



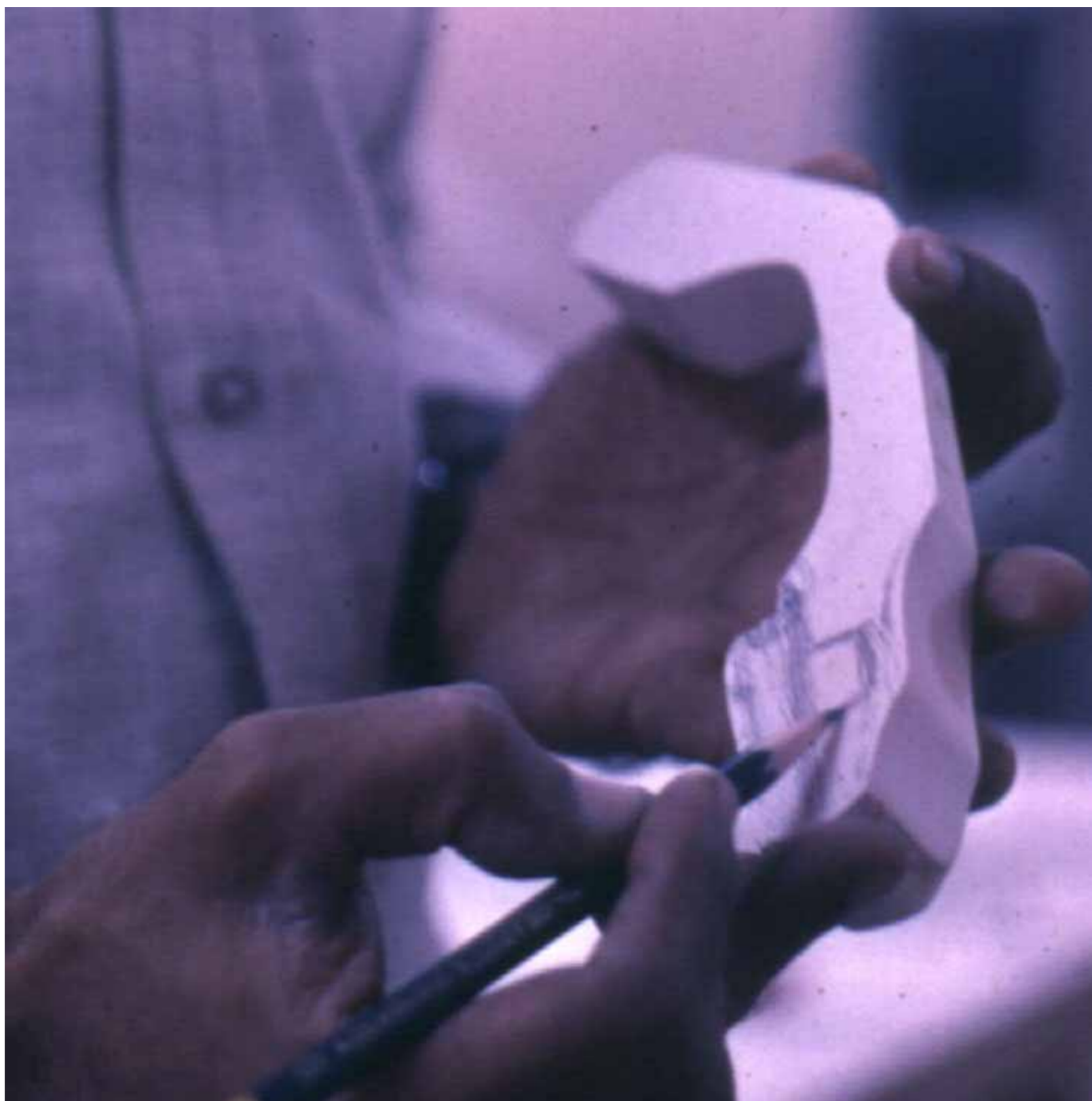
Simple Phone for CDOT

design: a g rao

C Dot assigned Telephone project to IDC in 1988 or so. Kishor babu an aluminus of IDC had left CEDT, IISc, Bangalore and joined C Dot. He was instrumental in getting the project to IDC. 3 Telephones were to be designed. Simple phone which came upto a level of pilot production of 100 pieces, is seen in the pictures. Prof.Bhandari and Prof.Athavankar designed STD phone and Executive phone respectively.



