

of Bell Telephone Laboratories and their associates. Several months ago, after Paracon had been demonstrated practicable at the laboratories, information was made available to the Baruch Rubber Committee and the War Production

Board. Details as to the process involved were turned over to several chemical manufacturing companies to enable quantity production, and the Resinous Products and Chemical Co. is now producing Paracon.

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## PSYCHOLOGY

## What Bombardier Needs

**To operate Norden Bombsight, you must have good eyes and mental as well as manual agility. Must be calm under fire.**

► IF IT IS your ambition to be the one to shout "Bombs away!" over Tokyo when America moves on Japan, you can start practicing now some of the skills you will need to operate the Norden bombsight.

Now that the bombsight is no longer kept boxed away in strict military secrecy, it can be told just what sort of abilities a man needs to work this precious all-American gadget.

First of all you must have good eyesight. And this means more than just ability to see a capital E at a distance of 20 feet. It means being able to pick out a camouflaged war plant from a background of trees or city pavements or other roof tops. You must be able to spot, at a great distance, an objective you have seen before only on a map. And you must spot it quickly. You have only something like 25 seconds—that is less than half a minute to do everything. If you waste many seconds in spotting your target, you won't have many seconds left in which to make the adjustments on your instruments.

If your plane is flying at a great altitude, you may have a little longer in which to search for your target. But if you are flying low, the ground will go whizzing along below you at a great rate.

Your eyes must be very good at detecting small movements. In operating the Norden bombsight, it is necessary to set the sight so that the cross-hairs are placed accurately over the target. If you should get it exactly right at the first setting, you won't need to do anything more; the instrument will go on and do the rest. But most people are not that good. If the setting is imperfect the target will start to drift just perceptibly off the exact intersection of

the cross-hairs and it will then be up to you to detect this drift instantly and make the necessary correction.

If you are going to be one of Uncle Sam's bombardiers, you must be able to make the adjustments on a precision instrument with great accuracy and great speed.

You must be able to use calculating devices such as a slide rule. You must be able to make lightning calculations in your head. You must be able to hunt up values in tables of figures quickly. You must be able to do a great many operations always in the proper order and without forgetting a single item. And you must be able to do them all at top speed.

And you must be able to remain quite calm and unflustered while you go through all this complicated procedure even though a Messerschmidt has a machine gun pointed straight at you.

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## PHYSICS

## Million-Volt Industrial X-ray Machine Installed

► A POWERFUL million-volt X-ray machine has just been installed at the University of Rochester, made possible by the collaboration of eight Rochester industries with heavy war contracts, Dr. Alan Valentine, president of the University, has announced.

"A number of Rochester firms with millions of dollars' worth of war contracts each wished to build one of these X-ray laboratories, but the cost and effort would have been too great," he states. "By combining forces they have not only cut the pro-rata cost to a fraction of the total, but they also have acquired a metallurgical laboratory whose research on

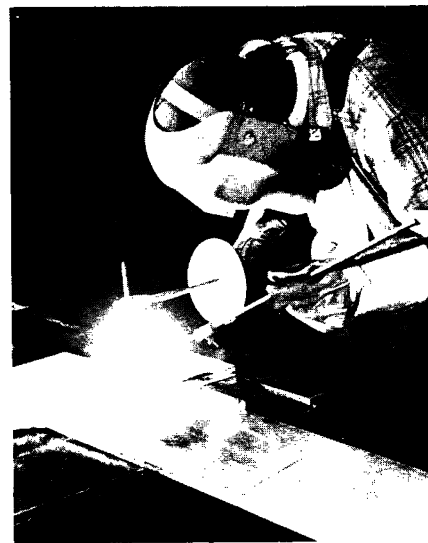
alloys and new materials will be valuable long after the present immediate need has been met."

Each of the eight contributing industries will use the giant X-ray machine to inspect and test war materials, thus greatly speeding up their work on vital government contracts. The University's scientific staff will assist in testing, and will use the equipment for research on alloys, plastics and similar products, for medical therapy and experiments involving the use of the deeply penetrating rays.

There are about 30 of these powerful X-ray machines in use in various places, but all are in industrial plants. This is the first of them that has been put into a university.

The Rochester industries collaborating in the purchase and installation of this huge X-ray machine are the Eastman Kodak Company, Bausch & Lomb Optical Company, Symington-Gould Corporation, Pfaulder Company, Delco Appliance Division and Rochester Products Division of General Motors Corporation, General Electric Corporation, and General Electric X-Ray Corporation. The machine was designed by Dr. E. E. Charlton of the General Electric X-Ray Corporation.

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**SILVER**—Loaned by the Government, this solid silver bus bar is now doing war service at the Dow Magnesium Corporation's new Michigan plant, relieving the demand for copper needed for cartridge casings and other types of ordnance equipment.