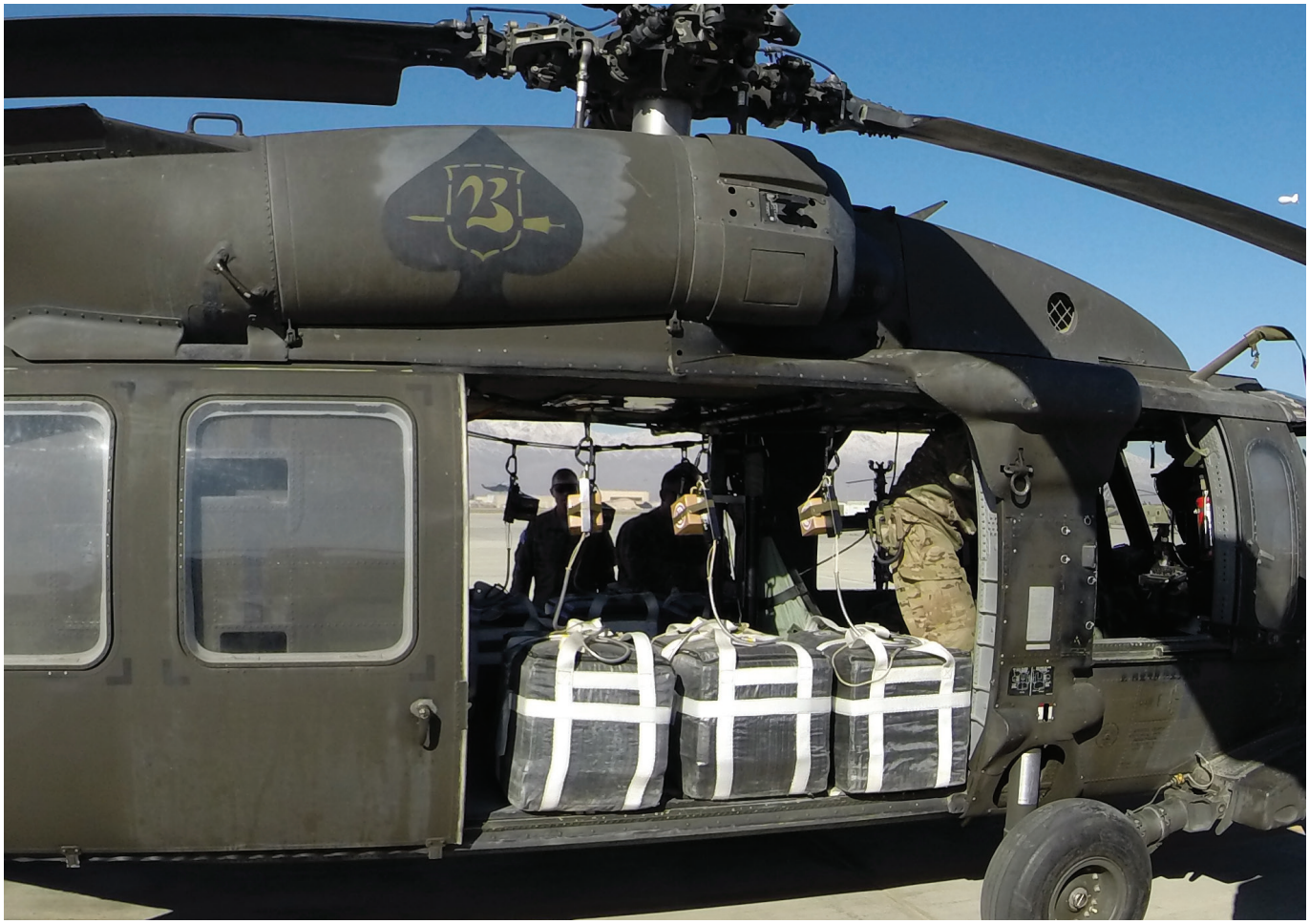


Three enhanced speed bag systems are rigged on a UH–60 Black Hawk helicopter and ready for resupply Jan. 31, 2013, at Bagram Airfield, Afghanistan. (Photo by Sgt. 1st Class Samuel M. Bright)

The Enhanced Speed Bag System

The enhanced speed bag system for helicopter resupply is a crucial development in aerial sustainment.

