Battlefront: First Echelon **Enhanced Armour Protection Rules v1.2**

Composite Sandwich Armour

During the 1960s and 1970s, the Soviets experimented with various types of armour made from 'sandwiches' of various materials, including ceramics, plastics, aluminium alloys, sand and even artificial rubies, as well as steel and spaced armour. It was found that these sandwiches increased the overall hardness of the armour against kinetic penetrators when compared to steel armour of the same thickness and were even more effective against shaped-charge penetrators.

Consequently, all Soviet Main Battle Tanks from the T-64 onward were fitted as standard with composite sandwich armour, thus increasing protection and reducing weight when compared to steel armour with the same levels of protection. Upgraded models of the venerable T-55 and T-62 were also fitted with composite sandwich appliqué armour.

Note that other nations also developed composite armour, such as the steel/rubber composite Blöhm & Voss appliqué armour package fitted to upgraded models of the Leopard 1 and the steel/rubber Stillbrew appliqué armour package fitted to the Chieftain Mk 10. However, these added an equal level of protection to both kinetic and shaped-charge penetrators, so simply result in an increase in a unit's armour factors.

1. In game terms, the unit cards of tanks fitted with composite sandwich armour have an 'S' suffix to their front armour number. For example 'Armour: 7S/4'.

2. This gives them a +1 armour bonus with attacked with green fire factors (HEAT, HESH or HEP).

3. The +1 armour bonus may be added to the +3 bonus provided by ERA protection, for a total of +4.

4. Composite Sandwich armour does not significantly degrade under fire.

Explosive Reactive Armour (ERA)

Following the Israeli experiences in 1973 against Egyptian troops armed with the Soviet 9K11 '*Malyutka*' ATGM (known to NATO as the AT-3 'Sagger'), the Israelis began work on a new concept – Explosive Reactive Armour. This is an array of flat explosive blocks, sandwiched between metal plates, which are used to 'tile' the skin of a tank or armoured vehicle. The Israelis eventually had a working system called 'Blazer', which was fitted to Israeli tanks in time for their invasion of Lebanon in 1982.

The Soviets meanwhile, had simultaneously developed their own system called '*Kontakt 1*' that was already being fitted to certain T-64 and T-72 models and would later be fitted to the T-80. Both nations initially had safety problems with their ERA, with detonations occurring due to small-arms fire, mortar fragments, etc. However, the bugs were eventually ironed out and both systems were regarded as effective protection against HEAT, HESH and HEP warheads. The US Army later adopted Blazer in order to improve armour protection on its remaining force of M60 tanks.

More recently, ERA has been further enhanced and some claim that the latest designs can even stop kinetic penetrators as well as explosively-formed projectiles (though as these rules are only intended to be relevant up to 1990, I'll leave that for someone else).

In *Battlefront: First Echelon*, ERA provides extra armour protection against weapons that fire using green boxes on their unit cards (i.e. ATGMs, infantry rockets and guns using primarily HEAT, HESH or HEP ammunition).

Unit cards marked with 'ERA Capable' MAY be equipped with ERA. This is not guaranteed: ERA was not permanently fitted as a matter of course. It would therefore need to be fitted upon mobilization and this could be a long and laborious job. It also depended upon the ERA blocks being immediately available for fitting. During the First Chechen War of the early 1990s, Russian T-80s suffered due to the fact that there had been insufficient time to fit the ERA before deployment. However, in the event of a high-intensity war in West Germany, it is a fairly safe bet that all ERA-capable tanks in the first echelon would initially have been fully fitted out.

If ERA is fitted, use the following rules:

1. All vehicles fitted with ERA must be indicated by a suitable marker (we use small green stowage boxes placed on the rear deck). This will be removed when ERA protection is lost (see rule 4 below).

2. ERA provides a +3 armour bonus against weapons using fire factors contained within a green box on the firing unit's card (i.e. explosively-formed penetration effect - HEAT, HESH or HEP).

3. ERA only boosts the front armour of a vehicle. It provides no bonus to flank armour.

4. ERA protection is lost after the first SUPPRESS or DISORDER effect is caused on the vehicle by ANY type of Direct Fire against the front armour. Remove the ERA protection marker.

5. Vehicles fitted with ERA may not carry Tank Riders.

6. Where a tank also has Composite Sandwich Armour ('S' suffix on the unit card), this is added to the ERA effect, for a total of +4 against green fire factors.

7. Optional Rule: When a vehicle fitted with ERA is Suppressed, Disordered or KO'd by Direct Fire against the front armour, all T, G or sV units within 2 inches of the vehicle must suffer an immediate Direct Fire attack, with firepower of -1 (ERA fragmentation effect).

Chobham/Burlington Armour

While the Israelis and Soviets were working on ERA as a defence against HEAT warheads, British defence scientists were already working on a very different form of armour – one that was passive, rather than active, utilising 'sandwiches' of different materials and a matrix of spaced armour.

The Soviets had already been working on composite armour, with the first generation appearing on variants of the T-64, T-72 and T-80. However, the Soviet systems were nowhere near as effective as the British system, which became popularly known as 'Chobham', named after the defence laboratories in Surrey, where it was developed, though its actual codename was 'Burlington'.

