Driver's Guide:
Czech Your Engine

An Unofficial Vehicle Sourcebook for Twilight: 2013

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Table of Contents

These days, just about every crew has named their ride. Call it animism, anthropomorphism, or just easier to remember than a serial number, but it's pretty much universal. British tankers claim they started it, back when tanks were "land ships" and the armoured corps was trying to adopt nautical traditions. Me, I suspect some semi-literate archers in Jan Zizka's army stuck names on their war wagons and the tradition's been around ever since.

The British Army used to have a system: every vehicle in a company or squadron got a name starting with the same letter, preferably the unit's designation. Since the Last Year, though, that's broken down; no one wants to rename vehicles every time they reorganize around losses. So now the two Challenger troops here have Abrasive Wheels, All In, Barbara, Letter from Carrickfergus, Deckhand, and Ruffian.

Every name's a story. Barbara the tank is a maintenance hog; Barbara the woman was the tank commander's ex-wife, who's widely believed to have slept with half his previous squadron. Carrickfergus' crew is from the eponymous town. The guys who ride Abrasive Wheels are fans of classic punk – and have rigged external speakers to share the love.

Czechs do the same thing, though with less tradition and more convert's enthusiasm. Consequently, ACR vehicles tend to be named with a distinct lack of gravitas. The gun truck company that runs convoys between Pardubice and Prague has Shoot Last, Traffic Violation, Capitalist (which is a mild insult in some parts of the country), and No Lawyers No Money. The KBVPs with 42nd Mechanized have women's names, which seemed fairly normal until I recognized Silvia Saint and realized they're all Czech porn starlets.

The recon units, British and Czech both, seem to be in a competition for the weirdest or most obscure names. Two Scimitar crews out of Melnik run Thing One and Thing Two, complete with artwork covering the turrets. Gulo Gulo (look it up if you can find a zoology textbook) is a Land Rover mounting a salvaged 20mm autocannon – don't ask me how or why. Velvet Revolutionary sounds like a normal Czech cultural reference unless you know the driver used to be an upholsterer and has applied his previous trade to the truck's entire interior. The prize, though, may go to the BPzV named Smazeny Syr. It's hard to take a 15-ton death machine seriously when it's named for fried breaded cheese.

Then there's Defector. Everyone uses the masculine pronoun for him, as the original owners did. He's a Russian T-80 that a patrol found outside Litomysl over the winter, sitting in the middle of a field, undamaged, half a load of fuel and ammo, hatches open, engine cold, no sign of the crew. No one feels entirely comfortable riding him, but, hey, free tank.

Defector is an exception, though. Most any other Russian vehicle, we just call "target."

Introduction

At the end of the Cold War, Czechoslovakia found itself with an immense surplus of military vehicles – some Soviet designs, some locally-produced. The successor Czech and Slovak Republics were able to pick and choose from the best of these during their subsequent downsizings, then exported or scrapped the remainder. After their respective admissions to NATO, both nations began upgrading their forces with Western equipment. Thus, by the early 2010s, the Czech and Slovak armies fielded unique mixes of vehicles, with half-century-old Soviet armor serving alongside the latest in European fighting vehicles.

This supplement for **Twilight: 2013** presents the common – and a few uncommon – military vehicles that characters are likely to encounter in and around the Czech Republic in mid-2013. This includes equipment fielded by the theatre's primary Czech, British, and Russian combatants, as well as a few designs from neighboring Austria, Germany, Poland, and Slovakia. It also provides rules for the heavy weapons and equipment these vehicles carried. While written as a companion piece for the **Survivor's Guide to the Czech Republic** setting sourcebook, this supplement is a stand-alone work. Familiarity with the Czech setting is necessary only to understand the context of some vehicle service histories.

Acronyms

ACR: Army of the Czech Republic.

AFV: Armored Fighting Vehicle.

APC: Armored Personnel Carrier.

ATGM: Anti-Tank Guided Missile.

IFV: Infantry Fighting Vehicle.

MBT: Main Battle Tank.

MoD: Ministry of Defence, contextually that of the United Kingdom.

Utility Vehicles

Iveco LMV

The LMV (Light Multirole Vehicle) is Italian-based Iveco's offering in the armored 4x4 tactical truck market. The vehicle features both ballistic and IED protection, including special attention to the effects of blast on the occupants: the seats have six-point harnesses and head restraints similar to those found in race cars. Combat exposure in Afghanistan already has proven the effectiveness of its defenses. A circular roof hatch allows fitting of a standard manned weapons mount or a Kongsberg Protector remote turret.

In addition to Italian domestic procurement, the LMV is in worldwide use. Austria, Belgium, Croatia, the Czech Republic, Norway, Slovakia, Spain, and the UK all deploy the vehicle in varying numbers. In British service, it's designated the Panther CLV (Command & Liaison Vehicle), with additional electronics replacing one rear passenger seat.

Special Rules: When sustaining direct explosive damage from beneath, the LMV's hull has Armor 16. In addition, all Armor values are tripled against blast and fragmentation.

Twilight: 2013 Service History: Although intended for patrol, reconnaissance, and command use, the LMV was pressed into frontline combat in the war's later months. In the Czech AO, it was a common sight in British, Czech, and Slovak forces alike. Attrition was heavy among these vehicles, particularly those assigned to reconnaissance duties or modified as stopgap ATGM carriers. The remaining few are prized for their dependability.

Standard Configuration

Barter Value: GG41,000
Street Price: $325,000
Configuration: Standard
Suspension: OR
Crew: 1+4
Cargo: 1,300 kg
Weight: 6.5 tons
Travel Speed: 43/11 km/hr
Combat Speed: 121/30 m
Fuel: 135 L (D)
Fuel Cons: 29 L/hr
Maintenance: 8
Armor: HF 10-Cp, HS 10-Cp, HR 8-Cp; Susp 4
Equipment
Armament: Weapon mount.
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights.
Aux: Self-recovery winch.

Remote Turret Configuration

Barter Value: GG72,500
Street Price: $580,000
Configuration: CIH
Suspension: OR
Crew: 2 (driver, commander) +2 (Panther 3: driver, commander, radio operator)
Cargo: 1,100 kg
Weight: 6.7 tons
Travel Speed: 43/11 km/hr
Combat Speed: 121/30 m
Fuel: 135 L (D)
Fuel Cons: 29 L/hr
Maintenance: 9
Armor: HF 10-Cp, HS 10-Cp, HR 8-Cp; TF 8, TS 4, TR 4; Susp 4
Equipment
Armament: Remote weapon mount (typically FN MAG or M2HB).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio (Panther adds a second radio and a tactical datalink).
Sensors: Headlights; variable magnification (Mag-0 to Mag-3) telescopic gunsight; variable magnification (Mag-0 to Mag-3) night-vision gunsight (C) (Panther adds military mapping GPS).
Aux: Self-recovery winch.

Land Rover Defender 110

It's entirely possible to publish a whole book devoted exclusively to military Land Rover trucks, from the MoD's first Series I vehicles to Australia's stretched 6x6 Perenties. This entry describes the most common Land Rover product in current military service, the Defender 110 (so designated for its 110-inch wheelbase). This vehicle is a militarized version of the civilian Defender model, developed to the MoD's XD (eXtra Duty) specifications. Open-topped and enclosed cabins are equally common. In British service, "Wolf" is the unofficial but ubiquitous nickname for the vehicle series.

Most British Defender 110s in front-line patrol use are open-topped versions fitted with a WMIK (Weapons Mount Installation Kit), which strengthens the chassis and adds a roll cage and two hardpoints. One is in the cargo area, allowing a standing passenger to engage targets all around. The second is for the front passenger seat and has an effective 240º field of fire, though anything outside the center 120º arc can only be a hip shot. Typical load for these mounts is a heavy support weapon (GPMG or larger) in the rear and a SAW in front. The Czech Defender 130 Caiman, with a slightly longer wheelbase, is identical to the Defender 110 WMIK for game purposes.

Twilight: 2013 Service History: The Defender 110 saw service around the world in too many militaries to list here. In the Czech AO, its main users were UK 1st Armoured Division and the ACR, both of which used it for logistics, reconnaissance, ambulance, and military police duties. Defender 110s remain a common sight in Czech-held territory and those that have fallen into Russian or independent hands are prized for their durability. Civilian versions were and are equally popular. The ACR used the Defender 130 Caiman as the primary infantry transport for the 43rd Airborne Battalion, one per six-man squad. Caimans typically were fitted with a PKM and either an NSV or an AGS-17.

Barter Value: GG4,375 (WMIK/Caiman GG5,625)
Street Price: $35,000 (WMIK/Caiman $40,000)
Configuration: Standard
Suspension: OR
Crew: 1+6
Cargo: 750 kg
Weight: 1,600 kg
Travel Speed: 53/15 km/hr
Combat Speed: 149/42 m
Fuel: 80 L (D)
Fuel Cons: 15 L/hr
Maintenance: 4
Armor (Soft-Skinned): HF 1, HS 1, HR 1; Susp 4
Equipment
Armament (WMIK/Caiman only): 2x weapon mount (see text).
Ammo: Dependent on mounted weapons; carried as cargo.
Comm (military only): Military vehicular radio.
Sensors: Headlights.
Aux: Self-recovery winch.

UAZ-469

This light off-road vehicle is a Soviet Cold War design still used around the world. Although some hardtop models were built, the most common versions are open or canvas-topped. First introduced in the early 1970s, the design remains in production under the designation UAZ-3151 (for game purposes, no appreciable changes). Civilian versions also are marketed to off-road enthusiasts, differing from the military models primarily in paint and creature comforts.

Twilight: 2013 Service History: The UAZ-469 and its later incarnations were ubiquitous in any theatre where Russian troops were deployed, as well as in most post-Soviet militaries throughout Eastern Europe. In and around the Czech Republic, both Czech and Slovak forces deployed them, as procurement of newer hardware had not yet caught up with the demand for vehicles in this size class.

Barter Value: GG8,750
Street Price: $35,000
Configuration: Standard
Suspension: OR
Crew: 1+6
Cargo: 500 kg
Weight: 1.6 tons
Travel Speed: 37/10 km/hr
Combat Speed: 103/29 m
Fuel: 78 L (G)
Fuel Cons: 12 L/hr
Maintenance: 4
Armor (Soft-Skinned): HF 1, HS 1, HR 1; Susp 3

Equipment

Armament: None standard but military models often were fitted with weapons mounts on their roll cages.
Ammo: Dependent on mounted weapon, if any; carried as cargo.
Comm: 25% chance of military vehicular radio.
Sensors: Headlights.
Aux: 50% chance of self-recovery winch.

Tatra Trucks

Czech-based Tatra has been producing vehicles since 1850, when it entered the carriage market. The company began building horseless carriages in 1897. By World War II, it had established itself as a leading manufacturer of heavy-duty trucks, a market position which it holds to the present day. Most Tatras are built on a single load-carrying support tube with independently-attached half-axles. This design provides superior protection for the drivetrain, much of which is located *inside* the tube, and high maneuverability over rough terrain. In addition to military transport, Tatra trucks also see extensive use in civilian applications ranging from commercial freight to firefighting to off-road racing.

Tatra T810

The T810 represents a rare modern departure from Tatra's signature tube-and-axle platform. It's a 6x6 cargo truck designed primarily for military use, and has been the Czech military's standard medium transport vehicle since it entered production in 2006. The T810 features a conventional frame, an air-cooled diesel engine, and an open cargo bed. The cab has a circular roof hatch with a ring mount for a support weapon. As a result of Czech missions in Iraq and Afghanistan, a lightly-armored cab is available as a factory option.

Twilight: 2013 Service History: T810s were ubiquitous throughout the Czech theatre during the Twilight War and hundreds are still in use under a variety of colors. The main Tatra factory in Koprivnice is now in the hands of Russia's Central Group of Forces and its current status is unknown, but intelligence reports suggest it retains at least some production capacity.

Barter Value: GG6,750
Street Price: $54,000
Configuration: Standard
Suspension: OR
Crew: 1+2
Cargo: 4.5 tons
Weight: 8.5 tons
Travel Speed: 35/9 km/hr
Combat Speed: 99/25 m
Fuel: 320 L (D)
Fuel Cons: 42 L/hr
Maintenance: 10
Armor (Soft-Skinned): HF 1, HS 1, HR 1; Susp 4
Equipment
Armament: Weapon mount (crewed by passenger).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: None as factory standard, but approximately 25% will have a military vehicular radio fitted.
Sensors: Headlights.
Aux: Self-recovery winch.

Tatra T815

Tatra's current heavy off-road transport offerings entered production in the early 2000s. The T815 series replaced the venerable T813, which had been a mainstay of Warsaw Pact military transportation since the 1960s. The T815 is offered in 4x4, 6x6, and 8x8 versions. Like the T810, the T815 has a factory option for an armored cab.

Twilight: 2013 Service History: T815s were sold into both military and civilian markets prior to the Twilight War and hundreds are still in service throughout Europe and Africa. In the Czech theatre, T815s are daily sights in both Czech- and Russian-controlled territory.

Armor Options

About half of military Tatra T810s and T815s were equipped with factory or add-on armor. For such trucks, traits change as follows:

• Barter value increases by GG1,250 and street price goes up by $9,000.

• Weight increases by 1 ton; cargo capacity decreases similarly.

• Maintenance increases by 1.

• Hull armor increases to HF 5, HS 4, HR 4. However, cargo and passengers in the open-topped bed have only 50% cover and can be targeted separately.

• 10% of armored models are fitted with NBC protection in the cab. The cargo area receives no such benefit.

If the PCs acquire one of these trucks through a random roll, roll 1d20: 1-10 no armor, 11-19 armor, 20 armor and NBC protection. This doesn't apply to the Tatra T815 SOT, which represents a different evolution of the base design.

Trait	4x4	6x6	8x8
Barter Value	GG7,200	GG8,250	GG9,500
Street Price	$57,500	$66,000	$75,000
Configuration	Standard	Standard	Standard
Suspension	OR	OR	OR
Crew	1+1	1+1	1+1
Cargo	8.4 tons tons	17.3 tons	24.4 tons
Weight	8.1 tons tons	11.7 tons	13.6 tons
Travel Speed	25/10 km/hr	28/11 km/hr	28/11 km/hr
Combat Speed	70/29 m	79/32 m	79/32 m
Fuel	320 L (D)	420 L (D)	420L (D)
Fuel Cons	24 L/hr	36 L/hr	38 L/hr
Maintenance	10	10	10
Armor	HF 1, HS 1, HR 1; Susp 5		

Equipment

Armament: None.
Ammo: None.
Comm: None as factory standard, but approximately 25% will have a military vehicular radio fitted.
Sensors: Headlights.
Aux: None.

Tatra T815 SOT

During deployments to Afghanistan in the 2000s, Czech forces used a wide variety of light utility and combat vehicles. One home-grown experiment was the Tatra T815 SOT, a gun truck (or "gunship" in the ACR's preferred vernacular) based on the T815 4x4 chassis. Two T815s were cut down to open tops with waist-high hulls, then fitted with armor, weapon mounts, and various support equipment for a deployed fireteam. Engine governors also vanished, increasing top speed to a potentially suicidal 120 km/hr.

A T815 SOT bristles with armament. Two pintle mounts in the cargo area are for primary weapons; each has a 330º field of fire, blocked only by its counterpart fore and aft. The forward corners of the cab are fitted with additional smaller mounts (medium tripod equivalent) for the driver and commander. These have effective 240º fields of fire, though anything outside the center 120º arc can only be a hip shot. Typical fitment is an AGS-17 and an NSV on the primary mounts and a pair of FN Minimis on the secondaries. In addition, the vehicle's open design allows crew and passengers to fire personal weapons at almost any angle.

