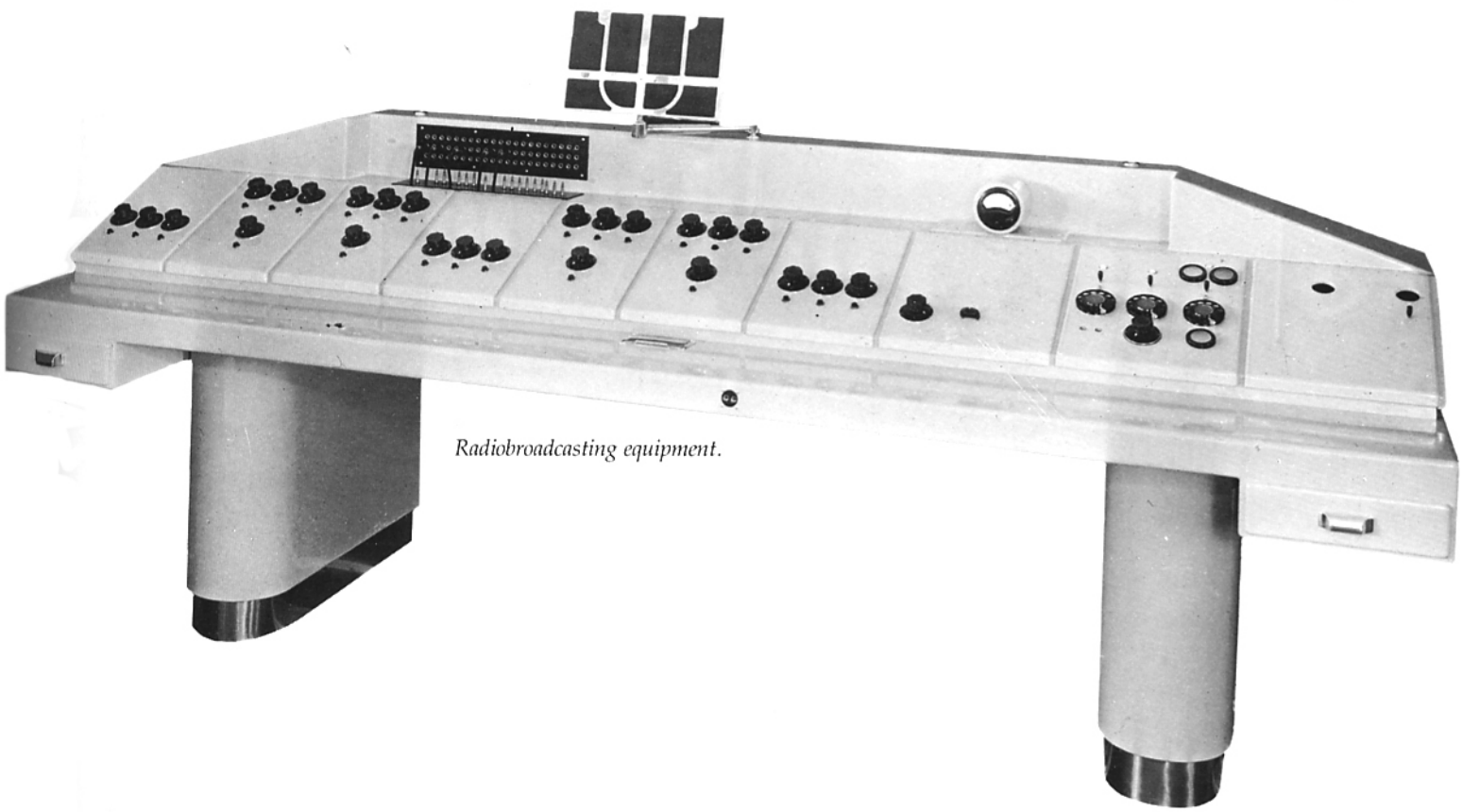
In 1939 the outbreak of the war in Europe curtailed exports.

During the 4 long years of war the activities had to be limited to orders for the telephone administrations of occupied or neutral countries and to radio sets, cooling equipment and light bulbs.

Telephone set anno 1930.



Channel wave carrier system.

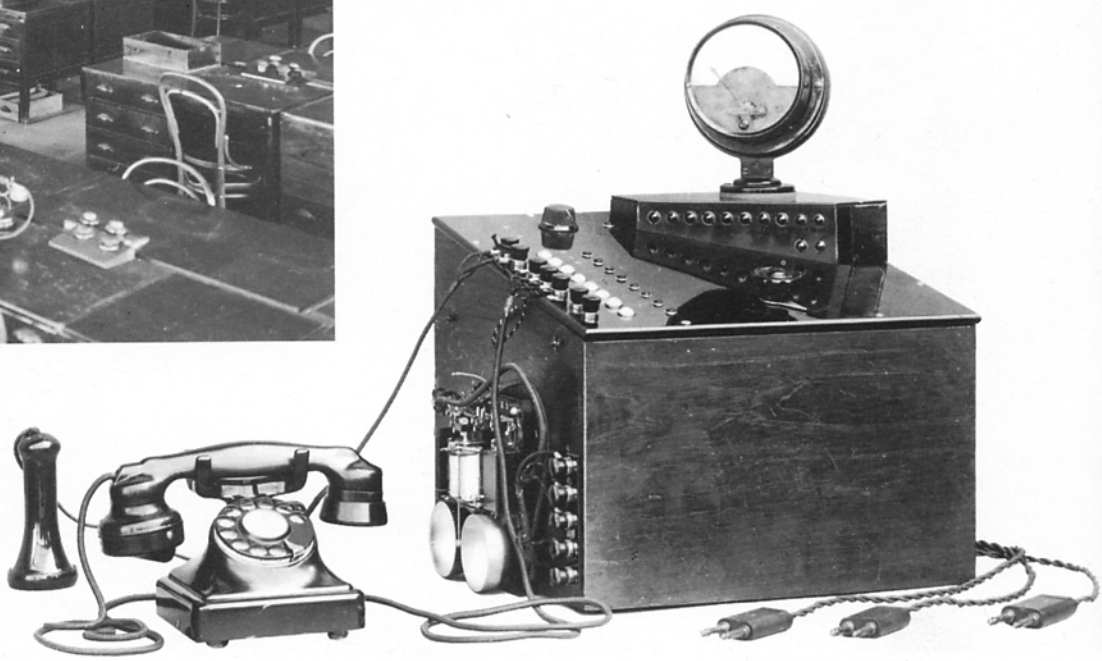


Radiobroadcasting equipment.

Extension of 1926.

BTM Hoboken.

Offices of the 30's.



Semi-automatic test equipment for telephone sets.

Buildings... machines... methods

For Bell Telephone the transition from manual exchanges to automatic exchanges represented a complete reorganization of production methods, and demanded a modernisation of the machine park. High-capacity machines with individual electric drive replaced the old types, and the toolshop was equipped with sensitive measuring and control equipment.

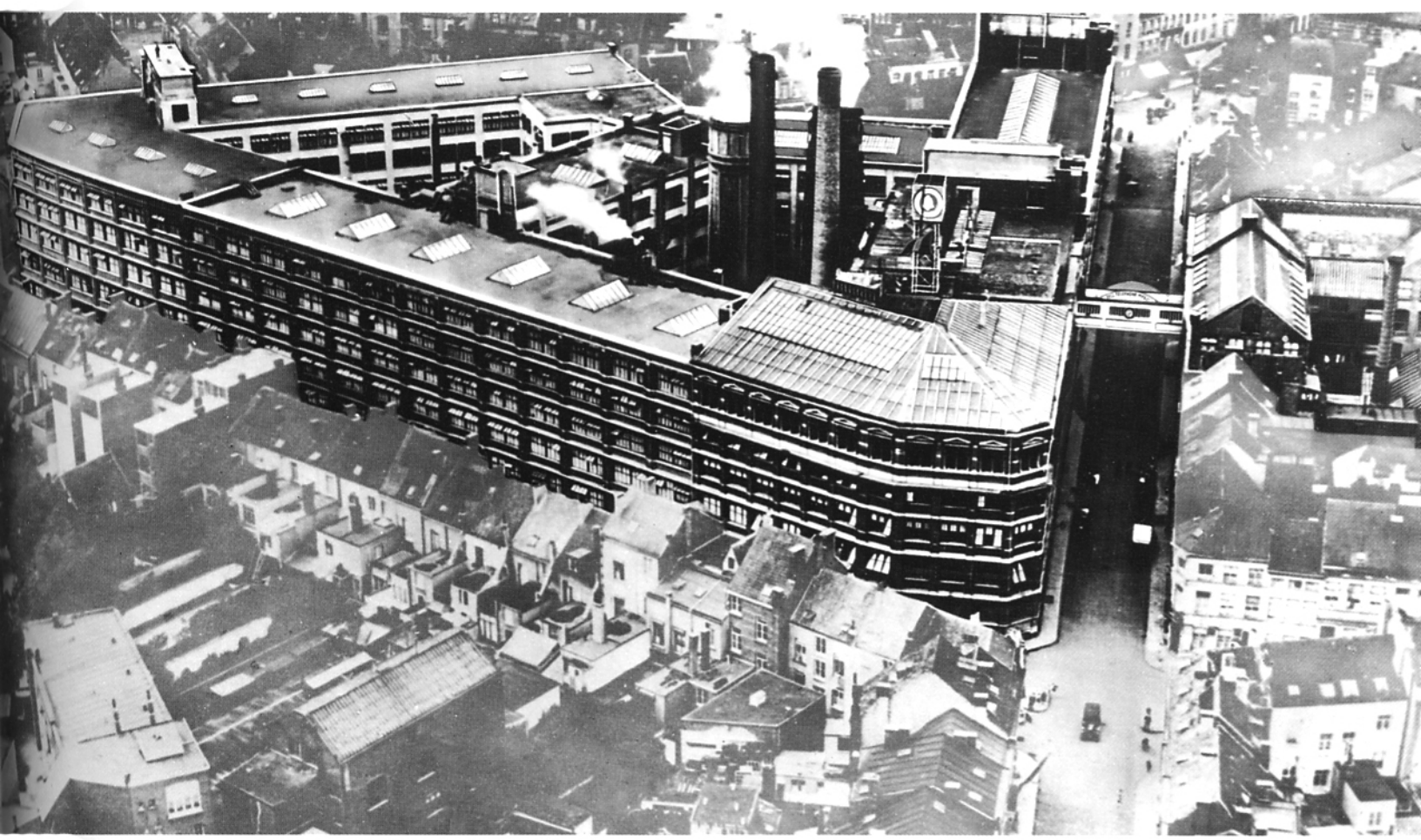
Around 1925 the company was literally bursting out of its buildings. Premises had to be rented in various parts of the city until the extensions to the main factory were completed.

Apart from a considerable extension of the workshops in the Boudewijnsstraat, a factory was built in Hoboken. An extensive sports complex for the personnel was built at the same time. This sports complex is still one of the best equipped of its kind in the country.

The introduction of production-line assembly for certain apparatus and components around 1929-1930 greatly increased productivity. The number of hours needed for the assembly of 1000 single type jacks for example decreased from 250 hours to 160 hours.

The advent of synthetic resins also impacted the telecommunications industry where bakelite found extensive application.

Also electric welding was introduced, the frames of bays, distributing frames and loading coil pots were welded electrically from 1930 on.



Aeroplane view BTM Headquarters.

The jubilee celebrations of BTM's 50th anniversary in 1932 were kept to a low key in view of the world economic crisis. However, the company was proud to announce on the occasion of King Albert's visit that the production floor covered 110.000 m². Two thousand four hundred machines were used in the manufacture of 50.000 different parts.

The piece parts and components were transported between the various departments by a 1200 metre conveyor chain with automatic selection. This chain covered 36 stations and could shift 30 kg per carrier platform at a speed of 16 metres per minute.

At the depth of the crisis in 1934, the number of employees dropped to about 2700. The factory at Hoboken was closed. It was not to reopen until September 1937.

Bearing in mind the first world war, it was decided in 1939 to transfer some of the machines and tools necessary for the production of Rotary 7A and 7D to Scandinavia and to the United States, so as to ensure continued supply if the Antwerp factories had to close.

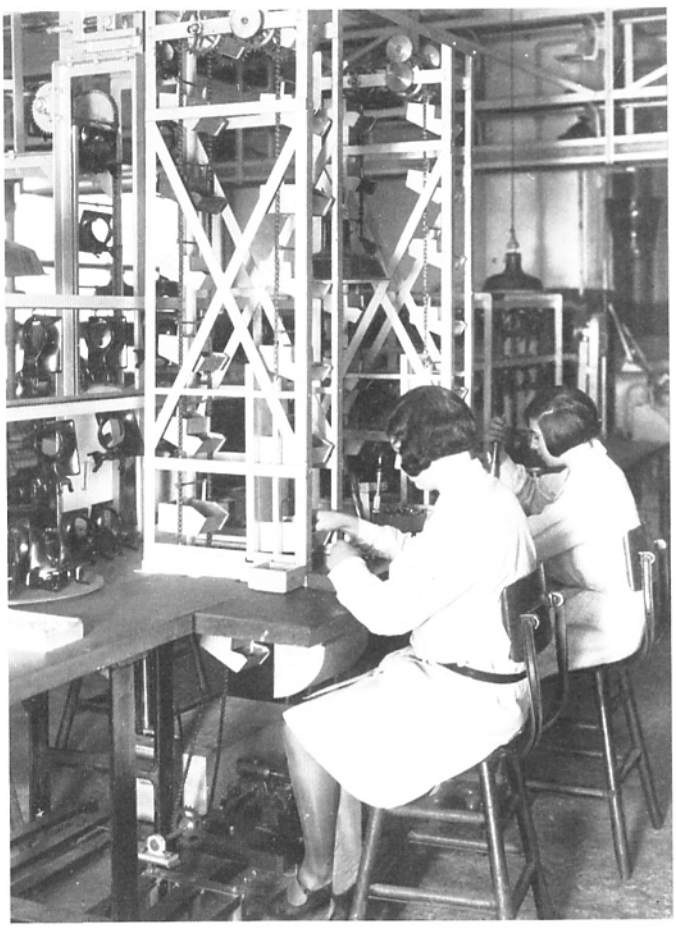
Approximately 500 crates with machine equipment, tools and laboratory models were shipped to France via De Panne.

When on May 10, 1940, Belgium became involved in hostilities, the fire of the steam boilers was extinguished to prevent explosions in case of bombing.

