

Vojislav Jereb - David Spencer

HRVATSKA RATNA POVIJEST

IMPROVIZIRANA OKLOPNA VOZILA 1991.-1995. FOTO ALBUM

CROATIAN IMPROVISED AFVs 1991-1995 A PICTORIAL HISTORY



adamić DIGITAL POINT

VOJISLAV JEREB – DAVID SPENCER

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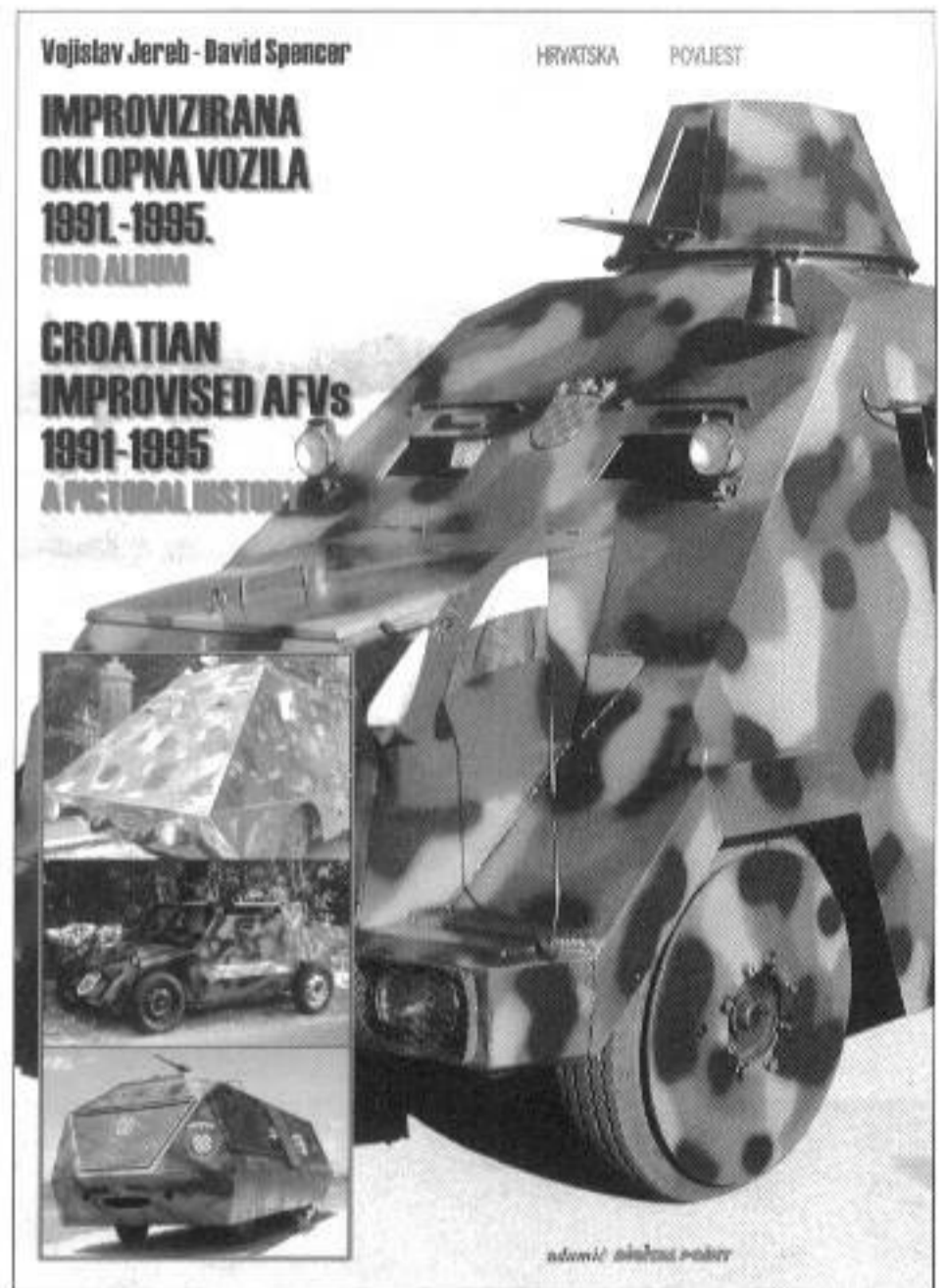
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Ruža Hrvatska prolazi ulicama Varaždina na dan isporuke snagama ZNG-a.
(Foto: Krešo Đurić via Josip Novak).

Photo on previous page:

The 'Ruža Hrvatska' (Croatian Rose) driving through streets of Varaždin
the day it was delivered to the ZNG forces (photo: Krešo Đurić via Josip
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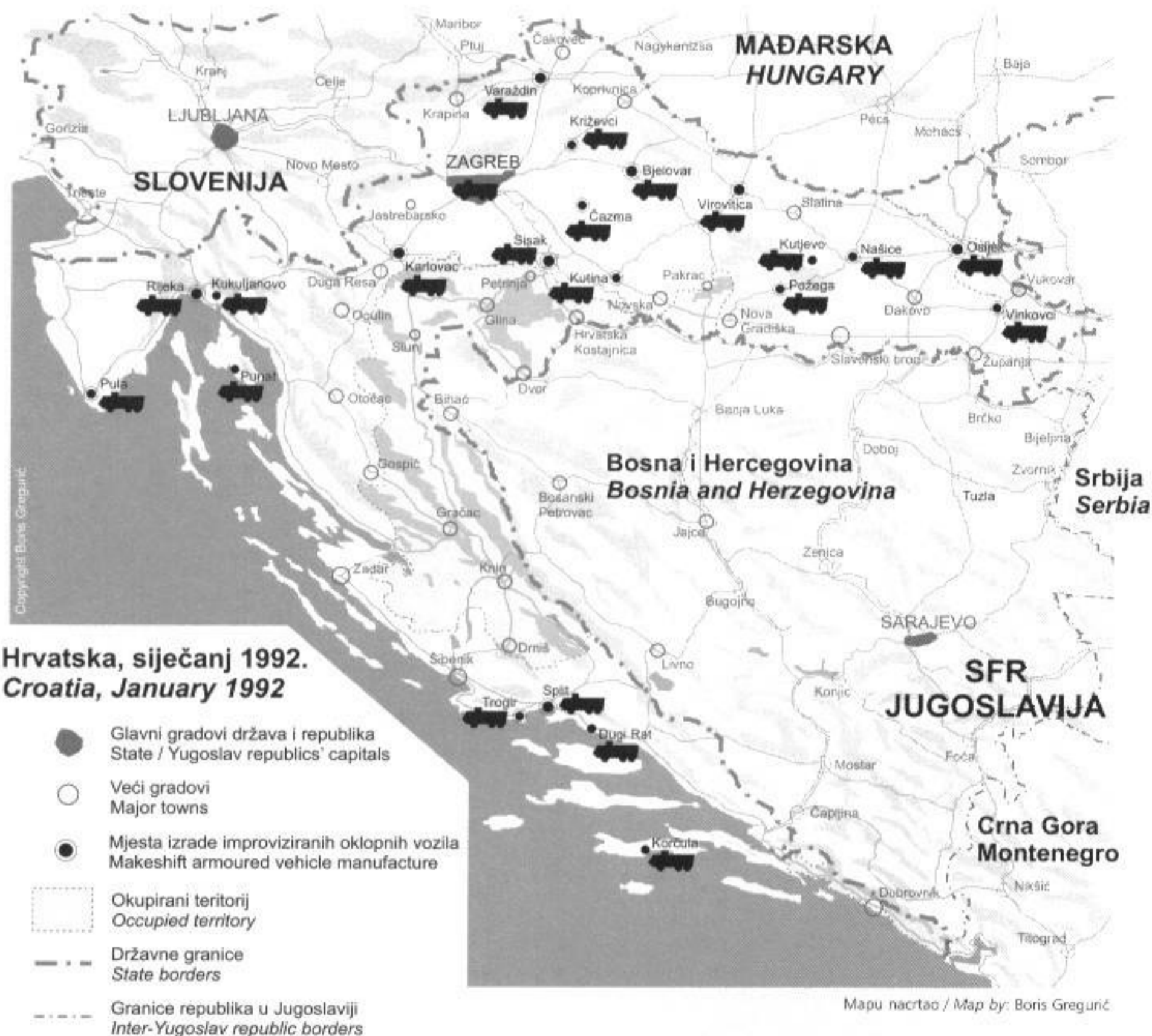
Dedicated to all those who built and used these beautiful machines.

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**POZNATA MJESTA GDJE SU
IZRAĐIVANI OKLOPNJACI
1991./1992.**

**KNOWN PLACES WHERE IMPROVISED
ARMORED VEHICLES WERE BUILT
1991/1992**



UVOD

Od svibnja do prosinca 1991. u Hrvatskoj je izgrađeno preko 250 djelomično ili potpuno oklopljenih vozila korištenih u borbama za obranu i oslobođenje Hrvatske. Ova vozila su izrađena na najrazličitijim podvozjima - od buldožera, traktora, kamiona i autobusa do običnih automobila, prikolica, željezničarskih manevarki i vlakova. Od materijala za izradu oklopa korišteni su pancirni limovi, obični čelični limovi, mreže, obični i kvarcni beton, guma, stakloplastika, drvo i vreće s pijeskom. Kvaliteta izrade je bila od izrazito grubih improvizacija do gotovo tvornički dotjeranih vozila. Borbena vrijednost se kretala od vozila kojima je jedina prava vrijednost bila podizanje morala, do izuzetno efikasnih borbenih sistema. No svi su bili jako dobrodošli, i korišteni su na svim bojištima. Toliki broj improviziranih borbenih vozila nije viđen na evropskim bojištima još od pojave 'Tiznaosa' u španjolskom građanskom ratu.

Postavlja se pitanje zašto se pojavio toliki broj improviziranih oklopnjaka u Hrvatskoj? Odgovor je jednostavan - radi nedostatka svega. Kada je Hrvatska krenula putem nezavisnosti u proljeće 1991, mogla se osloniti samo na male policijske snage. Republička Teritorijalna obrana (TO) koja je postojala pod kapom federalnih oružanih snaga je bila onemogućena, a veći dio njenog naoružanja je predan 'neutralnoj' JNA da se tobože onemogući međunacionalni sukob u Republici. Ipak je JNA, kojom su dominirali Srbi, bila daleko od toga da bude neutralna. Srpski nacionalisti su huškali Srbe u Hrvatskoj na pobunu protiv legalne vlade i da se oružje oduzeto TO podijeli srpskom življi za obranu. U svibnju 1991. takve su paravojne formacije digle pobunu, najprije postavljanjem zasjeda te istjerivanjem hrvatskih vlasti i stanovništva iz područja za koje su tvrdili da su srpska. Pobuna je bila vrlo atipična jer su pobunjenici bili bolje naoružani i opremljeni od vlasti koju su željeli svrgnuti! K tome, oni su bili potpomognuti od 'neutralne' JNA koja se tobože uključivala da razdvoji sukobljene strane, ali se sve otvorenije priklanjala srpskoj strani. Pobunjeni su Srbi na taj način kontrolirali sve više područja u Krajini i dijelovima istočne Slavonije. Hrvatska je reagirala osnivanjem vojske pod okriljem Policije nazavane Zbor narodne garde (ZNG). Dok se za ZNG ipak uspjelo osigurati nešto pješačkog naoružanja, što iz arsenala TO skrivenih od JNA, što uvozom iz Mađarske, Rumunjske, Čehoslovačke, Njemačke pa čak i Čilea i Argentine, nedostatak težeg naoružanja poput oklopnih vozila i artiljerije je bio kritičan. Hrvatska nije imala niti ratno zrakoplovstvo vrijedno spomena. Sve što je imala na raspolaganju bilo je nekoliko oklopnjaka tipa BOV i BTR, nekoliko protuavionskih topova, minobacača i bestrajaca. To je hrvatske snage ozbiljno stavilo u podređen položaj u sukobu s teško naoružanom srpskom paravojskom koja je dobivla otvorenu podršku JNA.

