

AIR FORCE MEDICAL SERVICE
(AFMS)
CONCEPT OF OPERATIONS
FOR THE
SMALL PORTABLE EXPEDITIONARY
AEROMEDICAL RAPID RESPONSE
(SPEARR) TEAM

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12 May 2000

OPR: HQ AETC/SGX
Randolph AFB, TX

Classification Authority: Unclassified
Declassification Instructions: None

TABLE OF CONTENTS

SUBJECT	PAGE
EXECUTIVE SUMMARY	3-5
SECTION 1 – GENERAL	6-8
SECTION 2– MISSION DESCRIPTION AND SCOPE OF CARE	8-14
SECTION 3 – OPERATIONS	14-19
SECTION 4 – COMMAND/ CONTROL RELATIONSHIP STRUCTURES	19
SECTION 5 – INTELLIGENCE/NATIONAL AGENCY/SPACE SUPPORT	19-20
SECTION 6 – COMMUNICATIONS/COMPUTER SYSTEM SUPPORT	20-21
SECTION 7 – INTEGRATION AND INTEROPERABILITY	21-23
SECTION 8- SECURITY	23-24
SECTION 9 - TRAINING	24-25
SECTION 10 - LOGISTICS	25-27
SECTION 11 - SUMMARY	27
GLOSSARY OF TERMS	28-29
ATTACHMENTS	
1. SPEARR Team Back Pack and Medical Bag Packing Lists	
2. SPEARR Team Common User Allowance Standard Guide	
3. SPEARR Team Mobility - Trailer Diagram	
4. SPEARR Team Field Laydown/Field Organization Diagram	
5. SPEARR Team EMEDS/AFTH Interoperability Diagram	

EXECUTIVE SUMMARY

I. GENERAL. The Air Force Medical Service's Expeditionary Medical Support and Air Force Theater Hospital system (EMEDS/AFTH) is a modular, highly capable medical system that represents the essential elements of deployed Air Force medical support. The extremely mobile and clinically flexible lead UTC force module of the EMEDS/AFTH system is named the Small Expeditionary Aeromedical Rapid Response (SPEARR) Team. The SPEARR Team may be useful in crises actions requiring lightweight, rapid response assets and in deliberate planning actions as an initial one pallet equivalent modular component during the early and late vulnerable phases of a deployment. The SPEARR Team also significantly increases the flexibility of all larger EMEDS/AFTH assemblages during sustained deployments, including AEFs, by providing a modular, rapid medical response to crises within a theater of operations.

II. MISSION DESCRIPTION AND SCOPE OF CARE. The SPEARR Team module provides a very rapid response, extremely mobile, and highly clinically capable medical asset to support a wide spectrum of Expeditionary Aerospace Force contingency missions. The mission of the SPEARR Team is to enhance Global Health by providing force health protection for up to 500 contingency/disaster support personnel, or a 500 population at risk (PAR), for an initial period of five to seven days. Sustainment or resupply capability (10 day resupply consistent with other EMEDS modules) ensures continued medical care and force health protection, when required. The PAR may be comprised of all US military personnel or include a combination of international military and civilian personnel in a coalition operation. The scope of care includes public health/preventive medicine, flight medicine, primary care, emergency medicine, emergency surgery, perioperative care, critical care stabilization, patient preparation for aeromedical transport and aeromedical evacuation coordination/communication.

III. OPERATIONS. The SPEARR Team is capable of being ready for deployment within two hours of initial mission notification. This rapid response time is site specific and is the best case scenario for SPEARR Team response. The two-hour response time is dependent on the collocation of personnel and equipment and on a team standing "on call" or "Bravo" alert at all times. The team functions as an EMEDS UTC module which is comprised of 4 UTCs; the PAM ADVON Team (UTC FFGL2), the Mobile Field Surgical Team (UTC FFMFS), the Expeditionary Critical Care Team (UTC FFEP1) and the equipment only Expanded Capability and Infrastructure Module (UTC FFEE8). The team may deploy in a manportable mode (backpacks, medical bags, and personal equipment only) without the FFEE8 UTC or in a one pallet equivalent trailer mode which allows independent operations for five to seven days. Flexibility is essential in the programming, planning and deployment process to allow for the most efficient deployment of both the SPEARR Team and the EMEDS Basic (e.g. – larger AEF deployments). To achieve this flexibility and rapid response capability may require positioning of similar deployable assets at both Lead Wings and Medical Centers. These positioning factors must be accurately reflected in documents such the Medical Resource Letter in order to be applied with crisis action and deliberate planning tools.

IV. COMMAND AND CONTROL. Command and control of medical operations for the SPEARR Team in joint, coalition, or other operations will be defined in the warning, execution, and operation orders. The gaining unified command surgeon establishes theater medical policy,

which is then promulgated through the AFFOR Surgeon down through the chain of command to the SPEARR Team mission leader. SPEARR Teams may fall under the TACON of the gaining unit, which the team(s) will support. When functioning as an independent medical unit, the SPEARR Team will operate under the direction of the installation/deployed commander or approved civilian equivalent. Most MAJCOMs will at most delegate TACON to deployed medical units, and only if a Joint Task Force has been activated. OPCON and ADCON would normally be retained at the JTF or component level. When augmenting an existing medical resource, the SPEARR Team will report directly to the senior ranking medical officer or in accordance with the command and control structure of larger medical elements such as an EMEDS/AFTH asset.

V. INTELLIGENCE, NATIONAL AGENCY, AND SPACE SUPPORT. Accurate medical intelligence is crucial to threat identification and application of appropriate preventative medicine measures. The host unit senior medical officer or other designated official US representative (in bare base scenarios) will coordinate communication of medical intelligence information.

VI. COMMUNICATIONS/COMPUTER SYSTEMS SUPPORT. The SPEARR Team utilizes communications and computer systems compatible with the Air Force Theater Medical Information Program. The team's deployed support includes one laptop computer, one digital camera, one INMARSAT, and Land Mobile Radios. Integrated systems applications such as the Global Expeditionary Medical System (GEMS) and patient care documentation with voice recognition software have been field tested with the SPEARR Team. The communication and computer systems requirements vary depending on the mode of deployment

VII. LINE INTEGRATION AND INTEROPERABILITY. Integration of deployed SPEARR Teams, as a four UTC module within the Air Force EMEDS/AFTH system of UTCs, is critical for successful medical operations. Integration needs to occur with the Line for expeditionary combat support (ECS), EMEDS/AFTH operations and aeromedical evacuation. The SPEARR Team's unique mobility and rapid response capabilities in disaster and other contingency scenarios also mandates effective integration and communication with Joint, Total Force, US national/government/international coalitions and non-government organizations (NGOs). ECS requirements include, but are not limited to water (potable water needed after 48 hours), fuel (one day fuel supply carried with SPEARR Team when authorized), transportation, logistics, and security. The team brings food for seven days (MREs). Rapid AE is essential to mission success.

VIII. SECURITY. The Defense Forces Commander (DFC) or civilian counterpart shall be responsible for all security operations, physical security, and force protection issues. Current threat assessment and threat condition (THREATCON) will drive local security measures. SPEARR Team personnel are responsible for following all personal protective measures as outlined in theater security briefings, force protection requirements, and OPORDS. All SPEARR Team members will attend security, antiterrorism, and weapons training as required. Defense Forces Commander and security forces will provide technical advice and recommendation to SPEARR Team personnel, as requested. SPEARR Team members may be issued weapons when authorized by the host unit commander. SPEARR Team personal

protection includes physical security and also requires theater specific personal protective measures and personal protective equipment. The adequate force protection (including personal protection issues) of deployed UTC personnel is the responsibility of the local MTF and MAJCOM command structure. Funding and acquisition issues for deployed UTC personal protection are the responsibility of the same command structure.

IX. TRAINING. The SPEARR Team, as an integral module of the EMEDS/AFTH system, will be trained in accordance with the EMEDS training plan, the Air Force Medical Service Master Training Plan, and AFI 41-106 Medical Readiness Planning and Training. The intense clinical nature of the SPEARR Team's capabilities mandates that routine (i.e. daily) clinical skills sustainment be maintained. Additional AFSC and UTC specific training with respect to disaster medicine is recommended.

X. LOGISTICS. The four UTCs in the SPEARR Team module (three are personnel and equipment, one is equipment only) comprise all the equipment and supplies necessary to care for the population at risk for up to 5-7 days. Additional expansion/resupply packages may be utilized to cover the transition period to larger medical assets in a crisis or other deployment plan. The resupply packages will be for 10 day periods, consistent with the 10 day resupply or sustainment packages for other EMEDS increments or UTC modules (e.g. EMEDS Basic, EMEDS 10 and EMEDS 25 bed increments). Storage of full SPEARR Team assemblages at certain locations, including specific overseas locations, is essential to ensure a rapid response (ready for deployment within two hours) and EMEDS/AFTH integrity and planning factors require other SPEARR Teams to be stored at AEF Lead Wings.

XI. SUMMARY. The USAF SPEARR Team UTC force module represents a small (one pallet equivalent), extremely mobile and highly clinically capable medical asset that forms one of the lead elements for the EMEDS/AFTH system. The SPEARR Team's extremely lightweight, flexible mobility platforms, rapid response capability, and very broad scope of medical care ensure that a wide spectrum of global EAF contingencies will receive continuous health assessment and emergency medical support.