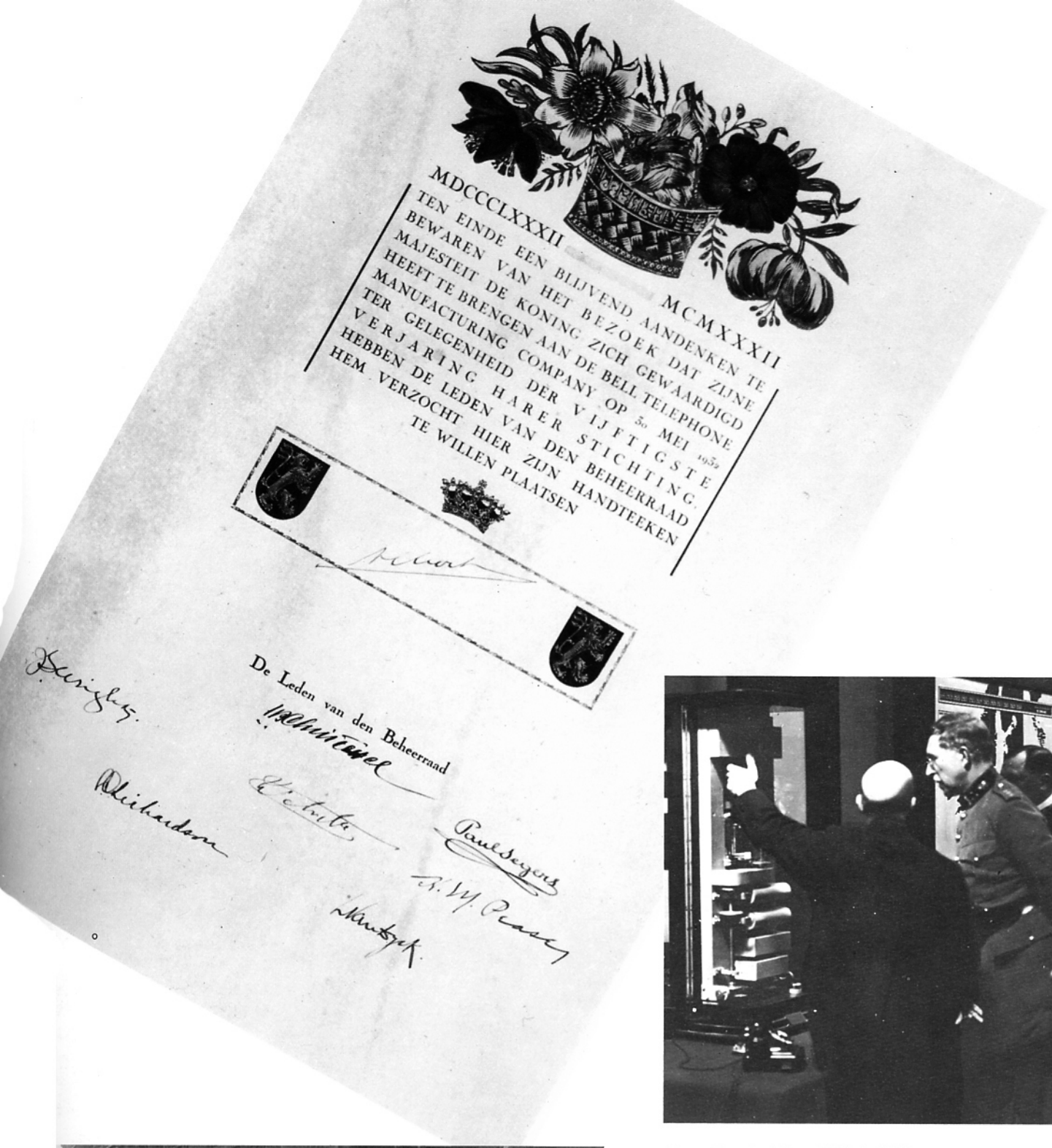
At the onset of the occupation of Antwerp, the factories closed down for a short period. Many of the workers had fled.

On July 5th 1940, only 204 employees turned up; by the end of August this figure had increased to 2300.

Assembly springnests.

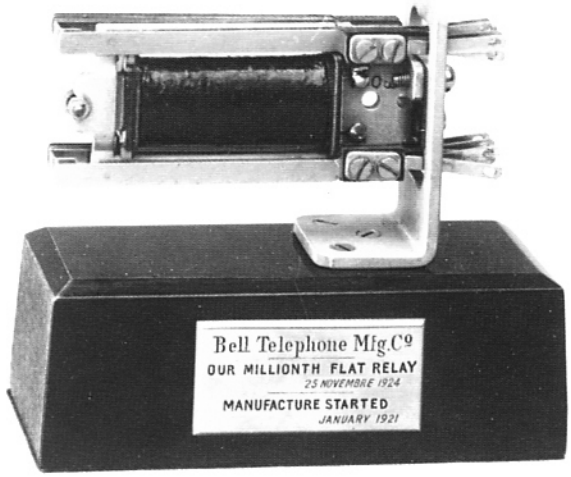


Final test and packing of subscriber sets.

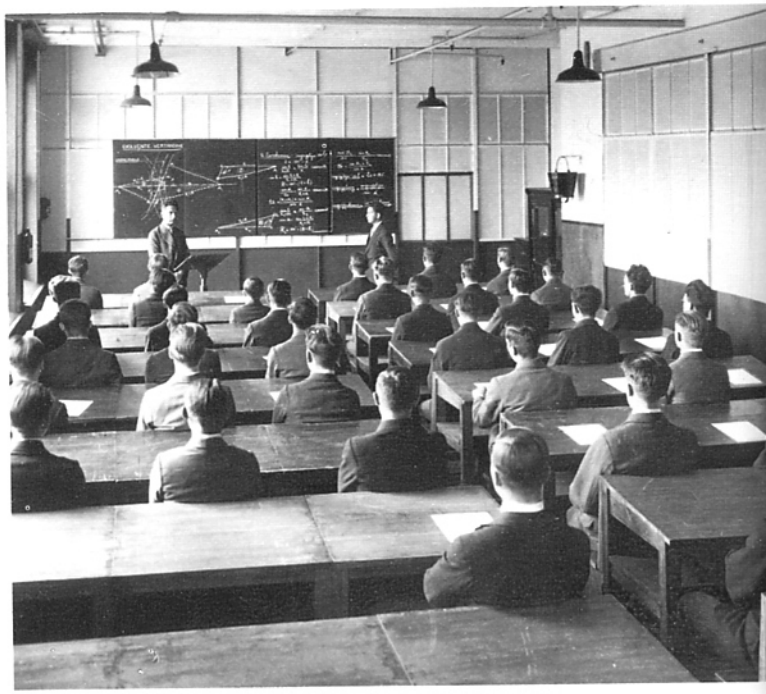

MDCCCLXXXII MCMXXXII
TEN EINDE EEN BLIJVEND AANDENKEN TE
BEWAREN VAN HET BEZOEK DAT ZIJNE
MAJESTEIT DE KONING ZICH GEWAARDIGD
HEEFT TE BRENGEN AAN DE BELL TELEPHONE
MANUFACTURING COMPANY OP 30 MEI 1932
TER GELEGENHEID DER VIJFTIGSTE
VERJARING HARER STICHTING.
HEBBEN DE LEDEN VAN DEN BEHEERRAAD
HEM VERZOCHT HIER ZIJN HANDTEEKEN
TE WILLEN PLAATSEN
De Leden van den Beheerraad

King Albert's visit to BTM in 1932.

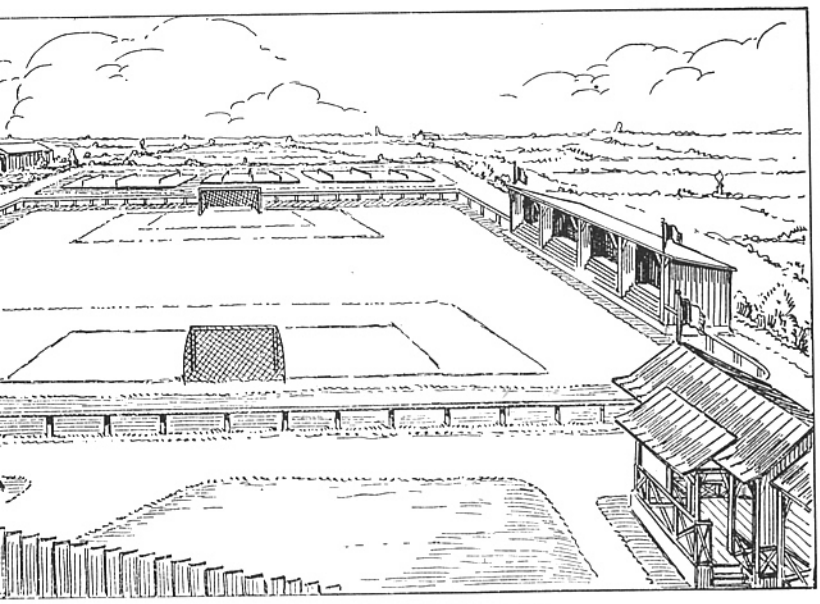
Training school for toolmakers.



November 25, 1924, one million flat type relays.



Theoretical training and recycling.



Artist's impression BTM Sports Park Hoboken 1926.

Official opening of BTM's Sports Park at Hoboken on May 13, 1926.

People...

During the period from January 1921 till November 1924, the relay department manufactured 1 million flat-type relays. An enthusiastic employee reckoned that 426.000 hours or 53.250 working days had been spent on this project.

One man would have worked 177 and a half years to achieve this result... the job was done by 44 men.

100 tons of iron, 25 tons of nickle silver, 9 tons of brass, 1 ton of ebonite, 7 tons of steel, 18 tons of enamelled wire, 6 tons of fibre, 2 tons of paper, 2 tons of cotton and 30 kg of contact material were used to produce these 1 million relays.

The rapid penetration of automatic telephony into numerous countries made BTM increase its staff to an unprecedented pre-war peak of 11.122 employees by the end of 1927.

The high volume of orders for automatic exchanges sharpened the need for specialised and trained workers. It soon became apparent that the company would have to provide the necessary training. So in January 1924 a vocational training school was started in the factory: the present "Bell Training Centre" can now boast 60 years of experience.

More engineers had to be recruited. For this an open course in automatic telephony was organised. It took three months, and was aimed at young engineers wanting to make a career in telecommunications. No fewer than 62 candidates from 12 different countries subscribed to it. Many of them remained with BTM. Others made successful careers in their home countries.

The official opening on the 13th of May, 1926 of the Bell Telephone Sports Stadium at Hoboken, a sports and recreation park for the personnel, was a major event.

This sports park with its football fields, basket-ball and korfball grounds, tennis courts, swimming-pool, playground, club-house etc. was unique. It is still one of the best equipped in Belgium.

The Public Address System installed by BTM elicited many remarkable letters from satisfied customers.

P.A.S. onboard of the SS "Belgenland".

Thus Mr. **J. Russel Mackay,** chief engineer on the luxury liner "Belgenland" wrote on August 5, 1926.

"I would like to inform you that the loudspeakers have been used with great success during our cruise around the world. During our crossing of the Panama Canal, we listened to a conference organised by the U.S. government and the loudspeakers operated very satisfactorily whatever their location. The talk I held in the smoking lounge of the Belgenland was only transmitted via the loudspeakers placed on the bridge. A long cable was connected to the microphone (portable handset) so as to supply the large lounge from where the information, the auditions and sketches could be transmitted to the smoking lounge and at the promenade bridge.

Frontpage radio-catalogue.

BTM's car park in 1936.

BTM's voluntary fire brigade in 1928.

In the thirties, BTM sportsmen contributed to the introduction of sports like volleyball and basketball in Belgium.

Many receivers were sold off in 1928 to the benefit of the burgeoning radio amateur community. These sets could be equipped with 2 lamps and allowed headphone reception.

An amplifier could be connected to receive all the European broadcasting stations. The liquidation price for the personnel, including the licence but without the lamps was 400 Bfrs.

At the end of February 1928, the thousandth loading coil was manufactured. It was destined for Holland, where it was installed on the Dordrecht-Roosendaal line.

Around 1930 sporting workers helped introduce and popularise new sports in Belgium such as volley-ball and basket-ball.

Due to the economic crisis the company's 50th anniversary was not celebrated too exuberantly. The spirit of this jubilee was reflected in the final considerations of the jubilee number of Bell Telephone News of July 1932:

"The organised celebrations were in tone with the situation. They were a great success and culminated in the visit of his Majesty the King to our workshops. We sincerely hope that the second 50 years will be as favourable to us as the first, that the severe crisis we now witness will be overcome and that Bell Telephone may soon flourish again to the benefit of the many families that depend on the company.

Leo Van Dyck.

On April 26, 1935 **Leo Van Dyck** was appointed to the post of Director General and became Managing Director in November of that year.

During the crisis period a "golden handshake" system was adopted for early retirements. It was intended to reduce the number of redundancies. The work force decreased to 2700 workers in 1934.

In 1939 some 1000 of the 7083 employees were mobilised.

On May 1, 1942 BTM was put under "Verwaltung".

The greatly reduced activities, the lack of raw materials and the difficulties in supply increased the liability of the workers to deportation: in October 1942 no less than 2500 of the 5700 workers were claimed by Germany for compulsory labour. After lengthy discussions this number was reduced to 300.

Club membership anno 1926.

Certificate of vocational training in telephony at BTM.

BELL TELEPHONE MANUFACTURING COMPANY
NAAML. VENNOOTSCHAP
ANTWERPEN

Theoretisch Onderwijs in de Fabriek

Aanvullings- en Volmakingsleergangen van : Wiskunde, Werktuigkunde, Electriciteit, Telephonie en Organisatieleer

GETUIGSCHRIFT

uitgereikt aan

voor de leergangen Telefonie die het eindexamen van

Mr Bekx Jan Totaal te winnen punten 100 behaalde punten 68

met Voldoening heeft afgelegd. Antwerpen, September 1928.

De Voorzitter en de Leden van het Schoolkomiteit,

De Leeraar,

De Bedrijfsbestuurder,

Het Hoofd der Onderwijsafdeeling,

BTM show time.

Salary sheet.