Twilight: 2013 Service History: Beginning in mid-2011, the original pair of T815 SOTs in ACR military police service spawned scores of successors. Primary recipients were military police, reconnaissance, and special operations units, though some gunships went to under-equipped reserve and militia companies. Today, 50 or so SOTs are in Czech service, mostly used to escort convoys or bolster security in rear areas. Some also serve as logistics vehicles for reconnaissance teams, hauling supplies and providing a base of fire as needed. A trickle of conversion work continues in Prague as materials become available, producing a handful of new gunships a month.

Barter Value: GG10,000
Street Price: $80,000
Configuration: Standard
Suspension: OR
Crew: 4 (driver, commander, 2 gunners)
Cargo: 3.4 tons
Weight: 11.6 tons
Travel Speed: 40/16 km/hr
Combat Speed: 112/45 m
Fuel: 320 L (D)
Fuel Cons: 38 L/hr
Maintenance: 12
Armor (Soft-Skinned but provides 75% coverage): HF 8, HS 8, HR 8; Susp 5
Equipment
Armament: 2x protected weapon mount (G1 and G2; AV 3); 2x protected weapon mount (C and D; AV 3; medium tripod equivalent).
Ammo: Dependent on mounted weapons; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights; searchlight on forward gunner's weapon mount.
Aux: None.

Tatra T816 Tank Transporter

The expense and maintenance requirements of operating armored vehicles lead most militaries to seek alternate means of transporting them over long distances. For road travel, this usually takes the form of a tank transporter – an extra-heavy prime mover and flatbed trailer. An 8x8 tractor version of the T816, an older series of heavy cargo trucks, fills this role for the Czech military. The cab includes seating for the crew of the vehicle being transported.

Twilight: 2013 Service History: T816s saw extensive use prior to 2012's battles, ferrying Czech T-72s and British Challenger 2s to Ostrava and Brno. Russian forces destroyed or captured about half the ACR's total inventory of T816s when the 201st MRD overran Brno. Several are in use there for handling large and heavy industrial machinery salvaged from the city's ruins. Most of the remaining Czech-owned examples are in Prague with the 7th Mechanized Brigade.

Barter Value: GG15,000
Street Price: $66,000
Configuration: Standard
Suspension: OR
Crew: 1+8
Cargo: 700 kg (+88 tons towed, including trailer)
Weight: 43.8 tons (+14 tons trailer)
Travel Speed: 28/8 km/hr
Combat Speed: 79/23 m
Fuel: 640 L (D)
Fuel Cons: 55 L/hr
Maintenance: 14
Armor (Soft-Skinned): HF 2, HS 2, HR 2; Susp 6
Equipment
Armament: None.
Ammo: None.
Comm: None as factory standard, but approximately 25% will have a military vehicular radio fitted.
Sensors: Headlights.
Aux: 2x loading winch (mounted at front of trailer bed, each 40-ton capacity).

Infantry Carriers

BMP-1

Introduced in the mid-1960s, the Soviet BMP-1 was the first modern example of the *infantry fighting vehicle*: a combination of a light tank and an armored personnel carrier. At the time, a tracked vehicle capable of carrying an infantry squad, protecting them from NBC hazards, and providing fire support when they dismounted was a revolutionary – and, to NATO, highly threatening – concept. BMP-1 production ran in the Soviet Union and various client nations through the mid-1980s, with about 25,000 built.

The BMP-1's small one-seat turret carries its armament: a 76mm cannon, a coaxial PK-series machine gun, and a wire-guided ATGM launcher. The ATGM launcher is mounted outside the turret, which requires the gunner to leave the protection of the armor – and compromise the vehicle's NBC seal – to reload it.

Each crewman has his own hatch, while the troop compartment has four roof hatches and a pair of rear doors. The rear seats are set in a back-to-back row down the center of the compartment, allowing all mounted troops to use firing ports simultaneously. The vehicle's fuel tanks are located between the seats and inside the rear doors, which can reduce crew survivability in some engagements...

The BMP-1's half-century service history led to a wide variety of variants. The following game traits are for the most common production version, approximately four decades old as of this writing.

Twilight: 2013 Service History: The BMP-1 remained in use around the world during the Twilight War. In the Czech theatre, its primary users were Slovak forces and some Russian formations. All remaining Czech BVP-1s (see sidebar) had been mothballed, though the ACR did continue to use a few specialist vehicles built on the base chassis. The 2011 rearmament push saw a few BVP-1s refurbished and issued to reserve companies. Poland also maintained a small fleet of aging BWR-1s (see sidebar), some of which remain operational in 2013.

Barter Value: GG450,000
Street Price: $900,000
Configuration: CIH
Suspension: Tracked
Crew: 3 (driver, commander, gunner) +8
Cargo: 800 kg
Weight: 13.5 tons
Travel Speed: 22/15 km/hr
Combat Speed: 61/42 m
Fuel: 460 L (D)
Fuel Cons: 45 L/hr
Maintenance: 16
Armor: HF 17, HS 9, HR 7; TF 18, TS 10, TR 7; Susp 9
Equipment
Armament: 2A28 cannon; AT-3 launcher; coaxial PKM.
Ammo: 40 rounds of 73mm; 5 AT-3 missiles; 2,000 rounds of belted 7.62x54mm.
Comm: Military vehicular radio.
Sensors: Headlights; searchlight (G); infrared searchlight (C); night vision system (D); variable magnification (Mag-0 to Mag-2) telescopic gunsight; Mag-2 night vision gunsight (C, G); optical rangefinder (G).
Aux: Amphibious running gear; autoloader; NBC defense system.

BMD-1

The Soviet Union developed this lightweight IFV in the 1960s as a BMP-1 equivalent for VDV (airborne) troops. The original design called for a magnesium hull under a BMP-1 turret, seating four crewmen and four infantrymen. Experiences in Afghanistan convinced engineers to switch to aluminum armor to reduce the risk of hostile fire turning the hull into a giant pyrotechnic device. The BMD can be airdropped with minimal preparation (and with two crewmen on board) and has a "kneeling" suspension to reduce overall height while being transported.

Unusual for post-WWII AFVs, the BMD-1 mounts two bow machine guns in addition to its turret armament, one at each forward corner of the hull. The commander's position is behind the left gun, while a dedicated secondary gunner has the right weapon. Each crewman has his own hatch atop his position. The engine is mounted at the rear of the hull, behind the passenger compartment, so passengers enter and exit through a pair of roof hatches. Most VDV units loaded only three passengers per BMD-1, as the vehicle's interior was claustrophobically small even by Soviet standards. Some doctrine called for a two-man permanent vehicle crew and five infantrymen, with squad members manning the bow guns until they dismounted.

Twilight: 2013 Service History: Though later AFV designs rapidly superseded the BMD-1, Russia kept it in service with some VDV regiments well into the 21st century. The 51st Guards Airborne Regiment had 90-odd in inventory prior to its ill-fated drop on Germany in early 2012. A few remnants of this operation are in the hands of German or Czech partisans and bandits along the border region. The regiment's own survivors at Temelin retain three BMD-1s, though one is being stripped for parts to keep the other two operational.

Barter Value: GG360,000
Street Price: $720,000
Configuration: CIH
Suspension: Tracked
Crew: 4 (driver, commander, 2 gunners) +4
Cargo: 600 kg
Weight: 7.5 tons
Travel Speed: 23/12 km/hr
Combat Speed: 65/33 m
Fuel: 300 L (D)
Fuel Cons: 33 L/hr
Maintenance: 16
Armor: HF 11, HS 6, HR 5; TF 18, TS 10, TR 7; Susp 6
Equipment
Armament: 2A28 cannon; AT-3 launcher; coaxial PKM; PKM (C); PKM (G2).
Ammo: 40 rounds of 73mm; 4 AT-3 missiles; 6,000 rounds of belted 7.62x54mm.
Comm: Military vehicular radio.
Sensors: Headlights; searchlight (G); night vision system (D); variable magnification (Mag-0 to Mag-3) telescopic gunsight; Mag-2 night vision gunsight (C, G); optical rangefinder (G).
Aux: Amphibious running gear; autoloader; NBC defense system.

BMPs and BVPs

In Czechoslovakian – and later Czech and Slovak service – the BMP-1 and BMP-2 (see the **Twilight: 2013 Core Rulebook**, p. 290) were designated "BVP-1" and "BVP-2." For game purposes, these vehicles are identical to their Soviet parent designs. Likewise, the Polish BWR-1 effectively is the same machine as the BMP-1.

Unlike the BVP-1, the BVP-2 remained in frontline Czech service through the war. It was the ACR's primary IFV, as KBVP procurement never caught up with the demand for vehicles.

Starting in 2008, a handful of Slovak BVP-2s were modernized with the same turret mounted on the Czech KBVP. Consider these identical to the BMP-2 except for turret armor, armament, ammunition, and sensors; for these, use the traits of the KBVP. By mid-2013, all surviving examples of this design are in the hands of the Central Group of Forces.

FV432

Built in the late 1960s, this tracked APC still serves the British Army as a troop carrier, command post, ambulance, engineer vehicle, and general workhorse. About half the original 3,000-vehicle production run remains in use. The FV432 had been slated for complete retirement in the mid-2000s, but ongoing British commitments in Iraq led to a service extension and modernization plan – and the vehicle's return to infantry use, in which the FV510 Warrior had largely supplanted it.

Close to a dozen FV432 variants exist, many with different FV43x-series model numbers. This entry presents the most recent of the basic APC versions: the FV432 Mk.3 and the "Bulldog" upgrade. The Bulldog package includes a complete drivetrain overhaul, new electronics, improved protection with reactive armor cells, a remote turret controllable from the commander's seat, and air conditioning.

Twilight: 2013 Service History: The FV432 was ubiquitous in British Army service, seeing action wherever Tommy fought. In the Czech AO, an estimated 30+ remain operational, not counting other FV430-series specialist variants. Most are Bulldog-level vehicles, veterans of the division's previous tours in Iraq.

FV432 Mk.3
Barter Value: GG725,000
Street Price: $1,450,000
Configuration: Standard
Suspension: Tracked
Crew: 2 (driver, commander) +10
Cargo: 2.6 tons
Weight: 15.3 tons
Travel Speed: 17/12 km/hr
Combat Speed: 49/33 m
Fuel: 455 L (D)
Fuel Cons: 68 L/hr
Maintenance: 14
Armor: HF 21, HS 17, HR 17; Susp 12
Equipment
Armament: Weapon mount (C; typically equipped with FN MAG).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (D).
Aux: Amphibious running gear; NBC defense system.

FV432 Bulldog
Barter Value: GG925,000
Street Price: $1,850,000
Configuration: CIH
Suspension: Tracked
Crew: 2 (driver, commander) +10
Cargo: 1.2 tons
Weight: 14.8 tons
Travel Speed: 24/16 km/hr
Combat Speed: 67/46 m
Fuel: 455 L (D)
Fuel Cons: 41 L/hr
Maintenance: 14
Armor: HF 25-RAR, HS 21-RAR, HR 20; TF 8, TS 4, TR 4; Susp 12
Equipment
Armament: FN MAG (standard stabilization).
Ammo: 2,000 rounds belted 7.62x51mm.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (D); variable magnification (Mag-0 to Mag-3) telescopic gunsight; variable magnification (Mag-0 to Mag-3) night-vision gunsight (C).
Aux: Amphibious running gear; NBC defense system.

KTO Rosomak

In the early 21st century, it seems every military procurement office on the planet is buying a different 8x8 wheeled APC or IFV. The Polish variation on this theme is the KTO *Rosomak* (Wolverine), a derivative of the Finnish Patria AMV. The Rosomak takes advantage of the parent design's modularity, reducing armor in favor of amphibious and air-transportable capabilities. It mounts a remote turret similar to that of the Czech KBVP (q.v.), equipped with a 30mm autocannon and a coaxial GPMG.

Some of the first production run of Rosomaks were deployed to Afghanistan in the late 2000s as part of Poland's ISAF commitment. These vehicles were fitted with enhanced modular armor for all-around protection against heavy machine guns and RPGs. The modular armor upgrade reduces cargo capacity to 2.3 tons, increases vehicle weight to 25.5 tons, removes the amphibious running gear, and increases hull armor to HF 27-Cp, HS 22-Cp, HR 22-Cp. The entire Rosomak fleet is expected to eventually be provided with this option for use as needed.

Twilight: 2013 Service History: The Rosomak appeared only in Polish service, where it fared poorly during the Twilight War. Designed for peacekeeping operations, its armor and armament were insufficient for the sort of full-scale conflict that erupted in 2012. The vast majority of Rosomaks were destroyed over the Last Year. Remaining examples tend to be assigned to patrol and rapid deployment operations where their speed and mobility can be used to best advantage. The Afghan armor kits mentioned above were rare, fitted to only about 15% of the fleet (random roll if the PCs acquire a Rosomak on the military vehicle table).

Barter Value: GG1,300,000
Street Price: $2,600,000
Configuration: CIH
Suspension: OR
Crew: 3 (driver, commander, gunner) +8
Cargo: 4 tons
Weight: 22 tons
Travel Speed: 33/15 km/hr
Combat Speed: 93/42 m
Fuel: 325 L (D)
Fuel Cons: 65 L/hr
Maintenance: 15
Armor: HF 22-Cp, HS 11, HR 11; TF 20, TS 12, TR 12; Susp 9
Equipment
Armament: Mk. 44 Bushmaster II (standard stabilization); coaxial UKM-2000.
Ammo: 600 rounds of 30mm; belted 7.62x51mm ammo as cargo.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (D); variable magnification (Mag-0 to Mag-3) optical gunsights (C, G); variable magnification (Mag-0 to Mag-3) thermal gunsights (C, G); laser rangefinder/designator (C, G).
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

Marder 1

The *Marder* (Marten) is a German tracked IFV dating to the early 1970s. Designed as the mechanized infantry companion to the Leopard 1, it's still in front-line use, though the newer Puma is expected to replace it by the end of the 2010s. The Marder features a two-seat turret with a Rheinmetall 20mm autocannon, a coaxial MG3, and a MILAN ATGM launcher. Early versions had a second MG3 in a remote mount atop the rear hull but this and the passenger compartment's firing ports were deleted in a mid-1980s up-armoring. Each crew position has an overhead hatch. The passenger compartment has a rear ramp and an additional overhead hatch; during normal operations, one of the mounted infantrymen is expected to serve as loader for the MILAN.

Over its service history, the design has undergone several upgrades to both firepower and survivability. The version depicted here is the Marder 1A3, which is the baseline for current German service. Two newer (and rare) upgrade levels also exist. The 1A4, assigned to battalion commanders, adds two more military vehicular radios and a SATCOM terminal. The 1A5, deployed primarily on peacekeeping missions, has additional mine protection (AV 24-Cp against mines, IEDs, and other ground-level explosions).

Twilight: 2013 Service History: The turmoil of the early 2010s resulted in limited Puma procurement and the Marder remained the *Bundeswehr's* primary IFV throughout the Twilight War. While its armament was somewhat outdated, the vehicle generally performed well in combat and it's probably the most common combat vehicle on German soil today. Surviving examples can be found wherever German troops fought. Aside from Germany, the only notable user was Chile (most of whose Marders are now in Argentinian service).

