



### SUNSPOTS

*This great disturbance visible on the face of the sun on July 7 is the largest group of sunspots seen in recent months. It was photographed at the U. S. Naval Observatory.*

### AERONAUTICS

## Autogiro Mail Line Opens at Philadelphia

**A**MERICAN aviation hangs up another first with the establishment of the world's premier "windmill airplane" airline, which has started shuttling airmail between Camden airport, the Philadelphia flying field, and the Philadelphia post office.

Not only does Eastern Airlines' "land-on-a-dime" Kellett autogiro haul 400 pounds of mail in five minutes a distance a mail truck requires a half hour to negotiate, but it promises a solution to the big city airport headache as well. The autogiro lands on the post office building roof.

With mail successfully ferried today, passengers will be carried just as quickly and easily tomorrow. Autogiros cannot now carry loads large enough to accommodate the number of passengers that can be fitted into an airliner, but the autogiro is a young bird yet. It will grow up just as its conventional airplane sister has.

Large cities are now faced with two unpleasant alternatives in building their airports because of the space required for takeoff and landing of the larger

planes. The city must either pay high prices for an airport site handily located or passengers have to put up with a 30- to 50-minute car or cab ride from business districts.

Getting to and from an airport can actually take more time than making the flight itself, particularly for shorter distances. For example, a New York to Philadelphia flight takes about 40 minutes. But getting to Newark airport and from the Camden airport requires more than an hour. A man in a hurry under such conditions can do better by taking a train.

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Experiments at Cornell University show that two species of mosquitoes can transmit fowl pox to healthy birds.

There are only about 600 miles of divided highways in the United States, to separate oncoming streams of traffic.

Chemists have discovered that with the proper strength of brine southern cucumbers can be made into firm pickles.

### ASTRONOMY

## Huge Sunspot Cluster Sweeps Across Sun's Face

**A** HUGE cluster of sunspots, so large that more than a dozen earths could be dropped into them, have been sweeping across the face of the sun, it is disclosed on photographs taken at the U. S. Naval Observatory. This is the largest group seen in recent months.

Three of the spots, with smaller satellite spots nearby, were lined up in an east-west direction across the sun. Not far away was a fourth group of three small spots arranged in the form of a triangle. All of them passed sun's meridian line about July 8 and disappeared off the western edge of the sun about July 15.

If they keep their shape they should reappear again on the sun's eastern side near the end of July. The period of rotation of the sun, which determines the speed with which sunspots appear to move, is about four weeks as seen from the earth.

*Science News Letter, July 22, 1939*

### ENGINEERING

## Create Mechanical Power From Burnt Fuel Gases

**T**HE ENGINEER'S answer to fears of wartime bombings, that would cripple city power plants, is a new type gas turbine described at the meeting of the American Society of Mechanical Engineers at San Francisco.

Gas turbines fulfill the engineer's dream of turning the energy of fuel into mechanical power without the use of cylinders and pistons or steam boilers and all the other necessary parts of present day power units, Dr. Adolphe Meyer, widely known engineer of the Brown, Boveri and Company, Baden, Switzerland, said.

In the gas turbine the burned gases from the fuel strike the blades of spinning turbine and generate the power.

As applied for a bomb-proof power station in the city of Neuchatel, Switzerland, a 4,000 kilowatt gas turbine generator is buried deep underground in a tunnel only 60 feet long, 17 feet high and 26 feet wide. Since no water cooling is required for this new type gas turbine, the entire emergency wartime unit is sealed except for fuel and air intake lines and openings for exhaust gases and an electric power cable. Gone from the eyes of airplane bomb sights are the towering stacks and great buildings of