Identifying the Skeleton Telephone

Introduction - Writing this paper came about because of differing opinions regarding the origin of a particular Skeleton Telephone and as a result of (ATCS) members gathering these unique telephones at a recent meeting, we have the basis for some enlightenment. **In each of the following descriptions, any features worth noting are highlighted in Blue text.**
We won't claim this to be an exhaustive list, or what might be a complete description of all Skeletons that could be discovered but it should help to clear up questions about different component parts fitted to these historic telephones.
So, any and all comments or contributions that will either correct or add to the following descriptions will certainly be appreciated. The final document in .pdf form (for your Adobe Acrobat Reader) will be made freely available to anyone interested in obtaining a copy. Some model/reference numbers and some diagrams from other documents listed in the Bibliography will also be used in this document.

Pictured above and below are some of the twenty or so Skeleton Telephones from various manufacturers and countries that were displayed at our meeting.

Ericsson

A very early version (AC 110 - of 1893)

Characteristics

Transmitter	With deep transmitter
Receiver	With one piece Bakelite receiver cap
Cradle	Conventional with tear drops
Deck	Ebonite with Lightning plate and 5 terminals
Transfers	Quite bold, not as fine lined as later versions Enlarged picture below
Magneto	Armature weighted cutout
Bell	Common bell motor No bell cutoff press button
Leg Spreaders	None – catalogue info below shows spreaders

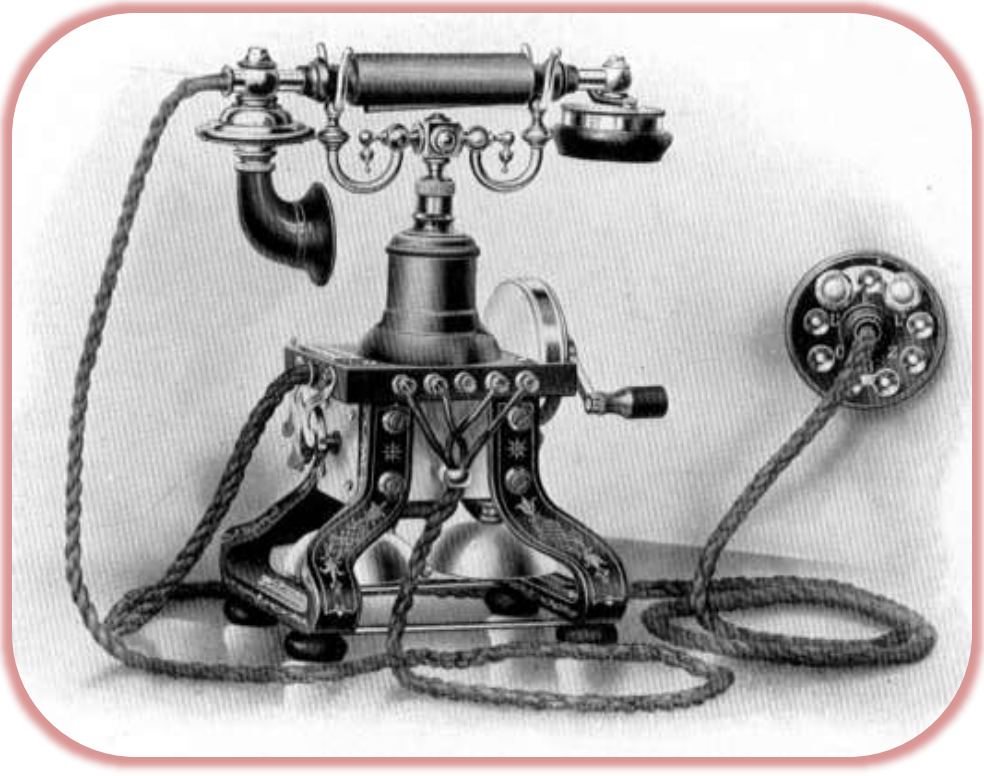
From Ericsson Catalogue 6th Edition (1911) L. M. ERICSSON & Co

Type AC 110

Magneto table telephone
(Old Catalogue. No. 375)
Micro-telephone RE 2002
(Old Cat. No. 520) resting on cradle switch,
with cord RS 7021 (Old Cat. No. 2252), flexible cable RS 9600 (No. 2150), which is connected to terminals fitted under the ebonite base plate, and terminal block with disc protector.

Generator, 2-magnet, which will ring satisfactorily through the ringer and a line resistance of 12000-15000 ohms.

The magnets of the generator also form the legs of the telephone.
Ringer. The resistance of the coils is 300 ohms.
Weight: 5,3 kg.