Srbi su tvrdili da je Srbija svaki pedalj zemlje gdje žive Srbi, čak i kad su bili u manjini. U Hrvatskoj su činili samo 12% stanovništva. Radi toga se nisu mogli nadati brojčanoj pobjedi nad Hrvatima. Umjesto toga mogli su se osloniti samo na vatrenu premoć. Srpska taktika osvajanja zasnivala se na konceptu okruženja, terora i satiranja. Prvi korak kod zauzimanja dijela hrvatskog teritorija je bio da se istjera čim je moguće više civilnog stanovništva sistematskim i nasumičnim teroriziranjem. Tada bi napadali preostale branitelje tj. vojsku i policiju. Prvo bi presjekli ceste i ostale načine komunikacije koristeći zasjede, mine, snajpersku vatru i artiljeriju. Tada bi sistematski udarali po braniteljima da ih dovedu u podložan položaj. Takav način borbe je garantirao Srbima minimalne, a Hrvatima maksimalne gubitke i neviđen teror. No pri tome su Srbi imali dva problema. Prvo, iako su imali daleko nadmoćniju vatrenu snagu bili su brojčano u jako podređenom položaju. To je značilo da mogu koncentrirati svoj napad na svega jedan ili dva pravca istovremeno. Mnogi položaji su često bili pokriveni samo vatrom ili povremenim patrolama. Drugi problem je bio taj da iako su Srbi time smanjivali svoje gubitke, to je produljavalo bitke. Što su Srbi dublje prodirali u Hrvatsku taj problem

INTRODUCTION

Between May and December 1991 over 250 partially and fully armored vehicles were built and used in the war for liberation of Croatia. These vehicles were built on all kinds of chassis: bulldozers, tractors, trucks, buses, cars, trailers, trolleys and trains. Materials used to protect the vehicles included armor plate, mild steel, metal screens, quartz cement, rubber, fiberglass, wood, and sandbags. The quality ranged from extremely crude to factory finish. Combat effectiveness ranged from mere morale boosters to vital combat multipliers. They were prolific and participated on every front. Not since the "tiznaos"² of the Spanish Civil War had such a large number of improvised combat vehicles been seen on a European battlefield.

Why did they appear in such large numbers in Croatia? The answer is simple, scarcity. When Croatia began its journey to independence in the Spring of 1991, it only had a small police force. The territorial militia known by the acronym TO that had existed under Federal Yugoslavia had been abolished previously, and most of the arsenals turned over to the "neutral" Yugoslavian People's Army (JNA) to prevent ethnic conflict in Croatia. However, the Serb dominated JNA was far from neutral. Nationalist Serbian politicians encouraged Serbian communities in Croatia to rebel against the Croatian government and turned over the confiscated TO arsenals to the Serb militias. In May 1991 these militias began an uprising, ambushing Croatian police and expelling Croatian authorities and people out of areas they claimed were Serbian. The insurgency was unique in the sense that the insurgents were better armed and equipped than the government forces they were fighting to overthrow. Furthermore, they were aided by the "neutral" JNA who ostensibly intervened to separate the two sides, but increasingly intervened to favor the Serbs. In this manner, Serb militias began to establish control over the Krajina region and parts of Eastern Slavonia. Croatia reacted by creating a new lightly equipped force called the Croatian National Guard, known by the acronym ZNG. The ZNG would eventually evolve into the full fledged Croatian Army or HV. While Croatia managed to acquire plentiful small arms for the ZNG from TO arsenals hidden from the JNA and countries such as Hungary, Romania, Czechoslovakia, Germany, and even places like Argentina and Chile, they were critically short of heavy weapons such as armored vehicles, and artillery. They also had no air force to speak of. All they had were a few BOV and BTR vehicles, a few anti-aircraft guns and a few mortars and recoilless rifles. This put them at a serious disadvantage when facing the heavily armed Serb militias who received increasingly open assistance from the JNA.

The Serb objective was to claim for the Serbs all parts of Croatian territory where Serbs lived, even if they were only a small minority. The Serbs in Croatia constituted only 12% of the population. Because of this they could never hope to beat the Croats through force of numbers. Instead they had to rely on their vast fire superiority. The Serb tactics were based on the concepts of terror, siege and attrition. The first step in taking over a piece of Croatian territory was to drive as much of the civilian population as possible out through both random and systematic terror. Then they would attack the military and police defenders. First, they would cut off the roads and other means of communication using ambushes, mines, snipers and artillery. Then they would systematically pound the defenders into submission. This guaranteed minimum casualties for the Serbs and maximum terror and casualties for the Croats. There were two major problems. First, although the Serbs had vastly superior firepower, they were greatly outnumbered by the Croats. This meant that they could only concentrate their offensive effort in one or two directions at a time. Many sectors were only covered by fire, mines or occasional patrols. The second problem was that while Serb tactics avoided casualties, they prolonged the battle. The prolongation of the battle gave time to the Croats to build up their forces. As the Serbs advanced deeper into Croatia and their lines became stretched their problems became more acute. This caused the

¹ 'Tiznao' je naziv kojeg su tim vozilima dali Španjolci, a u prijevodu znači 'crna stvar'.

² Tiznao is the nickname given by the Spanish to the vehicles. It means "black thing."

je postajao izraženiji. Zato su Hrvati prihvatili taktiku dugotrajnog otpora i preživljavanja. Dokle god su hrvatske snage uspjevale preživjeti, odoljevale bi srpskim napadima. Velike rupe u srpskim redovima, čak i prilikom okruženja, značile su za branitelje u okruženju preživljavanje, jer je kroz te pukotine bilo moguće doturiti pojačanja i snabdjevanje. To su bili uvjeti u kojima su se na bojištu pojavili improvizirani oklopnjaci. Najzanimljivije od svega je to da su u cijeloj zemlji različiti ljudi došli na iste zamisli nekako u isto vrijeme. U svakom gradu ili području formirani su krizni štabovi ili druga tijela sa zadatkom da smisle kako parirati srpskim napadima. Gradnja oklopljenih vozila je bilo jedno od rješenja. Većina vozila je bila smišljena i izrađena kao borbeni transporteri tj. kao vozila koja bi mogla sigurno prenijeti vojnike, snabdjevanje, ranjenike i ostale potrepštine kroz vatreni обруč srpske artiljerije, minobacača, zasjeda i snajpera do i od hrvatskih položaja u okruženju. To su bila uglavnom motorna vozila, ali postojala je npr. i jedna oklopna manevarka kao i oklopni vlakovi. Često su takva vozila korištena za predvođenje ili zaštitu kolone s pojačanjima i opremom. Mnoga su vozila pogodena i uništena od neprijateljske vatre, ali bilo je i mnogo hrvatskih boraca koji su preživjeli te napade zahvaljujući improviziranom ali efikasnom oklopu. Ta vozila su se navozila amo-tamo po putevima, ali je njihov doprinos otporu srpskom agresoru ogroman.

Kako se Hrvatska sve više naoružavala i jačala, pojavljuje se sve više i više specijaliziranih vozila. Na mnoge od tih borbenih transportera su montirane okretno kupole sa mitraljezima. Neki su naoružani i sa lanserima raketa ili bestrzajnim topovima. To im je omogućavalo ne samo da efikasnije zaštite svoje posade već i da prihvate borbu ili da budu korišteni u ograničenim napadnim akcijama.

Istovremeno se pojavljuju i samohodna oružja raznih vrsta. Postaje uobičajeno da se na vozila montiraju teški mitraljezi, laki protuavionski topovi pa čak i minobacači. To se činilo radi maksimalnog poboljšanja efikasnosti ono malo teškog naoružanja kojim je hrvatska strana raspolagala. Oružje montirano na kamion je moglo brzo mijenjati položaj ovisno o tome gdje prijete najveća opasnost. Ako se išlo u napad moglo se brzo napredovati dajući vatrenu podršku svojim snagama. Isto tako je bilo omogućeno i brzo povlačenje. Ipak, samohodna oružja su na sebe privlačila neprijateljsku vatru, tako da su postepeno i ona dobivala oklop radi zaštite posade, vozila i oruđa. U nekim slučajevima postavljani su samo štitnici ili kupole za oružje. U drugim je slučajevima cijelo vozilo bilo oklopljeno. Oklop je zavisio o tipu oružja, podvozja i materijalu na raspolaganju. Zabilježeno je čak i korištenje naoružanih prikolica koje su vukli automobili ili džipovi.

Kad je hrvatska vojska ojačala toliko da razmišlja o ofanzivnim djelovanjima, pojavila su se i druga specijalizirana vozila. Za vrijeme bitki za osvajanje vojarni JNA nekoliko buldožera i artiljerijskih traktora je prepravljeno u 'navalna' vozila. Zamisljeno je da se koriste kao vozila za rušenje zidova vojarni da bi se raskrčio put pješastvu iza njih. Također se pojavljuju i vozila za uništavanje mina i drugih prepreka. Pregrađivani su razni tipovi buldožera, mlatilica, valjaka i uređaja sa lancima radi uništavanja barikada i minskih polja da bi se na taj način omogućio prolaz trupama.

Mnoga od tih vozila su našla svoj put u Bosnu i Hercegovinu gdje su služila sa jedinicama HVO-a ili Armije BiH. Mnoga od njih su bila tako uspješna da kada bi bila zarobljena neprijatelj ih je nastavio koristiti iako je posjedovao i druga oklopna sredstva.

Sve podatke i priče o tim vozilima treba istražiti do kraja pa ova knjiga ne pretendira da su obuhvaćena sva vozila i ispričane sve priče. Ipak, prezentiramo vam foto album s željom da pokažemo većinu do sad poznatih vozila. Vozila su prikazana kroz poglavlja te se nadamo da će svaki čitatelj s nama podijeliti osjećaj divljenja kojeg osjećamo za nevidenu domišljatost i dosjetljivost. Neuništiva želja za slobodom hrvatskog čovjeka dokazana je i tim čudnim vozilima u stilu 'Mad Max-a'.

