

As Variety Is the Spice of Life

Unofficial Bolt Action Hungarian Army

Proposed Amendments/Unit Additions V3.8 by Andrew Ellerby



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Intro

I started Wargaming in the early 70's playing 25mm Napoleonic's, Ancients and WW2 in 1/300th and have kept my interest over the years with a few breaks due to work, kid's, life etc. Moved across to Bolt Action from Blitzkrieg era Battlegroup (In 28mm) around 2018 using my mighty Belgium's, I was looking for a later period army when the Budapest book was released hence the interest, noticed the army list was missing some basic transport elements and started to compile a list of additions which grew with more research, all of the things listed were used by the Hungarian army during the period of 1939-45. I have made a few changes and addition since V3.1, the topics cover five main areas, hope you enjoy,

1st. Just trying to fill some of the gaps in the original Army Book regarding transport and tows, I did consider adding the Raba 41.M tow but only one test vehicle was produced during the war so parked that idea.

2nd. Covers Hungarian equipment, weapon systems and technology used by or developed by the Hungarian army.

3rd. A revision to the effective range of 20mm anti-tank rifles, this was inspired by Armies of Italy V.2 by Lorenzo de Florio

4th. New mobile units featuring 'Rubber Hussars' on motorbikes and pushbikes.

5th. Suggestions to try and balance the Hungarian Army Special Rules, to compete with free units, free equipment or free unit benefits. I am not trying to super-charge the Honvid army, just add equipment, units and technology that were deployed during the period covered by Bolt Action.

The lack of basic transport also applies to several other sizable armies involved in WW2 which add a point's penalty when list building which seems unfair as quite a few don't even have access to a staff car.

One Transport Option

Bulgarian Chinese Communist Romanian Hungarian

Two Transport Options

Finland Greece Netherlands Norway

Three Transport Options

Italian Partisans (Seems Fair)

In a lot of 1000pts games the Hungarian player starts at a 10% points disadvantage which is fine if the Hungarian 'Army Special Rules' offered benefits of equal value to compensate, which at the moment they don't but Hungarians forces aren't unique in

that respect. I am not against the free stuff as it offers a point of difference between the armies but it's just trying to achieve a fair balance.

1. Additional Transport Options

Car or Light Utility Truck

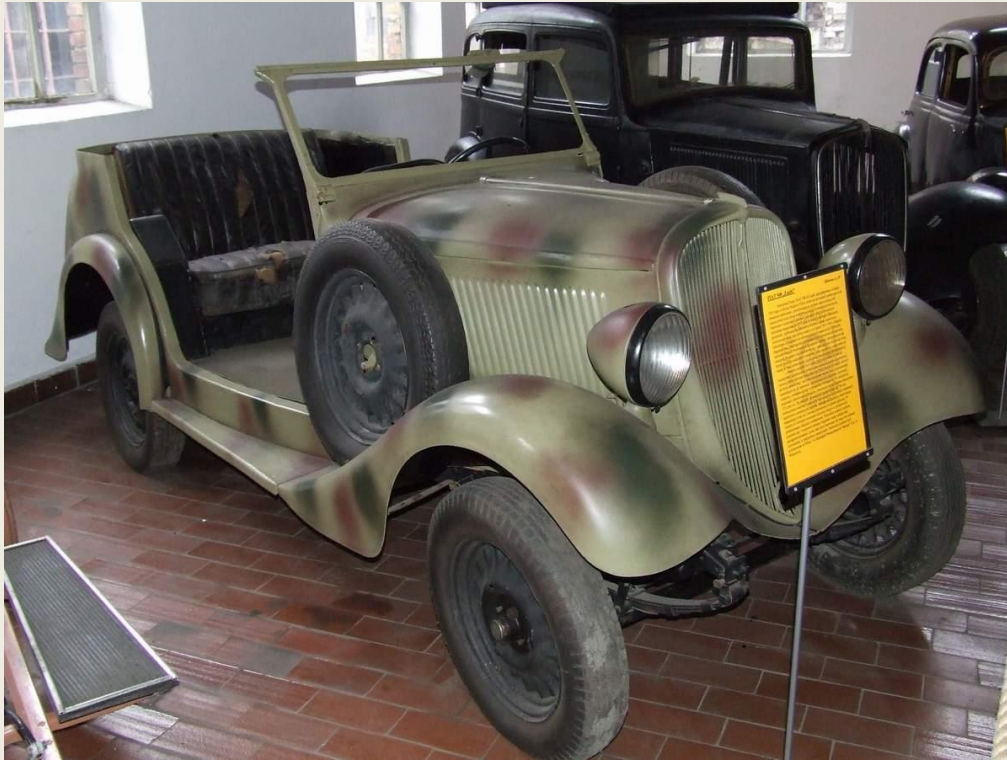
One of the odd things with the current Hungarian army list is that it only allows one type of transport, the 12 man capacity truck. This seems strange not to having access any different vehicles types especially for an army that was at war for 5 years , Belgium for instance was at war for 16 days and they have eight options to pick from in its Army Book.

It seems obvious Hungarian army should have a selection of vehicles to choose from. I have picked 4 additional types based on purchased equipment records and photo evidence.

The Fiat 508CM was a rugged vehicle manufactured in factories across Europe and various versions were purchased for use in the Hungarian army as a staff car, light transport or van



Poliski Fiat Van



Fiat 508 "Jeep" version



Poliski Fiat 508 variant (WZ-30 carrier), Hungary acquired various equipment from refugee Polish units.



Fiat 508 Coloniale



Above is a selection of the staff cars in use in the Hungarian Army with their paint schemes



A Hungarian Opel ready for shipping to the front

Car or Light Utility Truck (Inexperienced) 17 pts

Car or Light Utility Truck (Regular) 21 pts

Car or Light Utility Truck (Veteran) 25 pts

Weapons: None

Damage Value: 6+ (soft-skin)

Transport: 3 men

2. Field Car

Mercedes-Benz G5, also named the W152, was an off-road vehicle built for military and civilian purposes. It was built by Daimler-Benz and started production in 1937.





Military version G5, the Hungarian army was the largest user with around 240

Field Car (Inexperienced) 19 pts

Field Car (Regular) 23 pts

Field Car (Veteran) 28 pts

Weapons: None

Damage Value: 6+ (soft-skin)

Transport: 4 men

3. Heavy field car

One of the most popular was the Krupp Protze which had at least two versions, a troop transport Kfz.70 and a command version Kfz.21.

In the troop transport version the 2 bench seats are parallel with the side of the truck and can be fitted with a Solothurn or a Schwarzlose machinegun on a tripod. Both machineguns fired with 730m/s velocity. The Solothurn fired at 600rpm with 20-30 rounder box magazines, the Schwarzlose fired at 580rpm fed by 100-250 rounder canvas belts. Both used the same AA sight.

In the commander version there was no machine gun option and the seats are positioned in a normal fashion.



