Results from Aircraft Ground Handling Performance Studies

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Outline

- Transportation players
- Aircraft/ground vehicle testing
- Pavement texture treatments
- Wet friction/texture measurement correlation studies
- Conclusions and recommendations

Transportation Players

AAAE American Association of Airport Executives

AASHO American Association of State Highway Officials

AASHTO American Assn. of State Hwy & Transportation Officials

ACRP Airport Cooperative Research Program

AGARD Advisory Group for Aerospace R & D (NATO)

AIAA American Inst. of Aeronautics and Astronautics

ALPA Airline Pilots Association

APTA American Public Transportation Association

ASTM American Society of Testing and Materials

Transportation Players - Continued

CAA	Civil Aviation Authority (UK)
DOD	Department of Defense
EMAS	Engineered Materials Arresting System
ESDU	Engineering Sciences Data Unit
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier
ICAO	International Civil Aviation Organization
IFPA	International Friction Pavement Association
IRFI	International Runway Friction Index

Transportation Players - Concluded

ISO	International Organization for Standardization
NASA	National Aeronautics and Space Administration
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
RITA	Research and Innovation Technology Administration
SAE	Society of Automotive Engineers
SHRP	Strategic Highway Research Program
TALPA ARC	Takeoff and Landing Performance Assessment Advisory Review Committee
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board

VIDEO:
Variety of NASA Aircraft and Ground Vehicle Studies

Skidabrader

Skidabrader Modifying Texture of NASA KSC Shuttle Runway

Pavement Grooving Machine

Highway Longitudinal Grooving

Runway Transverse Grooving

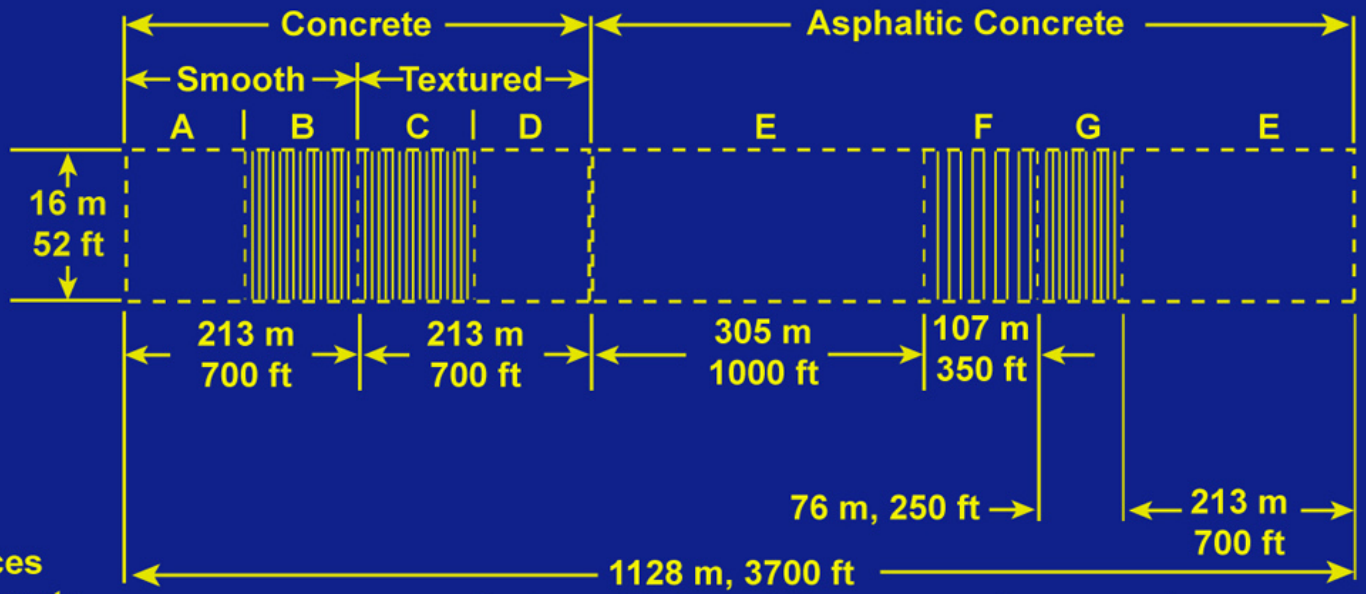
Pavement Grinding Machine

Grinding Machines in Operation

Overlay Treatments

- Micro-surfacing
- Slurry seals
- Rejuvenators
- Porous friction course

Schematic of NASA Wallops Runway 4/22 Test Surfaces



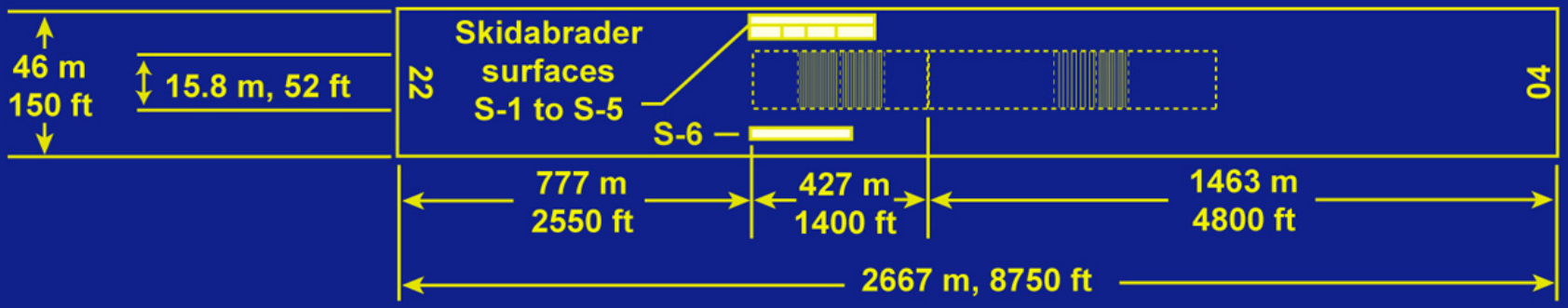
Note:

Taxiway test surfaces include small aggregate asphalt, aluminum panels, overlay treatments and micro-surfacing treatments

Surfaces B, C, and G transversely grooved 0.25 x 0.25 x 1.0 in.

Surface F transversely grooved 0.25 x 0.25 x 2.0 in.

Slots cut in pavement to hold rubber belt dam material



VIDEO:
Wet Pavement Ground Vehicle Friction Tests

Conclusions and Recommendations

- Large friction/texture database has been established and more research projects are underway
- New standards need to be defined to properly identify CFME calibration limits, operator training, and equipment hardware/software maintenance
- Revisions to existing FAA part 139 regulation will require aviation industry and ASTM support
- US aviation organizations will continue to support ICAO efforts to improve aviation safety

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