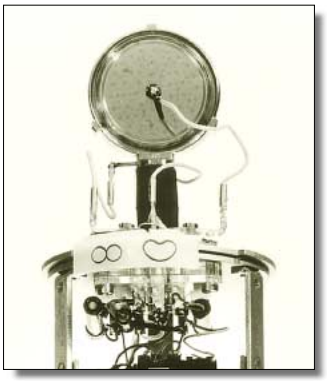
U 47 – The Legend

For approximately 20 years Neumann had manufactured and sold throughout the world the condenser microphone CMV 3, also known as the "Neumann-Bottle". Building on its success it became time to start something new.

The cardioid M 7 microphone capsule had been manufactured for many years with two equal diaphragms fixed on both sides of a perforated center electrode which is also provided with a number of cavities on both sides .One of the membranes is gold coated and thus electrically active. This membrane is directed towards the sound source.

The sound coming from the front causes movement of the front membrane and reaches the inner side of the rear membrane through the perforations in the electrode. The sound also reaches the outside of the rear membrane. The acoustic properties of the center electrode cause the forces acting on the rear membrane to be equal in size, but opposite in direction. Therefor, the rear membrane does not move and does not produce any electrical signal. For sound arriving from behind, the rear membrane moves and the front membrane does not. As a consequence, the microphone does not respond to rear sound, and the directional characteristic is cardioid.



Both capsule halves thus act as a cardioid capsule and led Neumann to make the rear membrane electrically active by coating it with gold too. When connecting both cardioid halves in parallel, the capsule produces an omni directional pattern. If only one membrane is connected, the microphone works as described above as a cardioid.

The prerequisites for an easily switchable microphone with two directional characteristics were now fulfilled. A steel vacuum tube VF 14 M was selected for the impedance converter/amplifier, a pentode being operated as triode. The microphone was fed with one supply voltage only, from which the filament voltage was derived by means of a wire wound resistor inside the amplifier housing. Consequently the microphone itself produced a fair amount of heat,

which may be partially responsible for its legendary longevity by providing a low humidity environment for the capsule. This was certainly not responsible for the "full, rich and warm sound" the U 47 is famous for, a sound quality still highly regarded in our days. Many recording studios are proud to claim ownership of a working U 47.

During the 1950's Neumann microphones also were sold through Telefunken, and carried the Telefunken logo. Thus the U 47 was also known as the "Telly". It was reported about "The Voice", Frank Sinatra, that he wouldn't sing without his "Telly", the Neumann U 47. From the Barclay Studios in Paris, which were technically supervised by Gerhard Lehner, we learned of people admiringly claiming: That's a microphone to drive nails into walls with. Whether this is understood literally or figuratively, it is a compliment for the U 47 either way!