BRAKE TESTING

NATC conducts brake tests on vehicles ranging from motorcycles to Class 8 trucks. The objectives of these tests range from developmental testing to compliance testing requested by government agencies such as NHTSA. NATC's test support is not limited to the test conduct and reporting and includes problem identification in the event that a test vehicle does not meet the performance criteria. Our philosophy is to establish transparency in the communication between the vehicle/component manufacturers and regulatory agencies enforcing the requirements.

The safe operation of a motor vehicle requires the continuous monitoring of brake or acceleration inputs, steering to changing traffic conditions or road obstacle avoidance. The brakes, the tires/ suspension and the steering system are the most critical safety elements of a motor vehicle. In addition to proper performance of these critical elements, operator skill and response time can have a significant effect on safety. When conducting evaluations of a given subsystem, such as brakes, the performance of the overall vehicle system must be considered and documented. NATC's approach in providing system level solutions, with respect to safety, include vehicle tests to the required performance specifications, and modeling and simulation of vehicle performance to understand the effects of parameter variations.

Safety is the primary impetus behind advanced braking technology. Through its work with electronics systems, vehicle dynamics and handling, and driver/vehicle interface, NATC has developed a vast body of knowledge applicable to Anti-lock Braking Systems (ABS), Traction Control Systems (TCS), Central Tire Inflation Systems (CTIS), active and semi-active suspensions, electronic engine and transmission control optimization, state-of-the-art collision warning and collision avoidance systems.

In addition, NATC has worked extensively in systems integration. Only when a new technology is actually integrated into a complete vehicle package can a valid study of total performance be made. NATC has the capability to do the integration then evaluate the complete vehicle, exploring, for example, the interaction between ABS and engine exhaust brakes on large vehicles, the relative effects of tire type, size, and loading on ABS, and the lateral traction considerations of ABS and TCS as they affect total vehicle sustem performance. NATC has developed computer simulations and performed instrumented tests for both on- and off-road ABS and TCS applications.

NATC conducts brake tests to all of the following specifications:

- **FMVSS105**
- **FMVSS 121**
- **FMVSS 122**
- **FMVSS 135**
- **94/13 EEC**
- **ECE/324**
- **California Title 21**
- **ISO 6597**
- **SAE J201**
- **SAE J134**
- **SAE J46**
- **SAE J1247**
- **SAE J1729**
- **ASTM F377**
- **ASTM F408**
- **ISO 7635**

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