

DIGNEY Frères

Introduction

You will immediately notice that this chapter is somewhat different from all the others. PART 1 is rather concise here. The reason is namely that, despite a lot of requests towards knowledgeable people and institutions, and searches in my many books, I have found little information about the life of the Digney brothers and also not a lot about their company. But in the end and after many months, thanks to the help of some friendly people -of which you will find their names at the end of this chapter- I managed to build up a (minimalistic) life story of the two Digney brothers.

PART 1

About the life and company of the “DIGNEY FRÈRES”

1.1. General

Unlike all the other names I have written about in this book, the name Digney is little or not known at all. This is certainly due to the fact that they were neither known inventors nor scholars, and that must be the reason why I was not able to find much information about them and their company.

Still, I thought it was important to devote a chapter to them because they played a pioneering role here in Europe in the early period of the breakthrough of Morse telegraphs and further on until the middle of the 20th century. They have indeed left their mark on the construction and design of the early Morse receivers. And what's more, the basic design from the late 1850's went on until -e.g. in Belgium- 1950! They were also the first producers of telegraph receivers to print the Morse signals in ink on the paper tape!

Luckily I got, in the last resort, a 'golden tip' from Mr. William Tobin (see [1]). What follows hereby is an extract from a book from around 1870. It is here, in its entirety, translated from French into English.

quote

DIGNEY FRERES (written c. 1870 by LAUZAC)

Jean-Didier, Knight of the Legion of Honour - Sébastien-Théodore, Telegraph equipment manufacturer

These two industrialists have only been established for about ten years, and they have already equipped the world of electrical telegraphy with advanced apparatus. It was considered as first ranked, and was soon adopted by most European governments. The Digney brothers, it must be said, were disciples of Mr. **Deshaye**, a distinguished watchmaker-mechanic in Paris, and under the inspiration of such a master, it is not surprising to see the progress they have made.

Jean-Didier was born on 7 March 1820 in Arraye-et-Han (+1880), and Sébastien-Théodore on 14 April 1822 in Clémery (+ unknown to me), two small communes [between Metz and Nancy]. They first joined Mr. Deshayes's company as workers in 1839, and later became in charge of managing Mr. **Louis Breguet's** workshop. And in 1856 they founded the establishment at which they are the head of today, making themselves known as “Digney Brothers, Watchmakers”.

Among the innovations accomplished by the two Digney brothers, which ensured them a distinguished place, we will mention a "Dial Telegraph" -printing dispatches in printed characters- and "Advanced Morse Telegraph" -also printing the dispatches in ink (invented in collaboration with mister. **F.-M. Baudouin**). Various other devices, which it would be too long to list here, were designed by Messrs. Digney; let us just say that these devices, like the ones we are indicating, have obtained, after multiple official tests, the preference of telegraph administrations. Moreover, almost all governments were using the 'Digney system', the only one adopted for international communications.

Mr. **Becquerel**, member of the jury and rapporteur of the XIII-th class (Precision Instruments) at the London Exhibition in 1862, said that the Digney Brothers built telegraphs showing an excellent manufacture. Besides a Morse system telegraph, but modified according to a specification that he indicated, Digney **designed** a printing telegraph operating by reversing the electric current, as well as a magneto-electric telegraph apparatus.

Before this Universal Exhibition, the Digney brothers had already won two gold medals from the Paris Academy of Arts and Crafts and a gold medal from the Société d' Encouragement. Following this exhibition, where they, self-evidently, also obtained a medal, they saw their fine work rewarded in the person of Jean-Didier, the eldest of the brothers, who was awarded the French 'Knight of the Legion of Honour'. This distinction was perfectly justified in the 'Moniteur' by the following lines:

".... He introduced significant improvements in the manufacture of telegraph equipment by inventing processes that facilitated the transmission of dispatches"

There are good reasons to believe that these skilled industrialists will not stop here, and that they will make further progress in electric telegraphy.

Unquote

Allow me to add some comments here.

-It is remarkable that these two brothers started working at a young age, without specific studies.

-It must have been their good fortune that they were trained as watchmakers in the practice of the famous and acclaimed watchmaker Deshayé and then moved on to Louis Breguet's company where they probably switched from his famous watch department to the telegraphic workshop.

-In various archives Deshayé is sometimes written as Deshayes...

-The statement that only the Digney device had to be used on international connections is not correct. Unless it means: on international connections *from France*. It was true that, from 1 January 1866, the International Telegraphy Union had imposed an obligation to use only Morse and/or Hughes telegraphs for compatibility reasons; but the brand was free to choice.

- In the overview of the patents one will see that the Digney brothers were also active in the field of watchmaking and other activities (including a cooperation with the Belgian Polydoor Lippens, about which I have written a separate chapter).

Via Google - Images I found a telegraph signed Digney & Diverneresse in the 'Norsk Teknik Museum' in Oslo. And a friend of mine told me about a Wheatstone type rheostat signed 'Digney & Diverneresse, Paris'.

And in an extract of an old document (a) was mentioned:

"Dissolution, as of 10 August 10 1878, of the company **Digney Frères et Diverneresse**, a manufacturer of precision objects and telegraphic devices; and reconstituted that same day under the name of **Digney Frères**".

When Diverneresse came into the picture, I don't know.

Furthermore , in another old document I could read:

"Digney Frères has become the property of "**Société Générale des Téléphones** ".

That must have been later than 1880 as SGT has been established in 1880. Another reason for this is that on 28 May 1882 there was a transfer, from Digney to SGT, of a patent 'for a system for closing and opening taps, valves of all kinds'...

1.2. Some patents

28983 - 2 September 1856, Digney Jean-Didier/Digney Bastien-Théodore, horlogers : Watchmakers: Electric telegraph system printing telegrams.

33191 - 7 August 1857, Digney Frères et Co.: Improvements in telegraph equipment.

49619 - 8 May 1861, Digney Frères et Co.:telegraph manufacturer: Various improvements to ordinary dial electric telegraphs, and those with ordinary characters.

57328 - 5 February 1863, Lippens Polydore & Digney Frères et Co.: Various improvements made to the equipment used in electric telegraphy.

