dangerous processes. As a tool for risk analysis and management in the framework of disaster mitigation, Disaster Scenarios (DISC) together with a special DIMAK scale for measurement of any disaster are being developed in the KamCENDR since 1988. The DISC is created on base on: a) especially ordered GIS; b) matrix equations for estimation of damage that depend on multifactoral danger impact, damage formatting factors, worth and vulnerability of urbanization, daytime and season of the disaster; c) Methods of Expert-Logistic Estimation and System Analysis (MELESA).

Three levels of DISC are carried out: DISC-1, direct damage; DISC-2, multi-disaster; DISC-3, lifelines, survival and emergency readiness level.

The DIMAK-Scale is based on the fatalities (K) and on the losses (S), and uses as the principal integrated parameters: F = K + 3S, measured by "fates," or L = S + 3K measured by "loss." "One fate" and "one loss"– are adopted units of any disaster. It allows to assess and to compare the happened and predicted disasters. In the framework of DIMAK, the clear-cut definition of accident, disaster, catastrophe, scales, and comparative levels of disaster, etc. are developed and presented. The use of DIMAK for measuring various disasters is demonstrated in the special tables. The step-by-step DISC technique, application, and the losses estimation methodology are described. The corresponding software "ONEGA" also is applied.

045.
Assessing the Impact of Flooding on the Delivery of Hospital Services in the Southeastern United States

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This study evaluates the impact of flooding on the delivery of hospital services during and following the summer 1994 floods in the Southeastern United States. Areas of concentration include the impact of the floods on continuation of patient care services, the extent of damage experienced, the levels of disaster planning conducted, and the readiness for disaster. Special emphasis was given to disaster planning and problems encountered in the area of information systems and data recovery.

A six-page mail survey was conducted of disaster preparation and the appropriateness of disaster planning in the 111 hospitals located in the 75 counties declared a "Federal Disaster Area." Thirty-nine surveys were returned (35.1% response rate), with the greatest level of response from Georgia (52%), the state most affected. Only 6% reported flooding within property lines. However, 21% reported structural damage and 26% said the flooding affected patient care access and care delivery. Three-fourths stated they had defined and planned for internal disasters. In retrospect, most (73%) felt their facility disaster plan was adequate for this situation, yet rated their community plan less adequate (63%). Seventeen percent had no community disaster plan. Medical information systems recovery plans were present only in 53% of the facilities.

This study describes current hospital disaster planning effectiveness in one region of the U.S. and makes recommendations for future research.

109.
The Role of the Medical Advisor at HQ North

WGCDR S.D. Milnes, Msc, MB, BS, MRCS, MRCGP, DAVMed, AFOM, DipLMC, RCS (ed) MRAeS, RAF
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This presentation will outline the contingency planning, assets, and logistics relating to the total defense concept in Norway. This involves the responses to crisis, disaster times of tension, and war. Additionally, personnel also are involved with humanitarian support of other countries, e.g., Bosnia. Reference will be made to the relationship between the national military-civil resources and additional augmentation available on an international scale. The presenter will draw on his 25 years of service and experience in this field, coupled with the recent completion of an MSC in Civil Emergency Management.

018.
Continuous Training Program to Face Aircraft Accidents in the Ministro Pistarini Airport

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Objectives: To describe the continuous training program in disaster medicine carried out by Province of Buenos Aires Emergency Direction, Ezeiza Zonal Hospital, Airport Medical Department, Pistarini Medical Division, and the Operations Office both dependent on the Argentine Air Force.

Program Description: All the topics were preesented in both the Airport and the Ezeiza Zonal Hospital. We tried to obtain the results that in case of an aircraft accident, the staff would be able to:

a) Identify the correct sequence of priorities in disaster situations;
b) Outline specific team role in different operative situations; and
c) Demonstrate and perform suitable skills used in disaster management.

