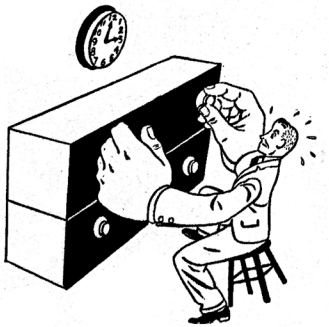
STREAMLINED CONVENIENCE

A Minor Detail Becomes Important

By JOHN VASSOS



Geel Are my hands heavy after a session with these old knobs.

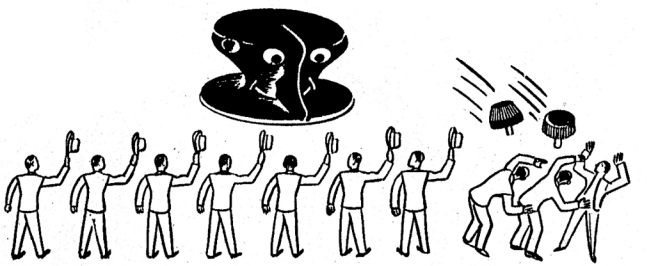
SOMETIMES an apparently insignificant object is given a great deal of attention and one wonders whether the mountain brings forth a mouse or vice versa.

And this was the dilemma with which we were faced when it came to the problem of redesigning and standardizing the knobs for our various types of speech input equipment. At the first glance, the problem seemed to present a rather easy solution, which was, to smooth and clean the surface of the old-fashioned knobs, but, as the analysis proceeded, certain other pertinent facts were exposed. On active equipment, the control engineer spends hours manipulating these knobs without interruption, and also the fact was brought out that oftentimes the control engineer is in a sitting posture when working, changing the angle of the forearm to an entirely different plane and leverage of action as compared to the operation when standing. So, as the importance of this lowly object began to achieve gigantic proportions in its solution, a survey was taken to determine even further factors in trying to arrive at, and cover practically all conditions under which the knob would be used.

Broadcasting stations and radio centers were approached for vital information. First it was necessary to arrive at the general proportions of the hand of the average radio engineer, assuming that, due to his particular type of work the hand development would be different than the average person. Then a plastic, soft putty similar to that used by sculptors was constantly molded and remolded until its overall form was of such size and proportions to suit this average hand, with the result that the most favorable proportions and dimensions were determined: It has no sharp or angular protrusions but soft indentations that act as a sure grip.

Another fact was disclosed. Seventy-five percent of the control engineers rested their hands on the knob by hooking the middle and index fingers over the knob and in a manner suspending and resting their entire arm thereon, and at the same time manipulating the knob. This meant in a short period of time the complete disfiguring of the panel proper and the rubbing out of the calibrated numerals. Often callouses and infections developed on the hands of the operator from the metal pointer that existed on these old knobs. Consequently, a flange was added at the bottom of the knob to prevent marring of the numerals of calibration and an integral fin was provided to act as the pointer, starting from the bottom of this protective flange and, in a streamlined fashion, blending into the top of the knob, the pointer portion extending from the center of the knob. This resulted in a beautiful and efficient form which had no sharp or angular protrusions foreign to the contours of the human hand, and assured protection for the instrument panel proper by the above mentioned flange.

So you didn't realize how important I was?



The Winnah! So say seven out of ten engineers.

The indicator point is more efficient than on previous knobs of this type because the line from center of top of knob extends to the point of marking in a fin-like shape without a gap between. In general, speaking of the efficiency of these knobs, besides the above mentioned features, no injury can be sustained by accidental contact and, at the same time, in case the lights should go out, it is possible to tune in total darkness, as the hands feel the web-like point rapidly. But its greatest service rests on the fact that it eliminates the fatigue and discomfort of the operator during the many hours that this knob is in use. And again, aside from its extreme consistency of functionalism, a beautiful form was evolved.

Tests

It was gratifying when all this work was completed and one of the severest tests ever given by a survey, to really find out how close we were in arriving at the perfect solution of this problem. A group of radio engineers, representative of those using the type of apparatus to which these knobs are applied were given five unidentified types of knobs for this critical test, among which, was the knob under discussion. This survey resulted in a 73% preference for this knob over competing knobs, which was an amazingly high acceptance in introducing a new form where fixed ideas were established by reason of habit.

The reasons given were as follows:

1. Large and easily gripped.
2. Rounded surface and natural feel.
3. Best for working two pots with one hand.
4. Pointer easy to find — not necessary to look at it. Can be held between second and third fingers.
5. Increased leverage. Can be worked with greater ease and gives finer adjustment.

The divisions that have assisted in this work should come in for their due credit. The particular contributing divisions to the development of this knob are the Photophone and Transmitter divisions.

The only other recent experience I had in working on a similar problem that appeared insignificant and yet very important when it came to solution was a streamlined paring knife for Remington-Dupont. It was disclosed that one-third of the time spent in the kitchen a paring knife is in constant use, and at no time before was this object given any attention. Man's most valuable mechanism are his hands and it is only recently that any serious consideration was given in preserving and retaining their beauty and efficiency.

A more complete conception of the detail and romance behind the creation of our new giant transmitters and the care devoted to their details can readily be appreciated, when it is realized from the foregoing account, the amount of infinite detail and investigation involved in the creation of a relative small unit such as the knob, merely one small component of a panel.