AERONAUTICS

Mach 3 Transport Urged

➤ THE UNITED STATES should have supersonic transports, flying at three times the speed of sound and capable of a New York-to-London run in slightly more than two hours, in full commercial operation by the early 1970's, the President's Task Force on National Aviation Goals believes.

Cooperation between the Federal Government and U. S. aircraft manufacturers in developing a Mach 3 transport is one of the key recommendations in the Project Horizon report submitted to the President after a six-month study. The report outlines national aviation goals over the next decade.

Being first with a Mach 3 passenger plane would not only enhance American prestige, but enable airlines to operate more economically and cut their fares on long-distance hauls, the group said.

Since present subsonic transports cannot stand the heat of supersonic flight, the venture would require complete new concepts in design and materials.

The Task Force recommends skipping the Mach 2 (twice the speed of sound) stage and shooting for Mach 3 instead, on the grounds that anything developed at the lower speed would be obsolete too soon to justify the expense. The British and the French already have indicated an interest in developing their own Mach 2 transports.

Cost of developing a 2,000-mile-per-hour Mach 3 model is estimated at between $500,000,000 and $800,000,000. Once in production, the per-plane cost would be about $20,000,000.

The cost is too much for private industry to bear alone, so Government help is necessary, the report emphasizes. Congress already has approved an $11,000,000 expenditure for the first of a series of studies aimed at the development of a supersonic transport. Next year's needs, a Federal Aviation Agency official said, will be more than double this if the program continues at its proper pace.

The revolutionary new transport is only one of 24 major goals set by the Task Force, which operated with FAA support and was headed by Fred M. Glass, New York, executive vice president of the Hertz Corporation.

Top emphasis is also laid on maintaining "world leadership in all phases of aviation" and in promoting safety. To implement safety, the Government is urged to set up within five years a unified air traffic management system assuring "safe and efficient use of airspace by both civil and military aircraft." The report calls for establishment of a Federal Aviation Service, operated by FAA on a civil level but available to the military in emergencies, to man the new system.

The Civil Aeronautics Board is criticized, in effect, for having allowed too many competing airlines to operate in areas where the extra service was unneeded. They are urged to encourage more mergers.

The group said the U.S. needs "more efficient helicopters and other vertical or short take-off and landing aircraft" for short-haul traffic, but that industry should finance most of this work without Government aid.

President Kennedy, in a letter to FAA Administrator N. E. Halaby, said the report includes many controversial matters and recommendations requiring future resolution, but called it "an excellent analysis."

He asked Mr. Halaby to "take the lead in developing recommendations for specific actions."

• Science News Letter, 80:205 September 23, 1961

SOCIOLOGY

How to Prevent Strikes

➤ STRIKES can be prevented by action based on science. Psychologists and sociologists have the necessary know-how to cure industrial friction such as that behind the automobile strike that has involved the biggest walkout in automotive history.

Strikes, it is recognized, are symptoms of social disease, just as fever is a symptom of many physical diseases.

Modern physicians do more than give fever patients cooling baths to reduce fever. They go after the germs or other causes of the fever to get the patient well.

Social psychologists have better ways of treating social sickness than prescriptions for cooling-off periods to avert strikes. They, like doctors of medicine, can diagnose the causes and apply remedies that will get the patient—in this case, the nation itself—back on the road to health.

A commission of scientists to be sponsored by the Government has been urged as a means for diagnosing the social ills that underlie recurrent strikes in the automobile, steel, coal and other industries. Such a commission would devote itself to a scientific search for facts, causes and effects and so would be in no sense partisan.

Unfortunately, the "grievances" discussed over the conference table are not always the basic conditions that make the workers unhappy. It is difficult for a worker, or his representative at the conference table, to express just what he finds undesirable in a job. The easiest thing to say is that the pay is not high enough. But really, the worker might still be unhappy if the pay were greatly increased. Perhaps he is troubled because there is no suitable place for his family to live or for some other reason not even mentioned in the talks.

Scientists, with modern interviewing and polling techniques, might be able better to get at the root of the friction.

Research techniques and scientific knowledge have developed in recent years to such an extent that a scientific commission could bring about a significant reduction of tension in industry. This opinion was expressed in a steel strike situation by Dr. Dorwin Cartwright, director of the Research Center for Group Dynamics, University of Michigan, who is a student of industrial relations.

A prescription for emergency treatment, suitable for strikes, has been worked out by Dr. Francis Bradshaw, New York psychological consultant.

It is difficult, he points out, for the top men in a dispute to come to an agreement. Each feels that he cannot "back down" on any single point without betraying his constituents. And yet it is doubtful whether any top man in an industrial dispute knows just what the men he represents might be willing to agree to.

The remedy, as seen by Dr. Bradshaw, is to bring together two groups, each one made up of representatives of each level in the hierarchies of management or of labor, from big boss to assistant foreman, from union president to shop steward.

Setting the scene for these discussions is important.

There should be no reminders of the respective status of the participants. The atmosphere of a courtroom and "witnesses" should be avoided.

Discussions should be implemented, when disagreements occur over facts, by sending out and ascertaining just what the situation is by use of scientific methods.

• Science News Letter, 80:205 September 23, 1961

THREE DIODES IN ONE

TECHNOLOGY

Diodes in Multiple Sets For Computer Networks

➤ ASSEMBLIES of two or three silicon switching diodes, housed in a tiny package the size of a match head and thinner than a nickel, have been developed by Radio Corporation of America, Somerville, N. J. The reduction in size and the replacement of individual diodes are expected to simplify construction of logic networks in computers. Smaller computers, capable of a larger work load than current types can handle, may result.

• Science News Letter, 80:205 September 23, 1961