

## **Evolving Doctrine in the Theater Aeromedical Evacuation System (TAES): Operation JOINT ENDEAVOR/GUARD and Beyond**

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### SUMMARY

With an increase in contingency operations in the NATO theater of operations, the Theater Aeromedical Evacuation System (TAES) needs to be flexible to meet the ever-changing demands of both combat operations and military operations other than war. Recent evolution in United States medical evacuation policies have made it necessary for the TAES to also change the way it does business. This paper discusses the composition of the TAES, recent additions to the TAES, trends in US medical policies, and implementation of the TAES during Operation JOINT ENDEAVOR/GUARD.

### TAES COMPOSITION

The TAES consists of a number of different functional elements created to provide the smooth transition of patient movement from a forward user service to the rear for more definitive care. The ultimate goal is to increase the survivability of the injured soldier. In particular, the TAES accomplishes this through the use of scheduled, alert and opportune aircraft. By "opportune" we mean an aircraft already bringing cargo in theater. These aircraft would then be used to "back haul" casualties out of theater.

Currently, the 43d Aeromedical Evacuation Squadron (AES) is tasked with five elements of the TAES: Aeromedical Evacuation Advance Echelon Team (ADVON), Aeromedical Evacuation Coordination Center (AECC), Aeromedical Evacuation Liaison Team (AELT), Mobile Aeromedical Staging Facility (MASF) and Aeromedical Evacuation Support Cell (AESC). Each will be discussed to provide information on personnel and functions.

### Aeromedical Evacuation Advance Echelon Team

The ADVON team is the lead element for the TAES. Their responsibility is to establish a liaison with all user services involved for sites and logistical support. Working with theater medical treatment facilities, they establish procedures for aeromedical evacuation and, if necessary, are able to perform as stand alone element for short periods of time until the Aeromedical Evacuation Coordination Center is established. It is composed of the following specialties:

Medical Service Corps	2
Flight Nurse	1
Aeromedical Evacuation Technician	1
Computer Systems Technician	1
Medical Administration	1
Logistics	1
Radio Operator	1

### Aeromedical Evacuation Coordination Center

The AECC is the command and control element of the TAES. The AECC may have multiple AELTs, AECMs and MASFs under its command. Additionally, it is the radio net manager for the aeromedical evacuation (AE) theater of operations. Nineteen personnel make up this package with the following specialties:

Medical Service Corps	4
Flight Nurse	4
Radio Operators	3
Administration	8

Some of the functions performed by the AECC are coordinating airlift, validating patient requirements, aircrew management, ensuring adequate logistical support and coordinating all AE missions.

### Aeromedical Evacuation Liaison Team

The AELT is the "front door" to the tactical AE system. Usually co-located with the user service, they provide initial clinical consultation and radio communication to the AECC and the MASF. They relay patient requirements both in number and specific care needs to the AECC. This input initiates the generation of an AE mission. The flight nurse acting as the flight clinical coordinator provides training on patient preflight considerations and acts as a consultant to medical and nursing staff regarding physiology of flight concerns. The 43 AES is unique in that it has the only airborne qualified AELT in the active duty force today. They may, as required, jump in with Army forward medical units. The AELT consists of:

Medical Service Corps	2
Flight Nurse	1
Radio Operators	3

### Mobile Aeromedical Staging Facility

The MASF provides preflight processing and nursing care the day of the AE mission. It can be positioned as far forward as a C-130 aircraft can land. Located approximately 100 feet from the taxiway, this facility can process up to 50 litter patients at one time with the capability of processing 200 litter patients per day. Casualties are generally held between two to six hours awaiting a mission. Time allotted is used for final processing and briefing of patients. Staffing at the MASF also allows for generating up to two AE crews in cases of emergencies. The personnel package for the MASF includes:

Medical Service Corps	1
Flight Nurses	9
Aeromedical Evacuation Technician	23
Medical Administration	3
Radio Operators	3

#### Aeromedical Evacuation Support Cell

The AESC provides medical material, administration and maintenance support to all elements of the TAES. Vehicle, radio and aerospace ground equipment (AGE) maintainers are all represented in this element. This is the element that keeps all the other elements maintained and sustained. The AESC consists of the following:

Medical Administration	1
Logistics	1
Radio Maintenance	1
Vehicle Maintenance	1
AGE Maintenance	1

#### Aeromedical Evacuation Crew Members

The primary role of the AECM is to provide in-flight nursing care to AE patients. In preparation for this the AECMs configure the aircraft to meet patient need and load specifications. Rapid configuration is essential for quick turnaround of opportune aircraft. The standard AE crew consists of:

