# CUMULATIVE INDEX

## *TRANSPORT and TELECOMMUNICATION, volume 5, No 3, 2004*

***(Abstracts)***

**Brent D. Bowen, Chien-tsung Lu. Measuring the Safety Performance of 10 Major Air Carriers in the United States: The airline safety report (1997-2000), *TRANSPORT and TELECOMMUNICATION,* Vol. 5, No 3, 2004, pp. 4–21.**

Over the past two decades, the airline safety performance in the United States (US) was measured mainly based on the singular safety factor—accident/incident rate. However, the aforementioned research generalization about the univariate evaluation seemed too narrow. In order to provide a more thorough mechanism of safety measurement, the Airline Safety Reports (ASRs) was initiated aiming to objectively evaluate the overall safety performance of the 10 US-based major airlines over a four-year period, between fiscal year of 1996 and 1999. Rather than focusing on only one factor, this study consisted of 17 factors important to airline safety such as airline operational violations, critical financial ratios, accident and fatality rates, and governmental enforcement/violation actions. This study utilized the Delphi methodology to retrieve experts' opinions and 112 aviation experts were surveyed. The calculation concepts of the national Airline Quality Rating (AQR) in seeking to report safety performance of targeted airlines were applied. In addition, the Analytic Hierarchy Process (AHP) software was adopted to (a) generate the unique format of our paired-variable survey questionnaire, (b) calculate weighted values, and (c) consequently produce a safety report. The initial results showed that Southwest Airlines achieved the best overall safety performance. In addition, this study did simultaneously propose a practical capability which would help airline managers or government authorities to target any erosion of aviation safety, predict risk, and prepare solutions ahead of schedule.

**Key words:** airline, safety factor, evaluation, accident/incident

**Nijole Batarliene. Information Modelling of Hazardous GOODS' *Transportation Regulations, TRANSPORT and TELECOMMUNICATION,* Vol. 5, No 3, 2004, pp. 22–29.**

Hazardous freight transportation regulations are modelled in the article. Formal lists of subregulations are made. They include classes of hazardous substances, special and general subregulations' lists in every class, general subregulations' lists for several or all the classes of hazardous substances. Besides, lists of common technological subregulations and class characteristics are formed.

All the lists include subregulations' codes expressed in natural numbers and texts attached with the essence of a particular subregulation. Besides the lists above, every hazardous substance has a special list of its transportation subregulations. Thus, it's sufficient to present the hazardous substance code for the database management system and you may find the necessary subregulations' codes. The descriptive texts of subregulations are given to the freight transporters informing them how to transport the particular hazardous substance.

**Key words:** hazardous goods, transportation regulations, information system

**Jonas Butkevicius, Ramunas Palsaitis. Impact of Market Liberalization to the Passengers' Transportation by Rail in Lithuania, *TRANSPORT and TELECOMMUNICATION,* Vol. 5, No 3, 2004, pp. 30–33.**

An extensive set of national international rules regulating passengers' transportation by rail transport is acting in Lithuania. The impacts of the wide array of regulations have on the passengers transportation industry fall into three main categories: access to the market, competition, general operating conditions. European rail transport operations and market liberalization are covering 2001/12EC, 2001/13EB, 2001/14 directives.

JS Lithuanian Railways are enforcing Government undertakings and from the cargo transportation profit are covering more the 30 millions Euro losses for the passengers' transportation. Presently JS Lithuanian Railways can't disclaim cross financing whereas government is not prepared to implement public transport service principles.

The purpose of the paper is to identify the complex of measures enabling to satisfy society demands in railway transportation services.

**Key words**: passengers, market, liberalization, railways, transportation

**Danutė Bagdonienė, Skirmantas Mazūra. The Simulation of Road Transport Operation at the Terminal, *TRANSPORT and TELECOMMUNICATION,* Vol. 5, No 3, 2004, pp. 34–55.**

In freight transportation, when the cargo is carried from one terminal to some others (or from several terminals to one area), the delay time of vehicles and loading equipment may be considerable, because their operation is not well coordinated. In the present investigation, the appropriate number of transport and loading facilities needed to ensure their coordinated work at the terminal is determined. The problem of transportation is analysed in terms of mass service assignment. The problems of stock management and proper choice of transport facilities are defined and analysed taking into account the relationship between cost of transportation and vehicle's capacity and size of cargo lots. By using mathematical statistical methods, the optimal vehicle's capacity for a particular lot on the routes for taking the cargo out as well as the periodicity of cargo delivery is determined.

**Key words:** loading equipment, time of vehicle's turnover, organization of freight transportation

**Aldona Jarašūnienė. The Usage Of Lithuanian Road Transport Inspectorate Information Technologies And Estimation Of Transport Technological Process, *TRANSPORT and TELECOMMUNICATION,* Vol. 5, No 3, 2004, pp. 56–62.**

Activities and using of IS of the state road Transport Inspectorate are very important factors in operating new Information Systems between transport means and that is playing very important role in the development of transport system. The article deals with the activities of IS of Inspectorate, estimation of IS, computerized IS in Inspectorate. The estimation of interdepartmental collaboration and common IS using with foreign countries are showed.

In this article technological process in transport is analysed, technological scheme of the transport graphically reflects the sequence of working operations in regard to aerial location, necessary equipment, outfit and workers are analysed, a technological graph chart reflecting the technological acceptability and time normative of technological operations of transport process is presented. Estimation and adapting of models in transport are presented as well. A model serving the development of general transport capacities was elaborated for transport process modelling.

**Key words:** state road Transport Inspectorate, information systems, technological data, technological process, using of mathematical models

**Konstantin N. Nechval. Inspection Policies in Aircraft Service, *TRANSPORT and TELECOMMUNICATION,* Vol. 5, No 3, 2004, pp. 63–76.**

Aircraft structures have many components. Maintaining high reliability for these structures generally requires that the individual structure components have extremely high reliability, even after long periods of time. One of the most important problems in the fatigue analysis and design of aircraft structures is the prediction of the fatigue crack growth in service. Available in-service inspection data for various types of aircraft indicate that the fatigue crack damage accumulation in service involves considerable statistical variability. The statistical nature of the fatigue crack growth is attributed to, among others, two most important factors: (a) the statistical nature of service loads and environments experienced by aircraft structures and (b) the inherent fatigue crack growth variability of materials. The objectives of this paper are to (i) describe possible statistical models to deal with the crack growth variability, (ii) point out their applications, (iii) suggest an invariant embedding technique for statistical decision making on the basis of fatigue crack growth models and (iv) propose an approach to evaluating the goodness of these models.

**Key words**: aircraft structures, fatigue cracks, inspection policies, detection