Barter Value: GG700,000
Street Price: $1,400,000
Configuration: Turreted
Suspension: Tracked
Crew: 3 (driver, commander, gunner) +6
Cargo: 900 kg
Weight: 33.5 tons
Travel Speed: 22/10 km/hr
Combat Speed: 61/29 m
Fuel: 650 L (D)
Fuel Cons: 85 L/hr
Maintenance: 16
Armor: HF 28-Cp, HS 24, HR 14; TF 30-Cp, TS 24, TR 16; Susp 17
Equipment
Armament: MK20 Rh202 autocannon; MILAN launcher; coaxial MG3.
Ammo: 1,250 rounds of belted 20x139mm; 7 MILAN missiles; 5,000 rounds of belted 7.62x54mm.
Comm: Military vehicular radio.
Sensors: Headlights; thermal imager (D); variable magnification (Mag-1 or Mag-3) telescopic gunsight (C, G); variable magnification (Mag-1 or Mag-3) thermal gunsight (C, G); laser rangefinder (G).
Aux: NBC defense system.

OT-64/SKOT

Czechoslovakia and Poland jointly developed and manufactured this 8x8 APC in the late 1950s as an alternative to the BTR-60. Its designation was OT-64 in Czechoslovakian service and SKOT (*Sredni Kolowy Opancerzony Transporter*) under Polish colors. Compared to the contemporaneous Soviet design, the OT-64 featured superior protection, speed, and range, together with equivalent armament.

By the early 21st century, the OT-64 was obsolete, though it remained in second-line service with the original manufacturers and about a dozen of export customers (mostly in North Africa). As of early 2010, the Czech military retains only a handful on active duty, having mothballed or sold most of its stock during its post-Cold War force reductions. The Polish fleet still numbers several hundred.

Several different configurations were built or retrofitted over the vehicle's service history. The two most common models for general infantry use are described here: the initial OT-64/SKOT-2 and the later OT-64A/SKOT-2A. The latter design replaced the exposed weapon mount with the turret from the Soviet BRDM-2 scout car. On both versions, access points are a pair of rear troop doors, a side door and roof hatch each for the driver and commander, and four roof hatches that open outward. The roof hatches can be locked upright, allowing mounted troops to use them for cover in the vehicle's side arcs (AV 4) while engaging targets outside the fields of the normal firing ports.

Twilight: 2013 Service History: In early 2011, Czech and Polish military planning recognized that procurement of modern APCs was unlikely to wholly satisfy the demand for mechanized transport. All remaining Czech vehicles and several hundred recently-surplussed Polish models were shipped to the Tatra truck factory in Koprivnice. The Czech government subsidized refurbishment of the vehicles' drive trains and installation of upgraded electronics in exchange for use of an unspecified number of the Polish vehicles. The Czechs used these to equip reserve and Zizka Brigade infantry companies. Most of the functional OT-64s in the Czech Republic came from this stock.

OT-64/SKOT-2

Barter Value: GG30,000
Street Price: $60,000
Configuration: Standard
Suspension: OR
Crew: 2 (driver, commander) +18
Cargo: 2.5 tons
Weight: 13 tons
Travel Speed: 31/12 km/hr
Combat Speed: 88/34 m
Fuel: 330 L (D)
Fuel Cons: 42 L/hr
Maintenance: 12
Armor: HF 19, HS 10, HR 8; Susp 5
Equipment
Armament: Protected weapon mount (C; AV 3; usually equipped with PKM or NSV; 6 firing ports (2 left, 2 right, 2 rear).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors (Cold War): Headlights; searchlight (C).
Sensors (2013): Headlights; searchlight on roof forward of weapon mount; night-vision system (D); Mag-1 night-vision system (C).
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

OT-64A/SKOT-2A

Barter Value: GG32,500
Street Price: $65,000
Configuration: CIH
Suspension: OR
Crew: 3 (driver, commander, gunner) +10
Cargo: 2.5 tons
Weight: 13.5 tons
Travel Speed: 31/12 km/hr
Combat Speed: 88/34 m
Fuel: 330 L (D)
Fuel Cons: 42 L/hr
Maintenance: 12
Armor: HF 19, HS 10, HR 8; TF 10, TS 6, TR 5; Susp 5
Equipment
Armament: KPV; coaxial PKM (G); 6 firing ports (2 left, 2 right, 2 rear).
Ammo: 500 rounds of belted 14.5mm; 2,000 rounds of belted 7.62x54mm.
Comm: Military vehicular radio.
Sensors (Cold War): Headlights; searchlight (C); Mag-2 telescopic gunsight (G).
Sensors (2013): Headlights; searchlight (C); night-vision system (D); Mag-1 night-vision system (C); Mag-2 telescopic gunsight (G); Mag-2 night-vision gunsight (G).
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

OT-90

This tracked APC is a BMP-1 chassis with the turret of the BRDM-2 and OT-64. First created in the early 1970s, it's wholly obsolete in the modern era. Its primary users are the Czech and Slovak Republics, both of whom intend to phase it out by the mid-2010s.

Twilight: 2013 Service History: Slovakia was the only nation to deploy more than a handful of OT-90s in the Twilight War. In addition to their own inventory of about 100, the Slovaks received the majority of Czech retired Czech vehicles. Most remaining OT-90s now belong to the Central Group of Forces, whose troops have experimented with a variety of improvised armament upgrades ranging from 23mm anti-aircraft guns to externally-mounted helicopter rocket pods.

Barter Value: GG450,000
Street Price: $900,000
Configuration: CIH
Suspension: Tracked
Crew: 3 (driver, commander, gunner) +8
Cargo: 800 kg
Weight: 12.7 tons
Travel Speed: 22/15 km/hr
Combat Speed: 61/42 m
Fuel: 460 L (D)
Fuel Cons: 45 L/hr
Maintenance: 15
Armor: HF 17, HS 9, HR 7; TF 10, TS 6, TR 5; Susp 9
Equipment
Armament: KPV; coaxial PKM (G); 6 firing ports (2 left, 2 right, 2 rear).
Ammo: 500 rounds of belted 14.5mm; 2,000 rounds of belted 7.62x54mm.
Comm: Military vehicular radio.
Sensors: Headlights; searchlight on hull roof forward of turret; Mag-2 telescopic gunsight (G).
Aux: Amphibious running gear; NBC defense system.

Light AFVs

BPzV Svatava

This is a Czechoslovakian-developed reconnaissance version of the BVP-1. The BPvZ retains its parent design's armor and armament but replaces the troop seating with crew positions for a navigator, sensor operator, and radio operator. A ground surveillance radar system is mounted on the right side of the turret, with an enhanced visual observation system opposite it. The ammunition load is increased over that of the base BVP-1.

Twilight: 2013 Service History: BPvZs saw combat in Czech, Slovak, and Poiish service through the Twilight War. At the outbreak of the war, the ACR had some 70 vehicles, serving mostly with the 102nd Reconnaissance Battalion. This unit suffered heavy losses due to the nature of its usual assignments but perhaps a third of its BPvZs remain in use. Any Slovak BPvZs that survived the war are undoubtedly in Russian custody now. Poland retains at least a few of its BWR-1Ses (same machine, different name).

Barter Value: GG630,000
Street Price: $1,260,000
Configuration: CIH
Suspension: Tracked
Crew: 6 (driver, commander, gunner, navigator, sensor operator, radio operator)
Cargo: 900 kg
Weight: 13.8 tons
Travel Speed: 22/15 km/hr
Combat Speed: 61/42 m
Fuel: 460 L (D)
Fuel Cons: 45 L/hr
Maintenance: 16
Armor: HF 17, HS 9, HR 7; TF 18, TS 10, TR 7; Susp 9
Equipment
Armament: 2A28 cannon; AT-3 launcher; coaxial PKM.
Ammo: 76 rounds of 73mm; 7 AT-3 missiles; 3,500 rounds of belted 7.62x54mm.
Comm: 3x military vehicular radio.
Sensors: Headlights; searchlight (G); infrared searchlight (C); night vision system (D); variable magnification (Mag-0 to Mag-2) telescopic gunsight; Mag-2 night vision gunsight (G); variable magnification (Mag-1 to Mag-4) night vision system (C); optical rangefinder (G); military mapping GPS (N); ground surveillance radar (SO); laser detector.
Aux: Amphibious running gear; autoloader; NBC defense system; 2x modern ruggedized notebook computer.

BRDM-2

Although painfully obsolete on a 21st-century battlefield, production volume makes this Russian-designed armored car a common target anywhere the Warsaw Pact once sold arms. First deployed in the early 1960s, it's a boxy, four-wheeled vehicle. Two additional pairs of chain-driven retractable wheels are mounted between the main axles, allowing the suspension to span trenches and other obstacles. The only ingress points are a pair of overhead hatches at the driver's and commander's stations.

The basic version of the BRDM-2 is primarily a reconnaissance vehicle, typically carrying a crew of four (driver, commander, and two scouts with additional duties as gunner and relief driver). Myriad variants have been built on the basic chassis, from SAM launchers to electronic warfare platforms. This entry addresses three of the most common designs: the original reconnaissance vehicle, the 9P148 ATGM carrier (sometimes misidentified by NATO sources as the BRDM-3), and the modernized diesel-powered BRDM-2M. Almost all Czech, Ukrainian, and Polish examples are modernized to an equivalent standard with the BRDM-2M, albeit with the belly wheels removed for more crew space and, in the case of the Czech variant, an NSV replacing the KPV.

Twilight: 2013 Service History: The BRDM-2's ubiquity over a half-century of arms sales put it on virtually every battlefield of the 2010s. However, the large number of remaining examples is a testament to production volume rather than survivability.

BRDM-2 (BRDM-2M)
Barter Value: GG25,000 (BRDM-2M $32,000)
Street Price: $50,000 (BRDM-2M $64,000)
Configuration: CIH
Suspension: OR
Crew: 3 (driver, commander, gunner) +1
Cargo: 600 kg
Weight: 7.7 tons (BRDM-2M 7.9 tons)
Travel Speed: 32/24 km/hr
Combat Speed: 89/68 m
Fuel: 290 L (G) (BRDM-2M 290 L [D])
Fuel Cons: 37 L/hr (BRDM-2M 24 L/hr)
Maintenance: 8 (BRDM-2M 7)
Armor: HF 12, HS 6, HR 6; TF 10, TS 6, TR 5; Susp 4
Equipment
Armament: KPV; coaxial PKM; 2 firing ports (1 left [D], 1 right [C]).
Ammo: 500 rounds of belted 14.5x114mm; 2,000 rounds of belted 7.62x54mm.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (C, D); infrared searchlight (C); Mag-1 telescopic gunsight (G); inertial navigation system (BRDM-2M replaces inertial nav with military GPS receiver).
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

BRDM-2 ATGM (9P148 "Konkurs")
Barter Value: GG37,500
Street Price: $75,000
Configuration: CIH
Suspension: OR
Crew: 3 (driver, commander, gunner)
Cargo: 450 kg
Weight: 7 tons
Travel Speed: 32/24 km/hr
Combat Speed: 89/68 m
Fuel: 290 L (G)
Fuel Cons: 37 L/hr
Maintenance: 9
Armor: HF 12, HS 6, HR 6; TF 10, TS 6, TR 5; Susp 4
Equipment
Armament: AT-5 launcher (5 tubes).
Ammo: 15 ATGMs (AT-4 or AT-5).
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (C, D); infrared searchlight (C); Mag-2 telescopic gunsight (G); Mag-1 thermal gunsight (G).
Aux: Amphibious running gear; autoloader; NBC defense system; self-recovery winch.

Fennek

The German-built Fennek is a 4x4 armored reconnaissance vehicle introduced at the turn of the millennium. It's currently in service with the German and Dutch armies as a replacement for aging recon platforms (respectively, the 8x8 Luchs and the M113). The Fennek features an angular, low-slung hull with a remote weapons mount and a sensor pod on a 2-meter telescoping mast. The pod also can be dismounted and used remotely, drawing power and returning data over a 40-meter cable. Onboard supplies are intended to allow the crew to operate autonomously for a minimum of 5 days. The vehicle is constructed to be as stealthy as a 10-ton armored car can be, with attention to minimizing its thermal signature and overall size.

The basic Dutch and German Fennek designs are the same, save for armament (typically M2HB for Dutch units, H&K GMG for Germans) and the installation of an ALADIN UAV launch system on some German models. In addition to the standard reconnaissance vehicle, there are command, combat engineer, forward observer, SAM, and ATGM variants.

Special Rules: On a turret hit, roll a die. On an even result, the turret is hit; on an odd result, the sensor pod is hit. The pod has AV 2 and any penetration automatically is a Sensor hit affecting one of the observer's sensors. Penetration with a Damage value in excess of 20 destroys the entire pod.

Twilight: 2013 Service History: Fenneks were the primary reconnaissance vehicles of German and Dutch ground forces during the Twilight War. Their speed and stealth made them difficult targets, but relatively light armor ensured that few cornered Fennek crews survived. Still, an estimated several hundred of these vehicles remain in service in 2013. Most are in the original owners' hands, though Polish troops salvaged or appropriated a handful and a few more are in the possession of various independent forces.

Barter Value: GG600,000
Street Price: $1,200,000
Configuration: CIH
Suspension: OR
Crew: 3 (driver, commander, observer)
Cargo: 750 kg
Weight: 9.7 tons
Travel Speed: 38/29 km/hr
Combat Speed: 107/81 m
Fuel: 185 L (D)
Fuel Cons: 25 L/hr
Maintenance: 9
Armor: HF 10, HS 9, HR 9; TF 8, TS 4, TR 4; Susp 4
Equipment
Armament: Modular remote weapon mount (see text).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: 3x military vehicular radio; tactical data link.
Sensors: Headlights; variable magnification (Mag-0 to Mag-2) optical gunsight (C); variable magnification (Mag-0 to Mag-2) thermal gunsight (C); thermal imager (D); military mapping GPS receiver; inertial navigation system; variable-magnification (Mag-0 to Mag-3) television camera (O); variable-magnification (Mag-0 to Mag-3) thermal imager (O); laser rangefinder (O); laser designator (O); directional microphone (O).
Aux: NBC defense system; self-recovery winch; ALADIN UAV launch and control system (25% chance, German vehicles only); 2x modern ruggedized notebook computer.

PvPK Snezka

This Czech artillery spotter vehicle, also known as the BVP-1PPK, is another BMP-1 derivative. The VOP-026 Sternberk corporation's extensive modifications to the base vehicle lengthen and raise the hull, add another set of roadwheels, and replace the turret with a 14-meter articulated boom. Atop the boom sits a sensor package that includes daylight and thermal cameras, a laser designator/rangefinder, a meteorological package, and a radar system capable of ground surveillance or artillery fire tracking. The boom's hydraulics can raise it in 90 seconds and return it to travel position in 60 (respectively, 3 and 2 exchanges of fire). Datalink transceivers enable the crew to relay targeting data to gunners as far as 15km away.

Special Rules: All "turret" hits strike the boom; treat any Crew, Weapon, or Ammo damage result as a hit to one of the boom's sensors.

Twilight: 2013 Service History: The Snezka's primary user was the ACR's 13th Artillery Brigade, in which it was the preferred platform for forward observer teams. Never particularly prolific, Snezkas were high-priority targets for Russian scouts. Only four are known to have survived the Twilight War intact and all of these remain in Czech inventory. An additional handful, with intact hulls but shot-away sensor masts, serve as stopgap APC replacements or ambulances. The Snezka also was offered for foreign sale in the late 2000s; while no purchases were recorded, the GM may feel free to use this as justification for placing one or two examples in odd locales.

