



# The American Motor-Rifle Brigade

## Issues with the Stryker Brigade Combat Team Concept

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**R**ecent and proposed developments to the Stryker combat vehicle and how it is employed bear striking similarities to Soviet and later Russian development of the *Bronetransporter* (BTR) armored personnel carrier and motor-rifle

formations. These similarities mirror both materiel and doctrinal concepts developed by the Soviets as they introduced, modified, and updated the BTR. However, the current Stryker developmental path is following an outdated methodology that is





inappropriate for the modern battlefield. This article identifies the regressive approaches currently being used by the U.S. Army to develop the Stryker medium-force concept and recommends new directions for its development based on historical analysis and current scholarly research.

## **Matériel Comparison of the Stryker Platform and the Russian BTR Series**

The Stryker concept has been in a constant state of flux since its inception. This is to be expected since it is a relatively new concept in the Army. Originally proposed by Gen. Erik Shinseki in the 1990s, the Stryker does not have the same depth and breadth of historical experience for the purpose of assessment compared to many other U.S. weapon systems due for matériel upgrades.<sup>1</sup> For example, the development of the M1 Abrams tank commenced with the XM (experimental model) in the 1970s. It was fielded in 1979 and continues in service today, a long period over which data have been collected, including from its use in combat situations.

The medium vehicle and force concept is not new worldwide. The Soviet Union fielded a medium-armored

**Left photo:** A convoy of BTR-82A armored personnel carriers participates in the Victory Day parade 7 May 2013 in Moscow. (Photo courtesy of Vitaly Kuzmin, <http://www.vitalykuzmin.net/>)

**Right photo:** U.S. Strykers carry soldiers from Battle Group Poland (comprised of U.S., U.K., Romanian, and Polish soldiers) to conduct weapons zeroing 6 April 2017 in Orzysz, Poland. (Photo by Georgios Moutoulidis, Training Support Team Orzysz/U.S. Army)

vehicle in the BTR and began to develop the motor-rifle regiment concept circa 1961.<sup>2</sup> The Soviet concept is distinctly different from World War II-era medium-armored vehicles. Some World War II-era armored vehicles and mobile guns can be said to be medium platforms, but these vehicles were always task-organized with heavier platforms. In contrast, the Soviet motor-rifle regiment was the first mechanized force organized to take advantage of the unique abilities that are afforded unilaterally by a medium force. Though the motor-rifle regiment may be involved in operations with heavy armored forces, it is considered distinct and separate from those forces. Similarly, the Stryker concept resembles the motor-rifle concept in that it is conceived as a stand-alone medium force. However, it differs from the Russian concept in some key areas.





While some changes to the original concept of the Stryker are expected and necessary, such as the ongoing Stryker upgrade to a double V-hull (a survivability design that deflects blasts from below a vehicle away from the crew compartment), some of these adoptions appear to be ad hoc and piecemeal.<sup>3</sup> Following the current Stryker upgrade to the Stryker Double V-Hull, General Dynamics has proposed several improvements for the next generation of Stryker, including the addition of a 30 mm cannon for some vehicles to increase the Stryker's direct-fire capability.<sup>4</sup>

Of note, this addition mirrors earlier Soviet-era development of medium-armored vehicles. The Soviet Union identified a similar weakness in the armament of its BTR in the 1960s. The BTR was originally fielded with the 12.7 mm DShK heavy machine gun, which is comparable to the current Stryker's armament of the M2 Browning .50 caliber machine gun. The Soviets replaced it with a heavier 14.5 mm cannon in later productions of the BTR 60.<sup>5</sup> Still later, during its modernization program, Russia adopted the even heavier 30 mm Shipunov cannon for the BTR-90 to give it greater direct-fire capabilities.<sup>6</sup> Additionally, Russia also added the 30 mm cannon to the BTR-80 series with the fielding of the BTR-82A. Notably, this gave the BTR offensive direct-fire capability similar to the *Boyevaya Mashina Pekhoty* (BMP) infantry fighting vehicle, which mounts the same cannon.<sup>7</sup> This is comparable to the current proposed change to the Stryker main gun, which would give the Stryker direct-fire capability akin to the M2 Bradley infantry fighting vehicle.

