Special Operations Individual Medical Equipment Part I – The Major Trauma Kit

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Abstract

Special Operations Forces (SOF) Operators need a variety of individual medical items that can generally be broken down into three types of medical kits: a major trauma kit, to treat major traumatic wounds; an in-use medical kit, to prevent or treat anticipated common medical conditions during operations; and a survival medical kit, to treat minor injuries and ailments when in a survival/evasion situation.

Aim

The aim of this article, the first in a two-part series, is to provide an insight on how an individual major trauma kit for SOF *could* be custom-built.

Operational requirements

The major trauma kit should allow an Operator to self-administer or receive effective treatment for as many field-treatable injuries encountered during operations as possible. At the same time, the kit should be durable and as light and as small as possible.

Conditions for use

The individual major trauma kit can and should be used to treat serious wounds inflicted upon the individual carrying the kit, whether collective medical supplies, such as those carried in the team medic's aid bag, are readily available or not. In addition, it may be used to complement the survival medical kit for non-trauma situations in a survival/evasion situation.

Criteria for selecting kit contents

First of all, the kit has to meet the operational requirements listed. A balance should be sought between light weight and compactness on the one hand, and comprehensiveness on the other. Both requirements are obviously contradictoryand influenced by several mutually interacting factors, such as the range of injuries considered as field-treatable, existing equipment (based on available technology), the accepted scope of practice and medical training level of individual SOF Operators, and time available for initial and refresher medical training.

Being effective means that any item as such is medically effective *and* can be used in tactical situations, in accordance with the principles of Tactical Combat Casualty Care (TCCC).[1] Effectiveness should be evidence-based, not just based on the manufacturer's claims. To be effective, the kits contents should also be easy to access and use when under stress. This often overlooked issue is very important, as the stress of combat will cause fine motor skills to deteriorate.[2] This consideration is even more important if there's a high likelihood that any replacement items will be different from the original. The fact that a piece of kit performs superbly in a hospital emergency room or in a non-hostile pre-hospital environment is totally irrelevant.

"As many field-treatable injuries as possible" means that at a minimum, items essential for the immediate treatment of most, if not all, causes of potentially preventable death on the battlefield, should be included. While also important is having the ability of treating non-life-threatening injuries so as to give some

comfort to wounded Operators, allowing them to stay in the fight. Based on data from the pre-Global War on Terror causes of death on the battlefield, there seems to be a general understanding that in order to avoid between 70 to 90% of all the potentially preventable deaths, there should be an additional focus on the ability to treat massive extremity bleeding and tension pneumothorax.[3] A capability for advanced airway management may be added since despite its low occurrence rate,[4] fatal upper airway obstruction can be successfully treated in the field. Experience from recent operations seems to confirm these priorities for SOF.[5]

Being durable implies the kit has to withstand exposure to the influences of environmental conditions – mainly water/humidity and temperature extremes – and physical pressure during tactical evolutions, while its contents have as long a shelf life as possible.

Contents should reflect the threat and the general environment Operators are working in. This implies that the contents of one's trauma kit *may* vary with a unit's mission profile (e.g. a vehicle-borne direct action mission in urban terrain may require one – and an amphibious special reconnaissance mission may require another) and hence, may either be modular or contain items that are doubled in different kits.

No matter how good an item is, non-availability makes it useless, in which case an acceptable substitute should be identified. Price, distribution restrictions of controlled medicine at individual Operator level, late or limited availability in a unit's supply system, insufficient production rates, etc. may all cause an otherwise good product to be unavailable.

The number of items which cannot be easily used on oneself should be limited to the absolute minimum whenever possible, so as to optimize the potential for self-aid.

Finally, contents should be selected so they can be used in accordance with the tactical-medical protocols used by the Operator's unit.