71566 – 1866, Lippens & De Broucker: Oblique angular gear system

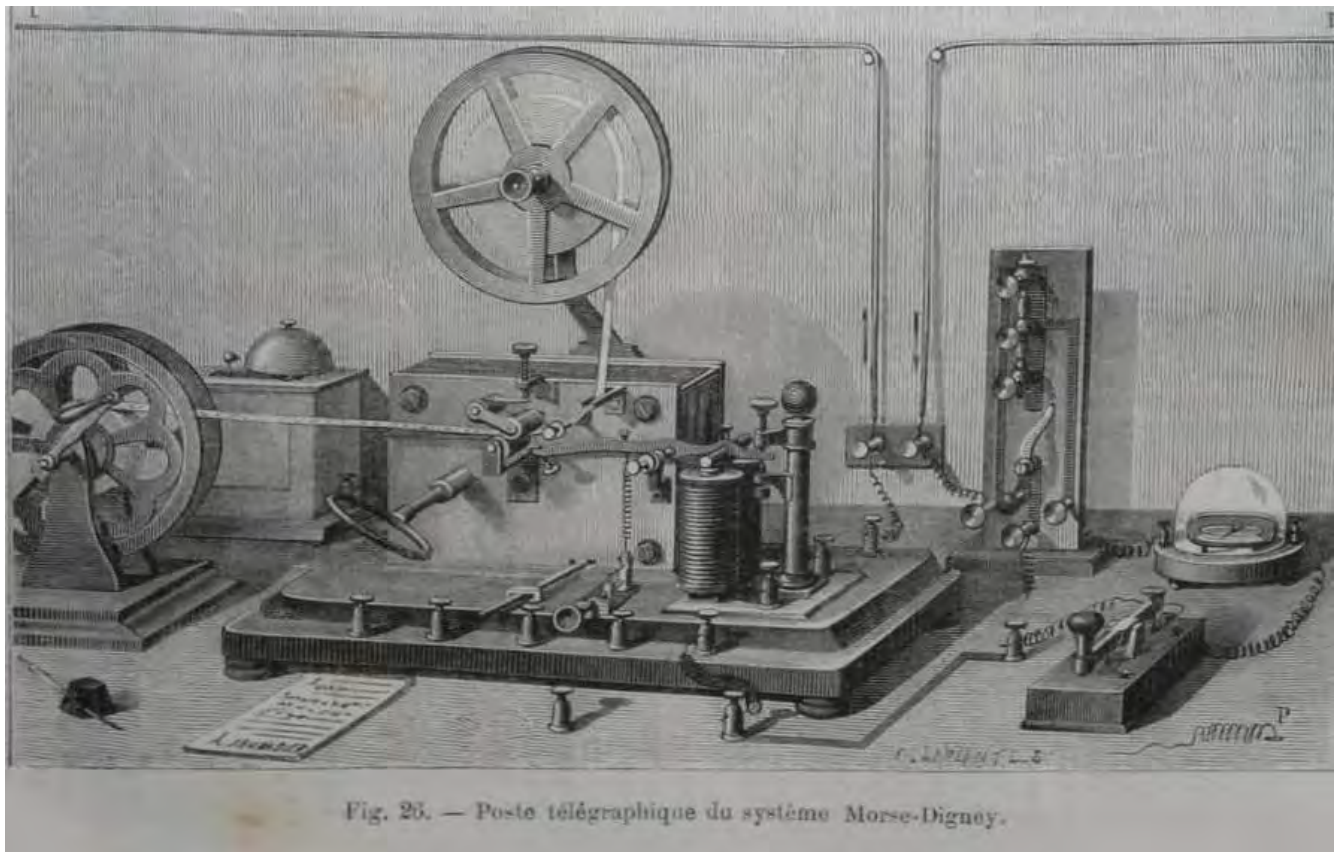
78599 – 1867, Hanotel & Digney Frères et Co.: Electrical transmission system for railway signalling.

84056 - 20 January 1869,; Digney Frères et Co.: Improvements in telegraphic communication apparatus.

87500 – 1869, Digney Frères et Co.: Improvements in telegraphic apparatus and especially in morse receiving apparatus

88657 - 22 January 1870, Digney Frères et Co.: Improvements in telegraph equipment and especially in Morse receiving equipment.

In PART 2 I am analysing the patent of 7 August 1857



PART 2

THE APPARATUS

2.1. THEIR MORSE TELEGRAPH RECEIVERS

2.1.1. The patent of 7 August 1857 that led to the success of Digney Frères

The earliest system of writing by embossing the Morse signals into the paper tape, using a 'dry point', is very difficult to read, especially when the light does not reach it in a suitable direction. Also the adjustment, which is necessary to be done quite frequently, requires careful care and a certain skill. Then you need a strong enough electric current to drive the embossing stylus in the paper tape, meaning that it is not always possible to send over long lines. The problem was significant and has, of course, been studied extensively. A large number of means have been proposed. For example, consideration was given to using Bain's chemical paper while adding modifications. But in this case, other problems appeared. It was imagined to place at the end of the lever a puller bathed in an inkwell. But the line puller requires far too frequent care, which employees cannot do without dirtying their hands and writing. Also the use of a pencil did not

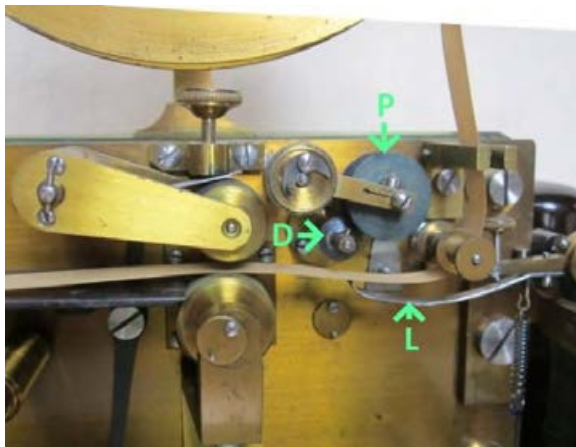


give satisfactory results

In 1856, a Hungarian, Mr. John, an employee of the KK Austrian telegraph lines, imagined replacing the dry point of the Morse lever with a small wheel rotating on its axis when the paper web was unwound. This wheel partially dives into an inkwell. When the lever lifts it, it marks its mark on the paper. Mr. John patented his invention on October 15, 1856. Later on the basic idea was taken over by Werner Siemens.



