Transportation Research Center Inc. (TRC Inc.) independently manages a transportation research and testing facility serving the needs of industries, governments, trade associations, and educational organizations worldwide. Transportation Research Center (the Center) is located near East Liberty, Ohio, approximately 40 miles northwest of Columbus. Because much of TRC Inc.'s work is proprietary, many projects are described in general terms. However, the information presented on the following pages will provide the extent of TRC Inc.'s capabilities.

**History**

The Center was developed by the State of Ohio as a transportation research and development proving ground with the purpose of encouraging motor vehicle research and development activities in Ohio. The Center began testing in 1974. In 1979, the State of Ohio's Transportation Research Board entered into a management agreement with The Ohio State University's (University) College of Engineering to oversee the operations of the Center. In 1987, the Center was sold as part of an economic inducement to Honda of America Manufacturing, Inc. to build an automobile plant in Ohio. In order to ensure that the business of the Center could be preserved without violating the confidentiality of the Center's customers, the University established Transportation Research Center Inc., a non-profit corporation. TRC Inc. is governed by a Board of Directors chaired by the University's Dean of the College of Engineering.

**Mission Statement**

*As the leading independent provider of testing, development and research, TRC Inc. helps the transportation industry create safer, improved products. We will accomplish our mission through high-quality services while satisfying stakeholders’ expectations.*

**Vision**

*Customer satisfaction is our competitive advantage.*

**Quality**

*We will strive to meet or exceed customer expectations.*

**Environmental**

*We will strive to protect the environment and assure safe and healthful working conditions.*

**ISO 9001 and ISO 14001 Registered**

**ISO 17025 Accreditation**

**Equal Employment Opportunity**

It is the policy of TRC Inc. to provide equal opportunity in all areas of employment practices, without regard to race, color, religion, national origin, sex, age, disability, veteran status, or any other reason prohibited by law.
I am pleased to present, on behalf of our staff, the Annual Report for Transportation Research Center Inc. (TRC Inc.) for Fiscal Year ended June 30, 2012.

The automotive industry’s economic environment during the past fiscal year has shown signs of recovery. In addition, the industry is continuing to make operational adjustments in response to last year’s earthquake and tsunami in eastern Japan. The pace of recovery will continue to be slow and steady as a result of the questionable stability of the world economy.

Revenue from all sources for Fiscal Year 2012 was $44.3 million, which is an approximate 9% increase from Fiscal Year 2011. The development, research and testing activities during the past year were impacted by the economic condition of the automobile industry. Activities for the year focused primarily on direct contract support, durability and dynamics testing and impact testing. Capital investments during the past year included resurfacing the Vehicle Dynamics Area, building improvements, the addition of data acquisition systems, high speed digital cameras, calibration fixtures and shop equipment. Funding was also available to maintain the test facilities and equipment.

TRC Inc. remains an ongoing sponsor of the Automotive News Pace Awards, now entering its 19th year. The program recognizes automotive suppliers for excellence and innovation and enables us to strengthen our relationship with our customers by providing opportunities to improve technology.

We continue to maintain a strong relationship with The Ohio State University through transfers to the University Endowment Portfolio to support transportation research in the College of Engineering. In addition, TRC Inc. provides assistance to numerous student engineering projects and maintains consortium memberships in the OSU Center for Automotive Research, Smart Car Vehicle Concept Center and Center for Child Injury Prevention Research Studies (CChIPS).

The TRC Inc. management is optimistic about the future of the automotive industry, which will produce new and innovative products that customers demand. In a world economy that is constantly changing, TRC Inc. will adjust its resources to support the development, research and testing needs of customers. In the coming fiscal year, plans are to rehabilitate the 7.5-mile test track.

I would like to thank the TRC Inc. staff for their support in providing quality services, and the TRC Inc. Board of Directors for their guidance and support during the past year.

Rick D. Gildow
Timeline of TRC from 1962 to 2012

- 1962: EST. 1962 - Research Facility Established by The Ohio State University & Ohio Division of Highways
- 1963: Facility Approved
- 1964: 3100 Acres Acquired
- 1965: Groundbreaking
- 1966: Track Completed Official Opening
- 1967: First Test on Vehicle Dynamics Area
- 1968: NHTSA Engineering Test Facility
- 1969: Off-Road Course
- 1970: NHTSA/Office of Defects Investigation
- 1971: NHTSA Safety Research Lab
- 1972: Established as an EPA Coasttown Test Center
- 1973: Crash Barrier
- 1974: Eastern Field Test Center
- 1975: Corrosion Facility
- 1976:
- 1977:
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- 1983:
- 1984:
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- 2010:
- 2011:
- 2012:
Introduction

Over the past 38 years Transportation Research Center Inc. (TRC Inc.) has gained a reputation as the world’s leading provider of vehicular testing services. This reputation has been maintained, not only because of the quality of the services offered, but also because the challenges that each year brings are viewed as new and exciting opportunities for growth.