SECTION 1 - GENERAL

1.1. Purpose: This document provides the Concept of Operations (CONOPS) for the Small Portable Expeditionary Aeromedical Rapid Response (SPEARR) Team. It describes the deployment, employment, and re-deployment of this team. The SPEARR Team may be deployed for medical support as either a freestanding medical unit in austere conditions or as the first increment or a four UTC module of the EMEDS system in the full spectrum of EAF contingency operations, including humanitarian and civil disaster response, small scale contingencies (SSCs), and major theater wars (MTW). The mobility and mission flexibility of each Air Force Medical Service (AFMS) EMEDS Basic increment is significantly enhanced with implementation of the SPEARR Team force package. This basic source document provides baseline information for SPEARR Team utilization, equipping, future validation, and possible modification. Additionally, the CONOPS may be used as a guide for validating future SPEARR Team requirements and revisions to appropriate planning and training concepts. It focuses on pertinent aspects, capabilities, and interoperability. It is not intended to provide minute detail of all aspects of operations. AETC provides oversight for the command responsible for the SPEARR Team concept, and ACC is the command responsible for the entire EMEDS/AFTH system. PACAF, USAFE, CENTAF, SOUTHAF, and Joint Forces Command (USJFCOM) are the primary users of the SPEARR Team. The AFMS provides UTCs to support theater requirements. Command relationships and appropriate force protection procedures will be defined in warning, execution, or deployment orders.

1.2. Background: The Air Force Medical Service (AFMS) pursued the development of a small, highly mobile, rapidly deployable, modular medical contingency team in response to recent changes in Joint and Air Force doctrine that emphasize a modular response to the full spectrum of Global Engagement scenarios. The ten-member SPEARR Team concept was first developed and utilized as a rapid response clinical contingency/disaster response to multiple terrorist events and natural and technological disasters during the 1990s. The SPEARR Team is comprised of the initial UTC modules or “building blocks” in the EMEDS/AFTH system and provides essential public health, preventive medicine, primary care, emergency medicine, emergency surgery, and critical care. The development of the ten-member SPEARR team is closely linked historically with its three component manpower and equipment UTCs; the Mobile Field Surgical Team (MFST or UTC FFMFS), the Preventive Aerospace Medicine ADVON Module (PAM ADVON or UTC FFGL2) and the Expeditionary Critical Care Team (ECCT or UTC FFEP1). The MFST was developed to provide rapid response forward emergency medical and surgical care in 1994 and has been effectively used operationally in such areas as Grenada, Panama, Kuwait, Ecuador, Sierra Leone, the Congo, India, Pakistan, the Balkans, and multiple continental United States (CONUS) locations. The MFST has been effectively combined over the past four years on a number of real world patient care missions with Critical Care Air Transport Teams (CCATTs) and a two-person command/communication module. This prototype combination of UTCs, or force package, was known as a Deployable Aeromedical Readiness Team (DART). The original concept for Air Force rapid response, clinically intensive, lightweight teams, such as the MFST and CCATT, was derived from USAFE’s Flying Ambulance Surgical Trauma (FAST) Team. The FAST Team was developed in 1984 as a response to the 23 October 1983 Beirut Marine

Barracks terrorist bombing disaster, for which there was no mobile, rapid response, clinically intensive casualty care module available. The PAM Team was developed in the 1990s as an early medical presence in a bed-down location; to reduce the incidence of disease and non-battle injuries (DNBI) by assuring appropriate public health and preventive medicine measures as well as primary care. The PAM Team's aerospace medicine expertise also enhances the link between "ground medical UTCs" and the Aeromedical Evacuation (AE) system. The PAM Team is comprised of three modules (FFGL2, FFGL3, and FFGL4), all of which are completely interoperable within the EMEDS/AFTH system. The SPEARR Team deploys with only the first PAM module (FFGL2). The third manpower UTC module in the SPEARR Team force package, the ECCT, was developed as part of the EMEDS/AFTH system in 1999 to provide perioperative and medical critical care support for the MFST and EMEDS Basic modules. The final UTC in the SPEARR Team force package is the SPEARR Team Expanded Capability and Infrastructure Module (ECIM or UTC FFEE8), which is an equipment only UTC. The ECIM was developed to ensure that the SPEARR Team is self-sustaining and completely interoperable as the first "pallet equivalent" (with trailer) of the 3 pallet EMEDS Basic package.

Flexibility is essential in the programming, planning and deployment process to allow for the most efficient deployment of both the SPEARR and the EMEDS Basic modules (e.g. – larger AEF deployments). To achieve this flexibility and rapid response capability may require positioning of similar deployable assets at both AEF Lead Wings and Medical Centers. These factors must be accurately reflected in documents such the Medical Resource Letter (MRL) in order to be applied to deliberate planning tools such as the Air Force Worldwide UTC Availability Tasking Summary (AFWUS) and the Type Unit Characteristic (TUCHA).

1.3. Threat: The Global Engagement directive in our National Security and National Military Strategies charges Expeditionary Aerospace Forces to be able to rapidly deploy to many different parts of the world. People, systems and facilities of supporting bases are essential to the launch, recovery, and sustainment of aerospace platforms, usually as part of an Aerospace Expeditionary Wing or Group(AEW or AEG). Medical services are crucial to force health protection (base medical defense) and survive to operate (STO) and the resumption of operations during a wide spectrum of EAF operations. The National Air Intelligence Center's "Threat Compendium, Worldwide Threat to Air Bases: 1993-2003," NAIC-2660f-265-93, 24 Sep 93; and the Air Base Systems, Threat Environment Description," NAIC-157-664-95, June 1995, are the baseline threat references for air base operations. Threats can be viewed from a perspective of type of injury as well as types of weapons and personnel or activity. A basic assumption utilized to develop this CONOPS is that the SPEARR Team will usually operate primarily in a low conventional/low nuclear, biological, or chemical (NBC) threat environment when operating independently. The SPEARR Team may operate in a heightened threat environment with the support of appropriate additional UTCs and force protection elements. In far forward locations, the security of the team and patients will be dependent upon the host unit. Major threats expected during small scale contingencies (SSCs) include terrorism and information warfare (IW). Deployed commanders must be able to protect their units against terrorism, IW and natural, man-made, and technological disasters. The expected threats during theater warfare are more diverse. They include IW and terrorism as well as air-to-surface munitions, surface-to-surface munitions, special operations forces (SOF), and NBC weapons.

1.3.1. Conventional and Exotic/Unconventional Weapons: These weapons carry the potential to inflict personal injury in the form of trauma of varying degree. Weapons in this category include precision guided munitions, anti-personnel/vehicle mines, rocket artillery, aerial bombs, cruise missiles, ballistic missiles, airborne carbon fibers, metal-embrittling liquids, high-power microwave, and directed energy weapons. Widespread collateral damage is expected with the use of these weapons. Many of these weapons are subject to use by saboteurs, terrorists, SOF, as well as ground forces. Effectiveness of casualty care is related to rapid delivery of care, competent use of equipment and supplies, techniques representative of the current standard of care; medical information access, and rapid aeromedical evacuation (AE).

1.3.2. Weapons of Mass Destruction (WMD): Although the SPEARR Team is not currently capable of operations in a contaminated environment, the team's rapid response and tremendous mission flexibility provide the potential for unique medical capabilities in many scenarios. The SPEARR Team currently provides extremely limited decontamination capability ("hasty" decontamination only), but provides significant treatment for patients suffering from nuclear, chemical, or biological weapons affects after the patients have been decontaminated. A SPEARR Team, with adequate personal protective equipment, can effectively provide emergency medical care in a "Warm Zone" and provide complete emergency medical and surgical care with medical units set up in the "Cold Zone" of a WMD event. Interoperability of the SPEARR Team with other medical resources is necessary for effective medical treatment in a WMD response scenario. Enhancement of the SPEARR Team's ability to survive and operate in a contaminated environment is a planned future program improvement.

SECTION 2 - MISSION DESCRIPTION AND SCOPE OF CARE

2.1. Mission Description: The mission of the SPEARR Team is to enhance Global Health by providing force health protection for up to 500 contingency/disaster support personnel or a 500 population at risk (PAR). This PAR may be comprised of all US military personnel or include a combination of international military and civilian personnel in a coalition operation. Title 10 restrictions will apply when the PAR includes a mixed, international population. The SPEARR Team provides mission support as a rapidly deployable, highly mobile, and versatile personnel/equipment package. The SPEARR Team can operate independently in austere conditions as a clinical contingency/disaster medical resource, or augment existing medical resources in deployed field settings and definitive care facilities for more prolonged periods. The team has very broad clinical capabilities, including primary care, flight medicine, emergency medicine, emergency surgery and critical care as well as public health and preventive medicine. The SPEARR Team can be deployed with only personally carried or man portable equipment, using a minimum of airlift at a critical time or with a one pallet equivalent trailer mode which includes the trailer, team clinical and personal shelters, and significant additional supplies for clinical and team personnel sustainment. The team's four UTCs comprise a sub-module of EMEDS-Basic, allowing rapid integration with the more robust capabilities of EMEDS-Basic or other larger EMEDS/AFTH system increments within 48 hours. The SPEARR Team has been specifically designed and tested for interoperability with other US and allied services and civilian responders. If deployed with its full allowance standard, including backpack equipment and the one pallet equivalent trailer mode of equipment and supplies, the SPEARR team is self-sufficient with respect to shelter, waste disposal and food for five to seven days. An initial potable water

supply is included for team members for up to 48 hours, after which the team must use other sources, part of which may come from team carried water filters. The team brings its own power generators (and one day supply of fuel) within the one pallet configuration, but must rely on local contracts or the Expeditionary Medical Logistics system for fuel beyond its one day intrinsic supply. The SPEARR Team requires host unit support for security. For situations which anticipate heavy patient loads or requiring more than five to seven days of support, immediate consideration should be given to rapid augmentation with an EMEDS-Basic or larger EMEDS/AFTH assemblages. If a larger assemblage is deemed unnecessary, then reachback capability must be established early in the mission or deployment of resupply UTCs for the four SPEARR Team UTCs with the initial deployment should be considered (reference paragraph 10.8 on reachback medical logistics resupply and sustainment).

