Air Force Special Operations Command Special Operations Surgical Team (SOST) CONOPS

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ABSTRACT

The call for small surgical teams to provide direct support to SOF units has gained intensity over the last seven years. In July of 2003, the need for SOF specific Level II (including forward surgical support) was one of the top SOCOM medical lessons learned from OEF. In October of the same year, SOCOM put forth a tasking to develop organic resuscitative surgical capability within SOF.

To respond to this tasking, the components looked to the existing smallest surgical units present in the services’ inventories such as the FST, FRSS, and MFST. Army Forward Surgical Teams (FST) and Navy Forward Resuscitative Surgical Squadrons (FRSS) are designed to provide trauma care during maneuver warfare to battalion-sized forces and have delivered exceptional results in OIF. But even though these units are small compared to traditional Level III surgical hospitals, their size is too large to support emerging and short duration SOF missions.

While other components were hindered by the lack of very small surgical units within their services’ conventional inventories, AFSOC was able to rapidly acquire a few Air Force Mobile Field Surgical Teams (MFST) and begin developing the training, tactics, techniques, and procedures to meet the SOF community’s needs. In doing so, it became clear that “SOF specific” surgical units serve a unique customer, must work within unique constraints, and must be agile enough to provide unique solutions. This paper presents the experiences and lessons learned in the ongoing development of the AFSOC Special Operations Surgical Team (SOST).

AFSOC SOST HISTORY

In 1995, the AFMS began developing the Mobile Field Surgical Team (MFST). The goal was to provide the absolute smallest personnel and equipment package that could provide trauma surgical care in the austere environment of a newly established air base. The resulting five person team with man portable equipment became one of the core building blocks of what would later become the Air Force EMEDS system.

Throughout its early development, the designers recognized its potential as a stand alone resuscitative surgical package that, because of its size, could uniquely support SOF forces. The pilot unit for the MFST, Wilford Hall Medical Center, developed a rotational coverage between their ten teams to ensure one team was always on standby status for AFSOC taskings. One of these teams was responsible for the first life saved by surgeons during Operation Enduring Freedom. Although the effectiveness of the MFST was recognized by AFSOC early in OEF, the sourcing of these teams out of conventional medical treatment facilities (MTF) posed significant logistical problems in promptly responding to emerging mission. Critical issues involved difficulties extracting teams out of the MTF for training and missions, monthly changes in personnel on alert status (preventing adequate reading in to classified programs), lack of SOF hardening, and geographic separation from the SOF units with which they were tasked to deploy.

As it became clear that these issues posed insurmountable hurdles to maximizing the effectiveness that these teams could provide to AFSOC, in 2002, the AF SG directed the creation of two MFSTs that would be stationed at Hurlburt Field and be operationally tasked to support AFSOC. The teams were rapidly built and deployed in support of SOF forces engaged in the invasion of Iraq four months later. Although by all reports they performed well during the invasion, the teams returned to home station committed to revising the CONOPS and equipment packages of the conventional MFST to better address the unique mission requirements that SOF forces demanded. With over 9000 deployed man days, 14 deployments and greater than 100 resuscitative surgical
procedures performed, the culmination of lessons learned concerning the delivery of austere surgical care is reflected in this AFSOC Special Operations Surgical Team (SOST) article.

**AFSOC SOST Doctrine**

Traditional joint level II provides patient holding and elevation of care from the CCP. Radiology, lab, and dental care are usually also available at this level. Resuscitative surgical care has traditionally not been codified into level II but rather exists as an independent augmentation with or without co-located level II units. In general, when size and numbers are not an issue, a robust level II and attached resuscitative surgical unit provide an ideal platform to deliver forward surgical care to military deployments. However, due to the very nature of SOF missions, size and personnel numbers have to be kept exceedingly small if there is any hope to be able to include advance trauma care on the mission.

Resuscitative surgical care is based on the principles of damage control surgery practiced in U.S. trauma center operating rooms. For trauma patients that are in severe or prolonged hemorrhagic shock, protracted surgical procedures to definitively address all injuries have a higher than acceptable mortality and morbidity rate. During the lengthy surgical procedures, the death spiral of acidosis, hypothermia, and coagulopathy results in excessive cell injury and eventual death. Abbreviated surgical procedures with the focused goal of hemorrhage control and limiting continued contamination are rapidly performed before returning the patient to an ICU. In the ICU the patient is warmed and resuscitated while coagulation issues are addressed. Once stabilized, the patient is returned to the operating room for more definitive surgical procedures that will restore normal anatomy and anatomic function.

