

# TRANSPORTATION RESEARCH CENTER INC.

2002 Annual Report

ISO 9001 Registered



Transportation Research Center 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 give the reader an appreciation of 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 insure 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 College of Engineering.

### ***Mission Statement***

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

### ***Vision***

*Customer satisfaction is our competitive advantage.*

### ***Quality Policy***

*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 Registered"***

## Equal Employment Opportunity

It is the policy of Transportation Research Center 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.



## President's Message

I am pleased to present, on behalf of our Board and staff, the annual report for Transportation Research Center Inc. for the fiscal year ending June 30, 2002.

Revenue from all sources for Fiscal Year 2002 was \$ 34.6 million, reflecting a 5.2% decrease from the previous year. Despite this fact, Fiscal Year 2002 was still our third highest year ever.

The effects of September 11<sup>th</sup> have been felt by many companies during this past fiscal year. Shaken consumer confidence resulted in an economic downturn and decreased profit margins for TRC Inc. during the first part of Fiscal Year 2002. We were pleased to experience a fourth quarter upswing, and we anticipate improved revenues for Fiscal Year 2003.

During Fiscal Year 2002 TRC Inc. converted its ISO 9001:1994 quality system registration to the 9001:2000 version. Citing our commitment on customer focus and our factual approach to decision making, the ISO auditor said "TRC Inc. is a new benchmark for companies converting from ISO 9001:1994 to the new 2000 version." TRC Inc. staff also devoted many months developing new environmental management systems in preparation for the new ISO 14001 registration. TRC Inc. is confident that we will achieve registration in the very near future.

I am proud to announce our involvement as an Automotive News PACE Awards sponsor. "PACE" is the acronym for Premier Automotive Suppliers' Contribution to Excellence." This sponsorship gives us the opportunity to support our customers and their efforts in the marketplace by acknowledging their diligent work.

We believe that TRC Inc. provides the highest quality services available in the industry. This level of performance has been achieved and maintained through the teamwork of TRC Inc.'s staff, whose dedication has allowed us to successfully complete another year. We look forward to continuing this role for many years to come.

Respectfully,

A handwritten signature in black ink, appearing to read "Rick D. Gildow". The signature is fluid and cursive.

Rick D. Gildow  
President



*Aerial View of The Center*

## Introduction

Transportation Research Center (the Center) is the world's leading vehicular testing facility. 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 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. 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 in order to assist customers in developing safe and marketable products. To complement our new facilities, TRC Inc.'s 600 plus employees have worked hard this past fiscal year to maintain our ISO 9001 registration. This registration demonstrates TRC Inc.'s continuing commitment to meeting or exceeding the expectations of our customers. TRC Inc. will continue to measure and improve the quality of services we provide. TRC Inc. is committed to continuing its world class leadership in independent automotive research and development testing.

The following pages of this report are dedicated to describing each of TRC Inc.'s primary business areas — Contract Services, Durability & Dynamics Operations, and Impact Laboratory Operations — and a brief review of their activities and accomplishments during the past year.

# The Facilities

Under terms of a management agreement, TRC Inc. exclusively schedules the facilities and equipment of the Center. In addition to managing the Center, TRC Inc. maintains the facilities and buildings which include approximately 120 lane-miles of improved and unimproved road surfaces and 304,000 square feet of building space.

During Fiscal Year 2002, TRC Inc. made extensive facility improvements as a result of customer survey feedback. The majority of improvements have taken place in Impact Laboratory Operations. Our customers expressed a need for improved digital imaging of crash tests. TRC inc. responded by repackaging the lighting system, resulting in softer lighting and fewer glares. This created greater accuracy in the current film analysis process and brought the crash facility a step forward in preparing for high-speed digital imaging. Seven high-speed digital cameras were purchased and the impact simulator sled and static fixtures laboratory control systems were upgraded. The calibration lab was enlarged in order to accommodate outside services. During this fiscal year, The Federal Highway Administration has recognized TRC Inc. as a Center of Excellence for NCHRP 350 testing.

Construction and facility enhancements were also completed during Fiscal Year 2002 for Durability and Dynamics Operations. A new, automated fuel plaza will greatly improve the fueling and fuel tracking process. A new humidity cabinet that will complement our already extensive corrosion testing facilities was also completed. The addition of these facilities enhances TRC Inc.'s ability to maintain its status as one of the most comprehensive proving grounds in the world.



