

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.

*Science News Letter, June 23, 1945*



**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.