Furthermore, in the 1990s, the Russian Federation identified an antitank weakness in the BTR and integrated the AT-5 "Spandrel" with the BTR 90.<sup>8</sup> This system is mounted on the side of the turret and can be detached and fired from the ground. Russia also adapted the Anti-Tank Guided Missile (ATGM) capability to its BTR-82s with the Kornet antiarmor system.<sup>9</sup>

**Top left photo:** A modernized BTR-82A armored personnel carrier with 30 mm cannon rehearses 4 May 2015 for the Victory Day parade in Moscow. (Photo courtesy of Vitaly Kuzmin, <http://www.vitalykuzmin.net/>)

**Bottom left photo:** The first prototype Stryker Infantry Carrier Vehicle outfitted with a 30 mm cannon was delivered to the Army in October 2016. (Photo courtesy of the Program Executive Office Ground Combat Systems)

These systems remain in service today throughout the Russian motor-rifle formations and exported BTRs.

Similarly, Raytheon and Lockheed-Martin have proposed extending their Joint Javelin Venture Program (JJVP) to mount the Javelin missile system on a Common Remotely Operated Weapon Station for some Strykers.<sup>10</sup> Like the Spandrel, the Javelin is also mounted on the side of the turret and can be detached and fired from the ground. The addition of the Javelin will give the vehicle and formation antitank capability in addition to the M1134 ATGM Stryker variant.

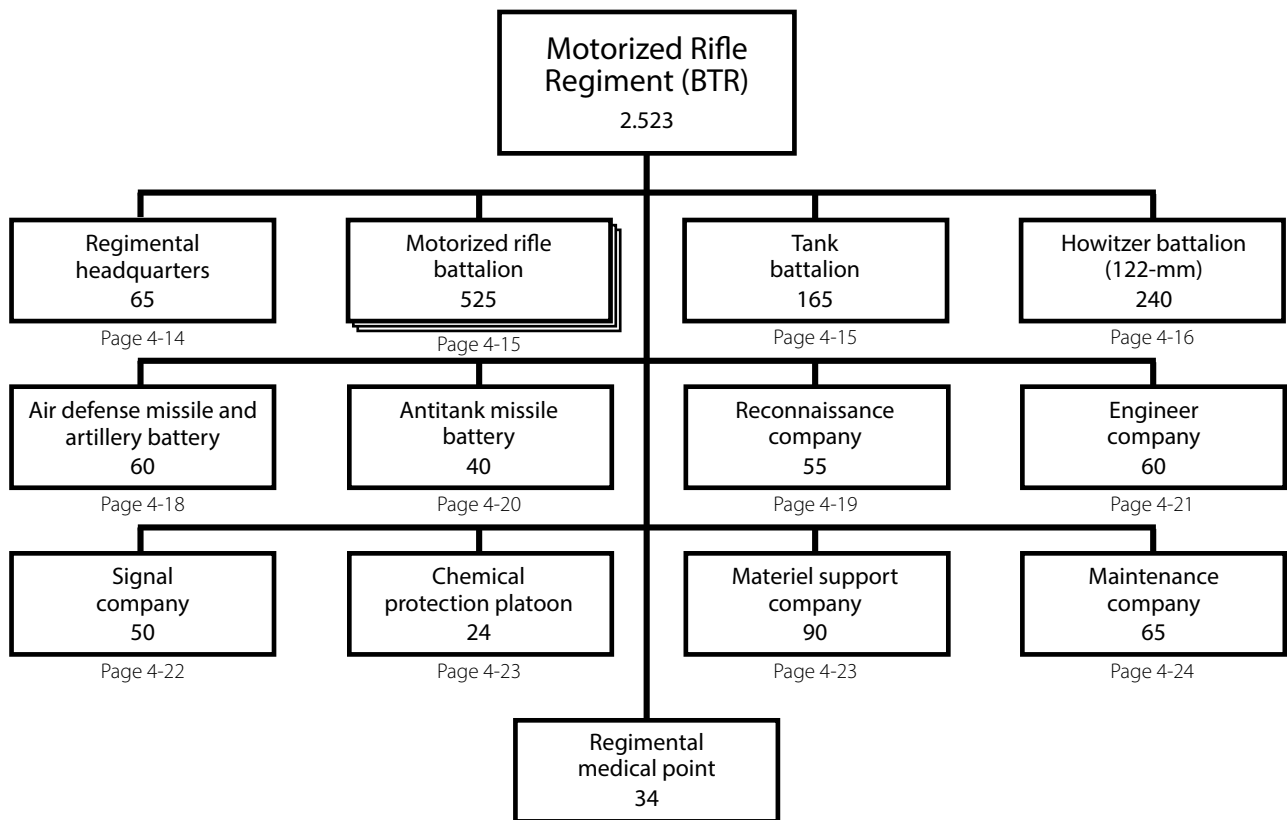
The proposed Stryker upgrades are, unsurprisingly, in response to a 2016 request by the Germany-based 2nd Cavalry Regiment, which was concerned that its Strykers were overmatched by Russian materiel.<sup>11</sup> Soviet-era materiel, or equipment based on Soviet materiel, is utilized by the clear majority of potential U.S. adversaries.<sup>12</sup> Therefore, this concern is well-founded for the Stryker platform and is not just a specific theater concern to be dealt with at the local-unit level.

