

AERONAUTICS

Patent Norden Bombsight

► THE WORLD'S most famous bombsight, the Norden bombsight, was granted a government patent after being kept under security wraps for more than 32 years.

Considered the nation's No. 1 military secret during the early years of World War II, the bombsight was so jealously guarded that pilots forced down behind enemy lines were ordered to destroy the device even at a risk of their own lives.

The bombsight was originally invented by Carl L. Norden of New York in 1923, but was considered so ultra-secret that Mr. Norden remained "Mr. X," until November 1940 when Gen. George C. Marshall, then Army Chief of Staff, first called it the "Norden bombsight."

Application for a patent on the bombsight was not made until January 25, 1945, close to the end of the Second World War. It is more than 10 years later that Mr. Norden has received his patent, No. 2,703,932.

In describing his invention, Mr. Norden claimed that his bombsight provided for automatically reducing the errors a bombardier might make in adjusting the speed

disc of old bombsights and the plane's altitude. He stated that this prevented making a bombing run during gliding or climbing.

The altitude limits of the Norden bombsight were set at 20,000 feet or more, which for World War II Flying Fortresses was a marked factor in flying above anti-aircraft fire.

In releasing the detailed drawings and explanation of the Norden bombsight, it is believed that the device has become outdated and has been superseded by more advanced sights suited to modern aircraft.

As a historic reminder of the pace at which weapons development has galloped since the end of World War II, plans for the once top-secret Norden bombsight, which Capt. Colin Kelly used to sink the Japanese battleship Haruna, can now be purchased for 25 cents at the U. S. Patent Office.

The patent rights to the bombsight were assigned by Mr. Norden to the United States of America as represented by the Secretary of the Navy.

Science News Letter, March 26, 1955

BOTANY

Easter Lilies Year-Round

► EASTER LILIES are about to become available for the Fourth of July, Labor Day and Christmas too.

More than 40 varieties of new lily hybrids are now being tested and evaluated by scientists who developed them at the U. S. Department of Agriculture's plant industry station at Beltsville, Md. Described as being superior to the standard varieties now appearing in flower shops across the nation for the spring holiday, the plants will be available to the public within the next two to four years.

Products of several years of crossbreeding, improvements have been made on both the home plant variety and the larger plants for churches and hotels. The Easter pot-flowers are described as having bigger, finer blossoms and shorter stems, only 14 to 18 inches long.

For vase lilies, the bigger blossoms flower on stems from three to three and one-half feet long. Included in the new hybrids, too, are better lilies for floral pieces and funeral sprays.

The new plants, bred by researchers of both federal and state experiment stations, are the result of work with lily chromosomes, "inheritance vehicles found in the cells." By a series of intercrosses between diploids, plants with 24 chromosomes in each cell, and tetraploids, with 48 chromosomes in each cell, and then treatment with various growth regulating chemicals, the new hybrids were collected.

Some of the new plants are being increased for public release, but it is a time problem because increasing one bulb to hundreds of thousands is a slow process.

A report of the new varieties was made in *Agricultural Research* (March) by Drs. Samuel L. Emsweller and Neil W. Stuart who headed the project.

Science News Letter, March 26, 1955

PSYCHOLOGY

Worry Rates With Poor Sight as Accident Cause

► WORRY, FEAR, stress and strain rate with poor eyesight as cause of motor vehicle accidents, the National Society for the Prevention of Blindness was told at its annual conference in New York.

Attention and perception are as important as eyesight itself for safe driving, Dr. Leon Brody, director of research at New York University's Center of Safety Education, New York, declared.

The effects of emotional upset or lack of attention on accurate perception and driving safety, Dr. Brody said, are shown by the fact that "most accidents happen to 'average drivers' rather than accident repeaters. And it is safe to say that these average drivers are for the most part persons with normal vision."

Science News Letter, March 26, 1955

• RADIO

Saturday, April 2, 1955, 5:00-5:15 p.m. EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. David B. Ast, director, bureau of dental health, New York State Department of Health, Albany, N. Y., will discuss "Fighting Tooth Decay."

CHEMISTRY

New Simple Sugar May Explain Growth Steps

► PRODUCTION OF a previously unknown sugar compound containing four atoms of carbon may shed additional light on how plants build sugars in photosynthesis.

The new sugar, erythro-3-pentulose, was found when spleen extract was reacted with ribose phosphate, one of the important growth chemicals. This research was carried on at the National Institutes of Health, Bethesda, Md., by Drs. Gilbert Ashwell and Jean Hickman of the Arthritis and Metabolic Diseases Institute.

The chemical structure of the new compound shows the way one complex sugar may be modified into another during plant growth. Theoretical schemes have been worked out which include compounds of the type now reported, but such compounds have not been discovered before in nature nor synthesized in the laboratory. Details of how the new compound was made and its composition proved are reported by the Bethesda scientists in the *Journal of the American Chemical Society* (Feb. 20).

Science News Letter, March 26, 1955

AERONAUTICS

Airstrips Cheaper If Thinner at Edges

► BY MAKING civilian airstrips thinner around the edges than in the middle, more than \$100,000 in construction costs per runway may be saved.

This is indicated by research by Robert Horonjeff and John Hugh Jones, engineers in the University of California's Institute of Transportation and Traffic Engineering.

At runways in Los Angeles, Oakland and San Francisco the two engineers set up detector instruments to determine how far planes landing and taking off were from the center of each airstrip. Day and night traffic and visual and instrument flight conditions were checked.

The results showed that 95% of traffic on a runway 150 to 200 feet wide is concentrated in the central 60 feet.

The engineers believe that 200-foot wide runways could be made 36 inches in the central 60 feet and 30 inches in the remaining 140 feet instead of a normally uniform 36-inch thickness. On a runway 8,000 feet long this would save as much as \$103,000 and perhaps more in some areas.

Science News Letter, March 26, 1955