*Night view of the new fuel plaza*



*New impact simulator console*



*New lighting system in the crash barrier*

# The Organization



## Durability and Dynamics Operations

Durability and Dynamics Operations (DDO) followed the trend with the automotive economy this past year and experienced a downturn in business. The principle area for DDO, which is test driving (195,567 hours), experienced a decrease of 19%. This is the first year that test-driving has decreased test hours after six consecutive years with an average annual growth of 12.5%. However, this was still our 4th largest year historically, and early fourth quarter numbers point to an double-digit increase for Fiscal Year 2003. DDO performed testing services for 19 domestic and foreign vehicle manufacturers. The following table describes the percent of business by industry classification.

<b>Industry Classification</b>	<b>FY 2002</b>
Vehicle Manufacturers	74%
Component Manufacturers	12%
Fuels & Lubes	6%
Independent Labs	4%
State Organizations	2%
Litigation/Engineering	1%
Other	1%

The majority of testing involves powertrain, rough road, chassis, corrosion, and fuel additive durability. In addition, DDO conducts brake, fuel economy, 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, but safe, mileage accumulation.

DDO has always been concerned with understanding our customers' expectations. In response to customer demands during this past year, a humidity chamber with the ability to hold a Class 8 truck with a maximum temperature of 120 degrees was constructed. This chamber will augment our already extensive corrosion facilities.

The completion of a new, improved fuel plaza also occurred this fiscal year. The new facility will allow for automated tracking, inventory, and billing of vehicles which will greater reduce the possibilities of improper fueling and provide better tracking of fuel and its related charges.

A new data acquisition system that records vehicle-driving cycles for analysis was also developed and implemented this past year. This system will allow TRC Inc. to better track driving cycles and assure proper correlation of test programs to real world customer driving cycles.

With the improved economy in the fourth quarter of Fiscal Year 2002 and the installation of new facilities and systems to meet our customers' ever increasing needs, we should expect to see a rise in both test driving hours and overall revenue for DDO in Fiscal Year 2003.

## Impact Laboratory Operations



After maintaining robust test activity for two consecutive years, Impact Laboratory Operations (ILO) experienced a decline in test activity for Fiscal Year 2002. Although test activity has decreased, improvements to the test facilities continue in order to meet customer expectations and broaden the capability of the laboratory.

ILO performed 256 crash tests, down 22% from Fiscal Year 2001. Additionally, 238 impact simulation tests were performed, which is a 10% decrease from Fiscal Year 2001. The majority of Impact Laboratory Operation's testing activity involves development and certification of automobiles and trucks to meet occupant protection requirements established by the Federal and Canadian Motor Vehicle Safety Standards, European Economic Community or manufacturers. Sixty-six percent of the ILO activity supported the automobile and truck manufacturing community.

In addition to automotive and truck manufacturers, ILO continued to support government contracts for the National Highway Traffic Safety Administration, Vehicle Research and Test Center (NHTSA/VRTC) and Volpe National Transportation Systems Center. Twenty-six percent of the Operation's activity supported government crash testing for front and side occupant protection and fuel system integrity, sled simulation testing, static fixture structural integrity, and crash dummy and standards development research programs.

Although testing activity declined for the year, ILO has strategically planned facility improvements as a result of feedback from customer surveys. The lighting system in the barrier facility was repackaged to provide softer lighting with fewer glares to make the film analysis process more accurate and prepare for high-speed digital imaging capability. Additionally, the control systems for the impact simulator sled and static fixtures laboratory were upgraded to provide greater control of equipment.

## 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 customer products. Customers of Contract Services include automotive manufacturers, component manufacturers, and the federal government.

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 electrical technicians, engineering assistants, photographers, designers, research engineers, and research scientists.

The professional staff hold memberships in various societies, such as the Society of Automotive Engineers (SAE), and play major roles in various technical committees. Several technical papers were published during Fiscal Year 2002. The affiliations, committee work, and technical paper writings and presentations bring recognition and industry/professional exposure to TRC Inc.

Contract Services has experienced a 7% growth in staffing during Fiscal Year 2002. This is a reflection on the high quality of personnel and dedication of the people supporting our customers.