Krupp vehicle in Hungarian Service with MMG



Hungarian MMG Mount



Krupp Protze Staff Car

Heavy Field Car (Inexperienced) 22 pts

Heavy Field Car (Regular) 27 pts

Heavy Field Car (Veteran) 33 pts

Weapons: None

Damage Value: 6+ (soft-skin)

Transport: Up to 6 men

Tow: Light howitzers; light or medium anti-tank guns; light anti-aircraft guns

Options:

May have a pintle-mounted MMG covering the forward arc for +15pts

Make a command car with the Command Vehicle rule for +15pts

Make	Model	Year	Hungarian Model Year	Size
Fiat	508	1931	31M	Small Car
Fiat	508C Colonial	1938	38M	Small Car
Fiat	2F	1929	29M	Large Car
Fiat	512	1931	31M	Large Car
Fiat	520 F4	1933	33M	Medium Car
Fiat	525N	1932	32M	Large car
Ford	V-8 (60HP)	1939	39M	Medium Car
Ford	V-8(90HP)	1940	40M	Large Car
Horch	901	1942	42M	Medium Car
Krupp	L2H143	1938	38M	Large Car
Krupp	L2H43	1935	35M	Large car
Merced-Benz	G-5	1938	38M	Medium Car
Opel	Olympia	1937	37M	Small Car
Skoda	P1100 Colonial	1942	42M	Small Car
VW	Type 82 Kübelwagen	1944	44M	Small Car

List of the 'cars' purchased for the military use not including requisitioned private vehicles.

4. Trucks

The Hungarian army used a wide variety of trucks/large vans from a range of sources; some manufactured or assembled in Hungary, others purchased from plants across Europe plus captured Russian vehicles.

Manufactures used included:

Fiat	Ford	Opel-Blitz	Ford Marmon	Phänomen	Granit
MAVAG-Mercedes	Raba	Klöckner	Gaz	Krupp	
Skoda	Mercedes-Benz	Steyer	Zis		

Due to the variety of truck types used an 8 man capacity vehicle should also be included in the transport options available.

A few models that would fit in this category are the Ford BB, FIAT Spa 38R, Mercedes Benz L1500 or a Rába AFi



Above on the left a restored Ford BB from 1932, right a Ford BB in Hungarian service.



Fiat Spa 38R truck



Above Mercedes Benz L1500



Above Rába Afi

- Light Truck (Inexperienced) 25 pts
- Light Truck (Regular) 31 pts
- Light Truck (Veteran) 37 pts
- Weapons: none

Damage Value: 6+ (soft skin)

Transport: Up to 8 men

Tow: light howitzer; light or medium anti-tank gun, light anti-aircraft gun

Options:

Not found any pictures of light trucks with a MMG mount so not included the option.

The standard truck with a 12 man capacity should have the ability to mount a MMG





Above 38M Botond trucks with Machine Guns

Truck (Inexperienced) 31 pts

Truck (Regular) 39 pts

Truck (Veteran) 47 pts

Weapons: None

Damage Value: 6+ (soft-skin)

Transport: 12 men

Tow: Light howitzer; light or medium anti-tank gun, light anti-aircraft gun

Options:

May have a pintle-mounted MMG covering the forward arc for +15pts

Trucks in use in the Hungarian Army			
Designed	Country of Manufacture	Make	Model
Czechoslovakian	Hungary	Rába	Rába V (licence built Praga V)
Hungarian	Hungary	Rába	Afa
Hungarian	Hungary	Rába	Afe
Hungarian	Hungary	Rába	Afh
Hungarian	Hungary	MARTA	WW1 era truck
German	Hungary	Rába-Krupp	L 3.5H 63 (licence built Krupp)
German	Hungary	Rába-Krupp	L 3.6H (licence built Krupp)
German	Hungary	MÁVAG-Mercedes	LO 2000 (licence built Mercedes-Benz)
German	Hungary	MÁVAG-Mercedes	LO 2500 (licence built Mercedes-Benz)
German	Germany	Henschel	Typ 33 D1
German	Germany	Klöckner-Deutz	330 A/S
German	Germany	Krupp	L2 H.43 „Krupp-Protze” (Hungarian superstructure on German chassis)
German	Germany	Krupp	L2 H.143 „Krupp-Protze” (Hungarian superstructure on German chassis)
German	Germany	Magirus	Magirus 3000
German	Germany	Mercedes-Benz	L3000 A/S
German	Germany	Mercedes-Benz	L4500 A/S
German	Germany	O.D.-Rex	4 Eintonner
German	Germany	Opel-Blitz	Type 3,6-36S & 6700A
German	Germany	Opel-Blitz	(2.5t) Ambulance
German	Germany	Phänomen Granit	Phänomen Granit
Austrian	Austrian	Graf & Stift	Graf & Stift
Czechoslovakian	Czechoslovakian	Praga	Praga RV
Czechoslovakian	Czechoslovakian	Skoda	256 Ambulance
Czechoslovakian	Czechoslovakian	Skoda	256B
Italian	Italy	OM	Autocarretta 32
Italian	Italy	Fiat	4TS
Italian	Italy	Fiat	XV
Italian	Italy	Fiat	6M Autocarretta
Italian	Italy	Fiat SPA	Dovunque 35
Italian	Italy	Fiat SPA	SPA 38R
American	Germany	Ford	Ford BB (Köln)
American	Germany	Ford	Ford V8/51 (Köln)
American	Germany	Ford	Ford V. 3000S (Köln)
American	USA	Ford	Ford 817T
American	USA	Ford-Marmon	V8
Italian	Poland	Polski	Polski Chevrolet COE „Bulldog” Omnibus
American	Poland	Polski	Looted Polish Fiat 621 L



Hungarian Opel-Blitz Truck



Hungarian Ford V8 Truck

5. Hungarian Cycle Units (Rubber Hussars) 1939-44-New Unit

The Hungarian army made extensive use of bicycle mounted troops throughout the war due to the lack of suitable motorised transport. The average strength of a bicycle infantry Company would be about 156 men made up of 4 platoons of 3 squads of 13 men.





32.M "Csepel" Army bicycle, this was the standard issue bike for Hungarian cycle troops. A folding version was developed for use by the Paratroops.

