

ENGINEERING

# Auto Industry Contemplates Use of Polarized Light

## Engineering Problems of Switchover Are Major Ones And Require Considerable Testing Before Adoption

HOW the automobile industry might solve the problem of introducing polarized headlights to eliminate night-driving glare was described to the Society of Automotive Engineers, Detroit, by P. J. Kent, chief electrical engineer, Chrysler Corporation.

An agreement among manufacturers to install polarized lights on new cars after a given date would be the initial step. At the same time demountable polarizing screens for old car windshields could be made available to allow the beneficial polarizing, glare-eliminating effect for them also.

However, Mr. Kent pointed out, it would probably also be necessary to have new cars equipped, for a few years at least, with a standard beam-depressing switch so that their strong headlight rays could be lowered in meeting old-type cars. This depression of the beam would be needed until the old cars came to a lingering death and the end of their usefulness.

Polarizing screens on headlights and windshields would be "crossed" so that the polarized light rays could be extinguished and glare eliminated.

Still debatable, said Mr. Kent, is the question of whether headlight intensity would have to be stepped up with the introduction of polarized beams. The polarizing screens cut the light intensity emitted by the headlight some 60%, he pointed out. It has been suggested that brighter headlights could overcome this absorption and also surmount the addi-

tional absorption of 60% encountered in the windshield screens.

The engineering problems involved in the switchover to polarized headlights are major ones, Mr. Kent concluded, and require considerable testing before they can possibly be applied to all automobiles.

The problem is by no means as simple as the introduction of safety glass in cars, for polarizing the headlight beams can only gain its effectiveness if all cars possess the new invention. The benefits of safety glass, in contrast, were real and tangible immediately on its installation in any single car without respect to others.

*Science News Letter, January 27, 1940*

## Safety Fuels for Planes

A NEW type of safety gasoline for aviation that would be no more volatile than kerosene and hence less hazardous from the explosion standpoint, was described to the Society of Automotive Engineers, Detroit, by Robert E. Ellis and William J. Sweeney, Standard Oil Development Company.

Back in the days when the U. S. Navy had the *Akron*, *Macon* and other great airships, safety fuels were seriously considered, the scientists pointed out. These airships were inflated with helium to decrease their fire risk and Naval scientists were seeking a gasoline which vaporized only a little and could be used to cut the kill hazard from fuel still further.

The disasters to Naval airships and the urge for superior high-octane gasolines for airplanes were twin reasons why interest in safety fuels diminished after 1932, although in that year the capacity for the production of such safety fuels reached tank car lots.

New advances in petroleum refining since 1932 have, however, made it possible to produce safety fuels with very high octane (anti-knock) rating up to 100 octane number.

These safety fuels have a flash point, the temperature at which their vapors will ignite, of 100 degrees Fahrenheit. In

contrast, the flash point of many gasolines is below room temperature and, in some cases, is as low as minus 30 degrees Fahrenheit.

Scientists Ellis and Sweeney, in their analysis of crude petroleum sources suitable for making safety gasolines, find that if the proper equipment were installed, a production of 10,000,000 barrels of such fuels could be produced each year, an amount sufficient for aviation's needs for many years to come.

Stopping point for the immediate introduction of these new safety gasolines is that they cannot be burned in an ordinary type of engine using a carburetor. It is necessary to supply the fuel to the engine by injection methods.

*Science News Letter, January 27, 1940*

## Diesel Airplane Engines

NEW DIESEL airplane engines of the 1,000 horsepower class now developed in Europe can compete successfully in performance with gasoline engines of comparable power, Paul H. Wilkinson, consulting engineer, told the Society of Automotive Engineers, Detroit.

Seeking out first-hand information in France, Germany, England and Holland just before the outbreak of the current European War, Mr. Wilkinson inspected the factories and latest engine designs of these nations.

From his authoritative information, Mr. Wilkinson compared for his fellow engineers the performance of the new liquid-cooled B. M. W.-Lanova Diesel of Germany with top ranking American air-cooled motors using gasoline of 87 octane (standard on airlines), 90 octane and 100 octane (used on military planes). These American motors were, respectively, the Pratt & Whitney Twin Wasp SC3-G, the Wright Cyclone 102A and the Pratt & Whitney Twin Wasp S1C3-G.