631

Firma / Firme **Bell Telephone Manufacturing Cy.**
Société Anonyme
18, RUE BOUDEWYNS - ANVERS

LOONBOEKJE
(K. B. van 25 November 1929)

Carnet de Salaire
(A. R. du 25 novembre 1929)

Familienaam en Voornamen / Nom et Prénoms: Van Loon Blanche

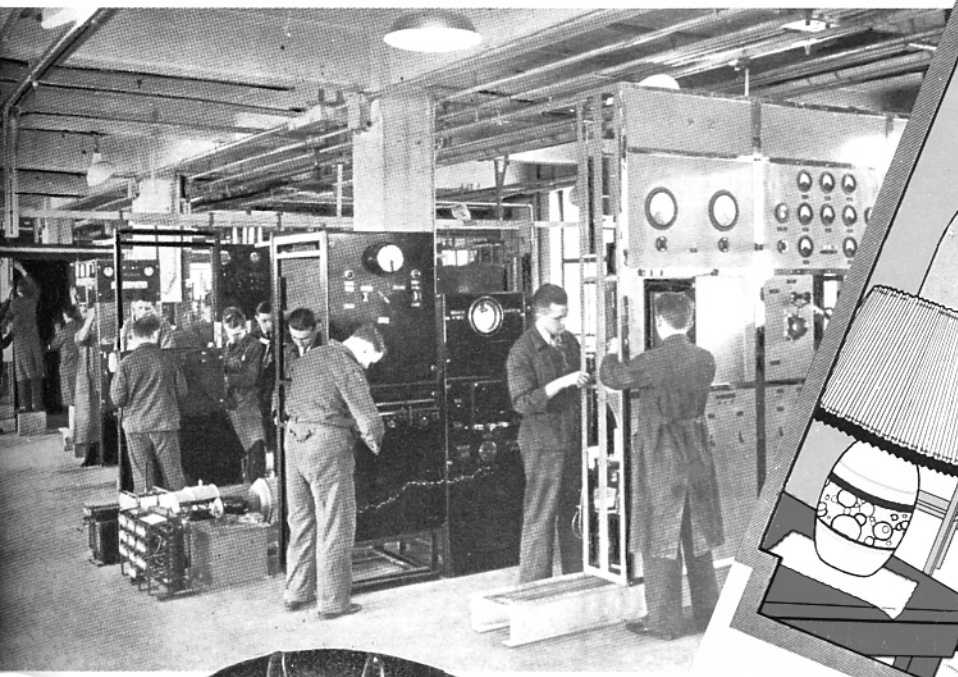
Ambacht of beroep / Métier ou profession: Telefoonmeisjes

Nummer van lijfrentkaart / Numéro de la carte de retraite: 1208

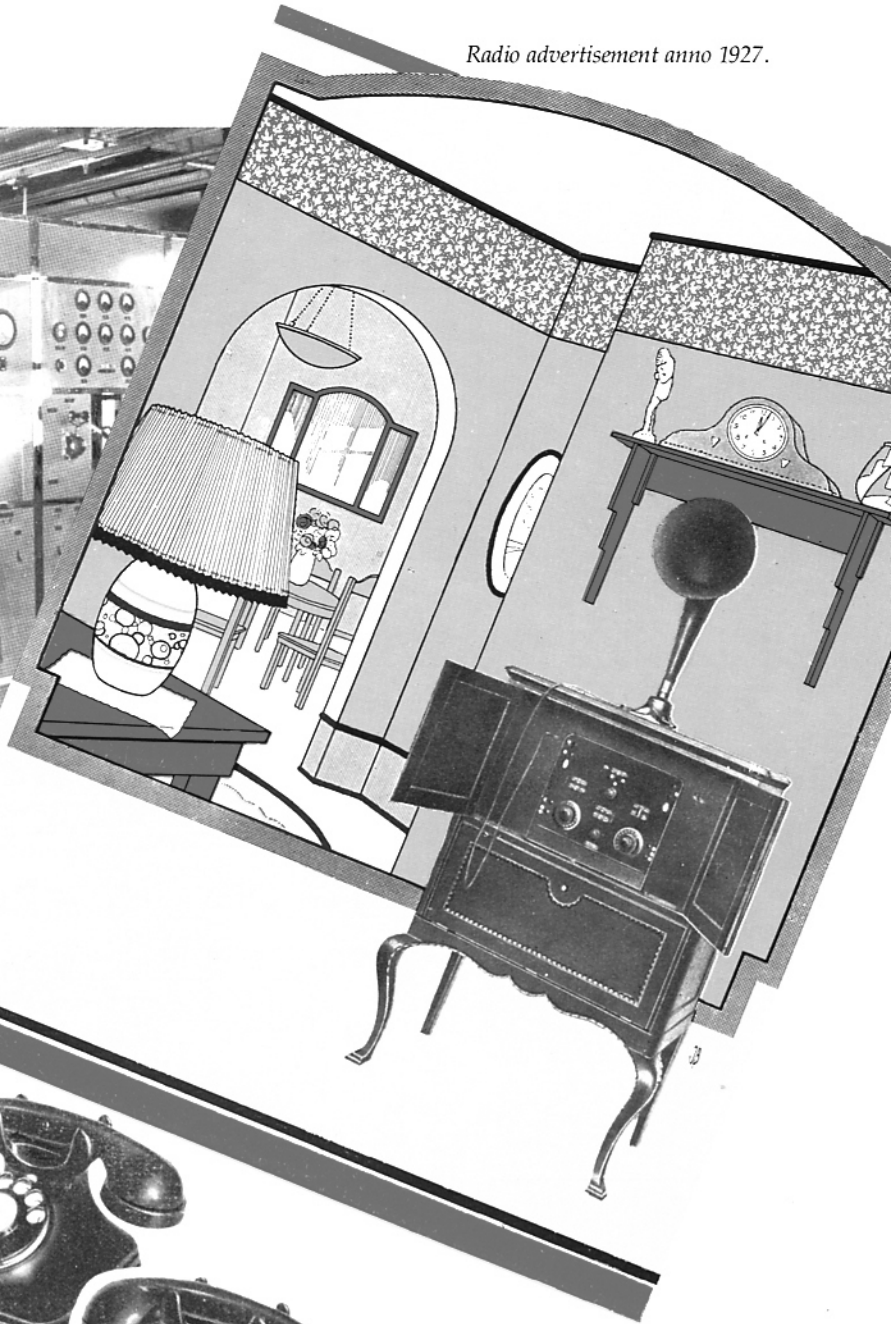
Datum waarop aan den werkman dit boekje is overgemaakt / Date de la remise de ce carnet à l'ouvrier: 1-1-31

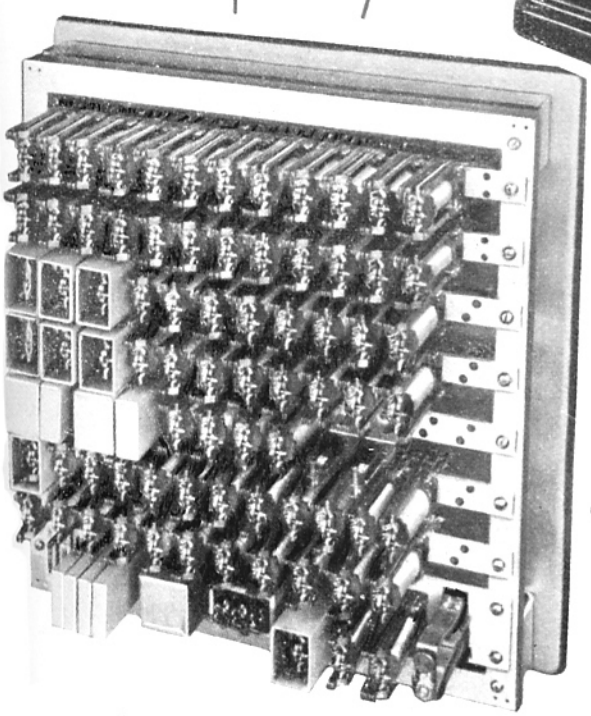
E. Stockmans & Cie

Assembly power boards.



Radio advertisement anno 1927.





Coin telephone set.

PABX with 2 lines and 6 extensions.

1942-1962

Assembly Rotary selectors.

Technological lab.

Cornerstone-laying of BTM tower.

BTM main plant in the sixties.

Buildings... machines... production... organisation

The shortage of raw materials towards the end of the second world war led to the use of less suitable substitutes which caused increased wear and breakdowns of machines that were already in urgent need of overhaul.

In order to avert the vandalism which destroyed the workshops at the end of the first world war, a permanent night service was organised by the management and staff in July 1944.

A sworn expert was commissioned to take a photographic inventory of the buildings and equipments. This photographic series is undoubtedly the most comprehensive ever made of the buildings, machines and fixed equipment.

When Antwerp was liberated in September 1944, the BTM plants in Antwerp and Hoboken escaped destruction because of the rapid retreat of the occupying forces.

By the middle of 1947 the demand for Rotary equipment became so great that a productivity campaign was started under the slogan "The battle of the 100 bays".

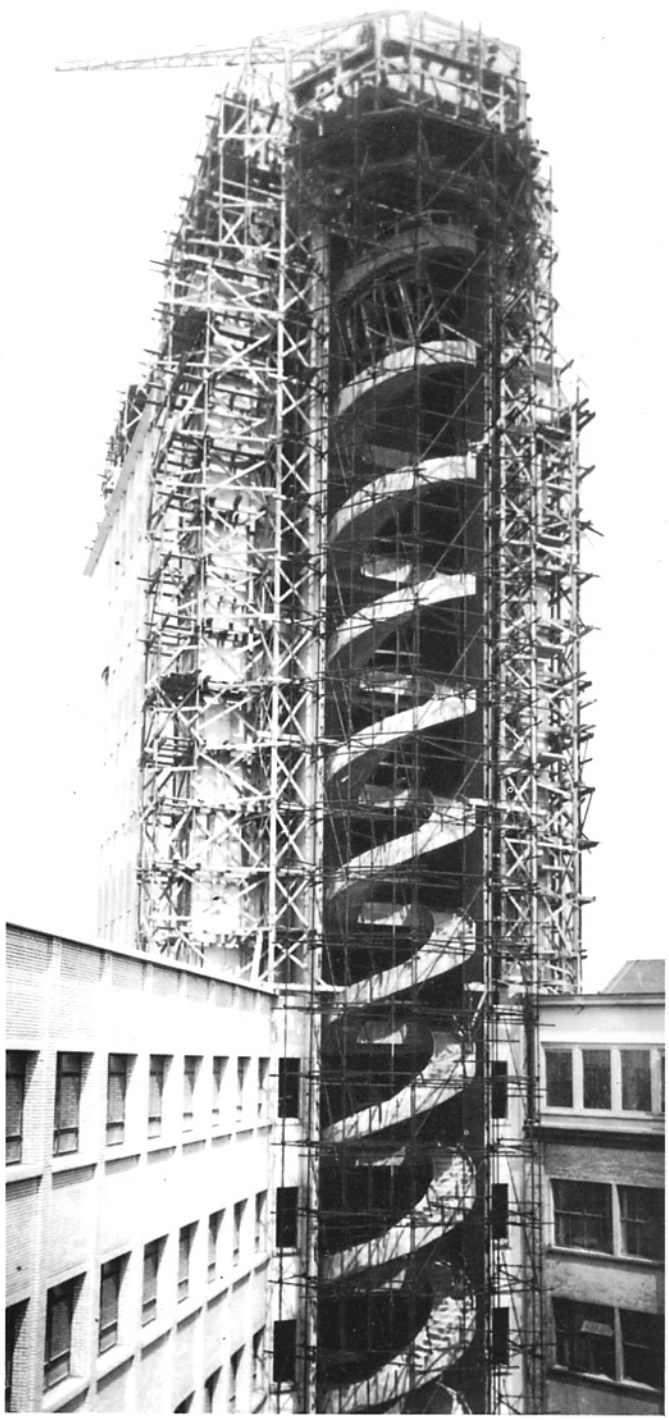
To meet the delivery promises at least 100 bays had to be manufactured each week.

In 1947-1948 the order volume exceeded by far the production capacity. In February 1948, it was decided to expand the plant at Hoboken where new grounds were purchased at the beginning of the fifties.

At regular intervals efforts were made to involve the personnel in the general running of the company. At the end of 1951 a competition was organised for the best dissertation on improvements and simplifications related to production and management.

The BTM plants were hit by the floods of February 1953. Whilst damage in the cellars was limited, the goods awaiting shipment in the harbour warehouse were severely damaged. Many of the stored bays were completely submerged. Under the slogan "drowned bay", a password which made the impossible possible, all available workers set to repairing or replacing them.

On April 26, 1954 the cornerstone of the BTM tower was laid in Antwerp. Two years later, the 58 meter tall main offices were officially opened. The open days organised for the occasion brought more than 35.000 visitors.



BTM Pavilion Expo 58, later the new clubhouse at Hoboken.

BTM products attracting worldwide visitors during Expo 58.

Automatic machine for the carbon filling transmitter capsules.

One of the labs.

The World Exhibition year 1958 heralded the end of the hegemony of Antwerp for the BTM plants. On February 24, 1958, grounds were purchased in the Artevelde city from Ghent city council, which was concerned about dwindling employment in the textile industry. The first BTM plant outside greater Antwerp was built on this site. It housed the cable and wire factory which had to leave Hoboken to make room for new assembly departments.

The firm also spread its wings to St.-Niklaas, where in 1961 the production of Pentaconta parts was started in rented workshops.

A real decentralisation policy only surfaced in the sixties when new plants were built in Geel, Wasmes (Colfontaine) and Villers-le-Bouillet – all regions of high unemployment.

At the beginning of the sixties and with the approval of the Minister for Economic Affairs, a trial run was started for the production of telephone sets on the premises of a disused coal mine at Frameries.

Some years later this led to the setting up of a BTM plant in the Borinage at Colfontaine (Wasmes).

The increasing penetration of automatic and electronic systems was not only reflected in the development of a wide range of products and activities, but also in the production methods. Adjustment operations were mechanised and the automatic manufacture of parts became the rule rather than the exception.

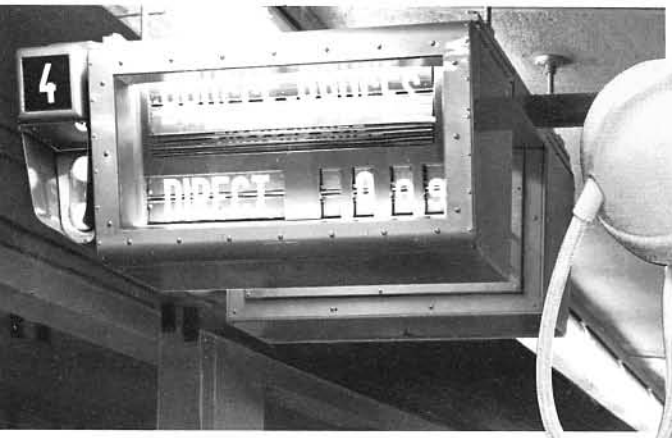
Within the context of the 1962 reshuffle, the administrative organisation was reviewed and restructured.

Furthermore, the machine park was modernised and the workshops adapted to the new situation.

The adoption of formal management techniques reached a climax with the fundamental reorganisation of the company's structure along the line and staff matrix principles.

The main objectives were formulated: diversification of activities into the services sector, faster tendering, shorter delivery times, stricter inventory control, improvement of work methods, more aggressive marketing techniques...

