

Learning Objectives:

1. Comparison of various nations policies, practices and procedures for aeromedical disposition of aircrew

Wednesday, May 15
Chicago 8

08:30 AM

[XXXIV] PANEL: EARHART-NOONAN MISHAP INVESTIGATION PANEL OF 1937

Moderators: A. Parmet

St. Lukes Hospital, Kansas City, MO

K. Heupel

USAF, Travis Air Force Base, CA

PANEL OVERVIEW: A Mishap Investigation of the Earhart-Noonan Flight of 1937: No accident investigation was convened following the disappearance. This panel will review pertinent issues from the investigation. The nature of the flight, aircraft performance, meteorological conditions, personnel information, human factors, survival information search and rescue operations will be reviewed.

[336] EARHART/NOONAN ACCIDENT INVESTIGATION

S. Williams¹, A. Parmet²

¹Kirtland AFB, NM, ²St. Lukes Hospital, Kansas City, MO

INTRODUCTION: Survival and Equipment: Earhart elected to take only limited survival equipment and supplies. Other equipment would have improved their chances of survival and rescue. The lessons learned from this flight later affected survival planning in WWII and after.

Learning Objectives:

1. Mishap investigation of the Earhart/Noonan accident

[337] CASUALTY IDENTIFICATION OF THE EARHART-NOONAN FLIGHT OF 1937

M. Cimrmancic

Marquette University, Milwaukee, WI

INTRODUCTION: The first part will be a Radio-Play historically recreating Amelia Earhart's background and the conduct of the Earhart-Noonan Flight of May- June 1937 **METHODS:** Identifying casualties in 1937 used a limited number of scientific techniques compared to today. This presentation will review the possibilities of identifying casualties from older accident sites and current methodology.

Learning Objectives:

1. understand the methods of identifying remains

[338] US NAVY SEARCH AND RESCUE EFFORTS FOR THE EARHART-NOONAN FLIGHT

W. Dalitsch

U.S. Navy, Chula Vista, CA

INTRODUCTION: After disappearance of their Lockheed Electra on July 2, 1937, and an initial search by the US Coast Guard Cutter Itasca, the US Navy mounted the largest search and rescue operation to date in an effort to find Amelia Earhart and Fred Noonan. Efforts involved ships and aircraft in a wide search near and around Howland Island and other island groups for more than a two-week period, and involved costs of approximately \$4 million. The forces deployed and the lessons learned from this operation later affected search and rescue operations in World War II. The changes evolved to form the basis for search and rescue operations today.

Learning Objectives:

1. Audience will learn of the search and rescue efforts mounted for the Earhart-Noonan flight.
2. Audience will share lessons learned during the search and rescue efforts of the Earhart-Noonan flight.

3. Audience will learn of search and rescue methods developed due to experiences in the search for the Earhart-Noonan flight and their relation to methods today.

[339] A MISHAP INVESTIGATION OF THE EARHART-NOONAN FLIGHT OF 1937

K. Heupel

USAF, Travis Air Force Base, CA

INTRODUCTION: The RadioPlay-a recitation of Amelia Earhart's background and the conduct of the Earhart-Noonan Flight of May-June 1937. This panel will review pertinent issues from the investigation. The nature of the flight, aircraft performance, meteorological conditions, personnel information, human factors, survival information search and rescue operations will be reviewed.

METHODS: The first part will be a RadioPlay to get the audience to "experience" Amelia Earhart's and Fred Noonan's final flight. Then there will be a discussion similar to an Air Force Aircraft mishap investigation outbrief, but in addition comparing and contrasting what the investigation team would have had then compared to current day.