On 7 August 1857, the Digney brothers took out a patent for another design. The figure below represents their principle. **D** is a small thin disc of metal, which rotates when the paper is unwound; but instead of



following the movements of the lever, as in John's system, it rotates on the spot. It is charged with ink by rubbing on the cylindrical pad **P**, which rests on it in free friction. This pad, made of cloth or felt, is first strongly impregnated with oleic ink (greasy ink) by the operator. This time the lever **L** lifts the paper strip when the electric current flows in and brings the paper into contact with the disc and a dot or line is made, depending on the length of contact. The rest of the operation of the device does not differ essentially from the classic Morse device. Once the pad is well impregnated, it is sufficient to maintain it in good condition by applying a few drops of ink with a brush, once every twenty-four hours when the device is

constantly occupied. A test was carried out on the Paris-Brussels line (about 310 km), without line relays (amplifiers) and without local relays, and it worked perfectly...

Let's not forget that the brothers Digney are indebted to Mr. Baudoin for his contribution to the ideas of their invention.

Then it is remarkable that in a catalogue from Ducretet & Roger from around 1920 appears a Morse receiver with a writing system using a drawing pen. I have only seen one and suppose that it was not successful.

34. **Inscripteur** à mouvement d'horlogerie entraînant une bande de papier pour l'enregistrement graphique des signaux de T. S. F. (Fig. 11) 500 »
 Cet inscripteur, qui est commandé par le relais N° 33 ci-dessus remplace le récepteur Morse ordinaire, il est d'une construction plus économique, car il utilise un rouage d'horlogerie industriel renfermé dans une boîte en ébénisterie. Tous les organes inscripteurs sont montés sur une plaque de cuivre épaisse.

La position de l'électro-aimant, placé directement au-dessous de la bande de papier, simplifie les organes et diminue considérablement l'inertie des pièces en mouvement, ce qui permet d'atteindre les plus grandes vitesses de manipulation. Grâce au frein régulateur, la bande peut défilér à la vitesse la plus appropriée à celle de la transmission, tout en réduisant au minimum la dépense de papier bande.

L'inversion des signaux est obtenue directement par suite de la position de l'électro. Le dispositif d'inscription par tire-ligne assure une netteté parfaite des signaux, même les plus serrés et les plus rapides.



Fig. 11. N° 34.



2.1.2. Question Mark

This photo below from the CNAM states that the telegraph is an embosser from Digney. That means that the brothers Digney must have started by making Morse receivers working with a steel pin, engraving the Morse signals in the paper tape (like Morse did in the beginning of the telegraphy era).

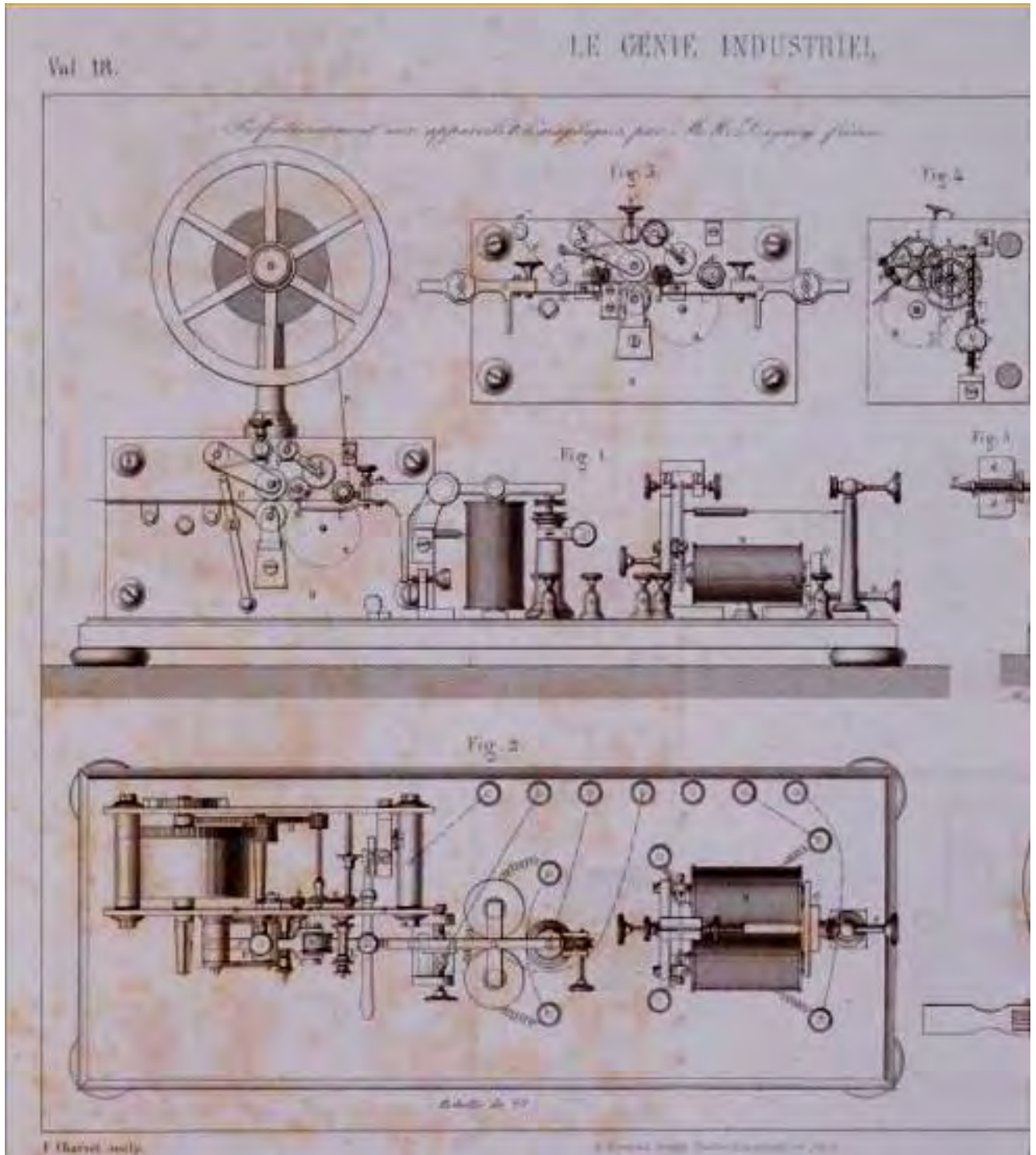
But then “1851”...!? We have seen that they founded their company, “Digney Brothers, Watchmakers” in 1856 (and that they got their first telegraph patent in 1858...).