Early version (with Short Turret)

Characteristics

Transmitter	With deep transmitter
Receiver	Two piece cap & Nickel ring
Cradle	Conventional with tear drops
Deck	Ebonite no Lightning plate and 5 Terminals
Transfers	None on this example
Magneto	Armature weighted cutout
Bell	Common bell motor Corner fitted bell cutoff press button
Leg Spreaders	Flat metal paddle shaped

This example has three unusual features –

1. The timber portion of the **turret is slightly shorter** than any other example that we have seen in the twenty or so that were brought together for examination. Although we didn't dismantle the turret, it must also have a shorter induction coil.
2. The (red) **Bell Cut-off press button** is different to the more common Nickel plated button usually located in the centre edge of the Ebonite deck – quite often the cause of a nasty breaking out of the Ebonite deck.
3. The **leg spreaders** are made from a single piece of flat metal with ends flaring out to appear like paddles. This is unlike the more conventional thin hollow rods with flat paddle ends silver soldered to the rod.

Later version
(1900's AC130,140)

Characteristics

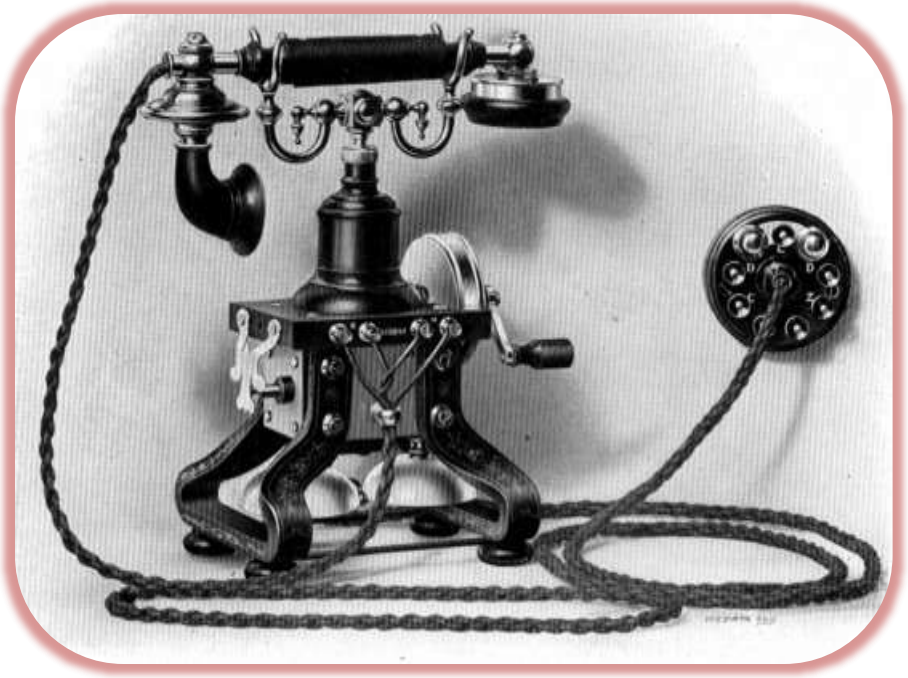
Transmitter	Sanitary
Receiver	Two piece cap plus Nickel retaining ring
Cradle	Conventional with tear drops
Deck	Ebonite with Lightning plate and 4 terminals
Transfers	Non in this case
Magneto	Armature weighted cutout catalogue has spindle c/o
Bell	Common bell motor. Very small bell gongs. No bell cutoff press button
Leg Spreaders	None – catalogue below shows spreaders

Cradle is missing one Teardrop

Copy from Ericsson Catalogue 6th Edition (1911) L. M. ERICSSON & Co

Type AC 130-140

1. Micro-telephone RE 2002 (Old Cat. No. 520) resting on a cradle switch, with cord RS 7021 (Old Cat. No. 2252), flexible cable RS 9600 (Old Cat. No. 2150) connected to terminals under the ebonite base plate of the telephone & terminal block with disc protector.
   Generator, 2-magnet, which will ring satisfactorily through the ringer and a line resistance of 12000-15000 ohms. The generator is fitted with a "cut-out" with plate spring which is effected through the longitudinal movement of the spindle. The generator magnets form the legs of the telephone.
   Ringer resistance of coils 1000 ohms. Bell remains silent when generator is being operated. Weight: 5,3 kg.