# The Activities

## Quality Planning, Assurance, Improvement, and Control

TRC Inc.'s Quality Policy:

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

TRC Inc. is committed to providing services that meet or exceed the expectations of its customers and is dedicated to a quality policy that is understood, implemented, and maintained at all levels of the organization.

Each of TRC Inc.'s five Primary Business Functions (Crash, Sled, Durability, Dynamics, Contract Services) has its own quality system process definition (SPD) team, which has determined the expectations of its customers and the technical requirements necessary to meet those expectations. Based on these expectations and requirements, performance goals and objectives have been established and are monitored throughout the organization and by customers through customer surveys. Performance ratings and internal process measurement results are reviewed on a regular basis and potential performance issues and preventive actions are managed through a formal corrective and preventive action system.

## ISO 9001 Registration

As part of TRC Inc.'s commitment to customer satisfaction and continual improvement, the organization acquired registration to the ISO 9001:1994 Standard on May 6, 2000. 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.

Following registration, the registrar conducts surveillance audits to ensure continuing compliance to the Standard. Since the initial registration, TRC Inc. has maintained compliance through four surveillance audits. In addition, TRC Inc. successfully acquired/upgraded registration to the ISO 9001:2000 revision of the Standard on May 24, 2002 at the fourth surveillance audit. The 9001:2000 version includes a process-based quality management system model with an increased focus on customer satisfaction and continual improvement. For TRC Inc., the process of upgrading to the 9001:2000 Standard included streamlining the internal audit process and utilizing of process data to further drive improvements.

## ISO 14001 Registration

TRC Inc. is currently pursuing registration to the ISO 14001 Standard. ISO 14001 is a model for environmental management systems and addresses the management of business activities impacting the environment. The initial audit for 14001 is a documentation audit, conducted on site, to assess preparedness for the main audit. TRC Inc.'s initial audit was conducted on June 4, 2002. The main audit is scheduled for July 30-August 2, 2002. Although not required by the ISO 14001 Standard, TRC Inc. has incorporated health and safety into our environmental program.

## Environmental, Health and Safety (EH&S) Policy

TRC Inc. has adopted the following Environmental, Health and Safety (EH&S) Policy:

### Policy Statement

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

### Principles

TRC Inc. is committed to continual improvement in TRC Inc.'s environmental, health, and safety programs by setting objectives and targets and by evaluating our performance to those goals.

TRC Inc. is committed to prevention of pollution by using processes and materials that prevent, reduce, or minimize pollution. This includes recycling, control mechanisms, material substitution, and efficient use of resources.

TRC Inc. is committed to compliance with all applicable environmental, health, and safety regulations, laws, and other internal and external requirements.

TRC Inc. provides education and training to ensure understanding of the environmental, health, and safety policies throughout the organization.

In developing TRC Inc. Inc.'s EH&S Management System, we identified the aspects of TRC Inc.'s activities that can have the biggest impact on our environment:

- Waste – solid, hazardous, and universal – on use of landfill space
- Leaks and spills – on storm water pollution
- Emissions – carbon monoxide, VOC, particulate matter – on air pollution
- Electricity usage – on consumption of resources

## **Automotive News PACE Awards Sponsorship Activities**

TRC Inc. is proud to announce that we have become affiliated with the *Automotive News* PACE Awards. PACE is the acronym for Premier Automotive Suppliers' Contribution to Excellence. Established in 1994 by *Automotive News* and Cap Gemini Ernst & Young, the PACE Award honors automotive suppliers who have embraced innovation or adapted and reinvented themselves to meet the demands of the original equipment manufacturer 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 apply to win this distinguished award. The winners, selected by a panel of independent judges consisting of former automotive industry executives, earn the distinction of joining the automotive world's list of "Who's Who."

In conjunction with our sponsorship, TRC Inc. hosted the *Automotive News* Pace Awards Innovation Forum on June 19, 2002, at The Ohio State University's Fawcett Center in Columbus, Ohio. Nine presenters spoke on the subject of innovation and its relevance in today's automotive industry. Ohio's Governor, Bob Taft, and The Ohio State University's President, William E. (Britt) Kirwan, highlighted the day's events by focusing on Ohio's strength in the auto industry and how the State and The University are promoting automotive growth within Ohio.

