TRB IS CHALLENGED TO FACE THE FUTURE

Editor's Note: The staff of the Transportation Research Board participated in a retreat held in Williamsburg, Virginia, in December 1985. Under the direction of TRB Executive Director Thomas B. Deen, the primary goals of the staff retreat were (a) to ensure that the Board develops and maintains a common image of its direction and purposes; (b) to learn how to more flexibly respond to the changing environment in order to continue to be a significant factor in the future of transportation; and (c) to create an environment that encourages innovation. The retreat participants were divided into six workshop groups for purposes of discussion and development of specific recommendations: TRB's mission; external influences; support and professional staff; productivity and quality; internal communication; and new activities. Many significant and useful conclusions and recommendations came out of the workshop discussions; a lengthy report of the retreat incorporating the results is currently in preparation.

Other participants in the retreat included Lester A. Hoel, Chairman of the Civil Engineering Department at the University of Virginia, and 1986 Chairman of the TRB Executive Committee; Peter G. Koltnow, Counselor to the President, American Trucking Associations, Inc.; Milton Pikarsky, Distinguished Professor of Civil Engineering, City College of New York, and Chairman of the TRB Committee on NRC Oversight; and Philip M. Smith, Executive Officer of the National Research Council.

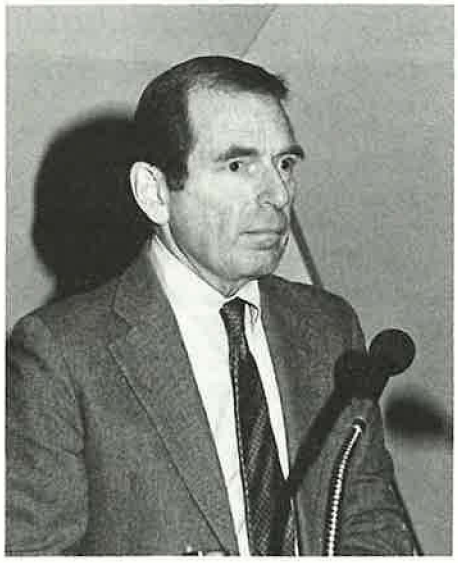
Peter Koltnow was the guest speaker. Because the staff retreat participants found his remarks to be noteworthy and highly stimulating and challenging, his speech is presented here with the belief that the readers of *TRNews* will also find it of special interest.

Koltnow was president of the Highway Users Federation for Safety and Mobility from 1974 through 1984. A former member of the TRB Executive Committee and 1979 Executive Committee chairman, he was the 1982 recipient of the Transportation Research Board's Distinguished Service Award. Koltnow earned his B.S. degree in civil engineering from Antioch College and his M.S. degree in civil engineering from the University of California, Berkeley, beginning his career in transportation in 1953 with the city of Dayton, Ohio.

In his speech, Koltnow looks back at the changes that have taken place in the transport world in the past 20 years and observes that the Transportation Research Board has lived through a massive transportation evolution and that the pace of change has accelerated rapidly. Looking ahead to the changing conditions and the uncertainties that will face the transportation community in the year 2000, Koltnow considers the implications of future changes and how to ensure that the activities of TRB will stay relevant, valuable, and exciting in responding to these changes.

Koltnow suggests that five basic characteristics of TRB will help the organization maintain a leadership role in transportation issues: flexibility, willingness to cease activities when they are no longer relevant, ability to expand, reliance on a wide base of competent professionals, and a multiple communications capability.

In conclusion, he discusses a trio of major challenges facing the Board in the future: broadening its base of participation in the transportation world; making a significant contribution to management productivity among transportation providers; and responding to changes stimulated by increasing competition in the transportation research and information transfer business.



Speaking at the TRB staff retreat, Peter Koltnow takes both a look backward to TRB's history and the transportation community and a look forward to the year 2000.

TRB staff members listen to presentations by workshop chairmen at the retreat.

I am honored and flattered to be part of TRB's search for excellence. TRB commands a loyalty and commitment enjoyed by few organizations. The fact that thousands of volunteers consider TRB to be as much theirs as you feel it is yours reflects its remarkable history, style, and importance. As one of the few volunteers participating in this retreat, I will take the liberty of casting their vote from time to time in my remarks. Think of them as the silent, but present, majority.