Hungarian Cycle Units (Rubber Hussars) 1939-44

Composition: 1 NCO and 4 men. Add up to 8 additional men with rifles at +7pts (Inexperienced) +10pts (Regular) or +13pts (Veteran) each

Weapons: The NCO is armed with a pistol, all others with rifles

Options:

One soldier may have a light machine gun for +20pts - another soldier becomes the loader

Equip the NCO with a submachine gun for +3pts

Arm one soldier with a Panzerfaust for +5pts from 1944 onwards

Up to 1 man may have a light mortar for +25pts each, another man becomes the loader

The entire squad may be equipped with anti-tank grenades for +2pts per model

The entire squad can be mounted on bicycles at +1pt per man

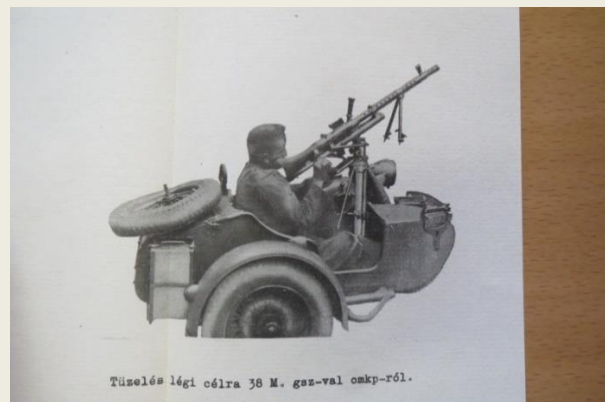
6. Hungarian Motorbike Reconnaissance and Rifle Squad - New Units

During WW2 Hungary used various motorbike companies in Reconnaissance Battalions and as sub-units of the Motorised Rifle Brigades - later Regiments. Some of these motorbikes were equipped with 8mm 31.M Solothurn light machine guns, 8mm 07/31.M Schwarzlose machine guns, 20mm 36.M Solothurn anti-tank rifles or even 50mm 39.M grenade launchers. The weapons could be dismounted from the side car of the motorbike but were also operational while mounted (except grenade launcher). The horizontal and vertical movements were limited of course.

Based on the pictures the Royal Hungarian Army used these weapons on a range of motorbikes with a variety of different mounts in some cases. For example the 20 mm 36.M Solothurn rifle mount on a BMW R.75 sidecar and on a PZInż Sokół 1000 sidecar .

For a Schwarzlose machine gun mount I also couldn't find a Hungarian example only an Austrian Bundesheer example but it's also proved by archive documents that Schwarzlose sidecar machine gun mounts were used too in the Royal Hungarian Army.

The 50 mm grenade launcher was strapped to the front of the sidecar for transport and rapid deployment, see below.



Instruction manual showing the 50mm 39 M in transit mode on a sidecar and the mounting for a 38.M machine gun.



Above two picture of machine gun mounted on sidecar



Above Left 50mm 39M light grenade launcher Right S18-100 ATR mounted on a sidecar



Left-Schwarzlose 08 mounted on side car Right-S18-100 in foreground with a LMG at rear of the picture.

Hungarian Motorcycle Recce Unit

Add into the unit selector the option of a Motorcycle with sidecar with various weapon options into the Armoured Car section of the selector.

Motorcycle with Machine-gun sidecar (Regular) 40 pts

Motorcycle with Machine-gun sidecar (Veteran) 48 pts

Weapons: One forward-facing MMG covering the front arc

Damage Value: 6+ (soft-skin)

Replace the MMG with an anti-tank rifle for +10pts

Replace the MMG with a LMG -5 pts

Replace the MMG with a light mortar -5pts

(Light mortar not able to move and fire)

Recce

(p118)

Turn on the spot

Can execute a full speed run rate 'reverse' finishing the move facing in direction of travel.



Instruction manual showing the 31.M LMG mounting on a 41.M BMW

Hungary fielded a significant number of motor cycle troops as part of Motorised Rifle Brigades and it seem reasonable to include a motorcycle mounted infantry unit as a selection in the Hungarian Army along the lines of similar units listed for other forces.



A motorised rifle brigade during a brief stop, LMG in shot far left.



Motorised rifle brigade advancing, 36.M (S18-100) ATR on sidecar bottom right.



Hungarian motorcycle troops on the move with a command car fitted with the R/3 transceiver which had a range of 15-20km in the foreground.

Motorcycle Mounted Hungarian Rifle Squad

Composition: 1 NCO and 4 men. Add up to 8 additional men with rifles at +15pts (Regular) or +18pts (Veteran) each

Weapons: Rifles

Options:

The NCO can have a submachine gun instead of a rifle for +3pts

Up to 2 men can have a submachine gun instead of a rifle for +3pts

Up to 2 men can have a panzerfaust in addition to other weapons, for +5pts each, from 1944 onwards.

Up to 1 man can have a light machine gun for +20pts - another man becomes the loader

The light machine gun may be replaced by a German MG42 for +5pts

Equip the entire squad with anti-tank grenades for +2pts per man

Motorbikes

(p90) Moves at 12" for Advance and 24" at a Run with same rules and restrictions as Wheeled vehicles, except they may make any number of turns as they move. Cannot react to enemy attacks by going Down. Can react by making escape move (at normal move, not double speed). Can dismount as part of any Advance move, but cannot remount. Bike riders cannot shoot while moving. Cannot assault and can make an escape move if assaulted. If attacked at close quarters they fight as infantry. Each man fights (including sidecar passengers if equipped). Regroup 2D6" rather than D6".

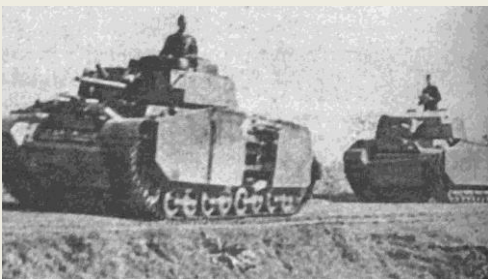
7. Turan Tank New Vehicle Options

A selection of new upgrades covering armour, ammunition and the H.E. ability of the gun.

Spaced Armour



Above a Turan II in the Kubinka Tank Museum with spaced armour, Turan II in action with the Thoma spaced armour.



Above Turan I with "Thoma" armour fitted.

The Turan I & II tank should have the option of adding "Thoma" Spaced Armour for +10pts see above pictures with it fitted to both versions.

Ability to Use HEAT

The second upgrade option for the Turan II should be to have the option to fire HEAT ammunition so it does not lose penetration at long range.

The 41.M main gun of the Hungarian Turan tank was converted from the 18.M field gun which was manufactured by MAVAG. The 41.M was the first Hungarian tank gun which had a horizontal semi-automatic sliding block but it was not an ideal choice for an anti-tank weapon as it was derived from a low velocity field artillery gun but at the time it was the best option available as the Germans would not licence production of the Pak 40 in Hungary. So one option to improve the tank killing ability of the tank was to use a HEAT round.

41 M. 75mm L/25 tank gun

- muzzle velocity: 450 m/s
- muzzle energy: 83,15 mt
- range: 6300-8400 m
- theoretic rate of fire: 12 shots/min
- recoil: 450-500 mm
- ammo: 52 rounds;
- vertical gun depression, elevation: -10°, +30°

Ammo types and Performance

- 42/36.M páncélgránát (APHEBC-T),
- 42/38.M repeszgránát (HE)
- 42.M páncélrobbantó gránát (HEAT-T)

42/36.M páncélgránát (APHEBC-T)

- 100 m /60°/56 mm
- 500 m /60°/51 mm
- 1000 m /60°/45 mm

42.M páncélrobbantó gránát (HEAT-T)

- regardless of distance HEAT-T: 90mm /in 60°



7.5 cm 42.M páncélrobbantó gránát -

The name means "7.5 cm 1942 patterned armour-demolition grenade". This shaped charge was a licence built version of a German Hohl-Ladung shell, this was introduced to improve the mediocre performance of the gun due to its low muzzle velocity.