Mr. Wilkinson concludes that the new German Diesel can compete on a basis of parity with American 87-octane motors

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and "in all probability with engines operating on 90-octane and 100-octane gasolines."

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## ARCHAEOLOGY

## Secret Room in Palace Baffles Archaeologists

**P**AGE Sherlock Holmes! British archaeologists digging out the ruins of a 3,700-year-old palace in Syria, have encountered a mystery room, suggesting the secret, hideaway chambers of whodunit fiction. And to date, the archaeologists have not solved the mystery.

Discoverer of the baffling scene is Sir Leonard Woolley, famous for his explorations at Ur of the Chaldees, and more recently director of British Museum excavations in North Syria.

Exploring a royal palace buried 25 feet under the soil at Atchana, ancient Alalakh, Sir Leonard found a flight of stairs leading to a basement level and barred at the foot by a low stone door. The door, cracked and broken, still could be turned on its hinges. Behind it lay enough evidence to conjure up thoughts of strange macabre doings in palace life of an ancient, unknown king.

Seen now, only the most enduring remnants of the secret are visible. Outstanding object is an oblong wooden box, collapsed, in which were packed four skeletons. In a corner of the room is a heap of ashes from a wood fire, and with it, bones of animals and some stone and clay vases. The designed secrecy of the barred room is emphasized by surrounding rooms, all for household routine.

Alalakh, scene of this palace mystery, is otherwise proving very enlightening to archaeological science. From its buried palaces, temples, statues, and pottery, seven stages of ancient history are coming to light, including much information about the little-known Hittite era. Alalakh in Syria was no provincial place. It had contact with civilizations of Egypt, Asia Minor, Mesopotamia, Cyprus and Crete.

*Science News Letter, January 27, 1940*

## ● RADIO ●

Dr. Albert F. Blakeslee, director of the department of genetics, Carnegie Institution of Washington and newly elected president of the American Association for the Advancement of Science will tell why people behave differently as guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, February 1, 4:15 p.m., EST, 3:15 CST, 2:15 MST, 1:15 PST.

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## PUBLIC HEALTH

# Mayo Clinic Authority Urges Speed in Better Medical Care

## Approaching Presidential Election Brings Danger That Problem Will Become a Political Football

**A** WARNING that we must now make haste in working out plans for better medical care distribution, to avoid having the problem become a political football, is issued by Dr. Hugh Cabot, of the Mayo Clinic, in his book, *The Patient's Dilemma* (Reynal and Hitchcock).

Dr. Cabot incidentally criticizes the American Medical Association for failing, in its handling of economic, social and political problems relating to medicine, to maintain its high standards and the judicious and judicial qualities which have characterized its handling of scientific problems. But Dr. Cabot's chief concern is in solving the patient's dilemma of being unable to find or to pay for good medical care.

The approaching presidential election makes speed essential, Dr. Cabot points out, if the problem of getting medical care to all the people is to be solved by sound plans.

With large bodies of people convinced and certain to state clearly their convictions that some change in medical care distribution is overdue, "the time appears to me," Dr. Cabot says, "to be short during which good-tempered discussion can hold the floor."

"Once the issue is joined between the political parties, action—possibly hasty—may well result," he warns.

No formula for solving the problem exists, Dr. Cabot says. Disagreeing with proponents of compulsory health insurance, he states that while there is "much foreign experience to guide our footsteps, there is no foreign formula which can be applied—even in its general principles."

"The entrance of government into the distribution of medical care," he continues, "must have as its first step a secure foundation in the provision of a good personnel, good standards, and expert supervision."

Dr. Cabot seems to favor solving the problem largely at the state level. He says there is much to be gained by regarding the states "as a series of experimental laboratories." Local initiative, local financing with state grants-in-aid to communities needing it, a single state administra-

tive channel and state maintenance of standards are the principles he suggests for plans for medical care under government auspices.

Establishment and maintenance of fundamental standards, however, can only be



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