The first tank to see frontline service using Chobham wasn't British at all, but the West German Leopard 2, followed by the American M1 Abrams and finally by the British Challenger (which had grown out of the abortive '*Shir 2*' MBT developed in the UK for the Shah of Iran). The Americans further enhanced Chobham by adding a Depleted Uranium mesh to the armour matrix. During the 1990s, Chobham appliqué armour kits were also appearing on lighter AFVs such as Warrior and Bradley.

The main advantage of Chobham over ERA is that it is universal – it will stop virtually anything – and that it is more difficult to degrade under fire than ERA, which will progressively blow off.

Vehicles fitted with Chobham armour will generally have a higher-than normal base armour factor and will also apply the following rules:

1. All vehicles fitted with Chobham must be indicated by a suitable marker (we use small green stowage boxes placed on the rear deck). This will be removed when Chobham protection is lost (see rule 4 below).

2. Chobham provides a +3 armour bonus against weapons using explosively-formed penetration effect (i.e. HEAT, HESH or HEP – any firing factor contained within a green box on the firer's unit card).

3. Chobham only boosts the front armour of a vehicle. It provides no bonus to flank armour.

4. Chobham protection is lost after the first DISORDER effect is caused on the vehicle by any type of Direct Fire against the front armour. Remove the Chobham protection marker.

Mine Protected Vehicles (MPV)

With the rise of 'asymmetric' warfare in the latter part of the 20th Century, mines and command-detonated IEDs have become the main threat to regular armies forced to engage in such conflicts. While these weapons inflict a low level of casualties in military terms, the demoralising effect of a constant trickle of such casualties can have a seriously deleterious effect both on the army involved and on public opinion back at home. As a consequence, mine-protected vehicles (MPVs) began to appear in various revolutionary wars from the 1970s onwards.

Rhodesia pioneered the MPV concept during the wars of Zimbabwean Independence and South Africa built on that experience during the insurgency in Southwest Africa (Namibia) and their external war in Angola. The South Africans produced some excellent designs and the Casspir in particular, set the standard for vehicles of this type. Its legacy can be seen in the myriad of MPVs now in service around the world and particularly in Iraq and Afghanistan. The British also produced an MPV during the 1980s; the Saxon, which while not the best example of the type, still proved effective in providing protection against the PIRA culvert bombs that had previously caused serious casualties to the British Army.

In *Battlefront: First Echelon*, we are only concerned with MPVs that carry passengers – i.e. APCs and command vehicles. Some vehicles, such as the South African Ystervark antiaircraft vehicle, are MPVs in that they will protect the crew from a mine explosion, but in game terms this is irrelevant, as bailed-out vehicle crews play no part in Battlefront and the Ystervark has no dismountable elements.

We have seen other wargames rules where MPVs are more likely to survive passing through a minefield. This of course, is nonsense, as MPVs are just as likely as any other vehicle to strike a mine and become immobilised. The difference is the protection that mine-resistance gives to the passengers, not to the vehicle itself.

MPV rules:

1. Vehicles with Mine-Protected capability built into the design will have their unit cards marked with '+n MPV', where 'n' is the number added to the Bail-Out roll when a Troop unit attempts to dismount from a vehicle following a Suppress, Disorder or KO caused by a minefield or IED. If a unit simply has 'MPV' in its notes, the modifier is +1.

Changes to Hull-Down Rules

There are two major factors affecting going Hull Down that have become more prevalent since the end of WW2:

First, is the necessity for larger and larger guns in tanks, while balancing this against the need to reduce the tank's profile. The Soviets in particular, considered that keeping their tanks low in profile was of vital importance when pursuing their primarily offensive doctrine. The resultant low turret profiles in Soviet tank designs meant that the gun's breech could not raise very far, thus preventing the gun from being depressed to any significant degree.

This then means that these tanks are very difficult to get into a hull-down position, where the ability to depress the gun is of vital importance. This was not something that bothered the Soviets very much, whose primary concerns were highly-mobile big guns behind thick armour.

The rule for this is very simple:

1. These vehicles have their cards marked with a note such as '-2 Hull Down Check' (sometimes abbreviated for reasons of card-space to '-2 HD Chk'), which is to be applied to the die roll when attempting to go hull down.

By way of contrast, NATO doctrine was for most of the Cold War, primarily defensive in nature. Therefore, a great emphasis was placed upon being able to fight from hull-down positions and many NATO tank designs increased the turret mask armour to improve protection when fighting hull-down, while simultaneously reducing hull armour to keep the weight down and retain mobility.

ATGM vehicles are also relevant here: When these are hull-down, they are often presenting only a very small weapons mounting rather than a turret per se and some are designed to 'lob' their missiles over terrain, while the vehicle remains completely hidden. Therefore, these vehicles also often have a Hull Down DF Modifier due to their small target profile when hull-down.

Vehicles that have extra-thick turret armour or a small target-aspect when hull-down have a second front armour rating in parentheses. This second rating should be used as the front armour rating when the vehicle is hull-down, in addition to the usual +1 for being hull-down. For example, if a vehicle has an armour rating of 3(4)/1, it uses 4 as its armour rating when hull down and 3 at all other times.

Note that we have removed the penalty (found in *Battlefront: WWII*) which penalized large vehicles attempting to go hull-down. As discussed above, NATO main battle tanks were designed to fight from hull-down positions and having a large turret was often a benefit to finding a good hull-down position, so this penalty does not seem logical.

Note also that helicopters can also go 'hull-down' in game terms – see the Helicopter rules for details.