



PLANNING—Working out a war-essential sort of jig-saw puzzle, J. C. Smith, General Electric Company planner, arranges a layout with paper pieces to insure minimum waste when the patterns are later cut from steel.

ENGINEERING

Power From Tests

More than half the power needed to operate an engine factory can be obtained from energy formerly wasted by plane engines on test block.

➤ MORE THAN half the power needed to operate an engine factory can be recovered from tests of plane engines, G. E. Cassidy, W. A. Mosteller and W. L. Wright of the General Electric Company reported to the American Institute of Electrical Engineers meeting in New York.

The power-recovery method has helped the war effort by giving to the aircraft engine industry a testing technique that contains advantages not available in other methods, the engineers pointed out. Testing can be made with greater ease and in less time on a basis that is economically sound.

Previous to the development of the new power-recovery system, energy produced during testing was dissipated by water brakes, propellers, electric brakes and other devices which involved complete wastage. Fuel consumed accomplished no useful purpose other than testing of the engine. Furthermore, engines became so huge that schemes to dispose of the power by wastage began to present difficult problems.

Starting with an inquiry for an improved method from Pratt and Whitney Aircraft, development of the power recovery system has gone through several phases.

Using an induction generator, one of the latest setups begins the test with a cold start and run-in test for checking mechanical operation and lubrication of the engine. Then speed is gradually increased. When ready to "fire" the ignition switch is turned on and the engine throttle adjusted to idling speed. As the throttle is opened, the generator speed passes through synchronism and load is automatically applied to the engine. Any desired values of load and speed can be established.

From such a test, the engineers reported that 3,000 to 6,000 kilowatt-hours of energy may be recovered from each engine of current-large rating.

"The advantages of the power-recovery system applied to the testing of aircraft engines have not yet had time to be universally appreciated," the engineers maintained.

"It may be quite possible that with the passing of time the engine builder will point with more and more favor (toward wider use of the method) because he is already pointing toward larger aircraft engines—and the larger the engine the more advantageous power-recovery testing becomes."

Science News Letter, February 6, 1943

PUBLIC HEALTH

Meningitis Increases Almost 20% in Week

➤ CASES OF meningitis throughout the nation increased almost 20% during the week ending Jan. 23, latest for which figures are available. Reports from state health officers to the U. S. Public Health Service show 354 cases for the past week as compared with 298 for the week of Jan. 16. Most of the cases are on the East and West coasts.

Total number of cases for the year to date, that is, to Jan. 23, is 941, which is probably the largest number for that short a period since the U. S. Public Health Service has been keeping weekly records of this disease.

Influenza cases totalled 4,387 for the week of Jan. 23, about the same as for the previous week. Measles increased slightly.

There were 23 cases of smallpox, five in Ohio and four in Indiana. No other state reported more than two.

Science News Letter, February 6, 1943

ENGINEERING

Infrared Lamps Dry Painted Plastic Helmets

See Front Cover

➤ PLASTIC helmet liners weighing only 12 ounces are said to be as strong as steel of the same weight. They give our soldiers adequate protection during non-combat duty and comfort under the steel helmets during battle.

The photograph on the front cover of this week's SCIENCE NEWS LETTER shows freshly painted hats of war going under the drying rays of infrared lamps in a Westinghouse Electric and Manufacturing Company plant.

Science News Letter, February 6, 1943

The *pecan*, America's most valuable native nut tree, yields over 60,000,000 pounds of nuts annually.

Aircraft used in desert country are fitted with a special *filter* to keep out as much of the sand as possible.