

The Pneumatic Post in Vienna: an outline

What is “Pneumatic Post”?

The simplest Pneumatic Post system consists of a single tube linking two ‘stations’. Closely fitting cylinders containing messages are either blown through the tube by compressed air or sucked along by a vacuum.

In 1799, 1835 and 1844 various inventors suggested to the Austrian Department of Commerce the installation of a “pneumatic post”. All were immediately rejected; in Austria at that time any suggestions for any changes whatsoever fell foul of two objections: (i) they might involve the government in expenditure; (ii) they implied that the existing arrangements were less than perfect. Clearly, no modern government would have such an attitude.

However the new technology functioned well in Paris and Berlin, and the Viennese wanted one too. At this time speedy communication was confined to the telegraph, introduced from 1845 (the first telephone system in Vienna was opened in 1881 and had 154 subscribers), and the Vienna Pneumatic Post system was intended for sending written telegraph messages from outlying post offices to the Central Telegraph Office for onward transmission by wire. This would solve the problems of the expansion of Vienna (it could take a messenger on foot an hour to go from the Central Telegraph Office to the boundaries) and of the expansion of telegram traffic as trade increased.

Opening day - 1st March 1875

The Viennese Pneumatic Post was opened to the public on the 1st March 1875; the total cost including all the machines, apparatus, pneumatic receivers and land was 364,700 gulden (equivalent to £30,418 then: about £2.2 million now!). Post and Telegraphy were at that time under separate administration, and the new service was assigned to the telegraph since it was primarily for the expedition of telegrams and “Depesche” (ie, official despatches, usually urgent). The new service brought with it specially prepared stationery, first in the form of envelopes and letter sheets, later supplemented with post cards and letter cards.

There is often a large blue crayon number at the top left of a pneumatic item. It is the number of the destination office on the Pneumatic system. The operating staff apply it and use it to route the item; it is taken from a special List of Offices and may or may not be the same as the Office Number used by the general public.

Fig 1 shows a typical pneumatic postcard, cancelled on 26th Dec 1890 at Kärntnerring. The vertical folds in the middle and the left are visible because they are dirty! The big blue '5' at top left is the Office Number for Magdalenenstrasse. However, the card was dealt with at Neumangasse, the previous “station” in the circuit. They applied their cancel to show they had handled it and sent it on to Magdalenenstrasse.

A word to the person who wouldn't dream of buying any such strange-looking card because it's got too many cancels, coloured crayon markings messing it up, and worst of all it's been folded and creased, which as we all know reduces the value of a cover to practically zero! These may not be classic classics, but they are very interesting. Two folds are a decided plus, not a major minus; red and blue crayons are welcome, lots of cancels are a plus, material from 1945 is a lot scarcer than from 1900 to 1910, etc.

Fig 2 is a normal postal stationery card from 1923. It has a 200Kr imprint with three additional adhesives to make up the rate of 300Kr postcard plus 2000Kr express. It was sent from Döbling, Station 117 to Fleischmarkt, Station 2, as shown by the blue 2 scrawled over the Express label, where it received an extremely clear pneumatic-type cancel.

In 1880 red-painted Pneumatic Post letter-boxes (see **Fig 3**) with the inscription “ROHRPOST” were introduced. They were smaller than the normal yellow ones for ordinary mail, and were emptied every 20 minutes by dedicated messengers. By the end of 1895 there were 427 red boxes. Occasionally items are found addressed and franked as foreign mail to England but bearing a special cachet “Found in a Pneumatic Post letter-box”: one suspects a visitor believing that since British letter boxes were red so were Austrian!

The customer service expanded along with the area covered. From 1880 the pneumatic stationery was obtainable in tobacconists, and the introduction of “Pneumatic Railway Station Correspondence” in 1883 also helped to ensure the viability of the system. From about the mid-1890s the use of ordinary postage stamps was permitted.

Pneumatic system map.