These proposed U.S. materiel responses seem unintentionally reactionary at best. Notably missing from most of the conversations about these proposed Stryker upgrades is any discussion of the BTR or the motor-rifle regiment, the peer force that the Stryker could potentially fight against. The BTR has had a 30 mm cannon since the early 1980s and an antiarmor capability since the mid-1990s. This means that the previous generation of the Russian medium-armored vehicle already had overmatch on a proposed upgraded Stryker. When we compare the proposed Stryker armament upgrades to the historical BTR, it appears that the Stryker is thirty to sixty years behind current medium-armored trends. The adoption of these materiel upgrades is not inherently bad or dangerously outdated in and of itself. What is problematic and missing from the upgrades is the next step after the current adoption. We have independently confirmed what the Soviets discovered thirty years ago, namely that a medium force does not work against a heavy force independently.<sup>13</sup>

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(Graphic from Army Field Manual 100-2-3, *The Soviet Army: Troops, Organization, and Equipment* [Washington, DC: U.S. Government Publishing Office, 1991, (obsolete)], 4-9)

**Figure 1. Russian Motor-Rifle Brigade**

This is important beyond an academic discussion of peer weapons systems. Russia has moved on to its second generation of medium-force vehicles and is actively innovating. Russian materiel testing and acquisitions do not suffer from analysis and adoption problems similar to the United States when it comes to medium-armored force vehicles. The current generation replacement for the BTR, the *Bumerang*, has adopted an engine in the front as opposed to the rear, where it was located in the BTR. The *Bumerang* also has a back troop ramp instead of a side troop door as was found in the BTR. Both of these adaptations appear to be similar to those of NATO vehicles and are a marked departure from the line of development of the BTR.<sup>14</sup> This means that if we were to catch up to the current line of BTRs today, we would still be behind because Russia is actively modernizing their medium-armored platform.