Several models were made in POP after finalising the basic form through sketches.. A model cut in half acts like a cross sectional drawing to verify whether the identified speaker fits in the allotted space or not!



Number of alternatives tried out can be seen in the pictures!

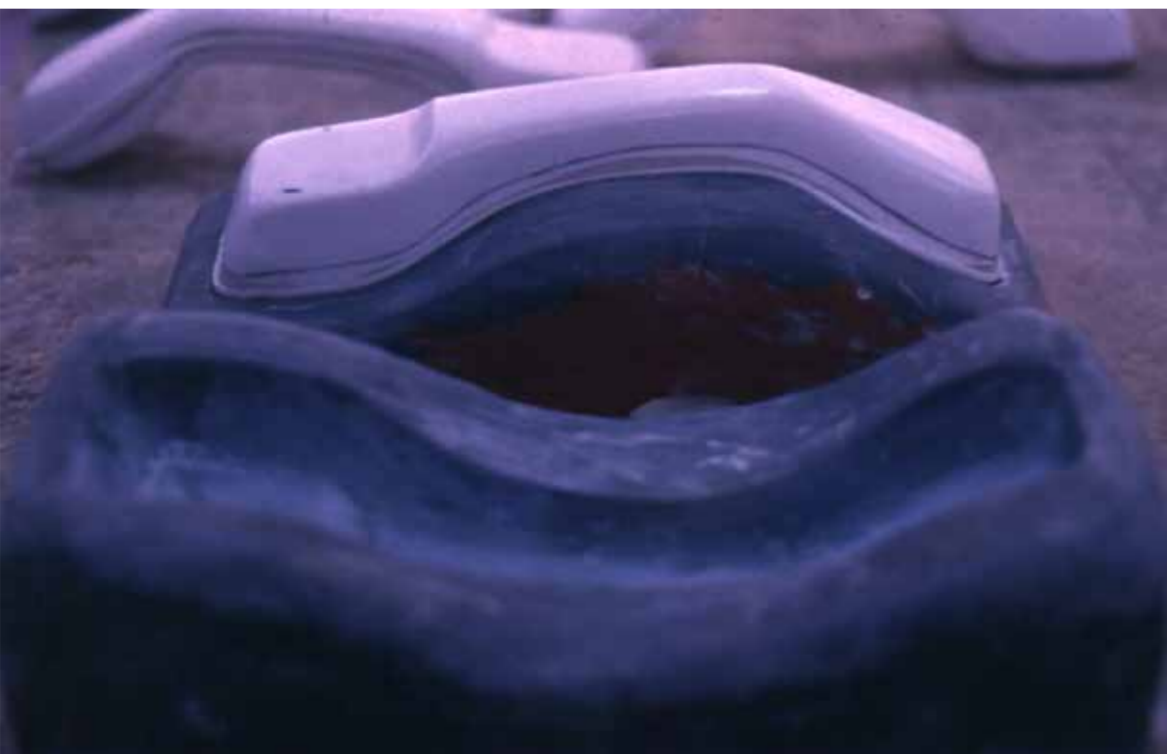




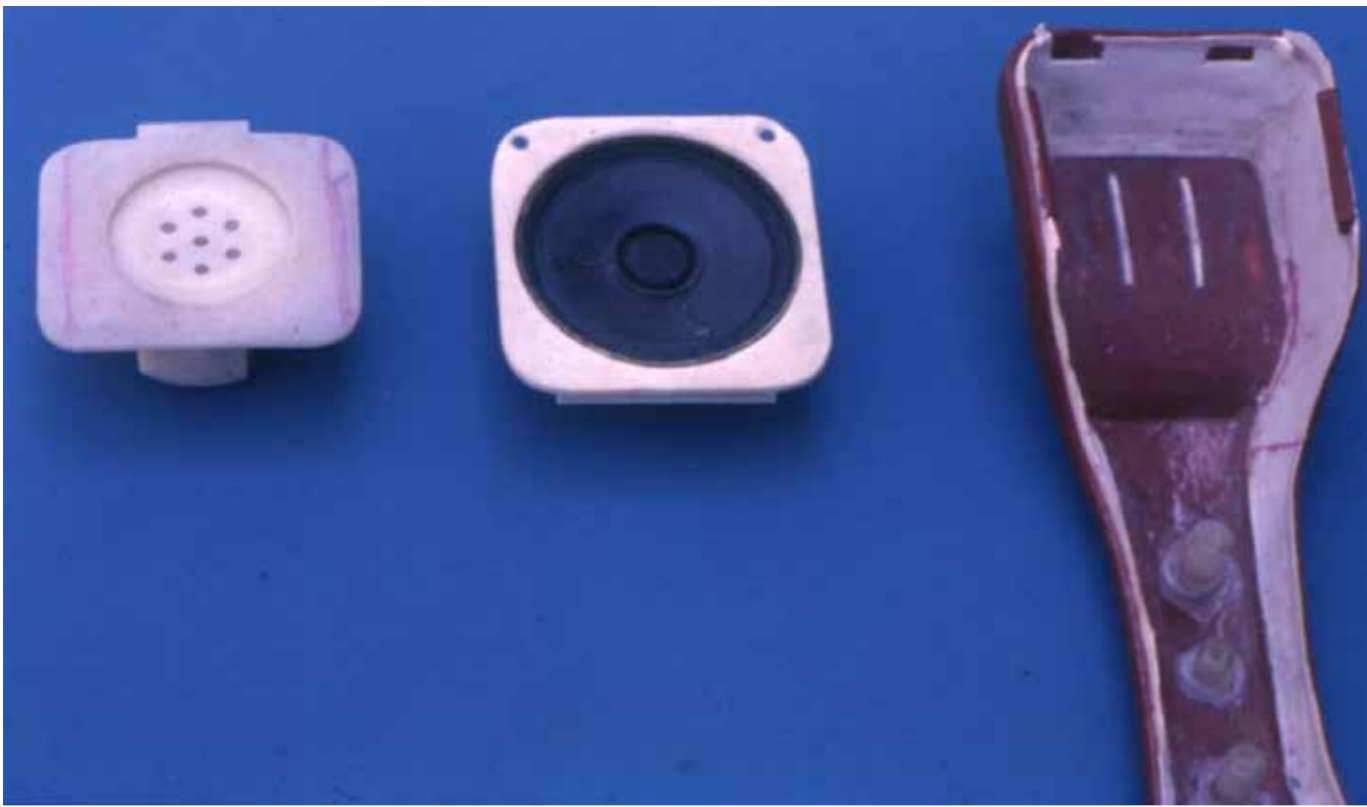
Two typical models were analysed. Standard handset was symmetrical. The other 'top heavy' model was popular in US.

POP models were good to see the 3D shape. Finalised model was made in wood as it can give better weight simulation and easy to paint without risk of breaking during presentation.

Wooden model also helped in making vacuum formed hollow model in plastic. This helped us to check the exact fittings of parts!



Wooden model was used as positive mould. FRP moulds to get the cavities with the right parting line! Parting lines in multiple planes was rather challenging in those days when 'Computer help' was not available!