Its explosive around the conical liner was TNT while the detonator was pentolite 50/50, it had a tracer. It was used by the 41.M Turán (a.k.a. Turán II) tanks. The armour penetration was 90 mm at 60° from horizontal.

May upgrade to 1942M HEAT ammunition for +10pts so it does not suffer -1 penetration at long range

Enhanced HE

The third upgrade option is that the HE performance of the gun should be upgraded to the same as UK/USA 75 mm as its HE performance is comparable to the US M2-M6 gun.

Both are derived from a 75mm low velocity field gun with similar specifications

Tank Gun

Hungarian 41.M Gun

US M2-M6

Original Gun

18 M (Böhler), 76.5 mm Field gun

French Canon de 75 modèle 1897 Field Gun

HE Shot Weight

Shot Weight 6.5kg 14.33lb

Shot Weight 6.76kg 14.88lb

(75mm) HE (2")

Instead of using the 1" template, use the 2" template (75mm gun tanks)

AP Gun with Enhanced HE +10 pts

8. 40mm Bofors Anti-Tank and Anti-Aircraft gun HEAT Ammunition plus Gun Shield.

In 1942 the Hungarian Institute of Military Science (HTI) started research on new weapons that would enable it to defeat heavy Soviet armour; the research was focused on using HEAT ammunition with existing and new weapon systems. Two new weapon systems that were developed using HEAT technology were the 44M "Buzogányvető" and 44M Páncélrém. To improve the anti-tank ability of existing weapon systems like the 40mm Bofors anti-tank and AA guns 42.M round was developed.

40 mm 42.M páncélrobbantó gránát - HeatFinStabilized

The name means "40 mm 1942 patterned armour-demolition grenade".

It was a shaped charge, fin-stabilized shell, for use with the 40 mm Bofors AA autocannon or the 40mm 40.M anti-tank gun. It had two variants, the 42.M (left picture) and the 42/a.M (right picture). The difference between the two is that the 42/a.M is wider so the muzzle brake on the 40 mm Bofors AA gun did not need to be removed; the 40mm A/T gun had to have with the muzzle brake removed to use the 42.M round. The explosive around the conical liner was TNT while the detonator was pentolite 50/50. This shell penetration when used by the 36/40.M Nimród SPAAGs was 180 mm at 90° from horizontal which is not surprising as it looks very similar to the Buzogányvető round.

This poses some issues with balancing in the game as you are potentially converting a heavy auto-cannon into a super heavy A/T gun with a pen factor of +7.

I suggest to balance it give it a pen of +5 equivalent to a Panzerfaust and reduce the effective range. The round uses a spigot and sleeve arrangement so it fits over the end of the gun and into the barrel, this reduces the rounds velocity, affecting its range and accuracy.

When using the HEAT round, the maximum range of any of the 40mm guns is 24" , long range penalties apply but with no loss of penetration at the new 'HEAT' long range, plus the Nimrod/Bofors AA gun only gets one shot not its normal two.

**40 mm 42.M shaped charge, fin-stabilized shell:
 V_0 /muzzle velocity/ = 100 m/s ; P1 /shell weight/ = 10.5 kg
 Armor penetration (vertical) = 180 mm**

Fire range	Sight elevation	Distance on 40.M anti-tank gun sight	Flight duration	Shell-course data						
				Angle of impact	Terminal velocity	Summit of trajectory		50% dispersion		
						Ceiling	Distance	Longitudinal	Vertical	Horizontal
X_0	ϕ	.	t_0	ω	V_V	Y_T	X_T	L_{50}	V_{50}	H_{50}
m	mil	m	sec	mil	m/s	m		m		
25	13.2	1400	0.26	13.3	98.8	0.1	13	6.1	0.08	0.08
50	26.5	2250	0.53	26.7	97.6	0.3	26	6.5	0.17	0.16
75	39.9	2800	0.80	40.4	96.5	0.7	39	6.8	0.27	0.25
100	53.4	3300	1.07	54.4	95.4	1.3	53	6.9	0.37	0.34
125	67.1	3650	1.34	68.7	94.3	2.1	67	7.0	0.47	0.43
150	81.0	4000	1.61	83.2	93.3	3.1	81	7.1	0.58	0.52
175	95.1	4300	1.89	98.0	92.3	4.2	95	7.1	0.69	0.62
200	109.4	4500	2.17	113.1	91.3	5.5	109	7.2	0.80	0.72
225	123.8	.	2.45	128.5	90.3	7.0	123	7.3	0.92	0.82
250	138.4	.	2.73	144.2	89.4	8.7	137	7.3	1.04	0.92
275	153.3	.	3.02	160.2	88.5	10.6	151	7.4	1.17	1.03
300	168.4	.	3.31	176.5	87.6	12.8	165	7.4	1.30	1.14

Datas are from the firing table of the 40 mm 40.M anti-tank gun. The Nimród SPAAG usually fired the 42/a.M shaped charge which is the same as the 42.M but with a wider sleeve so that the flash eliminator of the 40mm 36.M AA autocannon of the Nimród didn't have to be removed. The 42/a.M had a muzzle velocity of 110 m/s.

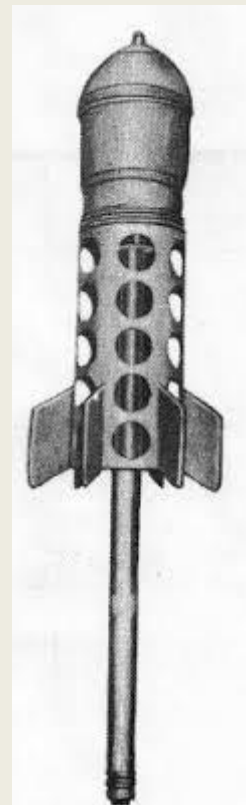
In this version 3.3 I revised the firing range so the max range is the same across all the 40mm guns after finding the Hungarian test firing charts for the shaped charged.

This will give the Hungarian guns using HEAT the same max range as a Panzerschreck

Gun Type	Max Range
	If Using HEAT
40mm Bofors Anti-Tank Gun	24" Range
40mm Bofors AA Nimrod Gun	24" Range
40mm Bofors AA Gun	24" Range

For all 40mm guns using the HEAT round the ,**'Limited Ammunition Type'** rule applies so any unit can only fire 2 HEAT rounds a game.