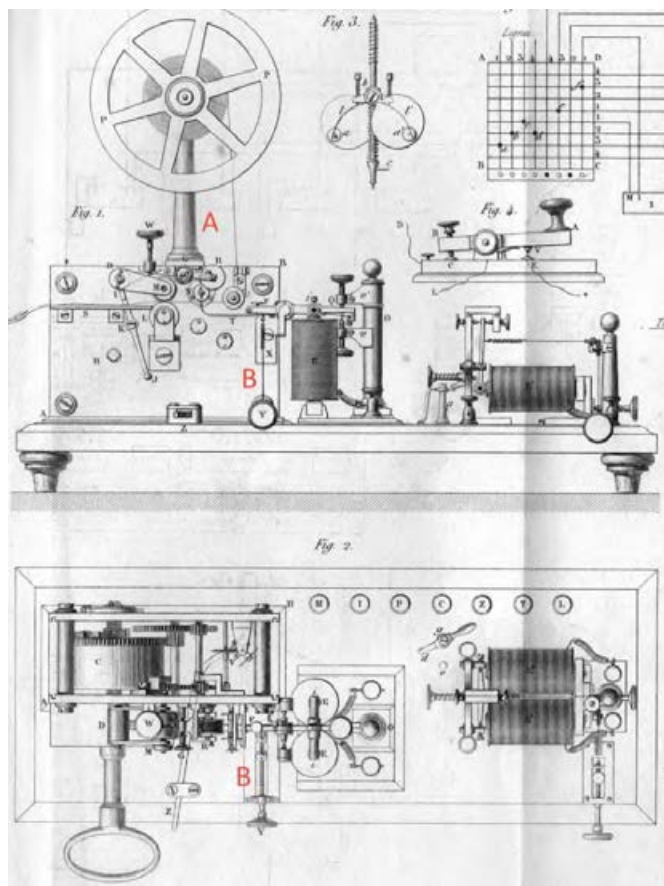
2.1.3. This may be a drawing of the very first Digney telegraph.

It comes out of [2], a book of 1859.

It has a local relay, sitting at the right hand side on the same wooden base



2.1.4. And this is most probably the second -and most typical- version , produced as from the 1860's



Images out of the book
by E. Blavier, from 1865 [3]

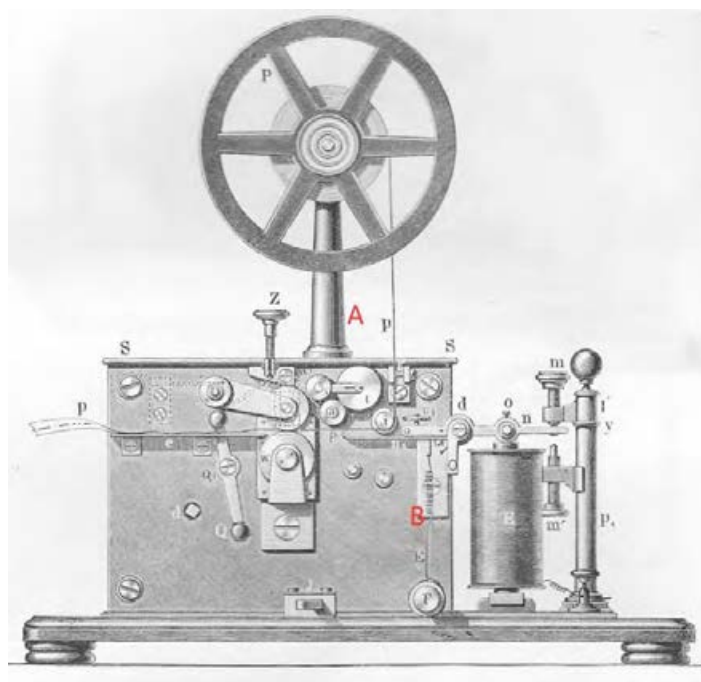
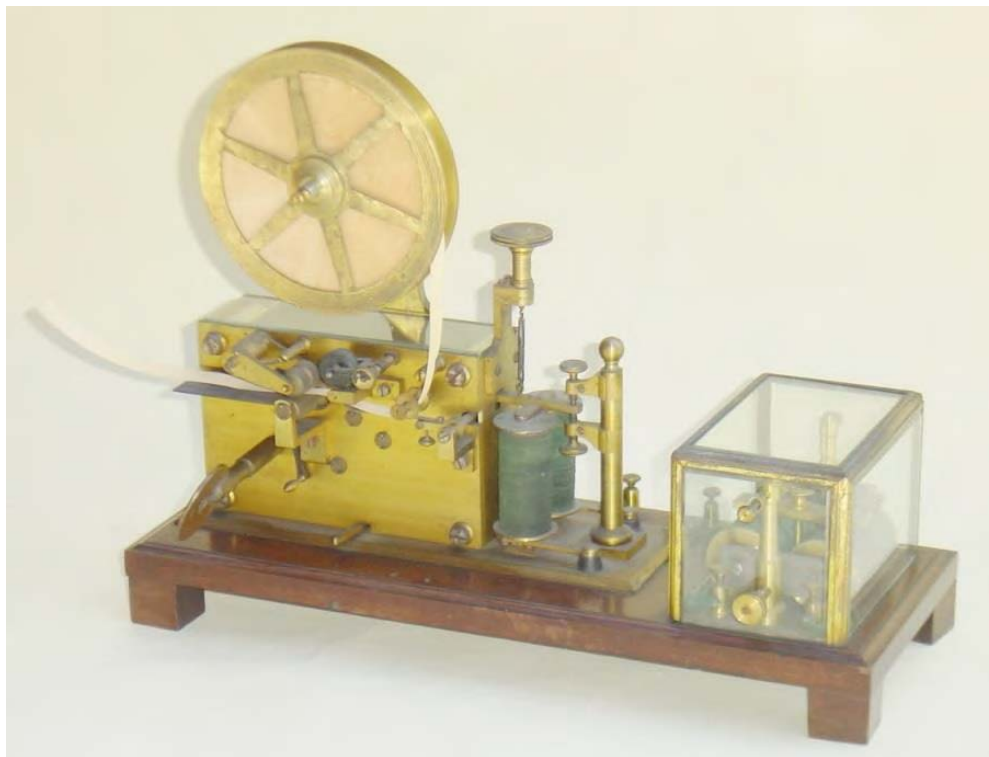