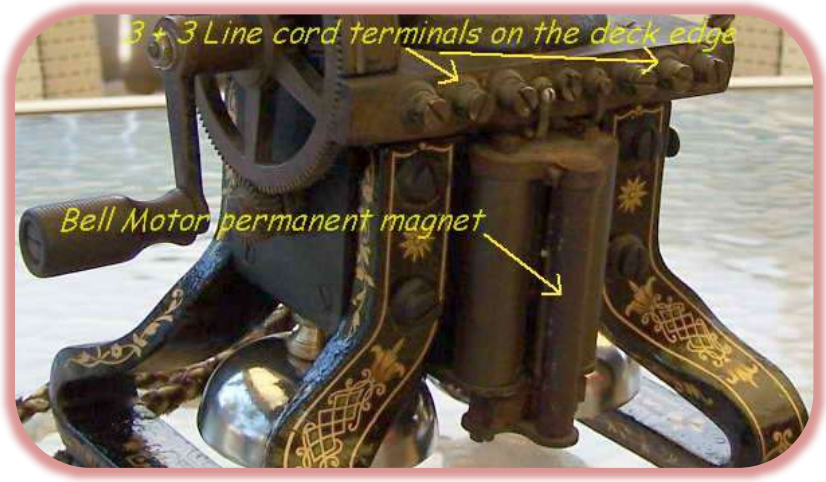


Ericsson Beeston (UK)

(Also called the UK No 16)

Characteristics

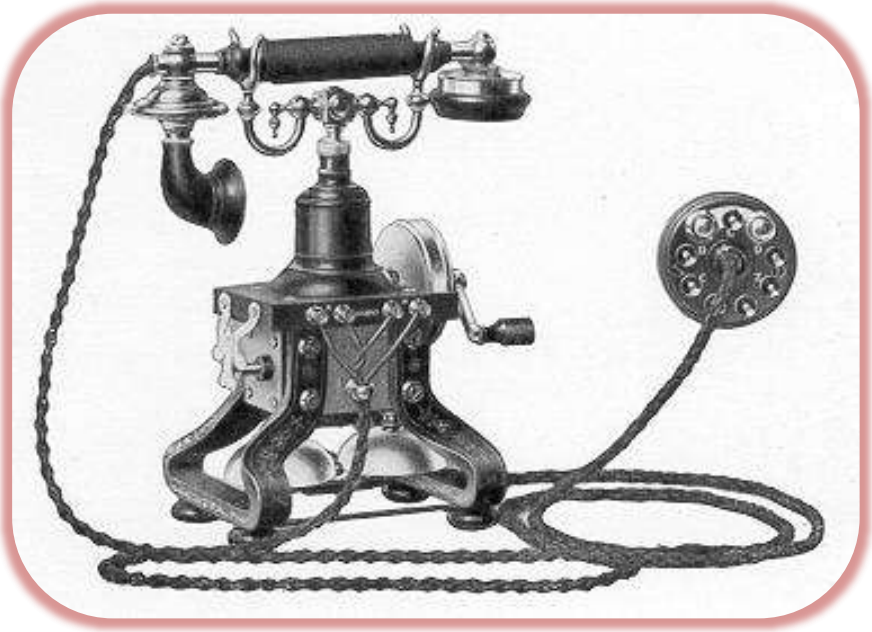
Transmitter	Aluminium. Horn missing
Receiver	Aluminium. With 2 piece cap & Nickel plated retaining ring
Cradle	Conventional no tear drops
Deck	Ebonite with line terminals on the deck edge (not inside the deck ala LME)
Transfers	Original NTC turret transfer. Leg transfers were renewed (with same as existed)
Magneto	Spindle cutout.
Bell	Bell motor magnet is a 3rd arrangement with front mounted round magnet **No bell cutoff button**
Leg Spreaders	None –catalogue below shows spreaders



Magneto Table Telephone N 2000

This exclusive instrument is a masterpiece of unique design and is undoubtedly the handsomest set in the industry.
The micro-telephone rests on a cradle which operates the switch springs.
The generator armature is totally enclosed and the 2 magnets of large cross section also form the legs of the telephone.
The generator will operate a 1000 ohm ringer satisfactorily through a line resistance up to 15,000 ohms.
The ringer has a resistance of 1000 ohms and the sound from the domes is not restricted, although they are well protected from accidental damage.
The cord connections from the micro-telephone and terminal block are made to terminals on the ebonite base-plate.
A disc type lightning arrester is fitted on the terminal block.

Copy from the Ericsson catalogue, edition 26



Another **UK No 16 (Ericsson Beeston).** DD

This one has the additional ornate Mother-in-Law receiver hook.