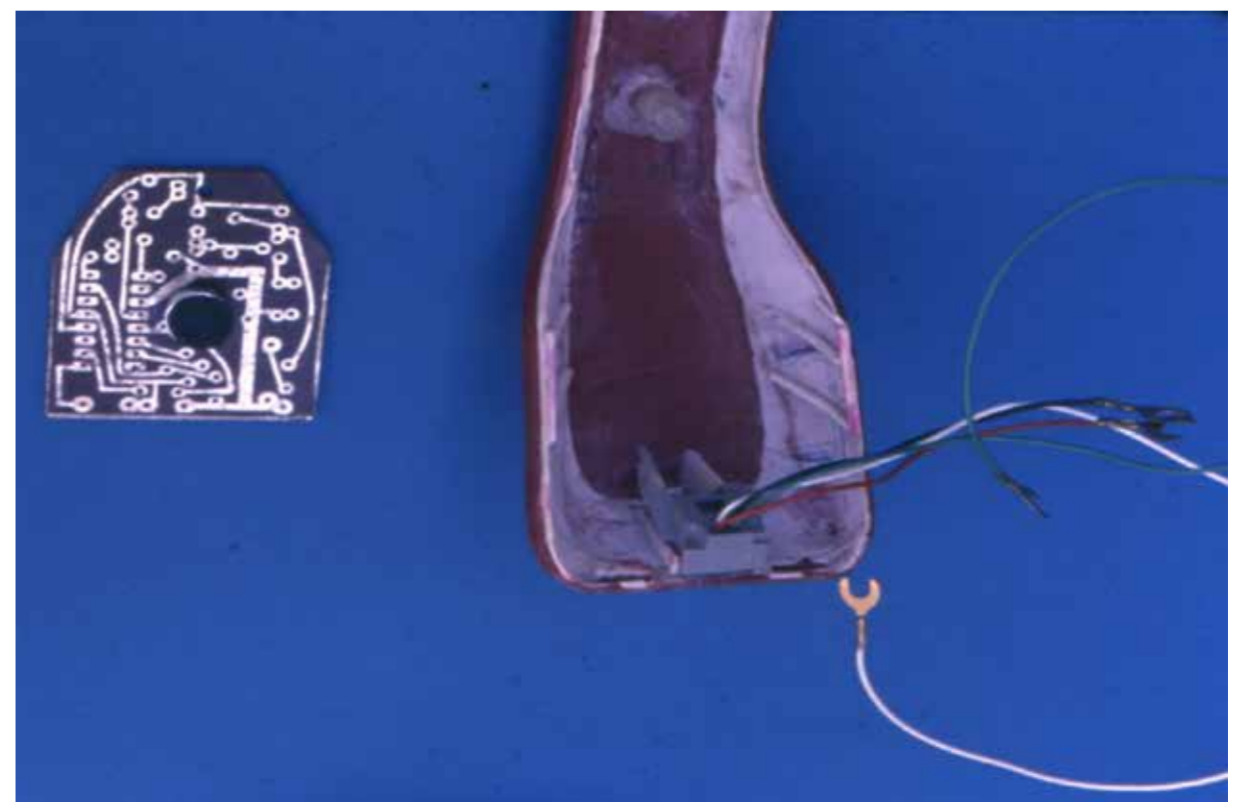
It was for the first time plastic prototypes for injection moulding were made at IDC. Our development engineer, Govinda Rajan and his team worked hard to get the details. Cutting and pasting of vacuum formed parts helped in achieving thickness variation in the edges.