Image out of the book
by Schellen, from 1867 [4]

Have a special look at the letters A and B (in red) within the above figures. 'A' points to the wheel support, and 'B' to the adjustment of the spring that controls the printing mechanism. These two are different in the later models; many other differences, in the subsequent decades, will not materialize. See further down all the other models, and apart from A and B you will not notice any difference; even in the model that was still in operation, eighty years later, after WWII !

2.1.5. Two models with 'relay on board'



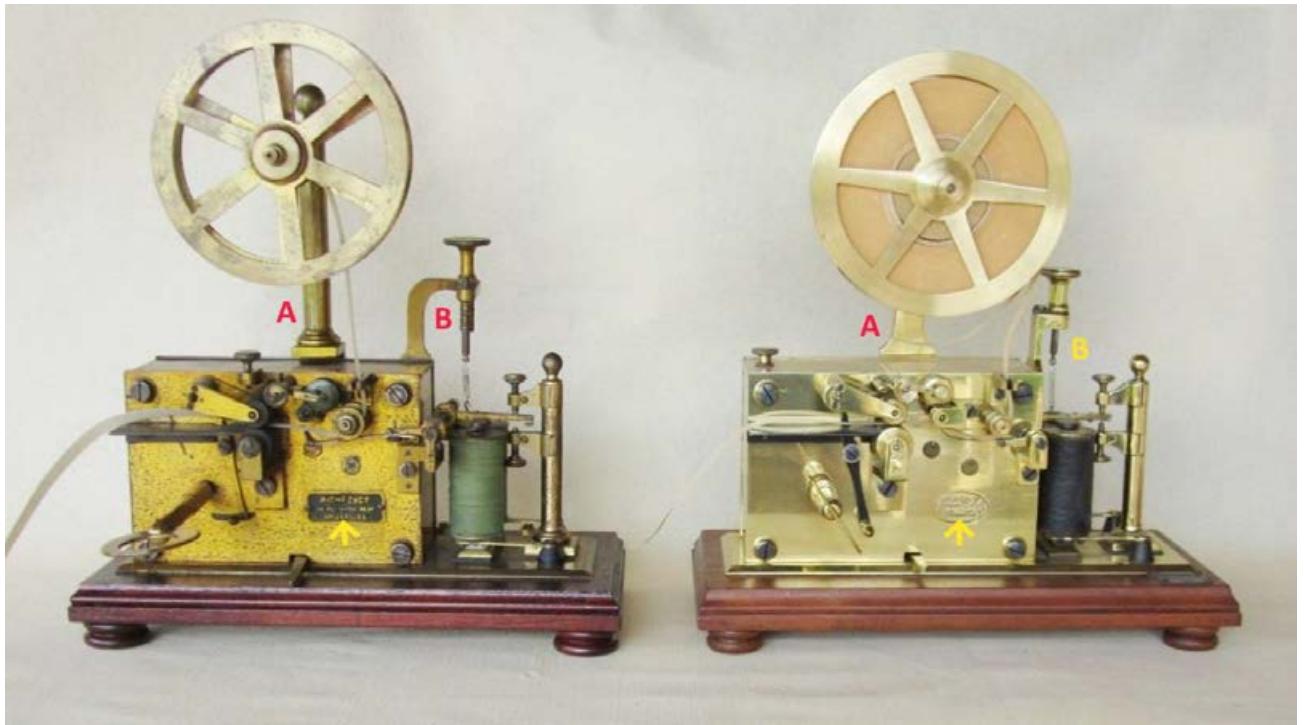
I found the old and nice ensemble below in the Netherlands where the different items were mounted by the company CAMINADA. A proof that Digney was also present there. Sorry for the quality of the photo, it was taken with an analogue camera in the 1990's and the telegraph left my collection long ago.



2.1.6. About the Digney telegraphs in Belgium

In PART 3 (Miscellaneous) you will be able to see from the illustrations that Digney receivers (or similar ones) were used in many countries.

The situation here in Belgium is somewhat vague to me. From the 1860's on, only such receivers were used here on the network of the 'Telegraph Administration' (the Belgian Railways were, amongst others, using Siemens & Halske receivers). I assume that they were first imported directly by the company Digney. Anyway, identical telegraphs appeared with a nameplate of a Belgian company and later with the name of the Belgian company engraved in it. Fact is that I had a receiver with the name of a Belgian company on it, but in which I discovered parts engraved with the name Digney. Despite my research, I have no information to conclude that those telegraphs were manufactured in France or that they were imported into Belgium or assembled here. These Belgian companies included Charles RICHEZ, F. VAN HULLE, and DE VOS (later Veuve [widow] DE VOS), three companies that were located in Brussels.