2.2. Scope of Care: Upon appropriate tasking, the SPEARR Team can be ready to deploy within two hours of initial mission notification. This rapid response time is site specific and is the best case scenario for SPEARR Team response. The two hour response time is dependent on the collocation of personnel and equipment and on a team standing on Bravo alert at all times. Transportation requirements (e.g. - ready cargo for airlift or ground trailer hitch within two hours) will establish the actual arrival time on-scene. Other SPEARR Teams may not be able to meet a two hour response time, but remain “rapid response” assets relative to an individual unit’s manpower and equipment limitations. The SPEARR Team will arrive on location, assess existing medical needs and assets, and provide the following services: public health/preventive medicine, flight medicine, primary care, emergency medicine, emergency surgery, perioperative care, critical care stabilization, patient preparation for aeromedical transport and aeromedical evacuation coordination/communication. Initial contingency/disaster response assessment and triage are important specific capabilities of the SPEARR Team. The SPEARR Team can stand alone in austere conditions or be used to augment existing local military or civilian medical capabilities. Additionally, when tasked, the SPEARR Team can support medical operations directed to the local populace and wounded enemy prisoners of war. All team members are multifunctional and will support any function for which they are trained, if not otherwise employed.

2.2.1. Public Health/Preventive Medicine: The PAM-ADVON Team consists of a Aerospace Medicine Specialist (AFSC 48A3) and a public health officer. The PAM ADVON Team provides medical surveillance, epidemiology, public health, vector risk assessment, in-theater medical screening, limited early detection of chemical and biological agents, infection control, food/water inspection, communicable disease control and medical intelligence. The PAM ADVON Team members will provide the site assessment for the SPEARR Team’s shelter and working location in conjunction with the host unit.

2.2.2. Flight medicine: One Aerospace Medicine Specialist (AFSC 48A3) provides aerospace medicine support, occupational medicine and surveillance, in-flight emergency response, Combat Search and Rescue (CSAR) consultation, and primary care augmentation. The Flight Surgeon is the SPEARR Team’s primary clinical and administrative liaison to the AE system and is thus critical for effective and coordinated transfer of patients by the SPEARR Team. It is also highly recommended that an Aeromedical Evacuation Liaison Team (AELT) be deployed to support a SPEARR Team. While the Aerospace Medicine Specialist is the primary expert in

clinical AE validation, all SPEARR Team members should be trained on procedures for clinical validation and patient movement/transfer to ensure effective and coordinated Aeromedical Evacuation of patients. The sending unit, including the SPEARR Team, is responsible for transport of patients to the flight line or other site of evacuation by doctrine. The SPEARR team would temporarily require a vehicle of opportunity for patient transport. When flying units are based at the deployment location, additional organic flight medicine support in the form of Squadron Medical Elements may be required to provide the full depth of flight medicine coverage.

2.2.3. Primary care: The SPEARR Team includes multiple physicians, nurses and technicians who can manage acute and chronic medical problems in the supported population, including acute gastrointestinal or respiratory infections, asthma, hypertension, and similar problems, as well as limited psychiatric, gynecologic, and pediatric care. The primary care physicians include the Aerospace Medicine Specialist, the internal medicine specialist, and the emergency medicine physician. The majority of the patients seen in support of contingency or disaster response personnel are expected to have Disease Non Battle Injury (DNBI) diagnoses, so all SPEARR Team personnel must be capable of assisting or providing care for these diagnoses. The Expanded Capability and Infrastructure Package (FFEE8) increases the primary care capability of the PAM ADVON Team from a PAR of 200 up to a PAR of 500.

2.2.4. Emergency medicine: The primary care personnel and emergency medicine physician provide evaluation and treatment for acute problems such as heart attacks, respiratory failure, poisonings and minor soft tissue and orthopedic injuries. The emergency medicine physician on the SPEARR Team also provides support with respect to mass casualty triage and perioperative care.

2.2.5. Emergency surgery: The MFST module can rapidly establish an operating theater, perform advanced resuscitative procedures, select appropriate candidates for surgery, and perform appropriate trauma, resuscitative, or other emergency surgery. Examples of subject injuries/conditions include: blunt and penetrating trauma of the thorax, abdomen, extremities, genitourinary system and the head and neck region. Management of multi-system trauma, shock/hemorrhage, respiratory failure, airway emergencies, limb revascularization, stabilization of fractures, thermal injuries, major wound debridement and other emergency care can also be performed by the MFST. Examples of emergency care, besides trauma care, that has been provided by the MFST include such things as appendectomies and surgery for incarcerated or strangulated hernias. The MFST maintains limited emergency whole blood collection and transfusion capability (20 units). The MFST can provide care for up to ten serial (48-72 hour period) damage control surgeries or twenty non-operative resuscitations without re-supply in a disaster or mass casualty scenario. Two simultaneous operative cases may be supported for a limited period of time in an emergency scenario. Anesthesia support is provided by and anesthesiologist or certified registered nurse anesthetist. General endotracheal or regional anesthesia may be performed. Anesthesia equipment and supplies include a flow over vaporizer, mechanical ventilator, or hand bag device, invasive monitoring equipment and intravenous anesthesia supplies. Perioperative care is provided by the Expeditionary Critical Care Team (UTC FFEP1) or other AFMS critical care assets within the EMEDS/AFTH system.

2.2.6. Critical care stabilization: The Expeditionary Critical Care Team (ECCT) Allowance Standard module and personnel from the ECCT provide critical care support including mechanical ventilation, fluid resuscitation, cardiovascular care with medications (full ACLS care available) and invasive physiological monitoring. The ECCT may provide critical care support for a maximum of 3 mechanically ventilated patients simultaneously (4 ventilators contained in SPEARR force package) and has equipment and supplies to care for 10 perioperative, or other critically ill patients over a 72 hour period. All available team members would be required to assist if the maximum number of critically ill patients (10) is encountered. Attention to work rest cycles during such challenging work conditions is paramount to staff and patient safety. The team's capability to care for the maximum number of patients has been extensively tested over the past four years in both exercise and real world scenarios. ECCT equipment and supplies are completely interoperable with other AFMS critical care assets (FFCCT, FFCCU, FFCCV). The internal medicine physician is the ECCT clinical team leader and is supported by other SPEARR Team critical care support providers (critical care nurse, respiratory technician, anesthesiologist, general surgeon, and emergency medicine physician). The surgeon will be the physician primarily responsible for postoperative decision making unless this role is delegated otherwise by the surgeon. Supplemental supplies, such as additional intravenous fluids, are provided in the SPEARR Team Expanded Capability and Infrastructure Module allowance standard (refer to section 10 of this CONOPS; Logistics). Each critically ill patient is expected to be aeromedically evacuated within 24 hours, consistent with the EMEDS/AFTH CONOPS, so the ECCT will not be required to care for more than 3 critically ill patients at any one time.

2.2.7. Perioperative care: Expeditionary Critical Care Team personnel provide critical care and perioperative stabilization including airway management, post-hemorrhage resuscitation, management of thermal injuries and maintain fracture stabilization. The ECCT also provides other routine pre- and post-operative care or medical critical care (e.g. – myocardial infarction, severe pneumonia, trauma not requiring surgery such as a closed head injury) for up to 10 patients over a 72 hour period, with a maximum of 3 patients being provided critical care at any one time. Other SPEARR Team members will be required to augment the ECCT when necessary. Rapid AE transport is obviously a key factor for continued effective ground perioperative care provision by the SPEARR Team. Rapid AE ensures that the team is not caring for more than 3 critically ill patients at any one time.

2.2.8. Blood Collection and Transfusion: The capability to provide a safe source for blood transfusion in critically injured patients is an important issue for the SPEARR Team. The team is trained and equipped to perform emergency blood collection and transfusion (active duty walking donor pool only), but would strive to bring 10 units of O-negative blood if airlift or other transport resources are adequate. Blood requirements will be dictated by theater medical policy.