Possible contents

Taking into account the above criteria, possible contents are listed below:

Tourniquet(s)

A tourniquet is required to stop massive hemorrhage of extremities during the care under fire phase,[6] irrespective of the question whether or not the bleeding can be stopped by any other method, the tactical situation usually leaves no other feasible option for effective hemorrhage control. During the subsequent tactical

field care phase,[7] a tourniquet can be used to stop otherwise uncontrollable extremity bleeding.

In spite of the lack of statistically significant data currently available, it seems reasonable to assume that, based on a single Israeli study, two-thirds of tourniquet applications occur on lower-limbs and one third on upper-limbs.[8] There is thus little doubt that lower-extremity bleeding deserves more attention, especially as it is more difficult to achieve effective arterial occlusion in lower extremities than in upper.[9] However, even with only half as many occurrences of severe upper-extremity bleeding, the need for one-handed tourniquet application is required for those routinely operating in small patrols.[10]

Two studies show that in over 18% of reviewed cases, more than one tourniquet was used on the same casualty.[11,12] The question whether all tourniquets were really indicated in each case is irrelevant, as they will be applied whenever it is believed they're needed, in accordance with TCCC guidelines. If more than one in six casualties with severe extremity bleeding may require two tourniquets, it could be prudent to include at least two in an individual kit. The second tourniquet can also be applied next to the first if a distal pulse is still present.[13]

Appropriate tourniquets should be simple, without complex internal mechanical devices that cannot be seen, and which may malfunction unbeknownst to the user.

Care must be taken to ensure the latest version of an approved tourniquet has been selected. Some tourniquets have been modified over time, based on feedback from the field where some shortcomings were identified, without their names being changed. These changes are often not apparent to the uninitiated.

For SOF units routinely operating in a maritime environment, sustained salt water exposure is an important concern, as very few tourniquets are suitable.[14]

Hemostatic dressing

As incompressible hemorrhage may occur at sites not amenable by a tourniquet. A hemostatic dressing may be required to stop heavy external bleeding that

cannot be stopped by pressure with a conventional dressing alone, during the tactical field care phase.[15] When selecting a hemostatic agent, a loose granular or powder form should be avoided since these cannot be used for self-aid and there may also be a serious risk of the product being washed away by blood. A hemostatic dressing, depending on the type, may require a gauze dressing during its application, as well as a bandage to hold the hemostatic dressing in place after its application. Note that some types of hemostatic dressings are erroneously called bandages, which may be misleading as to the actual adjuncts required.

Wound dressings and bandages

To treat a serious combat wound not requiring hemostatic agents, two items are required: sterile gauze to provide pressure directly onto the bleeding vessel and a bandage to keep the gauze in place and maintain direct pressure, while freeing the hands of the care provider.

The bandage – whether a simple stand-alone bandage or integrating a wound pad (i.e. a field dressing) – should be easy to apply, provide pressure on the wound, and have an integral securing device that doesn't come easily undone by accident. If the bandage is not elastic, such as the gauze bandages of the standard military field dressings that have been used for decades, it will be virtually impossible to reach the same amount of pressure achieved by elastic bandages. On the other hand, if the bandage is too elastic, it will require more force to apply sufficient pressure, and may tear holes in itself when applied.[16] In addition, it may be beneficial to have self-adherent properties or intermediate hook and loop strips ensuring the bandage doesn't completely unroll if the ends are accidentally dropped.

Military field dressings usually combine a bandage with a sterile compress or wound pad in between both ends of the bandage. These are also known as field dressing, first field dressing, field first-aid dressing, battle dressing, or battle pack.[17]

In spite of incorporating an integral, yet thin, sterile compress, it does not replace the gauze required to pack deeper into a bleeder. Whereas a more voluminous gauze dressing can be used in combination with a simple elastic wrap, and is usually be the less expensive option.

Gauze dressings come in several shapes and sizes, such as packages containing multiple square pads, rolls, or folded gauze strips. There is now a versatile field dressing containing gauze stored in and accessible from a compartment behind the wound pad. New types of gauze incorporating hemostatic properties are becoming available. While greater flexibility may be offered by a single device, traditional gauze can also be used for other applications not warranting the use of much more expensive hemostatic gauze, e.g. to dress superficial wounds.