Since Transportation Research Center (the Center) began operations in 1974, new programs have been developed for customers in the areas of collision avoidance, energy absorption, fuel economy, emissions, durability, performance, noise, crash simulation, and crashworthiness (please refer to the timeline presented below for an overview of our progress). Test programs evaluate the performance of passenger cars, trucks, airplanes, tracked vehicles, off-road vehicles, recreational vehicles, buses, motorcycles, electric vehicles, and automotive components. TRC Inc. schedules and monitors all facilities, with primary importance placed on the safety and security of each customer.

TRC Inc. is continually improving and adapting to meet changing customer needs. To enhance the Center and TRC Inc.’s overall service offerings, new facilities have been designed to assist customers in developing safe and marketable products. To complement our new facilities, TRC Inc. is ISO 9001 and 14001 registered, and maintains a 17025 accreditation. These registrations and accreditations demonstrate TRC Inc.’s commitment to customers. We will continue to measure and improve the quality of the services we provide.

The following pages of this report are dedicated to describing each of TRC Inc.’s primary business areas - Durability and Dynamics Operations, Laboratory Operations, and Contract Services - including a brief review of their activities and accomplishments during the past year.
Facilities, Equipment, & Operational Changes

Under the terms of our Management Agreement, Transportation Research Center Inc. (TRC Inc.) exclusively schedules the facilities and equipment of Transportation Research Center (the Center). In addition, TRC Inc. maintains the facilities and buildings, which include approximately 150 lane miles of improved and unimproved road surfaces and 328,000 square feet of building space. Annual extensive facility upgrades are made through maintenance and repair, procurement of equipment, and facility construction, based on customer survey feedback.

Fiscal Year 2012 was a challenging year financially for the Automotive Industry and for TRC Inc.; however, we were still able to allocate resources to repairs and upgrade existing facilities to continue to meet customer demand.

Operational changes included the kick-off of an eight-year initiative to reduce carbon dioxide emissions by 20 percent, by the year 2020, as well as a two-year capital project to upgrade the Emissions Laboratory temperature control. TRC Inc. continues to strive to protect the environment and ensure safe and healthful working conditions, as part of our environmental management system.

Durability and Dynamics Operations upgrades included the complete resurfacing of the 50-acre Vehicle Dynamics Area and new epoxy flooring in the customer open-bay garage. Durability and Dynamics Operations also acquired new lightweight outriggers for dynamic testing and transitioned to NI Data Acquisition systems for brake testing.

Laboratory Operations received upgrades in both the Impact Laboratory and the Emissions Laboratory. The Impact Laboratory purchased four additional high-speed cameras to improve the on-board camera capabilities. The Emissions Laboratory completed an upgrade to the particulate measurement system and recommissioned the Sealed Housing for Evaporative Determination (SHED).

As the automotive industry continues to improve, we will continue to invest in facilities, equipment and operations to meet the continued needs of our customers.

The Center’s Vehicle Dynamics Area undergoes a complete resurfacing.
Durability and Dynamics Operations (DDO) experienced a 10.9% decrease in revenue from Fiscal Year 2011. The decrease was predominantly attributed to a large government multi-vehicle program, which concluded early in Fiscal Year 2012. As the economy and the automotive industry continue to remain stable, we expect our business to remain steady in Fiscal Year 2013.

The majority of DDO testing involves powertrain, rough road, chassis, corrosion, fuel additives, and fuel economy. In addition, we conduct brake, skid truck correlation, and vehicle handling testing to FMVSS, SAE, and ASTM Standards. DDO maintains a 24-hour-a-day, 7-day-a-week operation for rapid, safe mileage accumulation.