2.2.9. Diagnostic and therapeutic support: Perioperative ultrasonography is available using a hand held device operated by the surgeon or emergency medicine physician. The SPEARR Team does not have plain film radiology capability. Laboratory support is provided by a hand held clinical analyzer which can determine blood indices such a hemoglobin, white blood cells, glucose and electrolytes. Urine dipsticks and pregnancy tests are also included as diagnostic aids. Oxygen therapy is provided through oxygen concentrators (three in allowance standard)

that are compatible for use with the team's Impact 754 ventilator. The anesthesia provider has the primary responsibility for distribution of controlled medications. Multiple other providers may be delegated the responsibility of dispensing non-controlled medications.

2.2.10. Aeromedical transport preparation, coordination, and communication: The Aerospace Medicine Specialist, critical care personnel, and an Aeromedical Evacuation Liaison Team (AELT) manage arrangement of aeromedical evacuation and prepare patients for transport. SPEARR Team formal field validation testing has repeatedly demonstrated the importance of an AELT (2-person module) in ensuring rapid AE. AE policy will be consistent with the EMEDS/AFTH CONOPS (refer to section 7.2.1 of this CONOPS).

2.3. Team Composition: The SPEARR Team UTC force package includes the FFMFS, FFGL2 and FFEP1 UTCs (personnel and equipment) and the FFEE8 UTC (equipment only).

FFMFS personnel include:

General Surgeon	045S3
Orthopedic Surgeon	045B3
Emergency Medicine Physician	044E3A
Anesthesiologist	045A3
Operating Room Nurse	046S3

FFEP1 personnel include:

Internal Medicine Physician	044M3
Critical Care Nurse	046N3E
Cardiopulmonary Technician	04H071

FFGL2 personnel include:

Aerospace Medicine Specialist	048A3
Public Health Officer	043H3

Authorized AFSC substitutions are detailed in the Manpower Force Element Listings (Mission Capability Statement and Manpower Detail) for each of the individual UTCs in the SPEARR Team force package.

2.4. Mission Scope: The SPEARR Team force package may function as an independent medical resource in austere conditions or as an early modular medical "building block" in a large number of contingency scenarios that may include disaster response, humanitarian assistance, and special operations as well as combat operations. The force package provides preventive medicine, public health, primary care, flight medicine, emergency surgery, emergency medical care, and critical care capabilities to deployed forces and ill or injured patients in far forward locations as well as rear echelon medical treatment facilities (MTF). Examples of specific missions appropriate for the SPEARR Team are:

- Medical support of a small (PAR 500) deploying Line of the Air Force unit
- Surge augmentation of an existing deployed medical facility

- Support of ramp up/down phases (early and late phases) – the most “medically vulnerable” phases of deployments
- Triage/emergency care/salvage surgery at an air field
- Surgical or critical care stabilization of injured patients in close coordination with the AE system
- Rapid augmentation of existing resources (military, civilian, or coalition assets) in support of contingency/disaster scenarios to include terrorist attack, natural or technological disasters
- Special operations support

2.5. Deployment modes: The SPEARR Team can be deployed in one of two modes.

2.5.1. Man portable mode. The first mode of SPEARR Team deployment is the “manportable” mode. This mode includes the ten member team, equipment contained in backpacks and medical bags, and personal gear. The team maintains the ability to provide emergency care in the manportable mode, to include 20 major casualty resuscitations, 10 emergency or “damage control” surgical operations, and perioperative care for 10 patients over a 72 hour period. Rapid AE is essential to maintain full scope of care in the manportable mode. A bare, essential amount of food (MREs) and potable water is transported with the SPEARR Team in the backpack or manportable mode. A two-day potable water supply (6-8 quarts per person per day) is carried on the members’ Load Bearing Equipment (LBE) and within their personal gear (additional canteens and “camelbacks”). The SPEARR Team will be required to function in a wide spectrum of conditions and it is recognized that significant additional water will be necessary in extreme conditions (e.g.- desert). Additional potable water is contained in the one pallet equivalent trailer mode. Rations, water, and fuel are checklist items acquired at the time of deployment (refer to SPEARR CONOPS attachment). The equipment and supplies in this mode may be carried in vehicles of opportunity such as HMMWVs (two vehicles required to carry equipment in this mode; three total for equipment and personnel), a two and a half ton or two and a half ton military truck (one vehicle total for personnel and equipment), civilian vans or pickup trucks (two vehicles total for personnel and equipment), a C-130 aircraft (one aircraft can transport 2-3 SPEARR Teams), a SHERPA C-23 aircraft (one aircraft total for personnel and equipment), CASA 212 aircraft (one aircraft total for personnel and equipment), OV-22 Osprey tilt-rotor aircraft (one aircraft required for equipment and personnel), or UH-60 Blackhawk helicopter (two total required for equipment and personnel).

2.5.2. One pallet equivalent trailer mode: The “one-pallet equivalent” trailer deployment mode includes the full SPEARR Team Allowance Standard (FFEE8), adding one trailer, shelter, power, environmental control systems (separate heater and air cooling capability), and additional medical supplies for 5 to 7 days to fully support a PAR of 500. This mode includes five to seven days of food (MREs) and 48 hours of potable water (in addition to water carried by team members) for the 10 member SPEARR Team. This SPEARR Team deployment mode requires one pallet position equivalent and all equipment and supplies are completely contained within or attached to the SPEARR Team trailer. Flexibility is essential in the programming, planning and deployment process to allow for the most efficient deployment of both the SPEARR and the EMEDS Basic modules (e.g. – larger AEF deployments). To achieve this flexibility and rapid response capability may require positioning of similar deployable assets at both AEF Lead Wings and Medical Centers. In addition to positioning of SPEARR Teams at Lead Wings and

Medical Centers, SPEARR personnel and equipment should be strategically located in the European Command and the Pacific Command theaters of operations to ensure a rapid response capability in these areas of operation. These factors must be accurately reflected in documents such as the Medical Resource Letter (MRL) in order to be applied to deliberate planning tools such as the Air Force Worldwide UTC Availability Tasking Summary (AFWUS) and the Type Unit Characteristic (TUCHA). The SPEARR Team trailer was transported on multiple different aircraft during the field test process. Examples of aircraft capable of transporting the full SPEARR trailer mode include the C-130 Hercules, the C-23 Sherpa, the CASA 212, the KC-135, the KC-10, the MH-53 (AFSOC)/ CH-53 (Marines) (internal pallet position or sling load), and the UH-60 Blackhawk (sling load). The SPEARR Team's mobility and flexibility are maximized with the design of the trailer for sling loading (designed to US Army and FAA specifications). Additionally, the SPEARR Team may bring or request a vehicle (s) for ground transport at the deployed location. This vehicle or vehicles must be capable of transporting 10 personnel and pulling 4400 pounds (net weight of trailer with equipment and supplies) over varied terrain. Such vehicles include the "Deuce and a Half" military truck, HMMWVs, or a variety of civilian vehicles. The SPEARR Team trailer has a variable, multi-use hitch compatible with military or civilian vehicles (2 - 1/8" to 2 - 1/2" or Pintle hook). Adequate familiarization and training on pulling and loading the SPEARR Team trailer is essential for safe and effective field operations.

SECTION 3 - OPERATIONS

3.1. General: The SPEARR Team can be ready for deployment within two hours of notification. This rapid response time is site specific and is the best case scenario for a SPEARR Team response. The two-hour response time is dependent on the collocation of personnel and equipment and on a team standing "on call" or on "Bravo" alert at all times. Transportation requirements (e.g. - ready cargo for airlift or ground trailer hitch within two hours) will establish the actual arrival time on-scene. Other SPEARR Teams may not be able to meet a two-hour response time, but remain "rapid response" assets relative to an individual unit's manpower and equipment limitations. Variations in response time may exist, therefore at locations such as AEF Lead Wings, Medical Centers, specific overseas locations, and Air National Guard units. The team must be ready to deploy via aircraft (sling load or within aircraft) or ground transport (trailer pulled by vehicle of opportunity). Initial operational capability (IOC) can be instituted within fifteen minutes of arrival at its assigned location. IOC is defined as the SPEARR Team's ability to provide essential emergency medical and surgical care. Shelters of opportunity will be utilized if the SPEARR Team is deployed in the manportable mode. Full operating capability (FOC) for the SPEARR Team should be reached within two hours of its arrival at its assigned location. FOC is defined as the SPEARR Team's ability to provide the full scope of clinical care as well as a functioning command and communication system, completed shelter erection, and initial local area public health assessment. During employment, the SPEARR Team can provide preventive, primary and advanced critical care/emergency medicine and stabilization/emergency surgery. The SPEARR Team can hold up to three critically ill patients simultaneously for up to 24 hours and is equipped to provide perioperative or other critical care for up to ten patients over a 72 hour period. Rapid aeromedical evacuation of severe illnesses/injuries (within 24 hours of request) is critical to mission success. The Aerospace Medicine Specialist and an Aeromedical Evacuation Liaison Team (AELT) are essential elements to ensure rapid AE of SPEARR Team

patients. Casualties will be treated in forward locations or received from forward, less capable facilities. Evacuation of casualties will be determined by theater evacuation policy. A stabilized patient is defined as: airway protected, hemorrhage controlled, shock controlled, and fractures stabilized. Redeployment is accomplished with rapid resupply to maintain SPEARR Team availability for subsequent missions.