Although many nations have been issuing a single field dressing to deployed personnel, the requirement to carry at least two can be found in several U.S. and British tactical manuals. Not only do combat casualties often have multiple injuries,[18] many have multiple wounds on more than one body part.[19] Where traditionally the most common pattern of injury on a conventional battlefield was multiple small fragment wounds of the extremities,[20] there has now been a shift towards a significantly larger proportion of usually more severe injuries from bullets in recent urban combat operations,[21] including Special Operations in an urban environment.[22]

Note that a second field dressing should never be applied on top of another field dressing that is unable to stop a bleed, as often recommended in many first aid classes, as this will serve no other purpose than to hide the still ongoing underlying bleeding.

While carrying more than one seems reasonable, the dressing's size should also be considered. Future studies on contemporary wound patterns, linked to the occurrence of improvised explosive device attacks in current counterinsurgency operations, may suggest each Operator carry at least one large field dressing. Operational experience has shown that when an abdominal (i.e. large-surface) bandage is required, it has to be available, there is no reliable substitute.[23]

Chest seal(s)

A large, well-sticking chest seal is recommended for the treatment of an open pneumothorax. There are a few alternate options are available. Paraffin gauze has been used as an occlusive dressing; however, care must be taken to not get it stuck in the chest wound as there is concern of complications when cleaning the chest cavity during surgery. Plastic or aluminum foil laminate will require strong tape (applied on all sides) or a thick pad maintaining continuous pressure to the dressing. Purpose-made chest seals – some have one or more one-way valves – will circumvent all these issues. The valves may help in preventing the development of a tension pneumothorax, but the fundamental requirement is the ability to stick well to a chest covered by body fluids, which should not be taken for granted. It may be recommended to carry more than one chest seal,[24] and some manufacturers now offer a single package containing two occlusive chest dressings, with at least one without a valve, in order to reduce cost.

Catheter for needle decompression

A catheter should be available to perform a needle decompression of the chest if a tension pneumothorax develops. It is an effective and easy procedure to treat a life-threatening condition.[25] The catheter's diameter should be at least 14 gauge, with which a needle thoracocenthesis works very well,[26] and may be as large as 10 gauge.[27] A minimum cannula length of 4.5cm, as previously recommended,[28] may be too short to reach the pleural cavity in a significant percentage of patients due to chest wall thickness,[29] especially in a military population, where an 8cm catheter seems to be more appropriate.[30] Although an internal Department of the Army memorandum makes the use of a 3¼" catheter imperative,[31] the benefit of this (much more expensive) longer catheter has been questioned by some highly-experienced field practitioners,[32] since a normally insufficient cannula length catheter of 2" may be overcome by inserting the catheter at the mid-axillary line, instead of the commonly-used mid-clavicular line.[33] Since there are reports of pre-hospital needle decompressions being performed so close to the heart that cardiac or major vascular injuries almost occurred,[34] this may also be safer.