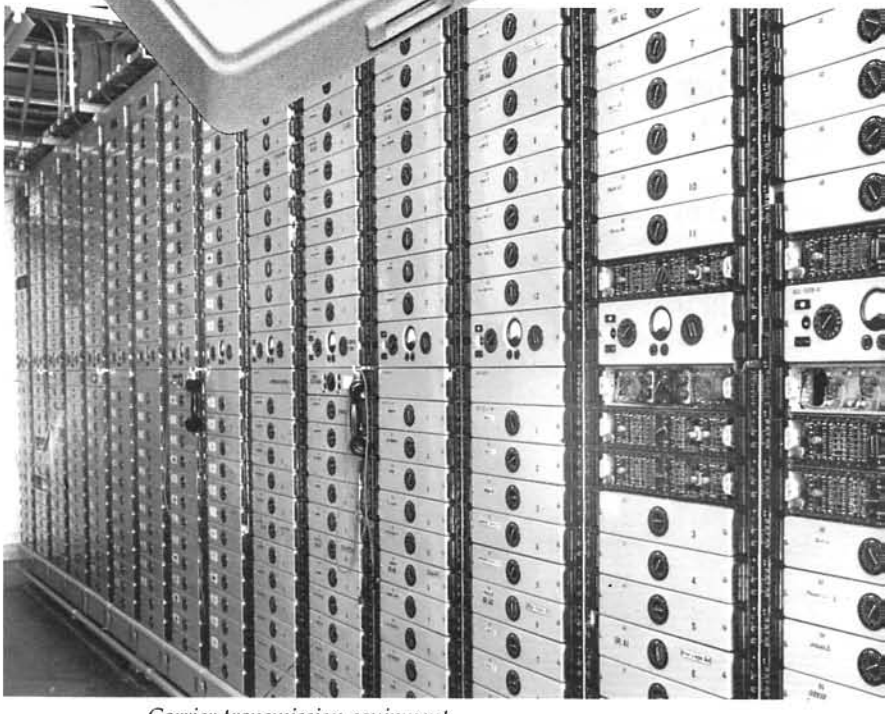
BTM Ghent.



Train dispatching.

Sonorisation equipment.

Subscriber set anno 1948.



Carrier transmission equipment.

Circuit lab.

Products... markets

Normal activities were out of the question immediately after the liberation. Not only was there a shortage of raw materials, but the fuel shortage, in particular coal, was a major problem. It was impossible to supply the black bakelite telephone sets owing to a shortage of bakelite powder and the 1460 dark and light brown sets offered to the customer as a replacement were unacceptable.

In 1945, the orders just flooded in. Orders for telephone sets, amplifiers and even for jerry cans for the allied forces, export orders for the Netherlands, Switzerland, Rumania, Norway, Spain and Czechoslovakia and in particular the Belgian RTT for rebuilding the Liège network, which had been devastated by the enemy, filled the order book.

The demand for BTM products was equally remarkable in 1947-1948; for instance, 90 % of the orders for PABX's in Belgium were placed with Bell Telephone. There was also an increased demand for transmission equipment and specifically for the new 12-channel carrier-wave system.

In the mail handling sector, the study and development of mail sorting equipment was started and the first machines were put into operation in 1951.

At the beginning of the fifties, the first orders were received for new 7E and ME (later 8A and 8B) systems, which were to introduce electronics.

The 8A and 8B systems departed from rotary switches and turned to crossbar switches.

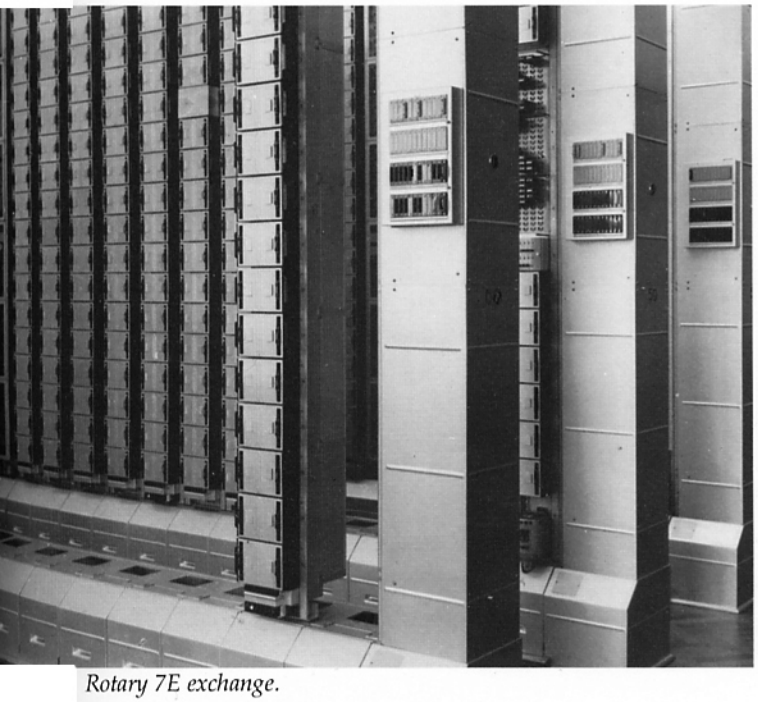
The international tensions during that period entailed severe cuts in the telecommunications budgets in Belgium.

This forced the RTT to restrict its orders to indispensable investments for a few years. The execution of the plan to complete the automation of the Belgian network had to be postponed until the necessary funds could be found.

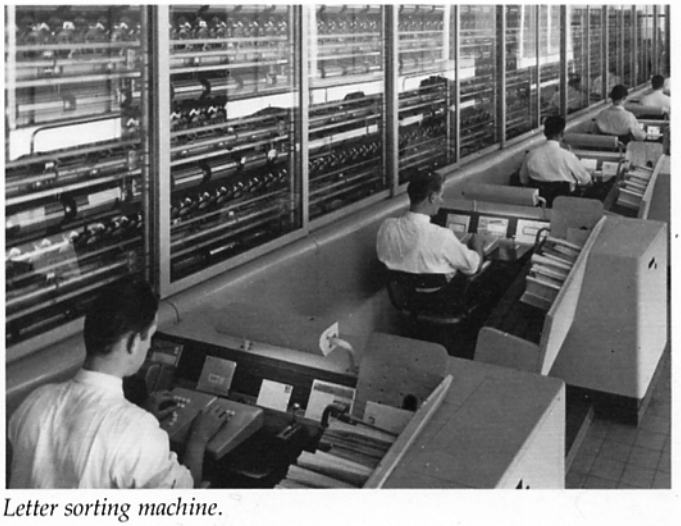
Fortunately, BTM had a number of export contracts to fall back on: Egypt, Spain, Syria, Brazil, Norway, Cuba, Switzerland, Bermuda, New Zealand, Mexico and the United States.

Work staggering in some departments, was still unavoidable.

To compensate for the shortage of orders on the home market, a number of new activities were started such as sonorization, navigation equipment for inland shipping, industrial cooling equipment, signalling, remote control, transmitters-receivers and... television sets.



Rotary 7E exchange.



Letter sorting machine.

The coronation of **H.M. Queen Elizabeth II** of England on June 2, 1953 was the ideal opportunity to launch the television sets.

Thousands attended the demonstrations held in the showrooms and laboratories of Radiobell-Tevebell in rebuilt workshops in Volksstraat.

International economic dependencies stressed the importance of foreign contacts. After a slow start with only 100 subscribers in 1950, the telex service in Belgium became increasingly popular and widened BTM's horizons dramatically.

In 1950 BTM was entrusted with the development of an electronic calculator by the "Institute for the Promotion of Scientific Research in Industry and Agriculture" and the "National Fund for Scientific Research". This development took almost 5 years. **King Baudouin** was very interested and on January 21, 1955, visited the first computer manufactured in Belgium. This was used to calculate scientific data and to optimise resource utilisations.

In the television sector, BTM not only manufactured receivers but also participated in the development of the Eurovision network with the supply of the radio-link network in Belgium.

King Baudouin visiting the electronic calculator in 1955.

A remarkable first was the installation of the electric voting-system in Parliament in 1954 and later in the Senate.

On May 29, 1956, the Belgian Telephone Administration had a world first with the official opening of the first fully automatic international telephone link between Brussels and Paris and between Brussels and Lille. This automation of international telephone traffic was particularly welcomed on the Brussels-Paris line and brought an immediate increase in traffic of 15 percent.

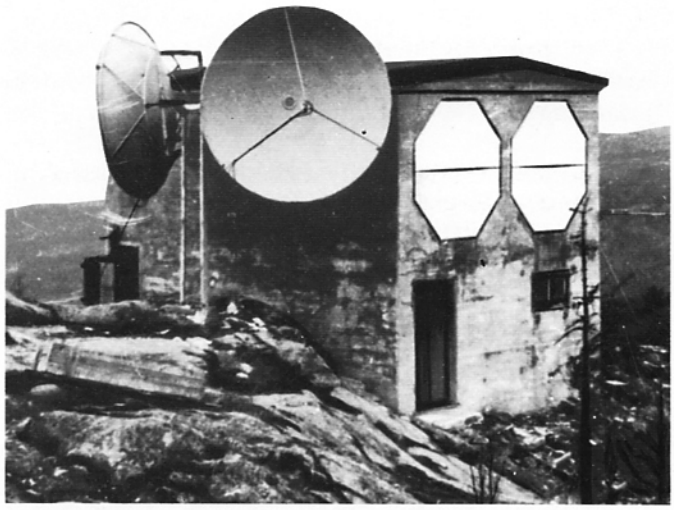
Test television receivers.

The World Exhibition EXPO '58 held in Brussels was an ideal occasion to demonstrate BTM's product range and capabilities to millions of visitors from all over the world.

In the Atomium, at the Palace of Posts and Telecommunications and also of course in the BTM pavilion it was possible to see automatic telephone systems, telegraphy and transmission equipment, automatic telex systems, PABX's, radio-links, remote control and telemetry equipment, mail sorting equipment, automatic machines and durable consumer goods.

The mail sorting equipment developed and manufactured by BTM was brought into the limelight when on May 22, 1958, the mechanised mail sorting centre of Brussels X was put into operation. It was equipped with six mail sorting machines, each with six operator desks, and 340 destination bins. Featuring a capacity of 110.000 to 130.000 letters per hour, this sorting centre was to become a pivot in Belgian and European postal service. It brought Belgium to the fore front of world postal mechanisation.

On February 5, 1959, following favourable tests of a BTM mail sorting machine in Washington, the U.S. Post Office placed an order for eleven mail sorting machines destined for the first completely mechanised post office of the United States in Providence, Rhode Island.



Radio-link.

U.S. mail sorting center in Providence, Rhode Island.

Telex exchange.

Electrical voting equipment in Belgian Senate.

At the beginning of the sixties it was decided to extend the production of automatic telephone systems with the Pentaconta system. As opposed to the 7A, 7A2, 7D and 7E systems belonging to the Rotary type with rotary switches, the Pentaconta was characterised by crossbar switches like the 8A and 8B systems.

The Pentaconta system was highly successful on the export markets where it initiated a new type of export contract. The supply of equipment was linked to the transfer of technological know-how to set up local production. BTM first concluded this type of agreement with India and Rumania.

The Belgian Telephone Administration remained faithful to Rotary, a highly reliable system which was still being perfected. In Belgium, the Pentaconta technique only found applications in private telephony where Pentomat PABX's gradually replaced Rotary private exchanges.

"Assistant" subset.

PABX.

Pentaconta.

BTM reached the sixties with a remarkable range of products and activities, as appears from its list of "main products and equipments" of that period. Subdivided into chapters on telephony, telegraphy, radio-telephony and radio-telegraphy, radio and TV sets, public address installations, signalling, dry rectifiers and power supply devices, this list comprised more than 100 headings.

Some headings such as listed in the chapter on signalling moreover covered many applications, for example control systems and signalling for hotels, offices and hospitals. Others were more restricted such as deep-sea sounding equipment.

The wide range of products and activities was to some extent the result of an increased penetration of automatic and electronic processes into numerous fields.

"Scientific management" became very fashionable at the beginning of the sixties.

Simplifications, innovations, improvements, efficiency, rationalisations, job analysis etc. were called for. Extra bonuses were given for suggestions leading to savings in material, time, power, parts, etc.

A "Committee against Waste" was set up and a trophy (made of scrap material!) was offered as a prize.

In 1960, Bell Telephone had a world first with the installation of the national emergency call systems 900 and 906.

That same year a completely new type of telephone set was introduced. The "Assistant" was acclaimed by an international jury of designers and was awarded the Golden Insignia 1960. Millions of these sets were exported to all five continents.

In 1961, a pilot installation was set up in Brussels for the future automatisation of the "Postal Cheque Office".

National emergency call systems.

Document handling.

First BTM "Committee on Safety and Health at Work".

Maria de Nèv

La première machine mathématique électronique d'Europe a été construite en Belgique

APRÈS AVOIR MÉCANISÉ LE LABEUR HUMAIN ON VA MÉCANISER LA PENSÉE GRACE A CE VÉRITABLE CERVEAU AUTOMATIQUE

CE samedi, dans les bâtiments de la Bell Telephone à Anvers, qui a construit la première machine mathématique électronique fabriquée en Europe, ce véritable cerveau automatique va être inauguré.

Les journalistes avaient été invités, vendredi après midi, à voir fonctionner cet instrument aux apparences fantastiques, dont les différents éléments emplissent une vaste salle.

machine mathématique.

Pour ceux qui douteraient c
cette nouvelle façon de voir l
choses, disons simplement qu
côté des opérations de calcul pr
prement dites, la machine pou
rait, comme on le fit en Ame
que, déterminer entre quatre ce
versions différenes d'un texte
évangiles la version la plus
cienne.

— Grâce à cette machine, a
un autre technicien, on fait d
manipulation d'informations.

Mais la machine ne pense
Placée devant des alternat
quelles qu'elles soient, elle ch
toujours le côté qu'on lui a d
choisir. Ce véritable cerveau a
mémoire fantastique, mais
pas l'intelligence de dire à u
ment donné : « on m'a c
choisir tel côté de l'altern
eh bien, moi, je préfère l'au
En revanche, elle se corrig
commence les opé

People...

Immediately after the liberation, shortage of fuel was a major problem. At the beginning of 1945, the temperature in some of the workshops barely exceeded freezing point. Some workers were even made temporarily technically redundant.

The company newspaper was not published again until March 1946, owing to the scarcity of paper. Its publication had been stopped in 1940 because of the difficult war circumstances.

Productivity increased considerably in the period 1945-1947. Whereas in 1945 weekly telephone set production amounted to 600, by the middle of 1947 this total had been driven up to 2500.

On Friday, January 16, 1948, the first meeting took place of the "Committee on Safety and Health at Work" of Bell Telephone, set up pursuant to ministerial decrees of December 17 and 21, 1946.

The Works Council was not set up until 1950, and met for the first time on April 7 of that year.

At last – "music in relief" was the Radiobell publicity slogan in June 1948. The "Radiobell Stereophonic" was the first BTM stereo radio receiver to be brought on the market.

Tropical regions set specific requirements for telecommunication equipment. Extreme climatic conditions made stringent standards necessary. The toughest standards were met by BTM with the "Bandung finish".

BTM regularly celebrated employees with 50 years service. In the year 1948 there were no fewer than seven of them.