### **Doctrinal Comparison of the Stryker Brigade Combat Team and the Motor-Rifle Brigade and Regiment**

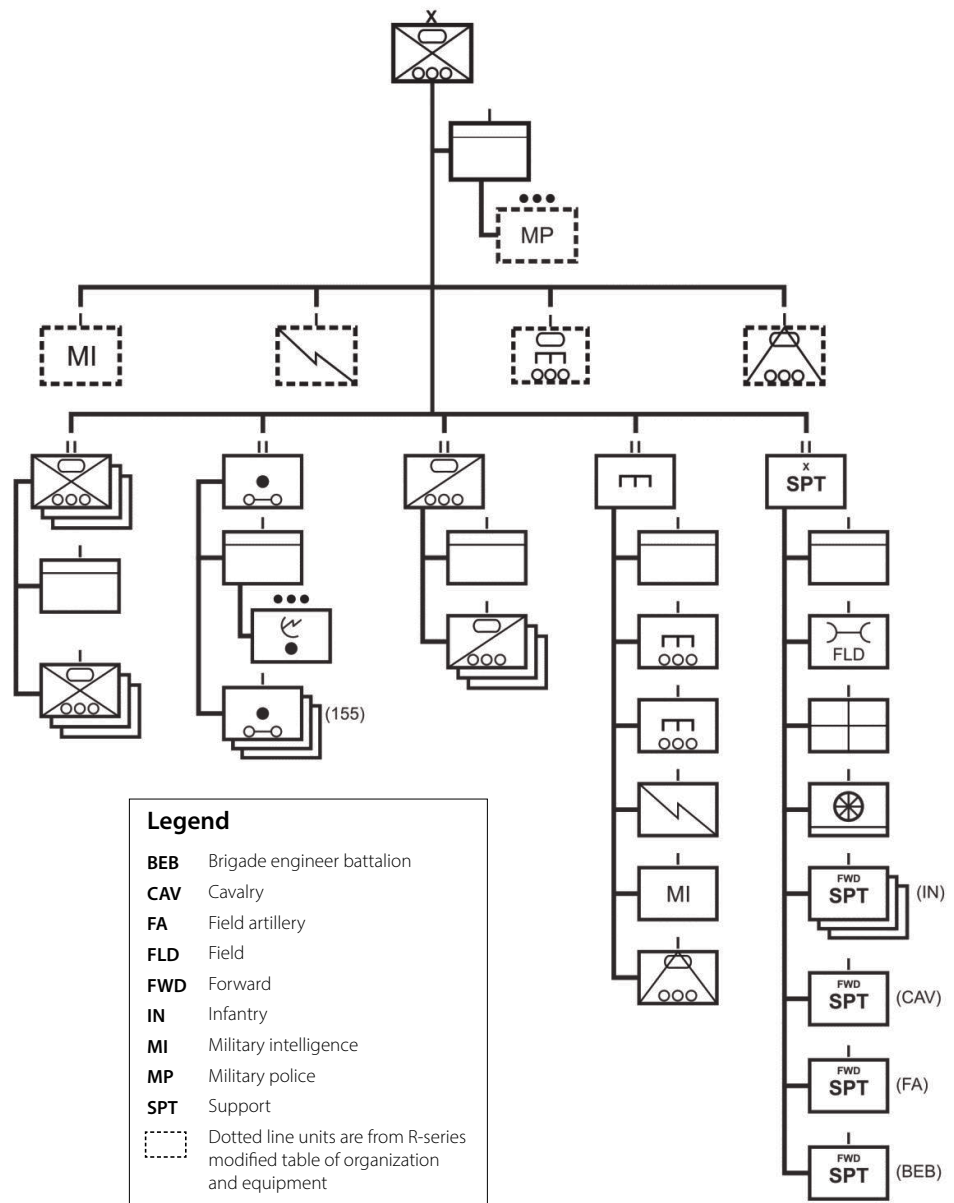
The similarities between U.S. and Russian medium forces are not limited to materiel developments. The United States has also started to adopt similar doctrinal and organizational aspects of the motor-rifle formations depicted in figure 1. The Stryker brigade combat team (SBCT) shown in figure 2 (page 71) is similar to the Russian motor-rifle regiment, utilizing a lighter, faster medium-armored vehicle to bridge the gap between rapidly deployable light infantry and the heavier, slower-to-deploy armor units.

Conspicuously different, however, is that the motor-rifle division has always included a BMP regiment, and the motor-rifle regiment has always included a tank battalion.<sup>15</sup> The Russians have always attached heavy platforms to allow BTR formations to fight

effectively against an armored threat. Similarly, SBCTs conducting National Training Center (NTC) rotations focused on decisive-action scenarios recently started having tank battalions attached. This is in response to the historically poor showing of SBCTs when confronted with an armored threat during previous rotations.