May upgrade to having 1942M HEAT ammunition for +10pts



A 40mm 42/a.M Round in use with an emplaced Bofors 40mm AA gun,note the gunshield.

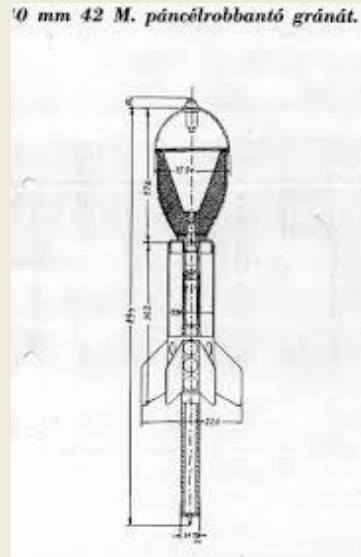
Hungarian 40mm Bofors can have the option to add a gun shield for +5 pts

See below a link to a video from the Hadtörténeti Múzeum in Budapest showing the Bofors 36.M with the gun shield.

<https://www.youtube.com/watch?v=WTdzby6ZRIE>



Jeno Kovessy holding a 40mm 42.M Round Round



40mm 42.M



A 40mm 42.M Round in use with a Bofors 40mm anti-tank gun

The Hadtörténeti Military History Institute and Museum Budapest has a video on the use of the round with the Nimrod, link below , my Hungarian is lacking but hope to get a translation.



(Top)A Nimrod using the 42/a.M Round with the turret rotated over the rear deck of the tank.(Bottom) Screen grab of the Director of the Hadtörténeti Múzeum in front of the Nimrod with the HEAT round.

The full Nimrod video can be found from the link below

https://www.youtube.com/results?search_query=hadt%C3%B6rt%C3%A9neti+m%C3%BAzeum

Hungarian WW2 weapons demonstration film showing the 42.M round being fired from a 40mm Bofors anti-tank gun at 21 secs in.

<https://hungarianweaponryww2.wixsite.com/hungarianmilitaryww2/blank-page-1>

9. Hungarian 120 mm 43.M mortar –New Unit



Hungarian 43.M in use



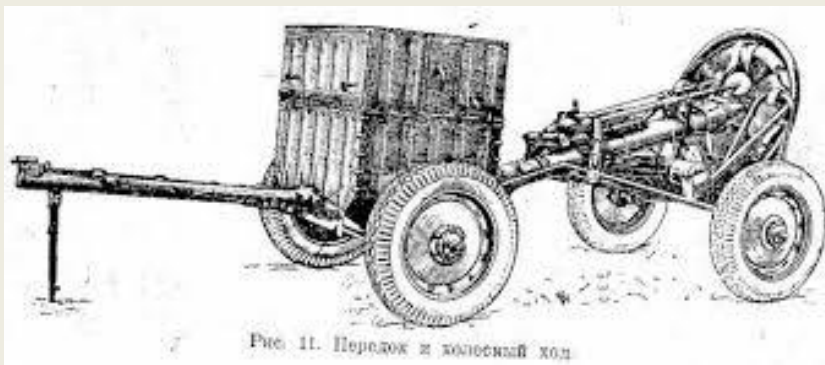
Russian 120mm mortar



Hungarian M43.m mounted on it's wheeled carriage



M1938 Mortar in transport mode.



M1938 Mortar and ammunition trailer.

Along with Germany, Finland and Romania, Hungary also captured quantities of Russian M1938 120-millimeter mortars. The Hungarians were impressed by the weapon and created their own design using the captured weapons as a template, thus the 43.M mortar was born. Sadly we don't know exact data of this weapon but we do know that it was produced and used in the war.

The 120mm mortar appears in organisational charts for various Hungarian units from 1944, for example.

Armoured Reconnaissance Battalion of an Armoured Division- Motorised Mortar Company (8 mort. 81mm+4 mort 120mm)

Hussar Regiments-Mounted Heavy Mortar Company (12x120mm)

Heavy Mortar (Inexperienced) 46 pts

Heavy Mortar (Regular) 65 pts

Heavy Mortar (Veteran) 84 pts

Team: 4 men - firer and 3 loaders

Weapons: 1 Heavy mortar

Options:

May add Spotter for +10pts

9. Change range of 20mm anti-tank rifles

At the moment all anti-tank rifles (ATR's) are treated the same for the sake of simplicity but quite a few nations used an ATR that used a 20mm round which had far more power than lower calibre versions like the British Boys, German PzB 39 and Soviet PTRD-41 /PTRS-41.



A group photo of contemporary anti-tank cartridges. Left to right: 20x138b (as used in the S18-1000 Solothurn and Lahti), 20x124 (as used in the Japanese Type 97), 14.5x114 (as used in the Soviet PTRD and PTRS), .55 calibre round for the Boys Antitank Rifle, 7.92x107 (as used in the Wz-35) and the 7.92x94 "Patronen 318" (as used in the PzB 38 and PzB 39).

The Solothurn ATR used by the Hungarians for instance uses 20mm armour piercing ammunition (same ammunition as used in German 20mm Flakvierling), with a muzzle velocity of 832m/s, a semi-automatic action, 5/10 round magazine and was provided with an optic. It is closer in design to semi-automatic cannon and in my opinion it should have a range advantage over lower calibre ATR's.

20mm ATR Max range 48" +2 pen up to half range +1 over half range

Since 20mm ATR's didn't have the ability to fire fully automatic they do not have the rate of fire of automatic cannon so only have a single shot. This change should also be applied to all 20mm ATR like the Japanese Type 97 and Finnish L39; changes would also affect Italians, Dutch, Romania and Bulgarian armies who all used the Solothurn ATR.



Hungarians using the Solorthurn ATR



Italian Bersaglieri and Dutch troops using the Solothurn S18-1000



The Finnish Lahti L-39 with skies and the Japanese Type 97 20mm ATR with its carrying frame.

20 mm 36.M anti-material rifle. 36.M armor piercing shell with tracer:
 V_0 /muzzle velocity/ = 735 m/s ; P_1 /shell weight/ = 0.148 kg

