

SPACE

Nurses in Outer Space

U.S. Air Force nurses are preparing for space evacuation missions requiring a new approach in the gravity-free environment above the earth's atmosphere, Lillian Levy reports.

► U.S. AIR FORCE NURSES at the School of Aerospace Medicine, Brooks Air Force Base, Tex., are preparing for the time when they will be on aerospace medical evacuation missions caring for patients in the gravity-free environment above the earth's atmosphere.

Standard techniques used to provide the best patient care on earth could be catastrophic in outer space, and the development of new techniques already is under consideration, Lt. Col. Lucile C. Slattery, chief of the school's Flight Nursing Branch, told SCIENCE SERVICE.

Bathing the patient with soap and water, for example, will be difficult if not impossible in space. Splashing water would float in the air as well as the soap and basin, Col. Slattery observed.

"We already have the answer to this problem. The wash-and-dry type cloth would provide bodily cleanliness without hazard," she said.

Intravenous feedings would be done under pressure in space rather than relying, as on earth, on gravity to force the fluids into the veins at the proper rate. "Adaptation of the pressure method used for speeding blood transfusions on earth will solve this problem," the Air Force nurse said.

Other difficult nursing situations anticipated in space include assisting in surgical procedures and maintaining sanitary standards in the operating theater.

"It may very well be," Col. Slattery said, "that a hermetically sealed type of compact operating theaters provided with artificial gravity is the only practical solution."

However, air conditioning units containing chemical agents with germ-killing capability may provide one way to maintain sanitary standards in the surgical area and thus help reduce the threat of infection that often results from surgery. Vacuum cleaners such as those recently developed to draw up water while scrubbing floors might be adapted to clean the surrounding air, walls and floors from blood resulting from surgery. Fluids released by the patient from coughing or sneezing in space would be taken care of the same way.

In evacuating patients from a space station and bringing them back to earth, it will be necessary to place them in space suits and strap them to special couches designed to withstand the impact of reentry.

Nursing in space has benefits as well as problems. "Lifting patients will be simple. Bed sores resulting from the strain and pressure of enforced bed rest in the gravity environment of earth will be eliminated in space," Col. Slattery said.

Arthritic patients, amputees and fracture victims will be more easily made comfortable in space.

While actual space nursing still is far in the future, Air Force nurses now provide medical ground support for the men now pioneering in space. This support has required new knowledge and training.

Among the new space age courses given at the school is one termed "Missile Nursing." Nurses taking this course must know not only the type of accident and injuries that may occur at missile bases and launch pads and the best method of treatment, but they must also have a complete understanding of the mechanical and chemical functioning of the ballistic missile systems.

Lt. Col. Agnes M. Arrington, assistant to Col. Slattery, helped develop this course, which includes lectures in missile medicine, visiting missile sites, and learning first hand the proper methods to minimize possible accidents.

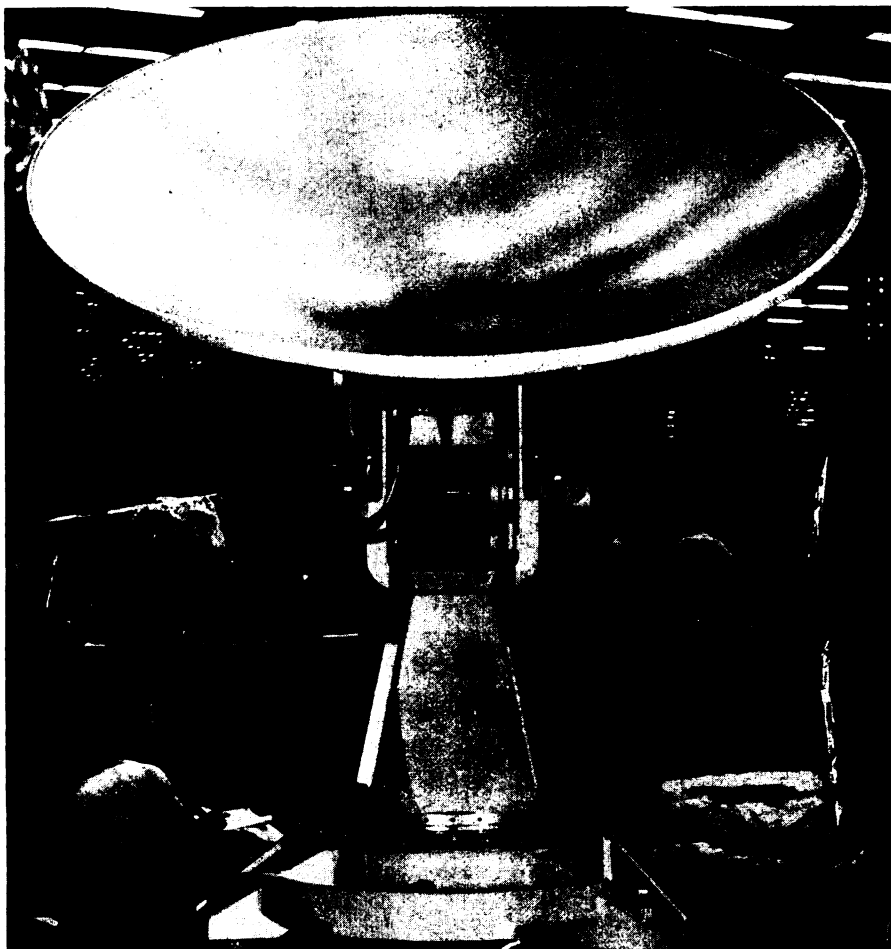
"Each nurse must acquaint herself with the toxicities of the chemicals involved and be conversant enough with their properties and effects and other hazards peculiar to the missile operation to be able to understand the patient's explanation of his exposure or injury," Col. Arrington explained.

"For example, a nurse assigned to a missile complex where aniline is used should know that this fuel passes readily through the pores of the skin, and at high temperatures is highly toxic. However, the patient exposed may first exhibit only headache symptoms.

"Aspirin, ordinarily prescribed for simple headache, would be extremely harmful because of the chemical nature of aniline and could intensify toxic effects causing cyanosis, convulsions and psychic disturbances. Patients at missile sites reporting with complaints of headache should, therefore, never be given aspirin," the missile nurse expert said.

The Air Force Flight Nurse Training Center has made its instruction for aviation and space available to military nurses from foreign countries as well as the other United States services.

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MISTRAM ANTENNA—Precise measurement of the in-flight performance of missiles fired from Cape Canaveral will be aided by radar antennas produced by General Electric's Ordnance Department, Pittsfield, Mass. The antennas, as part of the Missile Trajectory Measurement System (MISTRAM), will supply data on position and speed of missiles in flight.