Reading the book *In Search of Excellence* by Thomas J. Peters and Robert H. Waterman, Jr., was fun. Like you, I looked first at the one-page synopsis of the main points—and then shifted to the index to see if there was anyone there I knew. The book's credentials are, for me, largely established by those who are quoted or referred to. As it happens, it was my good fortune to work closely with Ren McPherson when he chaired the Highway Users Federation for 2 years. Ren's absolute commitment to people—individuals—was sometimes hard to adapt to. It can be inconvenient to have all members of an organization feel that they have a say in what gets done and how things are done. When he sought excellence he looked within his own organization and found it among the people who carried on the day-to-day work. And, of course, the same is true within TRB. The search for excellence is ultimately a search *within*.

What I would like to do is to give some perspective to the environment in which TRB now works—and will work in the future—and then look at some characteristics of TRB's response to changing times. I am less concerned with how TRB is running than with the direction it is running in. The areas of concern being addressed by several of your working groups suggest to me that the operational problems of TRB—communications, relationships, resources—have all been faced, and solved, in other organizations.

Within a relatively short period of time, many of us—as well as TRB—have lived through and coped with a massive transportation evolution and an economic and social revolution.

A Look Backward

Let me get a running start at looking ahead by a glance backward—to 1965, the first time I participated in TRB's Annual Meeting—a convenient 20 years ago. The transport world has changed dramatically in some ways since then. The numbers are familiar to most of us: There are 75 million additional vehicles on the road. There are 35 million additional drivers. A total of 35 billion gallons more fuel goes into the air every year. Almost 20,000 more miles of Interstate are in use. In 1965 you could still get your kicks on Route 66; this year, the old road was put to sleep by AASHTO's route-numbering committee. In 1965 only one out of seven major urban roads carried over 40,000 vehicles a day; now the number exceeds one-half. Highway construction prices have tripled in those 20 years, and the balance in the Highway Trust Fund has increased 40 times!

Some of these changes were predictable—and predicted. Some just amaze. Other changes are even more dramatic:

- There was no National Environment Policy Act in 1965—no environmental impact statements!
- There was no U.S. Department of Transportation, and precious few state transportation departments.
- There was no Environmental Protection Agency and no Energy Department.
- The urban transportation planning process was in its infancy.
- Microprocessors were not in the dictionary. The founder of the Apple computer company was still in grade school.
- Engineering students still wore slide rules on their belts.

And of course transportation impacts were yet to be felt from some conditions that are well in place today:

- Major shopping malls did not exist.
- There were no wide-body aircraft unloading 400 to 500 people at a clip. Airline traffic has gone up 350 percent.
- One-third of the scheduled airlines that were in business in 1965 no longer exist; they have been replaced by four times as many new airlines. The airline with the third largest number of flights from America's busiest airport did not exist as little as 5 years ago.
- Package delivery was in its infancy. Three years ago, United Parcel Service did not have any aircraft; today it has 85.
- Japan accounted for only 34,000 of new car sales in the United States in 1965. For every new Japanese car on a U.S. highway then, there are 100 new ones today.
- There was no METRO, no BART, no MARTA, and no UMTA in 1965—all of those acronyms were yet to be created!
- There were twice as many people working for American railroads in 1965 as there are today.
- Airlines, railroads, trucking, busing, and telecommunications were still regulated industries.

The point of all this, of course, is that within a relatively short period of time, many of us—as well as TRB—have lived through and coped with a massive transportation evolution and an economic and social revolution. Many of the transportation changes have been influenced strongly by the transportation community itself—of which TRB is a part. But many others have been stimulated from the outside, and neither TRB nor the transportation community has been involved much with them. The *pace* of change has also accelerated rapidly during this period.

TRB has managed to hang on pretty well during this roller-coaster ride of change. Even in 1965 the Board was gearing for change: the Highway Research Information Service (HRIS) got its start; and a more vigorous screening of papers and a reduced number of sessions at the Annual Meeting were established to maintain quality.

It is interesting to note some other items from that time:

- TRB's annual budget was $1 million; today it is $12 million.
- It was estimated that year that eventually 2,000 research reports would be handled within HRIS, and 1,000 entries added annually. As a matter of fact, there are about 200,000 items in the Transportation Research Information Services (TRIS) files and more than 10,000 are added each year.