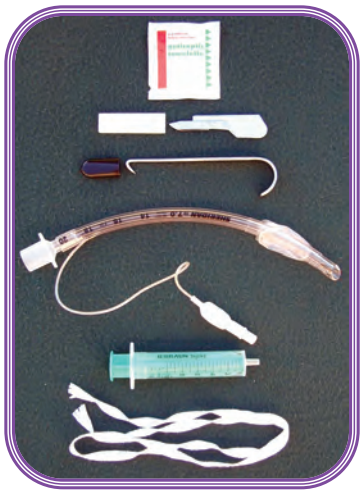
Airway management kit

A basic airway management kit consists of nothing more than a nasopharyngeal airway (NPA) and preferably – especially in a dry, dusty environment – a small lubricant sachet, although water may be used instead to lubricate the airway.[35] Intended to keep an airway open when there is a risk of airway obstruction caused by the tongue falling back, it is not absolutely required, as the same effect will be obtained by placing the casualty in a proper position. Placing an unconscious casualty in the semiprone recovery position may be required anyway, even with an NPA in place, to prevent aspiration of blood, mucous, or vomitus.[36] If an NPA is to work well, it shouldn't be too short, nor too long. Tube length is much more important than its width, and correlates to a person's height. A 130mm long NPA is suitable for the average 163cm person and a 150mm NPA suitable for the average 183cm person.[37] An NPA with a big flange is more convenient than a model requiring a safety pin through the smaller flange.

A surgical airway kit will provide the tools for establishing the advanced airway of choice in the tactical environment SOF operates in. It may consist of a disinfecting wipe, scalpel, tracheal hook (to stabilize the larynx), tube, syringe (to inflate the cuff), and securing strap.

The scalpel will often be a size 10, due to common availability. Other types, such as a number 11,[38] number 15,[39] or number 23[40] scalpel have been suggested, but difficulties to obtain this blade and associated training issues may preclude this option.

The tube is usually a cuffed 6.0 to 7.0mm endotracheal (ET) tube,[41,42] that has been shortened on purpose. A modified standard ET tube comes at only a fraction of the price of purpose-built cricothyroidotomy tubes, making it affordable. Size and cost will usually not warrant the inclusion of a local anesthetic and the means to apply it in an individual-level kit, unless a small pre-filled syringe is used. Cutting the skin will certainly



hurt a conscious casualty, but the lifesaving nature of a surgical airway overrules this concern.

Fluid resuscitation items

Although carrying intravenous (IV) fluids at individual level to treat hypovolemic shock as a result from hemorrhage was recommended by medical training handbooks used by many nations' SOF units[43] and has traditionally been part of many SOF units' standing operating procedures, this recommendation can be seriously questioned. The vast majority of combat casualties are not in shock, and do not need IV fluids.[44] Considering the weight and bulk of a 500ml IV fluid bag and infusion set (which takes all the space in a triple 30-round 5.56mm assault rifle magazine pouch), coupled to the potential difficulties of getting access at night to the narrowed vein of a patient in shock (often hypothermic), the inclusion of IV resuscitation fluids in individual kits may not be warranted. For casualties who are in shock, the chance of survival with a systolic blood pressure of less than 90mmHg will diminish over time, so the ability to maintain vital organ perfusion pressure is critical.[45] This can be achieved not only through the infusion of fluids through IV or intra-osseous (IO) access routes (which are the usual primary and alternate methods used by combat lifesavers and medics), but also by oral hydration.[46] This is a very simple treatment option that is underused yet recommended for all casualties with a normal state of consciousness and the ability to swallow.[47,48] Even in hypovolemic casualties with mild nausea, this is a reasonable option, as conscious casualties will normally have the ability to vomit in case oral fluids are not tolerated, minimizing the risk of aspiration.[49,50] In order to increase water absorption and restore minerals lost with blood, water mixed with oral rehydration salts (containing carbohydrates and sodium, amongst others) are preferred to plain water. Oral hydration with appropriate fluids gives the added benefit to treat dehydration, which, if severe, will significantly lessen the chances of survival in wounded suffering from hemorrhagic shock.[51] The small volume and weight of a sachet containing oral rehydration salts and the fact that water can be expected to be carried anyway, make this a viable option.

In spite of the de-emphasized importance of IV fluid delivery, IV access is a requirement that should be differentiated from IV fluid administration. Even when fluids are not required, casualties may still require IV access for pain medication and antibiotics.[52] However, rapid IV access is less critical than a couple of years ago, as medics now have IO devices in case IV line establishment isn't possible, making an IV access kit not very useful at individual level, especially when IV medication for dealing with pain and infection are carried at the medic level.

