JULY 1995

Interpersonal relations when isolated (University of Bergen and Norwegian Underwater Technology Centre, Bergen, Norway): "The present article derives from two isolation studies performed for the European Space Agency (ESA) as simulations of space travels, lasting for 4 and 9 weeks. The aim was to study how interpersonal relations were affected by time, and how individual characteristics related to conflicts and tension among crewmembers. A broad battery of methods was used, including video-recording, peer-ratings and self-reports. In both studies, group-functioning declined in the middle of the isolation and towards the end of the stay. Dominance and task motivation seemed to be important characteristics for compatibility between crewmembers, and negative relations established early in the isolation remained stable over time. These findings have implications for composition, training, and support of crews for extended spaceflights…

"The present studies indicate that crews undergo crises in certain periods of isolation and confinement, which seem to be relatively independent of the actual duration of the mission. We believe that this information has considerable potential benefit. Prediction of when interpersonal problems are most likely to occur might enable the astronauts and support personnel to better prepare for interpersonal problems and to intervene before they result in operational degradation or health problems. Experience from Russian spaceflights shows that different support strategies (e.g., celebrations, distracting tasks, and talking with family) might reduce the negative effect of foreseen crises…

"Processes in the early stages of the group's development seem to be an important determinant for later compatibility between crewmembers. A practical implication is that questionable group behavior should be addressed at the time of the crew formation in order to prevent establishment of dysfunctional patterns. Preparing the crew for potential conflicts as part of the pre-mission training might help the crew to take self-remedial actions. If the astronauts are unable to adapt to one another at an early stage, evaluation should suggest removal and reassignment for some crewmembers. The present study indicates that enhancing crew compatibility should be an important part of training and selection."[2]

JULY 1970

Air Force ejection and evacuation injuries (Directorate of Aerospace Safety, Norton AFB, CA): "During 1967 and 1968 there were 561 emergency ejections/extractions from USAF aircraft. This included both combat and noncombat losses. Of the total crew members involved, 64 were fatally injured, 144 received major nonfatal injuries, and the remaining 353 escaped with minor or no injuries. Analysis of this experience disclosed that the primary ejection fatality injury type was multiple extreme, which usually resulted from ejection outside the low level capability of the systems involved; i.e., time available for completion of the ejection sequence was less than the time required. Fractures accounted for the majority of the major nonfatal injuries received. Parachute landing accidents and ejection force were the leading causes of major injuries. Significant differences were noted between the conditions of combat and noncombat ejections. In combat, there was a notable lack of low level ejections, and wind-blast/flailing was a major cause of injury."[3]

JULY 1945

Quarantine practices for air travel (Bureau of Medicine and Surgery of the United States Navy): "For the most part, quarantine laws and regulations as presently applied are the outgrowth of practices which go back as far as the time of Emperor Justinian and devices which were developed in the fifteenth century. It was in the middle of that century that bills of health were first employed as a basis for quarantine practice. While in the United States it has been clearly recognized that these are outmoded by other more rapid means of communication, they have still persisted to the present day…

"Present knowledge reveals that some definite changes are indicated in quarantine procedures with reference to international traffic; in particular, those concerned with the airplane. The craft and its passengers should be processed before the take-off and a simple quarantine declaration used which should establish clearance upon landing at any port of entry.

"In general, the use of artificial immunization against quarantinable diseases when the passenger is liable to be exposed to such diseases should form the basis for international travel and the plane should be disinsectized after loading and immediately before departure. When indicated, and passengers fail to be immunized, a system of surveillance or detention should be practiced.

"United States military air traffic has established a high degree of perfection in quarantine procedures. These planes and their passengers present the least possible hazard to the public health. They may be allowed free entrance into any country without danger. Their aerodromes, for the most part, may be taken as models for sanitation…

"In order for air traffic to reach its maximal use and efficiency, quarantine procedures must be so devised as not to delay or hamper its rapid flow yet must offer maximal protection to countries of entry."[1]

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This column is prepared each month by Walter Dalitsch III, M.D., M.P.H. Most of the articles mentioned here were printed over the years in the official journal of the Aerospace Medical Association. These and other articles are available for download from Mira LibrarySmart via https://submissions.mirasmart.com/asmaarchive/Login.aspx.

DOI: https://doi.org/10.3357/AMHP.5644.2020