

Versailles when enforcement was possible; from organized propaganda for "pacifism" based on an appeal to cowardice; and from our experiment in "neutrality", which has been, through the ages, the best guarantee of war, will probably not be forgotten. If, however, victory is not made a basis for the application, to international relations, of the principles which have successfully reduced conflict within nations, the work will have to be done over.

Among these principles are: 1. However much we deplore war, war is a duty

when civilized social organization needs to be defended; and saving one's neck at whatever cost is anti-social. 2. That civilized social organization involves cooperation to defend victims of anti-social aggression, whether the victims are persons in the house next door, or other national groups. 3. That anti-social behavior, refusing to uphold justice for others, eventually destroys the nations practicing it. 4. That refusing to fight for principles lest one be hurt is a foolish form of cowardice.

*Science News Letter, January 20, 1940*

to turbulent air flow over a wing was so delayed as to reduce . . . basic air resistance by approximately two-thirds.

"So far the application (of this achievement) is limited to small airplanes, but there are indications of its ultimate applicability to larger airplanes through continued research."

*Science News Letter, January 20, 1940*

#### ENGINEERING

### Latest English Lifeboat Is Propelled by Pumps

**L**IFEBOATS have been needed all too often in recent months thanks to the war at sea. Latest lifeboat news out of England, post war, concerns a new surf-type, motor lifeboat propelled by pumps instead of propellers. The pumps used are similar in design to those extensively employed for circulating water in naval vessels and power stations. Two such pumps, one on each side of the boat, are operated by engines. Discharge of the water from the pumps below the waterline propels the boat.

The stream of high velocity water can be directed to any point of the compass by turning a wheel which controls a deflecting nozzle, thus making steering easy. By turning the jets either directly toward or directly away from each other, the boat can be held stationary. By turning both jets outboard, the boat is held against another vessel or wharf without tying up. Striking advantage is that a pump-propelled boat drives through a head sea and over shoals or obstructions in a very remarkable manner.

*Science News Letter, January 20, 1940*

Several television telephone stations have been opened in Germany for "visible" calls in Berlin or from Berlin to Munich, Nuremberg and Leipzig.

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#### AERONAUTICS

## Engine Research Laboratory Urged by N.A.C.A.

### Committee Calls Move "Of Utmost Importance" for Development of Aviation and for Defense Program

**C**ONSTRUCTION of a national airplane engine research laboratory is urgently recommended in the 25th annual report of the National Advisory Committee for Aeronautics.

Through a sub-committee, whose chairman was Col. Charles A. Lindbergh, it is found "that there is a serious lack of engine research facilities in the United States, and that it is of the utmost importance for the development of aviation in general, and for our defense program in particular, to take immediate steps to remedy this deficiency."

Emphasizing this suggestion, the N. A. C. A., through its new chairman, Dr. Vannevar Bush, president of Carnegie Institution of Washington, continued: "The reason for foreign leadership in certain important types of military aircraft is due in part to the superiority of foreign liquid-cooled engines. At the present time, American facilities for research on aircraft power plants are inadequate and cannot be compared with

the facilities for research in other major fields of aviation."

While the N. A. C. A. did not cite specific examples of foreign planes in the "leadership" class it is believed that Messerschmidt fighters, Heinkel pursuit-fighters and Junkers and Heinkel bombers—all of which are powered with liquid-cooled engines—would be typical planes of the class to which the committee referred.

Aircraft design and research will ultimately replace the Atlantic and Pacific Oceans as the best bulwark for the defense of the United States, the N. A. C. A. reported. Pointing out that the nation is most fortunately situated between two great oceans, the report adds:

"However, as advances in aeronautical science result in increased range of aircraft the significance of these oceans will gradually diminish and superiority in aircraft design will become more and more essential to our national safety."

Most significant event of the year, for the future of American aviation, was the authorization of a second major research laboratory to be established at Moffett Field, California, some 38 miles south of San Francisco.

Further details of what has become known as the "500-mile-an-hour wing" for airplanes was also disclosed in the new report of the N. A. C. A.

Research scientists at the Langley Field, Va., laboratory have discovered "a new principle of wing design in which the transition from smooth (laminar) flow

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