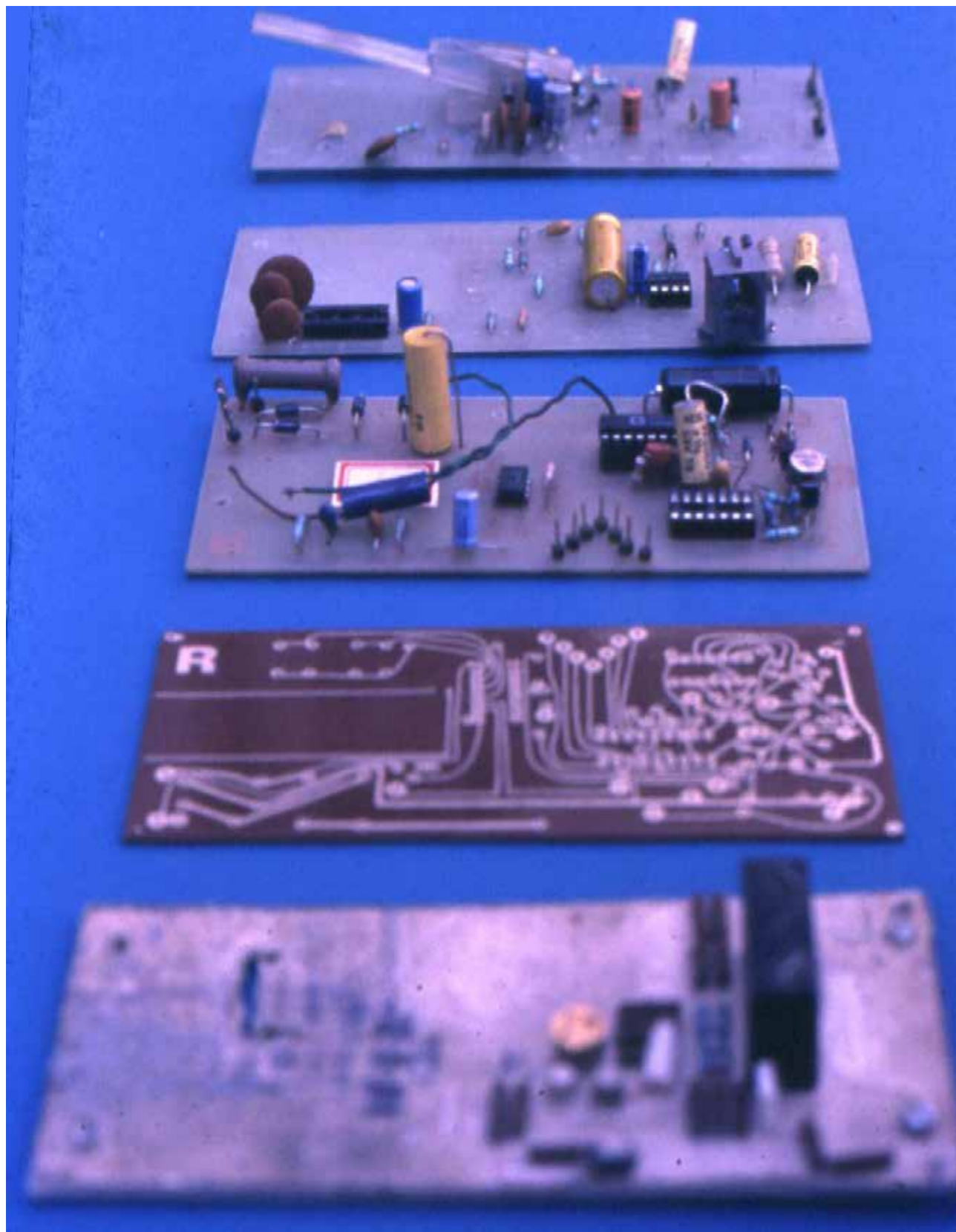


In the speaker end a plate was introduced to house the speaker. In case of change in the speaker, it would be required