Fire range	Sight elevation	Flight duration	Shell-course data								Armor penetration (50° from vertical)*	Armor penetration (30° from vertical)	Armor penetration (vertical)*
			Angle of impact	Terminal velocity	Summit of trajectory		Sighting	50% dispersion					
					Ceiling	Distance		Longitudinal	Vertical	Horizontal			
X ₀	φ	t ₀	ω	V _V	Y _T	X _T	Δ	L ₅₀	V ₅₀	H ₅₀	20 mm		
m	mil	sec	mil	m/s	m		mil	m			mm		
100	1.0	0.1	1.1	688	.	51	.	.	.	0.1	16.8	24	31.2
200	2.0	0.3	2.3	643	0.10	104	.	.	0.1	0.1	15.4	22	28.6
300	3.2	0.4	3.7	600	0.25	158	.	.	0.1	0.2	14.0	20	26.0
400	4.5	0.6	5.5	559	0.50	212	.	.	0.2	0.2	12.6	18	23.4
500	5.9	0.8	7.6	520	0.85	268	1	.	0.2	0.3	11.2	16	20.8
600	7.5	1.0	10.3	483	1.30	325	1	26	0.3	0.3	10.5	15	19.5
700	9.2	1.2	13.4	448	1.90	382	1	25	0.3	0.4	9.1	13	16.9
800	11.2	1.5	17.0	416	2.70	440	1	24	0.4	0.5	8.4	12	15.6
900	13.5	1.8	21.4	387	3.72	500	1	23	0.5	0.5	7.7	11	14.3
1000	16.0	2.0	26.5	362	5.05	560	1	22	0.6	0.6	7.0	10	13.0
1100	18.7	2.3	32.4	341	6.70	620	2	21	0.7	0.7	6.3	9	11.7
1200	21.7	2.7	38.9	324	8.60	680	2	20	0.8	0.8	5.6	8	10.4
1300	25.1	3.0	46.0	310	11.00	740	2	20	0.9	0.9	5.6	8	10.4
1400	28.7	3.3	53.8	299	13.80	802	2	19	1.0	1.0	5.6	8	10.4
1500	32.8	3.7	62.5	290	17.10	865	2	19	1.2	1.1	4.9	7	9.1
1600	37.3	4.0	72.3	282	21.15	930	3	19	1.3	1.2	4.9	7	9.1
1700	42.0	4.4	83.0	275	25.63	995	3	19	1.5	1.3	4.9	7	9.1
1800	47.1	4.8	94.9	269	30.70	1070	3	19	1.8	1.4	4.9	7	9.1
1900	52.5	5.2	108.0	263	36.60	1125	3	19	2.1	1.6	4.2	6	7.8
2000	58.4	5.6	122.2	258	43.33	1190	4	19	2.4	1.7	4.2	6	7.8

*Approximately

Shell usually bounces off without penetration from thicker armor plates with more than 50° from vertical (40° from horizontal) slope.



Hungarian Firing Table for the 36.M ATR (Solothurn S18-1000)

The Solothurn (20mm) anti-tank rifle now cost +5pts since it gained the long range rule.

Solothurn S-1800 20 mm anti-tank rifles

(Inexperienced) 25pts

(Regular) 35pts

(Veteran) 45pts

Composition: 2 men

Weapon: 1 anti-tank rifle

Special Rules:

Team weapon

20mm Anti-Tank Rifle max range of 48" +2 pen up to half range +1 Pen over half range

Comment:

Videos of the Solothurn S18-1000 in action see links below, first is a review by Ian McCollum of Forgotten Weapons fame and the 2nd a WW2 live firing video showing its semi-auto ability.

<https://www.youtube.com/watch?reload=9&v=GBjFwBKQpog>

<https://imgur.com/gallery/F5vIr3Z>

11. Crossley M.29 Armoured Car-New Unit



In 1928 the government bought two BGV chassis from the British Crossley Motors and gave them a superstructure. Later one of the two 29.M Crossley armoured cars was equipped with a long-range radio to operate as a commander vehicle (See above). These armoured cars were equipped with two Schwarzlose machine guns. However the two vehicles didn't satisfied the needs of the military, the chassis couldn't bear heavier armour and there was no more room to re-build the vehicle to have two driving positions - one at the front and an additional at the rear which was a basic requirement for armoured cars at that time .The two armoured cars saw action been used in several engagements in the Slovak-Hungarian War (also known as The Little War) in March 1939.

29. M Crossley Armoured Car (Inexperienced)	64 pts
29. M Crossley Armoured Car (Regular)	80 pts
29. M Crossley Armoured Car (Veteran)	96 pts

Weapons: 1 turret-mounted MMG and 1 hull-mounted MMG

Damage Value: 7+ (armoured car)

Recce
(p118)

12. Fiat 3000B Tank-New Unit



The Hungarian Army operated a small number of Fiat 3000B tanks (Left picture, front right picture).

They were used in the Slovak-Hungarian War (also known as The Little War) in March 1939 ,Hungarian versions used a single 8mm 7/12 M Schwarzlose machine gun.

Fiat 3000 (L5 Series) (Inexperienced)	32 pts
Fiat 3000 (L5 Series) (Regular)	40 pts
Fiat 3000 (L5 Series) (Veteran)	48 pts

Weapons: One turret-mounted MMG

Damage Value: 7+ (tankette)

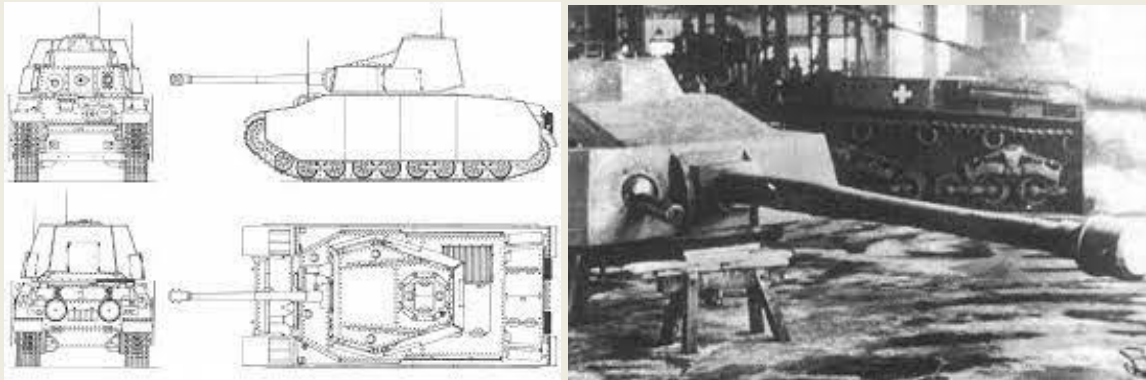
One-man Turret

Must make an order test when issuing an Advance order; even if the tank is not pinned

Slow

(p119) A vehicle designated as slow has a basic move rate of 6" when Advancing and 12" at a Run