Since 1988 and following ICAO recommendations, 236 persons of the airport and hospital staff were trained during three years in six courses, each four months long. The second combined exercise in response to a hypothetical air crash within the boundaries of the airport was held June 1994. Meanwhile, two real events tested the organization: 1) August 1993, a Viasa DC-10 aircraft went off the runway during the landing operation; and 2) A British Airways jumbo jet aircraft flying with 260

passengers aboard suffered fire in one engine. Both events ended without severely injured patients.

Conclusions: The continuous training program diminished the consequences following a disaster. Adequate coordination of the planned operations and continuous education proved to be the best way to face the effects of a disaster.

095.
Medical Support for Space Shuttle Operations: The Role of Emergency Medicine

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Manned space flight operations (MSFO) are ripe with the potential for disaster. The United States National Aeronautics and Space Administration (NASA) and the Division of Emergency Medicine at the University of Florida (UF) have created a unique program to provide medical coverage in the event of MSFO contingencies. Participants are recruited from emergency medicine, anesthesia, and the surgical specialties, and are required to complete a one-day training course at the NASA John F. Kennedy Space Center prior to deployment. Trainees learn about space physiology, spacecraft hardware, and aerospace toxicology with special attention to the needs of astronauts and rescue crew. Other program elements include physician recruitment, certification, team configuration, and logistical support. Opportunities exist within the program to interact with NASA crew surgeons and international space medicine physicians, to participate in simulated contingency exercises, and to achieve NASA Flight Surgeon certification. Since 1988, UF teams have attended 63 launch and landing opportunities of the United States Space Transportation System (STS–Space Shuttle). No operational incidents have occurred necessitating the mobilization of UF personnel. The NASA-UF program represents a unique application of the principles of emergency and disaster care.

016.
An Experimental Study of Aeromedical Evacuation by Helicopter and Fixed-Wing Airplane of Japanese Ground, Self-Defense Forces

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In the case of big disaster and catastrophe, the Japanese Ground Self-Defence Forces(JGSDF) usually has been asked to help with rescue and evacuations services under the Disaster Relief Act in Japan. Also, JGSDF occasionally has transported many emergency, critical patients from isolated islands or depopulated areas to well-equipped, big hospitals. But JGSDF has no airplanes and no helicopters that are specially fitted with any equipment for use in emergency medical services (EMS).

Recently, the government and people have requested that the JGSDF participate much more with peaceful purposes. So, the medical school of JGSDF has begun experimental studies of aeromedical evacuation using aircraft, with both helicopters and fixed-wing airplanes which are provided with some equipments for the EMS.

Studies have included the effects of monitoring and treatments used with attached equipments, such transmitting the electrocardiogram to the base and evaluation with physiological in men.

The results of these studies will be used for the dispatch of JGSDF using helicopters and fixed-wing airplanes in the near future.

123.
Computer Program to Compute Different Trauma Scores

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Various considerations make it desirable that the severity of accident injuries can be mutually compared. As described by Draaisma, these scores are used for a number of purposes: 1) Evaluation of trauma care; 2) Evaluation of specific therapeutic measures; 3) Triage or sorting of casualties in the field; 4) Making clinical decisions; 5) Prognosis of the individual patient; 6) Organization of the reception and treatment of casualties; 7) Recognition of changes in the epidemiology of injuries and/or deaths resulting from trauma; and 8) budgeting of costs.

A computer program has been developed for the calculation of each of these scores. This program works on personal computers with a MS-DOS operating system. It consists of the following parts:

A. Input the data of a patient.
B. Read components on the screen.
C. Records alterations.
D. Calculations of the trauma scores.
E. Sort the data for names.
F. Sort the data for age.
G. Sort the data for hospital numbers.
H. Sort the data for trauma mechanism.
I. Sort the data for trauma scores.
J. Sort the data for a specific injury.

The output consists of 26 variables:

1. Name
2. First name
3. Birth date
4. Location (emergency department)
5. Hospital number
6. Date of accident
7. Blunt/Penetrating injury