Croats to adopt tactics of resistance and survival. As long as the Croat forces could survive, they could resist the Serb onslaught. The great gaps between Serb forces meant that even areas mostly surrounded by the Serbs could still hold out because Croatian forces could slip through the lines to bring reinforcements and supplies. It was under these conditions that the improvised armored vehicles began to appear and flourish on the battlefield. What is remarkable is that all across the nation, different people came up with the same solution at about the same time. In each town and region crisis committees or staffs were created to come up with ideas about how to resist the Serbs. Building armored vehicles was a common solution. The majority of the vehicles were designed and built as battle taxis. These were vehicles that could carry troops, supplies, wounded and other items through the gauntlet of Serb artillery, mortars, ambushes and sniper fire to and from Croatian positions. These were mostly motor vehicles, but also included at least one trolley and one or more armored trains. Often these vehicles led or escorted convoys of trucks taking supplies and reinforcements to beleaguered Croatian positions. Many were hit and knocked out by artillery fire, anti-tank rockets, and grenades, but there are many Croatian soldiers who survived these attacks because of the improvised, but effective armor. These vehicles did a lot of mundane traveling up and down the roads, but they facilitated resistance against the Serb aggressor.

As Croatia acquired more weaponry and grew stronger, more specialized vehicles began to appear. Many of the battle taxis began to sport machinegun turrets. Some were also equipped with such weapons as rocket launchers and recoilless rifles. This allowed them to not only protect their crew, but to fight back and be used in a limited offensive manner.

Weapons carriers of various types also appeared. It was common to mount, heavy machineguns, light anti-aircraft guns, and even mortars on trucks. This was done to maximize the effectiveness of the few heavy weapons available to the Croats. A weapon mounted on a truck could quickly travel from place to place depending on where the greatest Serb threat existed. If opportunity came to attack, it could quickly advance with the troops to provide fire support. It could also quickly withdraw if necessary. However, these weapons carriers drew a lot of enemy fire, so steps were taken to protect the crew and the vehicle. In some cases shields or turrets were built for the weapon. In other cases the entire vehicle was armored. Much depended on the type of weapon, type of chassis and the materials available to provide protection. Even some non-motorized trailers were made into this type of vehicle and dragged around behind cars and trucks.

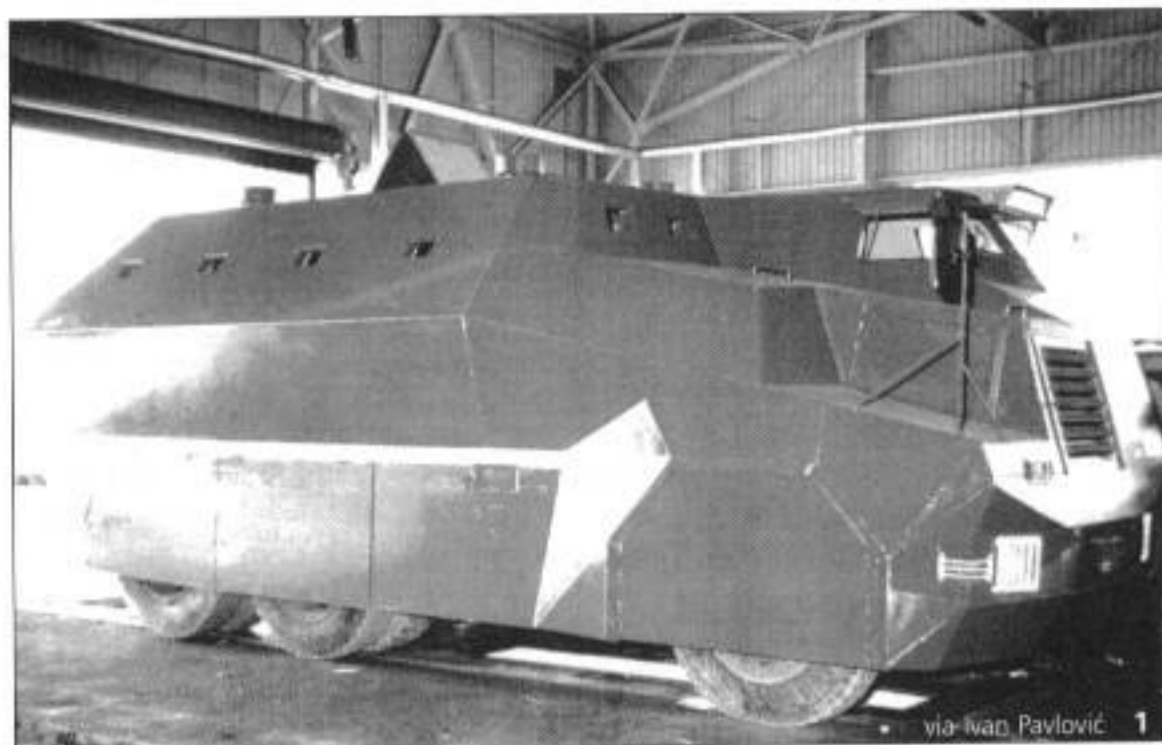
Finally, as the Croats acquired enough strength to go on the offensive, even more specialized vehicles began to appear. For the battle of the barracks, a number of bulldozers and artillery tractors were armored as "breakthrough" vehicles. Vehicles that could be used to push their way through barracks fences and other obstacles to open a path for the infantry. Also, anti-mine and anti-obstacle armored vehicles appeared as well. Various types of bulldozers, flails, rollers and chain devices were built to clear barricades and mines to allow the passage of troops along the roads. Several of these were also used to clean up the battlefields after the fighting ended.

Many of the vehicles eventually found their way to Bosnia-Herzegovina where they served with the HVO or the BiH. Many of the designs were so effective that when the Serbs captured them, they continued to use them despite already possessing conventional armored vehicles.

The story and information on these vehicles is still being revealed, so this book does not pretend to mention all of the vehicles or all of the stories. Instead this is a book of photographs that hopes to show a broad selection of most of the known vehicles. The story will be mostly told in the captions. We hope the reader will share the sense of marvel that we feel for the ingenuity and will to conquer of the Croatian people demonstrated by these "Mad Max" vehicles.

Napomena: Svi improvizirani oklopnjaci prikazani u knjizi izloženi su po geografskom slijedu i ponekad s imenima ili šiframa koji nemaju veze sa originalnim nazivom onih koji su ih izradili. Postupilo se tako jer se usprkos mnogim nastojanjima, za mnoge od njih nije uspjele doznati ime proizvođača, datum ili period izrade. Autori ove knjige su zato dodjelili izmišljena imena ili šifre prema izgledu ili nekom karakterističnom detalju da bi ih mogli međusobno razlikovati.

Note: All the improvised armored vehicles shown in the book are classified by geographic origin sometimes using names or codes which have nothing to do with the creator's or user's classifications. This is because while every attempt has been made to identify the manufacturer and name/designation, for many of the vehicles the exact dates of construction and name, if one was given, has not been found. The authors have given names and codes to them based on appearance, or other unique characteristics to be able to keep the vehicles straight between themselves.



via Ivan Pavlović 1

HOT

Čast izrade prvog oklopnjaka i predaje ZNG-u (Policiji) pripala je firmi Dalmacija – tvornica ferolegura iz Dugog Rata i 4. gardijskoj brigadi.

Ideja o izradi oklopnjaka je sazrijevala još od travnja mjeseca 1991. godine što dovoljno govori o položaju hrvatskog življa u srazu sa srpskim nacionalistima i JNA na tom području. Nakon nekog vremena izrada oklopnjaka je počela na osnovi dampera tipa BK-20 proizvodnje Braće Kavurić, pogonjen motorom 305 KS Famos F305A, kakvi su korišteni u tvornici. Prvo vozilo dovršeno je 10. srpnja 1991. i to je najraniji dokumentirani podatak o dovršenju nekog takvog vozila za snage ZNG-a.

Vozilo je nazvano 'TIN'. Mnogi su to povezali sa čuvenim pjesnikom Tinom Ujevićem međutim to je bio akronim za 'Tuđman i Narod'. Službena oznaka vozila je bila HOT-001 (HOT - Hrvatski oklopni transporter).

Oklop na prvom TIN-u je bio 'sendvič' tipa s vanjskim limom debljine 12, unutaršnjim debljine 4 mm dok je raz-



via Ivan Pavlović 2



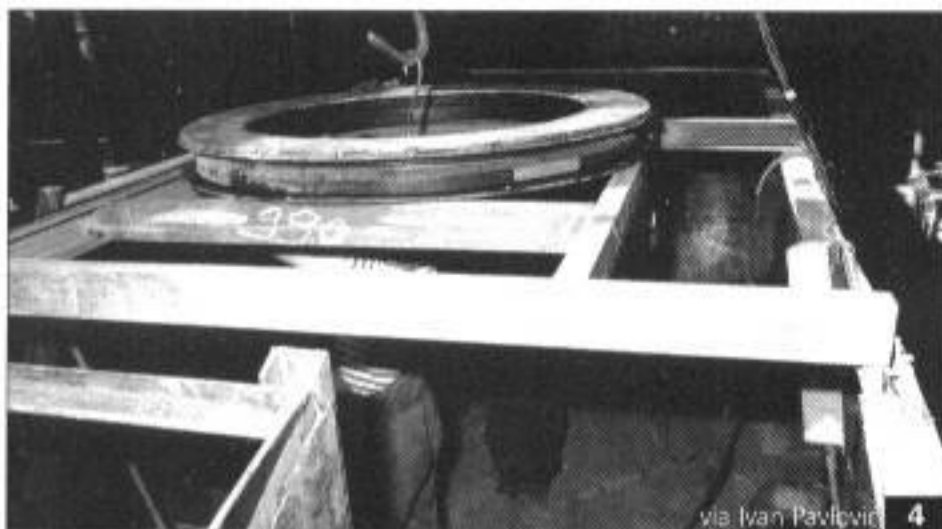
via Ivan Pavlović 3

mak među njima od 48 mm bio ispunjen kvarcnim pjeskom i vatrootpornim betonom. Gume su u šibenskom TEF-u punjene pjenom protiv ispuhavanja prilikom probijanja.

Pošto su snage ZNG-a bile još uvijek u sastavu MUP-a vozilo je bilo pobojano plavo sa bijelom crtom, kao sva policijska vozila u to vrijeme (slika 1 i 2). No nakon prvih okršaja ipak je maskirano te je kao takvo korišteno u zadarskom zaleđu. Uništeno je 5.10.91 prilikom napada nadmoćnih snaga JNA na zaleđe Zadra kod sela Briševo gdje je još neko vrijeme nakon uništenja (barem do 1993.) bilo na cesti.

Pored prvog, Dalmacija Dugi Rat je izradila još dva oklopna transportera nazvavši ih HOT-011 (slike 3 do 8, 10) i HOT-111 (imenom 'Poskok', slike 9, 11 i 12). Oba su isto tako bili pregrađeni damperi BK-20 ali su imali potpuno drugačiji oblik i okretnu kupolu sa mitraljezom. Od početka su bili maskirani i predani su 4. gardijskoj 17. kolovoza i 10. listopada iste godine. Sudbina oba oklopnjaka nije sa sigurnošću utvrđena – HOT-011 je navodno potopljen na trajektu u Karinskom moru dok je HOT-111, nakon korištenja na južnom bojištu kod Dubrovnika viđen u Bosni gdje mu se gubi svaki trag (vidi slike na str. 49).

