

# A WEIGHTY PROPOSITION

Finding efficiencies in complex Stryker retrograde

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It's an eight-wheeled, 55,000-pound vehicle nicknamed "the Cadillac of the infantry" for its performance in the mountains and valleys of Afghanistan. Now it's time for the Stryker Light Armored Vehicle to come home, a process that could serve as a case study in complexity and lessons learned in retrograde efficiency.

The Stryker poses two striking differences compared with most other vehicle programs: the complexity of the vehicle, and the fact that Strykers have been retrograded once before, with the fielding of the Double-V Hull (DVH) variant, a major upgrade in Soldier protection.

Developed, produced and deployed in the first decade of the 21st century, the Stryker is designed to combine speed, agility and firepower with a high level of protection for the Soldiers who operate and fight from it, and sometimes eat and sleep in it. A number of upgrades made to the Stryker since it was first fielded have resulted in an improved vehicle that is readily deployable, better-armored and easier to maintain

than the original. These same qualities complicate the process of returning hundreds of Strykers from forward operating bases (FOBs) in Afghanistan to home bases in the United States.

## **A PAINSTAKING PROCESS**

While several units and organizations are involved in the Stryker retrograde mission, most of the hands-on work in theater falls to the 401st Army Field Support Brigade (AFSB), one of eight AFSBs under the command and control of the U.S. Army Sustainment Command (ASC), headquartered in Rock Island, IL. The 401st AFSB has served units redeploying from Afghanistan by taking Strykers off their hands and getting the vehicles ready for retrograde at Kandahar Airfield.

The departing unit drops off its Stryker with the Army Field Support Battalion – Kandahar at the 401st AFSB Redistribution Property Assistance Team (RPAT) yard. RPAT personnel, along with members of the redeploying unit, conduct a joint ammunition inspection to ensure that the vehicle is clear of all ammunition.

The next step is to inventory the government-furnished equipment (GFE), after which the redeploying unit signs the vehicle over to the RPAT yard. Then, 401st AFSB personnel remove all GFE for inventory, cleaning, packing and wrapping. Personnel then tag all GFE for shipping and send it directly to Joint Base Lewis-McChord (JBLM), WA, where it will be reinstalled eventually into the Stryker from which it was removed. Pallets of GFE, which have to clear customs, are weighed and measured for shipping by 401st AFSB employees.

Members of the 401st AFSB workforce then painstakingly clean the vehicle, piece by piece, to ensure that there will be no problems clearing customs at the vehicle's various stops on the way back to the United States. Like every piece of equipment leaving Afghanistan, the Strykers must meet exacting standards set by U.S. and Afghan customs regulations.

For example, the vehicle is inspected continually to make sure no ammunition, explosives or explosive debris were missed



### FLEET MULTIPLIER

The Stryker battle damage repair facility in Qatar has supported the fleet's high operational readiness rate by enabling the Army to fix Strykers relatively close to theater and return them to the fight that much faster. In addition to repairing 422 Stryker vehicles for use by Soldiers fighting in Iraq or Afghanistan, the Qatar facility executed the reset of 80 Strykers in support of non-Stryker brigades in Southwest Asia. Here, pallets of replacement Stryker parts are staged outside the facility, ready for use. (Photo courtesy of PM SBCT)

earlier. Just one bullet found in a Stryker at a port of exit will delay an entire shipment for hours.

International agricultural standards aim to prevent the export of invasive plant and animal species from one nation to another. A single clump of dirt in a Stryker leaving Afghanistan might harbor a seed, insect or organism that could cause long-term harm to plants and animals native to North America. Features on the Stryker such as bolt-on ceramic armor and armored skirts, designed to protect Soldiers from threats such as small-arms fire, rocket-propelled grenades and improvised explosive devices, also create hiding places for dirt and foreign objects, and so complicate the process of ensuring that each Stryker is clean enough to clear customs and agricultural inspection.

In all, every Stryker retrograded through a 401st AFSB facility undergoes at least

five inspections, covering every nook and cranny, before and after cleaning.

Cleaning the vehicle inside and out can take up to 36 hours, according to CPT Lee Berry of the 401st AFSB, who oversees the RPAT yard at Kandahar Airfield. As a result, the average "production" of Strykers is two vehicles per day, including all inspections and documentation to stage them for air shipment and retrograde. In contrast, Berry said, cleaning an average armored vehicle usually takes fewer than six hours.

