

AERONAUTICS

New Safety Aviation Fuels Decrease Flying Fire Hazard

Aeronautic Meeting Learns That New Gasolines Can Give Performance and Economy of Present Fuels

TESTS at the research laboratories of the National Advisory Committee for Aeronautics, at Langley Field, Va., have just proved that new types of safety aviation fuels can give performance and economy equal to that of the risky super-gasoline now used by aviation.

A great advance in aviation safety will come from the new knowledge as soon as it can be taken out of scientific laboratories and used commercially.

Safety aviation fuels are now made synthetically in the laboratories of science but can be produced on a commercial scale as soon as the demand for them arises. Their cost will probably be no more, for large production, than the cost of the high-test, anti-knock gasolines now used in airplanes.

The National Aeronautic Meeting in Washington, sponsored by the Society of Automotive Engineers, was the scene of the new important announcement as Oscar W. Schey, mechanical engineer of the N.A.C.A., described his tests on the performance of aviation engines using fuel injection.

In these experimental engines the fuel is not sent through a carburetor to be vaporized in the usual way. It is forced,

under pressure injection, directly into the firing cylinder where it is ignited by an electric spark. It is this fuel injection method which permits the use of the newly created safety aviation fuels.

Characteristic of these new fuels is their high flash point. Where the vapors of some aviation gasolines will ignite, or flash, at temperatures as low as 30 degrees below zero, Fahrenheit, the new safety fuels are so made that their vapors will not ignite, or flash, until the temperatures reach 100, 134, or even 164 degrees.

Using the safety fuels in airplanes will greatly diminish the risk of fire hazard when accidents occur. This potential increase in safety has long been realized but it remained for the N.A.C.A. tests to prove that the safety fuels could be used without any loss of power output or desired economy of fuel consumption.

The N.A.C.A. tests were made, it is true, on small one-cylinder experimental engines, but engineers see little trouble in adapting the fuel injection methods to large multi-cylinder engines which are adaptable for installation in transport airplanes.

Fuel injection for engines, instead of

carburetors, has another advantage stressed at the National Aeronautic Meeting.

In a report by C. F. Bachle of the Continental Motors Corporation it was explained that within the last year fuel injection has been adopted for light aviation engines in private planes. Mr. Bachle stressed that fuel injection eliminates the risk of ice forming in carburetors. The rapid vaporization of gasolines so cools the carburetor that water vapor is sometimes frozen to ice in it, with fatal stalling and disaster.

The fuel injection systems for light planes are used with current aviation gasoline. With suitable changes in the engines it might be possible to adapt them for the safety fuels with which the N.A.C.A. has been working, so that additional safety from fire hazard could also be obtained for the private pilots.

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Light Aviation Engine

A NEW type of experimental airplane engine that weighs only 0.6 pound for every horsepower it develops was described at the National Aeronautic Meeting.

The new engine is of the Diesel type, only four feet long, with 18 cylinders. Weighing 3,000 pounds, it could be developed to deliver 5,000 horsepower, said E. S. Hall, avia- (*Turn to next page*)

CONSERVATION

Face Seventh Season of Fighting Coal Fires

CCC WORKERS in Wyoming are preparing for a new campaign in what has proved to be a Seven Years War against the nation's hottest and most destructive fires. For the seventh spring, they will go into the line to fight fires that are devouring some of the nation's biggest and best coal reserves.

Fighting the coal fires is not done with conventional hose-and-nozzle equipment. The weapons are power shovels, tractors, wheelbarrows and spades. Burning masses of coal are dug out and smothered with packed earth.

Sometimes the heat is volcano-like, melting the soil. Working periods on occasion have been shortened to as little as ten minutes. Yet despite the laboriousness and extreme hazards of the work, the CCC forces engaged have not had a single major accident during their operations since 1933.

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BATTLING SEVEN-YEAR FIRE