It is worth noting that **this hook is screw mounted into the Ebonite deck in the position where the line cord enters the deck on the Swedish LME (also the Australian used version).**

To be shown elsewhere, on the Australian version, the additional Mother-in-Law receiver hangs on small bobbin head on the end of the handset cord retaining ring.

Another **UK No 16 (Ericsson Beeston).** JN

Characteristics JN

Transmitter	Aluminium. With old Horn
Receiver	One piece Ebonite brown with age
Cradle	Conventional without tear drops
Deck	Ebonite no Lightning plate and line terminals on the deck edge
Transfers	None on this example
Magneto	Armature weighted cutout
Bell	**Unusual bell motor and mounting very similar to the British Ericsson single box wall phone**
Leg Spreaders	Thin rod with paddle ends

Ericsson Germany

Made in 1919

Characteristics DD

Transmitter	Aluminium.
Receiver	Aluminium. With one piece cap
Handgrip	Oval shaped Ebonite with a large letter “E” moulded
Cradle	Conventional no tear drops
Deck	Pressed metal with line terminals on the deck edge (not inside the deck ala LME)
Transfers	Original leg
Magneto	Spindle cutout. Extra contacts between the gear wheel cover and wooden turret
Bell	Bell motor magnet is a 4th arrangement with front mounted flat magnet No bell cutoff press button
Leg Spreaders	Thin rod with end paddles

Ericsson South America

Characteristics

Transmitter	Sanitary Mouthpiece
Receiver	Two piece with Nickel ring Incorrect handset (hanging ring)
Cradle	without tear drops
Deck	**Metal, no Lightning plate and line terminals inside the deck.**
Transfers	Normal, but very worn
Magneto	Spindle cutout
Bell	Bell motor missing on this phone Would be a conventional motor
Leg Spreaders	Not fitted on this particular phone

Ericsson Hungary

Made in

Characteristics TF

More information needed

Ericsson Italy

Made in 1890

Characteristics

Transmitter	Plated with unusual horn
Receiver	Nickel plated with 2 piece cap & retaining ring
Deck	Ebonite with line terminals on the deck edge (not inside the deck ala LME)
Induction Coil	Under the bell motor ala Peel Conner
Transfers	Bold (old style) pictured
Magneto	Spindle cutout, distinctive solid gear wheel
Leg Spreaders	None on this example

SAT / Aktiebolaget

Stockholm General Telephone Company was established in 1883 providing Subscriber Services but using Ericsson telephone equipment. Having previously been an Ericsson customer, in the 1890's SAT started their own telephone manufacture as Aktiebolaget Telefonfabriken.

Made in 1891

Characteristics

Transmitter	Nickel plated.
Receiver	Nickel plated. With two piece cap
Deck	Ebonite with curved cover (Tunnan / Tunnel)
Logo	SAT Telefonfabriken
Magneto	Armature weighted cutout
Bell	Common arrangement No bell cutoff press button
Leg Spreaders	Thin rod with end paddles

From Catalogue of AKTIEBOLAGET TELEFONFABRIKEN, STOCKHOLM

N:r 10
Table telephone set

THE same principles, on which the elaboration of the wall-telephone has been based, have governed the construction of this instrument.

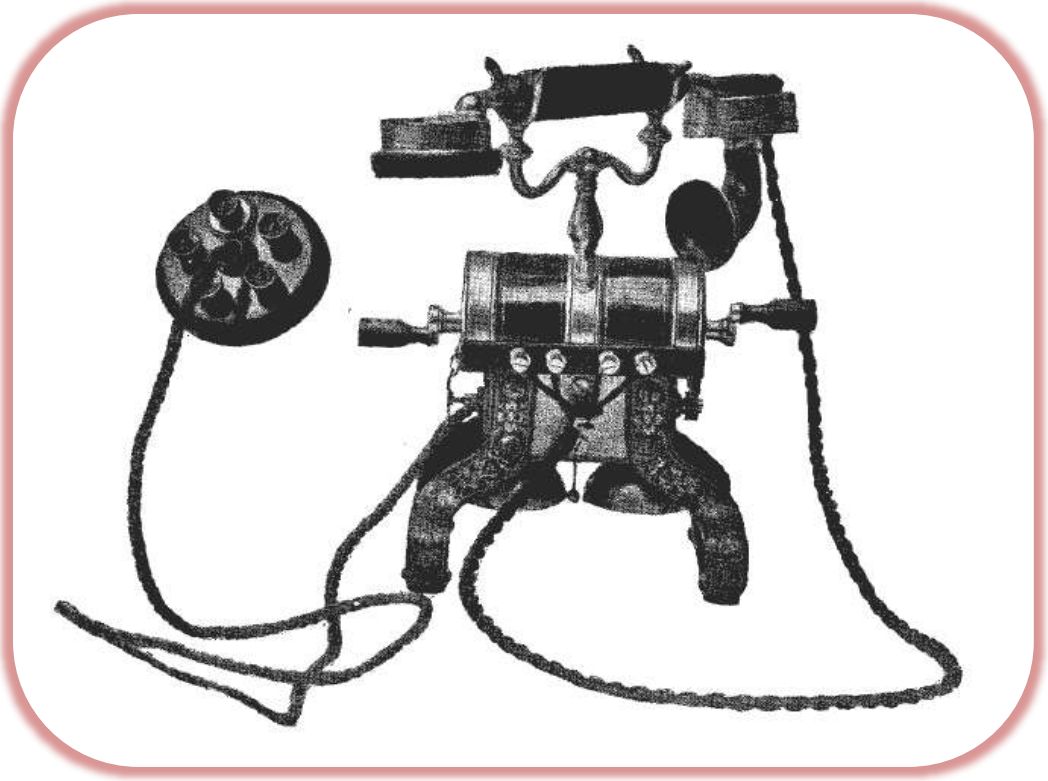
Here all the contacts are made easily accessible by unscrewing half the lid of the instrument.