Dr. Giorgio Rizzoni of The Ohio State University's Center for Automotive Research (OSU/CAR) gave an informative speech on "How to Use the University's Resources to Foster Innovation."

Hosts Peter Brown of *Automotive News*, Mike Wujciak of Cap Gemini, and Rick Gildow of the TRC Inc. moderated and hosted the day's events.

## **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 renewal scholarships to high school seniors majoring in a two- or four-year automotive-related field. This year's recipients were Abigail

Moyer and Jennifer Sankey, who will be attending Purdue University and The Ohio State University, respectively. The second year recipient of the renewable scholarship was Leslie Bowsher, who is majoring in Mechanical Engineering at The University of Dayton.

Thanks to the efforts of our employees, TRC Inc.'s recycling program is operating successfully. In addition to recycling paper and aluminum, this year we incorporated plastic, glass, and cardboard. We have extended our support to the local community through the Logan County Clean Committee (LCC), which is made up of local businesses and individuals promoting recycling and litter prevention. Our Environmental, Health and Safety Policy and supporting principles are outlined in this report, under the heading "Quality Planning, Quality Assurance, Quality Improvement, Quality Control."

TRC Inc.'s Child Seat Awareness Program, started in 1997, continues to promote child seat safety in our local communities. Child seats for infants are provided to local health departments who distribute the seats and provide training for proper usage to local families. This program also provides employee reimbursement for the purchase of a child restraint upon the birth of a new baby. Newly added is the booster seat reimbursement program.

TRC Inc. offered assistance to The American Red Cross by sponsoring blood drives twice during the past year, on Memorial and Labor Day weekends, when there is a critical need for blood.

Once each year, employees are given the opportunity to pledge a portion of their pay to United Way, with TRC Inc. giving a matching corporate gift. The United Way is the only charitable organization for which TRC Inc. solicits funds. The United Way was selected because of the flexibility it gives our employees to donate within their home community and to the United Way supported charities that they choose.

TRC Inc. has provided monetary support to the following organizations through corporate sponsorships and employee volunteering efforts made possible through the TRC Inc. Volunteers in Partnership Program: Mary Rutan Hospital Auxilliary, Tricare Hospice Braveheart Day Camp, Bellefontaine Exchange Club Safety Town, local YMCA's, local volunteer fire departments, Union County Humane Society, Marysville Art League, Highpoint and Union County Fraternal Orders of Police, local 4-H clubs, Leukemia Association, Muscular Dystrophy Association, and National Lupus Foundation.

# Governance

## Board of Directors



Dr. Keith E. Alley  
Senior Associate Vice President for Research  
The Ohio State University



Mr. George Arnold  
Attorney at Law  
TRC Inc. Vice Chairman of the Board



Ms. Janet Ashe  
Vice President for Business and Finance  
The Ohio State University

Dr. Thomas W. Lester  
Dean of the College of Engineering  
University of Kentucky



Ms. Greta J. Russell  
University Controller  
The Ohio State University



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



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

## Other Officers



Mr. Shawn T. Ahern, C.P.A.  
TRC Inc. Vice President and Treasurer of the Board



Mr. Milton J. Dunlop  
TRC Inc. Vice President



Ms. Jill R. Macy  
TRC Inc. Vice President



Mr. John W. Phillips  
TRC Inc. Vice President



Mr. Stacy Weislogel  
Associate Dean  
College of Engineering  
The Ohio State University  
TRC Inc. Board Secretary

## General Counsel

Mr. John S. DeLibera

## Independent Auditors

Deloitte & Touche LLP

## Board Changes

During the past year, Board Member and Vice Chairman, Ms. Janet Ashe, resigned her position as The Ohio State University Vice President for Business and Finance to accept the position of Deputy Director for Administration and Treasurer at The Cleveland Museum of Art in September 2001. TRC Inc. also said goodbye to Dr. Thomas W. Lester, University of Kentucky Dean of the College of Engineering. Dr. Lester's term expired December 2001.

In January 2002, TRC Inc. welcomed Ms. Greta J. Russell, The Ohio State University Controller, as an ex-officio member of the Board.



**Transportation Research Center Inc.**

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