Two Belgian' ones. The left one is the oldest;

The yellow arrows are pointing to the names (here RICHEZ); left (the oldest model) the name plate, right the engraving

2.1.7. More models

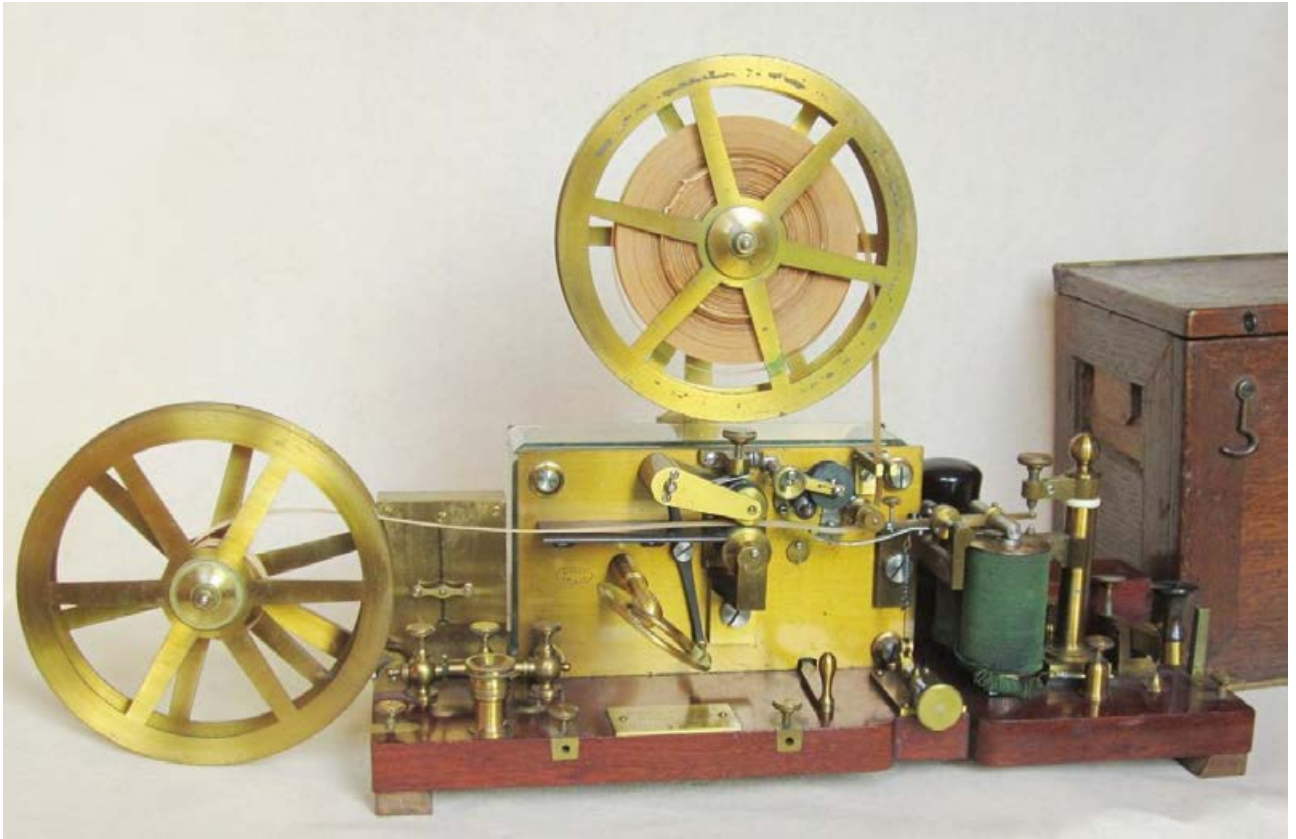


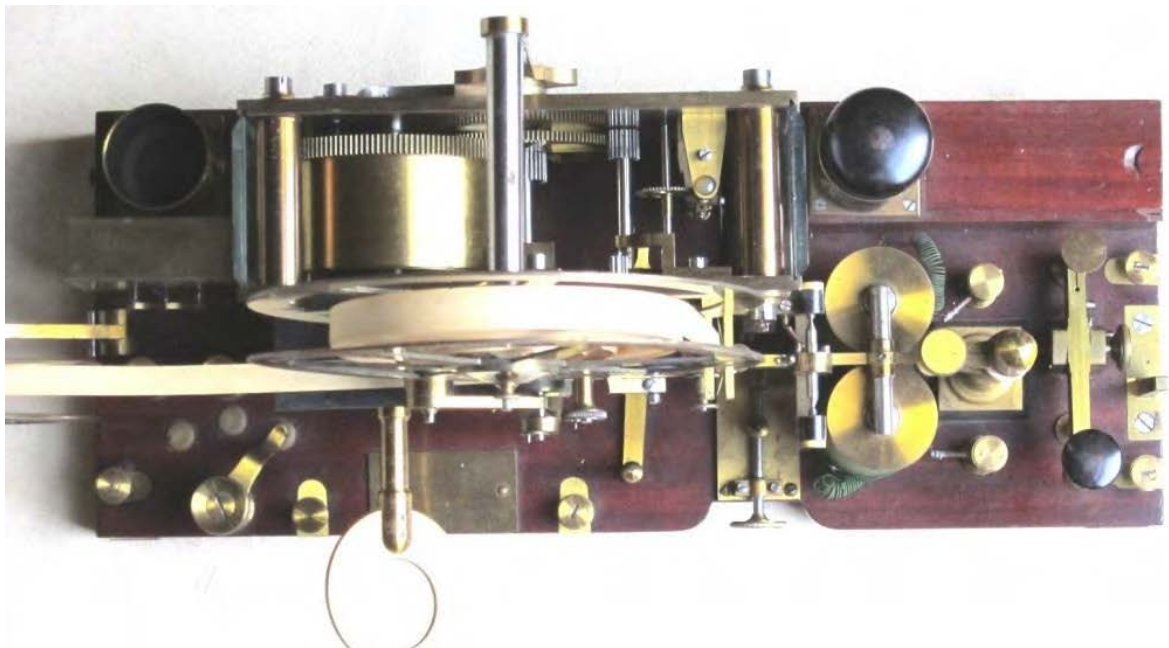
The one below is the only one that I have ever seen with a wooden back.