Barter Value: GG800,000
Street Price: $1,600,000
Configuration: CIH
Suspension: Tracked
Crew: 4 (driver, commander, radar operator, artillery spotter)
Cargo: 500 kg
Weight: 17.4 tons
Travel Speed: 18/12 km/hr
Combat Speed: 51/35 m
Fuel: 460 L (D)
Fuel Cons: 45 L/hr
Maintenance: 22
Armor: HF 17, HS 9, HR 7; TF 5, TS 5, TR 5; Susp 9
Equipment
Armament: Weapon mount (C; typically NSV).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: 2x military vehicular radio; tactical data net.
Sensors: Headlights; night vision system (D); military mapping GPS (AS); fire direction and ground surveillance radar (RO); weather sensors (AS); 3x variable-magnification ()Mag-1 to Mag-3) television camera (AS); variable magnification (Mag-1 to Mag-2) thermal imaging television camera (AS); laser designator/ rangefinder (AS).
Aux: Amphibious running gear; NBC defense system; small portable generator; 3x modern ruggedized notebook computer.

M53/59

The "*Jesterka*" ("Lizard") is a Czechoslovakian SPAA platform from the 1950s, which Czechoslovakia and Yugoslavia adopted over the contemporaneous ZSU-57-2. It's a heavily-modified Praga V3S 6x6 truck chassis mounting a pair of 30mm autocannon. The weapon system is wholly manual, lacking any electronic guidance. The vehicle is lightly armored against small arms and fragmentation but the turret is open-topped (50% cover for the gunner and loaders). The turret can depress to 2º below horizontal to attack ground targets and can elevate to 85º for its intended use, and it can be removed from the vehicle for use in a fixed emplacement.

By the end of the Cold War, the M53/59 was thoroughly obsolete, seeing only limited reserve service in Czechoslovakia, Yugoslavia, and their respective successor states, as well as in Libya. The vehicle's last recorded combat use was in the Balkans in the 1990s, where various former Yugoslav factions used it for both air defense and, more commonly, ground combat.

Special Rules: The M53/59's dual autocannon fire as a single attack. For attack and damage purposes, multiply the number of rounds fired in a burst by the number of functioning autocannon (i.e. a vehicle with two working guns actually fires 12 rounds when using a B6 rate of fire).

Twilight: 2013 Service History: By the 2010s, a bare handful of M53/59s were operational outside museums. A few of these were former Libyan vehicles scattered across North Africa, but most were in the hands of various Balkan militias and gangs. Largely ineffective as a modern air defense system, their primary use was for urban infantry support. No combatants in the Czech AO are known to have deployed M53/59s, but we've included the design here as an historical curiosity and a possible unique possession or opponent for PCs.

Barter Value: GG190,000
Street Price: $380,000
Configuration: Turreted
Suspension: OR
Crew: 5 (driver, commander, gunner, 2 loaders)
Cargo: 1,000 kg
Weight: 10.3 tons
Travel Speed: 20/10 km/hr
Combat Speed: 56/28 m
Fuel: 120 L (D)
Fuel Cons: 19 L/hr
Maintenance: 12
Armor: HF 5, HS 4, HR 4; TF 4, TS 3, TR 3; Susp 4
Equipment
Armament: 2x M53 30mm autocannon
Ammo: 800 rounds of 30x210mm (8x 50-round magazines, 400 rounds stored).
Comm: Military vehicular radio.
Sensors: Headlights.
Aux: None.

SK-105 Kurassier

The Austrian-built *Kurassier* (Cuirassier) is a tracked tank destroyer. First deployed in the early 1970s, the vehicle is one of the few gun-equipped antitank platforms to remain in service in the era of ATGMs. Primary armament is a turreted 105mm rifled gun, while a pair of German-built MG 3s provide anti-infantry and anti-aircraft firepower. The SK-105 is strictly intended for fire support and ambush work, not frontal assault, as its forward armor is rated only against light autocannon rounds and the rest of its protection stops nothing more than small arms. On the positive side, its light weight makes it airdroppable, and, combined with a robust engine and transmission, gives it superior mobility on steep grades.

The vehicle carries a crew of three, with the driver in the hull and the commander and gunner in the turret. Each crew position has its own hatch. The hull is not NBC-sealed, though each position has a mask supplying filtered air. The odd oscillating turret is derived from the French AMX-13; in addition to rotating, the entire turret assembly, not just the main gun, moves to adjust weapon elevation. The gun's range of elevation is greater than that of many main battle tanks, reflecting the SK-105's mountain warfare design objective.

A total of roughly 600 SK-105s were built. Austria is the SK-105's primary user, owning about a third of the total production run (albeit mainly in reserve today). Export sales were mostly to South American and North African nations.

Special Rules: The Kurassier moves at full speed in hilly terrain and ½ in mountainous terrain, rather than the respective ¾ and ¼ speeds that are normal for a tracked vehicle.

Twilight: 2013 Service History: The Kurassier enjoyed moderate combat success in African and South American conflicts, where it was less likely to encounter modern MBTs. In Austrian defense service, it was less effective, as even its newly-developed APDS ammunition was incapable of consistently scoring kills on T-80s and T-90s. By autumn 2012, the Austrians had abandoned the SK-105 for the tank-killing role and attached their remaining Kurassiers to infantry units as mobile fire support. Perhaps a score of these vehicles survive in 2013, equally distributed between remnant Austrian forces and the Russian 58th Army. Ammunition shortages make their battlefield appearances quite rare.

Barter Value: GG212,500
Street Price: $850,000
Configuration: Turreted
Suspension: Tracked
Crew: 3 (driver, commander, gunner)
Cargo: 750 kg
Weight: 17.7 tons
Travel Speed: 23/18 km/hr
Combat Speed: 65/50 m
Fuel: 420 L (D)
Fuel Cons: 59 L/hr
Maintenance: 18
Armor: HF 33, HS 9, HR 8; TF 38, TS 11, TR 10; Susp 13
Equipment
Armament: 105 G1 cannon (standard stabilization); coaxial MG 3 (G); weapon mount (C; typically equipped with MG 3).
Ammo: 42 rounds of 105mm; 2,000 rounds of belted 7.62x51mm NATO.
Comm: Military vehicular radio.
Sensors: Headlights; night-vision system (D): variable magnification (Mag-1 or Mag-3) gunsights (C, G); Mag-2 thermal gunsights (C, G); searchlight (G); laser rangefinder (G).
Aux: Autoloader; crew air filter.

Combat Support Vehicles

AMB-S

Built on the hull of a BVP-1, this Czechoslovakian design is an armored ambulance intended for medical evacuation at the front lines. The parent vehicle's turret is deleted in favor of a raised roofline that can accommodate a medic and four stretcher patients. The AMB-S is unarmed, though it retains the BVP-1's crew hatches and an enterprising owner could conceivably weld on a weapons mount.

Barter Value: GG350,000
Street Price: $700,000
Configuration: Standard
Suspension: Tracked
Crew: 2 (driver, commander) +5
Cargo: 1,000 kg
Weight: 12.5 tons
Travel Speed: 22/15 km/hr
Combat Speed: 61/42 m
Fuel: 460 L (D)
Fuel Cons: 45 L/hr
Maintenance: 14
Armor: HF 17, HS 9, HR 7; Susp 9
Equipment
Comm: Military vehicular radio.
Sensors: Headlights; infrared searchlight (C); night vision system (D, C).
Aux: Amphibious running gear; NBC defense system; ambulance-equivalent medical equipment.

BREM-2

This Soviet (later Russian) armored recovery vehicle is based on the chassis of the BMP-1. It sacrifices the BMP's roof hatches and turret in favor of a crane, and the troop compartment is expanded to provide additional stowage space for tools. A plow blade is fitted to the lower slope of the bow, though it's used less for earthmoving than to brace the vehicle while using the winch. Standard cargo includes one set each of basic hand tools, basic power tools, mechanic's tools, model-specific vehicle tools for BMP-series vehicles and their derivatives, an arc welder, and a small portable generator. Typical crew is a team of three mechanics.

Special Rules: All "turret" hits strike the crane, which has an AV of 2. Don't roll for damage location on a crane hit – just apply the damage result to the crane mechanism itself.

Twilight: 2013 Service History: The BREM-2 served in virtually all Russian formations equipped with BMP-series IFVs. Most survived the war, as recovery vehicles rarely were thrown into combat as improvised fighting vehicles. By mid-2013, their utility makes them prized pieces of equipment and many surviving examples have been pressed into service for infrastructure recovery efforts. As such, they can be encountered throughout uncontested areas, carrying out a variety of engineering missions far removed from their design intent.

The Czechoslovakian equivalent of the BREM-2 was the domestically-produced VPV, built on BVP-1 and BVP-2 hulls. For game purposes, it's identical to the BREM-2. As late as the Twilight War, the Czech and Slovak armies used VPVs to support units equipped with BVP-series IFVs.

Barter Value: GG550,000
Street Price: $1,100,000
Configuration: CIH
Suspension: Tracked
Crew: 2 (driver, commander) +1
Cargo: 900 kg
Weight: 14.3 tons
Travel Speed: 20/15 km/hr
Combat Speed: 56/42 m
Fuel: 480 L (D)
Fuel Cons: 130 L/hr
Maintenance: 15
Armor: HF 17, HS 8, HR 6; Susp 9
Equipment
Armament: Weapon mount (C; typically equipped with PKM).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights.
Aux: Amphibious running gear; cargo-handling crane (6.5-ton load limit); NBC defense system; plow blade; winch (25-ton load limit, 120-meter cable).

BTR-80K

The company/battalion command variant of the BTR-80 is effectively a standard hull retrofitted with additional communication, navigation, and battle management equipment. Externally, it's distinguishable by its extra whip antennas and its 11-meter telescoping antenna. Internally, it replaces part of the passenger seating with three workstations for the unit commander and two radio operators, though the latter positions are sometimes extra duty for the vehicle commander and gunner.

Twilight: 2013 Service History: The BTR-80K was the standard command vehicles for motor rifle formations mounted on BTR-80s.

Barter Value: GG80,000
Street Price: $160,000
Configuration: CIH
Suspension: OR
Crew: 6 (driver, commander, gunner, unit commander, 2 radio operators) +2
Cargo: 1.7 tons
Weight: 14.2 tons
Travel Speed: 27/20 km/hr
Combat Speed: 75/56 m
Fuel: 300 L (D)
Fuel Cons: 40 L/hr
Maintenance: 14
Armor: HF 16, HS 8, HR 4; TF 16, TS 6, TR 5; Susp 5
Equipment
Armament: KPV; coaxial PKM; 5 firing ports (1 front [C], 2 left, 2 right).
Ammo: 500 rounds of belted 14.5mm ammo; PKM ammo carried as cargo.
Comm: 4x military vehicular radio; base station radio aerial.
Sensors: Headlights; IR searchlight on turret; inertial navigation system; military GPS receiver.
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

FV434 Armoured Fitters' Vehicle

This is the field maintenance and repair carrier of the British Army's Royal Electrical and Mechanical Engineers (REME). It's a variant of the FV432, fitted as a mobile tool shop. A crane is affixed atop the hull and a canvas-topped cargo area replaces the rear section of the passenger compartment. The version depicted here is the current standard, upgraded with the drivetrain of the Bulldog package. Typical crew is a team of four REME technicians. Standard cargo includes one set each of basic hand tools and basic power tools, plus one of the following:

• one set each of mechanic's tools and model-specific vehicle tools appropriate for the unit to which the crew is attached

• one set each of electrician's and electronics tools

• one set each of gunsmith's and ordnance tools

Special Rules: All "turret" hits strike the crane, which has an AV of 2. Don't roll for damage location on a crane hit – just apply the damage result to the crane mechanism itself.

Twilight: 2013 Service History: REME units throughout the British Army used the FV434 as a mobile workshop. Vehicles that remain in operation today usually are assigned to units performing reconstruction work in remote areas where such a workbench on treads is a necessity rather than a convenience.

Barter Value: GG800,000
Street Price: $1,600,000
Configuration: CIH
Suspension: Tracked
Crew: 2 (driver, commander) +2
Cargo: 2.6 tons
Weight: 17.8 tons
Travel Speed: 24/16 km/hr
Combat Speed: 67/46 m
Fuel: 455 L (D)
Fuel Cons: 41 L/hr
Maintenance: 14
Armor: HF 21, HS 17, HR 17; Susp 12
Equipment
Armament: Weapon mount (C; typically equipped with FN MAG).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (D).
Aux: Amphibious running gear; cargo-handling crane (3-ton limit); NBC defense system.

MT-55

This Soviet AVLB (Armored Vehicle-Launched Bridge) is built on the hull of the T-55 (see the **Twilight: 2013 Core Rulebook**, p. 292). The tank's turret is replaced with the hydraulic mechanisms necessary for transporting, deploying, and recovering an 18-meter folding bridge. Deploying the bridge takes three minutes; recovery, about eight. The bridge is 3.3 meters wide and has a maximum load of 50 tons. The crew can manage the entire process without leaving the vehicle.

The Czech variant, the MT-55A, is identical to the base model save for the addition of an optical rangefinder, night-vision equipment, and NBC protection. Also, the Polish/East German-designed BLG-60 is another T-55 AVLB derivative and is identical to the base model for game purposes.

Special Rules: All "turret" hits strike the bridge or its deployment mechanism. While the bridge is on board, this location has an AV of 75 (hey, it's a 6.5-ton slab of steel). While the bridge is off the vehicle, the hydraulics have AV 2. Don't roll for damage location on a bridge hit – just apply the damage result to the hydraulic mechanism itself.

Twilight: 2013 Service History: Most militaries considered the MT-55 obsolete by the time of the Twilight War but it did serve in second-line Russian forces (and replaced destroyed MTU-72s in some first-echelon units). A few examples remained in use in various corners of the globe that lacked the inclination or budget to modernize their AVLB inventories. The ACR continued to use the MT-55A as its primary combat bridging asset, complementing the newer truck-mounted systems deployed away from the front lines.

Barter Value: GG180,000
Street Price: $720,000
Configuration: Turreted
Suspension: Tracked
Crew: 2 (driver, commander)
Cargo: 400 kg
Weight: 36.5 tons (incl. 6.5-ton bridge)
Travel Speed: 17/12 km/hr
Combat Speed: 47/33 m
Fuel: 560 L (D) (+2x200 L drop tanks)
Fuel Cons: 27 L/hr
Maintenance: 14
Armor: HF 38, HS 16, HR 12; Susp 19
Equipment
Armament: Weapon mount (C; typically equipped with PKM).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights (MT-55A adds night vision system [D, C]; optical rangefinder [C]).
Aux: Bridgelaying hydraulics; radiation shielding (MT-55A upgrades to full NBC defense system).

Trojan AVRE

The Trojan AVRE (Armored Vehicle, Royal Engineers) is a route clearance and demining vehicle based on the Challenger 2 chassis. Though it shares hull and drivetrain components with its parent MBT, the Trojan is new production, not a refit of existing tank hulls. It's part of the British Army's modernization program of its entire engineering vehicle fleet.

A hydraulic excavator arm is mounted atop the hull, while the glacis is fitted with a bulldozer blade. The rear deck is fitted with a rack for a fascine (a bundle of plastic pipes linked with a chain, suitable for filling ditches or spanning soft ground), which the excavator's jaws can grab and deploy as needed. External ports allow engineers to power standard hydraulic tools from the vehicle's own system. For mine clearance work, a plow can replace the earthmoving blade and a lane marking system can be mounted to the rear. The crew can remotely operate all mounted equipment from inside the cabin, conducting normal operations without breaching their NBC seal. For self-protection, an L94A1 chain gun is housed in a small remote weapon mount. Most of the armor is dismountable to save weight and improve fuel economy (though game traits assume it's still fitted).