Russia has seen the lack of a supporting heavy-armor component as a weakness in the Stryker formation since its inception. One critique of the Stryker concept put forward by the Russian *Foreign Military Review* in 2004 was its lack of an armored contingent.<sup>16</sup>

It is unsurprising that Stryker units have had difficulty dealing with an armored threat in exercises. An extensive study by the RAND Corporation in 2004 identified that a medium-armored formation would fare poorly against a competent heavy-armored threat generally, especially without a forced-entry armor system.<sup>17</sup> The ongoing problems with the Stryker Mobile Gun System (MGS)—poor performance in the antiarmor role, mechanical and technical issues, and user-reported difficulty in maintenance—make the MGS unable to fulfill its secondary role as a direct-fire support platform to counter enemy armor.<sup>18</sup> Conversely, the ATGM Stryker variant has been shown to be effective as the primary



(Graphic from Army Field Manual 3-96, *Brigade Combat Team* [Washington, DC: U.S. Government Publishing Office, 2015], 1-9)

## Figure 2. Stryker Brigade Combat Team

means to counter enemy armor. The TOW 2 missile system remains a proven and combat-tested antitank guided missile.<sup>19</sup> Unfortunately, the SBCT fields only nine of them.<sup>20</sup> Even if the MGS and the ATGM variants worked exactly as proposed, SBCT would still be overmatched by a standard Russian BTR motor-rifle regiment. A motor-rifle regiment fields a tank battalion and 146 BTRs, the majority of which have ATGM capabilities organically. This basic task organization

gives a motor-rifle regiment a huge overmatch when compared against an SBCT.

## Lack of Air Defense Artillery

SBCT doctrinal force structure has additional problems when confronting a peer or near-peer threat. Currently, there is no air defense artillery (ADA) organic to the SBCT. In contrast, the motor-rifle regiment is organized with an ADA platoon in each battalion.<sup>21</sup>

This lack of ADA assets has had a very damaging effect on rotational units at the NTC. For example, NTC rotation 14-08 saw a large portion of its ground forces destroyed after the Red Force attack helicopters had attrited friendly-force air weapons teams (pairs of Apache helicopters).<sup>22</sup> The teams were having similar issues to the ground forces in that they were fighting an uphill battle against an enemy that had overmatch from the start. This enemy also could engage in a combined arms maneuver that was impossible for friendly forces to counter due to lack of organic ADA assets. At the NTC, organic ADA gave the Red Force the ability to mitigate aerial risk and thus enhance a freedom to maneuver that was denied to the Stryker battalions. While it can be argued that there are many artificialities at the NTC that do not transfer directly to the conventional battlefield, the direct-fire ADA shortfall is not one that can easily be explained away by such arguments.

Notwithstanding, though no ADA upgrades have been proposed for the SBCT yet, the Army has acknowledged that there is a short-range ADA gap developing in Europe when compared to Russian capabilities.<sup>23</sup> Recognition of this materiel shortfall is another example of the Stryker concept following a similar development pattern to that of the motor-rifle regiment.

## Analysis

If we accept that the Stryker concept is developing along similar lines as the motor-rifle regiment, the question becomes, why is the Army slowly aligning its medium force with that of the Russian Federation and the historical Soviet Union thirty years later? I do not believe, nor is it credible, that this parallel development is the U.S. Army intentionally aping the previous Russian experience. Furthermore, it would be inappropriate if it were. I also do not believe that it is being driven entirely to match the capabilities of the Russian Federation's formations together with those of its allies.

That is to say, I do not think the Army is consciously mimicking Russian materiel and doctrine simply because it is the adversary we are currently concerned about (i.e., that we would copy whatever the Russian medium force was in theater, not specifically the BTR and motor-rifle regiment). A more credible explanation is that the Stryker force is suffering from a lack of direction and focus and is simply reinventing on its own the wheel Russia made a long time ago.

The Stryker formation does not have a unified concept. Multiple levels of leadership are pulling the organization in different directions. We do not have one ideal of what the medium-force concept is supposed to be that we can devote our training, doctrine, and development toward. As such, we are suffering from organizational ennui that has separate parts of the Stryker formation developing in a vacuum without consideration of what the parts are doing.

