

# **The University of Denver Center for Transportation Studies: Education at the Crossroads**

PAUL STEPHEN DEMPSEY\*  
ANDREW GOETZ\*\*  
JOSEPH SZYLIOWICZ\*\*\*

## I. INTRODUCTION

Rising majestically west of downtown Denver stands Mount Evans, towering 14,264 feet above sea level. The mountain was named after John Evans, a renaissance man. President Abraham Lincoln asked Evans to leave Illinois, where in 1851, he had founded Northwestern University (and after whom its city of Evanston is also named), and become Territorial Governor of Colorado, then largely an unspoiled wilderness. In Colorado, John Evans founded a second great educational institution — the University of Denver (originally Colorado Seminary), in 1864. Today, the University of Denver is the oldest and one of the largest voluntarily supported institutions of higher education in the Rocky Mountain region.

But Evans was not to leave his contribution to Colorado there. The first transcontinental railroads largely bypassed the Denver area, and only took in the corners of eastern Colorado. The Union Pacific cut north

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\* Paul Stephen Dempsey is Professor of Law and Director of the Transportation Law Program, University of Denver.

\*\* Andrew Goetz is Assistant Professor of Geography, University of Denver.

\*\*\* Joseph Szyliowicz is Professor of International Studies, University of Denver.

through Wyoming, then west to Promintory Point, Utah, where the link was completed on May 10, 1869.<sup>1</sup> Denver began to decline as a commercial center, as many of its residents moved to Cheyenne and other towns along the railroad. The vice president of the Union Pacific, Thomas Durant, described Denver as "too dead to bury."

But Denver was full of pioneer spirit, and not about to lie down and die. Recognizing the vital importance the rail avenue would play in the economic growth and prosperity of his adopted city, in 1867, Evans founded the Denver and Pacific Railway & Telegraph Co., which built the first rail line to Denver. The first train roared into Denver in 1870. Denver's fortunes reversed, and the city again became the dominant commercial center of the Rocky Mountain West.

Evans had caught transportation fever, and it was now in his blood. In 1872, he founded the Denver, South Park and Pacific Railroad to serve the mining towns in the Colorado Rockies.<sup>2</sup> In addition, he founded the Denver & New Orleans Railroad in 1881.<sup>3</sup> His son, William Evans was also to become a rail baron, taking over the Denver, Northwestern, and Pacific Railroad, and supporting development of the Moffat Tunnel (cut through the continental divide) which was to provide Denver with a solid east-west transcontinental link. His grandson was elected chairman of the Denver & Rio Grande Western (now Southern Pacific).

During the ensuing years, Denver has become the dominant rail, highway, and aviation hub, and as a consequence the commercial, cultural and educational center, for the Rocky Mountain region. Much of that we owe to John Evans, and his profound insight into the vital importance of transportation and education, and his tenacious dedication to their growth.

In 1991, Chancellor Dan Ritchie announced the creation of a Center for Transportation Studies at the University of Denver. It is entirely fitting that Denver should be home to such an educational enterprise. As a center for highways, railroads and airline routes, Denver stands at the crossroads of the West. Northwestern University too, has been a major contributor to transportation education for decades. Both of John Evans' creations are now firmly committed to the same endeavor.

The University of Denver's Transportation Center builds on a foundation of educational activities offered since the inauguration of its Transportation Law Institute in 1967, and the creation of the Transportation Law

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1. Similarly, the Atchison, Topeka & Santa Fe reached Pueblo in 1876, then turned south to lay track over Raton Pass into New Mexico in 1878.

2. This railroad was taken over by the Union Pacific.

3. This railroad was subsequently renamed the Denver, Texas and Gulf Railroad, and acquired by the Denver, Texas and Ft. Worth Railroad.

Program in 1976.<sup>4</sup> The educational emphasis began in motor carrier law and regulation, and has since expanded to embrace bus, rail and air transport. The new Center for Transportation Studies will encompass all transportation modes as well, although with Denver's pivotal role in aviation in the 1990s, its early emphasis will be on air transportation.

The Transportation Center brings together various disciplinary perspectives, such as law, business, engineering, international studies, and other social sciences. It performs research, consulting, and outreach activities, including conferences and short courses for practitioners in specific areas relevant to transportation such as trade, terrorism, tourism, technology, translation, drug trafficking, public policy, law and regulation.