TRB has developed a broad-based communications system for information transfer and user contacts: the Annual Meeting, committees, a huge publishing program, a growing computer file, and an active field visit program.

The Strategic Highway Research Program is also likely to be a resource for the future. It is designed to do a better job of what we have been doing for a long time, and ties in well with the incremental improvements we expect in the road program.

- A total of 2,800 attended the Annual Meeting then. Registration cost $10 and preprints were 50¢. Since then, registration costs have increased more than 10 times and preprints have gone up 6 times.
- The dominant Annual Meeting subject was materials and construction, with four other core subjects accounting for the vast majority of topics.

Today TRB's Annual Meeting includes four times as many sessions, twice as many topics, coverage of several new transport modes, and many subjects that are hard to classify by traditional titles. Other noteworthy features include the following: research is itself a subject; freight has achieved status; urban planning as such is almost gone; and environmental subjects are scarce.

Astonishingly, a review of both 1965's Annual Meeting Program and the one for the January 1986 meeting completely misses the whole energy issue! A crisis has come and gone—perhaps like Halley's Comet to zoom back again—but essentially the issue has passed.

A look back at and around TRB suggests several basic characteristics of the organization that are likely to stand it in good stead in the years ahead: (a) It is flexible and reasonably responsive to changing times. (b) It can stop doing things when they are no longer important. (c) It can grow—in staff, budget, scope, and constituency. (d) It depends on the talents of many individuals, but no one of them is indispensable. (e) It has developed a broad-based communications system for information transfer and user contacts: the Annual Meeting, committees, a huge publishing program, a growing computer file, and an active field visit program.

The changes in the last 20 years also suggest some matters of real concern if the organization is to be important in the year 2000: (a) many of the important influences on transportation are largely unpredictable, and not under the control of the transportation community; (b) TRB has played a minor role in some of the most important transportation events of the past decade or two, and cannot expect to get a reserved seat at the ringside of the future; (c) TRB will have to assimilate whole new disciplines in the next 15 years—assimilate, not just hire people; and (d) there are large segments of the transportation community that do not rely on TRB, and may not even know that it exists.

How might these changes and concerns relate to what is coming down the pike?

A Look Ahead

Our brief look backward suggests some of the conditions of the year 2000 about which we can speak with some confidence:

- Private passenger cars will dominate personal transportation. They will have four wheels, pneumatic tires, and an internal combustion engine using fossil fuels.
- Trucks will remain the major freight carrier and will still be the most common element in multimodal shipments. Similar to cars, they will burn fossil fuels and will be substantially more fuel efficient.
- Approximately 95 to 98 percent of the road system will be where it is today. How we utilize these roads and the other few percent of new roads will, of course, be absolutely critical to the successful handling of shifting population, employment, and travel.
- The driving population will be substantially older than it is today—older,

more mobile, and more politically potent.

- The United States will still be the world's largest trading partner. International trade will be a larger part of state and national economies.

- In many parts of the country there will be no racial or ethnic majority. Immigration will be high, and there will be manpower shortages.

- Employment will be even more widely distributed than it is today, as will housing, congestion, road decay, and vehicle crashes.

- The basics of road, rail, and air technology will be much the same as they are today, with improvements rather than fundamental changes.

- Citizens will want better transportation services, and they will get them. They will be safer and more mobile, and may be spending a smaller part of their budget on getting around.

These are among the things about the year 2000 that I said we could conjecture about with some confidence.

What are some of the conditions of the year 2000 about which we must be *un*certain—and even more conjectural?

- We do not know who the important new employers are going to be, what they are going to make, who they are going to hire. Who foresaw 20 years ago that Alabama would today be the largest tire-producing state in the country, and that passenger-car tires would no longer be made in Akron? Who foresaw the impact of high-intensity traffic generators similar to McDonald's 20 years ago, or that modern suburban shopping centers would have four or five major department stores? Who could tell that the silicon chip would create traffic jams in Silicon Valley—or for that matter, who visualized the Silicon Valley itself?

- We do not know the nature of much future freight. If we do not know the cargo and how it is to be used, we do not know some critical determinants of future transportation adequacy. Will the value of time be more or less important to freight movement than the ability to move very heavy or very large loads? Will congestion have a higher priority than axle loads or load width?