3.1.1. Employment Overview: The composition and size of the SPEARR Team place it on the most lightweight and mobile end of the spectrum of units in the United States military inventory that are available to provide initial public health/preventive medicine assessment and advanced emergency medical and surgical care. Effectiveness of casualty care is related to rapid delivery of care. A rapid, flexible mobility posture and minimal airlift requirements allow the SPEARR Team to reach an area of casualty need and to institute care of casualties hours or days before larger units with additional emergency medical or surgical capabilities arrive. Emergency care is enhanced when the SPEARR Team is positioned as close as possible to areas of high risk or anticipated need. Adequate personal protective equipment and security measures must be available to ensure emergency care is delivered safely. The small size of the equipment and personnel package and limited logistical support requirements permit the team to comfortably integrate into nearly any type of host medical unit and immediately increase public health, emergency medical and surgical capability.

3.1.2. Independent Medical Operations: In scenarios where the SPEARR Team is the sole medical resource, often in austere conditions, it is capable of providing the team's full scope of medical and surgical care, command and control, and emergency aeromedical evacuation coordination duties. If the SPEARR Team is deployed in the one-pallet trailer mode, it can function in its own shelters (clinical shelter and sleep shelters); otherwise a shelter of opportunity identified by the host unit and approved by the team may be used for patient evaluation and treatment. Routine duration of employment will be one to seven days. The host unit will provide security. If the SPEARR Team has deployed in the manportable mode, the host unit must also provide shelters for clinical care and billeting, and additional food and potable water. SPEARR Team members will carry food (MREs) and water (on LBEs and in personal gear) for two days if deployed in the manportable mode. Initial fuel supply (for 1 day) will be carried with the team in all deployment modes if the carrier permits transport of this type of mission essential hazardous cargo. The SPEARR Team brings a 1 kW emergency generator in the manportable mode and an 10 kW generator in the one pallet trailer mode. The surge power requirements for the SPEARR Team have been assessed during field tests at 8 kW. Rapid AE will be required to support critical care and emergency surgery. Environment control systems currently include modular heating and cooling (fans) systems that may be inserted for each specific mission (i.e., arctic, desert, humid tropics).

3.1.3. Augmentation of Existing Medical Resource: In scenarios requiring a medical augmentation role, the SPEARR Team will incorporate its preventive medicine assets and emergency medical and surgical expertise into existing host medical resources. The host unit triage officer and the SPEARR Team emergency medicine physician will undertake initial evaluation and triage of patients. Initial stabilization procedures will be performed and appropriate patients selected for resuscitative or emergency surgery. Limited perioperative

resources in this scenario include the ECCT and any additional personnel available from the host unit. Rapid AE will be required for stabilized patients.

3.1.4. Augmentation of Definitive Care Medical Resources: In scenarios requiring augmentation of existing definitive care capability, the SPEARR Team will incorporate its public health, surgical and emergency medical expertise within existing medical resources. SPEARR Team personnel and equipment can be utilized to increase functional capability. The SPEARR Team will not be limited to resuscitative surgery or short duration critical care in this scenario, since available resources and postoperative care allow definitive care to be performed. Public health/preventive medicine capability of the host unit will also be enhanced in this scenario.

3.1.5. Tasks

3.1.5.1. Specific Tasks: UTC specific tasks are mission oriented tasks required to accomplish an assigned portion of the overall mission. The SPEARR Team's three manpower UTCs may be attached to virtually any DoD or other officially tasked medical resource, ranging in size from a battalion aid station (BAS) to a mature Air Force Theater Hospital (AFTH), Army Combat Support Hospital (CSH), or Navy Fleet Hospital (FH) Ship, amphibious assault ship, or support ship.

3.1.5.2. Mission Leader Orientation: Prior to deployment, the SPEARR Team mission leader must obtain or be familiar with the following items:

- Mission objectives
- Team predeployment requirements
- Health support to include military, civilian, or host nation medical capabilities and regional sources of supply
- Patient transportation/evacuation capabilities
- Blood supply while deployed
- Local laws, customs, and political environment to include military-civilian support agreements or memorandums of understanding
- Medical intelligence, theater medical policies and predeployment medical requirements
- Security issues
- Laws of Armed Conflict
- Status of Forces Agreements
- Rules of engagement
- Logistics support, including resupply, communications, and transportation
- Other organizations active in the area, including civilian relief organizations

3.1.6. AFSC Cross Utilization: Cross utilization for SPEARR Team AFSCs is in accordance with the Manpower Force Element Listings for each of the three manpower UTCs in the SPEARR UTC module (FFGL2, FFMFS, FFEP1).

3.1.7. Employment Role: The employment role of the SPEARR Team is to support a wide spectrum of worldwide contingency operations with rapidly deployable, lightweight and highly mobile preventive medicine, primary care, emergency surgery and emergency medical

capability. The full spectrum of operations includes humanitarian and disaster response; small scale contingencies; and major theater war. Adequate personal protective equipment and training is essential for the team to engage in a wide spectrum of contingency operations.

3.1.7.1. Enemy Prisoners of War (EPW): If EPWs are treated by a SPEARR Team, coordination with security forces is required to provide guards for prisoners. Following essential care, EPWs and their medical records will be transferred to host nation or US Army EPW management authorities. Guards assigned to medical prisoners must accompany them to their ultimate destination.

3.1.7.2. Non-US Armed Forces Life Saving: If a civilian is injured secondary to US Government operations in the area of operations (AO), the theater CINC has approval authority for a SPEARR Team to treat or transport the patient. Medical care can be authorized to save life, limb, or eyesight. The SPEARR Team will coordinate patient care and/or transport through appropriate channels.

3.2. Deployment/Redeployment.

3.2.1. Deployment: The SPEARR Team module is deployed to support CINCs and other contingency commanders in preventive medicine, primary care, surgery, critical care and the rapid evaluation/evacuation of critically ill or injured patients. When appropriate, the SPEARR Team will be integrated with gaining elements, including a larger component of the EMEDS/AFTH system, at the earliest opportunity. The ability of the SPEARR Team module to deploy within two hours ensures that an appropriately prepared SPEARR Team can meet almost any short notice medical response tasking. The two-hour response time is the optimum response time and requires that personnel and equipment be co-located and be place on “Bravo” alert or on-call status. If the conditions for a two-hour response time cannot be met, the mobility and multiple deployment modes of the SPEARR Team continue to offer rapid deployment capability. Ideally, the SPEARR Team should be strategically positioned to provide rapid and mobile medical support wherever needed. In order to provide its full scope of care optimally, the SPEARR Team should remain stationary for at least 24 hours after IOC is established and should not be under direct fire.

3.2.2. Initial Operating Capability (IOC) and Redeployment: The SPEARR Team personnel and equipment packages are organized in a manner to allow for set up of emergency care equipment and initiation of casualty care in less than fifteen minutes after arrival at the deployed location. The SPEARR Team manportable mode can re-pack its equipment and supplies in less than thirty minutes and rapidly re-deploy to a new location, if the mission requires. In the one-pallet equivalent trailer mode, complete re-packing of the trailer will take 90 minutes or less. Additional time for redeployment may be necessary if the team is actively managing critically ill patients. Re-deployment to remote areas may be accomplished using the trailer in a “sling load” mode or individual backpacks and medical bags.

3.2.3. Transportation Requirements: The ten-member team, their medical equipment and supplies, and personal gear (approximately 1500 lbs.) can be airlifted within aircraft down to the size of a CV-22 tilt-rotor aircraft, or two UH-60 Blackhawk rotary-wing aircraft. The addition of

the remainder of the allowance standard in a trailer brings the total weight of the combined SPEARR Team to no greater than 4400 pounds and a size no greater than one pallet position equivalent (including personal gear). Ground transportation can be accomplished with a single 2 ½ ton truck, three HMMWVs (with team member drivers), or similar sized government or civilian vehicles. Airlift of the material as a “sling load” is an additional important transport option for the full SPEARR Team AS.

3.2.4. Cargo Processing: The manportable equipment package of the SPEARR Team (backpacks and medical bags) is organized so that it can be transported as personal or professional gear. It is imperative to mission success that the same carrier transport the SPEARR Team personnel and equipment, since the ability to attain IOC in fifteen minutes is dependent upon the man portable equipment being available to team members immediately upon arrival at the site of operations. The one kW and ten kW generators must be physically and administratively prepared at all times for deployment. At least one member of the SPEARR Team must be certified to appropriately prepare the generator and other hazardous cargo for transport.

3.2.5. Weapons Courier/Narcotics Courier Requirements: A weapons courier must be assigned to accompany any shipment of weapons. Couriers will be provided with a packet of written instructions regarding en route security, subsequent storage and issue at destination sites, and redeployment procedures. The weapons courier will be fully knowledgeable of all aspects of weapons control to include marking and securing containers, escorting and marshaling, safeguarding en route, protection at deployed locations, issuance procedures, recovery of weapons issued, packing and marking, and redeployment. The anesthesia provider will normally be responsible for the security, transport and dispensing of narcotics. A locked box is provided for narcotic storage.