Special Rules: On a turret hit, roll 1d10. On a 1-6, the hit strikes the excavator arm, which has an AV of 6. On a 7-9, the hit strikes the fascine (if it's carried), which has an AV of 2. Don't roll for damage location – just apply the damage result to the excavator mechanism or the fascine itself. On a 10, the hit strikes the remote turret. In addition, when sustaining direct explosive damage from beneath, the hull has Armor 72, and all Armor values are doubled against blast and fragmentation damage.

Twilight: 2013 Service History: Trojans were exceptionally rare, with only 35 in service at the war's outbreak – three per Royal Engineer squadron and a handful in training units. 1st Armoured Division deployed to the Czech Republic with a total of seven, having somehow acquired one of the pair of prototype/trial vehicles. Two of the division's Trojans were lost when Russian air assets sank their barge and three are presumed destroyed or captured in Brno. The last two remain in service, primarily clearing minefields the departing Russians left in their wake after the Siege of Prague ended.

Barter Value: GG3,750,000
Street Price: $7,500,000
Configuration: CIH
Suspension: Tracked
Crew: 3 (driver, gunner, equipment operator)
Cargo: 750 kg
Weight: 62.5 tons
Travel Speed: 20/13 km/hr
Combat Speed: 56/36 m
Fuel: 1,590 L (D)
Fuel Cons: 210 L/hr
Maintenance: 24
Armor: HF 66, HS 24, HR 24; Susp 24
Equipment
Armament: L94A1 (C).
Ammo: 2,000 rounds of belted 7.62x51mm ammo.
Comm: Military vehicular radio; tactical data net.
Sensors: Headlights; night vision system (C, D, EO); variable magnification (Mag-0 to Mag-2) telescopic gunsight (C); variable magnification (Mag-1 to Mag-2) night vision gunsight (C); military mapping GPS.
Aux: Bulldozer blade or mine clearance plow; excavator arm (1 m³ volume, 6.5-ton capacity); NBC defense system.

Main Battle Tanks

Challenger 2

Introduced in 1998, the "Chally" (officially the FV4043) was the British main battle tank of the Twilight War. Although technically a progressive development of the original 1980s-vintage Challenger, the Challenger 2 was an entirely new beast outside the hull and drive train. Fewer than 500 examples were built, as the only purchasers were the UK and Oman.

The Challenger 2 follows NATO doctrine of a four-man crew: commander, gunner, loader, and driver. It has a conventional Western layout with the driver in a forward compartment and the other three crewmen in the turret. Access points are a driver's hatch in the center of the forward slope and commander's and gunner's hatches on the turret roof. While exact capabilities are classified and thus a matter for conjecture, the Challenger 2 has earned a reputation as one of the best-protected MBTs in the world.

Twilight: 2013 Service History: The Challenger 2's highest-profile service was in the Czech Republic, where the Russian invasion pitted the UK's 1st Armoured Division against late-series T-80s and T-90s. Chally crews generally held the upper hand in such matches, though superior Russian numbers went a long way toward evening the odds. Of the 120-odd Challenger 2s that left Germany in late 2011, 1st Armoured has about 25 still operational, with more repairable if spare parts can be obtained. An unknown number from other formations are scattered across Poland and its neighbors as a result of British participation in Operation Marauder.

Barter Value: GG4,000,000
Street Price: $8,000,000
Configuration: Turreted
Suspension: Tracked
Crew: 4 (driver, gunner, loader, commander)
Cargo: 100 kg internal + 500 kg in bustle rack
Weight: 63 tons
Travel Speed: 20/13 km/hr
Combat Speed: 56/36 m
Fuel: 1,590 L (D) (+2 x 175 L drop tanks)
Fuel Cons: 210 L/hr
Maintenance: 27
Armor: HF 166-Cp, HS 43-Cp, HR 27-Cp; TF 192-Cp, TS 68-Cp, TR 55; Susp 24
Equipment
Armament: L30 120mm cannon (good stabilization); coaxial L94A1 (G); weapons mount (C; typically MAG).
Ammo: 52 rounds of 120mm ammo; 4,000 rounds of belted 7.62x51mm ammo.
Comm: Military vehicular radio; tactical data net (UK models only).
Sensors: Headlights; laser rangefinder; night vision system (D); variable magnification (Mag-0 to Mag-3) optical gunsights (C, G); variable magnification (Mag-0 to Mag-3) thermal gunsights (C, G).
Aux: NBC defense system.

T-72M4CZ

This modernized Czech T-72 descends from a Czechoslovakian upgrade program of the late 1980s. Of about 180 T-72s in current Czech inventory, only the 30 in the ACR's single active-duty armor battalion are built up to this standard. The rest were mothballed or assigned to reserve units during the post-Cold War force drawdown.

The T-72M4CZ upgrade effectively jacks up the hull, tracks, and main armament of the original T-72 and slides an entirely new tank under them. The gunnery systems have been brought up to modern standards, including adding a stabilization system to allow limited fire on the move. Communication systems likewise are upgraded to meet NATO interoperability requirements. Add-on explosive reactive armor increases turret and hull protection, while a British diesel engine and American transmission replace the original Russian equipment. Visually, a T-72M4CZ is nearly identical to a standard T-72 unless the observer is intimately familiar with both designs or has the leisure to conduct an extended inspection.

Twilight: 2013 Service History: In late 2010, the ACR began reactivating and upgrading its mothballed T-72 inventory. In addition to bringing all available T-72s up to the M4CZ standard, ongoing electronics upgrades added a domestically-produced tactical data network for NATO interoperability. Most or all of the tanks are believed to have been upgraded before the outbreak of hostilities, though precise records were lost during the Russian invasion. A small number of vehicles were turned over to UK 1st Armoured to replace Challenger 2 losses suffered during the division's movement to Prague.

During the Russian invasion, the T-72M4CZ performed admirably against its Russian cousins. Czech forces exploited the visual similarity of the designs on many occasions during the Twilight War. However, this did generate a slight uptick in friendly fire incidents, particularly when Czech armor was operating near the troops of other allied nations. To mitigate this hazard, Czech tank crews adopted a variety of field-expedient identification methods during the later months of the war.

Barter Value: GG1,500,000
Street Price: $3,000,000
Configuration: Turreted
Suspension: Tracked
Crew: 3 (driver, gunner, commander)
Cargo: 75 kg internal plus 700 kg in bustle rack
Weight: 46 tons
Travel Speed: 20/15 km/hr
Combat Speed: 56/42 m
Fuel: 1,590 L (D) (+400 L drop tank)
Fuel Cons: 150 L/hr
Maintenance: 27
Armor: HF 97-Cp-ARAR, HS 41, HR 31; TF 110-ARAR, TS 79, TR 33; Susp 19
Equipment
Armament: 2A46M 125mm cannon (standard stabilization); coaxial TK 95 (G); pintle mount NSV (C).
Ammo: 37 rounds 125mm; 2,000 rounds belted 7.62x54mm or 7.62x51mm; 720 rounds belted 12.7mm.
Comm: 2x military vehicular radio; tactical data net.
Sensors: Headlights; night-vision system (D); Mag-2 optical gunsight (C); Mag-3 optical gunsight (G); Mag-2 thermal gunsight (C); Mag-3 thermal gunsight (G); laser rangefinder; military mapping GPS; laser detector.
Aux: Autoloader; NBC defense system.

T-80

The T-80 was the first (and last) successful Soviet tank design powered by a turbine rather than a diesel engine. Development from the existing T-64 occurred during the 1970s, with the Red Army adopting the T-80 for service in 1976. Throughout the Cold War, it was one of the mainstays of Soviet armor. The Soviet Union considered its technology a state secret and never offered it for export, unlike the contemporaneous (and mechanically simpler) T-72. Even in the post-Communist era, few former Soviet republics have sold many T-80s.

Visually, the T-80 has nearly identical proportions and general lines to the T-72. However, the T-80's electronics are superior, including equipment for launching laser-guided ATGMs through the gun tube. The tank underwent several upgrades during its service life. This entry provides traits for the two most common. The T-80U mounts reactive armor and an improved turbine power plant. The Ukrainian-designed T-80UD comes full circle to replace the turbine with a diesel engine for better fuel economy.

Twilight: 2013 Service History: Russia and several other former Soviet republics fielded T-80Us in the Twilight War, as did Egypt and South Korea. T-80UDs also were found in Russian forces, albeit less common, and in Pakistan. The T-80UD made up a good portion of Ukraine's armor and the country's implosion and conquest spread these throughout Central Europe. In the Czech AO, CGF and 58th Army forces have T-80s in both configurations. A few ex-Ukrainian T-80UDs are in Czech service and one is the prized possession of the independent militia holding Polna.

T-80U

Barter Value: GG2,000,000

Street Price: $4,000,000

Configuration: Turreted

Suspension: Tracked

Crew: 3 (driver, gunner, commander)

Cargo: 100 kg internal, 800 kg in bustle rack

Weight: 46 tons

Travel Speed: 23/16 km/hr

Combat Speed: 65/45 m

Fuel: 1,100 L (multifuel: G, D, A, AvG, AvJ) (+two 370 L drop tanks)

Fuel Cons: 235 L/hr (but see the **Twilight: 2013 Core Rulebook**, p. 276)

Maintenance: 40

Armor: HF 156-CP-ARAR, HS 41, HR 36; TF 170-CP-ARAR, TS 88, TR 42; Susp 20

Equipment

Armament: 2A46M 125mm cannon (standard stabilization); coaxial PKM (G); pintle mount NSV (C).

Ammo: 41 rounds 125mm (typically 6 replaced with AT-11 ATGM); 2,000 rounds belted 7.62x54mm; 720 rounds belted 12.7mm.

Comm: 2x military vehicular radio; tactical data link.

Sensors: Headlights; night-vision system (D); Mag-3 optical gunsights (C, G); Mag-3 thermal gunsights (C, G); laser rangefinder/designator.

Aux: Autoloader; NBC defense system.

T-80UD

Barter Value: GG1,600,000

Street Price: $3,200,000

Configuration: Turreted

Suspension: Tracked

Crew: 3 (driver, gunner, commander)

Cargo: 100 kg internal, 800 kg in bustle rack

Weight: 46 tons

Travel Speed: 22/15 km/hr

Combat Speed: 61/42 m

Fuel: 1,200 L (D) (+two 370 L drop tanks)

Fuel Cons: 155 L/hr

Maintenance: 30

Armor: HF 156-CP-ARAR, HS 41, HR 36; TF 170-CP-ARAR, TS 88, TR 42; Susp 20

Equipment

Armament: 2A46M 125mm cannon (standard stabilization); coaxial PKM (G); pintle mount NSV (C; may fire from inside turret at –3).

Ammo: 45 rounds 125mm (typically 6 replaced with AT-11 ATGM); 1,250 rounds belted 7.62x54mm; 450 rounds belted 12.7mm.

Comm: 2x military vehicular radio; tactical data link.

Sensors: Headlights; laser rangefinder/ designator (C, G); night vision system (D); Mag-3 telescopic gunsights (C, G); Mag-2 thermal and night vision gunsights (C, G).

Aux: Autoloader; bulldozer blade; NBC defense system.

Small Watercraft

Pegas 4M

The Russian-built *Pegas* (Pegasus) 4M is a small four-seat hovercraft. Its lightweight fiberglass hull features an enclosed cabin with gullwing doors mounted ahead of a single large drive fan. A small-block automotive engine, housed in the rear of the cabin, powers both the drive fan and the lift impeller.

Twilight: 2013 Service History: Though never common in any theatre, the Pegas M4 saw occasional government and military use as a utility craft. The ACR had a handful in its prewar inventory for water search and rescue and similar tasks. Three are known to have survived the Twilight War. Two are now based at Prague's Chase Island lock complex for traffic inspection and rapid response work, while the third is stationed at Zvikov Castle for reconnaissance and courier use.

Barter Value: GG24,500
Street Price: $49,000
Configuration: Flush Deck
Crew: 1+3
Cargo: 50 kg
Weight: 650 kg
Travel Speed: 23 km/hr
Combat Speed: 65 m
Fuel: 80 L (G)
Fuel Cons: 16 L/hr
Maintenance: 4
Armor (soft-skinned): Hull 1, Waterline 2
Equipment
Comm: None standard but can be fitted with vehicular radio
Sensors: Headlights

Hovercraft

All hovercraft piloting requires the Special Vehicle (Hovercraft) skill. For small hovercraft like the Pegas M4, a generous GM may allow characters to use Aquatics at a –4 penalty.

On water, a hovercraft is treated like a boat for purposes of speed reduction (see the **Twilight: 2013 Core Rulebook**, p. 273). On solid surfaces, it moves at its rated speed on roads, ¾ speed on open ground and swamp, ½ speed in hills, and ¼ speed in woods. Mountainous terrain is impassable. On sand, ice, snowy open ground, or glass-smooth water, a hovercraft receives a +½ *bonus* to speed.

In combat, a hovercraft sustains damage like a watercraft. As long as the engine is running to pressurize the skirt, flotation hits do not have their normal effect of sustained cumulative buoyancy loss. Also, a hovercraft will not detonate a land mine's pressure trigger.

Vehicle Families

Where possible, we've attempted to organize this supplement's vehicle designs by general type. However, in two cases, we had enough closely-related vehicle designs spread across those categories to justify collecting them under their own respective headings. The CVR(T) permutations described here are the British Army's light tracked workhorses of the Cold War era, while the Czech Pandur II derivatives are among the latest in 8x8 wheeled combat vehicle designs.

CVR(T) Family

The British Combat Reconnaissance Vehicle (Tracked) series originated in the 1960s as a family of lightweight, highly maneuverable AFVs sharing a common chassis and drivetrain. Early-production vehicles used a gasoline engine, which later upgrade programs replaced with a diesel power plant. Aluminum armor is standard, with various additional options receiving study throughout the vehicles' service lives.

The following entries describe the CVR(T) vehicles most commonly seen in British forces that deployed to the Czech Republic during the Twilight War. Additional members of the family include the FV101 Scorpion (similar to the Scimitar but mounting a 76mm gun), the FV102 Striker (Swingfire ATGM carrier), FV106 Samson (armored recovery vehicle), and Sabre (a Scorpion chassis with an FV721 Fox turret, identical to the Scimitar for game purposes). With the exception of the Samson, all of these are now out of British service and few remain in use under other flags.

Special Rules: All vehicles in the CVR(T) family have exceptionally low ground pressure – lower than a man on foot. They move at ¾ speed in swampy terrain and normal speed in sand, rather than the respective ½ and ¾ speeds that are normal for a tracked vehicle.

FV103 Spartan

The FV103 is the CVR(T) line's light APC, carrying a two-man crew and five troops. In current service, it's used primarily as transport for heavy weapon teams (i.e. ATGM or SAM crews) and other small specialist units. Current British Army procurement plans call for it to be replaced by Iveco LMVs but this transition has not yet occurred in full.

Twilight: 2013 Service History: Spartans' primary role as mounts for specialized combat teams made them a welcome sight for Czech and British troops. Their speed and relatively low profile made them difficult targets, and over half of 1st Armoured's prewar inventory remains in service. In 2013, many have been reassigned to infantry units that suffered heavy vehicle losses, providing a functional if cramped replacement for FV432s and FV510s.