The honor of delivering the first armored vehicle to the Croatian Police force (ZNG 4th Brigade) fell to the Dalmacija metallurgical plant at Dugi Rat. The idea of making an armored vehicle began in April 1991 and was the product of increasing clashes between the Croats of Dalmatia, Serb nationalists and JNA forces. The construction of the vehicle was based on the chassis of a BK-20 heavy dump truck. The dump truck was manufactured by Braća Kavurić and equipped with a Famos F305A 305 HP diesel engine. The first vehicle was finished on July 10. It is the earliest known vehicle to be delivered to the ZNG/Police. The vehicle was named 'TIN' and many thought it was after the well known poet Tin (Augustin) Ujević but later it was revealed to stand for the initials of the phrase 'Tudman i Narod' (Tudman and the People). The official designation of the vehicle was HOT001 (Hrvatski Oklopni Transporter - Croatian Armored Transport).



via Ivan Pavlović 4



via Ivan Pavlović 5



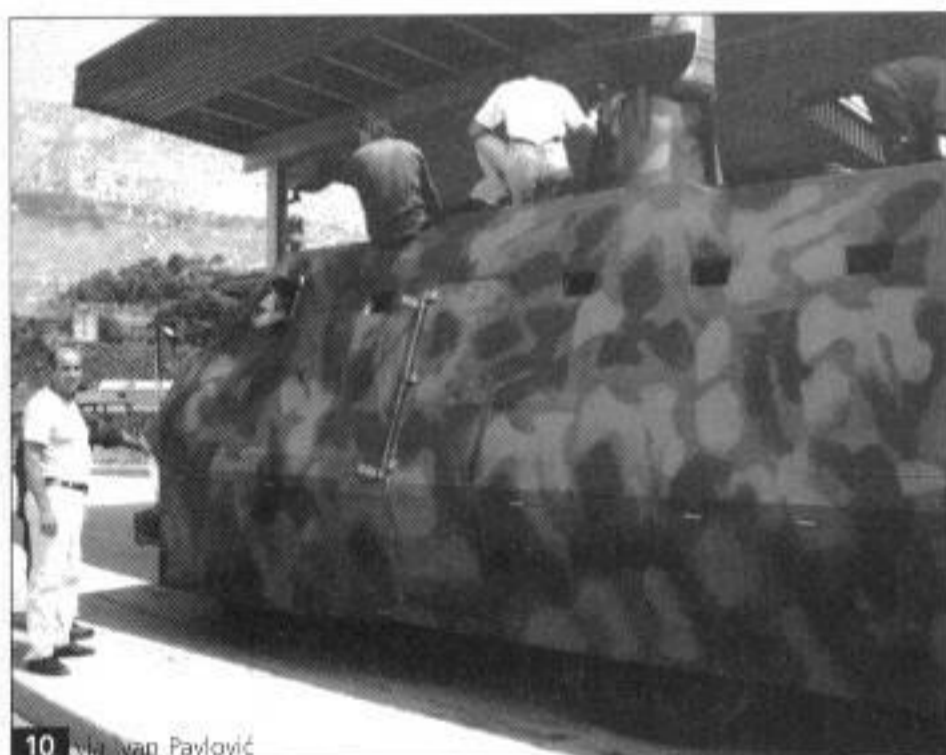
6 via Ivan Pavlović



via Ivan Pavlović 7



8 via Ivan Pavlović

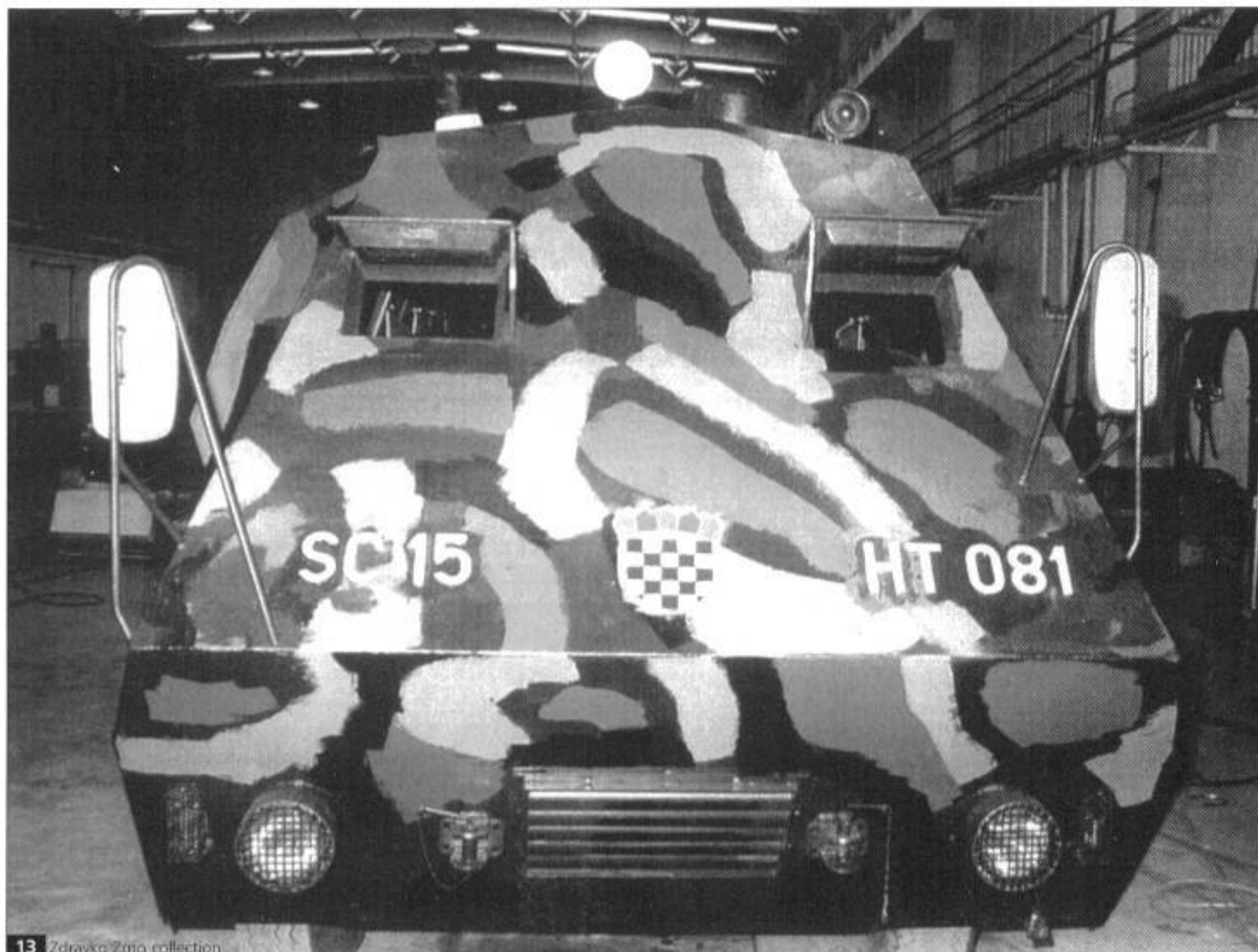


The armor on the first vehicle was of composite sandwich type composed of 12 mm outer steel plates, inner plates of 4 mm steel and 48 mm of fire-resistant quartz sand concrete in between. The tyres were filled with anti-ballistic foam at the TEF plant at Šibenik.

The vehicle was delivered to the 4th Brigade. As the ZNG Brigades were still part of the Police the vehicle was painted Police blue with white trim (photos 1 and 2). Nevertheless, after the first combat use it was painted in a more appropriate camouflage pattern and used in the Zadar surrounding area. The vehicle was most probably destroyed on October 5, 1991 during the JNA attack on the Briševo village. It remained where it was destroyed for some time afterward.

Besides this vehicle, the Dalmacija plant built two more improvised APCs, the HOT-011 (photos 3 to 8, 10) and the HOT-111 (photos 9, 11, 12). These were also based on BK-20 dump trucks but had better sloped armor and revolving machinegun turrets. From the start these were painted in camouflage patterns and were delivered to the 4th Brigade on August 17 and October 10 of that year. The fate of these vehicles is not certain – HOT-011 is said to have been sunk on a ferry retreating in the Karin sea while HOT-111 was used on the Southern front near Dubrovnik and after that sent to Bosnia where all traces of it were lost (see photos on page 49 too).





13 Zdravko Zrno collection

BRODOSPLIT

U splitskom 'škveru' su, potaknuti situacijom u dalmatinskom zaleđu, vrlo rano započeli s izradom improviziranih oklopnjaka. Jedan od prvih je bio naoružani i oklopljeni 'Tamić' na kojeg se mogla navući cerada pa je izgledao kao običan kamion.

No po isporuci prvoga TIN-a iz Dugog Rata srpnja 1991, odlučili su započeti sa serijskom izradom oklopnjaka. Korištena su iskustva iz Dugog Rata te su si zacrtali izraditi još bolja vozila otklanjajući nedostatke prvog HOT-a. Plan je bio izrada 15 oklopnjaka identičnih karakteristika te su, izrađivši ukupno 14 vrlo sličnih vozila, u tome praktički uspjeli.

Kao osnovu za prvo vozilo uzet je rashodovani kamion marke Scammel (nepoznatog tipa) iz samog Brodogradilišta kojeg su potpuno ogolili i na njega nadodali oklop. Za ostale oklopnjake su korišteni još jedan Scammel, pa dva Magirusa, dok je najveći broj izrađen pregrađivanjem teških Tamova (model TAM-260 T26) s motorom od 260 KS. Redoslijed završavanja i označavanja oklopnjaka prikazan je u tablici 1. Sistem označavanja vozila je bio takav da su prva slova označavala tip kamiona (SC - Scammel, MG - Magirus, TM - TAM), broj 15 uz njih je označavao nazivnu nosivost vozila, HT je značilo Hrvatski Transporter dok je zadnji broj slučajno odabiran, ali čim viši, i kao označavao je broj transporteru izrađenih u Hrvatskoj, naravno lažan, da se zavara neprijatelj.

Gotovo svi oklopnjaci su isporučeni 4. 'A' brigadi, dok je jedan korišten u 114. splitskoj brigadi. U 4. brigadi ti su oklopnjaci činili jezgro oklopnih postrojbi te proslavljene gardijske brigade.

Korišten oklop je bio tipa 'sendvič' sa limovima debljine 6 i 8 mm i sa 36 mm razmaka ispunjenog betonom sa kvarcnim pjeskom. Ispitivanja su pokazala da takav oklop štiti od pješackog naoružanja do kalibra 12,7 mm. Ukupna težina praznog vozila je bila 22,2 tone, a korisna nosivost je bila 2 plus 12 ljudi s kompletnom opremom i naoružanjem.

Sudbina svih vozila nije poznata. Jedini u sastavu 114. brigade (SC15-HT082) je bio zarobljen prilikom povlačenja naših snaga kod Vrlike, ali je pronađen nedaleko Knina nakon 'Oluje'. Nekoliko njih (na pr. SC15-HT081 i TM15-HT085) su viđeni u BiH, dok je jedan (TM15-HT088) sačuvan u Zagrebu (vidi i slike u boji na strani 50).