The SBCT community wants all the positive aspects of a light force: lower cost, a small tooth-to-tail ratio, greater operational-level speed, etc. But, it also wants the ability to confront a heavy-armored force on its own terms without having to adopt the cost, support, and deployment time required by an armored force. Since these two ideas are mutually exclusive, we have been forced to adopt a piecemeal response to shortcomings identified during training and training center rotations. This has led to competing ideas on how to train, implement, and support the SBCT, which is why our materiel and doctrinal development have been unintentionally following what the Soviet Union discovered thirty to sixty years ago. Our lack of unified vision has us developing *ex nihilo* the way that the Soviet Union did when it first started its medium-force program. We are now forced to relearn these lessons for ourselves, inadvertently giving our adversaries following the Soviet model a thirty-year head start.

## Recommendations

The solution is a radical restructuring of thought around the Stryker concept. First, the Army must drop "Stryker" from doctrinal terms for forces as it focuses thinking around a platform and not a concept. We do not call armored brigades "Abrams brigades" because it would inappropriately limit the doctrinal scope of the brigade. In this same way, the use of Stryker for the medium force is limiting. Junior Army leaders do not have a concept of a medium force,

and they are not taught to think doctrinally about a formation between a light and an armored formation. Therefore, doctrine does not provide a shared framework to compare and contrast a Russian motor-rifle regiment against an SBCT. This lack of a conceptual medium-force doctrine also exacerbates the continued counteractive directions that the Stryker concept is being pulled in. Similarly, the Stryker should be referred to as a medium-armored platform by doctrine. This would give us a common intellectual structure to weigh medium-armored vehicles and related materiel against each other. As it stands now, junior leaders cannot doctrinally talk about medium-armored capability differences among the Stryker, the BTR, and the German *Gepanzertes Transport-Kraftfahrzeug* Boxer.

Second, if we are committed to having the medium force confront a modern heavy-force threat supported by aviation assets, we need to acknowledge that the medium force will fare poorly without significant combat multipliers, namely organic ADA and more robust direct-fire support not offered by the MGS. One of the RAND Corporation's key recommendations was a restarting of the M551 Sheridan replacement program to provide this direct support.<sup>24</sup> This would mean a new solution program and not returning to the XM8 Armored Gun System, which is 1990s technology.

Additionally, even if the medium force has better organic direct-fire support and ADA, it will still require combined arms to overcome a heavy force. Fighting as a combined arms force should be incorporated into the mission-essential task list for medium-force units, and those tasks should be the focus of joint training, especially training with our Air Force partners. Training with the U.S. Air Force would also ensure that our units are capable to deploy via airlift. The current Army medium force was designed to be transported via air. This ability is essential to lower the time required to build combat power in theater.

Finally, U.S. Army Materiel Command should thoroughly analyze current peer medium-armor systems, especially the BTR and Bumerang. There is a wealth of knowledge available in friendly and competitor forces' experience with their medium platforms. This analysis should focus on which foreign lessons learned should be adopted in the current battlefield environment and which are inappropriate. These findings should then drive near-term upgrades and acquisitions. This would solve the short-term materiel listlessness and give strategists a starting point from which to innovate.

This article is meant as a critique of the current Stryker concept and is therefore generally negative. However, the reader should not take this to mean my intent is in any way to argue that the Stryker concept is wholly ineffective or unnecessary; quite the contrary. Shinseki's argument for the Stryker concept remains sound. Study of the medium-armored concept historically and in current operations shows its effectiveness.<sup>25</sup> The medium force has historically fared better than its heavier counterpart in complex and urban terrain.<sup>26</sup> This has remained true for the Army, as it has adopted the Stryker concept during the war on terrorism. The medium-armored formation's ability to bridge the gap between light and heavy forces during a sustained peer or near-peer conflict is an invaluable capability. The medium-armored force's ability to quickly bring heavy overmatch to a light formation in contact with a light formation, or to provide quick support to a heavy formation with a lower support requirement, is a compelling conceptual argument. The Army's medium concept, when paired with its air mobile capability and high-quality combined arms support, gives it the potential to be the premier medium force worldwide. For this to happen, we must focus our materiel efforts to fill identified gaps and refine our doctrine. If we do not, we will continue to unintentionally recreate the obsolete Cold War-era motor-rifle regiment. ■

## Notes

*Some of these sources were knowingly taken from Russian state-owned or supported organizations. Any specific capabilities claims by these sources should be considered with that understanding.*

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