■ By Capt. Jude G.B. Coe

The enhanced speed bag system (ESBS) is a cutting-edge piece of equipment. Its purpose is to facilitate emergency resupply operations from a UH–60 Black Hawk helicopter that is maintaining a relatively safe altitude (between 100 and 110 feet) and a reasonable speed (20 knots). The ESBS enables Soldiers to conduct quick and accurate resupply operations while avoiding enemy small-arms fire and rocket-propelled grenades.

Soldiers from A Company and H Forward Support Company, 3rd Battalion, 187th Infantry Regiment (Iron Rakkasans), 101st Airborne Division (Air Assault), were the first to test this piece of equipment in Afghanistan. An introduction to the system and a validation exercise with Task Force Talon (the 3rd General Aviation Support Battalion, 82nd Combat Aviation Brigade) were both conducted at Bagram Airfield, Afghanistan, from December 2014 to January 2015.

ESBS Specifications

The ESBS is composed of the

multipurpose cargo bag with padding, one speed line assembly with a cable grip that is used to facilitate the descent of the bag from the aircraft, one linear brake system that is used to control the bag's descent, two 5,000-pound carabiners for holding the bags in place inside the aircraft, one multisetting gauge for setting the system to the weight of each bag, one roll of tape to secure extra rope, and four manila tags for marking the contents of each bag.

Six systems can be rigged in a Black Hawk simultaneously. Each bag can hold a maximum of 200 pounds of supplies. All six bags can be deployed from the aircraft into the resupply area at the same time, which allows for up to 1,200 pounds of supplies per aircraft to be dropped.

Each bag must weigh at least 125 pounds. The bags are gauged using the multisetting gauge before they are loaded onto the aircraft. Because of the length of the rope in each system, the aircraft must maintain an altitude between 100 and 110 feet during the deployment of the bag.

The ESBS can be used during day or night operations. Once deployed, the bag descends at a speed of 40 to 50 feet per second, which allows for a quick resupply. The resupply area should be clear of any personnel, and the bags should be recovered only when the crew has communicated to the ground troops that they have finished the bag deployments and are moving from the resupply area.

Finally, the aircraft must maintain a hover when conducting a resupply with an ESBS in a wooded area. This is to ensure that the rope does not become tangled and to avoid injury to the air crew and the troops on ground.

Preliminary Instruction

On Dec. 20, 2014, the Rapid Equipping Force office at Bagram Airfield conducted an ESBS introduction class with 12 Iron Rakkasans Soldiers and noncommissioned officers from A Company and H Company. The training and introduction was divided into two sections. The first section involved an outline of the purpose of the ESBS, an in-depth instruction on how to properly operate the ESBS, and a practical exercise to ensure the Soldiers understood how to set up the ESBS.

