

accepted and will lead only to further disruptions of the peace. The common people of all countries must not only feel their political and economic future holds genuine hope for themselves and for their children, but must also feel that they themselves have the responsibility for its achievement."

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AERONAUTICS

Airplane Will Furnish Primary Policing Medium

► USE of the airplane as a policing medium for world security to prevent acres of gas-filled rockets from being aimed by enemies at distant cities was predicted by T. P. Wright, U. S. Administrator of Civil Aeronautics, in delivering the thirty-third Wilbur Wright Memorial Lecture before the Royal Aeronautical Society. He pointed out that while attempts at inaugurating security organizations heretofore were not successful because of the absence of a suitable policing medium, the airplane promises to fulfill that need.

Mr. Wright declared that we are "on the threshold of the greatest period of aeronautical development that has yet been witnessed." He cited as items which may completely change aviation technique the gas turbine, jet propulsion, electronic devices which will make all-weather flight safe and practicable, and advanced designs of private planes and the helicopter. He estimated that in the postwar years the aviation industry will employ over 600,000 people, 12 times as many people as it did before the war, and will carry 20 million passengers a year on U. S. lines at speeds of 300 miles an hour and at a cost of three cents a mile. At this estimated rate you could fly from New York to Chicago for \$22.26 instead of today's fare \$38.40. Fares from New York to Washington would be \$6.87 and from New York to Los Angeles about \$78.

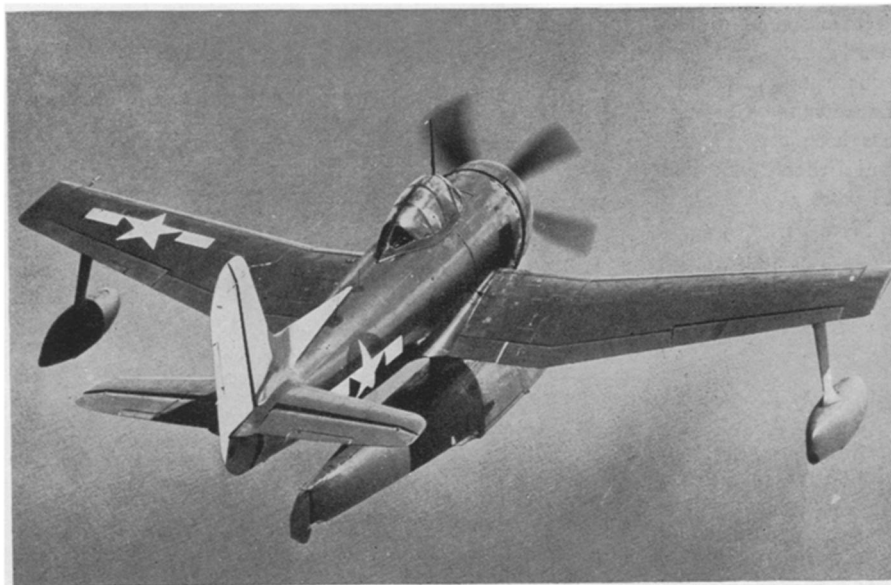
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PUBLIC HEALTH

Varnish Makers Protected From Skin Irritation

► PERSONS working with cashew nut shell oil, used in the manufacture of varnishes and resins, may now be saved from skin infection by a protective cream. A New Jersey plant discovered that the poison ivy protective cream developed by the U. S. Public Health Service was effective in this case also.

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CLIMBING—Skillful design of this new bird, the "Eye of the Fleet", is dramatically shown in this view as it soars from the water. Note pronounced dihedral angle of the wings for greater stability.

AERONAUTICS

Speed Doubled

The Navy's new observation-scout plane, designated the SC "Seahawk," can fly higher and farther than any previous Navy models.

► LAUNCHED into active combat from battleship and cruiser catapults recently, for the first time, is the Navy's new observation-scout airplane that is reported to be twice as fast, and can fly higher and farther than any previous Navy models.

Designated the SC, "Seahawk," this new scouting airplane has a single float, and low wing construction, plus nearly three times the horsepower of the OS2U "Kingfisher," the plane used up to now for such work.

The fundamental jobs of the SC are to scout for enemy fleet units, to spot gunfire both in sea actions and in the shelling of enemy shore batteries during landing operations, and to act as an air-sea rescue plane. While the Seahawk is fitted to carry only the pilot, a bunk can be arranged back of the pilot seat into which one man may crawl.

Observation-scout planes are usually considered easy targets for the enemy. With its greatly increased speed and maneuverability, plus added fire power and its ability to carry bombs and depth charges in the float, the SC introduces

into warfare a formidable weapon for use against the enemy in an emergency.