Although forward surgical teams are often required to treat more severely injured patients, they lack the larger amount of Class VIII resources available to modern U.S. trauma centers. Military resuscitative surgery incorporates the principles of civilian damage control surgery into surgical procedures at forward locations to, quickly and economically, convert unstable patients to stabilized patients capable of withstanding evacuation to higher echelons of care. The vast majority of procedures performed by AFSOC surgical teams are not considered definitive and will require evacuation for additional surgical care within the next 48 hours. But by utilizing resuscitative surgical principles, Class VIII usage is minimized and more patients can receive initial surgical care within a brief period of time.

There is a dictum in SOF medical planning that “a bad day in SOF is one casualty.” Although there are instances of multiple severe casualties occurring in SOF operations, this is thankfully a rare occurrence. Due to the skills of the Operators, effective use of body armor, and precision in mission planning, it is rare that direct action operations produce more than one or two casualties that require prompt life saving surgical intervention. Conventional medical planning focuses on “worst case scenarios” and attempts to provide adequately sized surgical teams capable of effectively managing the patient load that these events could produce. Because of the less than overt nature of SOF mission and the usual requirement to minimize the footprint of SOF operations, the weight and cube of these larger medical units excludes their inclusion on the deployment package for most SOF missions.

AFSOC surgical teams are designed with one purpose – to be small enough to fit into the load plan for almost any mission, fast enough to be able to provide care within ten minutes of arriving at a location, and versatile enough to manage the vast majority of potentially life threatening injuries seen in a SOF environment. In the most typical of SOF casualty producing events, this “Silver Bullet” capability to save one or two lives is the AFSOC surgical team’s primary contribution to the mission. The impact of the AFSOC surgical teams is not only measured by the number of surgical cases performed. Perhaps more importantly, it is reflected in the willingness of SOF commanders and combatants to undertake higher gain / higher risk missions knowing that a capable surgical team is available if casualties are taken.

**AFSOC SOST Mission Capability**

**SOST (FFQE3) Mission Capability Statement**

PROVIDES PERSONNEL TO PERFORM ADVANCE TRAUMA LIFE SUPPORT, SURGICAL STABILIZATION AND LIMITED POST-OP CRITICAL CARE IN SUPPORT OF SPECIAL OPERATIONS FORCES IN LOCATIONS FORWARD OF ESTABLISHED HEALTH CARE SUPPORT SYSTEMS. DEPLOYS WITH FFQES, FFQEE, AND FFQEF SPECIAL OPERATIONS SURGICAL EQUIPMENT. ONLY SUBSTITUTION AUTHORIZED IS ANESTHESIOLOGIST (45A3) FOR CRNA (46M3). GRADE/ SKILL LEVEL SUBSTITUTIONS ARE RESTRICTED IAW AFI 10-403, CH 5. BOS REQUIRED.

Assuming a standard mix of traumatic injuries, AFSOC surgical teams are able to provide resuscitative
surgical care for up to ten surgical procedures and ten trauma resuscitations. As each type of traumatic injury will have different Class VIII material requirements, the degree of severity of injured patients will determine the exact number of surgical patients that can be treated. As the teams have very limited holding capability and the Class VIII supplies for post operative care will have to be drawn against supplies allocated to surgical care, rapid post-operative evacuation is essential to maintain maximal surgical capability.

As the team’s staffing usually only allows the performance of surgical operations in a serial manner, it is expected to take two to four hours for the team to address the third surgical case. As the injury pattern for most SOF mission sets provides only one to two severely injured combatants, this is rarely a problem but medical planners should research the availability of alternate surgical facilities. Regardless of the number of patients, medical planners will need to plan for aeromedical evacuation of post operative patients to the nearest approved surgical facility for continued care of post operative patients. Mission sets expected to produce much higher levels of U.S. casualties should be supported with a larger conventional surgical unit.