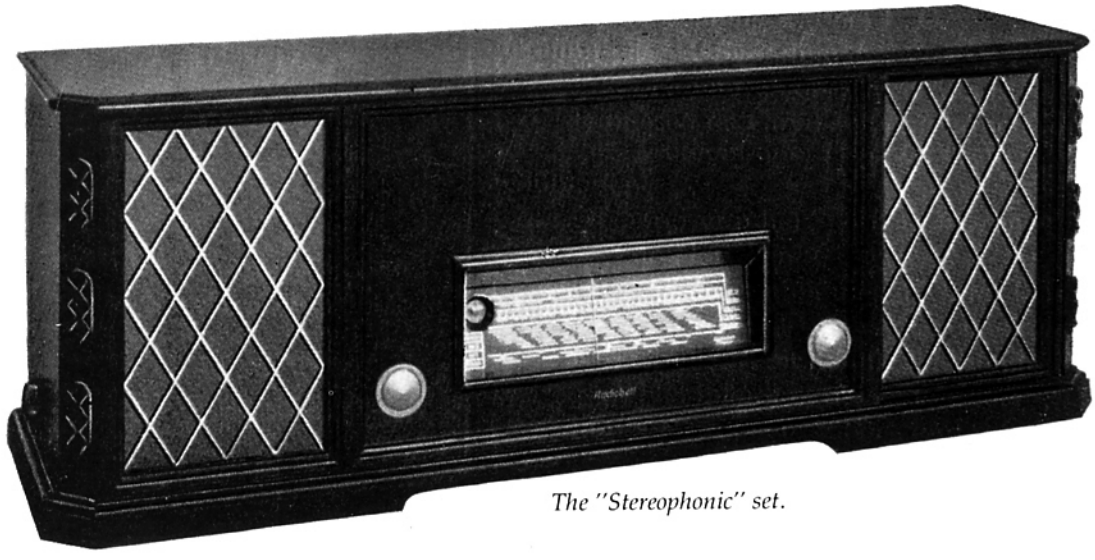
In 1953, a shortage of orders on the home market had severe repercussions on the employment.

In August of that year, 1032 certificates of temporary unemployment were delivered; fortunately, this situation did not last. By the end of 1954, there were more than 8000 employees, a number that regularly increased during the following years.

On December 31, 1954, **Maria De Nève** retired after a career lasting 45 years. She had started work on June 11, 1909, and her career had been the longest of any female employee at BTM.

"It was with great emotion that we stood before the gigantic electronic calculator manufactured by Bell Telephone in Antwerp. This emotion was triggered by the considerable human ingenuity required to manufacture a machine capable of making the most intricate calculations in a minimum of time".

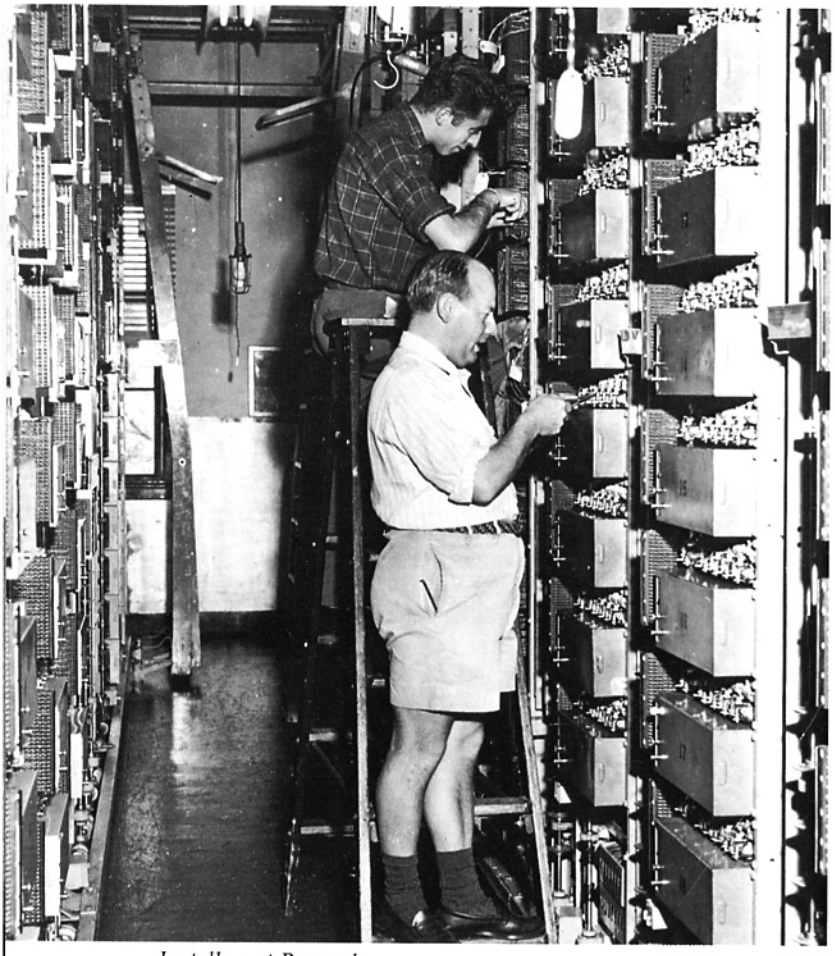
This was written by a journalist at the beginning of 1955, following the presentation to the press of the BTM electronic calculator.



The "Stereophonic" set.

The following is an excerpt from the speech made at the inauguration of the tower building in 1956:

"One industrial revolution follows the other. Important innovations are heralded. I am thinking of automation or the science that carries out work processes automatically. Very intricate mechanical, electronic, hydraulic and pneumatic systems will make realisations possible which would not have been conceivable without this technology. Computers or electronic calculators, processing machines for accounting in banks, postal cheque services, insurance companies, automatic bookkeeping for storerooms, electro-mechanical sorting machines, whole installations for the mechanising of postal centres".
"There must be no respite in scientific research since the existence of our industry depends on the results obtained in our laboratories".



Installers at Bermuda.

The international praise received by Bell Telephone following the commissioning of the mail sorting centre Brussels X was echoed in the United States. Mr. **Arthur S. Summerfield, Postmaster General,** wrote a remarkable letter of congratulation to **King Baudouin** on the installation of a BTM mail sorting machine in Washington on May 26, 1958:

Sire,

We are gathered here today on the operational floor of the post office in Washington D.C. City for the formal inauguration and putting into operation of a new machine capable of sorting about one hundred and fifty thousand letters to three hundred different destinations in a period of eight hours.
This semi-automatic machine was manufactured in Belgium by the Bell Telephone Manufacturing Company in Antwerp. It has been supplied to us by the International Telephone and Telegraph Corporation and was installed by its subsidiary the Intelex Systems Inc. Its use will assist our postal services in reaching their aim i.e. the next day delivery of any letter between two cities in the U.S.A. We are grateful to the Belgian engineers and postal authorities without whose ingenuity, intelligence and imagination this machine could not have been developed. We hope that you will give them our greetings and congratulations.
Would your Majesty please accept this expression of my consideration and respect.

Arthur S. Summerfield,
The Postmaster General

When **J.P. Jennes, G. Kesters** and **A. Schoepen,** colleagues in the Production Control and Merchandise departments, discussed in 1956 the progress of a contract, their joint service added up to 138 years, a rare example of company loyalty.

It was not to be expected that BTM equipment would one day reach the Antarctic. However, in 1957 quite some BTM equipment went along with the Belgian Antarctic expedition. At home it was learned that radio connections had been established throughout the world and that the Amplibell high-fidelity equipment was working properly. The scientific ionospheric probes specially developed for the expedition also gave full satisfaction.

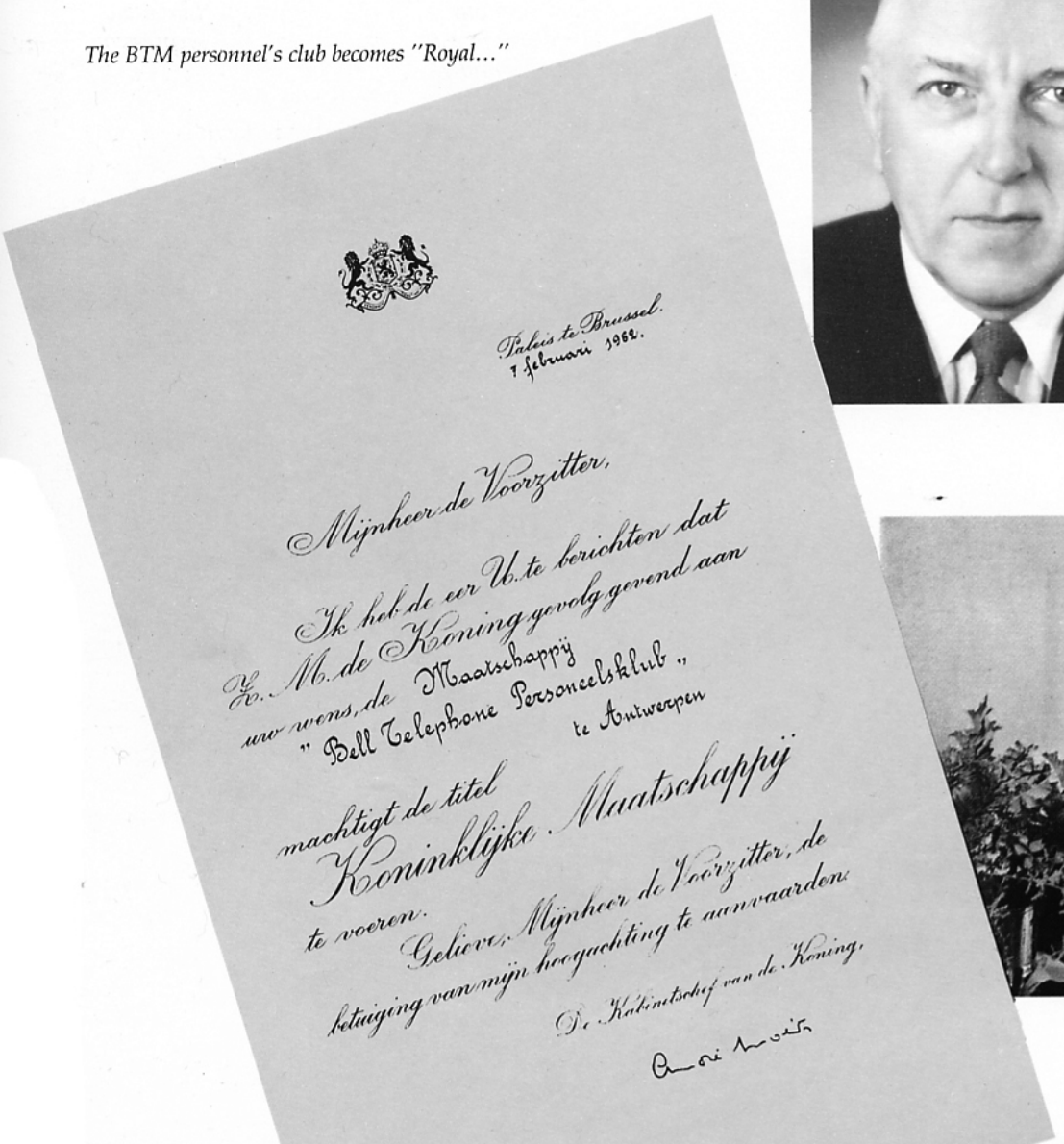
In 1959, the television receiver was not yet a standard household item. A group of young people collected 35.256 Radiobell advertisements in a contest organised by a local newspaper and won a television set which went to a paraplegic lady who had been living alone for 32 years. The television department's laboratory promptly developed a suitable remote control unit for her.

The Bell Telephone Personnel Club was justly proud of its new club house erected in 1960. It had been the BTM pavilion at the 1958 World Exhibition and was re-erected in the BTM Sports Park in Hoboken in the spring of that year. On February 1, 1962, the personnel club was granted permission to use the title "Royal Society".

In 1961, **Leo Van Dyck** retired as Chairman of the Board of Directors after a career of almost 60 years. In view of his contribution to the growth and development of Bell Telephone, he was created a Baron on January 2, 1957, for services rendered in the economic, social and scientific sectors. It goes without saying that he was made Honorary Chairman of the Board of Directors. He was succeeded as Chairman by **C. Van Rooy,** who occupied the position of Managing Director from May 1957.

C. Van Rooy.

The BTM personnel's club becomes "Royal..."



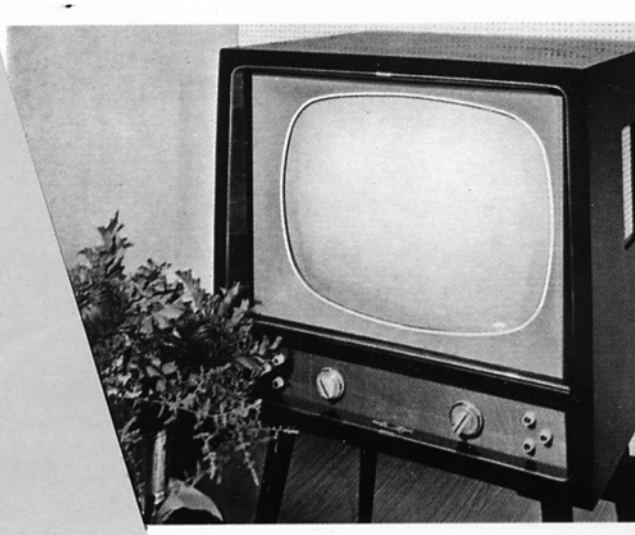
Paleis te Brussel.
7 februari 1962.

Mijnheer de Voorzitter,

Ik heb de eer U. te berichten dat
Z. M. de Koning gevolg gevend aan
uw wens, de Maatschappij
"Bell Telephone Personeelsklub"
te Antwerpen
machtigt de titel
Koninklijke Maatschappij
te voeren.

Gelieve, Mijnheer de Voorzitter, de
betuiging van mijn hoogachting te aanvaarden.

De Kabinetschef van de Koning,

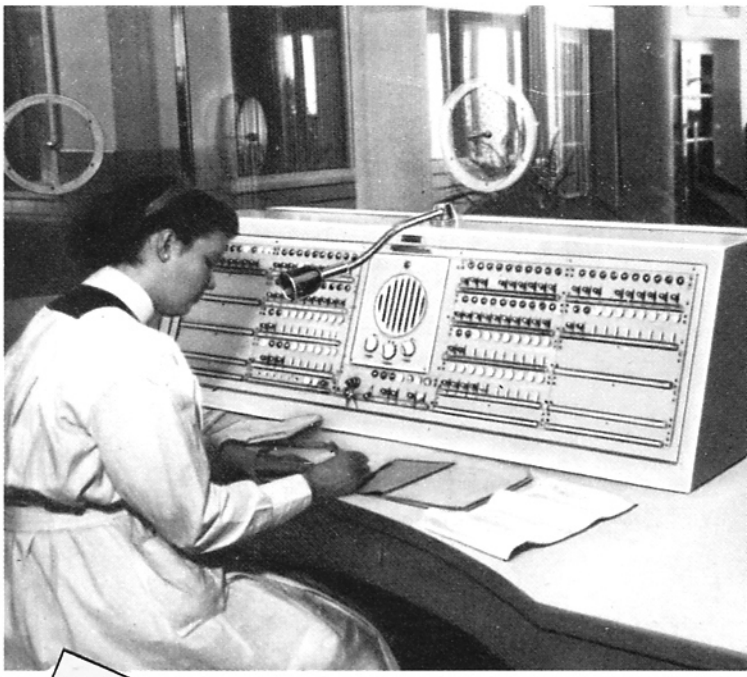


The Bell Harmony Boys.