Both airplane and engine are designed and built by the Curtiss-Wright Corporation. The SC uses the newest air-cooled airplane engine in production, the Cyclone 9, which is reported to generate more power per pound weight than any other engine for aircraft in the world. The new engine generates more than 1,200 horsepower, greater than the horsepower of the engine used on the B-17 Flying Fortress, producing more than one horsepower for every pound of weight.

According to P. B. Taylor, vice-president of Wright Aeronautical, the new engine has the power of more than 25 automobiles, power enough to generate current to operate the Empire State Building, and more power than most heavy-duty tugboats.

The Seahawk is equipped with a four-blade hollow-steel propeller that has an unusually wide blade, designed to provide the tremendous thrust necessary to the airplane's fast rate of climb, and cruising efficiency at high altitude. The

propeller looks more like a canoe paddle than a conventional propeller.

Due to the heavy strain imposed on the pedestal attaching the float to the fuselage, a strain which may be equal in force to six times the weight of the entire airplane, engineers designed a strut strong enough to withstand six G's without snapping off.

The SC was designed by 35-year-old Bruce Eaton of the Curtiss-Wright Cor-

poration. He received his M.S. degree in aeronautical engineering at the Massachusetts Institute of Technology in 1932 and for several years has been in charge of wind tunnel research at Buffalo, N. Y. He is credited with the design and development of the modern system of automatic wind tunnel balances, an important aid to testing plane models before "life-size" prototypes are built.

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Northrop Aircraft, Inc., at the same meeting. Such methods, he said, can be used in two principal phases of the problem, process control in the plant, and quality assurance with respect to materials and parts acquired elsewhere. The methods, involving the use of control charts and requiring only simple arithmetic, have been widely used in industry for a number of years, he added.

"Quality does not happen, it must be planned," Mr. Howell declared. "Quality has its beginning in the design of a product. If the design is good, the chances for good quality are much better than if the design is poor. In order for design to be good, the designer must know the capabilities and limitations of equipment at hand and available.

"The knowledge is most readily obtained by the quality control records of previous product," he continued. "The setting of quality standards and establishment of acceptable quality level is an engineering problem with which the statistician can lend valuable assistance."

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OPTICS

Bronchoscope for Planes

The same instrument that doctors use to find a pin in the baby's lungs now used to inspect almost inaccessible spots around aircraft motors.

► OPTICAL instruments are playing an important part in aircraft manufacturing, particularly for photographing or visually inspecting concealed spots that cannot be examined otherwise without inconvenient and expensive removal of some parts of the structure. The use of such instruments, in redesigned form, was explained at the meeting of the Aviation War Conference of the American Society of Mechanical Engineers by Milton Gray of the Erb and Gray Scientific Instrument Co.

A small-bore periscopic device, borrowed from the field of medicine where it is known as the cystoscope or bronchoscope, is used, he said, to inspect almost

inaccessible spots around aircraft motors, hydraulic systems, control housing and other installations having small apertures for insertion of an instrument. The bore inspection telescope, originally designed to inspect riflings and internal finish of big gun barrels, especially redesigned for the purpose, is similarly used.

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Standards Control

The necessity and value of applying well-standardized statistical methods to quality control in aircraft manufacture was emphasized by John Howell, of

Heater Ignition System

The physical principles governing the design of an ignition system for aircraft internal combustion heaters were discussed at the meeting by Dr. E. H. Plesset and others of the Douglas Aircraft Company, Inc. Essentials, they stated, are a spark plug with relatively low thermal conductivity, high resistance to chemical attack, high thermal shock resistance, and high dielectric strength. Also important are the relative positions of the gasoline spray, spark plug and gap and inlet air.

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CHEMISTRY

Dr. Frederick T. Wall Gets \$1,000 Chemical Prize

► DR. FREDERICK T. Wall, associate professor of physical chemistry at the University of Illinois, has become the outstanding young chemist of the year as the result of the award to him of the \$1,000 American Chemical Society pure chemistry prize. Dr. Wall is only 33.

This prize is awarded annually to encourage fundamental studies by young chemists and it is provided by the Alpha Chi Sigma, national scientific fraternity. Dr. Wall was cited for his independent and original researches on the thermodynamic and statistical mechanics of polymers.

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SPACE SAVER—Folding wings are a new feature for a Navy scout-observation seaplane. Shown here on its beaching gear, the new Curtiss Seahawk occupies less space aboard its ship. Official U. S. Navy photographs.