**SECONDARY MISSION CAPABILITIES:**

Most conventional surgical units consider themselves tasked with the “consequence management” of the expected outcome of military conflict. They are equipped and tasked to provide care to traumatized combatants that are brought to them. As a SOF unit, AFSOC surgical teams are expected to be prepared to engage effectively in a variety of roles throughout the planning and execution process to best support the JSOTF commander’s attainment of mission goals. Although the primary avenue of this support is in the provision of “silver bullet” surgical care for U.S. forces, there are additional capabilities the teams bring to the fight. These include, but are not limited to:

- Rapid movement forward to respond to emerging need
- Modular employment to meet space limitations within theater
- Limited CASEVAC capability
- Limited trauma response capability
- Limited VIP medical escort capability
- MASCAL plan development
- TCCC training / refresher instructors
- Augment of independent duty medical corpsman clinics
- Site assessment of local medical facilities
- MEDCAP support
- Host nation medical outreach
- Host / Allied forces medical training
- Medical / surgical consulting services
- Civil Affairs / NGO liaison

**AFSOC SOST MANNING REQUIREMENTS**

AFSOC surgical team’s specialty composition is similar to the AF MFSTs that have been employed for over 10 years. Each team consists of a general surgeon, orthopedic surgeon, emergency medicine physician, CRNA, and an OR technician. This composition has proven to be effective in a wide range of mission profiles and provides a great deal of flexibility. AFSOC primary alterations to the MFST standard manning has been the replacement of an OR circulating nurse with an OR technician and the use of CRNAs instead of anesthesiologists. In the following paragraphs, the roles, responsibilities, and justification for each of these positions will be discussed.

In designing the makeup of these small surgical teams, maximal effort was placed in providing the most versatile skill sets into the smallest possible package that could provide competent resuscitative surgical care. While the AFSOC solution may not provide the “best” trauma surgical team composition for certain injuries, the discussion below should demonstrate how the teams are well suited to provide the best possible solution for a wide variety of possible medical scenarios.

In addition, the discussion will report on the non-medical tasking we expect (and train) the team members to perform. It became clear early in the team’s development that functioning in the austere SOF environment required the unit to be able to provide greater self reliance than would be required for a similar unit at a more developed conventional forward airbase. The location of these teams in close proximity to SOF units and under the command and control of line units has been critical in meeting these training requirements. Conflicts over competing priorities have proven to be a hindrance to mission readiness and availability in units under the command of brick and mortar medical treatment facilities. Discussion of these additional duties is pertinent as it addresses the mechanism the AFSOC teams have undertaken to reduce the support small SOF units must provide and, therefore, decrease the medical “drag” on tactical SOF operations.

**ROLE: GENERAL SURGEON (TRAUMA TEAM LEADER)**

**Rationale:** The general surgeon is the medical director for all trauma care and is an essential component to the surgical team. Subspecialists who have maintained a
portion of their practice seeing general surgery patients can be legitimate substitutions as they all have completed full general surgery residency programs. General surgeons are experienced not only with the operative management of trauma but also trauma resuscitations, ICU medicine, non-trauma surgical disorders, and have limited experience with OB/GYN, orthopedic trauma and chronic medical conditions.

**Additional duties:** Back up to EM physician for team medical care, triage officer

**Non-medical duties:** Weapons

**Role: CRNA (Anesthesia Provider)**

**Rationale:** The safe and effective delivery of anesthesia to patients undergoing resuscitative surgical procedures requires experienced providers in this specialty. Although anesthesiologists would be clearly able to perform this task, for a variety of reasons, seasoned CRNAs have proven to be the best fit for these surgical teams. Their experience as prior critical care and emergency room nurses provides a resource for crucial nursing skills in managing patients in the pre- and post-operative setting. Their relative abundance compared to physician anesthesia providers in the AFMS allows for a larger pool of candidates to choose from, ensuring the greatest chance to acquire superior personnel. This has been demonstrated by AFSOC CRNAs having been awarded the AF CRNA of the year award in three of the last four years.

**Additional duties:** Nursing duties, trauma airway management, post op recovery, narcotics manager

**Non-medical duties:** Communications

**Role: Surgical Scrub Technician**

**Rationale:** Having a capable surgical technician who is able to manage the surgical instruments and provide them promptly during a resuscitative surgical procedure is critical to the effective functioning of these small teams. The lack of “scrub” experience for circulating nurses dramatically decreases their effectiveness in this role which is why AFSOC only employs surgical technicians. Their experiences in central sterile supply and logistics have also been of great benefit. AFSOC also trains these individuals to EMT-B levels aiding in their ability to assist during MASCAL and trauma resuscitations.