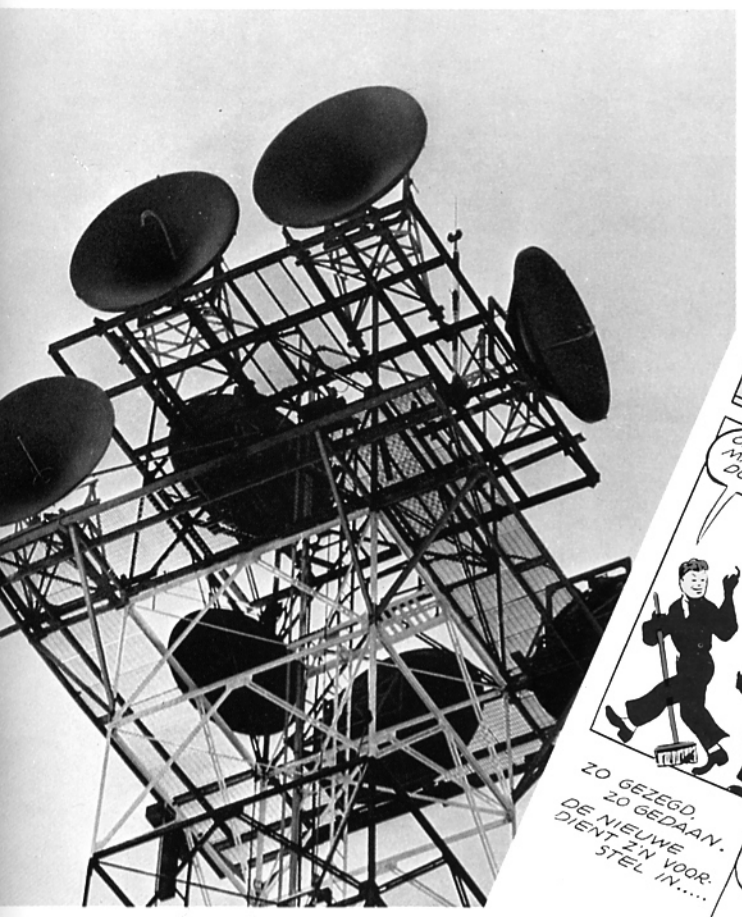
Commemorative medal 1957.

The BTM Harmony.

Combined radio, pick-up and television set in 1958.

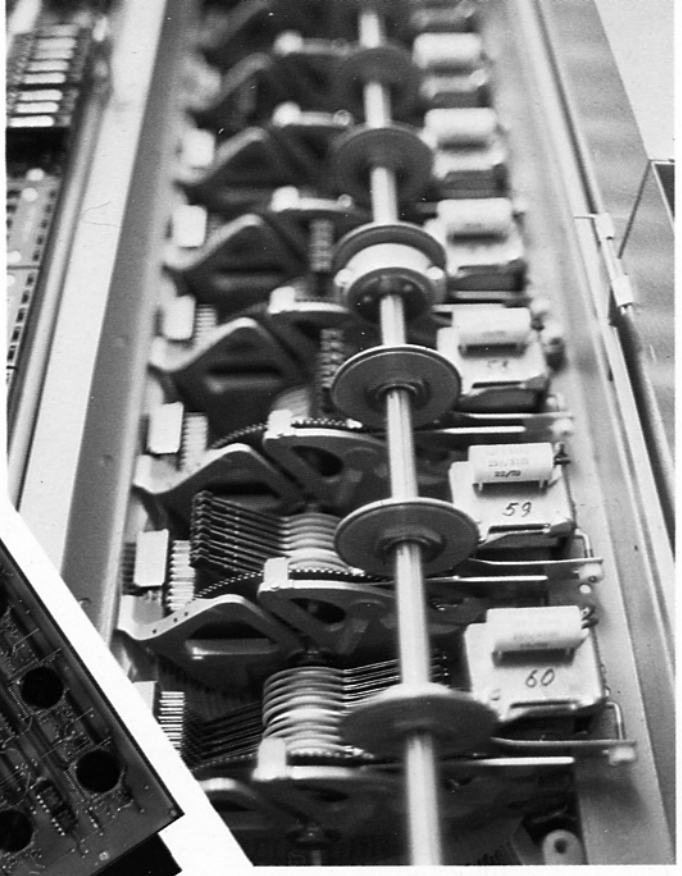


Operator's desk hospital signalisation.

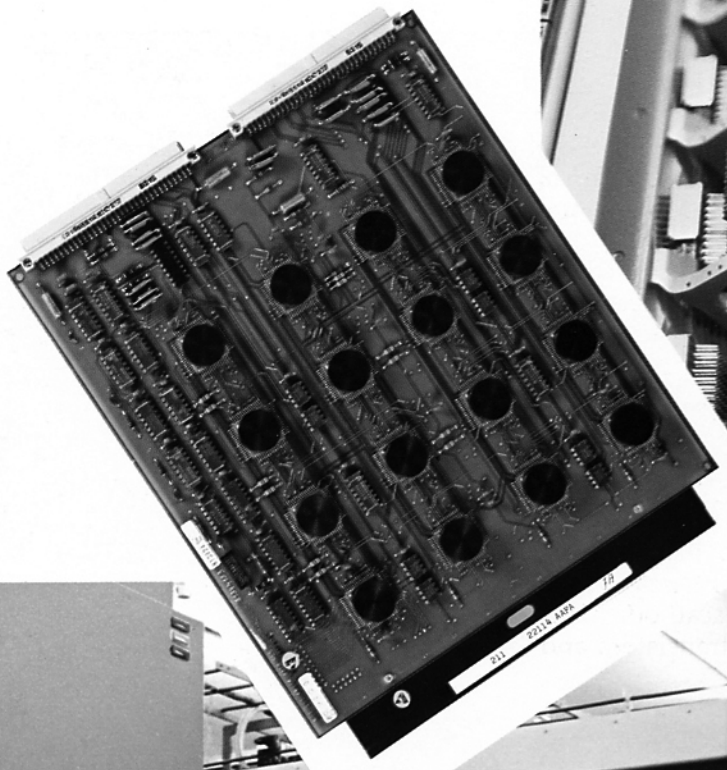


Radio-link system.

1962-1982



Rotary



System 1240.

Products... services... markets

With the export contracts for Pentaconta concluded in India (1964) and Rumania (1965) BTM introduced a new contract policy of which several other countries availed themselves for the supply of equipments and systems. In this type of contract, the supply of equipment was linked to the transfer of technology required for starting up licensed local production.

BTM had already acquired substantial experience in the transfer of know-how through the assistance it had been supplying for years to associated companies in various countries in starting up specific types of production.

Despite the success of Pentaconta, a number of telephone administrations had such confidence in the Rotary system that it was continued for several years to come. The system was updated for the last time with the 7EN version, in which the cold cathode tubes and wired circuits were replaced by transistors and printed circuits.

In 1965, BTM entered space technology, where it made remarkable contributions to both national and international programs.

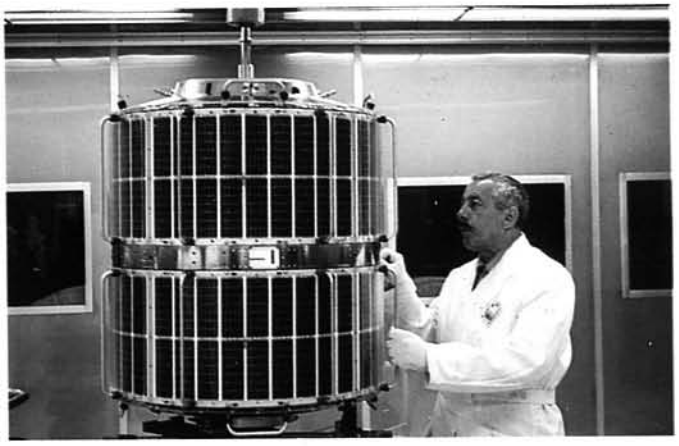
As a first achievement in ground equipment in this field, BTM contributed to the system development and construction of the tracking and guidance station of the European Launcher Development Organisation (ELDO) at Gove, Australia.

The first spaceborne equipment came with the solar cell power supply for the ESRO I satellite which was successfully launched as the Aurora on October 3, 1968, by the European Space Research Organisation (ESRO).

The range of radio and television receivers available on the market was no longer confined to Radiobell and Tevebell sets. These two trademarks were to disappear shortly after Graetz, Schaub-Lorenz and Prisma (later reduced to ITT and Graetz) were introduced. Finally, in 1967, the range was extended to include colour televisions.

Frigibell, for many years a popular trademark of refrigeration equipment, was also gradually replaced by the more general ITT label. The production of refrigerators in Belgium stopped in 1970.

Mobile satellite tracking and guidance station on its way to Australia.



Esro-1 satellite.

In 1967, the Belgian Royal Observatory ordered BTM to design and build a radio interferometer — used to scan the sun and to locate and map radio sources at 408 MHz — for the radio astronomy station at Humain-Rochefort.

"Unique in Europe... first electronic telephone exchange with stored program control cut over to RTT". This was just one of many similar headlines appearing in the national press after the first Metaconta 10C exchange had been put into service at Wilrijk, near Antwerp, in September 1967.

Metaconta 10C and the updated 10CN version both became worthy successors to Rotary and Pentaconta. At present, over 3 million equivalent Metaconta 10C and 10CN lines are operational in Australia, Belgium, Bermuda, Hong Kong, Indonesia, Korea, the Netherlands, Norway, Russia, Singapore, Taiwan and Yugoslavia.

For Metaconta 10C and 10CN, licensed local production contracts were concluded with Yugoslavia, Taiwan and Korea.

The development of the updated Metaconta 10CN version was started in 1977. No less than 131 man years went into the development of the software, whereas the hardware from its side demanded 117 man years.

In Metaconta 10CN, a more powerful computer was introduced. The redesigned software offered increased flexibility and a wider range of facilities to both the administration and the subscriber.

The first two Metaconta 10CN exchanges were put into service in Belgium and Korea respectively.

A few years after BTM had successfully launched its language laboratories, it extended its activities into the field of educational material in 1968 with the acquisition of IVAC (International Visual Aids Centre).

Over the years IVAC became largely integrated with the BTM Training Centre and started to concentrate its efforts on complete training courses and programs.

In 1968, BTM founded "Promedia". In collaboration with the RTT, Promedia set out to modernise the official telephone directories in Belgium, and also added a business directory, which became widely known as the "Golden Pages". Promedia published its first "Golden Pages" in 1969.

In 1970, the Belgian Telephone Administration RTT celebrated not only its 40th anniversary but also the completion of the fully automatic national network.

In international telephone facilities, the RTT was well ahead. By 1970 the Belgian subscriber could already dial 95% of his international calls.

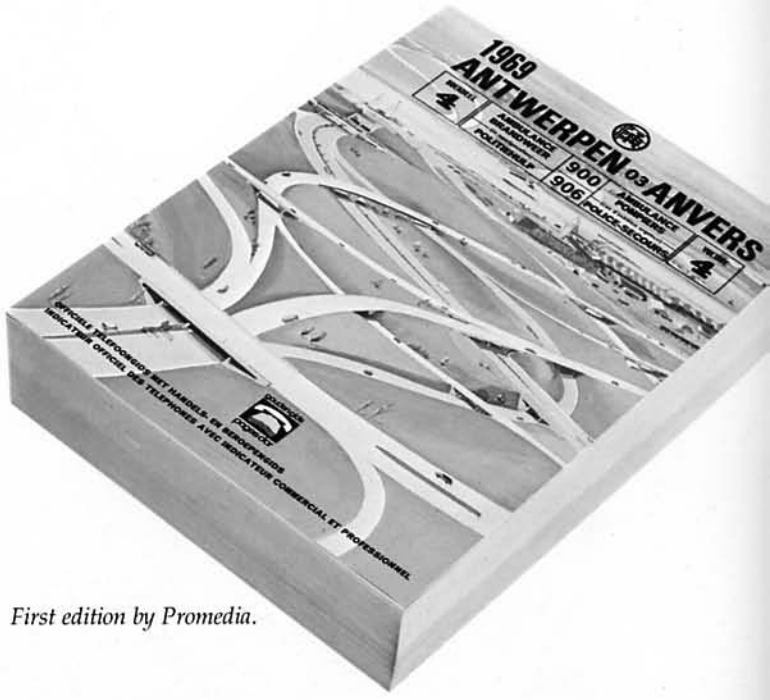
In the early seventies, the computer was also introduced into BTM mail sorting systems, thereby adding a new dimension to this type of equipment, which substantially contributed to the mechanisation of the extensive Canadian postal network.

The BTM subsidiary Standard Finance celebrated its 25th anniversary in 1971. Established in 1946 to finance BTM consumer goods, it quickly developed into a finance company in its own right.

The sales of transmission equipment continued to grow. Orders came in from all five continents.

Success was also achieved with the pay-stations which were sold to 40 countries. This remarkable performance was, however, eclipsed by the "Uniphone" telephone set which opened markets in more than 50 countries.

In 1974, the first optical chain for document handling was put at the disposal of the Postal Cheque Administration in Brussels. This new equipment was intended to gradually replace the original jacketing system which had been used since the 1950's.



First edition by Promedia.

Metaconta 10C, a European first in 1967.

The computers enter public telephone switching.

System 1240 laboratory.

Telephone set with built-in loudspeaker/microphone and large easy-to-operate call keys.

Coin telephone set.

Unimat PABX.

Uniphone.

Production telephone sets.

On July 18, 1974, Belgian telephone numbers were increased to nine digits. With BTM's help no less than 62.000 circuits were changed overnight.

Within the framework of the post-Apollo program, BTM received its biggest order for space equipment. As a co-contractor in a European consortium the company was entrusted with the development and construction of the "Electrical Ground Support Equipment" (EGSE) for the European Spacelab. In 1977, the first EGSE was installed in the Spacelab integration hall at Bremen. Two similar units have recently been delivered at NASA.

