GEORGE W. NEAT
DEPUTY ASSOCIATE DIRECTOR, OFFICE OF TECHNOLOGY APPLICATIONS

Mr. Neat was awarded an Engineers Degree in Aeronautics and Astronautics from the Massachusetts Institute of Technology in 1971 and he received an M.S. degree in Mechanical Engineering from the University of Washington in 1961. During the past 15 years at TSC, his responsibilities have included test, evaluation and equipment development for urban rail transit vehicles, manager of the Urban Mass Transportation Rail Systems Technology Program, Executive Assistant to the Director and Chief of the Office of Program Development. Prior to joining DOT, Mr. Neat was a Systems Engineer for NASA's Electronics Research Center where he worked on flight control systems development for advanced space boosters and precision pointing technology development for satellite application. Earlier, he worked for the Boeing Company as a control systems engineer. Mr. Neat is past chairman of the IEEE Land Transportation Committee and is currently a member of the Association of American Railroads Track Train Dynamics Steering Committee. He is an adjunct professor at Boston University where he teaches control systems courses. He received the Department of Transportation Superior Achievement Award (Bronze Medal) in 1981.

PIN TONG
CHIEF, STRUCTURES & DYNAMICS DIVISION

Dr. Pin Tong received his Ph.D degree in Aeronautics and Mathematics from the California Institute of Technology in 1966. He then joined the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology as a senior research engineer, and left as Associate Professor of Aeronautics and Astronautics in 1974 to become the principal staff scientist for the Mechanical Engineering Division of the Transportation Systems Center, DOT. He is currently Chief of the Structures and Dynamics Division. Dr. Tong has also been an adjunct professor at the Northeastern University and the Southwestern Jiatong University, China and a visiting professor at the Institute of Electronics and Information, Italy, and the University of California at San Diego. He has over 20 years of experience in the analysis and design of mechanical systems. During the years at TSC he has been responsible for directing and conducting analytical and experimental studies and for designing mechanical components of transportation vehicle systems. While at the Massachusetts Institute of Technology he did research and taught courses related to structural analysis design, finite element method, and aeroelasticity. Dr. Tong is the author of numerous papers on structural analysis and a book on the finite element method. He is a recipient of the Von Karman Award in 1974 by TRE, Inc., for outstanding contributions to structural and material technology, and of the DOT Meritorious Achievement Award (Silver Medal) in 1977.

OSCAR ORRINGER
MECHANICAL ENGINEER

Dr. Orringer received his Sc.D degree from the Massachusetts Institute of Technology in 1972. He leads the Center's work on failure investigations involving fatigue and other mechanical/structural failures in transportation equipment fleets. Current and recent responsibilities include railroad passenger vehicle axle/bearings and disc brake fretting failures, assessment of weld fatigue failures and modifications in the Grumman Flxible 870 city bus fleet, and management of revenue and test track experiments to determine the rates of growth of fatigue cracks in rails. Applicable experience prior to entry into government service includes membership on U.S. Air Force committees for structural integrity review of the C-5A, C/KC-135, and F-4E/F air frames and failure investigation of pitch control machinery in U.S. Navy ship propellers. Dr. Orringer has taught systems engineering design and integration at the Massachusetts Institute of Technology. As an officer on active duty with the U.S. Army Corps of Engineers, he was responsible for earth work and paving design and construction. He received the DOT Superior Achievement Award (Bronze Medal) in 1981 and the DOT Meritorious Achievement Award (Silver Medal) in 1984, and was selected as Engineer of the Year at DOT in 1983.

HERBERT WEINSTOCK
MECHANICAL ENGINEER

Dr. Weinstock received his Sc.D degree in 1968 and has 25 years of experience in the analysis, design, and testing of mechanical systems operating in severe dynamic environments. At TSC he has been responsible for analytical and experimental studies of vehicle, track and roadway dynamic interaction as related to safety and performance of transportation vehicles and guideways. While at the MIT Instrumentation Laboratory (now Draper Laboratory) from 1960 to 1965 and at the NASA Electronics Research Center from 1965 to 1970, he was responsible for the design and development of advanced navigation and flight control instrumentation, and for the design and development of equipment for severe dynamic load environments. Dr. Weinstock is registered as a Professional Engineer in the Commonwealth of Massachusetts. He is a recipient of the Department of Transportation's Superior Achievement Award (Bronze Medal) and, in 1982, the Meritorious Achievement Award (Silver Medal).

