

The Knowledge Bank at The Ohio State University

Ohio State Engineer

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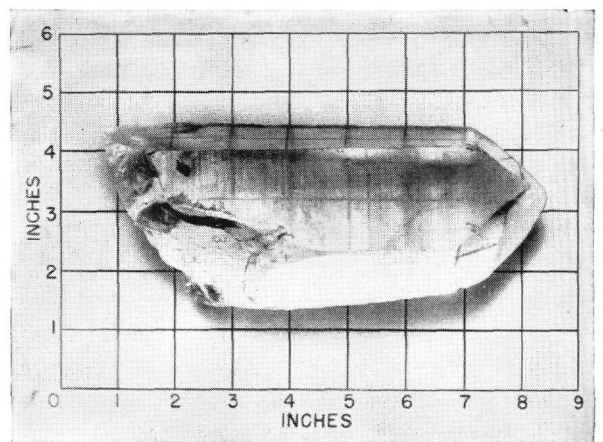
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QUARTZ CRYSTALS

Most of the quartz crystals used in radio work come from certain parts of Brazil. Over a period of possibly many millions of years, these crystals formed as symmetrical stalagmites. The most perfect of these crystals is the full prismatic with six troncal and six or more apex faces. Usually this form is perfect on only one end because it was broken from the mother rock and the other end was ruined. These crystals carry striations, or growth lines running circumferentially around the surface, which are an indication of the number of times the growth was stopped.

With quartz crystals it is possible to control the broadcasting frequencies of a station very closely. Before being used, the crystals are examined with arc lamps and the imperfections marked. The crystals are then cut into hexagonal pieces. Due to the imperfections, very little of the crystal can be used. The cuts of quartz are examined under polarized light and then cut into blanks.

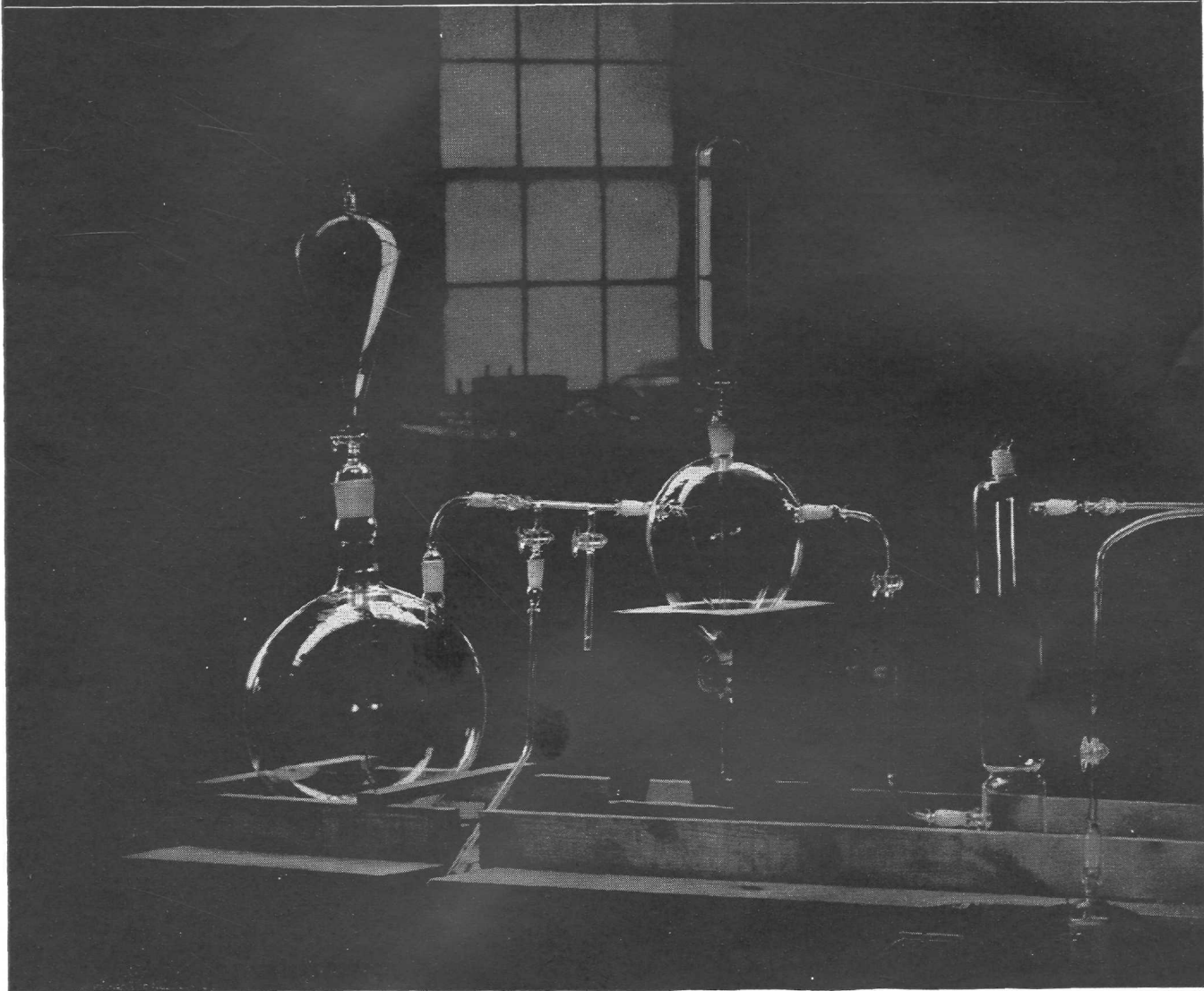


● Full prismatic quartz crystal.

—Courtesy General Electric

The Ohio State Engineer

Neither too little nor too late, Dr. Goebbels!



IT'S fashionable in some quarters to talk of America as a nation that lets clever people like the Germans run circles around it in technical skill. We have a hunch the idea comes from Dr. Goebbels' propaganda factory in Berlin. Anyway, it's not true.

In the glass field, for example, America was surprisingly well prepared for war. Take Laboratory glassware, vital in the manufacture of dyes, explosives, foods, and many war supplies, as well as to health. In 1914 we depended upon Germany for this material. But in 1915 Corning developed Pyrex brand laboratory ware and now this country needs German glass no more than it needs German wheat!

Despite war's demand, Corning is keeping pace with laboratory ware, insulators, communication equipment, and

signal glassware required for planes and ships. Chemical industries are getting necessary quantities of glass piping, acid pumps, and glass mechanical parts that replace scarce metal alloys. Even glass precision gauges (ring, plug and others) are now being produced that are in many ways superior to ones made of steel.

These are just a few of the war-important items flowing out of Corning today. The main point is that when the national need arose, Corning research had already explored the things that non-critical glass could do to replace materials vital to war effort and was ready to help. Yes, to the engineer glass is really important today, and promises to be more so after the war is over. That's why the best advice we can think of for you is this: Keep up-to-date on glass! Corning Glass Works, Corning, New York.



"YOU HAVE DONE A GOOD JOB OF SENDING GLASS TO WAR"

CORNING

— means —

Research in Glass