The following table represents the percentage of business by industry classification for Fiscal Year 2012:

<table>
<thead>
<tr>
<th>Industry Classification</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Manufacturers</td>
<td>78%</td>
</tr>
<tr>
<td>Government Organizations</td>
<td>11%</td>
</tr>
<tr>
<td>Component Manufacturers</td>
<td>7%</td>
</tr>
<tr>
<td>Independent Labs</td>
<td>2%</td>
</tr>
<tr>
<td>Fuels &amp; Lubricants</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
</tr>
</tbody>
</table>

DDO continued to support government and industry research, including brake testing, dynamic rollover resistance, forward collision and lane departure warning, as well as a major initiative by the U.S. Department of Transportation (USDOT) for a Connected Vehicle Research Program. Crash Avoidance Metric Partners (CAMP), the National Highway Traffic Safety Administration (NHTSA), and NHTSA’s Vehicle Research and Test Center (VRTC) partnered for elements of the vehicle-to-vehicle (V2V) portion of this initiative, which had three phases of testing with DDO involvement in each phase. The first phase, consisted of 50 vehicles, occurred at Transportation Research Center (the Center) in November 2011. The second phase involved 100 vehicles and took place in California in January 2012. The third and final phase, in March 2012, was conducted at the Center with 200 vehicles. Each phase consisted of evaluations that addressed the communications performance of V2V systems in various congested traffic scenarios.

In order to continue to meet our customers’ expectations for state of the art data acquisition and test equipment, DDO acquired NHTSA-3500-A Lightweight outriggers for dynamic testing and introduced National Instrument (NI) Data Acquisition systems for brake testing. The NHTSA-3500-A Lightweight outriggers are used when conducting dynamic rollover testing on vehicles weighing 3,500 lbs. or less, and are designed to protect test drivers during dynamic maneuvers, while improving test accuracy and performance. DDO now has a full complement of outriggers ranging from less than 3,500 lbs. up to 10,000 lbs. In addition to the outriggers, TRC Inc. has transitioned to NI Data Acquisition systems for Federal Motor Vehicle Safety Standard (FMVSS) 105 and FMVSS 135 brake testing. These systems utilize Labview software, with programs developed in-house, to control the brake test and assist in the function of the test. In addition to brake testing, NI systems have assisted with static force calibrations, data acquisition on our skid system, and have been used in airbag immunity testing.
Laboratory Operations, which increased 32% in revenues for Fiscal Year 2012, consists of both the Impact Laboratory Operations and the Emissions Laboratory Operations. The Impact Laboratory Operations had an increase in crash testing and a decrease in sled testing in Fiscal Year 2012. A total of 211 crash tests were conducted, which was an increase of 215% from Fiscal Year 2011. Impact simulation testing on the HYGE sled totaled 105 tests, which was a decrease of 20% from Fiscal Year 2011. Additionally, the Emissions Laboratory Operations conducted a total of 362 tests in Fiscal Year 2012, which was a 22% decrease in testing from Fiscal Year 2011.

The majority of the Impact Laboratory’s crash work involved development and certification of automobiles and light trucks to meet occupant protection requirements established by the U.S. Federal and Canadian Motor Vehicle Safety Standards. The Impact Laboratory provided research and development of alternative-powered vehicles, and simulation testing for child safety seat crashworthiness. The majority of the Emissions Laboratory’s testing included fuel and fuel additive testing, small engine and vehicle emissions certification, and fuel economy devices and additives.

The following table shows the distribution of business by industry classification for Fiscal Year 2012:

<table>
<thead>
<tr>
<th>Industry Classification</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Manufacturers</td>
<td>53%</td>
</tr>
<tr>
<td>Fuels &amp; Lubricants</td>
<td>22%</td>
</tr>
<tr>
<td>Government Organizations</td>
<td>16%</td>
</tr>
<tr>
<td>Component Manufacturers</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
</tr>
</tbody>
</table>

In order to continue to meet our customers’ expectations for state of the art test equipment, improvements were made in both the Impact Laboratory and the Emissions Laboratory. The Impact Laboratory purchased four small high-speed digital cameras to bolster the on-board camera capabilities. The Emissions Laboratory completed an upgrade to the particulate measurement system, and recommissioned the Sealed Housing for Evaporative Determination (SHED), in order to improve testing for exhaust gas emissions and hydrocarbon vapors.
The Organization

Contract Services

The mission of Contract Services is to provide customers with high-quality engineering and technical support to improve the safety, quality, and competitiveness of their products.

