



Vehicle-Trail Rating Classification System



NATC recognized the need for a tool which could correlate the capability of a vehicle with the roads, trails and terrain over which it may operate. Comprehensive knowledge gained over 50 years of analysis of the vehicle-terrain-road system has allowed NATC to develop such a tool. NATC's vehicle-trail rating classification system (V-TRCS™) provides organizations with a dependable validated solution, matching vehicle capability to intended severe condition on-road and off-road usage.



NATC's insight into worldwide terrain conditions was gained through extensive vehicle duty cycle, road network and soil conditions research. The unique location of NATC allows 85% of the terrain conditions where vehicles operate around the world to be simulated within a 150 mile radius or our main facility. The wide range of soil, terrain, trail and road conditions allows NATC to accurately evaluate the interaction between vehicles and terrain. This is a key element in the terrain severity rating system provided in V-TRCS™.

V-TRCS incorporates validated methods to quantify the severity of terrain and trails and compare those conditions to the capabilities of a vehicle. V-TRCS™ considers the performance of the vehicle as a system (wheel travel, power, torque, ground clearance, etc.) and evaluates the impact of vehicle modifications on overall severe terrain operation. V-TRCS™ utilizes both physical and virtual tests to predict vehicle-terrain interaction. A comprehensive set of vehicle parameters are evaluated to determine their contribution to vehicle mobility capability. Complete system tuning can be accomplished by ensuring all components work in concert to enhance vehicle mobility.



V-TRCS™ is a cutting edge tool that can be used to guide selection decisions, after-market modifications and new vehicle design. Using V-TRCS™ for vehicle as well as terrain analysis enables organizations to match vehicle mobility capabilities to terrain severity. To optimize fleet expenses, V-TRCS™ used in conjunction with NATC's durability and performance solutions, can determine complete life cycle costs. Fleet

purchasers can maximize capability while achieving optimal vehicle life cycle costs; including maintenance, fuel costs and acquisition costs. For existing vehicle fleets, V-TRCS™ can be used to determine the capability of the current fleet to meet the challenges of new applications. Vehicle and after market part manufacturers can quantify the impact of system changes on mobility.

V-TRCS™ can be appropriately scaled to evaluate vehicles ranging from off-road recreational vehicles to the largest logistics vehicle. V-TRCS™ can also be scaled to the scope of potential terrains. Selection from a comprehensive, worldwide library of terrains enables V-TRCS™ to include all the applicable conditions for a given study.

V-TRCS™ provides a new capability to the automotive industry. To discover how V-TRCS™ can benefit your application please contact NATC.



NATC, Providing “One-Stop” Testing Solutions in the Real World

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