Heat reflective blanket

Hypothermia increases the risk of bleeding,[53] and has a remarkably dramatic negative impact on the survivability of combat trauma patients,[54] no matter the ambient temperature or environment.[55] Prevention is the key to deal with hypothermia, as correcting it is often difficult and usually impossible in many Special Operations settings.[56] A heat reflective blanket (also known as survival blanket or space blanket) will provide *some* capability to prevent further hypothermia. This item in itself is not sufficient, but in the absence of dedicated – and relatively heavy – collective hypothermia management equipment, it allows a wind- and waterproof barrier to be wrapped around the patient, which can be complemented by a commonly carried kit, such as a poncho liner and thermal hat. These items are often carried even when large rucksacks have been abandoned. Including this very compact and extremely lightweight – yet easily ripped – item in an individual trauma kit will also help to serve as a reminder not to forget this often overlooked essential aspect of combat trauma care.

Pain control medications

Current TCCC guidelines recommend oral pain medications for mild to moderate pain, combining a 15mg meloxicam tablet with two acetaminophen 650mg bi-layer extended-release caplets,[57] the latter ensuring analgesia before meloxicam reaches its peak level in the patient's bloodstream.[58] Using acetaminophen and meloxicam, which unlike acetylsalicylic acid (aspirin) and most non-steroidal anti-inflammatory drugs such as sodium diclofenac, has the advantage of not causing blood platelet dysfunction (blood thinning), and is a prudent precaution just in case a casualty gets hit and starts bleeding again. The next level of pain control may be provided by oral transmucosal fentanyl citrate, delivered orally via a convenient lozenge. While the initial dose of 800µg currently recommended by TCCC guidelines[59] can be insufficient to stop heavy pain,[60] higher doses may not be recommended in the pre-hospital setting due to the risk of adverse effects,[61] in spite of the fact that doses of 1600µg have been reported as effective.[62] The final level of pain control may be provided by morphine. Although IV administration by medics is the preferred method, auto-injectors for intra-muscular (IM) morphine administration are convenient items that are sometimes

recommended even to be used by medics, especially in multiple-casualty situations.[63] If carried by individual Operators, it is important to ensure that they are familiar with the injectors, as previous experiences have shown that these controlled items are sometimes issued at the last moment prior to the launch of a mission, resulting in their incorrect use.[64]

Infection control medication

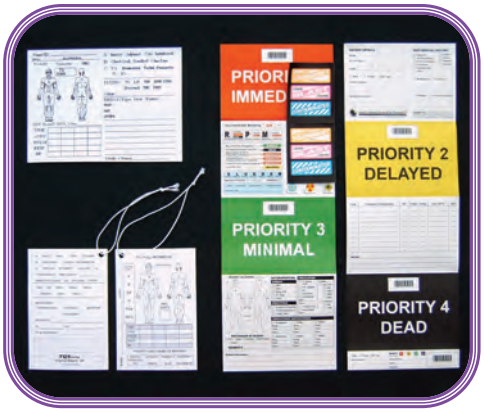
Infection is an important cause of death from combat wounds,[65] so a short course of prophylactic antibiotics is warranted after penetrating injury on the battlefield.[66] To be effective, they should be taken as soon as possible after wounding.[67] Taking into account the tactical situation which may preclude immediate care by the team medic and long delays before evacuation can take place – a common occurrence in Special Operations – as well as the difficulties of having the medic to carry, prepare, and administer antibiotics by IV/IM/IO route, it becomes clear that a single daily oral dose carried by every Operator is a much more practical option. Previous TCCC guidelines recommended gatifloxacin as the oral antibiotic of choice, but following its withdrawal from the market, current TCCC guidelines recommend moxifloxacin 400mg to be used.[68] Although the use of such a broad-spectrum antibiotic may not always be necessary in early wound management,[69] fourth generation fluoroquinolones, such as moxifloxacin, also protect against infection following wound contamination with salt or fresh water,[70] not an unimportant consideration for SOF operating in a maritime or inland water environment.