- We do not know the future price of fuel or its day-to-day availability or source or how much will be used. Because fuel taxation accounts for about three-quarters of highway income as well as a substantial portion of transit and airport funding, the financial foundation of much transportation infrastructure is unknown.

- We do not know the future cost of money or the rate of inflation or even the general state of the economy in the year 2000. Moreover, it would unwise to

James A. Scott, Transportation Planner for TRB, and Chairman of the Staff Retreat Task Force, addresses the staff during TRB's retreat in Williamsburg.

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guess. It is useful to remember how wrong forecasts of the world economy that were made in the summer of 1973 turned out to be—as were those made just a year and a half later.

- Because we do not know much about future money or fuel-use conditions, we do not know much about the future funding structure for transportation—or for transportation research—at least from traditional TRB sources.
- We do not know some things about *people* in the year 2000. We can count them pretty well, but we do not know whether they will be more competent drivers or pedestrians than they are today, or whether the people responsible for transportation services—engineers and other professional and service personnel—will be well-trained or even available.
- We do not know much with certainty about the power or control capabilities of future cars and trucks or aircraft. We do not know much about future mechanical or electronic advances or what degree of programmable behavior will be available. It is hard to tell whether emerging automotive technology is a godsend or a gimmick. This difference may be important.
- We do not know who is going to be running the transportation show—to the extent anyone is in charge. We are in a period of dispersion of transportation leadership and responsibility. Important transportation powers are being delegated to organizations that did not exist as little as 3 years ago, much less 15 or 20. We do not know where the shift of transportation authority away from the federal level will end.
- Finally, we do not know whether the environment, energy, national defense, the national economy—or all of these or something else—will have a higher priority than transportation. Something undoubtedly will.

Implications of Future Changes

Considering some of the conditions we can look forward to with reasonable confidence is helpful as we think about future work in transportation.

The likelihood that we will be dealing with substantially the same basic vehicles, road and transit systems, rail networks, and waterways lends support to the notion that much future work will be dedicated to maintaining current systems. This is particularly true of the road-automotive system, which absorbs such a large share of national transportation investment. This should give us confidence that many of the root activities of TRB will remain useful.

Core activities related to materials, construction, and design are likely still to be high on the agenda in the year 2000. For that reason, the Strategic Highway Research Program is also likely to be a resource for the future. It is designed to do a better job of what we have been doing for a long time, and ties in well with the incremental improvements we expect in the road program.

While materials, construction, and design activities are likely to remain the center about which other TRB activities spin, it is the successful carrying out of these other activities that will ensure that the Board stays relevant, valuable, and exciting.

What I am about to suggest reflects not only my own opinions, but those of a variety of friends and associates of TRB who have given some thought to the future and how the Board fits into it. They, too, have looked at both future likelihoods and uncertainties and have sketched in some of the influences to which the transportation community—and TRB—will have to respond.

First, many of the uncertainties about the future are essentially *market* uncertainties. We will have to deal with them a little bit at a time through a series of adjustments. We—you—will have to be sensitive to unending shifts and changes.

TRB Executive Director Thomas B. Deen presents Jewelene Gaskins, Cochairman of the Staff Retreat Task Force, with a citation for her excellent work.

Decisions about vehicle characteristics, modal choice, plant and housing location, employment, purchasing practices, and money—all of which will affect future transport decisions—are made daily in an uncontrolled and largely uncoordinated free-market environment. TRB has been a relatively small player in these areas. Even where TRB is strongest—among state and federal agencies—transportation decision making is becoming dispersed and market sensitive. TRB must deal with market-determined issues, often short term in nature.

Second, we are entering a period of increased competition—competition for resources, manpower, markets, technology, and money. Some of the certainties that have underlain highway development—the core of TRB attention now and for the future—are under-

going rapid change. There is no reason to believe that technology support, which is what TRB provides, will be immune to changes stimulated by competition. TRB must help our sponsors compete.

Third, transport decisions are likely to be dominated by concerns for the users of transport services. In a deregulated, competitive environment, user interests grow in importance. As transport service needs grow, the issue of capacity enhancement will outweigh matters of upkeep and financing. In some transportation sectors, particularly highways, capacity enhancement is still taking a back seat to other concerns. TRB must get closer to transportation service users. Their needs will be increasingly specialized and occasionally conflicting.