Flight Nurse	2
Aeromedical Evacuation Technician	3

#### NEW ADDITION

##### Critical Care Air Transport Team (CCATT)

While not directly part of the MASF personnel package, the CCATT may be assigned with the MASF to provide care for the most critically ill/injured once at the MASF and during their subsequent mission. Theater requirements may also place the CCATT at an airhead where aircraft and AE crews are positioned to provide broader theater coverage. They enhance care by providing continuous observation and stabilization/advanced care during transport to the next level of care. They are particularly valuable as they provide the close observation and advanced care

necessary for the stabilized patient when the sheer number of patients could preclude the AE crew from close monitoring. The CCATT is comprised of:

Intensivist Physician	1
Critical Care Nurse	1
Respiratory Therapist	1

#### TRENDS IN US MEDICAL POLICIES

Of late, the trend towards smaller contingency operations has necessitated a smaller forward medical footprint. In the past, there were a large number of inpatient beds in theater for casualty recovery and rehabilitation. As less specialties are available downrange, there is a greater necessity for AE. As a result, there will be a need to transport "stabilized" versus "stable" patients. Stabilized is defined as receiving initial care to include treating for shock, airway maintenance, splinting of fractures.

In addition, there is now a policy of "evacuate and replace" which means if a patient cannot be returned to duty in a short period of time, they are evacuated and replaced rather than treated in theater. This will increase AE volume as these patients are removed from theater.

Telemedicine or the ability to send patient information through electronic transmissions is a new and experimental initiative. With telemedicine, a casualty could be tracked throughout the entire medical system including in the air. As designed, AE crew members, with the aid of a laptop computer, could contact destination physicians with updates or for new orders without having to go through the pilot.

#### OPERATION JOINT ENDEAVOR/GUARD

The 43 AES initially deployed to the Bosnian theater of operations in December of 1995 and have maintained a presence in the operation ever since. The bulk of our mission was performed from December of 1995 to April of 1997 with a MASF, AELT, portions of the AECC, AESC and multiple AECMs. During that period the aeromedical evacuation flight safely evacuated over 870 patients on 138 missions. Twenty-nine percent of those missions were prioritized as urgent or priority. Those missions required the patient to be evacuated in less than 24 hours. The quickest "turnaround" time was just over 90 minutes from notification of an urgent patient to take off. This particular mission demonstrated the value of being able to use opportune airlift. The last mission out of Tuzla for the day was held and the aircraft configured while awaiting patient arrival. Using this aircraft not only saved time but also the expense of having to generate an alert aircraft from Ramstein Air Base, Germany.

The patients evacuated had a wide variety of illnesses and injuries. We were fortunate indeed that the operation had very few casualties. The most frequent single diagnosis was pregnancy. Orthopedic injuries had the greatest number for a diagnostic group. As for the urgent

missions, they ranged from myocardial infarctions to severe burns, to gunshot wounds to Hanta virus. All were successfully evacuated to Germany.

The TAES for this operation was pared and tailored to meet peacekeeping requirements. The MASF package was only about half of what the normal package would be. A single tent on the edge of the taxiway was the only tent allowed. The MASF can be up to six large tents (including billeting). As the operation wore on, the MASF became even smaller until the primary aircrews were taken out of Tuzla and moved to Ramstein Air Base, Germany. The number of missions per month decreased as did the number of urgent and priority patients.

The CCATT was stationed at Ramstein Air Base, Germany, not in Tuzla. This had both positive and negative effects. Due to the slow pace, being stationed out of Germany allowed for flexibility in tasking. One CCATT could respond to Tuzla or Tazar, Hungary, as required. The only drawback was that once alerted, it was a minimum of four to six hours before the CCATT could be in Tuzla. This made it difficult to use opportune aircraft already on the ground in Tuzla. In this particular case it was not a problem as the flight nursing staff available were critical care trained and experienced which allowed them to transport a critical patient without any decrease in the quality of care. These cases were few and far between and the CCATT was used for the majority of urgent missions without delay in patient transport.

#### ALLIED COOPERATION

Allied cooperation was in full force in Tuzla. The MASF had the opportunity to assist several countries including Russia, Sweden, Bosnia and Jordan in the staging and/or evacuation of some of their patients. Also, joint classes such as the advanced cardiac life support course were offered with multinational participation.

#### CONCLUSION

The TAES is a flexible system for movement of patients from forward to rear echelons for more definitive care. With a wide continuum of conflicts and peacekeeping operations now the norm, the TAES will need to consistently adapt as well as pare and tailor itself to meet the needs of its user services. A smaller medical footprint and a policy of evacuate and replace will increase the demand for tactical AE. A shift to transporting stabilized rather than stable patients will drive the need for the utilization of the CCATT as well as increase the need for advanced nursing care training for the AE crew. Flexibility will continue to be the key to the success of tactical aeromedical evacuation.

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