Zdravko Zrno collection 14



Zdravko Zrno collection 15



Zdravko Zrno collection 16



17 Zdravko Zrno collection



Zdravko Zrno collection 18

Forced by the situation in the border region, the Split shipyard began very early to produce improvised armored vehicles. One of their first vehicles was a small TAM truck, armored and armed but capable of being camouflaged with a tarpaulin to appear like a normal unarmored truck.

However, after the delivery of the first HOT from Dugi Rat they decided to make a series of their own vehicles. It was decided to use the experience of Dugi Rat and build vehicles that would be better by eliminating their shortcomings. The plan was to build 15 identical vehicles. This goal was almost accomplished as the final number made was 14.

The chassis for the first vehicle was the Shipyard's own Scammell truck (of unknown type) which was stripped down to the chassis before the armored hull was added. The rest of the series were built on another Scammell, two Magirus and the rest on TAM-260 T26s trucks with 260 HP air cooled diesel engines. The sequence of production and delivery of the vehicles is shown in Table 1. The coding system was derived as follows: The first two letters stood for the type of chassis (SC - Scammell, MG - Magirus, TM - TAM). The number 15 indicated the useful load in tons, HT stood for Hrvatski

Transporter (Croatian Transport) while the last three digits were painted in a random sequence using high numbers to confuse enemy intelligence about the real number of such vehicles in Croatia.

Almost all Brodosplit vehicles were delivered to the 4th Guards Brigade based in Split. Only one was to go to the 114th Brigade, also from Split. Those delivered to the 4th Brigade formed the armored nucleus of that Brigade.

The armor was of sandwich construction with quartz sand concrete between 6 and 8 mm thick plates. Experiments showed that this armor was proof against projectiles of up to .50 caliber. The empty weight of the vehicle was 22,2 tons, and it could carry 2 crew plus 12 fully equipped soldiers.

The fate of most of the vehicles remains unclear. The only one delivered to the 114th Brigade (SC15-HT082) was captured near Vrlika from the retreating Croatian forces and used by the Krajina Serbs. It was found near Knin after the Operation Oluja in 1995. Several others (amongst them TM15-HT085 and SC15-HT081) were seen in Bosnia - Herzegovina while one (TM15-HT088) is preserved in the Military Museum in Zagreb (see color photos on page 50).

Tablica 1.
Table 1

oznaka/mark	predan/deliv.	vozilo od/vehicle of	korišten/used by	sudbina/fate
SC15-HT081	01.08.1991.	Brodosplit - Split	4. 'A' brigada	korišten u BiH / Used in Bosnia - Herzegovina
MG15-HT083	14.08.1991.	Lavčević - Split	4. 'A' brigada	
MG15-HT084	14.08.1991.	Lavčević - Split	4. 'A' brigada	
SC015-HT082	25.08.1991.	Brodosplit - Split	114. brigada	zarobljen kod Vrlike / Captured near Vrlika
TM15-HT089	31.08.1991.	Visokogradnja - Split	4. 'A' brigada	
TM15-HT090	31.08.1991.	Melioracija - Split	4. 'A' brigada	
TM15-HT085	06.09.1991.	Hidroelektra - Split	4. 'A' brigada	kasnije u BiH / Later in Bosnia - Herzegovina
TM15-HT086	06.09.1991.	Hidroelektra - Split	4. 'A' brigada	
TM15-HT087	13.09.1991.	Visokogradnja - Split	4. 'A' brigada	
TM15-HT088	13.09.1991.	Pomgrad - Split	4. 'A' brigada	sačuvan u VM Zagreb? / Stored in VM Zagreb?
TM15-HT091	13.09.1991.	Cestar - Split	4. 'A' brigada	
TM15-HT092	13.09.1991.	Pomgrad - Split	4. 'A' brigada	
TM15-HT095	11.10.1991.	Pod. za ceste - Split	4. 'A' brigada	
TM15-HT094	11.10.1991.	Hrvatske ceste - Split	4. 'A' brigada	



BRODOSPLIT OKLOPNI VLAK

Početak kolovoza 1991. u Brodogradilište Split doveden je vlak (lokomotiva i dva vagona) sa zadaćom da ih se oklopi i napravi oklopni vlak. Lokomotiva je bila diesel tipa HŽ664, popularno zvana 'Kenedijevka'.

Prema proračunima je ispalo da se lokomotiva može opteretiti sa 30 tona oklopa te su se 'škverani' bacili na posao. Najviše su oklopljeni kabina i rezervoari goriva. Konačna težina lokomotive je bila oko 130 tona, dok su vagoni težili skoro po 40 tona. Za cijeli vlak je razrađen sistem ventilacije kao i otvori za izlaz u nuždi s obje strane i na podu. Na krovu su dodane kupole sa mitraljezima 12,7 mm. Nosivost vlaka je bila 40 tona.

Za vitalne dijelove je korišten sendvič oklop (6 mm vanjskog lima, 30-50 mm prostora ispunjenog pijeskom te 8 mm unutarnjeg lima) dok su kotači pokriveni limenim pločama debljine 10 mm.

Uspriko svojoj impozantnosti i borbenoj vrijednosti u trenutku kada nije bilo drugih oklopnih vozila na raspolaganju, oklopni vlak nije korišten u borbi te još danas stoji u splitskoj željezničkoj stanici Predgrađe.



BRODOSPLIT ARMORED TRAIN

At the beginning of August 1991 a train, consisting of a locomotive and two cars, was sent to the Split Shipyard to convert it into an armored train. The locomotive was a HŽ664 model, the so called Kennedy locomotive.

The calculations of the engineers showed that the locomotive could be fitted with up to 30 tons of armor and the shipsmiths went to work. Most of the armor was fitted over the vital parts such as the cab and the fuel tanks. The final weight of the locomotive was 130 tons while the cars weighed 40 tons. A ventilation system was fitted to the entire train and escape hatches were made on both sides of the cars and on the floor. Turrets with .50 caliber machine guns were added on the roof. The train could carry a load of 40 tons.

For the vital parts a steel-concrete-steel sandwich type armor was used (6 mm outer plate, 30 to 50 mm of concrete and 8 mm inner plate) while the wheels were protected with single sheets of 10 mm steel.

Despite being an impressive accomplishment with some combat value, especially when other armored vehicles were unavailable, the train was never used in combat, and remains unused at the Predgrađe station near Split.

Na slikama (19, 20, 21 i 22) je prikazan kompletni vlak (lokomotiva s dva vagona) u splitskoj stanici Predgrađe; slika vjerojatno nakon rata. Cijeli vlak je srebrno-sive boje s plavim natpisima ZNG RH i HRVATSKE ŽELJEZNICE. Na slikama se jasno vidi kupola s teškim mitraljezom Browning 12,7 mm, puškarnice sa strane vagona kao i bočna vrata za ukrcavanje/iskrcavanje. Vidi još fotografija u boji na strani 51.

Photos (19, 20, 21 and 22) show the completed train, the locomotive and the two cars, taken at the Split railway station of Predgrađe, most probably after the war. The whole train was painted silver-gray with ZNG RH and HRVATSKE ŽELJEZNICE (Croatian Railways) blue inscriptions. The photos clearly show the .50 caliber Browning machinegun turrets, the car side firing ports, entrance and exit. See more color photos on page 51.



AUTODIZALICA

Taj pogon Brodosplita je, u vrijeme kada se u 'škeru' gradila serija oklopnjaka, naoružao i oklopio jedan kamion za potrebe specijalne jedinice Policijske uprave Split. Osim toga, tamo je opremljen i jedan TAM-75 T5, također za potrebe 4. 'A' brigade. Nismo uspjeli doznati više podataka o tome kako su izgledala ta vozila.

The 'Autodizalica' plant of the Brodosplit shipyard made an armored truck at the same time that the shipyard plant TM series vehicles were built. The vehicle was made for the Split special police. In addition they also armed a TAM-75 T5 truck for the 4th 'A' Brigade. Unfortunately no further data is known and no photos of these vehicles have been found.

HOGAR

Oklopnjak s ovim natpisom je jedno vrijeme bio parkiran u Zadru u vojarni 'Višnjik-Novi Logor' gdje je i slikan (slike 23 i 24), ali se pretpostavlja da je lipnja 2000 razrezan i bačen u staro željezo. Iz fotografija se ne može puno zaključiti, jedino da je podvoz bio vjerojatno civilni kamion 4x2. Hogar (viking) je glavni lik iz istoimenog stripa. Moguće je da je tog oklopnjaka izradilo Brodogradilište Trogir iz Trogira.

This armored vehicle was withdrawn from service and parked for some time at the Zadar barracks of Višnjik-Novi Logor (photos 23 and 24). It was photographed as recently as 2000 but was soon thereafter cut up and scrapped. From the available photos not much is revealed except that the chassis was a civilian 4x2 truck. HOGAR is the Croatian name for the cartoon character Hagar the Viking. It is possible that this vehicle was built by the Trogir Shipyard.



BRODOGRADILIŠTE TROGIR

U tom dalamtinskom brodogradilištu je navodno napravljeno tri ili četiri oklopnjaka točkaša. Osnova za te oklopnjake su bili kamioni FAP sa pogonom samo na zadnje kotače (4x2). Ta vozila su napravljena 1991. i predana su ZNG-u. Kasnije (vjerojatno koncem 1992. ili 1993.) u tom brodogradilištu su oklopili i dva artiljerijska traktora na gusjenicama, ali za potrebe HVO u Bosni i Hercegovini. Koristili su otpisane traktore bivše JNA, vjerojatno tipa GJ-800, slično kao u Janafu i Brodogradilištu Uljanik 1991.

Moguće je da su njihovi oklopnjaci-točkaši niže prikazani (sa šifrom Model-1) kakve su zabilježile snage UN-a.

TROGIR SHIPYARD

At this Dalmatian shipyard three or four wheeled armored vehicles were allegedly built. The chassis used for these vehicles were FAP 4x2 trucks. These vehicles were finished during 1991 and delivered to the ZNG. Later, probably around late 1992 or 1993, this shipyard also armored two tracked artillery tractors. These tractors were delivered to the HVO forces in Bosnia and Herzegovina. The tractors used were JNA surplus, probably type GJ-800s, similar to vehicles used by JANAF Sisak and the Uljanik Shipyard at Pula in 1991.

It is possible their wheeled armored vehicles were the Model-1 vehicles shown below. Two identical vehicles were noted by UN forces.



25 Vojislav Jereb

MODEL-1

O vozilima ovog tipa nije ništa poznato. Loša fotografija dva slična vozila objavljena je u jednoj publikaciji UN-a. Navedeno je da je tipa 4x4 (pogon na sva 4 kotača). Ima bočna kao i vjerojatno stražnja vrata za ulaz i izlaz posade. Nije poznato gdje je slika slikana niti gdje su vozila korištena (crtež br. 25).

These vehicles remain a mystery. A poor photo of two similar vehicles was seen in a UN publication. They were claimed to be 4x4 vehicles. The vehicles had side and probably back doors. It is not known when they were photographed nor where the vehicles were used (drawing 25).