2.1.8. A portable model

This portable model is also somewhat special. The finishing is superb; have a look at the details. It was in use in Germany





2.1.9. Some look-alikes (clearly based upon the Digney design)



Breguet



French Administration



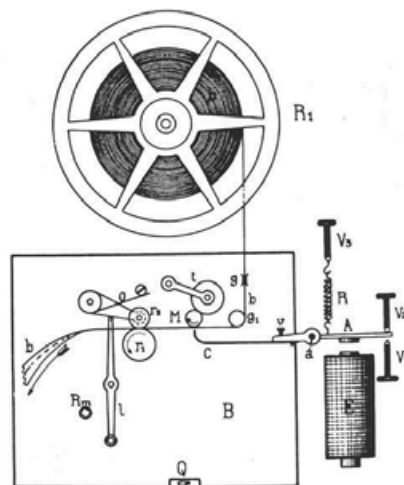
Mildé (Télégraphe Militaire, model 1907)



Ericsson

NOTE:

The chapter on Morse describes the working; look for this figure:



2.2. THEIR ABC (DIAL) TELEGRAPHS

2.2.1. Digney / Chambrier

Let me first say that these are very rare. I have seen some drawings in old books but never saw them in practice. Except for the one that I am describing here below. I suppose that they were inspired and based upon the Breguet system, but, as we will see here, with improvements.

For example with the Breguet one, it was a problem that there was often a loss of synchronisation between the transmitter and the receiver: every time the sender was transmitting too fast or turning the handle a bit in the reverse direction the synchronisation was lost. The telegraph I am highlighting here has an 'automatic' transmitter, a patent by a certain Mr. **Chambrier**. When you take the handle up from its last position, say the rest position '+' and then you turn it further, nothing happens until you push it down in the little groove corresponding with the next letter you want to send e.g. five steps to reach the letter 'E'. It is then only when you have put the handle in the groove, corresponding with the E, that the system automatically is sending five electrical pulses to the receiver.

Also a very special feature of this telegraph is that it could be connected, as an intermediate station, to two remote telegraphs. By putting the plug in the correct holes you can select the destination. And the remote stations can call the attention of the central telegraph: if they send an electrical current then the indicator (left or right) will signal which station is calling (like several decades later the signalling systems in house telephones did).

As this telegraph was one of my favourites, I am showing it here via many photographs.



Here are some detailed images from this beautiful and rare apparatus.

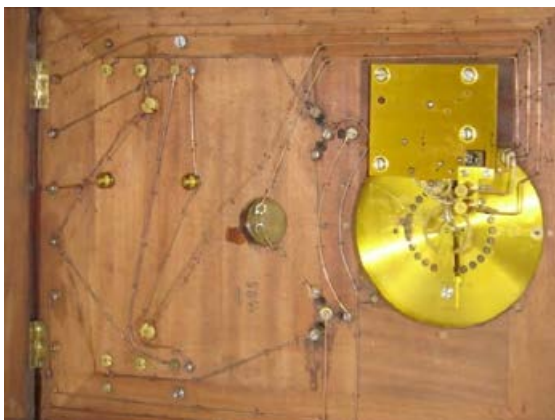
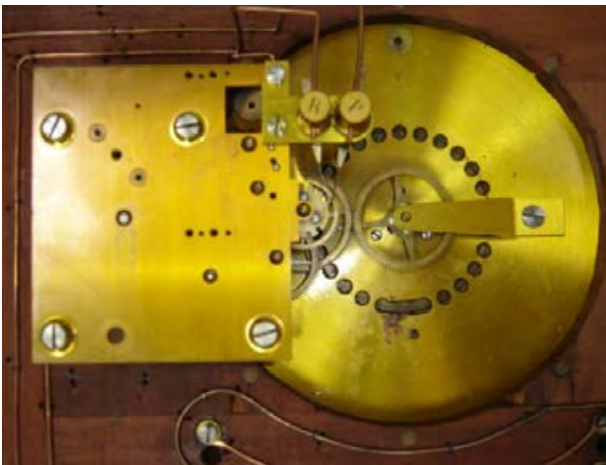
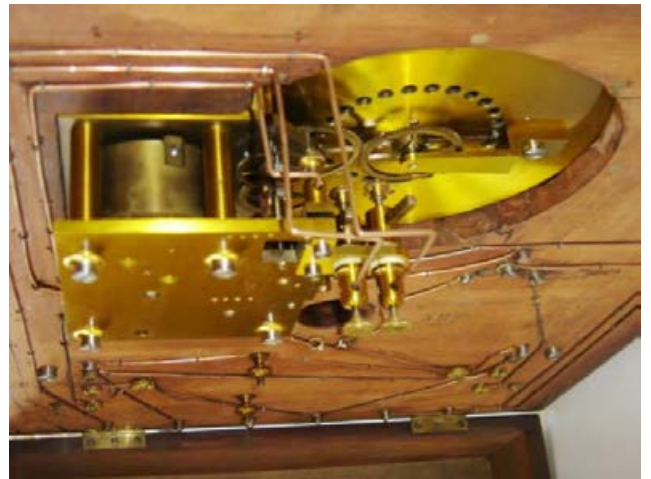