HARVEY SHUI-HANG LEE
MECHANICAL ENGINEER

Mr. Lee received his M.S. degree in Mechanical Engineering from Ohio State University in 1974, and has ten years experience in structural dynamic analysis and design. Current assignments include planning and coordinating computer simulations, performing analytical research in rail vehicle dynamics, and analyzing the dynamic behavior of rail vehicles subject to track geometry variations. Previous assignments include studies in rail vehicle dynamic stability and the effects of vehicle design on their safety performance. Capabilities include analyses in vehicle dynamics and computer programming.

LAWRENCE P. SILVA
CIVIL/GENERAL ENGINEER

Mr. Silva received his B.S. in Civil Engineering from Southeastern Massachusetts University in 1974 and has accomplished graduate studies at both Northeastern University and Massachusetts Institute of Technology in civil structures design and properties of construction materials. Prior to joining the Transportation Systems Center (TSC), he was employed as a project manager at the U.S. Army Corps of Engineers in Waltham, MA, with responsibility for reconnaissance investigations and preliminary design of flood and erosion control structures. At TSC, Mr Silva directed a transit construction cost analysis and contracting practices program, and was project manager of a project which included the development of Tunnel and Station Cost Estimating Models (TASCEM) and a construction cost database in support of UMTA. He also has been a member of UMTA task groups which have focused on the cost of retrofitting transit stations with elevators, investigation of construction quality problems and cost overruns at Miami Transit, and the assessment of construction management supervision requirements.

ALEXANDER HARRIS
AERONAUTICS/ASTRONAUTICS ENGINEER

Dr. Harris received his Sc.D degree in 1979, in the field of structural mechanics from the Department of Aeronautics and Astronautics, Massachusetts Institute of Technology. He has a wide background in Aeronautics and is quite familiar with aircraft design and analysis methods. He has over eleven years of experience in the development and analysis of finite elements. Current and recent applications include the Grumman Flxible modification, railroad axle/bearing analysis, and residual stress analysis in rails. At MIT, he studied experimentally and analytically the delamination behavior of composite materials. Other areas of experience include subspace iteration and component modal techniques in dynamics and rolling contact analysis with friction effects.

JEFFREY E. GORDON
MECHANICAL ENGINEER

Mr. Gordon received a B.S. degree from Tufts University in 1984. A product of his engineering studies has been experience in the study of rail mechanics and failure. Recent assignments include investigation of alloy rail failure and the structural integrity of general aviation aircraft. Current study involves methods of mechanical failure analysis via metallurgical examination.

ROBERT GREIF
MECHANICAL ENGINEER
Chairman, Department of Mechanical Engineering
Tufts University
Medford, MA

Dr. Greif was educated at New York University (BME, 58) and Harvard (SM, 59; Ph D, 63). He worked at the Missile Systems Division of Avco Corp for four years (63-67) before joining the faculty at Tufts University in 1967. Since 1981, he has been chairman of its Department of Mechanical Engineering. His other assignments include those with industry (USM Corp., 67-68; Stone & Webster, 71-78), government (DOT Transportation Systems Center, 77-present), and universities (Sussex, U.K. 74; Harvard, 81). He has published numerous papers on vibration and dynamics, solid mechanics, biomechanics, ultrasonics, and rail engineering. Active in ASME, AIAA, ASEE, he currently is a member of the Shock and Vibration Committee of the ASME Applied Mechanics Division, and he is also an Associate Fellow of AIAA.

PROFESSOR JAMES W. MAR
PROFESSOR
Department of Aeronautics and Astronautics
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Professor Mar received his education at the Massachusetts Institute of Technology (B.S., 1941). He worked at Curtis Wright as the Corporation head of Structural Testing from 1941 to 1944, before receiving his M.S. in 1947 and Ph.D in 1949 from MIT. He was employed with the Engineer Structural Research Group (1949-1950) before joining MIT again in 1950. He became a full professor in 1964 in the Department of Aeronautics and Astronautics and from 1981 to 1983 he was the acting head of the department. He was appointed as the Hunsaker Professor for the year 1980. He is an internationally known expert in the areas of Structural Integrity, Aircraft Design, and Thin Shell Structure. Professor Mar has served as the Chief Scientist of the United States Air Force.