Barter Value: GG375,000
Street Price: $750,000
Configuration: Std
Suspension: Trk
Crew: 2 (driver, commander) +5
Cargo: 1 ton
Weight: 8.1 tons
Travel Speed: 27/17 km/hr
Combat Speed: 75/47 m
Fuel: 390 L (D)
Fuel Cons: 52 L/hr
Maintenance: 14
Armor: HF 22, HS 10, HR 10; Susp 9
Equipment
Armament: Weapon mount (C; typically equipped with FN MAG).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (D, C).
Aux: Amphibious running gear; NBC defense system.

FV104 Samaritan

The Samaritan is the CVR(T) medical evacuation variant. Like most battlefield ambulances, it's unarmed and features a built-up superstructure to provide more volume in the passenger compartment. Samaritans typically operate with a three-man crew of driver, commander, and medic. Typical patient capacity is two on litters and two seated; if needed, the litter rack can be stowed to open three more upright seats.

Twilight: 2013 Service History: One of the British Army's primary combat ambulance designs, the Samaritan was widely used wherever British troops fought. Those which lost their medical equipment along the way are usually fitted with improvised weapon mounts for use as stopgap APCs.

FV104 Samaritan
Barter Value: GG450,000
Street Price: $900,000
Configuration: Standard
Suspension: Tracked
Crew: 2 (driver, commander) +5
Cargo: 1 ton
Weight: 8.2 tons
Travel Speed: 27/17 km/hr
Combat Speed: 75/47 m
Fuel: 420 L (D)
Fuel Cons: 52 L/hr
Maintenance: 14
Armor: HF 22, HS 10, HR 10; Susp 9
Equipment
Armament: None.
Ammo: None.
Comm: Military vehicular radio.
Sensors: Headlights; night vision system (D, C).
Aux: NBC defense system; ambulance-equivalent medical equipment.

FV105 Sultan

The Sultan is a command post carrier, built with the same enlarged passenger compartment as the Samaritan. In the Sultan, however, this provides usable office space rather than volume for litter racks. The vehicle's interior has a three-place bench seat facing a map board and working area along one side. A canvas tent (termed the "penthouse" in British Army slang) can be deployed from the rear of the vehicle to extend the available space, though this has been removed from many currently-serving vehicles.

Twilight: 2013 Service History: Two to four Sultans were assigned to the headquarters sections of most units that fielded other CVR(T) variants. Like most command post vehicles, they saw direct combat only through misadventure. In the Czech AO, a handful survived the war and are still in use for their intended purpose, though 1st Armoured Division has recently turned over two to the local SIS contingent.

FV105 Sultan
Barter Value: GG850,000
Street Price: $1,700,000
Configuration: Standard
Suspension: Tracked
Crew: 3 (driver, commander, radio operator) +3
Cargo: 600 kg
Weight: 8.3 tons
Travel Speed: 27/17 km/hr
Combat Speed: 75/47 m
Fuel: 420 L (D)
Fuel Cons: 52 L/hr
Maintenance: 15
Armor: HF 22, HS 10, HR 10; Susp 9
Equipment
Armament: Weapon mount (C; typically equipped with FN MAG).
Ammo: Dependent on mounted weapon; carried as cargo.
Comm: 4x military vehicular radio; tactical data link.
Sensors: Headlights; night vision system (D, C); military mapping GPS.
Aux: NBC defense system; 3x modern ruggedized notebook computer, wired router, scanner, and laser printer.

FV107 Scimitar

The Scimitar is the best-armed CVR(T) permutation still in British service. Carrying a three-man crew and the same 30mm RARDEN autocannon as the FV510 Warrior, its primary mission is forward reconnaissance. Like its sibling design, the FV101 Scorpion, the Scimitar has a welded aluminum hull and turret, rated against most small arms but ill-matched against anti-tank threats. It is not amphibious, though it does have a one-meter fording depth.

As with almost all British AFVs, the Scimitar's crew space includes a small water tank with a boiler for preparing hot food and drink. It also has a chemical toilet under the commander's seat. These provisions allow the crew to stay under armor and NBC protection as long as their supplies last, albeit in extremely cramped quarters.

Twilight: 2013 Service History: At the onset of the Twilight War, only Belgium and the UK employed the Scimitar. In Belgian service, the vehicles had been in reserve since the mid-2000s, but an unknown number were reactivated in 2012 to meet the EU's need for replacement vehicles on the Polish front. The UK had several hundred Scimitars on active duty with its formation reconnaissance regiments; these saw action wherever British ground forces were involved in the war. In the Czech AO, 1st Armoured Division retains at least one reconnaissance squadron (three four-Scimitar troops). The Scimitar's speed and relatively high fuel efficiency make it the division's vehicle of choice for supporting infantry patrols along the Vltava and Elbe Rivers. A Czech Resistance cell in northern Moravia operates a Scimitar recaptured from Russian forces after the battles around Ostrava.

Barter Value: GG700,000
Street Price: $1,400,000
Configuration: Turreted
Suspension: Tracked
Crew: 3 (driver, commander, gunner)
Cargo: 400 kg
Weight: 8.1 tons
Travel Speed: 27/17 km/hr
Combat Speed: 75/47 m
Fuel: 420 L (D)
Fuel Cons: 52 L/hr
Maintenance: 14
Armor: HF 22, HS 10, HR 10; TF 24, TS 12, TR 12; Susp 9
Equipment
Armament: L21A1 RARDEN autocannon; coaxial FN MAG (G).
Ammo: 165 rounds of 30mm; 3,000 rounds of belted 7.62x51mm NATO.
Comm: 2x military vehicular radio; tactical data link.
Sensors: Headlights; night vision system (D); variable-magnification (Mag-1 to Mag-2) telescopic gunsights (C, G); variable-magnification (Mag-1 to Mag-2) thermal gunsights (C, G); laser rangefinder; military mapping GPS.
Aux: NBC defense system.

KBVP/Pandur II Family

In the mid-2000s, the ACR began searching for a new design to replace its aging Soviet-era APCs and IFVs. The winner was the Austrian-built Steyr-Daimler-Puch Pandur II, an 8x8 wheeled vehicle. The Pandur II, itself a derivative of the earlier 6x6 Pandur, is a semi-modular hull and drivetrain that individual purchasers can equip with varying levels of armor, armament, and mission-specific systems. This entry presents the derivatives adopted by the ACR, starting with the basic KBVP infantry carrier.

As of this writing, the ACR intends the Pandur II to replace all remaining OT-64s and most BVP-series vehicles. However, cost overruns, quality control issues, and a bribery scandal have slowed the acquisition schedule. Full deployment is not expected until the middle of the 2010s, and it's likely that some BVP-derived specialist vehicles will remain in use past then.

Twilight: 2013 Service History: The ACR began accepting delivery of Pandur IIs in late 2007 but the aforementioned procurement issues prevented full deployment. Of all versions combined, barely 140 were in Czech service by the outbreak of hostilities in early 2012, and only about half the KBVPs were equipped with the planned Spike ATGM launcher. Most of the Czech Pandurs served with the 4th Rapid Deployment Brigade, which sustained major equipment losses around Ostrava. By mid-2013, less than 30 KBVPs remain in the Czech inventory, with surviving examples of the other variants – never numerous in the first place – measured in the low single digits.

KBVP

The KBVP is a basic IFV. It's fitted with a remote turret, which is equipped with multiple cameras for 360-degree vision. The commander's station has duplicate gunnery controls, as well as an override for one of the cameras to enable him to conduct visual searches independent of the gunner's actions. The vehicle's main armament is an ATK Mk. 44 Bushmaster II autocannon. A coaxial FN MAG provides supplementary antipersonnel firepower while an optional Spike ATGM launcher gives additional anti-armor punch. Although seating is available for eight passengers, typical load is a six-man squad, with the additional volume used for supplies, equipment, and elbow room.

Barter Value: GG1,675,000
Street Price: $3,350,000
Configuration: CIH
Suspension: OR
Crew: 3 (driver, commander, gunner) +8
Cargo: 4 tons
Weight: 23.5 tons
Travel Speed: 35/16 km/hr
Combat Speed: 98/45 m
Fuel: 350 L (D)
Fuel Cons: 52 L/hr
Maintenance: 16
Armor: HF 25-Cp, HS 24-Cp, HR 22-Cp; TF 20, TS 12, TR 12; Susp 9
Equipment
Armament: Mk. 44 Bushmaster II (standard stabilization); Spike-LR launcher (2 launch tubes); coaxial MAG.
Ammo: 600 rounds of 30mm; 6 Spike-LR missiles; belted 7.62x51mm ammo as cargo.
Comm: Military vehicular radio; tactical data link.
Sensors: Headlights; night vision system (D); variable magnification (Mag-0 to Mag-3) optical gunsights (C, G); variable magnification (Mag-0 to Mag-3) thermal gunsights (C, G); laser rangefinder/designator (C, G); laser detector; military mapping GPS.
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

KBV-Pz

The reconnaissance version of the KBVP retains the base design's turret (less the ATGM system) but replaces the passenger space with observation equipment and two additional crew positions. The observation package is mounted on a 3-meter telescoping boom. About half the ACR's KBV-Pzs are equipped with a ground surveillance radar system.

KBV-Pz

Barter Value: GG2,050,000

Street Price: $4,100,000

Configuration: CIH

Suspension: OR

Crew: 4 (driver, commander, gunner, observer) +2 or 5 (add radar operator) +1

Cargo: 4 tons

Weight: 23.5 tons

Travel Speed: 35/16 km/hr

Combat Speed: 98/45 m

Fuel: 350 L (D)

Fuel Cons: 52 L/hr

Maintenance: 17

Armor: HF 25-Cp, HS 24-Cp, HR 22-Cp; TF 20, TS 12, TR 12; Susp 9

Equipment

Armament: Mk. 44 Bushmaster II (standard stabilization); coaxial MAG.

Ammo: 600 rounds of 30mm; belted 7.62x51mm ammo as cargo.

Comm: 3x military vehicular radio; tactical data link.

Sensors: Headlights; night vision system (D); variable magnification (Mag-0 to Mag-3) optical gunsights (C, G); variable magnification (Mag-0 to Mag-3) thermal gunsights (C, G); variable magnification (Mag-1 to Mag-4) television camera (SO); variable magnification (Mag-1 to Mag-4) thermal imager (SO); ground surveillance radar system (RO; 50% availability); laser rangefinder/designator (C, G); optical rangefinder (SO); laser detector; military mapping GPS.

Aux: Amphibious running gear; NBC defense system; self-recovery winch; 2x modern ruggedized notebook computer.

KBV-VR

This is the company or battalion command variant of the KBVP. As with the KBV-Pz, it retains the turreted autocannon but discards the Spike launcher. Typical passenger complement is the unit commander, his radioman (occupying the fourth crew position), and two staff personnel or a scout/sniper team.

KBV-VR

Barter Value: GG1,750,000

Street Price: $3,500,000

Configuration: CIH

Suspension: OR

Crew: 4 (driver, commander, gunner, radio operator) +5

Cargo: 4 tons

Weight: 23.3 tons

Travel Speed: 35/16 km/hr

Combat Speed: 98/45 m

Fuel: 350 L (D)

Fuel Cons: 52 L/hr

Maintenance: 15

Armor: HF 25-Cp, HS 24-Cp, HR 22-Cp; TF 20, TS 12, TR 12; Susp 9

Equipment

Armament: Mk. 44 Bushmaster II (standard stabilization); coaxial MAG.

Ammo: 600 rounds of 30mm; belted 7.62x51mm ammo as cargo.

Comm: 4x military vehicular radio; tactical data link.

Sensors: Headlights; night vision system (D); variable magnification (Mag-0 to Mag-3) optical gunsights (C, G); variable magnification (Mag-0 to Mag-3) thermal gunsights (C, G); laser rangefinder/designator (C, G); laser detector; military mapping GPS.

Aux: Amphibious running gear; NBC defense system; self-recovery winch; 2x modern ruggedized notebook computer.

KOT-Zdr

The KBVP's ambulance variant is unarmed and features additional headroom in the hull. Typical crew is a driver, commander/litter bearer, and medic, with space for four stretcher patients (if needed, each rack of two stretcher patients can be replaced with seats for four upright passengers).

KOT-Zdr
Barter Value: GG1,125,000
Street Price: $2,350,000
Configuration: Standard
Suspension: OR
Crew: 2 (driver, commander) +5
Cargo: 4 tons
Weight: 21.2 tons
Travel Speed: 35/16 km/hr
Combat Speed: 98/45 m
Fuel: 350 L (D)
Fuel Cons: 52 L/hr
Maintenance: 13
Armor: HF 25-Cp, HS 24-Cp, HR 22-Cp; Susp 9

Equipment
Armament: None.
Ammo: None.
Comm: Military vehicular radio; tactical data link.
Sensors: Headlights; night vision system (D); laser detector; military mapping GPS.
Aux: Amphibious running gear; NBC defense system; self-recovery winch; ambulance-equivalent medical equipment.

KOT-Z

The engineer transport version of the KBVP drops the Bushmaster II turret in favor of a smaller remote unit mounting an M2HB. As with the KBVP, typical complement is three crew and a six-man combat engineer squad, with tools and supplies occupying the extra seats.

KOT-Z
Barter Value: GG1,325,000
Street Price: $2,650,000
Configuration: CIH
Suspension: OR
Crew: 3 (driver, commander, gunner) +8
Cargo: 6 tons
Weight: 21.5 tons
Travel Speed: 35/16 km/hr
Combat Speed: 98/45 m
Fuel: 350 L (D)
Fuel Cons: 52 L/hr
Maintenance: 14
Armor: HF 25-Cp, HS 24-Cp, HR 22-Cp; TF 8, TS 4, TR 4; Susp 9
Equipment
Armament: M2HB (standard stabilization).
Ammo: Belted .50 BMG ammunition carried as cargo.
Comm: Military vehicular radio; tactical data link.
Sensors: Headlights; night vision system (D); variable magnification (Mag-0 to Mag-3) optical gunsights (C, G); variable magnification (Mag-0 to Mag-3) thermal gunsights (C, G); laser detector; military mapping GPS.
Aux: Amphibious running gear; NBC defense system; self-recovery winch.

Rules Updates

This is the first (but hopefully not the last) vehicle supplement for **Twilight: 2013**. As such, it provides us the opportunity to expand some of the core rulebook's material on vehicle combat, introduce traits for new equipment, and present the errata for existing vehicle designs.

Beyond Extreme Range

The core Reflex System combat rules are designed for firefights within the capabilities of modern small arms. However, when tank guns and guided missiles are involved, shots at multi-kilometer ranges are theoretically feasible. This optional rule set allows characters to attempt such shots in the rare instances when visual conditions, line of sight, and other circumstances allow. It also facilitates visual observation in the same situations.

Simply put, when dealing with ranges in excess of 1,600 meters, extend the existing range band table (**Twilight: 2013 Core Rulebook**, p. 74) beyond Extreme range as presented in the following table. Note that guided missile flight times also increase with these extended distances.

