

INVENTION

Inventors' Ideas Needed

Armed Services are asking help in solving many technical problems which affect national defense. Their needs reach into many fields of science.

► HERE ARE SOME THINGS the Armed Services need:

Storage batteries for the Polar regions.
Smoke-producing mixture that will ignite and burn on wet ground.

Non-detectable ground mine.

New types of rocket propellants.

Improved metals.

Pneumatic tire substitute.

A bolt or cap screw that can be operated without the usual amount of turning.

New, non-magnetic compass.

Handwheels for vehicles that do not chill the operators' hands in cold weather.

These are only a few of several hundred technical problems affecting national defense which the Armed Services are asking help in solving. They are taken from an official list issued by the National Inventors Council, U. S. Department of Commerce. These lists are for circulation among inventors, in the hope that individuals will submit solutions or suggestions that may solve the problems.

All ideas and suggestions submitted to the Council are carefully screened by experts. When a proposal appears to be of constructive value, the Council refers it to the appropriate technical branch of the Armed Services for study. The judgment of the technical branch to which the matter was referred is communicated to the inventor as soon as possible.

Needs of the Armed Services reach into many fields, from those that might be solved by an ingenious mechanic to others that require the training and experience of high-grade research scientists. In the latter fields there are problems for chemists, metallurgists, physicists, engineers, mathematicians, aircraft experts and others.

In the fuel and lubricant field there is need for a diesel fuel oil which will not lose its physical and chemical characteristics at 65 degrees below zero Fahrenheit. There is need for lubricating oil which will maintain satisfactory viscosity and have a pour point of approximately minus 60 degrees Fahrenheit. Listed as an unsolved problem is the solidification of gasoline in order to improve packaging, transportation and storage under minimum temperatures of minus 65 degrees Fahrenheit.

A new type of electric storage battery, or improvements on present types, is essential to give efficient service under any climatic conditions within a temperature range of 130 degrees Fahrenheit above zero to 65 degrees below. It should not reflect any appreciable reduction in voltage and efficiency due to low temperatures. Applications range from locomotives to highway

vehicles and stationary engines.

For chemists to solve is the problem of a red tracer composition for artillery shells which will stand high velocities, function uniformly for any number of seconds, and is not affected by heat or moisture. Then there is the problem of an igniting composition which is not affected by heat or moisture with uniform action under all conditions of ammunition use. In addition, plastic materials for many uses under various climatic and other conditions are required.

For metal experts many problems remain to be solved. There is need for an easily worked alloy which will withstand temperatures above 5,000 degrees Fahrenheit; a satisfactory ceramic liner for rocket motors; non-corrosive metals; anti-friction bushings; a non-corroding, penetrating, alloying treatment for magnesium; and light alloy materials which will retain strength at temperatures up to 1,000 degrees Fahrenheit.

Unsolved problems in the Council list reach into nearly all branches of science. Electronic equipment of various types

might be mentioned. For mechanics there is the job of inventing a hydraulic jack that will not leak off under load or bind when operated to lower the load. Also wanted is a telescoping screw for elevating mechanisms, a substitute for the present wheel-brake system, and an air-brake system requiring only one hose.

The National Inventors Council has nothing to do with placing development contracts with private firms and laboratories for the solution of technical problems. It advises those interested in development contracts to discuss the matter directly with the Armed Services. The Council seeks only to bring the problems to the attention of individual inventors whose constructive thinking on them might not otherwise come to light.

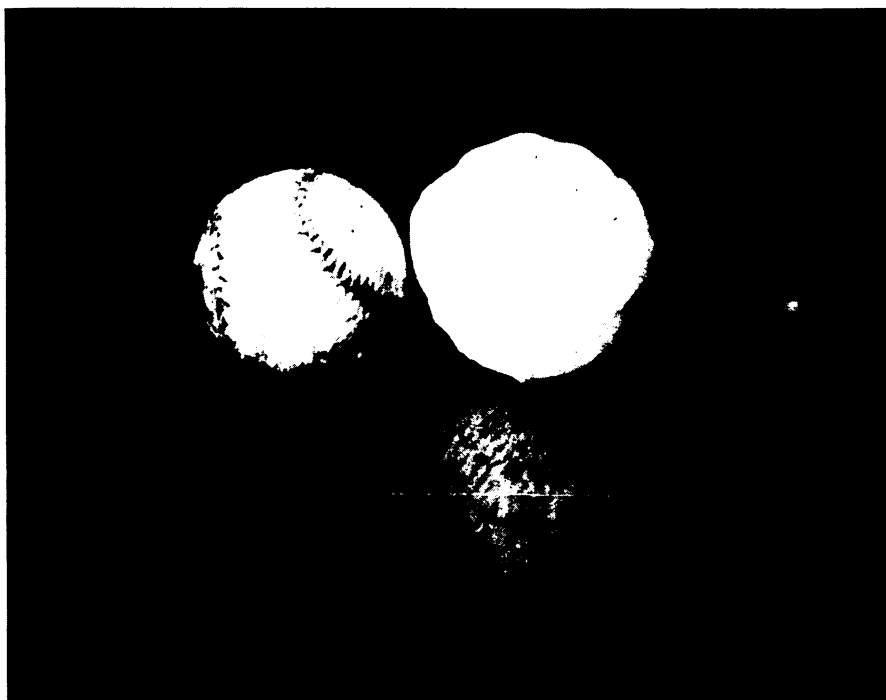
For the convenience of inventors, the Council publishes from time to time lists of needs of the Army, Navy and Air Force. However, some of the problems confronting the Armed Services are so highly specialized that it would serve little purpose to give them general publicity. Inventors may obtain lists from the Council.

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METEOROLOGY

Texas Hailstone Found Larger than Baseball

► A HAILSTONE larger than a regulation baseball has been added to the U. S. Weather Bureau's list of giant natural missiles from the sky.



GIANT HAILSTONE—The big chunk of ice shown here was compared for size with a baseball. It fell in connection with a tornado which cost three lives and injured 43 people last May in Texas.