### STREAMLINING

After the Stryker has been catalogued, stripped of GFE and cleaned, it is ready to begin its voyage to Anniston Army Depot, AL, for reset. After the reset is complete, the vehicle goes to JBLM, where state-of-the-art technology added to the vehicle in support of the mission will be reinstalled.

As the pace of retrograde has picked up, the 401st AFSB has operated wash racks around the clock to clean Strykers and other vehicles.

After cleaning and inspection, the vehicles are weighed, measured and tagged with bar codes for tracking. In some cases, part of the interior must be reassembled to enable the vehicle to be driven onto an aircraft. Traffic management specialists from the 401st AFSB complete all transportation and movement documents and forward the information to personnel from the Project Manager Stryker Brigade Combat Team (PM SBCT) of Program Executive Office Ground Combat Systems (PEO GCS), who are responsible for the final loading.

To speed the Stryker retrograde process at Kandahar, the 401st AFSB made improvements at the front end. Government engineers and their

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### MAKING IT QUICK

Soldiers from the 2/23, 4th Stryker Brigade tested a newly streamlined turn-in process in Kandahar in March with 16 Strykers they brought for retrograde. The operation took less than two hours, about one-third the time it had taken in the past. Here, the Soldiers arrive at Kandahar Airfield to turn in the Strykers and associated equipment to the 401st AFSB at the RPAT yard. (Photo by Sharonda Pearson, 401st AFSB Public Affairs)



### INVENTORY CONTROL

An inventory of basic-issue items for a Stryker is the last step before a redeploying unit turns in the vehicle for retrograde. Here, Soldiers from the 1st Cavalry Regiment inventory basic-issue items before turning in three Strykers. (Photo by Sharonda Pearson, 401st AFSB Public Affairs)

contractor partners designed and built three lanes at the RPAT yard, tripling the previous capacity, with clearly identified areas for the turn-in of different classes of equipment. This marked a significant improvement over the previous setup in which units had to turn in their various classes of equipment at two different yards at Kandahar, through separate appointments with the 401st AFSB and 3rd Sustainment Brigade, and then travel to a third location to sign their Strykers over to the 401st.

The new “one-stop shop” was tested in March when Soldiers from the 2nd Battalion, 23rd Infantry Regiment (2/23), 4th Stryker Brigade brought 16 Strykers to Kandahar for turn-in and retrograde. The operation was completed in less than two hours, about one-third the time it had taken in the past.

“I’ve been through the process three other times, and this is the fastest we’ve gone through it,” said SGT Daniel Maret of the 2/23. “Generally, we would have to do much of the process beforehand, prior to even turning in our equipment.” A unit could not hand over a vehicle and associated property until all equipment was accounted for, the vehicle had been cleared of ammunition, the inventory inspected and a list of any shortages completed. “Here, we were able to unload everything on site, and it was set up in stations, which made the process much easier and faster,” said Maret.

The 401st formed a working group that includes PM Stryker, the 3rd Sustainment Brigade, the Military Surface Deployment and Distribution Command and the U.S. Air Force. Members of the group have collaborated to identify and eliminate redundancies in the retrograde process and further streamline operations, now using one



process and one yard to retrograde all materiel, as opposed to the previously segregated locations for different types of equipment. A single group—with experts in transportation, packing, wrapping and shipping, and PM SBCT representatives—books airframes and sets priorities using a standard process.

“We’ve always had a weekly meeting to discuss our operations,” Berry said. “Now we’ve taken our working group, where we discuss issues and coordinate operations, to the next level to ensure that we are all physically working together in the same location, which enables us to learn from each other and provide better support to the warfighter.”

### GOING MOBILE

The Kandahar battalion of the 401st also maintains a mobile RPAT that travels to FOBs in Afghanistan to facilitate the turn-in of excess equipment and resolve property accountability issues before the equipment goes to Kandahar for retrograde. In May, when the Pakistan ground lines of communication reopened, the mobile RPAT went to a FOB in Spin Boldak in southern Afghanistan to execute its first “fort-to-door” operation for the 4th SBCT.

In the fort-to-door operation, the mobile RPAT prepared select pieces of Stryker equipment for retrograde, obviating the need to send the equipment to Kandahar for shipment. Instead, the retrograded gear would be transported over land through Afghanistan and Pakistan directly to the Pakistani port of Karachi, where it would be loaded aboard ships for transport back to the States.

“Being able to travel to the unit and execute the retrograde mission made the process quicker and more streamlined, because the vehicles are being

picked up by the carrier as soon as they are ready for transport,” said SFC Lesa Dash of the 401st AFSB, a member of the mobile RPAT team. “Fort-to-door keeps Soldiers off the road, since they don’t have to convoy to Kandahar to turn in their equipment.”

