AERONAUTICS

Aid Aircraft Control

Air Navigation Development Board reports ground-based radar most responsible for traffic control improvement. Terminal control distances need to be greater.

➤ PROVISION OF ground-based radar at American airports has made possible the greatest single improvement in airplane traffic control in the last decade, the recent report of the Air Navigation Development Board states.

Plane landings three minutes apart are now routine at airports having radar and trained radar controllers.

The recent improvements in traffic control efficiency have come about through the ability of radar to provide controllers with instantaneous, accurate and unambiguous position data, the report states. But even better traffic control is predicted for the near future with airborne radar relays.

Transponder beacons such radar relays are called. They pick up and re-emit radar signals. This airborne equipment will provide longer distance radar coverage, freedom from ground echoes and simple aircraft identification.

"In our opinion," the report states, "ground surveillance radar supplemented by airborne transponders, used in conjunction with VOR (Very High Frequency Omnirange) and DME (Distance Measuring Equipment), and operated under proper rules and procedures of the sort now being developed by simulation and operational tests, will be completely sufficient to handle traffic of mixed aircraft types at a rate of 30 operations per hour on a single runway, and single-type aircraft traffic at a rate of 45 per hour."

With the coming of faster planes, equipped with turbo-prop or turbo-jet propulsion, terminal control will be forced to extend for greater distances from airports. Terminal control will extend out into areas now recognized as en route control areas. Obviously the two types of control must operate with a great deal of cooperation, if not actually merge into a single system.

It is our conviction, the report declares, that the merger will occur in the denser continental regions and that the only difference between en route and terminal control will be one of degree. The necessity for precision is somewhat less for an en route aircraft than for those nearing approach.

Science News Letter, May 31, 1952

MEDICINE

Double Nerve Operation Helps Stomach Ulcers

➤ A DOUBLE nerve operation that helps stomach ulcer patients was reported by Dr. Ulysses Grant Dailey of Chicago at the meeting of the International College of Surgeons in Madrid, Spain.

In this operation the vagus nerve is cut through an opening in the diaphragm and the phrenic nerve is crushed through an opening in the neck. Two doctors operate simultaneously, one on each nerve.

Patients are out of bed the day after operation and back to work within three to five weeks, Dr. Dailey reported.

Cutting the vagus nerve to slow down stomach overactivity and thus give the ulcer a chance to heal has been done for half a dozen years. The crushing of the phrenic nerve causes a one-sided paralysis of the diaphragm between the chest and abdomen. The diaphragm is then pushed up by the abdominal organs including the stomach which takes a vertical position favoring drainage. The paralysis of the diaphragm lasts only three to six months but this is enough to help in healing the ulcer.

The double operation, Dr. Dailey said, is "a boon to poor risk patients" in whom removal of a large part of the stomach, performed in some ulcer cases, would be dangerous.

Science News Letter, May 31, 1952

Question Box

Photographs: Cover and p. 341, Brookhaven National Laboratory; p. 339, Dr. Edward S. Ross; p. 342, National Bureau of Standards; p. 343, Fremont Davis; p. 349, U. S. Air Force.

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