Learning Objectives:

1. Understand the Human Factors involved in the mishap
2. Understand how the limited survival equipment hindered survival and rescue efforts

Wednesday, May 15
Chicago 9

08:30 AM

SLIDE: COLLECTED TRAVEL & TRANSPORT MEDICINE TOPICS

Chairs: Fanancy Anzalone

Miami, FL

Kim Barber

Scott AFB, IL

08:30 AM

[340] COMMERCIAL AIR TRAVEL CAUSES AN INCREASE IN PULMONARY ARTERY PRESSURE THAT CAN BE CLINICALLY SIGNIFICANT

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Harmondsworth, United Kingdom, ⁴Aviation Discipline,

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INTRODUCTION: In theory, the mild hypoxia experienced during air travel could trigger hypoxic pulmonary vasoconstriction and cause a potentially dangerous increase in pulmonary artery pressure in-flight. Understanding these effects may reduce morbidity and mortality for aeromedical patients or susceptible passengers who have cardiopulmonary disease or increased hypoxic pulmonary vascular sensitivity. **METHODS:** Measurements were conducted during scheduled commercial airline flights on Boeing 777 aircraft. Eight healthy volunteers were studied during a nine-hour flight from London, UK, to Denver, USA, and one patient with Chuvash polycythemia, a genetic condition causing increased hypoxic pulmonary vasoreactivity, was studied during a six-hour flight from London, UK, to Dubai, UAE. The primary outcome measure was the effect of air travel on systolic pulmonary artery pressure (sPAP) assessed by portable Doppler echocardiography in-flight. **RESULTS:** In healthy participants, sPAP increased in-flight by 6 ± 1 mmHg (approximately 20%; $P < 0.01$). After landing in Denver, where the altitude simulates a typical aircraft cabin environment, sPAP remained elevated until 24 hours post-takeoff ($P < 0.01$). In the patient with Chuvash polycythemia, sPAP increased in-flight by 15 mmHg (approximately 50%), and the peak in-flight sPAP of 45 mmHg was well into the pulmonary hypertensive range.

ASMA 2013 MEETING ABSTRACTS

DISCUSSION: Pulmonary artery pressure increases during air travel in healthy passengers, and flight-induced pulmonary hypertension can develop in a susceptible individual even during a relatively short flight. These findings have implications for aeromedical patients and for vulnerable passengers with cardiopulmonary disease, for whom a hypoxia altitude simulation test with simultaneous echocardiography (HAST-echo) may be beneficial in assessing fitness-to-fly. Pre-flight evaluation with HAST-echo, and in-flight supplementary oxygen, should be considered for all patients with Chuvash polycythemia.

Learning Objectives:

1. To understand how air travel can affect the pulmonary circulation.
2. To understand the aeromedical implications of these effects.

08:45 AM

[341] THE MAGNIFICENT MEN RETURN!

P. Hurly

Royal New Zealand Air Force, Palmerston North, Manawatu, New Zealand

INTRODUCTION: In July 2012, the New Zealand Department of Veterans' Affairs and the New Zealand Defence Force, carried out a commemorative mission to take 34 veterans of the Royal New Zealand Air Force and of Bomber Command to London for the unveiling of the Bomber Command Memorial in Green Park. **DISCUSSION:** This presentation will discuss the planning, logistics and support required to transport the veterans to London and back on a RNZAF Boeing 757. All veterans were in their late eighties or early nineties and flew to London and back to New Zealand for the commemoration, with the requirement for several transit stops. A description is provided of the selection process of the veterans, the itinerary planning, personnel support and - particularly relating to the medical planning- the care and support provided during the mission. As the medical practitioners accompanying the mission were not licensed to practice in the overseas transit stops, nor in London, some discussion centres round the medico-legal aspects of providing the medical support and the carriage of medicine and equipment during the mission. There is also some discussion about the requirements for airworthiness for equipment that may have been used during the flight. Finally the presentation gives a brief chronology of the mission and the lessons learned. As more commemorative missions are planned for the next few years, this also serves to provide some assistance to future planning of similar commemorative missions.

Learning Objectives:

1. To assist in planning for similar missions in the future

09:00 AM

[342] MEDICAL TOURISM: MEDICAL AND ETHICAL CONSIDERATIONS

S. Falkenheimer

Trinity International University, Deerfield, IL

INTRODUCTION: Medical tourism, which can be viewed as a type of travel medicine, is not new in principle. Small numbers of patients have long sought medical care across national borders. Until recently, most of these patients have traveled to North America and Europe for care. In recent years, however, not only have the numbers of patients seeking care in other nations increased rapidly, but increasingly patients are traveling from highly developed nations to less developed ones to take advantage of less costly care at their top medical centers. This paper will outline a number of medical and ethical considerations and concerns raised by this trend.