Trauma shears

In order to be able to properly treat – as opposed to just cover – a wound, it has to be exposed. Trauma shears offer a good option to do so in a safe way. Variable sizes are available, and where small shears may be sufficient at the individual level, many SOF Operators prefer the larger model used by medics, especially when they anticipate having to cut through other pieces of kit other than just clothing, such as load-carrying equipment.

Casualty card

Field medical cards have traditionally been carried only by medical personnel. Even if not absolutely required for treating combat casualties, having a casualty card at the individual level which is pre-filled with personal data, helps to gain time when documenting the care rendered as to the point of injury. Which in turn saves time during patient handover, while providing better information for any follow-on treatment. However, care should be taken to ensure that any pre-filled demographics do not violate operations security instructions. The card should be in a format that can be understood and used by non-medical personnel, a type that could also serve as an easily recognized triage tag may prove beneficial.



Gloves

Gloves should be included to avoid contamination from body fluids; however, it should be noted that initial medical care provided through buddy aid is usually done wearing only tactical gloves. Disposable examination gloves should offer maximum protection, should fit well to the hand, should be strong, and provide maximum sensitivity. Natural rubber latex gloves are the traditional choice, but tend to break down in hot environments,[71] and may cause allergies. Nitrile gloves are a good alternative and just like latex gloves, provide better protection against contamination,[72,73] are stronger, and offer a better fit than vinyl gloves.[74]

PACKAGING AND CONFIGURATION

All items affected by water or moisture should be waterproofed, if not already done so by the manufacturer.

Airway tubes (NPAs and ET tubes) can be removed from their original sterile package materials.[75] If an NPA comes with a safety pin, this should be fitted through the small flange before packing. If an NPA is vacuum packed, an easily removable cord, slightly smaller in diameter than the tube itself, should be inserted, in order to prevent the airway from not fully reopening after prolonged storage.

Whenever possible, items that are used together should be packed together. If there are any doubts as to the contents of a package, durable labels that clearly identify the contents should be added.

Many dressings and bandages have packages containing notches for rapid opening. If not present or hardly visible, high-visibility quick-tear notches (using

adhesive tabs in a contrasting color, with V-shaped cuts) may be added, in order to facilitate rapid opening.

When making a combat wound pill pack, a see-through material will easily allow inspections to check that contents are still intact and not affected by heat or humidity.

The complete kit – usually less the tourniquet(s) – may be packed inside a single vacuum-sealed bag to better protect its contents from wear and tear.[76] A vacuum-sealed 5mils[77] plastic bag is effective to pack a trauma kit for combat swimmers, ensuring it remains functional after multiple subsurface operations.[78]

If a kit is vacuum-packed, think about how to access the kit after it has been opened, without throwing out all its contents, and how to re-pack the separate items no longer needed. A simple stuff sack may work well, but whatever container is used, it should allow rapid packing of remaining items and has to be suitable for future use after the kit has been initially used.

Regardless of the carrying location (discussed below), major bleeding control items should be accessible with either hand, requiring only a single hand to rapidly retrieve them under any light condition. In addition, as tourniquets require immediate application, any packaging material they come in should be removed. They should be configured for single-handed use, so they can be used for self-aid on an injured arm. For leg applications – the majority of cases – the configuration can still be changed using both hands. Any individual unable to do so, due to serious arm wounds in addition to massive bleeding from a leg, can reasonably be expected to require buddy aid anyway.

Although one suggested technique to secure a tourniquet with multiple rubber bands to the Operator's body armor or load-carrying system, may have some benefits,[79] care should be taken to avoid damaging or even losing the tourniquet when going under, through, or over obstacles.

Carrying Locations

An individual trauma kit should be carried on the body, quickly and easily accessible by both the wounded Operator and by any other care provider.