February 15, 1975 marked a milestone in the order book. On this day, an order amounting to well over 4600 million BF – a record figure – was booked in Djakarta. The divisions Switching Systems, Business Communication Systems, Transmission Systems, Audio Communication Systems as well as the Bell Training Centre were involved in its execution.

The initial contract was to be followed by others as, for example, in 1980 when a number of supply contracts and cooperation agreements were signed.

At the end of 1976, BTM engineers and technicians designed and constructed unconventional alarm systems. As opposed to other systems, the existing telephone networks could be used or a simple network installed.

This development led to the creation of Bell Security, an autonomous unit handling automatic security and access control systems.

In April 1977, a fully digital PCM/TDM trial telephone exchange was integrated into the Belgian telephone network in Charleroi. This transit exchange with 240 inputs and the same number of outputs became the forerunner of "System 1240".

With Unimat, fully electronic exchanges were also introduced into business communication systems. The Unimats, simultaneously suited to the needs of small, medium and large companies or services, became the worthy successors of the electromechanical Pentomat exchanges.

In data transmission, an advanced "packet switching" system was designed using microprocessors and offering a high degree of flexibility and forward compatibility.

With the installation of a central surveillance alarm system in Geel, electronics became of service to the elderly by making it easier for them to continue living in their own houses.

In addition to the traditional "brown" and "white" goods, the Consumer Goods division also started marketing micro-computers which paved the way for the use of computers by non-specialists.

In this field, BTM was also entrusted with the distribution of the Apple computer in Benelux.

The seriously handicapped can have great difficulty in using conventional telephone sets: a suitable set was specially designed and constructed in collaboration with the Belgian Telegraph and Telephone Administration RTT.

This set has a built-in loudspeaker/microphone and large easy-to-operate call keys. Moreover, a built-in memory enables the user to store frequently used numbers of up to twenty digits.

Data transmission.

Most of all, the seventies were characterised by unprecedented technical strides in which BTM both lived up to and enhanced its international reputation.

R&D efforts were concentrated on microelectronics, software development, system studies, computer applications and the introduction of new techniques such as pulse code modulation (PCM).

In 1972 for example, BTM applied PCM to transmission; the digitalisation of data made it possible to boost the capacity of the existing links.

For mail handling, production of a new type of letter sorter was started in 1981. The automatic reading of addresses (OCR) in this new machine is another proof of BTM's advanced technology.

For the application of optical fibers to transmission, BTM developed opto-electronic converters and PCM multiplex equipment which, in cooperation with the RTT, are now being evaluated on experimental links.

Similar optical fiber equipment was also made available to the National Belgian Railways. It was installed between Brussels-North and Brussels-South stations, in an environment where optical fibers show their characteristic advantages over more conventional media.

At BTM, the technological evolution of the past decade was not just a matter of advanced products and techniques, but also of new production methods, systems and services.

BTM's increasing R&D efforts are shown in its commitment to VLSI development, software capability and the extensive application of computer aided design techniques. These efforts are being supported through intensified collaboration with laboratories of Belgian universities.

In the field of switching, PCM was applied in the new digital switching system "System 1240". In December 1981, at Brecht, the first exchange of this system was handed over for evaluation to the RTT.

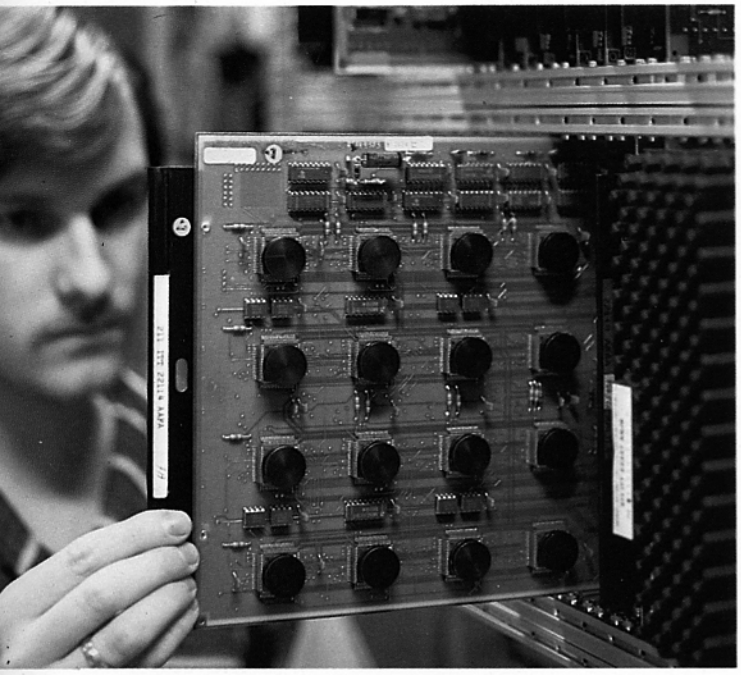
"System 1240" will also be implemented in the Mexican telephone network: in 1980 the "Teléfonos de Mexico" signed a significant contract for digital switching to this effect with " Industria de Teleco - municación" Indetel).

This contract calls for the supply of 430.000 local lines and 37.682 trunks of "System 1240". For its execution, Indetel will be supported by BTM who will be responsible for the full engineering, the initial manufacture, the training of the company's workforce and the ultimate technology transfer for local production in Mexico.

For subscribers, the digitalisation of the telecommunications network will result in the gradual introduction of new facilities such as electronic mail, remote computer access, wordprocessing, electronic banking via telephone, etc.

Nor is BTM sitting still in telematics. Following numerous Viewdata demonstrations, the company started early 1981 a "Videotex Service" offering a complete range of products and services for field tests. Anyone wishing to evaluate Videotex for internal use can now do so through BTM.

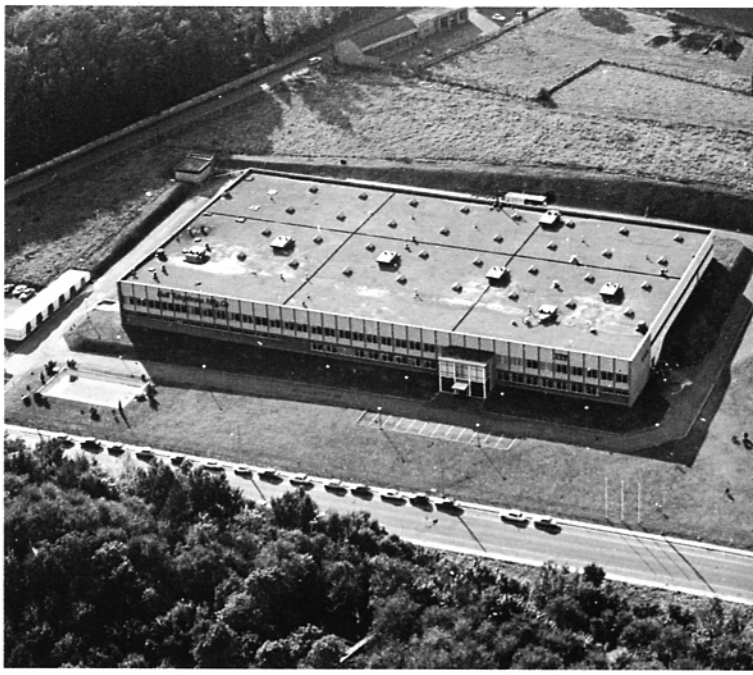
So the company's products and services are also contributing to the achievement of the office of the future.



The digital switching system 1240.

BTM Villers-le-Bouillet.

BTM Colfontaine.



BTM Antwerp.

Buildings... production... organisation

With the reorganisation of 1962-1963, a period of decentralisation and modernisation of the workshops and production facilities was inaugurated. The workshops at Hoboken, Ghent and Antwerp were extended and modernised. New plants were set up at Geel (2), Colfontaine (Wasmes) and Villers-le-Bouillet, where they brought employment in areas where unemployment exceeded the national average. On the other hand, obsolete workshops such as those at Frameries and in the Volksstraat and Napelsstraat in Antwerp, were closed.

The Golden Sixties were also reflected in employment: from 10.498 employees in 1963, BTM increased to a record figure of 14.946 in 1972, an increase of 42 percent.

A noteworthy feature of this period was the doubling of the number of employees with university training or higher technical education, which clearly indicated the technological evolution of products and systems in which electronics had an increasingly important share.

This was also reflected by the investments in R & D, which increased more than 3,5 times over the period 1963-1972.

The laboratory for environmental testing was even equipped with a space simulator. As one of the best equipped laboratories of its type, it also fulfils external orders.

The cable and wire manufacturing department in Ghent switched over from fabric to plastic insulation and the production capacity was doubled. The Components Division, which was centralised in Ghent, was also continuously expanding.

The concept "Safety at Work" has always been given much attention at Bell Telephone. Many initiatives were taken over the years to push this concept at all levels. 1968 was thus proclaimed "Year of Safety".

Both group and individual safety contests were initiated and thousands of employees participated.

At the "Open Day" held on September 21, 1969, in the new telecommunication plant at Geel, more than 40.000 visitors were counted. This factory would later serve as a model for similar factories in different countries, within the frame of orders including the transfer of know-how for local production.

BTM plants at Geel.

Unconventional transport of BTM equipment.

In the middle of 1972, building started on an eight-storey complex at the Boudewijnsstraat and Solvijnsstraat.

This new building houses administrative, medical and technical, as well as study services.

In order to fly more than 1700 tons of telecommunication equipment to Nigeria, some ninety Boeing 707's were chartered from Sabena between December 1975 and December 1977.

If successive generations of switching systems are compared it becomes clear that the number of direct working hours per unit volume continuously drops. Taking an index of 100 for Rotary, this becomes 65 for Pentaconta, 35 for Metaconta and only 18 for System 1240.

On the other hand, the two latter systems require more staff for development and engineering.

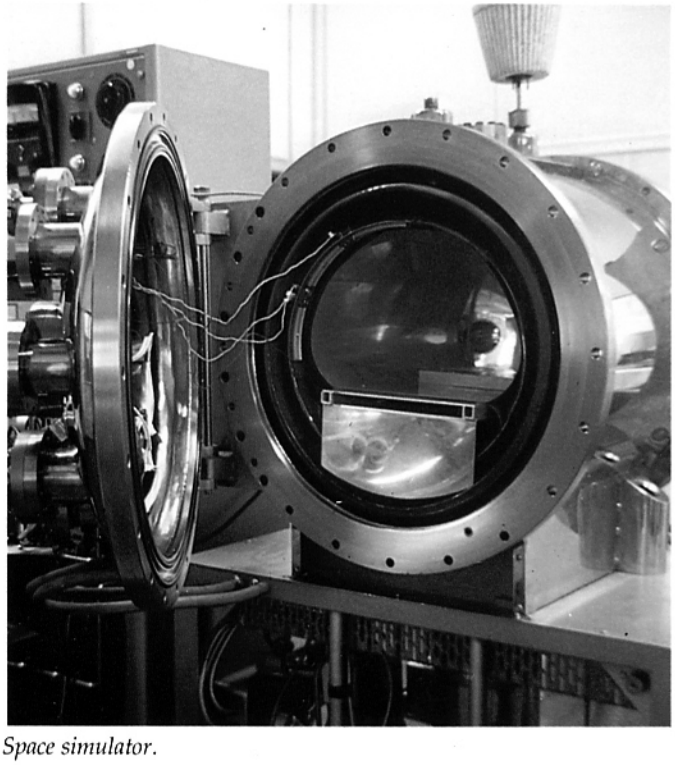
The technological evolution also manifested itself in the ratio between hourly-paid and salaried personnel. From an 80/20 ratio in the fifties and sixties, this has already evolved to 60/40.

Of course, this evolution also requires regular and extensive retraining programs.

In 1977, the R & D facilities were extended with a lab for micro-electronics, provided with the equipment required for developing and manufacturing LSI components. Originally started in Antwerp, this laboratory was transferred to Ghent in 1980, where the equipment was extended to handle VLSI technology.

The company's first workshops, the oldest part of which dated from 1883, were pulled down in 1978.

They made room for an urgently required car park for visitors to the main factory, whose façade was also given a thorough face-lift, for the jubilee year.



Space simulator.

Computer aided design.

Micro-electronics laboratory in Ghent.

Training.

Yugoslavia.

Metaconta 10CN production in Gumi (Korea).

Korea.

Audiovisual training techniques.

About employees...

The reorganisation started in 1962 took more than a year to implement, and involved an extensive information campaign for the employees. The problems were dealt with in some detail in the editorial of the company newspaper of May 1963. The following quotes need no further explanation.

"Over the years, strong fluctuations have often occurred in our staffing. Periods with a great number of employees alternate with periods of much lower staffing. Between April 28, 1962 and March 30, 1963 the total number of employees dropped by 904 persons". (...)

"In 1949, there was one salaried employee for every five wage-earners, in 1952 one for four and a half, in 1958 one for four, in 1960 one for three and at the end of 1962 one for 2,8".

"What becomes clear is that the balance is disturbed"(...)

"Our company must realise its expansion on the export market but that is precisely where we are vulnerable. Our export activities extend to all parts of the world; therefore, anything that happens anywhere in the world affects us".

For management and staff functions, external talent was attracted. On May 20, 1963 **Frank Pepermans,** who had won his spurs at Ford-Belgium, became the new managing director. Until 1976, the year of his death, he set his mark on company policy.

The sixties were characterised by expansion and decentralisation. A number of world-wide projects and orders led to new plants being set up in different regions of the country and to the creation of new jobs.

A great many BTM employees had reason to be pleased on November 20, 1963 when the first fully automatic both-way telex connection between the United States and Europe was officially put into service simultaneously in Brussels, Washington and New York. Both the exchanges in the United States and the one in Belgium were designed and manufactured by Bell Telephone.

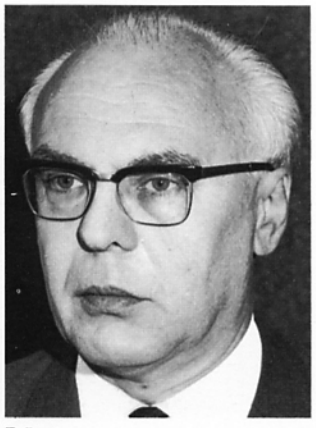
The 19 year old young man who in 1964 stole the famous painting "Negro Heads" by P.P. Rubens, from a museum in Brussels, was unlucky. During a telephone call he made to demand the ransom, the calling set was detected by subscriber- identification-equipment, and the police were able to arrest the extortioner on the spot.

Confronted with increasing training needs, the BTM training department developed audio-visual methods as early as 1965. Thus it became possible to give an almost unlimited number of employees a practical training at the same time.

On March 13, 1967, the steam-whistle of the company's main factory, a familiar sound in the city and a time signal for more than 42 years finally stopped.

Improvements in the boiler room brought the number of boilers from four to two, so that the pressure was reduced to 4 kg. which was insufficient for the old steam-whistle. Time passes!

