

## CHEMISTRY

# New Chlorine Process

Method by which chlorine dioxide, powerful oxidizing and bleaching agent, is now made is called "dry-production."

► A NEW PROCESS by which chlorine dioxide, powerful oxidizing and bleaching agent, can be produced has been developed by W. S. Hutchinson and D. K. Meecham of General Mills, Inc., (*Chemical and Engineering News*).

Chlorine dioxide is used for bleaching flour, starch, soap, paper and textiles. It also improves the water in public water supplies, checks blue mold in citrus fruits, and helps to preserve vegetables. Sterilizing the air with chlorine dioxide is believed to help increase the yield of the drug penicillin.

The new process for producing chlorine dioxide, called dry production, depends upon the reaction of chlorine and sodium chlorite. Advantages over the wet method are less lag in obtaining a steady stream of chlorine dioxide, and the elimination of water which is objectionable in some industrial operations and tends to cause corrosion and gumming in the chlorine system. The process is used by the Mathieson Alkali Works.

Chlorine dioxide is unstable, so that it cannot be produced in bulk and stored like many chemicals. It must be produced where it is to be used, for immediate consumption.

Equipment for the production consists of a generator that supplies chlorine and air, and a cabinet which houses the controls, gauges and other similar apparatus.

The generator consists of two vertical cylindrical towers. A mixture of chlorine gas and air is fed into the first cylinder, which is charged with flaked sodium chlorite. Chlorine dioxide is formed and carried to the bottom of the second cylinder, where the unreacted chlorine is oxidized, leaving the remaining chlorine dioxide chlorine-free. When the first cylinder is exhausted, after about 100 hours, the second cylinder is used for generating the gas, while the first cylinder is recharged. This permits continuous operation.

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Mr. Burden pointed out that of the 720 new points in the U. S. for which air lines have made application to the CAA to serve, 612 require airport construction. Scheduled air line service will not, he added, be made available to all of these points in the immediate future.

The CAA plan will be worked out state by state. Massachusetts, for example, now has 54 airports. Under the CAA plan it would secure 36 new airports, at a cost of about \$30,000,000. Half of these new airports would be of small size, suitable for personal flying. Minnesota would have 159 flying fields, as compared with 45 today. Since this territory is ideal for flying vacationists. Mr. Burden pointed out, 114 of the new fields would be of small size.

In conclusion, Mr. Burden said that the development of an airport system adequate for our air commerce in years of peace will insure our having a suitable system available immediately if needed for defense.

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## ORDNANCE

## Bazooka Made More Deadly By New Improvements

► BAZOOKA fire in future battles is likely to become increasingly accurate and deadly, as a result of several improvements in the American rocket weapon.

The rough wooden stock of the earlier model has been replaced by a skeleton steel frame, shaped to fit the user's shoulder better and to make handling of the weapon more convenient. The sight has been greatly improved and at the same time made more compact and less liable to damage by striking against trees or rocks. The rear section of the tube has been strengthened with a wire wrapping.

Carrying the original bazooka has always been a somewhat awkward job because of the considerable length of the tube. This difficulty has now been obviated by making the tube in two sections, with an easily locked, tight joint about halfway of its length. It can now be separated into two halves, and carried with three rounds of ammunition on the soldier's back. Also, for transportation in jeep, plane or glider, the long weapon can be reduced to more wieldy proportions.

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There are approximately 500,000 active cases of *tuberculosis* in the United States.

## AERONAUTICS

# More Airports Needed

Postwar development of civil aviation will be seriously impeded unless double the number of present fields are constructed within five years after the war.

► THE CIVIL Aeronautics Administration will soon complete and present to Congress a report on studies it has made for postwar airports, showing that civil aviation will be seriously impeded unless double the number of present fields are constructed within five years after the war, it was announced by William A. M. Burden, Assistant Secretary of Commerce.

"The airport," he stated, "is the basis of all aviation development, just as the highway is the basis of all automotive development."

As a result of a three-year program of the CAA, costing \$400,000,000, the United States now has 600 new or vastly improved airports, almost all of which will be used after the war for civil aviation.

This brings to 3,086 the total number of airports in the country.

Since the growth of private flying and air transport is dependent upon the development of an adequate airport system, Mr. Burden declared that the CAA will show Congress that we will need double the number of fields within five or ten years after the war, plus improvement of 1,625 of the existing fields.

Out of the total number of new fields proposed, 2,900 will be small airports to be used for personal flying and local air service. At present there are only 286 places in the United States where the planes of scheduled air lines can stop. The CAA will recommend to Congress that 174 of these be improved for safe and efficient air transport service.