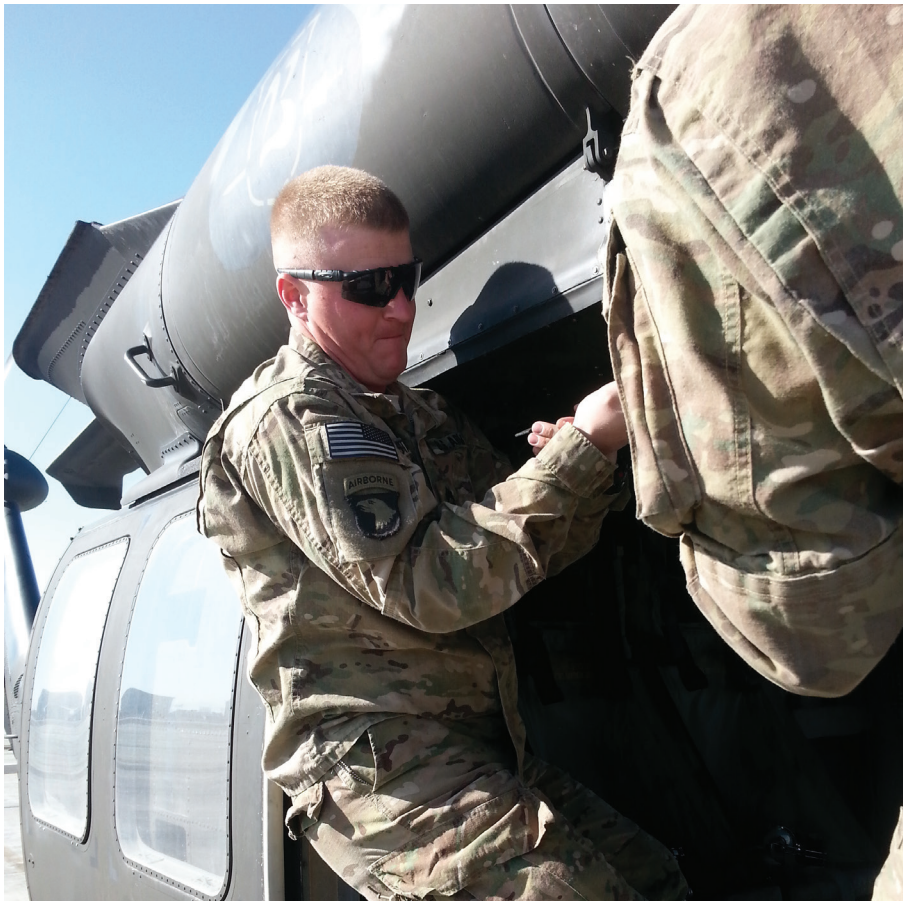
The second portion of the ESBS introduction included aviation personnel from Task Force Talon. The introduction comprised ESBS rigging instructions and a practical exercise. The result of the training was the Iron Rakkasans and Task Force Talon Soldiers' concrete understanding of how to set up and rig the ESBS inside a Black Hawk.

Validation Exercise

After two joint in-progress reviews, Task Force Talon and the Iron Rakkasans agreed on a date of Jan. 14, 2015, to conduct a validation exercise of the ESBS to ensure its effectiveness in theater. A Company provided 10 Soldiers to mark a pickup site with VS–17 signal panel markers and to maintain communication with the aircraft crew deploying the ESBS.

The ground crew's main function was to extract the bags from the pickup site once the aircraft executed the supply drop. The Iron Rakkasans' leaders were on the ground to inspect each ESBS and its supplies, ensuring that both the bag and the supplies were still intact.

Four crews from Task Force Talon certified the crews in ESBS operations. The forward support company's first sergeant and maintenance platoon sergeant each pushed one ESBS from the aircraft. Every ESBS was inspected once removed from the pickup site.



Sgt. 1st Class Kevin Stanfield, a maintenance platoon sergeant, prepares the rigging for an enhanced speed bag system in a UH–60 Black Hawk helicopter at Bagram Airfield, Afghanistan. (Photo by Capt. Jude G.B. Coe)

The ESBSs performed remarkably well. The bags contained either water, meals ready-to-eat, ammunition (of which 40-millimeter rounds were the most volatile), or sandbags. Two bags were packed with more than 200 pounds of supplies and withstood a drop of 100 feet onto a rocky surface.

Advantages

The validation exercise showed that the ESBS has numerous advantages and few disadvantages. The most distinct advantage is that the aircraft can maintain a relatively safe altitude and speed, rendering it less susceptible to enemy small-arms and rocket-propelled-grenade fire.

Since the ESBS descends at 40 to 50 feet per second, it will typically take only two seconds for each bag to reach the ground. This factor makes for a quick resupply and subsequent exit from the battlefield, limiting the aircraft's exposure to the enemy.

The altitude is also an advantage because using the ESBS negates the need to perform the type of resupply operations in which the supply aircraft must hover five to 10 feet off the ground during an extremely hostile firefight. This type of resupply not only endangers the pilots but also results in the enemy obtaining a more precise location of U.S. forces.