3.3. Mission Planning: Medical planners must consider the following general factors when developing deployment plans for the SPEARR Team:

- Mission, enemy, terrain, troops, and time availability factors
- Political situation
- The threat, including WMD
- Operational conditions
- Host country resources available and other agencies (e.g. – NGOs) engaged in the contingency operation
- SPEARR Team sustainment factors (food, water, sanitation, power, fuel, transportation, etc.)
- Operational constraints
- Personnel and equipment status of the SPEARR Team, to include training status
- Supply status and resupply options
- Communications status
- Patient estimates
- Availability of aeromedical evacuation including response time and time to reach next destination
- Evacuation resources for movement of casualties from the SPEARR Team to the nearest suitable airfield if not co-located

- Blood supply while deployed
- Required Expeditionary Combat Support
- Special operations requirements
- Possible humanitarian assistance needs
- Maximum efficient time per surgical patient (e.g. -120 minutes)
- Maximum time per medical patient treatment (estimated based on scenario)
- Maximum surgical case load per 48-72 hours – 10 cases
- Perioperative care and other critical care– limited to a maximum of 12-24 hours prior to AE, unless integrated into a larger medical element
- Casualty documentation – written, printed, electronic; adequacy of care recording methods and transfer to subsequent care provider

SECTION 4 - COMMAND AND CONTROL

4.1. General: Command and control of medical operations for the SPEARR Team in joint, coalition, or other operations will be defined in the warning, execution, and operation orders. The gaining unified command surgeon establishes theater medical policy, which is then promulgated through the AFFOR Surgeon down through the chain of command to the SPEARR Team mission leader. SPEARR Teams may fall under the TACON of the gaining unit, which the team(s) will support, but ADCON and OPCON would normally be maintained at the JTF or component level. When functioning as an independent medical unit, the SPEARR Team will operate under the direction of the installation/deployed commander or approved civilian equivalent. When augmenting an existing medical resource, the SPEARR Team will report directly to the senior ranking medical officer or in accordance with the command and control structure of elements such as the EMEDS/AFTH.

4.2. Local Command Authority: SPEARR Teams will organizationally align as directed by the tasking authority as identified in the deployment messages. When employed to augment existing EMEDS/AFTH assets, the SPEARR Team will integrate into the host's command and control structure. The official commander of the SPEARR Team will be the team's senior ranking officer in the deployed location, but actual clinical/operational leadership will be assigned to appropriate team members on a mission specific basis.

4.3. Multi-National Operations: Command and control of medical operations in joint or coalition environments will be defined in the warning, execution, and operation orders.

SECTION 5- INTELLIGENCE/NATIONAL AGENCY/SPACE SUPPORT

5.1. Intelligence: Accurate medical intelligence is crucial to threat identification and application of appropriate preventative medicine measures. Prior to a deployment for sustained operations, a deployment brief will be delivered to SPEARR Team for the AOR. During the employment stage of an operation, the SPEARR Team will require periodic briefings for their deployed location and for areas they will be transiting while conducting medical operations. The host unit senior medical officer or other designated official US representative (in bare base scenarios) will coordinate communication of medical intelligence information.

5.2. National Agency: The Defense Intelligence Agency (DIA) and its subordinate organization, the Armed Forces Medical Intelligence Center (AFMIC), the World Health Organization (WHO), Pan American Health Organization (PAHO), and the Centers for Disease Control and Prevention (CDC) are examples of primary sources for current medical intelligence.

5.3. Space: Space derived global positioning, satellite communications, intelligence, weather updates, and troop movements are examples of valuable information provided by space based resources. This information is primarily acquired through base support directorates.

SECTION 6 - COMMUNICATIONS/COMPUTER SYSTEM SUPPORT

6.1. Communication and Computer Systems Resources: The communication and computer systems requirements vary depending on the mode of deployment. The man-portable mode will deploy with satellite communications (SATCOM) capability, land mobile radios (LMRs), and a cellular telephone (obtained on a mission specific basis). The one pallet equivalent trailer mode will deploy with the SATCOM, LMRs, cellular phone, one laptop computer, a small printer/fax/copier machine and a digital camera. Minimal weight and cube and the ability to function in austere environments are essential for SPEARR Team communications and systems resources (e.g. – SATCOM must have be capable of functioning on battery power). A software system to record and transmit detailed patient epidemiological information (e.g. - Desert Care II, Global Expeditionary Medical System-GEMS) is included in the SPEARR Team information management/information technology (IM/IT) package, and other software systems may be required to specific AORs for Joint Task Force (JTF) Deployments. Future systems will interface with the Global Combat Support System (GCCS) to provide full integration with other ECS functional areas. The SPEARR Team communication and computer resource package provides word-processing, database management, graphics, and local area network/wide area network (LAN/WAN) interface, and communication for patient movement, situation reports, and logistics capability. All communication and systems resources for the SPEARR Team will be compatible with the EMEDS/AFTH system and Air Force Theater Medical Information Program (TMIP). Worldwide capable cellular telephone resources may be required for reach back capability, and would be most frequently used in operations such as humanitarian relief operations and disaster response. Cell phone use may be limited due to communications security and international system compatibility issues. The SPEARR Team deploys with limited resources and may be independently operational prior to arrival of other USAF resources, making the need for flexible and reliable communication particularly important for mission success.

6.2. Secure/Nonsecure Communications: The SPEARR Team will utilize the AELT's intrinsic SATCOM with STU III phone or host unit resources for secure communication. Nonsecure communication will include SATCOM, LMRs, FAX, and electronic mail through intrinsic or host unit resources. Team members should be familiar with procedures for secure voice communication using the STU III phone in conjunction with the SATCOM.

6.3. Organic Radios: Non-secure radios may be utilized by the SPEARR Team for intra-team communication. Scope Shield tactical radios can be used in the encrypted mode for secure LMR

transmissions. Operation of these devices outside the United States must be approved through the appropriate theater approval authority.

6.4. Classified Information: Classified information that is not under the personal control and observation of an authorized person is to be guarded or stored in an approved locked security container of the host unit.

SECTION 7- INTEGRATION AND INTEROPERABILITY

7.1. General: Integration of deployed SPEARR Teams, as a module within the Air Force EMEDS/AFTH system of UTCs, is critical for successful medical operations. Integration needs to occur with the Line for expeditionary combat support (ECS), EMEDS/AFTH operations and aeromedical evacuation. The SPEARR Team's unique mobility and rapid response in disaster and other contingency scenarios also mandates effective integration and communication with Joint, Air Reserve Component, US national/government/international coalitions and non-government organizations (NGOs). ECS requirements include, but are not limited to water (potable water needed after 48 hours), fuel (one day fuel supply carried with SPEARR Team when authorized), transportation, logistics, and security. Rapid AE is essential to mission success. The SPEARR Team is not capable of furnishing medical supplies and equipment to casualties during the evacuation process due to the limited intrinsic SPEARR Team equipment and supplies. The SPEARR Team allowance standard is completely compatible with the AE system's CCATT teams. To the maximum extent possible, the AE system must provide all en route supplies and attendants. En route medical needs must be coordinated within the AE system. When specialized supplies cannot be prepositioned (use of opportune airlift), the SPEARR Team will provide only those supplies necessary for the patient to safely reach the next level of care.

7.2. Interoperability

7.2.1. Aeromedical Evacuation (AE):

7.2.1.1. The Expeditionary Aerospace Force provides fixed wing, common user aircraft for patient evacuation to support combat arms during contingencies. AE assets will be postured to support the casualty requirements. Air Mobility Command is the lead MAJCOM for worldwide AE, providing forces and equipment to ensure personnel are organized, trained, and equipped to perform both the inter-theater and intra-theater AE missions. The SPEARR Team provides initial stabilization of critically ill casualties, resuscitative surgery and limited perioperative care (up to 24 hours). The SPEARR Team has no prolonged inherent holding capability (a maximum of 4 critically ill patients simultaneously for up to 24 hours; a total of up to 10 patients over 48-72 hours); therefore, rapid AE support or timely integration into a larger medical unit is critical to mission success.

7.2.1.2. A prerequisite for rapid AE support is the simultaneous deployment of an Aeromedical Evacuation Liaison Team (AELT). The AELT should be co-located in close proximity with the SPEARR Team. The size of the AELT will be situational-driven; however, a two-person team consisting of a flight nurse or Medical Service Corps officer and one radio operator is ideal for

most situations. The flight nurse is preferred because of the clinical as well as administrative capabilities he/she brings to the multifunctional, integrated AELT/SPEARRR Team UTC package. Ideally, the AELT will deploy with its fully loaded HMMWV (total equipment, supply and vehicle package of only two pallets), which will provide it with food, water, and shelter. However, if necessary, the AELT will deploy with only backpacks containing communications equipment, and minimal food, water, and shelter. The preferred communications equipment for the AELT is an International Maritime Satellite (INMARSAT) telephone, secure telephone, and a military satellite communication set. The AELT will coordinate with the AE Cell in the applicable Air Mobility Division, and the Patient Movement Requirements Center, as appropriate, to ensure rapid patient flow to appropriate levels of care. The AELT will also provide the AE expertise to ensure required information, especially unique requirements such as equipment/medication needs, are provided to the AE system, and patients are properly prepared for evacuation.

7.2.1.3. The key to successful AE coordination is thorough planning by the AEF/Theater planning function, in close communication with the SGX Operations office at HQ AMC. The specific contact point at HQ AMC/SGX is the deployment office (SGXO; DSN 576-3389 or 576-1913 for 24-hour available contact), which has a depth of experience in planning for AE operations and can provide valuable assistance to the AEF/Theater planners. The following are important issues that need to be resolved before deployment orders are written:

7.2.1.3.1. What are the potential casualties expected from the overall deployment, i.e., gun shot wounds, dehydration, motor vehicle accidents, gastrointestinal disorders? Of these potential casualties, which ones would normally result in aeromedical evacuation, and the estimated acuity/workload for the casualties?