The generator has been made stronger than those used in other table-sets so that it rings surely through a resistance of 20.000 ohms.

Special care has been bestowed on making the contacts as sure as possible.

Weight = 4.5 ko.

From Catalogue of AKTIEBOLAGET TELEFONFABRIKEN, STOCKHOLM



N:r 11
Table telephone-set SIMILAR to the preceding one but the induktor is provided with two handles. This makes the instrument suited for writing-desks where two persons are seated opposite each other.

Weight = 4.5 ko.

Peel Conner (UK)

(1890's known as the K88 in the 9th Edition Peel Conner Catalogue of 1904)

Characteristics

Transmitter	Aluminium occasionally with tortoishell horn - see picture below
Receiver	Aluminium with 2 piece cap & Nickel plated retaining ring
Induction Coil	Under the bell motor ala the Italian LME
Cradle	Unique to Peel Conner with "barrel" shaped centre
Deck	Ebonite with line terminals on the deck edge (not inside the deck ala LME)
Transfers	Distinctive pictured below
Magneto	Spindle cutout, distinctive gear wheel and cover
Bell	Distinctive pictured below
Leg Spreaders	Thin rod with end paddles

GEC

Characteristics

Transmitter	Aluminium
Receiver	Aluminium with one piece cap
Cradle	Plain with a “Black metal” finish
Deck	Ebonite with line terminals on the deck edge (not inside the deck ala LME)
Transfers	None
Magneto	Spindle cutout, gear wheel cover extends to wooden turret
Bell	Similar to the German LME
Leg Spreaders	Flat metal paddle shaped

Skeleton telephone Manufacturers/Users Timeline (dates from the Ericsson Chronicle c2000)

1876 LME factory established in Stockholm, Sweden.

1879 Permit for Telegrafverket (later Televerket) to offer Subscriber Services. (LME Customer/Competitor)

1882 Telegrafverket (later Televerket) connected their first Subscriber Services.

1883 Stockholm Allmana Telefonaktiebolag (SAT), the Stockholm General Telephone Company was established providing Subscriber Services. (LME Customer)

1888 Telegrafverket established a new Swedish national network called Rikstelefon. (LME Customer)

1890's Telegrafverket started telephone manufacture (LME Competitor)

1890's SAT started telephone manufacture as Aktiebolaget Telefonfabriken (LME Competitor)

1896 Name change from LME to Akiebolaget LM Ericsson & Co (AB LME).

LME Ericsson 1976

L.M. Ericsson remanufactured their popular model AC110 skeletal in 1976 under commission from the Swiss PTT to celebrate the 100th anniversary of both the first patent of the telephone in February 1876 and the founding of LM Ericsson Company in April 1876.

The Ericsson AC110, designed in 1892 was the first commercially available desk telephone with a one piece handset on cradle and became the mainstay of the company for nearly 38 years with over one million made.

5000 of this remanufactured telephone were produced and are extremely accurate except for two easily noted mistakes in design.

The "mistakes" were either by intention to prevent being mistaken for original or the result of a flipped image of an original used in the design layout.

1. The ringer motor is located on the opposite side of the telephone.
2. In addition the handset cord enters the side of the ebonite deck where the line terminal cord should enter as opposed to being connected to exterior terminals on the side of the deck.

Please note that this circuit diagram is not necessarily correct for all Skeleton versions