13. 43M Turan III-Playable as Experimental?-New Unit

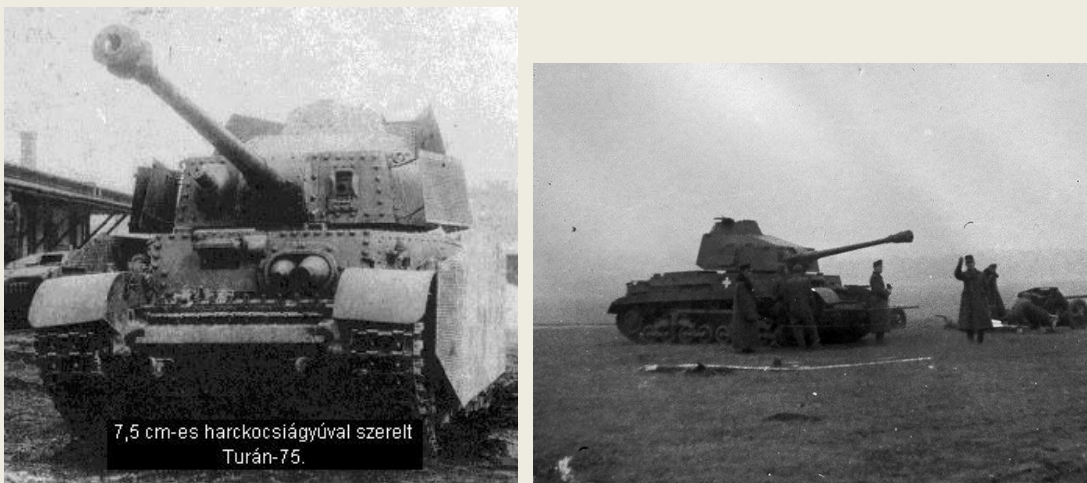


Drawing of the Turan III showing the armour skirts. Mock-up of the turret with its distinctive slope

The gun was based on the KwK 40L43 but was a not a copy as the Germans would not sell the rights for licenced production with the resulting delays in production.



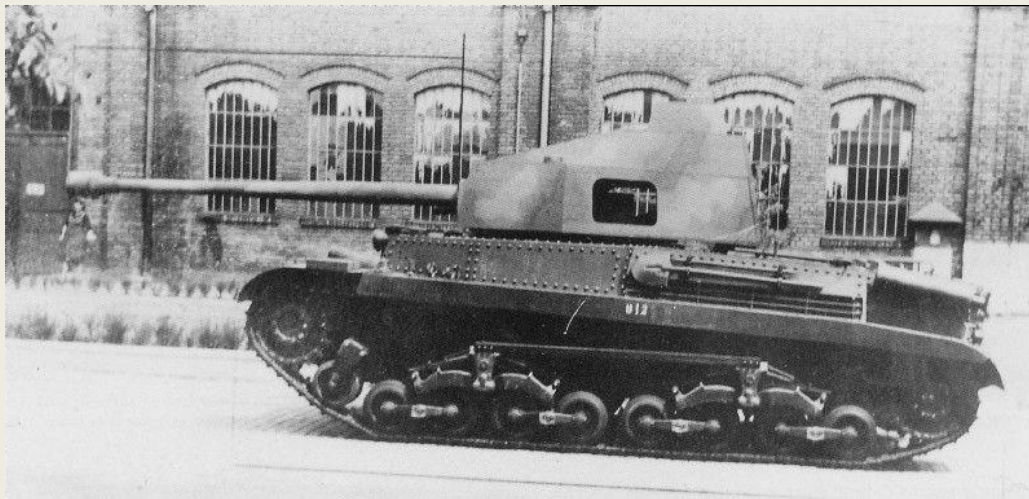
József Czimmermann a Turan tank driver stands in front of a Turan III fitted with the 43M 7.5 cm gun. According to his memoirs there were a number of Turan's in his unit fitted with the long 75mm gun used in battles in late 1944, which if true opens up some interesting what if scenarios.



Turan II fitted with Thoma spaced amour, Turán III during shooting trials, Hajmáskér, 1944

Penetration in mm,at 30 degrees from vertical				
Gun Type	Ammo Type	Muzzle Velocity	500m	1000m
7.5cm 43.M	43.M AP	770m/s	76mm	66mm
7.5cm Stuk 40 L/43	Pzgr.Ptr.39	740m/s	91mm	82mm
Sherman M3	M61 APC	618m/s	60mm	55mm

Chart comparing the penetration of the 43.M 75mm gun to its contemporaries using homogeneous armour at a 30 degree angle. The penetration seems a bit lack lustre considering the velocity of the gun but this may be due to material shortages affecting ammunition production at the time. The firing charts for the M3 and 40L/43 are both using APC ammo while the 43.M is only listed as AP.



Turan III medium tank (Inexperienced) 180 pts

Turan III medium tank (Regular) 225 pts

May have 'Thoma Spaced Armour' for +10pts

Weapons: 1 turret-mounted heavy ant-tank gun with co-axial MMG and forward facing hull-mounted MMG

Damage Value: 9+ (Medium Tank)

HE (2")

(p68) PEN: +2, PIN: D3 (D6 if in building) - Infantry and artillery can go down to halve the hits taken.

Spaced Armour

Anti-tank rifles and shaped charges never get the +1 penetration bonus for hitting the vehicle on the side.

Experimental

The Turan III must always take an order check, even if it has no pin markers

14.Hungarian Armoured Fighting Vehicle Inventory

Model	1939	1940	1941	1942	1943	1944	1945	Total
Fiat 3000 These date from the early 30's	6							6
29.M Crossley Amoured Car , these date from 1929	2							2
FIAT-Ansaldo CV-35 The tanks were delivered in 1935/36 so were on stock at the start of the war	150							150
39M Csaba csatar		60	22			16		98
40 Csaba parancsnoki			12			6		18
38M Toldi I		60	20					80
38M Toldi II			110					110
38M Toldi IIA-40mm Bofers A/T gun upgrade to earler tanks					80			80
Toldi III Improved armour but never completed						12		12
40M Nimrod			27	19	72	17		135
40M Turan I				158	121	4		283
41M Turan II					111	77		188
43M Turan III-Reports of more than 1 being used in action in late 44 by Turan driver						1		1
40/43M Zrinyi II					33	45		78
44M Zrinyi I						1		1
Pz.Kpfw.38(t)(T-38)				105				105
Pz.Bef.Wg.38(t)(T-38)				6				6
Pz.Kpfw.IB				8				8
K1.Pz.Bef.Wg.IB				6				6
Pz.Kpfw.II Ausf.F				10				10
Pz.Kpfw.III Ausf.M,11 in 42 had German crews.				11	17	19		47
Pz.Kpfw.IV Ausf.F1				22				22
Pz.Kpfw.IV Ausf.F2				10				10
Pz.Kpfw.IV Ausf.G					32			32
Pz.Kpfw.IV Ausf.H					30			30
Pz.Kpfw.V Ausf.D					17			17
Pz.Kpfw.VI Ausf.D					13			13
Stug III Ausf. C/D German crews				10				10

Model	1939	1940	1941	1942	1943	1944	1945	Total
Stug III Ausf. G/StuG 40G						50		50
Jagdpanzer 38(t) Hetzer						60	41	101
Marder II				7				7
Marder IIIM						1		1
Sd.Kfz.250 German crews						2		2
LT vz.35 (T-35) captured in Slovak-Hungarian war	2							2
Tatra OA vz.30 (T-72/30) Captured in Slovak-Hungarian war	1							1
Hotchkiss H-35/39 German war aid				16				16
Somua S-35 German war aid				2				2
Renault R-35 Surrendered by escaping Polish	3							3
Renault UE German war aid				5				5
TK-3 Surrendered by escaping Polish	9							9
TKS Surrendered by escaping Polish	7							7
T-20 Komsomolets Captured in 41/42			9					9

The Hungarians captured various Russian and lend-lease vehicles during the fighting in 41/42, some were returned to Hungary for propaganda, others were used as tows and some as unit HQ markers.