7.2.1.3.2. Where will the intermediate staging base (ISB) be located, how far is the ISB from the deployment location, and what kind of MTFs, especially U.S. military MTFs, are located in the AOR? Generally speaking, the farther away the ISB is from the deployment location, the greater the need to locate AE elements such as AELTs, AE crews, CCATTs, and Patient Movement Items (PMI) teams near the deployment location.

7.2.1.3.3. How far is the SPEARRR Team site from the nearest airfield capable of handling USAF fixed wing aircraft, and how will patients be transported from the SPEARRR Team site to this airfield? More specific, what kinds of transportation assets are readily available in the local area (Army Medevac, host nation ambulance service, U.S. military vehicles of opportunity)?

7.2.1.3.4. What will be the airlift operational tempo at the deployed location and the ISB? Presumably, the higher the tempo, the easier it will be to secure lift for AE.

7.2.1.3.5. What Patient Movement Items (PMI) issues should be considered, such as whether to deploy a PMI team, what PMI equipment should be placed in standby for exchange with the SPEARRR team, and how will PMI be transported from PMI centers to the SPEARRR Team location. Many AE patient movements require PMI equipment to be moved with the patient. Since the SPEARRR Team has a very limited amount of equipment, they cannot be depleted through aeromedical evacuation of their patients.

7.2.1.4. The Expeditionary Critical Care Team UTC (FFEP1) within the SPEARR Team UTC force package is completely interoperable with the AE system's Critical Care Air Transport Teams (CCATTs). The Expeditionary Critical Care Team provides critical care support for the EMEDS/AFTH system on the ground and is not specifically designed or trained for air transport of patients. Civilian AE assets may be utilized depending on the scenario.

7.2.2. EMEDS/AFTHs: The SPEARR Team is a modular component of the EMEDS-Basic and builds to a complete EMEDS/AFTH or mature AFTH when additional UTCs are added (refer to EMEDS/AFTH CONOPS).

7.2.3. Joint and Total Force Operations: The SPEARR Team has been developed, along with the rest of the EMEDS/AFTH system, to be interoperable within a Joint theater of operations. Equipment and supply packages, doctrine, and training principles all emphasize the current requirement to function in the majority of mission scenarios as an integrated, Joint service medical capability. Specific modifications to the SPEARR Team were developed for effective Total Force integrated operations. Total Force assets, such as the Air National Guard's Care Force Teams, were researched to ensure with Total Force manpower, equipment, and doctrine.

7.2.4. US National/Government Support: The SPEARR Team's mission flexibility make it a valuable resource for US National/Government applications such as presidential support missions and regional field support of other federal organizations such as the Federal Bureau of Investigation. These applications require detailed coordination and approval.

7.2.5. Coalition Forces: The SPEARR Team concept was modeled after and developed concurrently with similar international medical assets (e.g. – British Field Surgical Teams and the Chilean ERSAM module). The current international environment and the US National Security doctrine of Global Engagement mandate a SPEARR Team requirement to integrate effectively in international coalition operations.

7.2.6. Nongovernment Organizations (NGOs): The rapid response of the SPEARR Team permits tasked emergency medical and surgical support to a contingency/disaster response force, which is usually provided significantly earlier than similar support provided by NGOs. Phased response would include SPEARR Team medical coverage during the early or "vulnerable" phase of the deployment (5-7 days) followed by the larger NGO/or other asset deployment later in the response.

SECTION 8- SECURITY AND FORCE PROTECTION

8.1. Operations: The Defense Forces Commander (DFC) or civilian counterpart shall be responsible for all security operations, physical security, and force protection issues. Current threat assessment and threat condition (THREATCON) will drive local security measures.

8.2. Physical Security: SPEARR Team personnel are responsible for following all personal protective measures as outlined in theater security briefings, force protection requirements, and OPODS. All SPEARR Team members will attend security, antiterrorism, and weapons

training as required. Defense Forces Commander and security forces will provide technical advice and recommendation to SPEARR Team personnel, as requested. SPEARR Team members may be issued weapons when authorized in the Deployment Order.

8.3. Personal Protection: SPEARR Team personal protection includes physical security and also requires theater specific personal protective measures and personal protective equipment. The adequate force protection (including personal protection issues) of deployed UTC personnel is the responsibility of the local MTF and MAJCOM command structure. Funding and acquisition issues for deployed UTC personal protection are the responsibility of the same command structure.

SECTION 9 - TRAINING

9.1. Training: Initial training for personnel assigned to the SPEARR Team UTC force package will be coordinated according to the AF Master Training Plan and AFI 41-106. The training will be fully integrated with other medical readiness training such as that for the EMEDS/AFTTHs. Training will be provided to individuals, with priority given to those UTCs scheduled to be the first to deploy. Maintenance of clinical skills and team training will be incorporated into continuous and annual sustainment training programs at the unit level. All assigned SPEARR Team members must participate in this training. Any formal training associated with the EMEDS/AFTH or other gaining medical units will be accomplished and documented. Training may be conducted in conjunction with sponsored local training or in conjunction with operational deployments. A deployable SPEARR Team training program has been tested and will be formalized. Joint training is encouraged to foster effective operational relationships and to enhance capabilities of each service's deployable medical assets. Joint activities for the SPEARR Team may include experiences at the Joint Trauma Training Center (JTTC) or Joint Readiness Training Center (JRTC). Personnel assigned to force package UTCs should be familiar with all SPEARR Team operations and equipment. SPEARR Team personnel will also require a detailed knowledge of larger EMEDS/AFTH integrated operations. The roles of individual SPEARR Team members will expand during deployments and they will be expected to perform in multi-functional roles.

9.2. Ancillary Training: SPEARR Team members must complete additional training prior to deployment. Weapons training, driver's training for military vehicles, land navigation, communications, hazardous cargo, weapons courier and SPEARR Team specific WMD training are required. At least two members must be trained in medical logistics principles to include reachback resupply. These additional training items will be introduced during formal EMEDS training. All team members are required to have HMMWV training to increase the team's flexibility and lessen the need for tactical ground transportation. All physician members of the SPEARR Team must be current in Advanced Cardiac Life Support (ACLS) and Advanced Trauma Life Support (ATLS). Nurse members of the SPEARR Team should attend the Trauma Nurse Casualty Course (TNCC) and it is highly recommended that they attend ACLS and ATLS courses. It is recommended that surgical technicians (authorized substitutions on UTC FFMFS) complete ACLS, ATLS, and/or Basic Trauma Life Support (BTLS). The Combat Casualty Care Course (C4) is strongly recommended for all SPEARR Team members. Physician members of the SPEARR Team are encouraged to attend the Aerospace Medicine Primary (AMP) and the

Global Medicine course (USAFSAM). All SPEARR Team members are encouraged to attend the Critical Care Air Transport Team (CCATT) course, Combined Humanitarian Assistance Response Training (CHART) course, Humanitarian Emergencies in Large Populations (HELP) and Federal Emergency Management Agency (FEMA web based and/or live) disaster management courses and AOR specific foreign language training.

9.3. Medical Readiness Training: Training will be IAW AFI 41-106, *Medical Readiness Planning and Training*, and will cover the entire spectrum of deployed medical operations and all phases of deployment, employment, and redeployment. Units tasked to support SPEARR Teams will tailor training to reflect the full spectrum of operations for which the UTC may be tasked in the respective OPLAN. The majority of SPEARR Team members are assigned to UTCs within the EMEDS/AFTH system and will therefore be fully integrated into the EMEDS/AFTH training program.

9.4. Team Training on Equipment: The SPEARR Team equipment package will be assembled at least annually for inventory, preventive maintenance of equipment, and team training as part of maintaining overall mission readiness. More frequent team training with equipment and supplies is strongly encouraged.

SECTION 10 - LOGISTICS

10.1. SPEAR Support Requirements: The SPEARR Team is responsible for coordinating all operating support required during deployments including power, security, billeting, rations, shelter, water, transportation, waste disposal, communication, re-supply of medical items if necessary, and any other items determined necessary for the SPEARR Team to accomplish its mission.

10.2. War Reserve Material (WRM): The objective of the medical WRM program is to identify, acquire, pre-position, and maintain the materiel needed to support the forces and missions specified in Defense Planning Guidance and contingency plans. AF Manual 23-110, AF Medical Materiel Management System (Volume V), provides guidance for WRM assets, outlining when commanders may loan, use, and expend WRM assets. WRM program authorizations are published annually by HQ USAF/SG in the Medical Resource Letter, which contains personnel and equipment UTC taskings and storage locations. Medical materiel for SPEARR Team deployable assets is identified in the SPEARR Team Force Package AS. A common user name list is included as an attachment to the CONOPS of the individual UTCs to improve SPEARR Team and logistical integration.