to change only this plate!

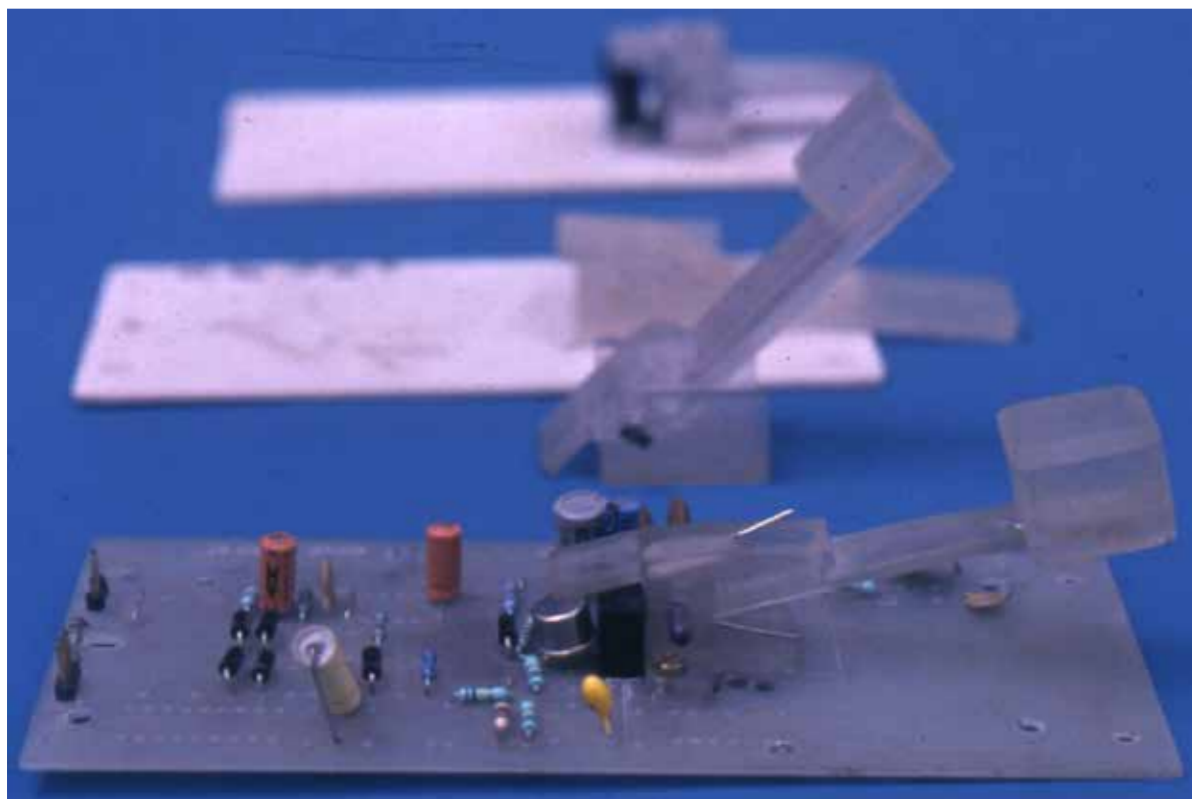
Thick aluminum fitted in the middle gave the additional weight required for the handset.