26 Mario Raguz

MAJSAN

Oklopnjak Majsan je bio odgovor na opsadu Dubrovnika i najočitiji iskaz prkosa toga grada prema agresiji JNA. Oklopnjak je izrađen u Brodogradilištu *Inkobrod* u Korčuli koncem listopada 1991. i očit je utjecaj konstrukcije Brodosplitove serije oklopnjaka. Osnova je najvjerojatnije kamion TAM-260 T26, koristio je sličan sendvič oklop, a ime je dobio po malom otočiću ispred Korčule.

U opkoljenom Dubrovniku Majsan je korišten za prijevoz i evakuaciju na relaciji Dubrovnik-Mokošica po noći odnosno za snabdjevanje i evakuaciju na Belveder po danu. Kako je uglavnom korišten pod okriljem noći, neprijatelj je na njega gađao na slijepo i nikad nije bio izbačen iz borbe. Najviše su stradavale gume, pa se očevici sjećaju situacije kada se vratio u Dubrovnik na samo dvije gume i osam felgi!

Od oslobođenja Dubrovnika vozilo je napušteno i ležalo je na jednoj livadi kod Konavala (slike 26 do 29, kao i slika 193 na str. 51).

The MAJSAN improvised armored transport was the answer to the siege of Dubrovnik and a very clear show of defiance by that city to JNA aggression. The vehicle was built at the Inkobrod Shipyard at Korčula in late October 1991 and closely resembles the Brodosplit series of armored transports. The chassis used was most probably a TAM-260 T26 6x4 heavy truck and a similar sandwich armour was used for protection. Majsan is the name of a small island in front of Korčula island.

During the siege of Dubrovnik Majsan was used to transport and evacuate military and civilian personnel, mostly along the Mokošica-Dubrovnik route by night, and to supply the military and evacuate civilians from the Belvedere sector by day. At night the enemy would fire blindly in its direction. While it was hit many times, it was never put out of action. The tyres were the most vulnerable and witnesses recalled once when Majsan returned from a mission on two tyres and eight rims!

After the liberation of Dubrovnik the vehicle was abandoned near Konavle for several years (photos 26 to 29, as well as photo 193, page 51).



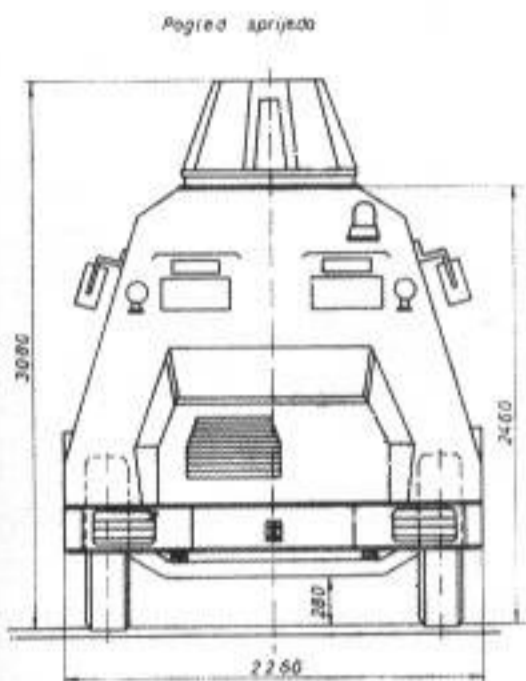
Mario Raguz 27



28 Mario Raguz



Mario Raguz 29



30 via Ivica Posarić



Egon Hreljanović 31

BiB

BiB Mk.1 i BiB Mk.2 su dva slična oklopnjaka izrađena u prostorima riječkog Bimonta. Prvi od njih je izrađen po ideji ljudi iz 'A' bojne 111. brigade na osnovu kamiona TAM-5000 kupljenog privatnim novcem u Istri. Montaža oklopa s kupolom izvršena je na Kukuljanovu u prostorima Bimonta, najvjerojatnije srpnja i kolovoza 1991., a materijal je kupovan u skladištu obližnjeg Brodomaterijala. Po završetku prvog BiB-a (BiB je stilizirana skraćenica firme Bimont, vidi slike) nazvanog 'Tomo', prišlo se izradi drugog na kojem su otklonjeni nedostaci prvoga. Korišten je civilni kamion TAM-110 T10 4x2. Drugi oklopnjak, nazvan BiB Mk.2 ili skraćeno 'Mark 2', dovršen je 18. studenog 1991. te je predan, koliko je poznato 128. brigadi. Neki izvori tvrde da ga je koristila 111. i 133. brigada do travnja 1992. (slike 31 do 34, kao i slike u boji na str. 52; na slici 31 je vozilo slikano u prajmeru, pred bojanje, 14.11.1991.)

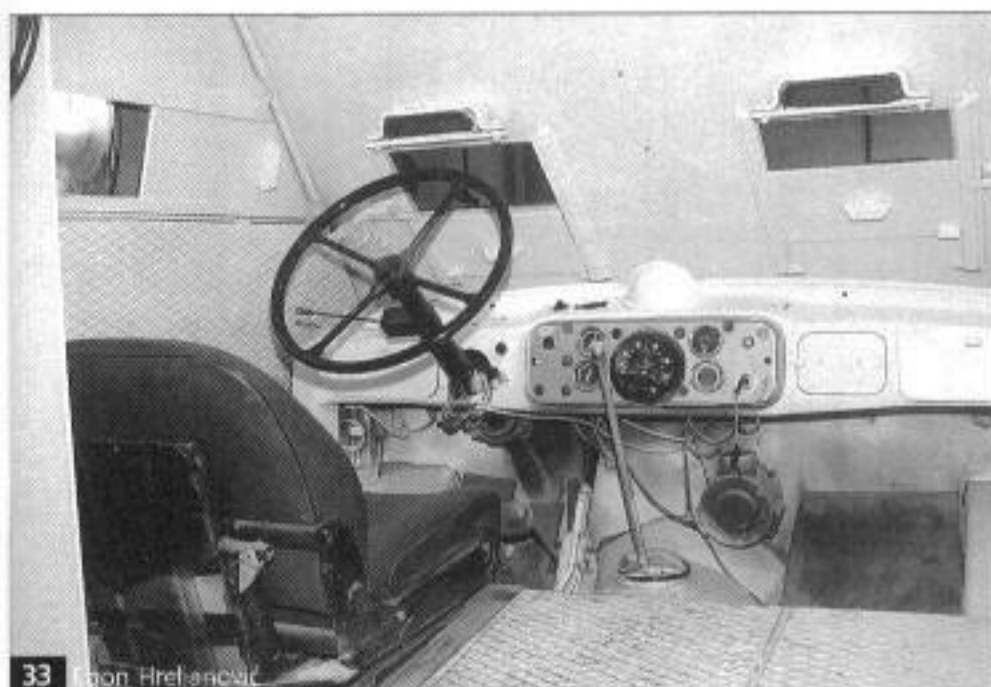
Za prvog BiB-a nije sigurno gdje je korišten. Neki izvori tvrde da je pogođen i uništen (navodno su i neki gardisti pri tome poginuli). Drugi BiB je korišten u Lici. Kraj rata (Oluju) je dočekaao u vojarni u Otočcu nakon čega je prebačen u zagrebački Vojni muzej gdje je uređen i pripremljen za izlaganje.

BiB Mk.1 and BiB Mk.2 are two similar armored trucks built in the halls of the Bimont plant of Rijeka. The first was built on the basis of ideas proposed by the men of the 'A' battalion of the 111th Brigade on the chassis of a modified TAM-5000 truck, with private money from the Istria region. The armored plates and the turret were added at the Bimont plant at Kukuljanovo during July and August 1991 and all the material were acquired from the nearby Brodomaterial stores. After finishing the first BiB (BiB is the logo of the Bimont firm, see photos) called 'Tomo', work on the second vehicle began. All the shortcomings of the first vehicle were eliminated and a civilian TAM-110 T10 was used for the chassis. The second BiB Mk.2 was finished on 18. November 1991, and, as far as it is known was delivered to the 128th Brigade. Other sources claim it was used by the 111th and 133rd Brigade until April 1992. (photos 31 to 34, as well as photos on page 52; photo 31 shows the vehicle in primer before painting on November 14, 1991).

The use of the first BiB is not positively known. Some sources claim it was hit and destroyed and that some men were killed in the incident. The second vehicle was used on the Lika front. At war's end, the vehicle was taken to the Military museum in Zagreb where it was restored awaiting display.



Egon Hreljanović 32



33 Egon Hreljanović



Egon Hreljanović 34

KONSTRUKTOR-1

Težinski primat među oklopljenim gusjeničarima svakako pripada ovom 'čudovištu' - ovo vozilo je, naime, sa svim oklopom težilo gotovo 50 tona!

Osnova je bio Catterpillarov buldožer tipa D8, tvornički broj 42. Izgleda da je ideja vodilja za izradu ovog vozila bila zamisao da se jednim tako teškim napadnim vozilom iznenada probije ulaz u trsatsku vojarnu u Rijeci nakon čega bi, po rušenju ulaza, jurišao ZNG i zauzeo vojarnu.

Vozilo je dala riječka građevinska firma Konstruktor dok se posla oko izrade i montaže oklopa uhvatio DMP (Dizel motorni pogon) brodogradilišta 3. maj u Rijeci (na Kantridi). Nije točno poznato kada je to vozilo, skupa sa Konstruktorom-2 (vidi), dopremljeno u DMP, ali je znano da su radovi na oklopljavanju oba vozila dovršeni do konca kolovoza ili prvih dana rujna 1991., u svakom slučaju prije početka izrade oklopnog kamiona Hrvatina (vidi) u istom pogonu. Dio vozila (motor i kabina) teško je oklopljen, dok je ostali dio vozila ostao neoklopljen, ali je ogromna prednja žlica trebala vjerojatno služiti kao oklop (s prednje strane) za hodni dio i gusjenice. Kabina je oklopljena duplim čeličnim oklopom (brodski lim) s ulivenim betonom između limova, dok je motor oklopljen djelomičnim sendvič oklopom bez betona, samo duplim limovima smještenim na cik-cak da se omogući protok zraka i hlađenje motora (slika 349 na str. 94). Usprikoš zamislama, vozilo je izgleda ležalo nekorišteno do prosinca 1991. u Rijeci. Poznato je da je na ličko bojište dopremljeno 7.1.1992. i to u Brinje. Ipak, od dolaska na front korišteno je isključivo kao građevinski stroj za zemljane radove. Radi problema sa hlađenjem motora odmah po dolasku je skinut oklop sa prednjeg dijela motora ('kiler'), a kasnije i sa ostale oplote motora. Vozilo je korišteno do 1994, nakon čega je vraćeno u Rijeku u matičnu garažu-radionu na Mihačevoj Dragi, gdje je ležalo do 2000. Oklopna kabina je zamijenjena 'običnom' kabinom, a na vozilu su još vidljivi tragovi maskirne sheme. U Mihačevoj Dragi leže i ostaci oklopnih ploča motora.

Na slikama 35 i 37 prikazano je vozilo slikano u hali zavarionice DMP-a vjerojatno u trenutku dovršenja-iskoruke, a na crtežu 36 opći izgled vozila kako je najvjerojatnije izgledalo. Sliku vozila kako je izgledalo ljeti 2000. vidi na str. 94 (slika 348).