Another advantage of this system is that only the linear brake system and the two carabiners are recoverable items. The rest of the system is designed to be used once and is not required to be recovered.

When applicable, the ESBS can replace sling sets, cargo nets, or cargo bags. These items can be extremely difficult to recover from the battlefield, especially during a fast-paced air assault operation involving numerous units. Both the carabiners and linear brake system are compact enough to fit inside an assault pack and can easily be recovered by one Soldier.

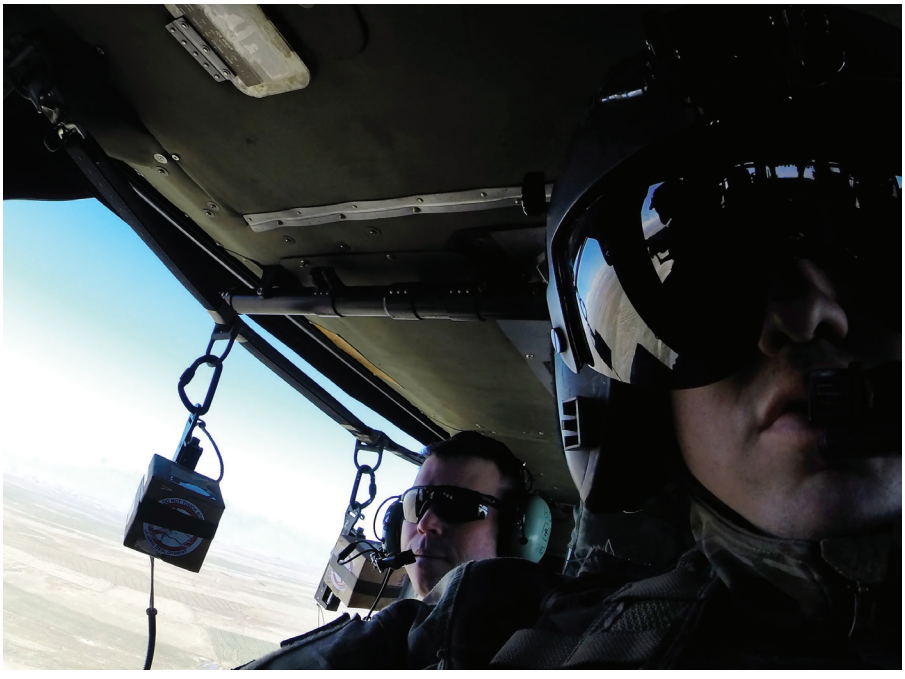
Disadvantages

The disadvantages of the ESBS are that it is expensive (approximately $1,000 per system) and designed to be used only once. The bag will develop tears after it is dropped from an aircraft, rendering it useless for future operations. Also, its smaller size and 200-pound capacity essentially constrains its use to classes I (subsistence), II (clothing and individual equipment), V (ammunition), and VIII (medical materiel).

Using the ESBS for class III (petroleum, oils, and lubricants) is not recommended, although it can be done by using fuel cans, removing the top covering of the ESBS, and securing the fuel can into the bag with a ratchet strap or a similar device. This should be done only during an extreme emergency for class III resupply.

Despite its disadvantages, the ESBS is a useful system when it is necessary to resupply a fighting position of a company-sized or smaller element with classes I, II, V, and VIII. The ESBS's design allows an aircraft to be less exposed to enemy fire during a resupply operation and allows the troops on ground to receive the supplies quickly.

Using the ESBS instead of sling sets, cargo nets, and cargo bags (when possible) assists in property accountability and reduces the amount of equipment to retrograde from the battlefield. This revolutionary system has the potential to add yet another instrument to the aerial sustainment repository. Based on the validation exercise at Bagram Airfield, it can withstand the toughest of terrain to resupply the warfighter.



1st Sgt. Shawn Murk and a crew chief from the 82nd Airborne Division's Task Force Talon participate in the enhanced speed bag system validation exercise Jan. 31, 2013. (Photo by Sgt. 1st Class Samuel M. Bright)

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