**Additional duties:** Alternate first assistant, medical logistics, limited bio-medical maintainer, EMT-B

**Non-medical duties:** Non-medical logistics, mechanics, military vehicle drivers

**Role: Orthopedic Surgeon (Surgical First Assistant)**

**Rationale:** For non-urgent surgical cases, the prior three discussed positions are the minimum sized team that could reasonably and effectively provide adequate surgical care. For larger trauma cases, the presence of a second set of skilled surgeon’s hands are critical to providing rapid access to actively bleeding sites, to perform the surgery in the least amount of time, and to ensure the best possible surgical outcomes. AFSOC has successfully utilized orthopedists in this role as they have been exposed to trauma surgery within their residency, operate with team general surgeons at home station, and are practicing independent surgeons in their own specialty. Their effectiveness in this role has been not only proven on the AFSOC teams but also in the much greater number of MFSTs within the AFMS inventory.

With the advancement of body armor technology, the relative frequency of severe extremity trauma has markedly increased. Although general surgeons are capable of addressing the majority of life threatening extremity injuries, the orthopedist generally provides these patients with higher quality surgical results due to their expertise in orthopedic trauma. This results in decreased morbidity, faster recovery, and better long-term results for the patient. When deployed, the orthopedist is routinely the most active member of the team addressing muscular-skeletal injuries. The presence of a forward orthopedist frequently acts as a force multiplier by decreasing the number of individuals medically evacuated for conservatively treatable orthopedic issues. Often, these patients can be treated locally and the combatant reinserted into the fight. AFSOC has found that the versatility the orthopedic surgeon provides the team to greatly outweigh the benefit of filling this billet with a second general surgeon.

**Additional duties:** Physical therapy, sports medicine

**Non-medical duties:** Communications, comptroller

**Role: Emergency Medicine Physician (Pre/Post Operative Provider)**

**Rationale:** With the above mentioned individuals fully engaged in the care of the patient on the operating room table, it is critical to have an individual available to manage the care of patients awaiting surgical care or immediately post operative. AFSOC has used ER physicians to great advantage in this role. The emergency medicine physician is trained in the acute management of trauma, evolving critical illnesses, acute airway management, and has ICU medicine experience. They also
function as the OR circulator during surgical cases, run the ER portion of trauma code, and manage post operative patients when the surgeons are engaged in the OR. They are equipped with a small trauma bag that allows them to respond to patients outside the treatment facility. They are the primary physician to transport patients to the next echelon of care.

**Additional duties:** Team physician, trauma response, CASEVAC/MEDEVAC provider

**Non-medical duties:** Training officer, Intel, SERE

**AFSOC SOST Equipment Packages (UTCs)**

The SOST allowance standard is designed to be light, modular, and focused on supporting the unit’s trauma-focused mission requirements. All items on the allowance standards are intended for resuscitative surgery and associated tasks. As these teams are not intended to provide sick call care, the allowance standard does not include any items solely for use in field primary care. In fact, there is not a single pill on the allowance standard. The allowance standard consists of three separate equipment UTCs – Quick Response, Electronics, and Sustainment.

**Quick Response Package (FFQEF)**

**Mission Capability Statement**

Provides resuscitative surgery and advanced trauma support equipment for up to 10 surgeries. Contained in man-portable field packs capable of being transported as checked baggage. Requires shelter of opportunity for operations, augmented by FFQEE and FFQES as required by mission.

The first UTC is the unit’s core equipment package which provides the most primitive package that meets the unit’s mission capability statement. It consists of four bags each weighing less than 100lbs, contains very limited amounts of electronic equipment, and contains no hazardous materials. This allows airline transportation as excess baggage to expedite movement when MILAIR is not available or convenient.

The bags are organized as:

**OR bag:** This bag contains all the instruments and supplies required to perform up to 10 surgical procedures. When opened, this bag lies flat and consists of three separate modular panels that can be quickly separated to be hung from a wall or laid out on a floor. Each compartment is made of see-through material so needed items can be pointed out to a non-team member to retrieve during surgical procedures when the OR tech is scrubbed. Standard items common to all procedures are packaged in individual quick start packs contained on the outside of the bag to allow the surgical tech to begin preparing the surgical field immediately upon arriving at the operating location. Within the bag, items are organized by category allowing “assistants of opportunity” to be quickly briefed on where to locate common items.

