TECHNOLOGY

Tests for Skidding Made

➤ AIRLINES are planning an operational test of runway grooving at an airport to determine whether or not grooves reduce skidding on wet pavement. The Air Transport Association (ATA) Flight Operations committee made the decision to carry out the tests.

To reduce skidding, small hairline grooves are cut across the runway, perpendicular to the plane's direction of travel. The grooves are only one-eighth to one-quarter of an inch deep, and one to two inches apart. They are made by machines with high-speed diamond cutting wheels that cut as many as 13 grooves at a time.

To groove the full length and width of a 10,000 feet long, 150 feet wide runway might cost about $70,000, according to one estimate.

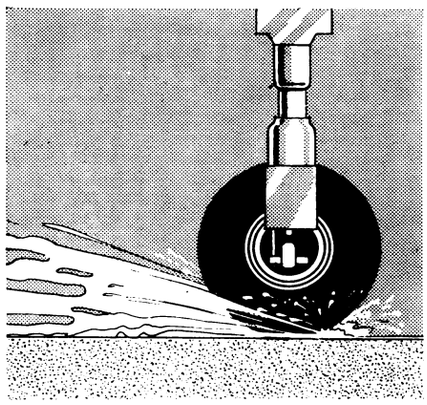
Major General Clifton F. von Kann (USA-Ret.), vice president-operations and engineering of ATA, said, "We are now preparing a test proposal that the airlines will submit to one or more airports very soon. After the proposal is submitted, a local committee of airlines serving the selected airport will work out details of the test program with airport management. We expect to be able to complete these details so that grooving can start next year, but we hope that there might be an airport that is willing to start before next year."

British authorities have been grooving runways at military airports for up to ten years. Recently, the runways at one civil airport have also been grooved, and a program to groove more civil airport runways is now getting under way in the United Kingdom.

Experiments by the Langley Research Center of the National Aeronautics and Space Administration (NASA) show why tires skid on wet pavement and how grooving reduces the skid.

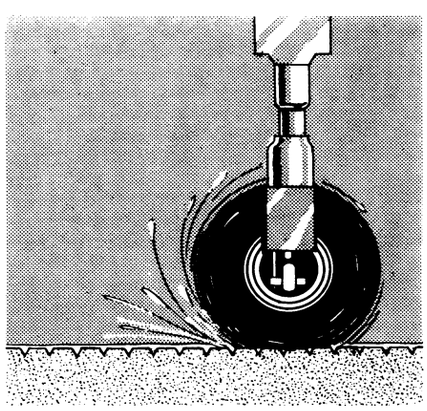
Where the pavement is smooth enough to allow the tire to slide on a thin film of water, grooves in the runway will break the film and restore traction. When large amounts of water are left standing on a runway, skidding can be caused by dynamic hydroplanning—the tire rides on a cushion of water, much as a surfboard rides the crest of a wave.

Grooves break this cushion by giving the water an escape route thus allowing the tire to contact, and get traction on the runway.



Air Transport Association

SKIDDING ON WET RUNWAY



Air Transport Association

TRACTION ON GROOVED RUNWAY

PUBLIC SAFETY

Higher Cars Are Safer

➤ HIGHWAY safety is considerably compromised by the fact that most automobiles in the United States are too close to the ground to allow drivers to see adequately.

Designers of many popular American cars, particularly some of the compact models, are producing automobiles that make the driver feel that he is almost sitting on the highway.

Studies by Dr. Merrill J. Allen of Indiana University, Bloomington, show that "a little realized complication of rakish styling is the loss of driver eye height above the road and the increasing problem of lighting the roadway as the vehicle height is lowered."

In other words, by bringing the driver and vehicle close to the ground, the driver's line of vision is significantly reduced.

A six-foot man walking along a straight road can see for three miles. The driver of a low slung car can see only two.

Poor visibility is further increased because the driver's eye level is so close to that of the beam from his headlights that he may be seeing more of the light than of the objects it is supposed to illuminate.

Traveling in a rain storm, for instance, a driver whose line of vision is almost blended into that of his headlights will see rain drops clearly illuminated by the bright light, rather than the highway in front of him. A truck driver, however, sitting in the cab three or more feet above the level of his lights, would not be subject to what Dr. Allen calls "back scatter" or particles in the air. His eyes would be focused on the highway, and approaching vehicles or small objects in his path would not be obscured.

Headlights positioned close to the ground also create a hazard by casting a glare into the eyes of approaching drivers. If the load in the rear of a car is increased, by backseat passengers or luggage, the headlight beam generally aimed parallel to the street, is somewhat raised, thus increasing even more the glare to oncoming traffic.

Dr. Allen, who is a member of the advisory panel appointed by the General Services Administration to help tighten automobile safety standards, reported that cars would be safer if their standard height were raised to give drivers greater spatial perspective and clearer visibility.

TECHNOLOGY

All 1967 Cars Will Have Rust-Proof Underbodies

➤ FOR THE first time this year, all new automobiles will have underbodies made of corrosion-resistant galvanized steel to give them added protection against rust.

The portions so protected vary from model to model and from manufacturer to manufacturer. However, the parts include rocker panels, which are the narrow strips under doors, fender shield, quarter section, rear floor panels, bands around radiators and front torque boxes.

The major causes of automobile rust are the salt and other chemicals being used in ever-increasing amounts to melt snow and ice on streets, highways and parkways. The salt collects along the seams, crevices and unseen crannies on the undersides of cars. Because salt attracts and holds moisture, a brine develops in these tiny pockets, promoting and accelerating corrosion.

The widespread use of galvanized steel in 1967 models was uncovered in a survey of the automobile industry by officials at the American Zinc Institute in New York.