into the storm towards the spot where they knew the Jap ship lay. The second salvo landed squarely on the enemy man-o'-war, 14,000 yards distant. This experience vividly demonstrated radar's effectiveness, and soon afterwards compact radar units were being installed in airplanes, as well as on land and aboard ships.

Science News Letter, March 3, 1945

ENGINEERING

Research Needed

Technical progress in the construction industry has been relatively slow in the past, and extensive research is now needed.

➤ TECHNICAL progress in the construction industry as a whole has been relatively slow in the past, and extensive technical research is now necessary if the industry is to be stabilized. Highway construction, and to a lesser extent heavy bridge and dam construction, have become thoroughly mechanized, but progress in other fields has lagged. This is the opinion of the National Planning Association, a voluntary association certified under the laws of the District of Columbia, in a report entitled "Stabilizing the Construction Industry."

The report, prepared by Miles L. Colean, states: "The costs resulting from the traditional handicraft methods still characteristic of most building operations have prevented the industry from fully exploiting its potential markets and at the same time have caused it to overbuild for the limited part of the market it has been able to reach."

"Another industrial problem comes from the slowness or failure of builders to shift from types of construction for which the demand may be currently satisfied to those where demand may still be latently effective," the report continues.

Some contractors have demonstrated considerable flexibility in shifting from one type of construction to another, but most find it difficult to shift profitably to unfamiliar types of structures and retire temporarily when the market for their usual products declines or disappears.

Research activities are engaged in by many large manufacturers of construction in the use of more economical meth- of their scientific work is concerned with the development of their own products.

"Only to a minor degree is research directed to the development of well-balanced end products and experimentation in the use of more economical methods," Mr. Colean declares.

To conduct the needed technical research, the report recommends that "assistance from the federal government should be considered." A precedent for this type of activity on the part of the government has already been set in agriculture, mining, aviation, and in highway construction. The National Bureau of Standards and the U. S. Forest Products Laboratory already have facilities capable of expansion, the report states, and the government could expand and coordinate work now proceeding in a piecemeal and unrelated way.

The primary aim of the government activities recommended by Mr. Colean "would be to advance the productivity of the construction industry (with resultant lower costs per unit of volume), increase the total physical volume, and, most important, encourage expansion of types of construction now restricted because of high cost."

The program, also, would help building organizations reorient their production as made advisable by variations in demand.

Science News Letter, March 3, 1945

ENGINEERING

New 7-Cylinder Engine Develops 700 Horsepower

➤ A NEW seven-cylinder air-cooled radial engine that develops 700 horsepower on inexpensive low-octane fuel has been announced by G. W. Vaughan, president of the Curtiss-Wright Corporation.

Known as the Cyclone 7, the new engine will permit airplane manufacturers to design short-range cargo planes and military trainer planes around a 700 horsepower installation. The new engine is similar to the nine-cylinder Curtiss engine which powers more than 80% of the nation's airlines. Close resemblance between the two makes it possible to interchange many parts, thus reducing maintenance problems.

The combustion chamber is designed for gasoline of an octane rating much lower than that of planes in the air today. Horsepower output would be correspondingly greater if higher-octane fuels were used.

The new engine is provided with a two-speed supercharger drive. The higher supercharger ratio is adequate for the development of maximum engine power at high-altitude airports. The lower supercharger ratio supplies extra power for high performance at airports situated at low altitudes.

To improve lubrication within the engine, oil jets have been provided in the crankcase to direct a continuous flow of oil into each cylinder barrel.

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