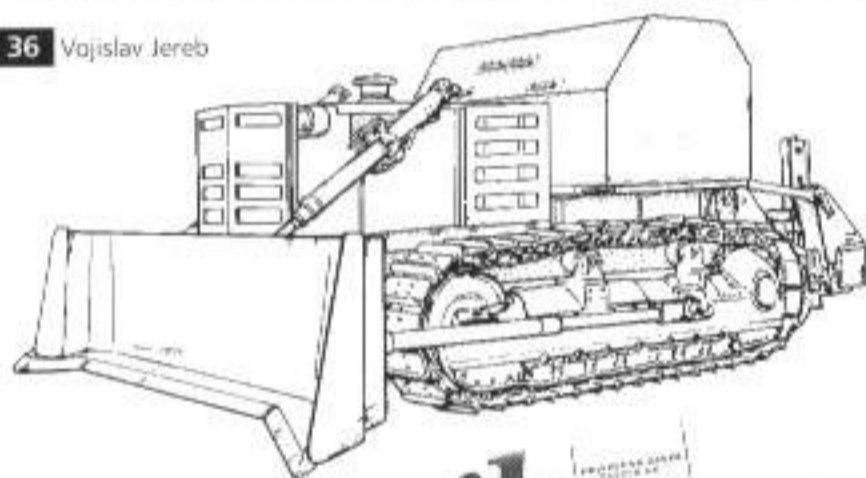
The weight champion title of the improvised vehicles of that time undoubtedly belongs to this 'monster' - With armour it weighed nearly 50 tons! The base chassis was the Caterpillar D8 heavy bulldozer, c/n 42. The concept for building this vehicle was to use it to lead a surprise breach of the perimeter of the Trsat barracks in Rijeka with the following ZNG infantry occupying the objective.

The vehicle chassis was donated by the Konstruktor construction company while the conversion took place at the DMP plant of the 3. Maj Shipyard. The exact date the chassis arrived at the Shipyard is not known but it is presumed that it came together with the 'Konstruktor-2' (see next page) chassis in early August 1991.

The motor and cab of the vehicle were armored while other parts remained unarmored and probably the huge front blade was envisioned as acting as armor. The cab was armored with sandwich armor of concrete between steel plates, while the motor was armored with single mild steel plates used to make navy ships. These were louvered to allow air flow for cooling (see photo 349). Despite the original purpose, the vehicle remained stored in Rijeka until late 1991 and was transported to the Lika front only in early 1992. After arrival the vehicle was used exclusively for engineering work. Because of engine cooling problems the engine grill armor was soon removed and later all engine armor was removed. The vehicle returned to Rijeka in 1994 and it remained in the garage until 2000 when it was photographed. The armored cab was removed and the original cab restored. The camouflage paint is barely visible. There are still some plates of the engine armor. Photos 35 and 37 shows the vehicle as it looked like when delivered in the Shipyard while drawing 36 shows the completed vehicle. The appearance of the vehicle during 2000 is shown on page 94 (photo 348).



36 Vojislav Jereb



KONSTRUKTOR-2

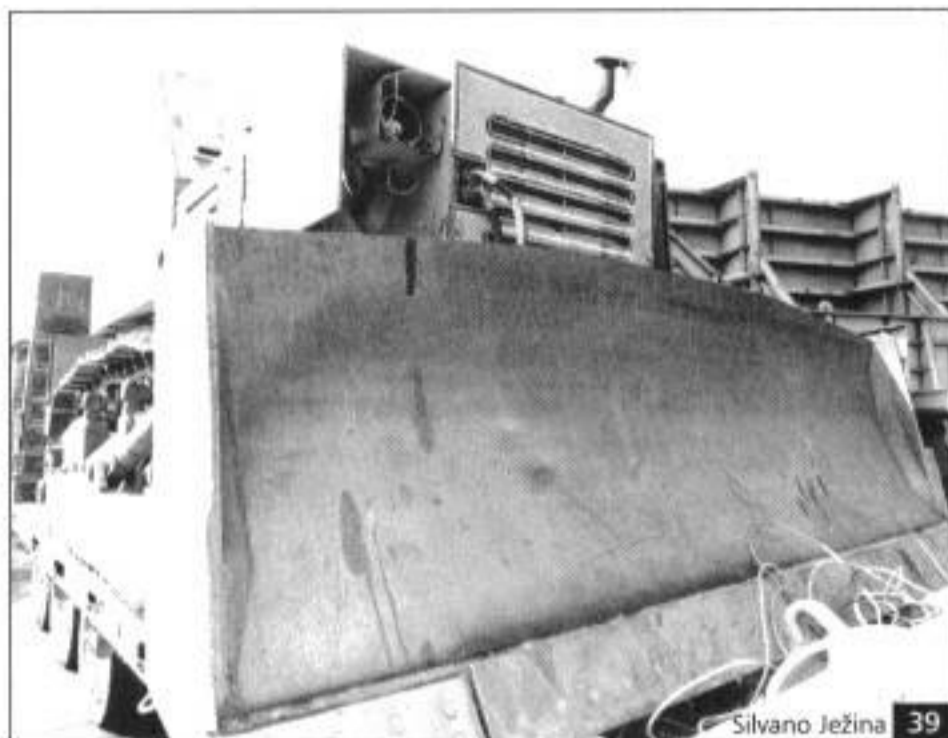
Iza šifre Konstruktor-2 krije se oklopljeno vozilo na osnovi buldožera TG-140 proizvodnje 14. oktobar Kruševac. Oklop je bio sendvič konstrukcije, ali nije poznato da li je korišten i beton.

Vozilo je iz riječkog Konstruktora dovedeno u halu zavarione DMP-a brodogradilišta 3. maj vjerojatno u prvoj polovini kolovoza skupa sa 'Konstruktorom-1' (vidi), a predano je na korištenje ZNG-u početkom rujna (slike 39, 40, 41 i 42). Korištenje vozila nije zabilježeno do eksplozija koje su razorile skladišta JNA na Sv. Katarini i Podhumu listopada 1991., nakon čega se ukazala hitna potreba za razminiranjem napuštenih i uništenih skladišta. Radi toga je vozilo preuređeno u radioni 'Konstruktor' dodavanjem nosača za teške brodske lanace (slika 43) te je jedno vrijeme ispitivano na Grobničkom polju kod Rijeke u novoj funkciji (slika 45 na slijedećoj strani).

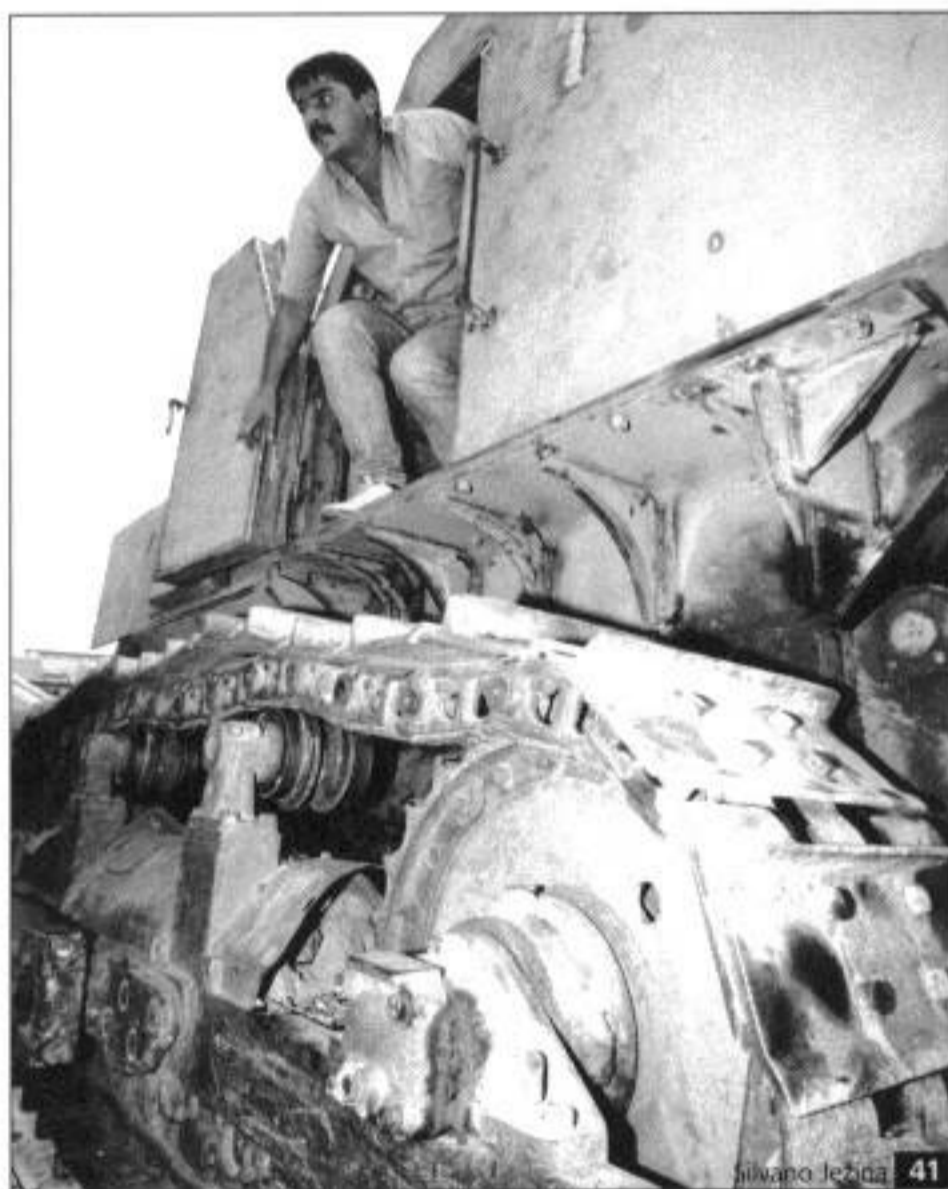
Vozilo je nakon korištenja vraćeno Konstruktoru gdje se, nakon skidanja oklopa, koristi i dalje.

This vehicle, coded 'Konstruktor-2' was built on a TG-140 bulldozer chassis. The original vehicle was manufactured at the '14. Oktobar' plant in Kruševac, Serbia. The armour plates were of sandwich type but it seems no concrete was used to fill the space in between.

The vehicle was taken from Konstruktor company in Rijeka to the DMP plant of the 3. Maj Shipyard in early August together with the 'Konstruktor-1' chassis (see previous page). Both vehicles were handed over to the ZNG in early September 1991 (photos 39, 40, 41 and 42). It is not known if 'Konstruktor-2' was used at all before the explosions which destroyed the JNA ammunition dumps at Podhum in the vicinity of Rijeka. After this a specialised vehicle for mine clearing and ordnance removal was urgently needed to clear the area around the destroyed dumps. 'Konstruktor-2' was modified for this role by the addition of an arm and some heavy ship chains (photo 43). Thus modified the vehicle was tested for some time in the Grobničko polje area (photo 45 on next page). After completing this task, the vehicle was returned to the owners and the armour removed.