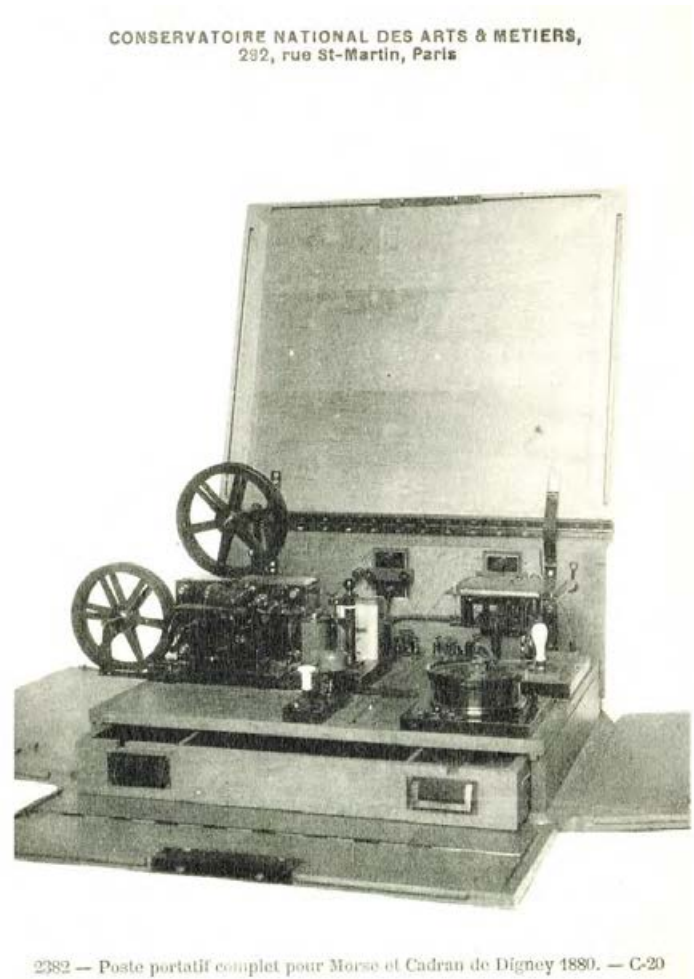
Photo with my grandson in 2005

The fine mechanisms



2.2.2. Notes

2.2.2.1. have never seen another ABC telegraph by Digney, but there must be one in the CNAM museum (on the right hand site on their postcard hereby).



2.2.2.2.. Interesting is the fact that both an ABC telegraph by Digney and the new system that printed the Morse signals in ink were presented by the famous **Th. du Moncel** in January 1859 in a lecture and registered in the bulletin from “the Society for Promoting the National Industry”, as proven here below.

*BULLETIN DE LA SOCIÉTÉ D'ENCOURAGEMENT POUR L'INDUSTRIE NATIONALE,
Rédigé par les secrétaires de la société, MM. Combes et Peligot, membres de l'académie des sciences
58e ANNÉE. DEUXIÈME SÉRIE. TOME VI. — JANVIER 1859*

On the ABC telegraph : :

-RAPPORT fait par M. TH. DU MONCEL, au nom du comité des arts économiques, sur un TÉLÉGRAPHE IMPRIMEUR A CADRAN imaginé par MM. DIGNEY, rue des Poitevins, 8, à Paris

On the ink printing Morse telegraph:

-RAPPORT fait par M. TH. DUMONCEL, au nom du comité des arts économiques, sur le TÉLÉGRAPHE IMPRIMEUR du système MORSE présenté par MM. BEAUDOIN et DIGNEY (

-DESCRIPTION DE LA PLANCHE 157 REPRÉSENTANT LE TÉLÉGRAPHE IMPRIMEUR DE MM. DIGNEY, AINSI QUE CELUI DE MM. BEAUDOIN ET DIGNEY

2.3. Other Digney telegraphy items (restricted to the ones that were in my collection)

2.3.1. Key



2.3.2.. Relais



2.3.3. Bell

The patent for this typical bell was attributed to the Belgian **Polydoor Lippens**, here abbreviated as LIPP^s. In 1850 he invented the mechanism for the electric bell, the vibrator. The patent for this was challenged by several other inventors, but eventually it was awarded to him in Paris in 1858.



PART 3: MISCELANEOUS ILLUSTRATIONS



Morse training for Belgian army recruits (in Vilvoorde caserne)



Postcard showing the basic Belgian Morse apparatus



Photo Second Empire (i.e. before 1870)



Photo with Belgian Morse apparatus

Digney or Digney based telegraphs were in use in many countries, the very first ones in France, Belgium, and Spain (du Moncel: December 1858).



Telephone cards



BIBLIOGRAPHY

Books

- [1] An extract of GALERIE HISTORIQUE ET CRITIQUE DU DIX-NEUVIÈME SIÈCLE. Volume 5 - LAUZAC - 1868-1872.
- [2] LE GENIE INDUSTRIEL N° 97-Tôme 18 - ARMENGAUD Frères - Janvier 1859.-341 p.
- [3] Nouveau Traité de TELEGRAPHIE ELECTRIQUE - E.E. BLAVIER - 1865 - 476 p.
- [4] DER ELEKTROMAGNETISCHE TELEGRAPH in...und... - Dr.H. SCHELLEN - 4th Ed. - 756 p.
- [5] BULLETIN de société D'ENCOURAGEMENT pour L'INDUSTRIE NATIONALE - COMBES et PELIGOT - Année 58, 2me série, Tome II - 1859 – p1-p15.
- [6] DU PERFECTIONNEMENT APPORTÉ PAR MM DIGNEY À L'APPAREIL MORSE - M.L. BERGON - ; sorry, I can't find it back

Internet

- [a] <https://gallica.bnf.fr/ark:/12148/bpt6k55735728/f2.image.r=%22digney%20fr%C3%A8res%22?rk=21459;2>
- [b] <https://gallica.bnf.fr/ark:/12148/bpt6k5803320n/f9.image.r=%22digney%20fr%C3%A8res%22?rk=1351938;0>
- [c] <http://www.telegraphy.eu/pagina/boek/TELEGRAFIE%2025%20APRIL%20Fons.pdf>
That is my second book HET INTERNET VAN DE 19-de EEUW - 2012 – 434 p. - In Dutch > but with 650 images

THANK YOU

These nice friends provided me, or helped me to find, scarce info.

William Tobin: William is a retired astronomer living in Britany with an interest in 19th-century science. See his www.tobin.fr

Henri Chamoux : Henri, docteur en histoire, est l'inventeur de l'Archeophone' ; voir ses impressionnants prestations sur <http://larhra.ish-lyon.cnrs.fr/membre/113> & <http://www.archeophone.org/these/>

Paolo Brenni: Paolo has been president of the Scientific Instrument Commission, of the International Union of History and Philosophy of Science and of the Scientific Instrument Society. Enough said I think ;o)

Michel Balanec: My 'alter ego' in France.

Alain Tamburini: During my full 'career' as a collector, Alain has been of a great help to me.

Andrew Wood: Founder of the UK "Communications Museum Trust" www.communicationsmuseum.org.uk , who has been so kind to correct my 'Flemish English'.