Speaking end a small PCB with a microphone was fitted as can be seen below!





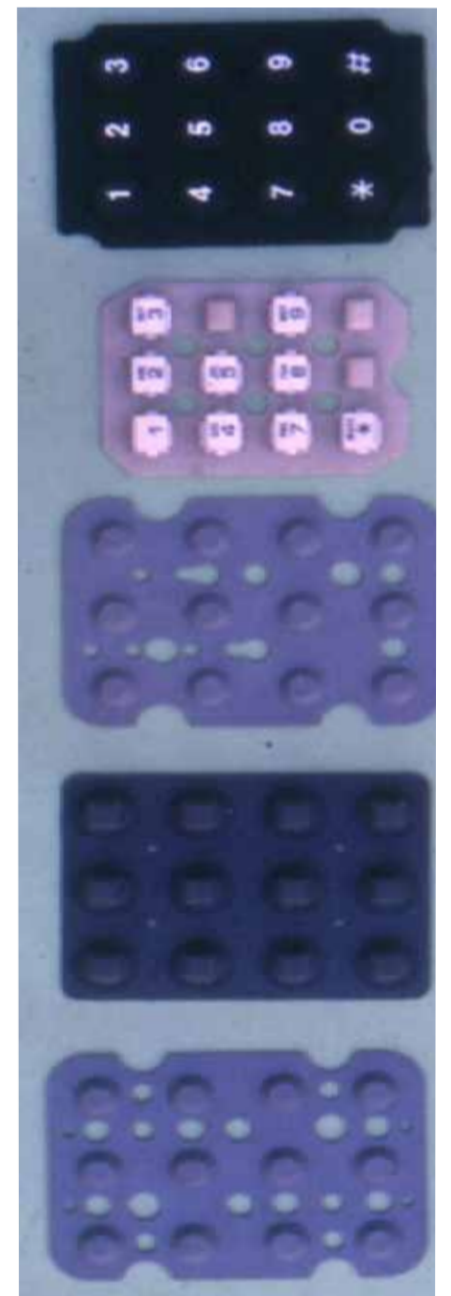
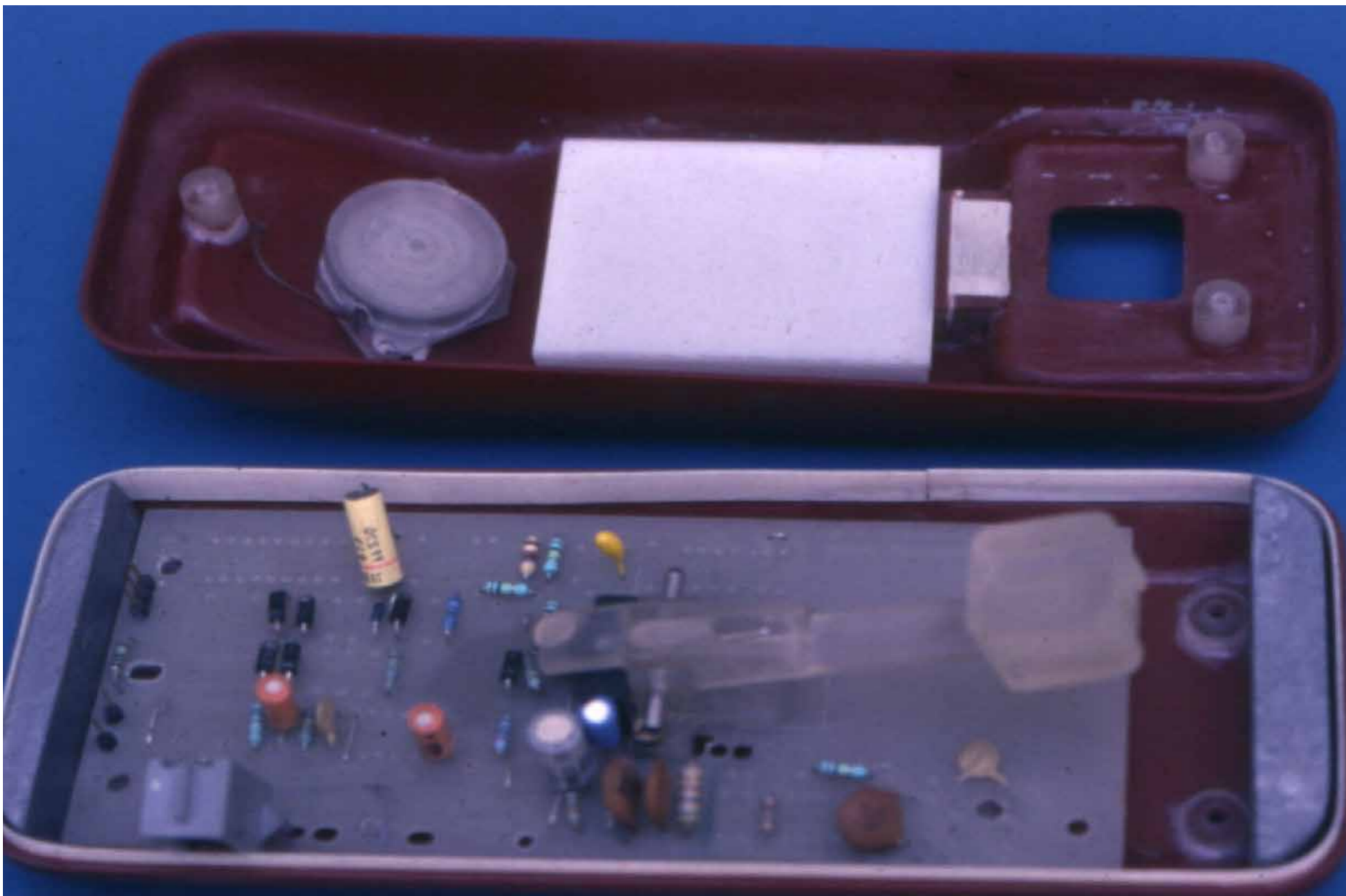
Transformation of PCB in the base unit as the project progressed can be seen in the picture! Simultaneously the lever mechanism was developed. Mockups helped in simultaneous development of electronic and mechanical components!