PM SBCT has another logistical asset during the drawdown: the battle damage repair facility in Qatar. Because of the high operational tempo for Strykers in theater, there was no time to send battle-damaged assets back to the manufacturer or a depot in the States. The only way to keep the Stryker fleet at a very high operational readiness rate was to establish a facility in the Middle East where assets could quickly be shipped, repaired and returned to the fight.

The final Stryker repair at the Qatar facility was completed in April. It was the 422nd Stryker vehicle repaired there and returned to Soldiers fighting in Iraq or Afghanistan. In addition to the 422 repaired platforms, the Qatar facility executed the reset of 80 Strykers in support of non-Stryker brigades in Southwest Asia, for a total of 502 vehicles. The facility has supported 19 Stryker deployments to Iraq and Afghanistan over the past decade.

While the Qatar operation is drawing down toward its anticipated closure in FY14, it will continue to support the retrograde of battle-damaged Strykers to the States for depot repair. A minimal number of ready-to-fight Stryker vehicles will remain in Qatar until the facility closes. The closure of the Qatar battle damage repair facility concludes a successful mission executed by the Army and industry team in Qatar.

### PRIOR EXPERIENCE

In June 2011, after a rapid 18-month development, PM SBCT began fielding

the new Stryker with the DVH to units in Afghanistan. The new hull configuration adopted many of the principles of a Mine Resistant Ambush Protected vehicle, aiming underbody blasts away from the vehicle. With the fielding of this improved Stryker, the original, flat-bottom hull Strykers had to be retrograded. As of December 2012, PM SBCT had retrograded 450 flat-bottom vehicles under the management of MAJ William Clark, assistant product manager for Stryker DVH fielding.

“We gained a wealth of experience during our previous retrograde efforts,” said David Dopp, PM SBCT. “As we draw down and begin the movement of our assets back to the U.S., the lessons learned during the retrograde of the flat-bottom hull Strykers will make the process much easier.”

The biggest lesson learned was to lock in the unit line number (ULN) as soon as

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**PIECE BY PIECE**

Preparing a Stryker for retrograde is a multipart process that includes rigorous cleaning, numerous inspections and a complete inventory of all equipment in and on the vehicle. Here, Soldiers from the 2/23 unload equipment from a Stryker at the RPAT yard in Kandahar. (Photo by Sharonda Pearson, 401st AFSB Public Affairs)

possible. The ULN, a unique identifier given to all equipment moving out of theater, is the cornerstone of all logistical movement data. The ULN orders the airframe for movement of material. A ULN can take up to 21 days to secure.

The only way to successfully plan how many vehicles are leaving and when is to lock in the ULN as far in advance of departure as possible. This avoids delays and pileups of excess equipment in staging yards.

A problem arose in this process as U.S. Central Command (CENTCOM) required actual weight and size measurements for the Stryker platforms before creating a ULN. This meant that assets actually had to be on hand in advance, which could lead to a significant backlog of equipment during the four to six weeks required for the ULN.

CENTCOM allowed PM SBCT to provide estimated weight and size measurements to secure a ULN. This reduced the choke points, creating a much smoother and more consistent process. PM SBCT anticipated the number of platforms being turned in to the RPAT and built the ULNs based upon that flow. This significantly shortened the timeline for movement of vehicles and cleaned out the backlog that was forming in the RPAT yard. It also allowed for better planning on the front end for acceptance, inventory and cleaning of the vehicles.

**CONCLUSION**

The 401st has received about half of the Strykers it will retrograde in the next four months, with a goal of retrograding 40 Strykers per month.

“It’s easy to get focused on your mission and potentially lose perspective of the

big picture,” Berry said. “Those of us involved in the logistics mission are here to support our warfighters, not hinder them in any way—not disable them from executing their missions because the turn-in process is tedious and cumbersome. It’s our responsibility to provide superior logistical support so that Soldiers can continue to fight.”

Anniston Army Depot was scheduled to begin the Stryker reset Oct. 1. The depot received the first 16 Stryker DVH vehicles in July.

After the vehicles complete reset and go to JBLM, for reinstallation of GFE and communications suites, the vehicles will be ready for reissue to units.

*For more information on Stryker retrograde, follow PEO GCS on Facebook (<http://www.facebook.com/peogcs>) and Twitter (<http://www.twitter.com/peogcs>), or go to [www.peogcs.army.mil](http://www.peogcs.army.mil).*

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