

### ***Integral and Semi-Integral Bridges***

Martin P. Burke, Jr. Wiley-Blackwell, 2009. 255 pp.; \$139.99; 978-140519-418-1.

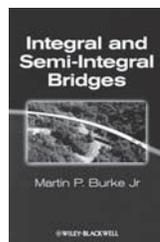
This book traces the evolution of deck-type highway bridges from the early 1930s to the present, focusing on subjects of significance to the design and construction of integral and semi-integral bridges. Also examined are the uncontrolled growth–pressure phenomenon, the culprit of much bridge damage; the attributes and limitations of integral-type bridges to be considered in the design process; the structure movement systems approach to highway bridge design; and some of the problem-solving techniques used by bridge design engineers. Real-life success stories and challenges—such as a bridge replacement and rehabilitation project in Ohio involving more than 1,800 bridges—provide insight.

Appendices to this volume include a critique of a formerly published and incorrect set of concrete pavement recommendations; a glossary to help novice engineers; and a collection of data and descriptions pertaining to the integral and semi-integral bridges shown in photographs throughout the book. Author Burke is an emeritus member of the TRB General Structures Committee.

### ***Fragile Networks: Identifying Vulnerabilities and Synergies in an Uncertain World***

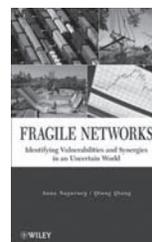
Anna Nagurney and Qiang (Patrick) Qiang. Wiley, 2009. 313 pp.; \$115; 978-0-470-44496-2.

Using a mathematical, multivariate approach, this book endeavors to help policy makers, urban planners, and business strategists identify critical infra-



structure investment needs to bolster disaster preparation and mitigation. Computer-based network systems modeling and analysis methods are applied to vulnerabilities in congested urban transportation networks, logistical networks, supply chains, the Internet, and other systems.

The authors explore many network activities: the behavior of network users, demands for resources, resulting flows, and associated costs. Three sections address network fundamentals, efficiency measurement, and vulnerability analysis; applications and extensions; and network integration, mergers and acquisitions, and areas of cooperation. Potential areas for risk reduction and disaster readiness are identified, along with possible synergies that can assist in disaster recovery.



The books in this section are not TRB publications. To order, contact the publisher listed.

### ***The Beginner's Guide to Aviation Biofuels***

Air Transport Action Group, May 2009. Available at [www.enviro.aero/biofuels](http://www.enviro.aero/biofuels).



To advance the use of biofuels in aircraft, the Geneva-based Air Transport Action Group (ATAG) has published *The Beginner's Guide to Aviation Biofuels*. Unlike biofuels derived from food crops such as rapeseed and corn that are often unsuitable for use in aircraft, “second-generation” aviation biofuels are sustainably produced, meet performance and safety standards for aviation fuels, and are derived from nonfood crop sources that can be mass-grown in many geographic regions. Several airlines have successfully tested jet fuels from alternative sources such as camelina, jatropha, and algae. The pamphlet examines the key safety and technical criteria in the use of aviation biofuels, outlines the testing process currently under way, and looks at technical and sustainability challenges.

## TRB PUBLICATIONS

### ***Human Performance: Infrastructure, Information Systems, and Simulation***

Transportation Research Record 2069

Authors study the effects of fog on car-following performance, run-off-the-road crashes involving over-correction, the decision dilemma zone at a signalized intersection approach, two-way stop-controlled intersections on divided highways, left-turn warnings, auditory road safety alerts, wireless communication and entertainment devices' effects on driving, warning messages and variable speed limits, right-turning vehicles and pedestrians approaching from the right side, traveler information delivery mechanisms, and pretrip public transport information use.

2008; 92 pp.; TRB affiliates, \$40.50; nonaffiliates, \$54. Subscriber category: safety and human performance (IVB).

### ***Concrete Materials***

Transportation Research Record 2070

Presented are papers on internal curing, impact echo scanning for void detection in posttensioned concrete, chloride permeability and microstructure of mortars incorporating nanomaterials, autoluminescent surfaces for concrete pavements, properties of concrete containing vitreous calcium aluminosilicate pozzolan, modulus contrast between near-surface material and deeper material in concrete pavements, the influence of curing conditions on strength development, and strategies for shrinkage mitigation.

2008; 67 pp.; TRB affiliates, \$37.50; nonaffiliates, \$50. Subscriber category: materials and construction (IIIB).