Fig 4 shows “the system at its maximum extent, in 1913”. One complication in explaining the markings on a pneumatic item is the effect of the successive expansions of the city of Vienna. In 1890, the boundaries of Vienna were enlarged to include as Districts X to XIX many of the previously-independent suburbs. It was then realised that many street names were duplicated, and a large number of changes were made in the following years to avoid confusion.

Pneumatic Post Cancellations

Initially, special cancellers were used: an oval canceller with the office number or name was used until 1883, followed by a circular sanserif type with the time, date, and office name. In 1890, a single circle seriffed canceller was introduced, followed in 1893 by the last specifically-pneumatic canceller, with the time, date, and office number. The next canceller type was a bridge, introduced in 1901. From 1925, the same basic types of cancellers were used as for the normal post, with special 'counter letters' and often (but not always) with the time in hours & minutes; senders usually marked their mail “Rohrpost”.

Pneumatic Post Stationery

Special stationery was issued for the Pneumatic Post - letter sheets (1.3.1875), envelopes (1.3.1875), post cards (1.8.1879), and letter cards (2.10.1887). The envelopes were thin, since the weight of a pneumatic item was limited. The first stationery bore the imprint of the 1873 telegraph-stamp; with the introduction of postcards in 1879 this changed to a postage stamp.

The letter sheet was slightly bigger than A4, and once written had to be folded three times, then sealed using the integral gummed strip. Specimens are rare, and as they were often damaged when opened, good used specimens are rarer! The folded letter was greatly disliked and it was soon replaced by an envelope. On the front was a list of the Districts served; on the flap was a list of all the Pneumatic Post offices. The original opening hours were soon curtailed, and despatches were reduced to 20 minute intervals instead of 15. All this information appeared on the Pneumatic Post stationery.

After 1922, pneumatic mail had to have “Rohrpost” written on it, or a red vignette with black imprint “Rohrpost”. If mail was marked “express” and correctly franked, then since the same surcharge applied for pneumatic and express delivery the Post decided for themselves whether or not to use the Rohrpost, which therefore became an internal postal forwarding facility.

On 1.1.1930, the difference between express mail and pneumatic mail was officially abolished. It had consisted mainly in that “express mail” paid only for express delivery at the delivery destination, while “pneumatic mail” paid for express delivery only in Vienna as well as for the pneumatic forwarding. The removal of the formal difference also had the consequence that from 1.1.1930 express printed matter, samples, “mixed sendings” and “business papers” which were suitable for pneumatic forwarding received it. From 1930, following the London UPU treaty, incoming air mails were entitled to express delivery at no additional charge:

Fig 5 shows a “doubly-pneumatic” card! It was sent express from Vienna to Berlin on 8 Dec 1916 and is franked at the special rate of 38 Heller for cards with imprinted stamps. It was sent pneumatically to Nord-West Bahnhof; the blue 24 at the top left is its office number. The cancel at centre top is a standard Berlin arrival for office 17; the BERLIN W struck on the Express label is a pneumatic cancel with the time in hours & minutes; the red 8 between these cancels is the Berlin pneumatic station number.

Fig 6 is an airmail letter to Romania sent on 6 May 1938 during the Anschluss period. It is franked with 45 Rpf to cover the full foreign letter rate of 25Rpf + Airmail surcharge of 20Rpf. It would have been sent pneumatically from W117 to W1 for forwarding to the airfield.

Fig 7 is an airmail letter sent to London on 1 August 1938, the first day of the full German rates system in Austria. Full foreign rate of 25 + Air surcharge of 20 + Express surcharge of 40 plus Pneumatic surcharge of 10 makes 95Rpf. Franked 93Rpf + 3G @ 2/3 = 95Rpf.

At the end of the war

From 1943 Vienna suffered repeated Allied bombing, and when Vienna fell to the Russians on 13th April 1945 fighting was going on in the very heart of the city. Within days of the end of the fighting, in April 1945, a provisional city government was constituted. The situation was far from encouraging: in the urban area, more than 3,000 bomb craters were counted, many bridges were in shambles, sewers, gas and water pipes had suffered severe damage.