Contract Services is comprised of technical personnel whose services are dedicated to specific customers on a full-time basis. Their work predominantly involves research and development testing, including vehicle components, crashworthiness, crash avoidance, biomechanics, research analysis and test device and procedure development. The personnel in these groups include engineering technicians, mechanical and electronics technicians, engineering assistants, photographers, research engineers and research scientists.

The staff holds memberships in professional societies, such as the Society of Automotive Engineers (SAE) and plays major roles in various technical committees. Numerous technical papers were authored or co-authored by our personnel during the past year. The affiliations, committee work, and published writings bring recognition and industry/professional exposure to Transportation Research Center Inc.

The following table describes the percentage of business by industry classification for Fiscal Year 2012:

<table>
<thead>
<tr>
<th>Industry Classification</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Organizations</td>
<td>56%</td>
</tr>
<tr>
<td>Vehicle Manufacturers</td>
<td>39%</td>
</tr>
<tr>
<td>Component Manufacturers</td>
<td>5%</td>
</tr>
</tbody>
</table>

As the auto industry continued to adjust and recover from the recession, we had forecast a 1% decrease in revenue for Fiscal Year 2012; however, one of our key customers decided to hire 55 of our employees. This decrease in head count, along with growth by other customers, resulted in a decrease in net revenues of 12% and a decrease of 25% in head count. For Fiscal Year 2013 we are forecasting an increase in revenue of 8% and steady head count.

We look forward to meeting the challenges of the coming year and exceeding the expectations of our customers.

Contract Services employees work at NHTSA’s Vehicle Research & Test Center.
Registrations & Accreditations

**Quality Planning, Assurance, Improvement & Control**

Company Registrations

**ISO 9001 Registration**

As part of Transportation Research Center Inc.’s (TRC Inc.) commitment to customer satisfaction and continual improvement, the organization acquired registration to the ISO 9001:2008 Standard on January 7, 2012 (Certificate No. US004370-1). The ISO 9001 Standard is an international model for quality management systems. Organizations are required to identify and document best business practices, and to implement these practices to achieve consistent quality services to meet and exceed customer expectations.

TRC Inc. Quality Policy Statement:
*We will strive to meet or exceed customer expectations.*

**Quality Principles:**

1. **Customer Focus:** TRC Inc. is committed to ensuring that each employee understands who the customer is, what the customer expects, and how their processes support the delivery of customer services.
2. **Continual Improvement:** TRC Inc. is committed to continual improvement in TRC Inc.’s Management System by setting quality objectives and targets, and by evaluating our performance to those goals.
3. **Compliance:** TRC Inc. is committed to complying with all applicable statutory, regulatory, and customer requirements, as well as internal policies.
4. **Communication & Understanding:** TRC Inc. provides education and training to ensure understanding of the quality policy throughout the organization.

**ISO 14001 Registration**

TRC Inc. is registered to the ISO 14001:2004 Standard. The organization acquired registration to the ISO 14001:2004 Standard on January 7, 2012 (Certificate No. US004371-1). The ISO 14001:2004 Standard is a model for environmental management systems and addresses the management of business activities impacting the environment. Although not required by the ISO 14001 Standard, TRC Inc. has incorporated health and safety into our environmental program.

TRC Inc.’s Environmental, Health & Safety (EH&S) Policy Statement:  
*We will strive to protect the environment and assure safe and healthful working conditions.*

**EH&S Principles:**

1. TRC Inc. is committed to continual improvement in its environmental, health, and safety program by setting objectives and targets and by evaluating our performance to those goals.
2. TRC Inc. is committed to prevention of pollution by using processes and materials that prevent, reduce, or minimize pollution. This commitment includes recycling, control mechanisms, material substitution, and efficient use of resources.
3. TRC Inc. is committed to compliance with all applicable environmental, health, and safety regulations, laws, and other internal and external requirements.
4. TRC Inc. provides education and training to ensure understanding of the environmental, health, and safety policies throughout the organization.

Company Accreditations

**ISO 17025 Accreditation**

As part of our commitment to customer satisfaction and continual improvement, TRC Inc. has been granted the ISO/IEC 17025:2005 Accreditation from the Laboratory Accreditation Bureau to perform the following tests:

- Fuel Injector Fouling Initial Performance (SCPI)
- Intake Valve Stick (IVS)
- Automotive Spark-Ignition Engine Fuel for Electronic Port Fuel Injector Fouling (PFI)
- Vehicle Crash Testing of Perimeter Barriers
Transportation Research Center Inc. (TRC Inc.) has renewed its sponsorship of the Automotive News PACE™ Award for the 11th year. PACE™ is the acronym for Premier Automotive Suppliers’ Contribution to Excellence. Now in its 19th year, the PACE™ Award honors automotive suppliers who have embraced innovation or adapted and reinvented themselves to meet the demands of the OEM customer. This prestigious award sets the standard for innovation and excellence and has become a significant industry credential.