Captured Universal carrier and a T-70 with its turret removed being used as a tow.

15.Horse-drawn Limber-New Unit



A Hungarian horse-drawn column resting during a march.

In common with a lot of armies at the start of the war the Hungarians were not fully motorised and still had to rely horse power to fulfil a lot of transport options including towing artillery.

Horse-drawn Limber (Inexperienced)	8 pts
Horse-drawn Limber (Regular)	10 pts
Horse-drawn Limber (Veteran)	12 pts

Weapons: none

Damage Value: 3+ (literally soft-skinned)

Tow: Any gun or howitzer

Slow (only when towing)

(p119) A vehicle designated as slow has a basic move rate of 6" when Advancing and 12" at a Run - only applies when towing.

16. Hansa Lloyd 37M/ Sd.Kfz 11 Artillery Tractor-New Unit

In 1937 Hungary bought 74 Hansa Lloyd 37M as artillery tractors from the German Government (German name Sd.Kfz.11).

Its main role was as a prime mover for a range of artillery covering light or medium howitzer; light, medium or heavy anti-tank gun; light or heavy anti-aircraft guns, it could also carry eight troops in addition to towing a gun or trailer.



Hansa Lloyd 37M playing the role of a recovery vehicle



Above left, Hansa Lloyd 37M towing Bofors AA guns, above right a medium field artillery piece.



German and Hungarian crew in front of a Hansa Lloyd 37M

Hansa Lloyd 37M half Track (Inexperienced) 29pts

Hansa Lloyd 37M half Track (Regular) 36pts

Hansa Lloyd 37M half Track (Veteran) 44pts

Weapons: None

Damage Value: 6+ (Soft Skin)

Transport: Up to 8 men

Tow: Light or medium howitzer; light, medium or heavy anti-tank gun; light or heavy anti-aircraft gun

17. Pavesi 31M/28M Wheeled Tow

The Pavesi 31M/28M was produced in Hungary under licence from the Italian Pavavesi company, it was able to pull any type of Hungarian artillery plus an ammunition trailer.



Pavesi 31M/28M Wheeled Tow (Inexperienced) 12pts

Pavesi 31M/28M Wheeled Tow (Regular) 15pts

Pavesi 31M/28M Wheeled Tow (Veteran) 18pts

Weapons: None

Damage Value: 6+ (Soft Skin)

Tow: Any howitzer; any anti-tank gun, any anti-aircraft gun

18. HSCS KV-40 38M & KV-50 41M Artillery Tractor



The HSCS (Hofherr es Schranc/Clayton & Shuttleworth) KV-40/KV-50 artillery tractors were derived from agricultural tractors and were powered by horizontal single-cylinder semi-diesel engines (similar to the German Lanz Bulldog). The KV-50 was of a similar design but had improved engine power, both provided sterling service during the war but were hampered by their slow speed compared to a truck.



KV-40 tractor towing 29M anti-aircraft guns

KV-40 Wheeled Tow (Inexperienced) 12pts

KV-40 Wheeled Tow (Regular) 15pts

KV-40 Wheeled Tow (Veteran) 18pts

Weapons: None

Damage Value: 6+ (Soft Skin)

Tow: Any howitzer; any anti-tank gun, any anti-aircraft gun

19, Alternatives to the Current Hungarian Army Special Rules

The current Army Special Rules offer very little in tangible benefits , the 'Experienced Officer Corps 'rule is very weak and Axis Support just offers extra choice at a cost, leaving you at a disadvantage against opponents who can take advantage of free units , free unit upgrades or a combination of both .

I would like to suggest a few alternative rules, one an upgrade to the Experienced Officer Corps rule to increase its effectiveness , second a replacement for it and third an upgrade to the 'Axis support Rule'.

Option One

Any Hungarian infantry or artillery unit that is given a 'Snap To Action' order by an officer is filled with **Patriotic Zeal** and becomes **Fanatic** for the turn in addition to any other action it is ordered to perform.

For: It follows the theme of the fanatic officer corps and extends it to the troops in the field.

Against: I listened to an interview with Brian Cook the author Fortress Budapest who said ' The Hungarian's were tough fighters who fought hard but there was not a lot of evidence of them being fanatics as a rule , it only occurring in specific circumstances i.e. The Arrow Cross, University Battalion,Vannay Battalion

Option Two

The **Faithfully - Honourably -Valiantly** rule from the Gendarmerie unit is applied to any infantry or artillery unit that fails a morale test, so if you fail a moral test you get a second attempt to pass, if you field a Gendarmerie unit and it is with in 12" of a unit that fails its moral the unit receives a minus one to its dice roll for its second test in addition to any officer bonuses

For: Reflects the dogged resistance the Hungarian army displayed during the retreat from Russia and the defence of Hungary plus it offers a solid benefit during the course of a game.

Against: Would Gendarmerie end up being an auto include for all army's?

Option Three

Modify the **Axis Support** rule so you get a points discount on the axis support unit you take. I would set the points deduction at 60pts, less than all the existing free units listed below but that is offset by the range of vehicles you can select from.

For: This works with the theme of the rule and encourage players to bring a range of vehicles.

Against: This rule would be contentious because it allows a non-German player to buy an AFV's cheaper than a German player and German players feel hard done by as it is?

	Minus 60pts	Normal cost
Regular Tiger I discounted cost	335pts	395pts
Regular Panther discounted cost	295pts.	355pts
Regular Panzer IV H discounted cost	175pts	235pts

Points benefit of existing free units

Cost for the free medium artillery	75pts
Cost for the free Soviet rifle squad	108pts
Cost for the free British FAO	100pts
Cost for the free Indian infantry section	100pts

What's your view, all the above are only suggestions so the Hungarian player has wider ranges of units and options to choose from, reflecting the size of the army and the technology that Hungary developed? These will remain just suggestion unless adapted by Warlord but as Mahatma Gandhi said "If you don't ask, you don't get it"

20. Reference Sources

Web Sites and books used for the research, I have tried to list them all , apologies if I have missed any.

Axis History Forum

WEAPONRY AND EQUIPMENT OF THE ROYAL HUNGARIAN ARMY DURING WW2

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Automotive News Ford in Europe

Bronhardt Attila, Sárhidai Gyula, Winkler László

"A Magyar Királyi Honvédség fegyverzete"

Magyar warriors Part 1

Don-kanyar bend 1942-1943

Hadtörténeti Múzeum Budapest which I visited in 2022