There was no pneumatic service in 1945 between early April and 23 July. Although the postal system re-opened progressively from May 2nd 1945, the pneumatic pipe-work under the streets had been disrupted by the bombing. A skeletal pneumatic service began on 23rd July 1945, and further sections were progressively added.

Censorship after the war

From about 20th March 1946, domestic mail originating in Vienna was censored. The censorship facility was at Wien 1 and was an "Allied" facility, jointly staffed and operated by all four of the Occupying Powers; however, it applied the rules and procedures implemented by the Soviet authorities in their surrounding Occupation Zone. Domestic mail censorship in the Soviet Zone (excluding Vienna) began in the greater Vienna area on 25 March 1946 and was carried out at Wien 76 (Südbahnhof). Later, other facilities were opened, closing at the end of domestic mail censorship on 7 October 1946.

Post-war air mail

During the war Aspern remained the Viennese airport, until in April 1945 the Soviet army took it over and made it their base for the next ten years. Aspern was in the Soviet zone and unavailable to the western allies, so in 1945 the Americans laid out an airfield along the Danube canal and near the Karl-Marx-Hof, while the British arranged theirs on Schönbrunner Schlossestraße along the Vienna river. Later the British and French took over Schwechat as their airport, the Americans Langenlebarn at Tulln where on 16 June 1946, PANAM landed the first post-war civilian flight.

On 25 March 1946, outgoing air mail from Vienna was authorized. By 1946 the pneumatic post system had been repaired, so air mail was sent to the Telegraphenzentralamt in Börseplatz, thence to the Air Mail Supervisory Office at Wien 101 (=Westbahnhof). It was censored; then sent to the airfield, probably Langenlebarn. As the first PANAM flight was not until 16 June, early civil airmail must have been flown on military flights.

The system declines

Once the difficulties of 1945 had been overcome, there were only on average 8 blockages per year, and at the end 2308 trains were running daily. Inevitably the arrival of the telephone took away much of the custom from the Pneumatic Post, although the growth of air mail correspondence from the 1930s enhanced the value of Pneumatic Post between the city offices and the Airmail collection point. However, the Pneumatic Post's other function, of expediting telegrams to the Central Telegraph Office, became of less importance as the use of telegrams declined.

The last train

Eventually the economics of maintaining the Vienna Pneumatic Post system in post war conditions led the authorities to close it down. The 2nd April 1956 was Easter Monday, and the pneumatic system "received a rotten Easter Egg". At 13:25, the last pneumatic train ran from Post Office 129 to the Central Telegraph Office, Börseplatz. It arrived there three minutes later and rang the familiar arrival bell, to find for the first and last time the station full of decorations, red-white-red streamers and honoured guests. Souvenir mail was taken from the cans and speedily delivered.

How was it done?

The simplest Pneumatic Post system consists of a single tube linking two 'stations'. Closely fitting cylinders containing messages are either blown through the tube by compressed air or sucked along by a vacuum. In a more sophisticated form, two tubes would link the individual stations, thus enabling two-way traffic to be maintained: one tube would be under pressure and in the other vacuum. Vienna had only a single pipe between stations, and depended

on strict adherence to a complicated timetable. A proposal in 1933 “to bring the system up to modern standards as exemplified at Berlin” by doubling the pipes was rejected as too expensive.

The first type of apparatus used was the “Felbinger-Crespin Bronze Cannon”, impressive in appearance but inconvenient to install and to operate. Later Felbinger invented a better device, which is shown in **Fig 8**. Incoming cylinders arrived in the large chamber, and were retrieved through the rectangular hatch; outgoing ones were inserted through the fitting at the top of the curved pipe. With an intermediate station, many of the incoming cylinders required forwarding to the next station, and this involved taking the cylinder round to the other side. The numerous valves had to be manipulated in the correct sequence to send or receive the cylinders.