Table XX: Extended Range Bands

Range Band	Visual Range Penalty	Flight Time
Personal	none	normal
Gunfighting (to 7m)	none	normal
CQB (7-25m)	–1	normal
Tight (25-100m)	–2	normal
Medium (100-200m)	–4	normal
Open (200-400m)	–8	normal
Sniping (400-800m)	–16	normal
Extreme (800-1,600m)	–32	normal
Extreme+1 (1,600m-3km)	–64	x2
Extreme+2 (3-6km)	–128	x3
Extreme+3 (6-12km)	–256	x4

Obviously, this can be extended *ad infinitum* if your characters have access to Nikola Tesla's death ray technology or other equally absurd devices (or, okay, aircraft-launched weaponry, which someone will make us stat out eventually). Just as obviously, these shots are going to be impossible without the benefit of magnification, aim, and target size modifiers.

Example: *Ed is rolling 'cross the land, kickin' up sand, with Iraqis on his tail 'cause he's in demand. Ahem. Deciding to reduce the opposition's numbers, he orders his driver to stop behind a sand dune and readies his Stryker's TOW launcher. The rangefinder puts his target at 3,700 meters, or within the Extreme+2 range band. However, the launcher has a Mag-3 gunsight and Ed is targeting a T-72, which has a visual profile 4x that of a human (another two range bands closer). His effective visual range drops a total of 5 range bands, from Extreme+2 to Medium. With only a +4 visual penalty, Ed's chances of hitting are vastly improved.*

In case you're wondering how Ed can make a shot at EX+2 with a launcher whose printed specs say its maximum range is EX, here's some errata for the ranges of the missiles and large-caliber guns presented in the core rules:

Table XX: Extended Ranges for Existing Weapons

Weapon	Range
Guided Missiles	
AT-7	M/S (no change)
AT-13	O/EX (no change)
AT-14	O/EX+2
Milan	O/EX+1
TOW	O/EX+2
Vehicle-Mounted Cannon	
2A42	O/EX+1
2A46M	S/EX+2
D-10	S/EX+2
L21A1 RARDEN	O/EX+2
L44	S/EX+2
M242 Bushmaster	S/EX+2

Missile Guidance

We didn't present any laser-guided or fire-and-forget missiles in the Reflex System core rules, though the Command Guidance sidebar on page 267 alludes to them.

Fire and Forget

As the name implies, a fire-and-forget guided missile requires no operator intervention once it leaves its launch tube. Such missiles function according to standard attack rules but, if the Stage III command guidance option is in use, require no input after the Attack action. They are still subject to flight time.

Laser

A laser-guided missile homes in on laser light reflected from a target. This requires someone to "paint" the target with a laser designator while the missile is in flight. Typically, a missile is set to pick up a given laser frequency or a given coded pulsation so it only homes in on the intended designator's signal. Changing this setting during combat requires both the gunner and the designator operator to spend an operational action, including communication.

In most cases, the character launching the missile has control of the laser designator on whose signal the missile will track, and use of this designator occurs as part of the attack action. However, if another character is providing guidance, that character must take an operational action to paint the target. For any laser-guided weapon homing on this guidance, the designator operator – not the shooter – makes the attack check, using his own Guided Weapons skill and his own visual range to the target. Physical range penalties, if any, still are calculated based on the missile's firing position.

Random Military Vehicle Table

Here's an updated random military vehicle table that adds this supplement's new designs to those of the **Twilight: 2013 Core Rulebook** (p. 213). As before, each vehicle comes with a full load of fuel and ammunition and a Wear value of 1d3+3. For each vehicle with a weapons mount as its primary armament, roll 1d20: 1-5 no weapon, 6-9 SAW, 10-15 GPMG, 16-18 HMG, 19 AGL, 20 ATGM.

Table XX: Random Military Vehicles (Expanded)

Die	Core Rulebook Vehicle(s)	New Vehicle(s)
1	Jeep Light pickup	UAZ-469
2	Heavy pickup Armored car	
3	Tactical truck	Land Rover Defender 110 BRDM-2 BRDM-2M
4	Tactical truck Light pickup technical Motor boat	Land Rover WMIK/Caiman
5	Tactical truck, up-armored Tactical truck w/ light trailer Heavy pickup technical	BRDM-2 ATGM
6	Tactical truck, up-armored 2.5-ton truck	
7	2.5-ton truck w/ medium trailer Mine-protected vehicle	Iveco LMV
8	5-ton truck 2.5-ton gun truck	Iveco LMV/Panther w/ remote turret Tatra T810
9	10-ton truck 5-ton truck w/ medium trailer	Tatra T815 4x4
10	BTR-80 Wz551 10-ton truck w/ medium trailer	Tatra T815 4x4 w/ medium trailer Tatra T815 6x6 OT-64/SKOT OT-64A/SKOT-2 KOT-Zdr
11	M1126 Stryker ICV TPz Fuchs NBC Recon 5-ton gun truck	Tatra T815 6x6 w/ heavy trailer Tatra T815 8x8 Tatra T815 SOT KOT-Z Fennek w/o ALADIN M53/59 FV103 Spartan FV104 Samaritan AMB-S BTR-80K
12	M113 Semi-tractor w/ semi-trailer	Tatra T815 8x8 w/ heavy trailer Tatra T816 FV432 Mk.3 KTO Rosomak OT-90 MT-55/MT-55A
13	FV510 Warrior	FV432 Bulldog KBVP w/o Spike launcher Fennek w/ ALADIN PvPK Snezka FV107 Scimitar

(continued on next page)

Table XX: Random Military Vehicles (Expanded) (continued)

Die	Core Rulebook Vehicle(s)	New Vehicle(s)
14	M577 TOC	KBV-Pz FV105 Sultan FV434
15	M88A2 HERCULES	BMP-1 BMD-1 KBVP w/ Spike launcher KBV-VR SK-105 Kurassier BREM-2 Trojan AVRE
16	BMP-2 M2A3 Bradley	Marder 1 BPzV Svatava
17	T-55	
18	Leopard 2 T-72 Patrol boat	Challenger 2 T-72M4CZ T-80U/T-80UD

GM Hint: Military Vehicle Acquisition

The usual practice for random equipment table rolls is to allow the player to choose one option on a die result that lists multiple items. In the case of this table, some die results may encompass a range of capability that makes the choice fairly obvious (i.e. few players will pick a stock T-72 when the T-72M4CZ is available). We've tried to roughly balance these vehicles against one another in terms of overall utility, not just combat power, but you may still want to exercise GM fiat to prevent players from consistently choosing the optimum plot-killing big guns from their 3d6 rolls. Likewise, feel free to waive the d20 rolls for weapons mounts in exchange for just providing whatever weapon is listed as typical for each vehicle.

If you're using this table in conjunction with the **Survivor's Guide to the Czech Republic** setting, it's also worth noting that some of the core rulebook's vehicles are highly unlikely to show up in the Czech AO. These include the Wz551, M113, M577 TOC, M2A3 Bradley, and patrol boat. Veto at will.

Vehicle Errata

Detail-oriented readers may note that the armor values presented in this supplement are not in line with those in the **Twilight: 2013 Core Rulebook**. Oops. We've recently released a significant errata update designed to address a few issues with vehicle damage resistance, and the AVs here align with those new values. The errata entries in question are available on the 93 Games Studio forums (http://www.93gamesstudio.com/forum/, but we've reprinted them here for your convenience.

Armor Values

Tactical Truck, Up-Armored: HF 9-Cp, HS 8-Cp, HR 7-Cp; Susp 3.

Armored Car: HF 5, HS 4, HR 4; Susp 4.

Mine-Protected Vehicle: HF 9-Cp, HS 8-Cp, HR 7-Cp; Susp 4. Hull AVs double against explosions from beneath (mines, IEDs, hobbits with RPGs) and triples against blast and fragmentation.

BTR-80: HF 16, HS 8, HR 4; TF 16, TS 6, TR 5; Susp 5.

M1126 Stryker ICV: HF 27-Cp, HS 23-Cp, HR 21-Cp; TF 8, TS 4, TR 4; Susp 7.

Wz551: HF 18, HS 9, HR 5; TF 15, TS 8, TR 6; Susp 6.

FV510 Warrior: HF 27-Sp, HS 24-Sp, HR 18; TF 27, TS 24, TR 12; Susp 15.

M113 (and M577 TOC): HF 20, HS 13, HR 12; Susp 11.

BMP-2: HF 17, HS 10, HR 10; TF 19, TS 10, TR 7; Susp 11.

M2A3 Bradley: HF 40-Cp, HS 34-Sp, HR 22-Sp; TF 29-Cp, TS 24-Sp, TR 22-Sp; Susp 17.

M88A2 HERCULES: HF 25, HS 22, HR 13; Susp 20.

TPz Fuchs: HF 18-Cp, HS 16-Cp, HR 12-Cp; Susp 8.

Leopard 2: HF 124-Cp, HS 32-Sp, HR 20; TF 188-Cp, TS 60-Cp, TR 49; Susp 24.

T-55: HF 38, HS 16, HR 12; TF 43, TS 31, TR 13; Susp 19.

T-72: HF 97-Cp, HS 41, HR 31; TF 110, TS 79, TR 33; Susp 19.

Heavy Machine Gun Calibers

The heavy machine gun calibers (.50 BMG, 12.7x108mm, and 14.5x114mm ammunition) are innately AP, not ball; thus, their Penetration cannot be further reduced. All three of these are available in API (**Twilight: 2013 Core Rulebook**, p. 263) for the same markup that lesser calibers experience when buying AP instead of ball. In addition, they ignore body armor, though they function normally against cover and vehicle armor.

Sensors

We neglected telescopic vehicular gunsights. Oops again. These replacement traits rectify that omission and resolve a few other errors.

Many vehicular gunsights, in both the errata and this supplement's new designs, are listed as having variable magnification. Assume changing magnification is a free action that the user performs in conjunction with whatever else he's doing through the sight.

M1126 Stryker ICV: Headlights; variable magnification (Mag-0 to Mag-5) optical gunsight (C); variable magnification (Mag-0 to Mag-3) thermal gunsight (C); thermal imager (D); military GPS receiver.

FV510 Warrior: Headlights; variable magnification (Mag-0 to Mag-3) optical gunsight (C, G); variable magnification (Mag-1 to Mag-2) thermal gunsight (C, G); night vision system (D); laser rangefinder; military GPS receiver.

BMP-2: Headlights; variable magnification (Mag-0 to Mag-2) optical gunsight (C); Mag-2 night vision gunsight (C); variable magnification (Mag-2 to Mag-4) optical gunsight (G); variable magnification (Mag-2 to Mag-4) night vision gunsight (G); laser rangefinder.

M2A3 Bradley: Headlights; variable magnification (Mag-2 or Mag-4) optical gunsights (C, G); variable magnification (Mag-2 to Mag-3) thermal gunsights (C, G); thermal imaging system (D); laser rangefinder.

Leopard 2: Headlights; variable magnification (Mag-2 to Mag-4) optical gunsights (C, G); variable magnification (Mag-2 to Mag-3) thermal gunsights (C, G); night vision system (D).

T-55: Headlights; variable magnification (Mag-2 to Mag-3) optical gunsight (G); night-vision gunsights (C, G); optical rangefinder; IR searchlight; night vision system (D).

T-72: Headlights; Mag-2 optical gunsight (C); Mag-3 optical gunsight (G); Mag-2 night-vision gunsight (C); Mag-3 night-vision gunsight (G); laser rangefinder; IR searchlight; night vision system (D).

New Vehicle Systems

This supplement presents several vehicles mounting equipment that doesn't exist in the **Twilight: 2013 Core Rulebook**. You'd probably like to have rules for those items...

Defensive Systems

Laser Detector

This system consists of a set of external optical sensors and a control/warning unit (usually mounted at the commander's station). The sensors are tuned specifically to detect laser illumination and warn the vehicle's crew. In game terms, this automatically alerts all characters in crew positions when their vehicle is being ranged or painted by a laser rangefinder or designator. It also provides the system's operator a bearing to the threat, accurate to within 30º. A laser sight weapon accessory will not trigger the system.

Reactive Armor

Reactive armor is a set of explosive boxes attached to the outside of a fighting vehicle's hull. In theory, when an incoming projectile strikes a box, the box explodes, disrupting the projectile's own explosion or physical penetrator before it contacts the hull. This protection isn't perfect or all-around (space must be left for weapons, antennas, vision blocks, and other external equipment), but it does measurably increase crew and vehicle survivability.

A full set of reactive armor has 14 cells (boxes) per vehicle facing. A vehicle hit location carrying reactive armor is indicated in its stat block with a "RAR" notation. When an attack strikes that hit location, the vehicle commander's player rolls 1d20. If the die result is equal to or less than the number of reactive armor cells remaining on that facing, the attack strikes the reactive armor first.

Reactive armor detonates if struck by an explosive warhead (HE, HEAT, HEDP, or HESH type) with a Damage value of 12 or greater. Obviously (but we'll say it anyway in case someone tries to weasel it), this reduces the total number of cells on that hit location by 1. Also, for the purpose of resolving the attack's damage, the hit location's AV is increased by 80 or tripled, whichever is less.

Some vehicles are fitted with advanced reactive armor, indicated with an "ARAR" notation. This functions identically to basic reactive armor, except that bullets or solid warheads (API, APDS) also can detonate it.

Example: *Ed's gunner shoots the T-72 in the previous example and hits its front turret facing with a TOW 2A. Normally, the missile's HEAT warhead, with Damage 165, would easily penetrate the turret's AV of 110. However, the tank has been upgraded with reactive armor. It's been in a few previous engagements and only 9 cells are still mounted. The GM rolls 1d20 for a die result of 3. The missile triggers one of the remaining reactive armor cells, which increases the turret's AV by 80. With an effective AV of 190, the turret rings like a bell but remains unbreached.*

Should any unprotected personnel be standing around a vehicle with reactive armor when a cell detonates, consider the explosion equivalent to a fragmentation hand grenade or the blast effects of the incoming attack, whichever is more dangerous.

A cell of reactive armor weighs 20 kg and has SV $6,000 and BV GG1,200. Advanced reactive armor weighs 24 kg and has SV $15,000 and BV GG3,000 per cell. If a team acquires a reactive armor-equipped vehicle before the start of a campaign (e.g. through a roll on the random military vehicle table), roll 1d20–6 for each equipped hit location to determine how many cells remain on that facing.

Slat Armor

Slat (or "bar" or "cage") armor consists of a metal cage extending about a half-meter from the vehicle. In theory, an incoming warhead will strike the armor and detonate prematurely. While the savings of 50 cm isn't significant against a sufficiently large unidirectional high explosive blast, this stand-off distance mitigates the effects of a HEAT warhead by putting the focus of its shaped charge in the empty air rather than the vehicle itself.

Slat armor can be installed on any armor facing with an AV of at least 2 (except for an unmanned turret, whose traverse mechanism won't support the extra weight). Each facing of slat armor adds 3% to the vehicle's weight. When an explosive warhead (HE, HEAT, HEDP, or HESH type) strikes a facing protected by slat armor, roll a die: 1d10 if the warhead is on a rocket or grenade, 1d20 for a guided missile, or percentile for a large-caliber gun. On a die result of 8 or less, the slat armor triggers the warhead before it strikes the vehicle. If the die result is 1, the explosion destroys the slat armor on the facing that was struck.

When slat armor triggers a HEAT warhead, its Penetration becomes x3. For any other warhead, premature detonation means the vehicle takes primary blast effects rather than the warhead's direct Damage.

A character with a welding torch and a ready supply of raw materials can fabricate slat armor. Protecting one vehicle facing is an incremental Artisan (Welding) (MUS, TN +4) or Mechanics (MUS) check with a period of 1 hour and a target total of the vehicle's weight in tons.

ALADIN

The ALADIN is a micro-UAV designed for tactical battlefield reconnaissance. It can be launched by hand or with an elastic or spring-loaded launcher and landed on any reasonably flat surface. Its propeller is driven by an electric motor with a rechargeable battery.