Carrying locations include the following:

- Combat jacket main pocket. Often, this is not an option in hot environments, as lightweight desert or jungle shirts normally don't have large-capacity pockets.
- Trousers cargo pocket. Depending on size and shape, this could interfere with leg movement if not carefully packed and is often not possible if a drop-down pouch with leg straps is worn on the same leg.
- Combat shirt/jacket sleeve pocket. This is only possible if the kit is rather small and when not wearing ballistic protection over the deltoid muscle area. While not being practical for self-aid if wounded in the arm opposite the one carrying the kit.
- Dedicated medical pouch with multiple compartments, attached to the trousers belt (at waist level or on the thigh, using a drop-down extension strap), on the body armor system or load-carrying vest/rig. The quality of any elastic straps is an important consideration, as they may wear out over time. If replacement cost is an issue, mesh compartments closed with a drawstring may be a better alternative. Compartments shouldn't be too item-specific, so as to allow some flexibility to repack the kit when new products or different-sized replacement items become available.
- Many individual medical pouches are quite large (four PALS/MOLLE bars wide),[80] although more compact versions (only two PALS/MOLLE bars wide) are now commercially available. Some medical pouches are designed to be rapidly pulled from a panel that itself can be attached to the PALS loops on a load-carrying system.
- Canteen, ammunition, or utility pouch carried on the body armor system or load-carrying vest/rig. While usually being cheaper and more readily available than dedicated medical pouches, care should be taken that the pouch can be closed properly, so as not to lose a kit. The simple addition of a strong wide elastic strap, sewn on the inside under the lid, may be useful to secure a dressing while allowing instant access.
- Split among several locations, including any of the above. While in theory, the kit could be split in different parts and carried in different locations based on criteria such as the need for immediate or delayed use, the ability to use items for self-aid or not, or a combination of those. In practice, this may hamper rapid retrieval. Possibly, only items that more than one of is carried, should be considered to be carried in different locations and even different layers of equipment, as a precaution against potential partial equipment loss. This can be tricky, especially if no clear and rigidly enforced unit standing operating procedures (SOPs) for this exist.

While being a common practice in many units for a long time, care should be taken when modern field dressings are being taped to weapons or load-bearing equipment, as their thin packaging materials may be more prone to damage than many older standard issue field dressings. When adhesive tape is used, the tape ends should be folded back so as to have a quick access point.

Marking

In order to facilitate identification, the trauma kit could be appropriately marked. Different options exist, such as an embroidered text ("IFAK", for "individual first aid kit"), a patch containing a cross (red, subdued, or reflecting visible or infrared light), or by using two sewn-on crossed webbing tapes. Due to cultural sensitivities, the use of a cross may be ill-advised during overt missions in some areas.

Training implications

Having an excellent trauma kit doesn't provide the capability to deal with injuries on the battlefield. The "train as you fight" principle applies to the use of medical kit. This implies the following:

- Individual trauma kits should be issued on a permanent basis. Most components are single-use-items, some may deteriorate with repeated use and/or be rapidly perishable, and still others may be controlled items or be too expensive to be issued when not on operations, so using a training kit containing mock items with similar size, shape, and weight, should be considered. Expired items can be used to fill this training kit.
- Individual trauma kits should be carried during all field exercises, as per unit SOPs. This not only accustoms Operators to the fact that they carry a trauma kit, it also forces them to think about how to pack it, and more importantly, to identify those items not to pack in the space to be used for this medical kit.

- Operators must be able to effectively use all items carried in their trauma kit. While not all items can be used for self-aid, any item from a casualty's kit may have to be used for the administration of buddy-aid in the absence of a medic.
- Combat gear should be worn during routine medical training, even during classroom training.

This article tried to give some insights on what might be included and why, when building a major trauma kit for SOF. It should be remembered that kit contents should always be adapted to the mission, the environment, and the adversary situation, while only a properly packed and configured kit, carried in a suitable location, will make it truly useful, provided adequate training has been conducted prior to mission execution.

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Dirk Geers has been serving in a number of SOF positions and has been heavily involved in the development of medical kits for SOF.