10.3. Equipment: The SPEARR Team is comprised of four UTC packages: the FFMFS (Mobile Field Surgical Team) package has five back-packs, a 1 kW generator, a fuel container and two folding NATO litters; the FFGL2 (Prevention Aerospace Medicine Team) package has two back-packs and two hand-carried medical bags; the FFEP1 (Expeditionary Critical Care Team) has three back-packs and eight hand carried medical bags, and the FFEE8 (Expanded Capability and Infrastructure Module) has six medical supply bags and also includes large SPEARR Team infrastructure items such as shelters (single large shelter and two small sleep shelters), large (10 kw) generator, and the trailer. The first three UTC packages (manpower and equipment) are

designed to be used in a man-portable mode and can be transported in vehicles of opportunity such as HMMWVs (three required for team members and equipment), civilian or military vans or pick-up trucks (two required), UH-60 Blackhawk helicopters (two required), an OV-22 Osprey tilt-rotor aircraft (one required), or larger aircraft such as a C-130. . Each set of backpacks and medical bags is designed to carry a portion of the team's capability to treat primary care conditions and critically ill or injured patients. All backpacks and the medical bags are required for the team to function as designed, and be able to maintain "man-portability." Additional equipment in the fourth UTC (equipment only) includes: a 32 by 20 foot shelter, two team sleep shelters, trailer which is sling loadable and is equivalent to one pallet when loaded on an airframe, portable power (10 kW and 1kW generator), environmental control systems (separate heating and cooling systems are modular and may be inserted for specific missions/climates), computer/communications equipment, and additional clinical equipment and supplies. SPEARR Team equipment and personnel must be deployed together in the same carrier to ensure IOC/FOC timelines are achieved.

10.4. Personal Equipment: The SPEARR Team is expected to function in all but the most extreme environmental conditions. Personal equipment items (including personal protective equipment) should be provided at home station IAW AFI 10-403, *Deployment Planning*, AFMAN 23-110, *USAF Supply Manual*, and MAJCOM policy. The provision of appropriate personal protective items is absolutely essential for SPEARR Team mission completion and team member force protection.

10.5. Storage Requirements: SPEARR Team assets are stored in a "ready" mode for rapid deployment while in-garrison. At a minimum, storage facilities will provide security and adequate environmental controls to prevent damage or loss of potency to dated and temperature-sensitive material. All surgical instrumentation will be stored in a ready to use condition (sterilized). All battery-operated equipment will be continuously charged so that they are operational upon notification of the warning order. The ten kilowatt and one kilowatt (MFST) generators will be stored in a condition ready for deployment (drained, purged, and with necessary HAZMAT documents). Other hazardous material (e.g. – fuel and fuel containers) will be ready for deployments at all times.

10.6. Supplies: Equipment and supplies are designed to provide single mission support for up to ten serial emergency or damage control surgeries (including perioperative care) or 20 non-operative resuscitations, and public health/primary care for a PAR of 500 personnel. The design and portability of the team does not allow for compressed gas resources and oxygen concentration systems are currently used for medical oxygen supply. There are significant limitations in the amount of crystalloid resuscitative fluids that can be carried in the man portable mode and additional fluids are transported in the SPEARR Team trailer mode. The support or gaining unit, in accordance with the principles of Agile Combat Support (ACS), will coordinate SPEARR Team resupply. Each UTC in the SPEARR Team force package has an additional equipment package that allows expansion of clinical capability or casualty care sustainment. Items such as rations, water, and fuel are on checklists and are acquired at the time of deployment (refer to SPEARR CONOPS attachment). The MFST expansion package allows for the emergency medical or surgical care of 5 additional patients. The ECCT expansion package allows for the care of 5 additional critically ill, injured or perioperative patients for up to 24

hours each. The PAM ADVON and Expanded Capability and Infrastructure Package expansion or resupply packages provide additional preventive medicine /public health and primary care capability. The initial ECIM expands the PAM ADVON capability from a PAR of 200 up to a PAR of 500 personnel. The optimal SPEARR Team mission length is 5-7 days and anticipated longer deployments or increased threat or PAR should drive medical planners to task larger assemblages such as the EMEDS Basic. The SPEARR Team force package UTCs expansion or resupply packages ensure that the transition to larger UTCs occurs without interruption in the quality of casualty care capability and also provides more precise modular resupply of these UTCs once they are embedded in larger assemblages (including Joint or coalition scenarios).

10.7. Biomedical Equipment Maintenance: SPEARR Team medical equipment maintenance is provided on site at the operator level only, unless the team is deployed with a larger medical unit such as the EMEDS Basic. Equipment repairs beyond the capability of the operator will be managed by priority equipment replacement, or by a Biomedical Equipment Technician in larger medical force package, such as the EMEDS Basic. All equipment must be reliable (e.g. – heater and generator) and adequately maintained prior to deployment.

10.8. Sustainment: The recommended SPEARR Team mission employment phase is five to seven days for contingency response missions. The SPEARR Team is designed, for crisis action and deliberate planning purposes, to serve as a short stand-alone or initial module for an EMEDS Basic or larger asset. A 10 day resupply or sustainment package provides support for SPEARR Team missions beyond seven days, consistent with other EMEDS assemblages which have initial seven day supply capability and 10 day resupply capability. Reachback resupply and sustainment must be considered during the planning process to insure adequate transportation networks are available in theater of operations to ensure supplies will be deliverable within established reachback timelines (72 hours). Refer to Expeditionary Medical Logistics (EML) CONOPS when planning medical logistics reachback. Line item requisitioning capability may commence within 24 hours after arrival.

SECTION 11- SUMMARY

11.1. Summary: The SPEARR Team UTC force package is a lightweight, mobile, highly capable AFMS medical asset that provides public health/preventive medicine, primary care, flight medicine, advanced casualty resuscitation, emergency/damage control surgery, emergency medical care, critical care and aeromedical evacuation coordination. SPEARR Team casualty care and assessment has been developed for a population at risk of 500 personnel for a period of 5 to 7 days. All team members are multifunctional and are prepared to provide a broad scope of care for the full spectrum of EAF contingency operations. The SPEARR Team is an extremely mobile and flexible asset and is able to operate independently for brief periods of time or augment existing capabilities of host medical units. Force health protection is promoted by inserting a wide spectrum of medical capability in a very small forward footprint. The SPEARR Team force package is comprised of UTCs within the EMEDS/AFTH system and the force package CONOPS and allowance standards have been developed to be fully interoperable with the CONOPS for the Expeditionary Medical Support and Air Force Theater Hospital system.

GLOSSARY OF TERMS

ACC	Air Combat Command
ACLS	Advanced Cardiac Life Support (Course)
ACS	Agile Combat Support
AE	Aeromedical Evacuation
AEF	Aerospace Expeditionary Force
AEG	Air Expeditionary Group
AELT	Aeromedical Evacuation Liaison Team
AETC	Air Education and Training Command
AEW	Air Expeditionary Wing
AFMIC	Armed Forces Medical Intelligence Center
AFMS	Air Force Medical Service
AFFOR	Air Force Forces
AFTH	Air Force Theater Hospital
AFWUS	Air Force Worldwide UTC Availability Tasking Summary
AMP	Aerospace Medicine Primary (Course)
AO	Area of Operations
AOR	Area of Responsibility
ATLS	Advanced Trauma Life Support (Course)
BAS	Battalion Aid Station
CENTAF	Central Air Forces
CSH	Combat Support Hospital
CCAT	Critical Care Air Transport (Teams)
CCP	Casualty Collection Point
CHART	Combined Humanitarian Assistance Response Training (Course)
CINC	Commander in Chief
CONOPS	Concept of Operations
CRNA	Certified Registered Nurse Anesthetist
DFC	Defense Forces Commander
DIA	Defense Intelligence Agency
DNBI	Disease Non Battle Injury
EAF	Expeditionary Aerospace Force
ECS	Expeditionary Combat Support
EMEDS	Expeditionary Medical Support
EPW	Enemy Prisoners of War
FAST	Flying Ambulance Surgical Trauma (Team)
GEMS	Global Expeditionary Medical System
GPMRC	Global Patient Movement Requirements Center
HELP	Humanitarian Emergencies in Large Populations (Course)
HMMWV	High Mobility, Multi-Purpose Wheeled Vehicle
HUMRO	Humanitarian Response Operation
IOC	Initial Operating Capability
IW	Information Warfare

JTF	Joint Task Force
LAN	Local Area Network
LBE	Load Bearing Equipment
LOAC	Law of Armed Conflict
MASF	Mobile Air Staging Facility
MEFPAK	Manpower and Equipment Force Packaging
MFST	Mobile Field Surgical Team
MTF	Medical Treatment Facility
MTW	Major Theater War
NBC	Nuclear, Biological, Chemical
OPCON	Operational Control
OPORD	Operation Order
PACAF	Pacific Air Forces
PMI	Patient Movement Items
RAM	Resident in Aerospace Medicine
SOF	Special Operations Forces
SOUTHAF	Southern Air Forces
SPEARR	Small Portable Expeditionary Aeromedical Rapid Response (Team)
SSC	Small Scale Contingency
TMIP	Theater Medical Information Program
TPMRC	Theater Patient Movement Requirements Center
TUCHA	Type Unit Characteristic (File)
USAFE	United States Air Forces Europe
UTC	Unit Type Code
WAN	Wide Area Network
WMD	Weapons of Mass Destruction
WRM	War Reserve Material