The containers

The mail was carried through the pipes in cylindrical containers. Pneumatic post stationery was folded to fit in the cans. The folding was on the vertical axis, twice, so that when the item is opened out it has three vertical fold marks; often the second fold's marks do not show. Pneumatic envelopes were sometimes rolled instead. These creases are helpful in identifying non-Pneumatic Post stationery which has actually passed through the Pneumatic Post, such as express letters sent from Vienna to other places and incoming express mail put into the Pneumatic Post for speedy delivery within the city.

The original containers were made of galvanised steel, later of aluminium. When it was required to send mail only to an adjacent Pneumatic Post Station the container would be inserted into the tube by itself. Containers for transmission to more than one station would be linked up according to destination and a heavy driver placed at the trailing end, thus making up a “pneumatic train” consisting generally of up to 10 steel cans. The trains travelled through the pipes at about 50km/h. Extra trains, eg to return empty containers to their source, were carefully fitted in to spare slots in the timetable.

Operational troubles - Sonar

If cans stuck, the first remedy was to apply full vacuum to one side and full compressed air to the other. If that failed, a train composed only of the heavy drivers was sent down, the impact of which normally dislodged the blocked cans. Condensed water was removed with a can carrying a sponge or a driver with a horse-hair brush. Jams & blockages would if possible be cleared by applying alternate pressure and vacuum; if that failed a 1kg iron driver was sent down, using a portable air compressor borrowed from the Vienna City Works Department!

If all else failed, the section was isolated with wooden stoppers. The operator then blew a puff of air into the tube and used a stop watch to time the “echo” in seconds. Taking the speed of sound in air as 330m/sec, the round-trip distance is 330 times the stop watch reading, and the distance to the blockage is half that. Using large scale street maps, the location of the blockage was determined, and the street dug up.

Messengers

The postal term Botenlohn means “messenger fee”: money paid to the system and/or to the messenger who has hand-delivered an item. As applied to the pneumatic post, it is a fee levied for deliveries to places not included in the free delivery area; it began in 1880 and seems to have been generally superseded in 1887, although we know of examples from 1904 and in principle it could have lasted until the system closed in 1956. There is an “Instruction Manual for the State Telegraph Messengers in Vienna, 1875” which amongst much else states:

- The Telegraph messengers are responsible for the delivery of telegraphic despatches and pneumatic letters.
- Their official uniform is “a green hooded cloak, orange-gold piping and two rows of buttons with eagles upon them”. The Post Office buys this, but the messenger has to pay back the cost from the delivery fees.
- Whilst on duty they must display a friendly and outgoing disposition, and are forbidden to spend time in wine bars or coffee houses. They may not solicit gifts from those to whom they deliver [but there is no specific prohibition on accepting them!]

List of figures

1. Pneumatic postcard, 1890.

2. Postal stationery card sent express in 1923.
3. Special red post box for pneumatic mail.
4. Map of “the system at its maximum extent, in 1913”.
5. “Doubly-pneumatic” card sent express from Vienna to Berlin in 1916.
6. Airmail letter to Romania sent in 1938 during the Anschluss period.
7. Airmail letter to London sent in 1938 during the Anschluss period
8. The Felbinger Pneumatic Apparatus



fig1



fig2



fig3

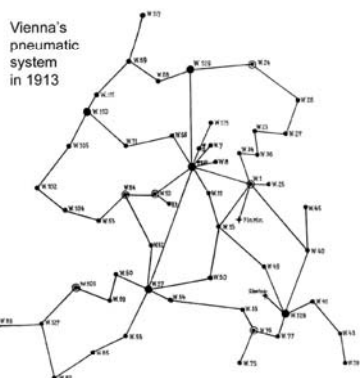


fig4



fig5



fig6



fig7

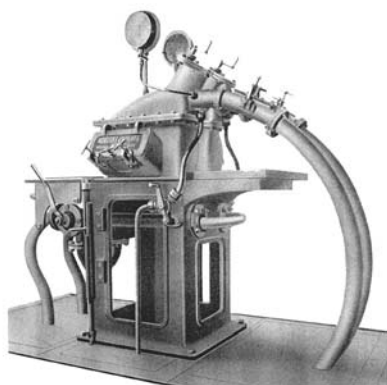


fig8