Fourth, transportation will be looked to as a way to increase productivity in the American economy. Physical improvements to transportation infrastructure, capacity and service enhancements, and regulatory measures will be judged by how they help or hinder productivity, particularly in the private sector. TRB must help relate transportation issues to economic issues, much as it once did with social concerns.

Fifth, we are entering a period of explosive scientific and technological development. A broader, more rapidly changing base of information will strain the limits of our current systems for transferring knowledge, and will stimulate technology transfer systems that use all available methods of transmitting information. TRB must utilize leading-edge communication technologies.

Sixth, the unpredictability of events that affect transportation will require better transport monitoring than is now carried out. The failures of transportation planning in the past have not been so much in our inability to predict and control the future as in our failure to tune our transport systems to frequent, unpredicted changes.

Those who provide transportation services will continue to work in a condition of permanent uncertainty and will be a larger and more demanding market for good, current information. There are substantial data voids and deficiencies that TRB may be able to fill—to its own benefit and those of its sponsors.

TRB Response

Earlier I mentioned five basic characteristics of TRB that are likely to stand it in good stead in the years ahead: flexibility, willingness to stop doing things that are no longer important, ability to expand, reliance on a wide base of competent people, and a multiple communications capability. Phrased in other ways, these are among the characteristics cited for successful firms in *In Search of Excellence*. Many a corporation would envy the signs of excellence that are the stock-in-trade of the Transportation Research Board. Those of us who are closely linked with the Board can view its future with much confidence. Even so, a final review of some challenges that the Board must meet to serve as well in the future as it has in the past might be worthwhile.

One of the Board's great strengths has been its ability to stay close to its market, and redefine that market from time to time. So far, that market has consisted primarily of the leaders and technical staffs of state highway departments and a wide range of researchers. To the extent that transportation decision making will become more diffuse and will increasingly involve the private sector,

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the job ahead for TRB is to broaden its base of participation. TRB has clearly been relevant to a dominant part of the domestic transport world of the last half century. How will it change and grow to reflect the fact that most transportation investment takes place in the private sector, that a larger share of transportation movements involve foreign places, and that much transportation productivity improvement is likely to involve points of modal change? That is challenge number one.

A second challenge is how to stay important, or become more important, in contributing to managerial productivity among transportation providers. For example, when asked what is on their minds, heads of state departments of transportation never mention asphalt. They usually talk about people—staff, new professionals, legislators, newspaper editors, and so forth. Managerial productivity involves getting the most and the best out of people. The demand for that is likely to increase, not decrease, in the years ahead, and TRB faces stiff competition in trying to take an important position in the field.

Competition itself is a third challenge. There are organizations in the transportation research and information transfer business today that did not exist when I first became acquainted with the Board. Units of the Congress are in the field, as are new quasi-public institutions, consultants without limit, new aggregations of researchers, and publishers. TRB is in a competitive environment, and that is healthy and exciting because the Board has some substantial advantages. In fact, its advantage of personal relationships, publishing volume, committee outreach, quality control, and funding give it a leg up. If it suffers anywhere it is in marketing to those parts of the transport world where it is least well known—and where more of the action will be in the future.

In marketing itself the Board has a special advantage: its relationship to the National Research Council. Your challenge is to utilize that advantage to the fullest. TRB is in the midst of an increasingly competitive world of research, data gathering, and information transfer under the wing of a stable institution that provides the financial stability of a $100 million budget, a growing relationship with private industry, a quasi-official status that almost guarantees a steady flow of research responsibilities, a history of successful volunteerism in which you share, a respected bias-control and peer-review process that no consultant can offer, an ongoing marketing program, and a record of adaptability in dealing with emerging issues. What a wonderful partner to have!

In a way it is a misnomer to call this gathering a retreat. My impression is that you are to get *closer* to the central issues of TRB, not withdraw from them. I have every confidence that you will emerge from this exercise charged up and better prepared to maintain the leadership that has characterized the Board for all the years I have known it.

The silent majority I mentioned at the opening—the volunteer community—will continue to take pride in their association with the Transportation Research Board as it changes, grows, and gets better and better.

— Peter G. Koltnow
TRB Staff Retreat
Williamsburg, Virginia
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