Until we publish full rules for air operations, GMs should be able to fake it with this:

Weight: 3.2 kg

Stall Speed: 20 km/hr (combat 56 m)

Travel Speed: 30 km/hr

Combat Speed: 84 m

Ceiling: 1 km

Battery Life: 1 hour

Maintenance: 2

Sensors: Television camera; night-vision camera.

A portable ALADIN control module weighs 17 kg and includes the necessary radio transceiver for remote operation, a military mapping GPS receiver, and provisions for recording up to 6 hours of sensor data and outputting it in standard digital formats.

The ALADIN's only defenses are speed, altitude, and size (1.5m wingspan). Any hit with MoS 0 damages the controls or engine but allows the operator a successful maneuver check to glide to a safe landing. Any hit with an MoS greater than 0 destroys the UAV.

Warhead Types

HESH: High Explosive Squash Head. This variant on the basic HE round contains plastic explosive and a fuse with a short (as in, measured in milliseconds) delay. On impact, the plastic explosive spreads across the surface of the target before detonating. The resulting shock wave propagates through the target and into the air beyond it, usually resulting in *spalling* – fragmentation of the target's inner surface. However, spaced armor is more effective at reducing this shockwave. In game terms, HESH acts like HE, with two exceptions. First, double a HESH round's Damage against structures. Second, halve the round's Damage when it strikes spaced armor.

PAB: Programmable Airburst. This is an additional designation applied to a standard warhead type (e.g. "Frag-PAB"). A gunner with a functioning rangefinder may take a 3-tick action before firing to target a point in midair up to 10 meters above any valid physical target. If the attack succeeds, handle the explosion normally, bearing in mind that an airburst may negate the cover of characters caught by blast or fragmentation. If the attack fails, it deviates as per the standard rules for indirect fire (**Twilight: 2013 Core Rulebook**, p. 164), but roll an additional d10 to determine deviation

altitude. On a 1-5, the round goes low; a deviation distance that puts it below ground level is treated as a ground-level blast. On a 4-9, it goes high. On a 10, the fuse fails and it sails merrily on its way without detonating.

Tandem: A tandem-charge warhead carries two separate explosive payloads whose detonation is separated by milliseconds. The purpose of the first explosion is not to breach armor but to prematurely disrupt reactive armor or to bypass slat armor. A tandem-charge warhead negates the normal benefits of these protection types (though it can still trigger reactive armor cells and destroy slat armor). In all other respects, a tandem warhead is considered a standard HEAT warhead.

Weapons

Anti-Tank Guided Missiles

AT-3 "Sagger"

The AT-3 is an early-generation Soviet wire-guided ATGM. The original version was manually steered, requiring an exceptionally high degree of operator proficiency. Ongoing improvements over its half-century service life eliminated this problem and enhanced its warhead to keep pace with improvements in vehicular armor. However, the missile is relatively slow and requires gyroscopic stabilization, which makes it inaccurate in the initial stages of its flight (in game terms, base flight time is 2 ticks per range band and attacks inside Open range suffer a –4 penalty). Despite its age, the AT-3 remained in service around the world through the Twilight War.

The AT-3's launcher was manufactured in both man-portable and vehicular versions. The man-portable model uses the missile's carrying case as the launch platform (one operational action to ready) and requires a separate reusable control box for command input. The box has a 15-meter wire, allowing the gunner at least some degree of separation from the launch platform. It also includes a Mag-3 telescopic sight.

AT-4 "Spigot"/AT-5 "Spandrel"

The AT-4 (Russian designation 9K111) and AT-5 (9M113) are a family of wire-guided ATGMs developed as equivalents to the American TOW. The missiles are fired from the same launch unit, which is most commonly found on the BRDM-2's ATGM-carrier variant.

In addition to vehicular mountings, a man-portable launch system was produced for the AT-4, intended as a replacement for the AT-3. The launcher included tripod, control unit, and Mag-2 telescopic sight. This unit is specific to AT-4 missiles and cannot launch AT-5s.

AT-10 "Stabber"

The AT-10 (9K116) is a laser-guided ATGM launched from a 100mm rifled tank gun tube, typically that of the T-54 and T-55. The missile itself ships in a casing that replicates the dimensions of a standard 100mm shell, so no special launch hardware is required beyond the gun itself. Some modernized T-55s carry the laser designator necessary for guidance, but those without must rely on another observer to designate the target for the missile's seeker head. The original AT-10 design carried a HEAT warhead; modernized missiles with extended range and tandem warheads also are available.

AT-11 "Sniper"

The AT-11 (9M119) is a laser-guided ATGM launched from a 125mm tank gun tube. The T-80 and T-90 MBTs carry the necessary laser designator and other electronics to make use of it, as do some modernized T-72s. Two versions exist: the original "Svir" and a newer extended-range "Refleks." Both are equipped with tandem warheads.

Spike

Spike is an Israeli-developed family of ATGMs designed for infantry, AFV, and helicopter use. All Spike missiles are equipped with tandem HEAT warheads and fire-and-forget infrared guidance. Spike-LR and -ER missiles also provide the option to use manual command guidance over a fiber-optic link. Two launch units are available. Spike-LR, which can be vehicle-mounted or semi-man-portable, can fire Spike-MR and Spike-LR missiles. Its larger sibling, Spike-ER, is intended solely for helicopter and naval use and can launch the full range of Spike missiles.

Spike ATGMs are packaged in disposable launch tubes. A man-portable Spike-LR "launcher" is simply a control unit that attaches to the tube, with optional use of a Mag-3 thermal sight and a tripod (detachable, respectively, at 3 kg and 4 kg). Vehicle-mounted launchers are equipped with whatever sighting systems the vehicle's manufacturer requires.

Table XX: ATGM Launchers

Launcher	Capacity	Range	Speed	Bulk	Weight	BV	SP
Man-Portable Launchers							
AT-3	1 (si)	Per ammo	7/11/16	7	2 kg	GG5,625	$45,000
AT-4	1 (si)	Per ammo	7/11/16	7	22.5 kg	GG6,250	$50,000
Spike-LR	1 (si)	Per ammo	6/9/14	6	12 kg	GG12,500	$100,000
Vehicular Launchers							
AT-3	1 (si)	Per ammo	8/12/18	–	–	–	–
AT-5	1 (si)	Per ammo	8/12/18	–	–	–	–
AT-11 in 2A46M	1 (si)	Per ammo	11/17/25	–	–	–	–
Spike-LR	1 (si)	Per ammo	7/11/16	–	–	–	–
Spike-ER	1 (si)	Per ammo	8/12/18	–	–	–	–

Table XX: ATGM Ammunition

Missile	Range	Dmg	Explosion/Effects	Weight	BV	SP
AT-3 HEAT	S/EX+1	140	Radius 18m, Blast 18, Frag 1	12 kg	GG440	$3,500
AT-4 HEAT	S/EX	80	Radius 8m, Blast 8, Frag 1	13 kg	GG500	$4,000
AT-5 HEAT	S/EX+1	110	Radius 10m, Blast 11, Frag 1	25.2 kg	GG600	$4,800
AT-10 HEAT	S/Ex+1	100	Radius 10m, Blast 10, Frag 1	18.4 kg	GG1,500	$12,000
AT-10 Tandem	S/Ex+2	100	Radius 12m, Blast 12, Frag 1	18.4 kg	GG3,000	$24,000
AT-11 Svir Tandem	S/EX+1	155	Radius 20m, Blast 20, Frag 1	24 kg	GG3,750	$30,000
AT-11 Refleks Tandem	S/EX+2	155	Radius 20m, Blast 20, Frag 1	28 kg	GG4,500	$36,000
Spike-MR Tandem	O/EX+1	100	Radius 12m, Blast 12, Frag 1	14 kg	GG1,750	$14,000
Spike-LR Tandem	O/EX+2	100	Radius 12m, Blast 12, Frag 1	14 kg	GG2,250	$18,000
Spike-ER Tandem	EX/EX+3	160	Radius 20m, Blast 20, Frag 1	33 kg	GG3,000	$24,000

Large-Caliber Guns

105 G1

The 105 G1 is a 105mm rifled gun used on the Austrian SK-105 (and later versions of the French AMX-13, not presented herein). Older versions will accept only HE, HEAT, and smoke rounds, though all still in service have been modernized to fire a French-built sabot shell as well.

The 105 G1's typical mounting incorporates an autoloader with a pair of six-round revolving magazines. With only 12 ready rounds, vehicles armed with this gun do not fare well in prolonged engagements. Most have internal storage racks for additional ammunition; the crew is intended to reload the autoloader's magazines between engagements.

2A28 "Grom"

The 2A28 is a 73mm smoothbore cannon mounted as the main weapon on the Soviet BMP-1 and many of its derivative designs. The gun fires at low pressure and thereby low muzzle velocity; after

firing, a rocket motor in the base of the round ignites, boosting it a higher speed. Combined with an usual turret mounting with a maximum elevation of more than 30 degrees, this allows it to be used for both direct and indirect fire.

In most mountings, the 2A28 includes an autoloader. Soon after its introduction in the BMP-1, this piece of equipment developed a reputation for enthusiastically attempting to load the gunner's left arm instead of, or in addition to, the next round in the ammunition carousel.

L30 120mm Cannon

The Challenger 2 is unique among modern NATO main battle tanks in mounting a rifled, rather than smoothbore, main gun. This feature is an outgrowth of the British Army's requirement for continued use of spin-stabilized HESH shells, which provide improved range over APDS projectiles. The L30's ammunition also is carried and loaded in three parts – shell, propellant charge, and igniter – rather than the more common one-piece configuration.

As with other tank guns, reloading the L30 requires one operational action on the part of the loader, gunner, or commander. The loader can declare this action before the gunner fires, completing the action after the weapon cycles.

Mk. 44 Bushmaster II

This autocannon is a scaled-up version of the original M242 Bushmaster, rechambered for 30x173mm shells to provide enhanced lethality against light armor. As with the M242, the Mk. 44 requires an external power source – either the engine of the vehicle on which it's mounted or an alternate 0.75kW power supply. The Mk. 44 is designed to accept 30mm RARDEN ammunition with a change of feed components. In its Pandur II and KTO Rosomak mountings, it's equipped with a dual belt feed system with two ammo boxes, respectively holding 60 and 140 rounds. The gunner can switch between belts as a 1-tick action.

M53

This is a Czechoslovakian antiaircraft cannon derived from the late-WWII German Mk. 303. It was used in both towed and self-propelled mounts. Towed versions use a 10-round clip, while the vehicular variant uses a massive top-mounted 50-round magazine with a loaded weight of 84.5 kg (hence the usual assignment of one loader per gun).

MK 20 Rh202

The Rh202 is a German-built autocannon used for both ground combat and naval applications. It's mostly being phased out in the 2010s, as its 20x139mm shells have insufficient penetration to defeat most likely threats. In its Marder 1 mounting, it's fed from two separate ammunition supplies (a pair of 200-round boxes), allowing the gunner to switch between belts as a 1-tick action.

Table XX: Large-Caliber Guns

Cannon	Capacity	Range	IFR	ROF	Speed
105 G1	1 (si)	S/EX+1	–	S	9/14/20
2A28	1 (si)	M/S	1.2 km	S	9/14/20
L30	1 (si)	EX/EX+2*	–	S	10/15/23
Mk. 44	dual belt	S/EX+1	–	S/B2/B3	8/12/18
M53	10 or 50	S/EX+1	–	B3/B6	9/14/20
MK 20 Rh202	belt	S/EX+1	–	S/B7/B13	8/12/18

* When firing HESH, the L30's maximum range is EX+3.

Table XX: Large-Caliber Ammunition

Round	Dam	Pen	Explosion/Effects	Wt	BV	SP
20x139mm Shells						
APDS	17	x1/x1	–	25 kg*	GG1,100*	$2,200*
HE	8	Explosive	Radius 5m, Blast 8, Frag 4	26 kg*	GG550*	$1,100*
* Per belt of 50 rounds.						
30x173mm Shells						
APDS	27	x1/x1	–	10.9 kg*	GG900*	$1,800*
Frag-PAB	6	Explosive	Radius 12m, Blast 3, Frag 8	9.5 kg*	GG1,100*	$2,200*
HE	12	Explosive	Radius 6m, Blast 6, Frag 4	10 kg*	GG240*	$480*
* Per belt of 15 rounds.						
30x210mm Shells						
API	25	x1/x2	–	63 kg*	GG800*	$1,600*
HE	11	Explosive	Radius 6m, Blast 6, Frag 4	63 kg*	GG650*	$1,300*
* Per case of 40 rounds.						
76mm 2A28 Shells						
Frag	13	Explosive	Radius 12m, Blast 12, Frag 5	4.6 kg	GG125	$250
HEAT	70	Explosive	Radius 6m, Blast 7, Frag 2	3.5 kg	GG175	$350
105mm G1 Shells						
APDS	77	x1/x1	–	18.3 kg	GG500	$1,000
Chem (smoke)	–	–	Radius 20m	19.1 kg	GG140	$275
HE	16	Explosive	Radius 12m, Blast 16, Frag 5	18.5 kg	GG200	$400
HEAT	60	Explosive	Radius 6m, Blast 6, Frag 2	17.3 kg	GG250	$500
120mm Rifled Shells						
APDS	157	x1/x1	–	18 kg	GG2,400	$2,400
HESH	82	Explosive	Radius 24m, Blast 24, Frag 3	20 kg	GG800	$800
WP	12	Explosive	Radius 24m, Blast 6, Frag 7	20 kg	GG650	$650

Machine Guns

MG 3

Rheinmetall's MG 3 is a West German-built GPMG, in service with the *Bundeswehr* and various other European nations since the 1960s. It's a descendant of the 1940s-vintage MG 42 and shares its parent design's viciously high rate of fire – adjustable to up to 1,500 rounds per minute. Traits are given for an average cyclic rate of "only" 1200 RPM.

TK 95

The TK 95 is a vehicle-mounted variation of the Uk (*Univerzalni kulomet* – Universal machine gun) vz. 59, itself a Czechoslovakian-designed 7.62x54mm GPMG. The TK 95's main distinguishing feature is the availability of conversion kits, allowing use of 7.62x51mm NATO ammunition with a change of barrel, feed cover, and breechblock. In the **Twilight: 2013** setting, these kits were widely available in the ACR by early 2012 (7 kg; GG250 or $1,000) and most vehicles have retained the examples they were issued, providing slightly more flexibility in logistics.

UKM-2000

This is a Polish derivation of the PKM chambered for 7.62x51mm ammunition, developed as part of Poland's NATO standardization initiative.

Table XX: Machine Guns

Firearm	Caliber	Cap	Dam	Pen	Rng	ROF	Spd	Rec	Bulk	Wt	BV	SP
MG 3	7.62x51mm	100 (bt)	8	x2/x3	O/EX	B8/B16	5/8/11	5	5	11.5 kg	GG2,000	$8,000
TK 95	7.62x54mm	100 (bt)	9	x2/x3	O/EX	B5/B10	5/8/11	6	5	8.7 kg	GG1,500	$6,000
TK 95	7.62x51mm	100 (bt)	8	x2/x3	O/EX	B5/B10	5/8/11	6	5	8.7 kg	GG1,500	$6,000
UKM-2000	7.62x51mm	100 (bt)	8	x2/x3	O/EX	B4/B9	5/8/11	6	5	8.4 kg	GG1,250	$5,000