F. Pepermans



P.L. Janssens

Commemorative stamp 40 years automatic public telephony in Bucharest.

The cut-over in 1967 of the first Pentaconta telephone exchanges in Rumania coincided with the 40th anniversary of automatic local telephone traffic in Bucharest, where BTM had set up Rotary exchanges in 1927. The Rumanian Postal Services even issued a special commemorative stamp for the occasion.

In the wide extension and modernisation program of the Mexican telecommunication network, partly for the 1968 Olympics, Bell Telephone had a considerable share. In addition to a number of telephone exchanges (Acapulco for example) much transmission equipment was also supplied, for transmitting the direct television-broadcasts of the Olympic Games.

The training courses: "Colour Television Techniques" organised by BTM were well attended. In 1968, 280 dealers and technicians successfully followed the course.

In 1969, BTM initiated a regular pre-retirement program which has already helped hundreds of personnel.

Once retired, BTM employees can moreover find recreation in the pensioners' section of the Personnel Club, which organises a wide range of activities twice a week in the Sportspark at Hoboken.

BTM was also a pioneer in ergonomics. In 1974 BTM was one of the few companies to set up an "Ergonomics Committee", in which specialists in various disciplines participated.

Mobile ground station for satellite communications.

In the early seventies, the international aspect of BTM's activities also manifested itself in a rather unusual way on the football field. In the Sportspark at Hoboken, the training services organised a friendly soccer match between a team of Australian trainees and a team composed of trainees from Yugoslavia, Venezuela, the Netherlands and Nigeria. The spectators included trainees from Zaire, Colombia and Great Britain.

Installation engineers require initiative; and show it. When installing a radio link in India, two BTM engineers landed in an area with no accommodation possibilities. So they spent the night in the wooden crate in which the aerials and the radomes had been packed.

An order, booked in Brunei for the supply and installation of a 960 channel radio link widened the geographic knowledge of many people when they heard that Brunei was a Sultanate on the northwest of the island of Borneo.

In 1976, the "KBTP" (Royal Bell Telephone Personnel Club) set itself up as the great promoter of the company sports expansion within the KSAH (Royal Antwerp Company Sports Association).

Under the impetus of its leaders, the VLB (Flemish League of Company Sports Federations) and the LFGCS (French-speaking League of Company Sports Federations) was also established.

In the seventies, the number of sections in the KBTP increased to more than thirty. Recent sports, such as windsurfing, badminton and hobbies such as numismatics and micro-electronics can also be practised within the club. Moreover, these sections are also open to foreign trainees at BTM who can thus speed their social integration.

During the meeting of the Board of Directors on October 25, 1976, **P.L. Janssens** was appointed president and managing director.

A mobile container telephone exchange must withstand rough treatment. BTM prototypes of such exchanges have therefore been tested on a road test circuit at Lommel.

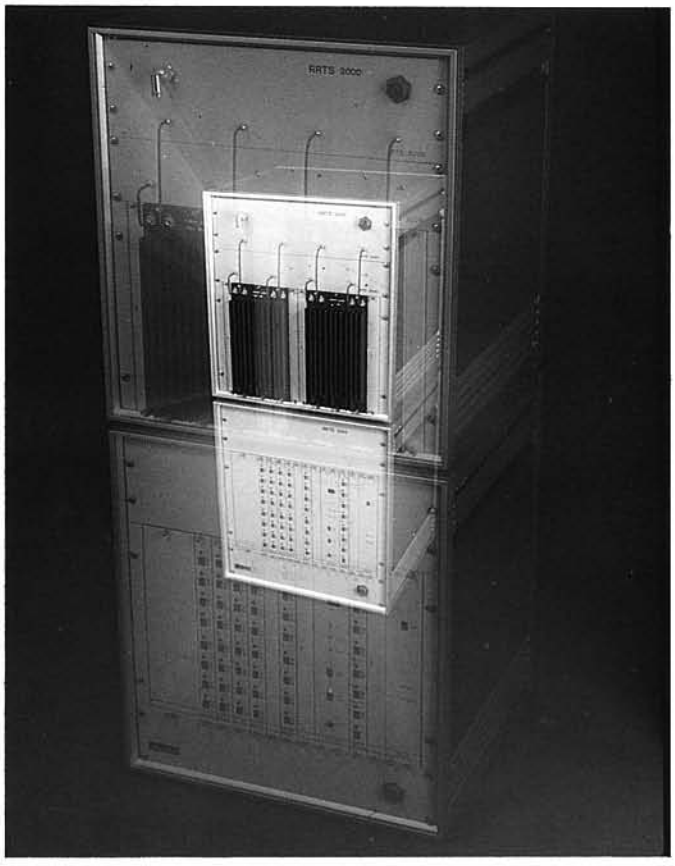
On October 15, 1978, millions of radio listeners witnessed the enthusiasm of the first French mountaineers who had reached the top of Everest, and announced it directly via Radio France.

The communications between Nepal and France via the Franco-German Satellite "Symphonie" came from Katmandu via a mobile ground station for satellite communications made by BTM. This station, mounted on the rooftop of the French embassy in the Nepalese capital, was operated by a BTM engineer.

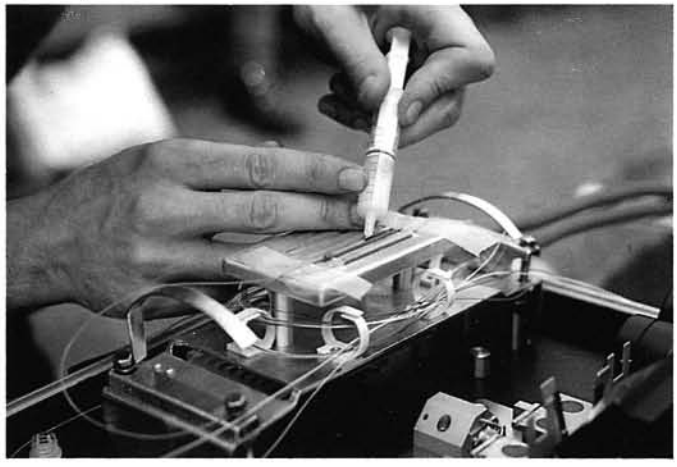
On April 24, 1979 **P.L. Janssens** retired and was succeeded by **G. Dirckx** as president and **E.A. Van Dyck** as managing director. On April 28, 1981, **Eugène Van Dyck** also took over the presidency.

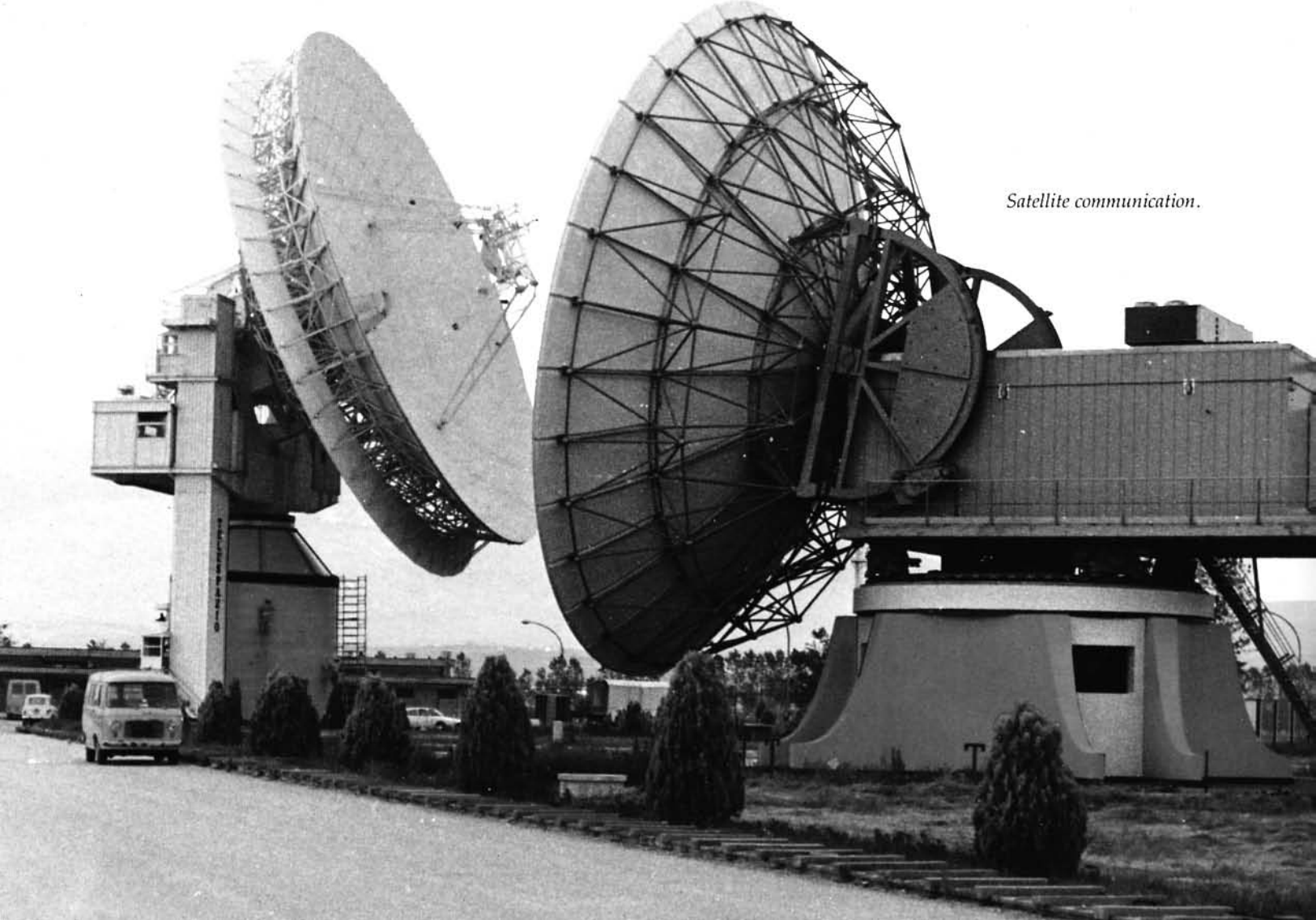
E.A. Van Dyck

Mobile radio telephone system.



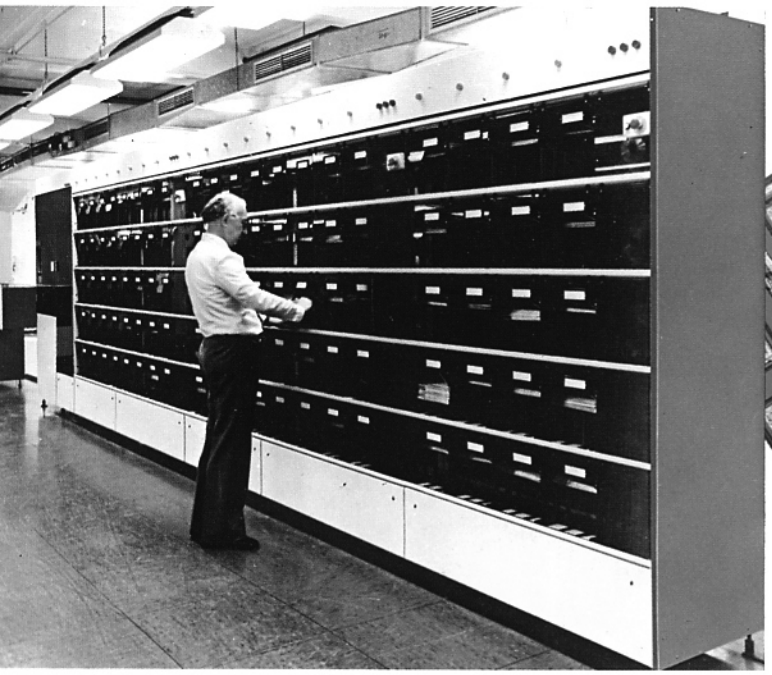
Optical fibre link.

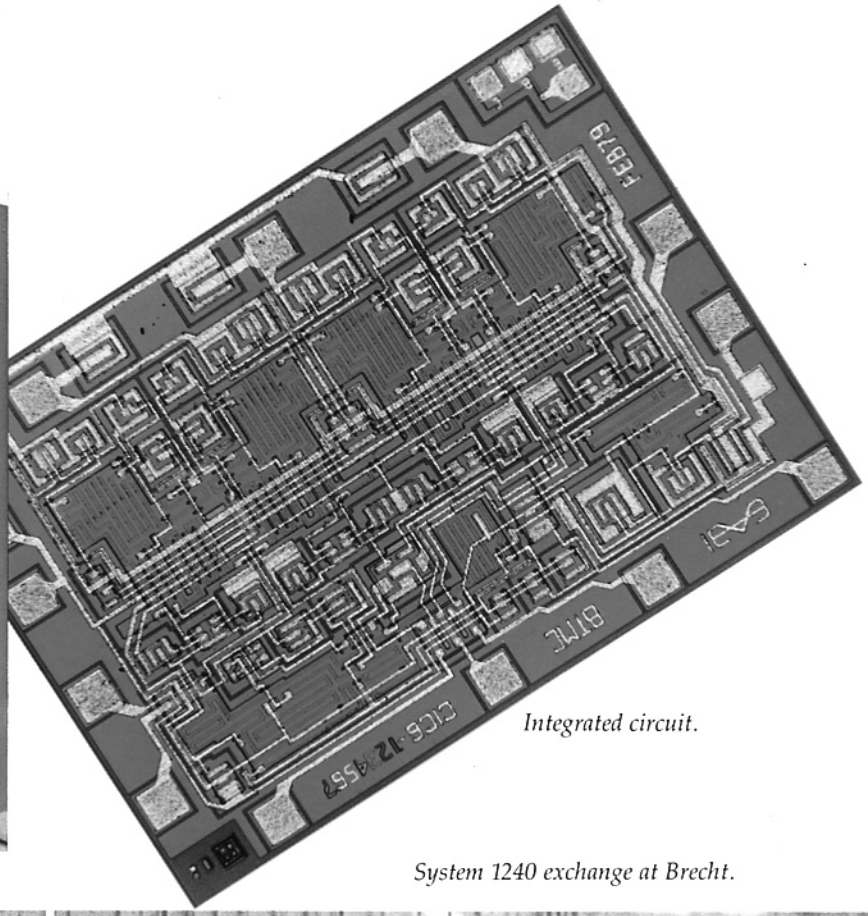




Satellite communication.

Letter sorting machine.





Integrated circuit.

System 1240 exchange at Brecht.


1882
1982

With a century of pioneering experience in telecommunications and electronics, Bell Telephone Mfg Co is set fair for the next hundred years.

Whilst the pace of technological development is increasing at an unprecedented rate, BTM's accumulated experience – a success story in itself – gives good cause for optimism.

In the fiercely competitive world markets BTM's confidence for the future is based on its long-established reputation for the hallmarks of success: quality and reliability.

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