Annually, hundreds of automotive suppliers around the globe compete to earn the distinction of joining the automotive world’s list of “Who’s Who.”

The PACE™ Award sponsorship has been a natural link over the past 11 years as many of the products featured are ultimately validated at our proving ground. Through this sponsorship we have had, and will continue to have, the opportunity to support our customers in the marketplace by acknowledging their efforts.

Staff Activities / Community Service

TRC Inc. believes in maintaining its role as a good corporate citizen in the community. TRC Inc. provides financial support through payrolls, payroll taxes and local procurement of goods and services.

TRC Inc.’s “Partnership in Technology Scholarship” program provides $1,000 renewable college scholarships for high school seniors planning to major in a two- or four-year automotive-related field, as well as the opportunity for an internship at Transportation Research Center (the Center). Four first-year students were added this year for a total of 10 students receiving this award in Fiscal Year 2012.

Good corporate citizenship includes protecting the environment. At the Center, this is accomplished in a variety of ways, including the recycling of paper, plastics, glass and metals. TRC Inc. participates in the Ohio Department of Transportation’s Adopt-A-Highway program and supports the Keep Logan County Beautiful Committee, an organization that encourages recycling and litter prevention.

Child safety is promoted through TRC Inc.’s Child Seat Awareness Program, which provides employee reimbursement for the purchase of child restraints and assists the community through child restraint donation programs administered by local health departments.

The following organizations have benefited this Fiscal Year from TRC Inc.’s Community Relations programs:

- Adopt-A-Highway
- American Red Cross
- Antioch Shriners
- Discovery Riders
- Humane Society of Logan & Union Counties
- Keep Logan County Beautiful Committee
- Local Food Pantries
- Logan County Agricultural Society
- Logan County Fraternal Order of Police
- March of Dimes
- Memorial Hospital of Union County
- Multiple Sclerosis Association of America
- Local Elementary Schools Seatbelt Safety
- United Way

The Activities

Automotive News PACE™ Awards & Sponsorship Activities

Governance

Board of Directors

Dr. David B. Williams
Dean of the College of Engineering
The Ohio State University
TRC Inc. Chairman of the Board

Mr. George J. Arnold
Business Development Director, H.R. Gray
TRC Inc. Vice Chairman of the Board

Mr. George S. Hofmeister
Chair & CEO, Revstone Industries

Dr. Caroline C. Whitacre
Senior Vice President for Research
The Ohio State University

Mr. Thomas F. Ewing
Interim University Controller
The Ohio State University

Mr. Rick D. Gildow
Transportation Research Center Inc.
TRC Inc. President

Board Changes

Mr. George Hofmeister, Chairman of Ascalon LLC, was appointed to the Board to complete a two-year term ending at the close of the annual meeting in 2013. Mr. Hofmeister replaced retiring Director Mr. C. John Easton, Chairman (retired) Honeywell Sensotec. Also, Mr. Thomas F. Ewing, Interim University Controller, replaced Ms. Greta J. Russell, University Controller, who retired. We thank Ms. Russell and Mr. Easton for their service to TRC Inc. and are pleased to welcome Mr. Ewing and Mr. Hofmeister to the Board.

In addition, Mr. Jeffrey A. Sprague, TRC Inc. Vice President, was elected TRC Inc. Board Secretary, replacing Ms. Jill R. Macy, who retired from TRC Inc. after 32 years of dedicated service.

Officers

Mr. Shawn T. Ahern, CPA
TRC Inc. Vice President
TRC Inc. Treasurer of the Board

Mr. Milton J. Dunlop
TRC Inc. Senior Vice President

Mr. John W. Phillips
TRC Inc. Vice President

Mr. Jeffrey A. Sprague
TRC Inc. Vice President
TRC Inc. Board Secretary

Mr. Ronald W. Burton
TRC Inc. Assistant Vice President

Mr. Richard E. Powers
TRC Inc. Assistant Vice President

General Counsel
Mr. Christopher E. Hogan

Independent Auditors
PricewaterhouseCoopers LLP