FOOD TECHNOLOGY

Synthetic Food for World

Synthetic foods can help to solve the food-population race when the world really begins to feel the pinch. A cheap low cost food mixture is one method.

➤ FOOD for many more millions of world population can be manufactured synthetically when future demands make it necessary, Dr. Karl T. Compton, chairman of the Massachusetts Institute of Technology, declared at the dedication of the National Dairy Research Laboratories in Cambridge.

Referring to synthetic foods as a "food reservoir of incalculable magnitude," Dr. Compton said that artificial food will not become important until the world begins to feel a real pinch, either in quantity or price, in the production of food by ordinary methods.

Synthetic rubber substituting for the sap of a tree, nylon made of coal, air and water replacing silk, and plastics from many natural sources as a rival for wood, caused Dr. Compton to be confident that the chemists would produce in volume, at reasonable cost, food when it is needed.

Synthetic foods may be made palatable by simultaneous development of synthetic flavors, Dr. Compton predicted. A number of these flavors are already successfully on the market. Either chemical or biological processes, or probably a combination of both, will be used in the production of synthetic foods, Dr. Compton said.

Development of synthetic foods may be expected when there is real danger of world hunger through inability to produce, not as at present through inability to distribute, he told his scientific audience.

For the immediate future of food supply, nationally and internationally, he urged greater efficiency of production, improved distribution, elimination of waste and intensive development of food for the underprivileged.

A diet that would maintain health at a cost of between $15.00 and $16.00 per year per person was developed at Massachusetts Institute of Technology before the war. This low-cost food consisted of corn, wheat, soya and peanuts, with milk powder and added vitamins. Part of the problem of feeding people at low cost could be solved by the use of such food mixture, Dr. Compton said. Suitable flavors and modification of textures would be needed to make a diet of this sort as attractive as it is cheap.

X-rays or high powered electron streams from atom smashing electrical generators will sterilize food without heat in the future, Dr. Compton predicted. This is the newest method of food preservation that promises to be economically feasible. The fresh taste of food preserved with such cathode rays is retained.

High speed vacuum pumps, originally designed for research in physics, also promise to bring a new kind of food preservation through a process of high vacuum, low temperature, dehydration or distillation.

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ENGINEERING

Piston-Turbine Engine Utilizes Exhaust Gases

➤ A NEW type aircraft engine, a combination of the conventional piston power plant and a gas turbine, utilizes former waste exhaust gases from the cylinders to operate the turbine. It is a fuel-saver.

By recovering and using the energy in the exhaust gas, which is usually discharged as a waste into the air, the turbines produce a large amount of power without any additional fuel. The same power produced by the basic engine is produced in the compound engine with 20% less fuel.

This new engine was developed in Wood Ridge, N. J., by the Wright Aeronautical Corporation under the sponsorship of the U. S. Navy. Experts agree that the turbine engine has many advantages in high-speed aircraft but also appreciate that the conventional reciprocating engine can not be matched as far as reliability and economy in operation and maintenance are concerned. This compound engine is claimed to combine the advantages of both.

The three power-recovery turbines used in this combination are an integral part of the engine. They feed their recovered power directly back into the engine crankshaft system without impairing basic engine efficiency or adding stresses on reciprocating parts. No operating controls are required aside from those already used to operate the basic engine.

Take-off power rating of this compound engine is 3,250 horsepower, a 20% increase over that of the basic engine. Normal rated power is increased 14% for low blower operation and 28% for high blower. Fuel consumption is reduced 20% for high cruise powers, and 15% for low cruise powers. The new type engine is designed for use in any aircraft where range is a primary operating requirement.

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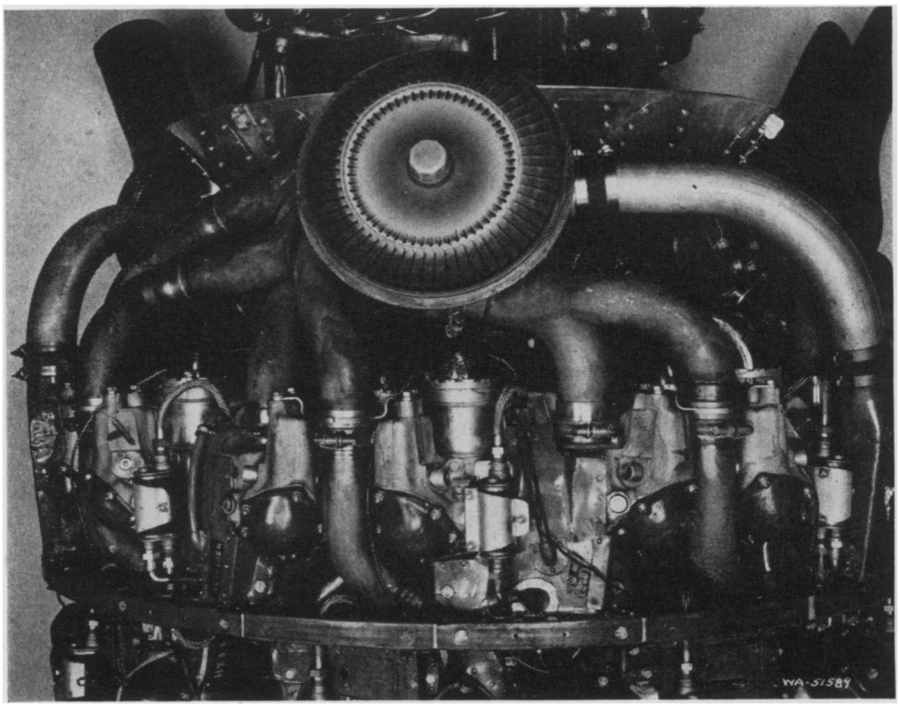

ECONOMICAL ENGINE—This close-up of one of the three turbines of a Wright Turbo-Cyclone 18 compound engine shows how the exhaust from six cylinders is piped to the turbine on the right side of the engine. The single pipe entering the turbine from the top is a cooling air duct for the turbine assembly. The other pipes are siamesed together in pairs to form three gas inlets to the turbine wheel.