The Center intends to develop graduate and undergraduate programs in transportation. Initially, it will offer a set of courses that will provide the basis for dual degree majors (e.g., transportation-economics). At the graduate level, students will be able to specialize in transportation studies while pursuing M.S., M.A., M.B.A., Ph.D., and J.D. programs in the Graduate School of International Studies [GSIS], the College of Business Administration [CBA], the College of Law, and the Department of Geography. The opportunity for dual degrees (e.g., J.D.-M.B.A.) already exists at the University, and will be expanded to include transportation specializations, such as those which are already available in the College of Law.

This essay addresses the need for a multidisciplinary center for studies in domestic and international transportation, its goals and objectives, and the existing resources at the University of Denver.

## II. DENVER AS TRANSPORTATION CROSSROADS

Denver's strategic location as a crossroads for road, rail, and air transportation is well known. Since its founding, Denver has flourished in large part because of its transportation connections. In the 19th and early 20th century, the advent of the railroad (facilitated by construction of the Moffat tunnel through the Rockies) made Denver an urban center and business, commercial and governmental headquarters for the region.

More recently, Denver's role as a major air hub has continued this historic trend and served as a catalyst for economic growth and development. Stapleton International Airport is already one of the busiest airports in the world.

No new major airport has been built in the United States since 1974,

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4. See Paul S. Dempsey, *Legal Education on the Move — Law and Transportation at the University of Denver*, 15 *TRANSP. L.J.* 1 (1986); Paul S. Dempsey, *The Transportation Law Program*, 9 *TRANSP. L.J.* 1 (1979).

when Dallas/Ft. Worth International Airport was opened.<sup>5</sup> Yet Denver is building a new airport which will be larger than nearly any in the world — it will cover a land mass twice the size of Manhattan. Today, only three major airports are under construction — Munich, Osaka and Denver — each located about one-third the way around our shrinking planet.<sup>6</sup> The new Denver International Airport is projected to be among the world's busiest three by the year 2000. Denver's strategic central location has proven of interest to the Japanese and the Europeans, and ensures that it will play a prominent role in the planned Canada-US-Mexico free trade zone. These developing trends create a need for education in transportation, and a market niche for the University of Denver.

### III. THE NEED FOR THE CENTER

Advances in transportation and communications have transformed and continue to fundamentally alter our world. We no longer live in isolated communities; we live in an increasingly interconnected global village. Transportation is becoming ever more vital as people, goods, and information flow across space. Its importance to the nation is demonstrated by the fact that today 18% of our domestic gross national product is accounted for by this sector. Transportation is an infrastructure industry which serves as the foundation for commerce, communications and national defense.

The importance of transportation has been recognized by several universities which have established centers in this field. The most important of these are supported by the Department of Transportation and act as regional centers linked to other institutions in their area. In addition, the Federal Aviation Administration supports a number of specialized programs and projects in air transportation at these and other institutions.<sup>7</sup>

Although each of these programs possess considerable strengths, none emphasize the multidisciplinary, multi-modal, and international orientation which the field of transportation studies requires. This leaves an important niche to be filled. We propose to do so not by competing with the existing centers, but rather by developing *cooperative linkages* with them.

In addition to the prospect of external research support, we believe that a significant number of graduate and undergraduate students would

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5. Atlanta's Hartsfield International Airport was reconfigured on the same property in 1980.

6. In 1991, some 23 new airports were under construction somewhere around the world, although most were not nearly as large as these three. AVIATION DAILY, May 21, 1991, at 345.

7. In our region, North Dakota State University is the lead institution and is affiliated with University of Colorado-Denver, Colorado State University, University of Wyoming, University of Minnesota, and Utah State. In addition, Metropolitan State College offers training in aerospace science.

be attracted to the University of Denver if we offered transportation courses. Significant employment opportunities exist in the transportation industry, especially in the fields of management, operations, and policy. For example, a commercial pilot shortage is expected over the next two decades. Between 1995 and the year 2000, the number of pilots who normally retire will quadruple.<sup>8</sup> Thus, there is a need for a traditional university undergraduate program which includes the opportunity to earn a commercial pilot certificate while completing a university degree. Captain Henry Duffy, former President of the Airline Pilots Association, identified the educational skills a commercial pilot should have: "A knowledge of the airline industry would be nice, a course in airline economics. Principals of leadership . . . [and courses which make the student] computer friendly . . . . And then enough flight time to have picked up all the basic skills."<sup>9</sup>

As part of its international orientation, the Center will operate a Technical Translation Unit on a fee basis that will provide a number of important services. It will facilitate our communication with persons, companies and institutions abroad who are not fluent in English. It will also serve as a key link between the regional transportation community and foreign organizations.