**Litter bag:** This bag contains two collapsible litters and four stanchions to be used as the OR table and back instrument table. When the structure of opportunity contains a suitable surface for the back table, the second stretcher will either not be set up (to save time) or be made available for a second casualty. Also included in this bag are fluids to be used for irrigation and/or resuscitation.

**ER bag:** The ER bag contains a smaller trauma ruck that allows the ER physician to provide initial trauma resuscitation evaluations and treatment either immediately upon arriving at the site or at a forward location. The remainder of the bag contains the additional supplies needed for multiple trauma resuscitations as per the unit’s MISCAP.

**Anesthesia bag:** This bag supplies all the equipment needed for the delivery of anesthesia and airway management. All items needed to do an emergency anesthetic in an austere environment are readily accessible in a single compartment for quick access. Contained within the bag is a small ruck that allows the CRNA to initiate a surgical anesthetic. The remainder of the bag contains the additional supplies needed for multiple surgical cases as per the unit’s MISCAP.

By structuring the contents of the bags to the team members using them, the bags can be positioned separately to allow maximum accessibility to the individuals utilizing the contents but keeping them out of the way of efficient flow through the operating room. The diagram of the usual tactical layout of the SOST operating room demonstrates this.
**Electronic Package (FFQEE)**

**Mission Capability Statement**

Provides equipment for surgical and monitoring capabilities when added to FFQES and FFQEF. Can be tailored to meet specific mission requirements. Capable of being transported as checked baggage.

The second UTC primarily consists of the four hardened containers containing communication and electronic patient care devices (portable ventilator, defibrillator, suction, etc). These can be taken as a package or as individual items in order to best meet mission objectives. All together these items weigh less than 400 lbs and fit with ample room left over in a single tri-wall container. This package is not necessary for providing the surgical care in the austere environment, but does increase the efficiency with which patients can be monitored and treated.

**Sustainment Package (FFQES)**

**Mission Capability Statement**

Equipment sustainment package for FFQEF and FFQEE including critical resupply. Increases surgical capacity to an additional 10 surgeries. Contained in man-portable field packs.

The third UTC provides additional supplies for the surgical team including a duplicate OR bag and a more robust operating table. This UTC is designed for those missions where the team will provide hub and spoke surgical support. It allows the team to maintain a complete OR set up at a central site while deploying to a more austere surgical package forward repeatedly. This package is roughly the size of a tri-wall container also.

Including the personal baggage for the five personnel, a surgical team can deploy with all three UTCs and still fit into the space of four tri-wall containers (one half a pallet position). In minimum size configuration, personnel equipment and the first equipment UTC should require about one tri-wall container of space (one eighth of a pallet position).

**AFSOC SOST Employment Criteria**

The AFSOC surgical teams are a low density, high demand resource that must be carefully managed if the capability is to be appropriately utilized. With this in mind, the teams have been designed to be able to be rapidly inserted and redeployed with minimal logistical requirements. As only a handful of these teams exist, it is incumbent on medical planners and line commanders to ensure that the teams are accessed only when operational risk is significantly increased and to promptly redeploy the teams when threat levels have declined. Failure to do so prevents other SOF asset access to these teams and negatively impacts the providers’ clinical currency. Guidelines for the appropriate utilization of the AFSOC surgical teams are as follows:

**Limited duration SOF mission**

Long term requirements for static surgical facilities should be tasked to conventional units. These missions do not utilize the unique capabilities of the AFSOC surgical teams and effectively prevent their use by any other unit. In general, most deployments should be under 30 days with a maximum appropriate deployment being 90 days. Lengths longer than this significantly impact the currency of the providers and limit their surgical effectiveness. With appropriate length taskings, multiple teams can be en-
gaged at one time. With long term static taskings, multiple teams are required to man a single mission.

**Significant risk of trauma casualties** The scarcestness of these teams does not allow them to be kept on hand for long periods when the mission is unlikely to produce casualties. An emerging mission may start with limited planning, difficult to ascertain risks and significant concerns for casualties. Once it has become clear that the risk no longer supports the employment of these teams, they must be redeployed so they can be available for other missions.