Learning Objectives:

1. To become aware of the nature and rapid development of medical tourism
2. To understand medical considerations and concerns associated with medical tourism
3. To become aware of ethical considerations and concerns related to medical tourism

09:15 AM

[343] PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL CHANGES IN A GROUP OF PEOPLE WHO ASCEND TO HIGH ALTITUDE IN THE SIERRA NEVADA DE SANTA MARTA, COLOMBIA

M. Salamanca, L. Del Castillo, F. Liñan, S. Diaz, M. Melendez, D. Martinez

Corporacion Universitaria Rafael Nuñez, Cartagena, Bolivar, Colombia

INTRODUCTION: Colombia has a variety of racial mixtures and because of its different landscapes it has tourist attractions for domestic and foreign. This and other reasons such as work, sports, etc. lead people need to travel between different altitudes. However, the counseling given to travelers about the normal physiological changes, cautions, and risks to which they are exposed by changes in altitude is not sufficient. In Colombia this research is in its infancy. **METHODS:** This is a cross-sectional study conducted in twelve volunteers living at sea level who underwent a complete medical history to rule out medical conditions that would prevent them from climbing to high altitudes. Vital signs, oxygen saturation, and blood samples for blood count of the volunteers at rest were taken at sea level and 2250 meters above sea level. The Louis test was applied to the volunteers at 2250 meters above sea level. **RESULTS:** The average age of the subjects was 29 years. All subjects had increases in heart rate, hemoglobin and hematocrit, and platelet count. White blood cells count increased significantly in two individuals who also had altitude sickness. Four people had symptoms of altitude sickness, one moderately and the other mild, which improved with descending without sequelae. **DISCUSSION:** In this study were found increased heart rate, hemoglobin and platelet count to high altitude climbing in the same way as it has been shown in previous studies. The increase in leukocytes in two people who submitted altitude sickness suggests that hypoxia aggression act as a triggering immune response that could be responsible of acute mountain sickness. Further studies are required to establish the relationship between increased white blood cells count and the acute mountain sickness risk, so it will work for prognosis and prevention.

Learning Objectives:

1. The objective of this study is to describe the physiological and pathophysiological changes in a group of individuals living at sea level climbing to high altitude in the Sierra NV de Santa Marta assessed by vital signs, and Louis test.

09:30 AM

[344] IN-FLIGHT FIRST AID TRAINING PROGRAM FOR FLIGHT ATTENDANTS

S. Ahn, Y. Yun, Y. Choi

Korean Air Aeromedical Center, Seoul, South Korea

INTRODUCTION: In-flight medical emergencies are likely to increase as air travelers grow and population is aging. In the event that a patient has an emergency, flight attendants should quickly identify the patient's health condition and give first aid. Thus, in-flight first aid training for flight attendants is an essential factor and a continuous issue for flight safety of civil airlines. **METHODS:** Korean Air Aeromedical Center is in charge of in-flight first aid training and also operates an Emergency Medical Call System (EMCS) which provides medical advice to flight crew regarding in-flight emergency patients, 24 hours a day. **RESULTS:** 1. In-flight first aid training: Flight attendants receive systematic training from the first date of employment. Differentiated training programs are provided to trainees according to their level. The contents of training are made up of a total of 9 subjects including CPR, and so forth which sufficiently satisfy domestic and foreign regulations. In addition, we educate flight attendants on the additional subjects emphasized each year. We have both online and offline programs, and we issue certificates to flight attendants if they pass the written and practice test. 2. Expertise in training: All first aid instructors and an emergency physician have certificates of BLS and First Aid instructor. Also, they handle in-flight medical equipment and air transportation for invalid passengers, so their experiences maximize the effectiveness of education by enriching the contents. 3. Other trainings: Besides first aid skill, flight attendants who are responsible for the safety of passengers should also possess health and practical business skills. **DISCUSSION:**