Facilitating Wall mounting of the telephone was added as a requirement in the later part! Lot of changes in the base unit had to be made including an additional part. Special development of the additional part as seen in the picture facilitated self locking and rotating of the additional part!

Rubber key pad dimensions kept on changing as per the availability demanding working out details again and again!

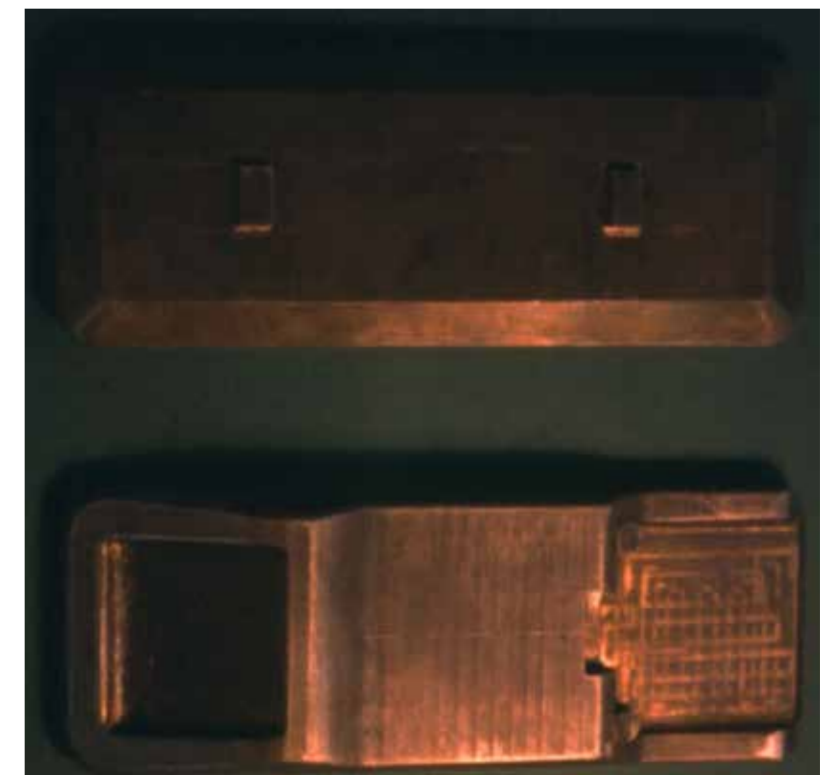
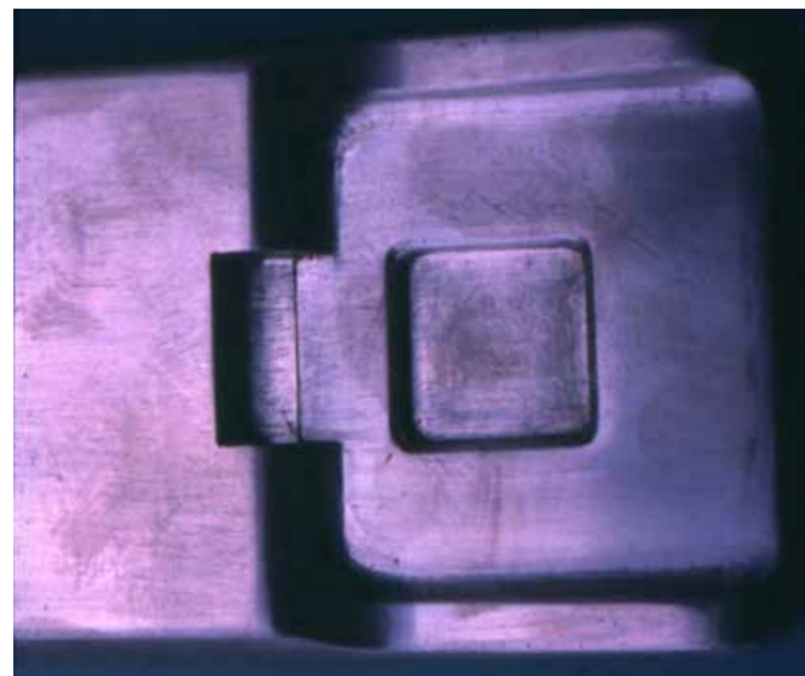
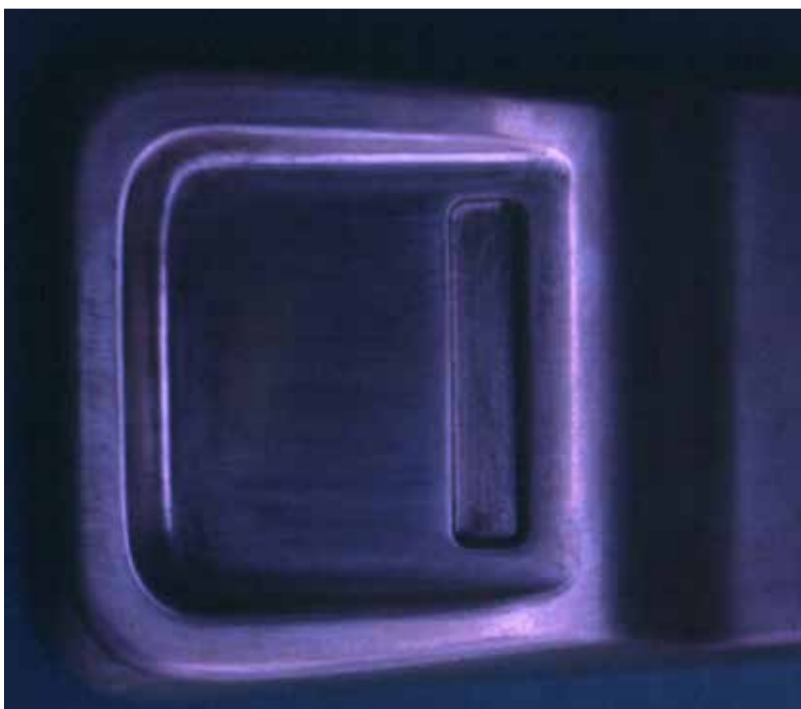




Making Moulds for injection moulding became a complex task for small scale tool makers, who had taken the contract! They were not familiar with complex shapes. For spark erosion small increase in the dimensions was required. Finally I filed and finished the copper masters myself as lot of visual judgement was involved!



Flow of double radii in the corners needed special skills from tool makers which were lacking! I enjoyed finishing of base as well!



Wall mounting required a base plate. I designed the base plate for injection moulding. I also used a texture built with Cdot symbol as an element!