Furthermore, substantial outreach opportunities have been identified, including conferences, seminars, short courses, and workshops for practitioners and other interested parties. In 1991, the University sponsored two new major aviation conferences: the First Annual Conference on Drug Trafficking, Terrorism, and International Air Transportation, and the First Annual Conference on Airlines and the Future of Aviation.<sup>10</sup> Both were highly successful. A major conference on "Airlines, Airports and Aviation", cosponsored with the Smithsonian Institution's Air & Space Museum, was held in Washington, D.C., in May, 1992.

#### IV. EXISTING UNIVERSITY RESOURCES

The University of Denver has substantial resources within the field of transportation in the form of faculty and associates in the College of Law, the College of Business Administration, the Graduate School of International Studies, the Denver Research Institute, and the Department of Geography.

The College of Law has a well-established program in Transportation

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8. Wilkinson, *The Making of An Airline Pilot*, AIR & SPACE (June/July 1991), at 72, 75.

9. *Id.* at 77.

10. GSIS, in cooperation with the Drug Enforcement Administration, recently sponsored the First Annual Conference on Drug Trafficking, Terrorism, and International Air Transportation. A second major transportation related conference, "Airlines and the Future of Aviation", was organized by the College of Law, with help from the Westinghouse Corporation.

Law which began in 1967 as a continuing legal education program for attorneys and practitioners — the Transportation Law Institute. Since its inception, the Institute has been jointly sponsored by the University of Denver and the Transportation Lawyers Association [TLA], and more recently, the Transportation Practitioners Association.<sup>11</sup>

In the mid-1970s, D.U.'s Transportation Law Program blossomed with the injection of a series of annual economic contributions by TLA. Its Director serves as Faculty Editor of the *Transportation Law Journal*, for which the College of Law assumed responsibility in 1976.<sup>12</sup>

The College of Law offers several introductory and advanced courses and seminars in Transportation Law, as well as independent study and internship opportunities.<sup>13</sup> These attempt to provide educational exposure to the legal, regulatory, economic and political developments in transportation. Students in the Transportation Law Program have the opportunity to participate in externships in federal regulatory agencies or major transportation businesses. Today, the University of Denver offers the only multi-modal, and perhaps the most comprehensive, program in transportation law in the United States.

The principal strength of the College of Business in the transportation area lies in the number of faculty members who have prior experience in transportation research and management and who retain an interest in transportation issues. These include faculty with experience in the following areas:

- Aircraft design and structural analysis
- Airline yield management
- Airport feasibility studies
- Air quality and transportation policy
- Air transportation systems design

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11. The Transportation Law Institute is held annually, alternative years in Washington, D.C., and San Francisco, California.

12. The Transportation Law Journal is the only comprehensive law school publication in the area of transportation law. It is a major source of information for the practicing bar as well as for scholars. As such, it strives to provide its international readership with the highest caliber of writing. All members of the Transportation Lawyers Association receive the periodical as one of the perquisites of their membership. Of the legal periodicals published by the University of Denver, the Transportation Law Journal is the only one reproduced in the Westlaw and Lexis computer systems.

13. The College of Law offers the following courses related to transportation law:

- Regulated Industries
- Administrative Law
- Transportation Law
- Aviation Law
- Law of Outer Space
- International Aviation Law Seminar
- Transportation Law Journal (student participation)

Alternative fuel production and distribution  
 Civilian STOL aircraft services  
 Logistics and distribution for international business  
 Network modeling and computer simulation  
 Passenger demand forecasting  
 Pipeline logistics planning  
 Railway operations research  
 Tourism  
 Transportation economics  
 Transportation systems analysis

The College of Business Administration (CBA) offers a complete range of courses in general management areas including accountancy, finance, hospitality management and tourism, labor relations, management information systems, marketing, organizational behavior, production and operations management, real estate and construction management, statistics, and urban and regional development.<sup>14</sup> Most of these have relevance to transportation studies. The College is currently ranked in the top 5% of over 1,300 schools of business in the U.S. and has gained increased recognition recently through the introduction of ethics, communication, and cross-cultural components to the M.B.A. program. The University's School of Hospitality Management and Tourism is in the process of developing a M.S. program in Domestic and International Tourism.