**Absence of more robust DOD surgical facilities nearby** In most cases, there is no indication to employ these teams if adequate DOD or U.S. standard surgical care is available in the immediate area. There are rare cases where OPSEC or other operational needs require the unique skills sets the AFOSC surgical team brings despite ready access to adequate conventional surgical care.

**Limited available space** If load plans will support the employment of more robust surgical units (Army FST, Air Force EMEDS, or Navy FRSS), strong consideration should be given to using these teams. As these teams often require two or more pallet positions to provide surgical care, situations where they can be fit into the airlift load plan tend to be larger SOF operations with far greater numbers of persons at risk. These conventional teams are better equipped to address the larger and more static surgical missions.

**Rapid and frequent movements** The AFOSC teams are designed to rapidly set up and tear down their surgical capability. Missions requiring temporary forward positioning of surgical capability for brief intervals are ideally suited to the AFOSC surgical teams design. This ability to forward position surgical capability for periods as short as a couple hours in support of forward direct action missions is a core competency of these teams. Utilizing a hub and spoke concept, these teams can provide surgical coverage over a wide geographic area to multiple fielded units, shifting locations to support units during periods of increased risk. The requirement for advanced field and survival training provided to the AFOSC surgical teams’ members is closely tied to this mission set.

**Rapidly emerging missions** The AFOSC teams’ small equipment size allows for movement by commercial air as well as military air. In addition, as they are assigned to line units, they can be rapidly extracted from hospital duties in order to meet emerging mission requirements.

**“Outside the wire” missions** The AFOSC teams training in convoy operations, defensive tactical shoot-
Advanced Trauma Care for Nurses courses. In addition, all team members take the TCCC course and are expected to become instructors.

SOST members’ field based training is not intended to turn them into “Operators”. They remain at all times Geneva Convention medical providers. But their taskings will often require them to travel “outside the wire” in tactical convoys and they are therefore trained to a higher standard. All team members receive field based instruction on survival skills including ground navigation, communication, search and recovery, signaling, and evasion. Convoy training includes driving military vehicles, immediate action drills, MASCAL management, convoy procedures, and defensive maneuvers. Individual team members are individually trained to higher levels on weapons, communications, logistics, SERE, and other tasks based upon their position as listed above. Field training also includes a series of exercises that challenge all of these skills along with delivery of surgical care in the austere environment.

**AFSOC SOST “TRUTHS”**

1) **Humans are more important than Hardware**
   
   Our SOF Operators are the most important weapon system in SOCOM’s inventory. Surgical teams must be small and agile enough to be where they are most needed in order to provide live-saving surgical care to our combatants. They need to integrate themselves into the planning process so that they can provide leadership the best possible support for the mission at hand.

2) **Quality is more important than Quantity**
   
   Most often it is the experienced clinician and the skill of the surgical team that saves lives, not the large supply stockroom back in the hospital operating room. The equipment taken to the field should be carefully chosen for its versatility, durability, and simplicity. There is no substitute for a trained, motivated, and somewhat stressed medical provider if one wishes to find a unique way to provide quality surgical care with whatever he has available on hand.

3) **Competent SOF surgical teams cannot be created after the emergency**
   
   SOF surgical teams must work well outside the “comfort zone” of most providers. The tactics and doctrine required to meet the mission must be taught, trained, and exercised aggressively for these teams to work effectively in the SOF environment. Habitual relationships need to be developed within the team and with the units they will support if they are to effectively integrate into the mission.

4) **SOF surgical teams cannot be mass produced**
   
   It takes especially motivated providers to repeatedly leave the comfortable confines of the hospital to train with these teams and to practice their trade in the most unforgiving of surgical environments. Selection of non-volunteers or billeting teams in an environment that does not foster team building will not provide for surgical teams that meet the mission requirement for high speed, low drag SOF surgical units.

**SOCOM SURGICAL CARE: THE WAY FORWARD**

The AFSOC SOST has demonstrated that small surgical teams can be effective in providing “silver bullet” trauma care in austere SOF environments. Their successes have quickly raised awareness of their existence and unique capabilities, and increased the demand for these teams. Currently, AFSOC alone cannot meet the SOCOM wide demand to provide this capability across the SOF community, and the demand will certainly continue to increase in the future. It is desired that AFSOC’s lessons learned and SOST doctrine discussed in this article will assist other components as they develop teams with similar capability.

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