The Graduate School of International Studies (GSIS) has a well established International Technology and Management concentration which attracts students from many countries. Within that program, several faculty and associates are working on research and course work within the broad field of transportation studies. In addition, other faculty members and students are concerned with various relevant problem areas. The general orientation is with the relationship between air transportation technology and national and international development and the international policy dimensions of air transportation. Specific areas of ongoing teaching, research and outreach include aviation security, prevention of terrorism and narcotics trafficking, air transportation technology transfer, cross cultural communications, and airport planning both in the U.S. and

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14. A full spectrum of courses is presently offered in general management areas including: Accountancy, Finance, Hospitality Management and Tourism, Management, Management Information Systems, Real Estate and Construction Management, and Statistics and Operations Research. In addition, the new courses that have been proposed for the Tourism degree will be of particular relevance. Existing courses include:

International Marketing  
 Hospitality and Travel Market Environment  
 Domestic and International Tourism

abroad. A complete range of courses in international affairs including international politics, international economics, and comparative politics with emphasis upon methodology, global conflict, development, political economy, public policy, and technology.<sup>15</sup>

GSIS has been instrumental in forging cross-disciplinary linkages at the University. It possesses joint degree programs with the CBA and the College of Law. It has also been active in outreach activities as exemplified by its recent conference on International Terrorism and Drug Trafficking and is expanding its international contacts in the area of aviation.

The Denver Research Institute has been involved in research on various forms of transportation technology, including aircraft systems, automotive design, rail and pipeline operations, and the transportation of hazardous materials. It provides needed technical and engineering expertise in these and other relevant areas.

The Department of Geography has research and teaching interests in transportation, especially air, rail, and urban transportation. Specific research has involved the geographical significance of regulatory policy on the airline industry, airport planning, transportation and economic development, and passenger rail systems.<sup>16</sup>

As is evident, the University possesses considerable resources, notably a committed faculty with significant expertise in the key areas of domestic and international transportation. They have been actively engaged in research which has led to many important publications. Two books dealing with air transportation are presently being published and a third on the new Denver Airport is underway. Several successful conferences have already been held and more are being planned.

The Transportation Law Program provides us with a solid educational foundation. The other graduate level courses which are presently available can be integrated into a cohesive multi-disciplinary graduate program that should prove attractive to students and prospective employers.

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15. The following are particularly relevant:

Planning and Management of Technology  
 Technology and Policy Planning: Theory and Practice  
 Technology and International Affairs  
 Technology and Economic Development  
 Trade and Economic Development  
 International Trade

16. The Department of Geography offers the following courses of relevance:

Urban Geography  
 Urban and Regional Planning  
 Land Use Planning  
 Urban Transportation Planning

## V. GOALS OF THE CENTER

The Faculty of the Center for Transportation Studies has identified the principal objectives of the Center as follows:

- 1) to develop and implement significant research projects in the area of transportation involving students, faculty, and other professionals;
- 2) to develop and implement teaching programs at the graduate and undergraduate levels for students planning professional careers involving transportation;
- 3) to provide technical services in such areas as translation and interpretation for the transportation and related communities;
- 4) to provide information to the local community about major issues in transportation through conferences, workshops, and other outreach activities;
- 5) to act as a focal point for transportation research, education, and communication in the region by identifying individual and group expertise, establishing coordinating mechanisms to enrich existing activities, and developing cooperative programs;
- 6) to provide a vehicle for dissemination of existing knowledge and new research findings to industry and government through consulting, conferences, seminars, and short courses for practitioners; and
- 7) to assist in the development of coherent transportation policies at local and national levels, both in the U.S. and abroad.

## VI. CONCLUSION

Transportation will continue to be a critical element of our local, regional, national, and international economy. The University of Denver finds itself uniquely and favorably positioned to contribute to a greater understanding of this vital activity.

A great University dedicates its physical, human and intellectual resources to serving its community, providing information, education and reasoned policy analysis. We are committed to making such a contribution. We have the opportunity to make a significant contribution to education in one of the world's most important industries. We do so with enthusiasm and dedication.