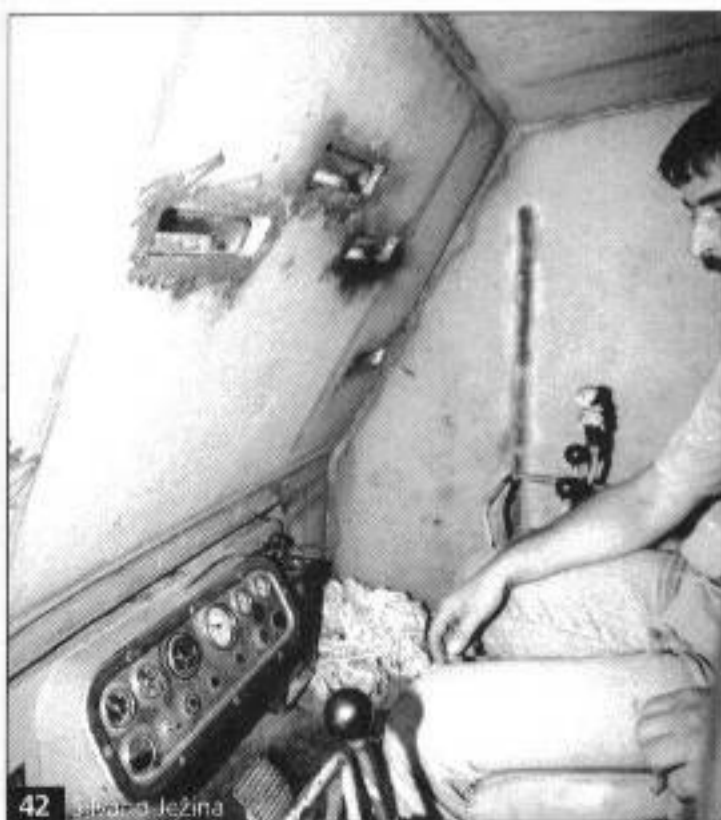
Silvano Ježina 39



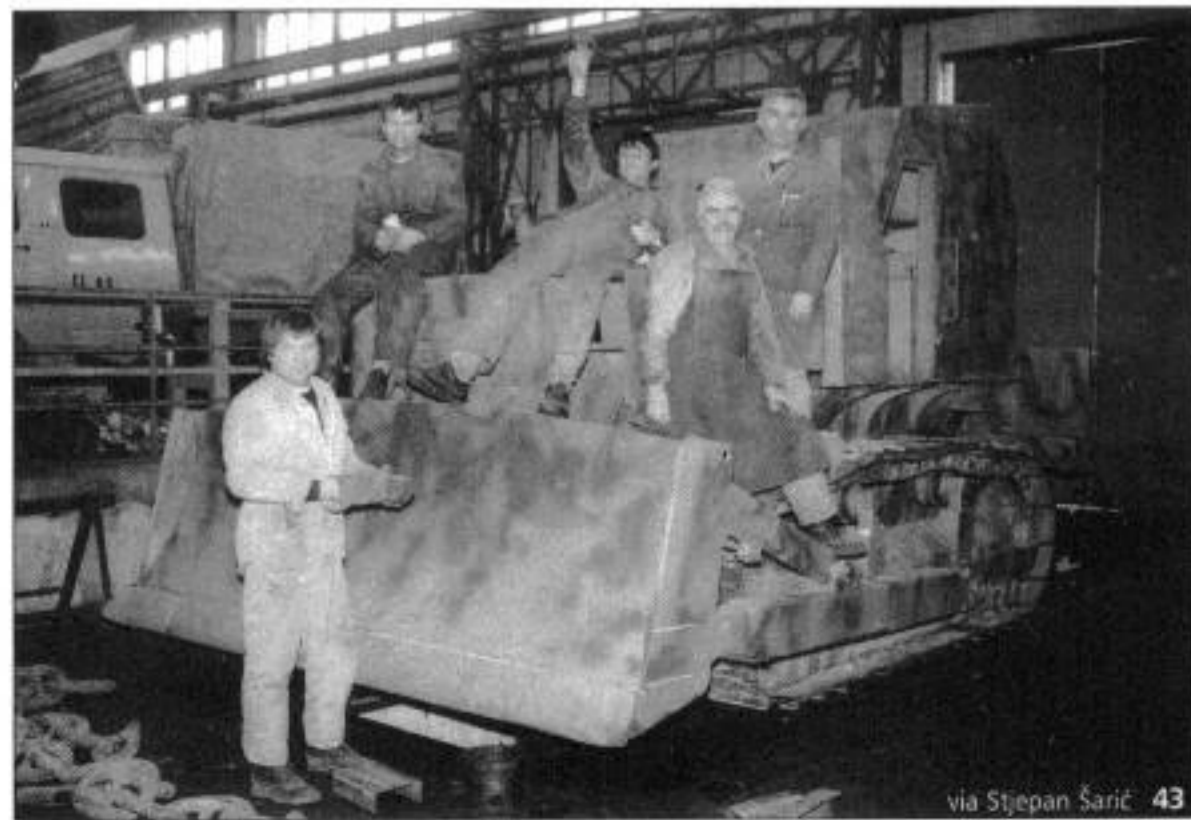
Silvano Ježina 41



40 Silvano Ježina



42 Silvano Ježina



via Stjepan Šarić 43



44 | fototeka Muzeja Grada Rijeke

Dvije fotografije Konstruktorovih buldožera. Gornja impresionira svakog gledatelja impozantnošću najtežeg improviziranog oklopnjaka izrađenog za potrebe ZNG-a. Jasno se vidi oklop oko vitalnih dijelova motora od dvostrukih ploča sa prorezima za hlađenje, dok je dio na kojem je kredom ucrtan hrvatski grb bez oklopnih ploča. Obratiti pažnju na ogromnu kabinu sa servič okloptom. Vozilo je bez prednjeg noža. Na donjoj slici je lakši od dva buldožera snimljen prilikom razminiranja područja oko Podhuma nedaleko Rijeke, nakon eksplozija skladišta i povlačenja JNA iz tih područja. Snimak je vjerojatno iz kraja 1991. ili početka 1992. godine.

Two photos showing bulldozers of the Konstruktor construction company. In the photo above the huge size of the heaviest armored vehicle in the ZNG inventory can be admired. The double-plate steel armor around the vital parts of the engine can be seen, with air cooling vents. Other parts of the engine cover (the one with the Croatian shield drawn with chalk) are not armored. Note also the huge cab made of sandwich armor. The photo below shows the smaller of the two bulldozers taken near Podhum (not far from Rijeka) during a mine clearing operation after explosions destroyed some JNA magazines and after the JNA withdrawal. The photo was most likely taken in late 1991 or early 1992.



45 | fototeka Muzeja Grada Rijeke



Vojislav Jereb collection 46



47 Vojislav Jereb collection

napisao. S obzirom na veličinu, osnova je bio neki manji kamion (tipa TAM-80, Zastava-620 ili sl.). Korištenje i sudbina ovog oklopnjaka nisu poznati.

It is known that this vehicle was built by the Rijeka Cesta workshops outside Rijeka (Kukuljanovo). It was delivered to the ZNG forces in Rijeka, at the Rijeka Cesta plant in Potok suburb on September 24, 1991. Newspaper articles from the following day say it was built in three days and nights. The photos (46, 47, 48 i 198) most probably show the vehicle on the day before (23 September), before

the vehicle was painted and the ZEUS inscription can be seen, probably painted by some workers. Judging by the size, the chassis for the vehicle is probably a smaller truck, a TAM-80, Zastava-620 or other similar vehicle.



Vojislav Jereb collection 48

SV. VID (ZEUS)

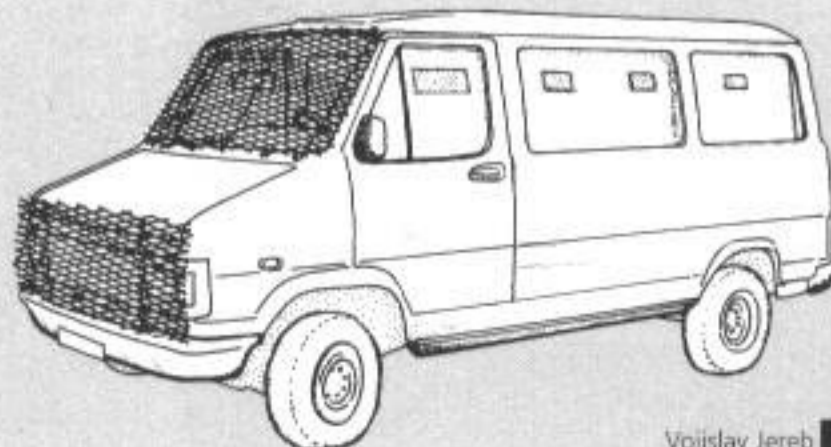
Za tog oklopnjaka je poznato da je izrađen u pogonima Rijeka-cesta u zaleđu Rijeke (Kukuljanovo). Predan je snagama ZNG u krugu Rijeka-cesta na Potoku (u Rijeci) 24. rujna 1991., a *Novi list* je idući dan, uz sliku oklopnjaka, objavio i da je dovršen u tri dana i dvije noći. Slike (46, 47, 48 i 198) pokazuju vozilo vjerojatno posljednji dan pred bojanje (znači 23. rujna), a na vozilu je vidljiv natpis ZEUS kojeg je vjerojatno neki od radnika

OSA-100 series of buses (see page 34), while steel mesh plate was welded on the front. The back door as well as the roof remained unarmored. Firing ports were cut at the window positions. The vehicle was hastily painted with brown and green and after being parked for a few days in Krk was sent to Lika. It was possibly later turned over to 128th Brigade.

PUNAT-1

Bravarska radiona malog brodogradilišta u Puntu na otoku Krku, iako specijaliziranog za drvene brodove, ipak je u jedno popodne rujna 1991. 'obukla' jedan kombi u oklop za potrebe Policijske stanice u Krku koja je djelovala i u Lici. Radilo se o jednom svijetlom kombiju (ne policijskom) na kojeg je stavljen lim debljine 8 mm iznutra (kao na autobusima serije OSA-100/101/102 – vidi na strani 34) dok je sa prednje strane na vjetrobransko staklo stavljen samo mrežasti isteg lim. Zadnja vrata i krov nisu oklopili dok su na mjestima prozora (stakala nije bilo) postavili otvore/puškarnice. Vozilo je na brzinu pobojano smeđom i zelenom bojom te je nakon nekoliko dana stajanja u PS Krk otišlo za Liku. Navodno je kasnije predan 128. brigadi.

The small metal shop in the Punat Shipyard on the island of Krk, although specialised in the construction of wooden ships managed to armor a van in one afternoon during September 1991 for use by the Krk Police forces on the Lika front. The vehicle used was a light colored van of unknown type (probably a Citroen) inside which 8 mm steel plates were fitted, as on the



Vojislav Jereb 49

STRAŠKO (HIAV)

Kao prvo treba priznati da prema načinu izrade ovi oklopnjaci ne bi trebali spadati pod 'improvizirane oklopnjake' jer je izradu tih vozila naručila ZNG/HV te su rađeni serijski u pravom smislu riječi (s kompletnom dokumentacijom i svi su isti). No po svojim karakteristikama i napose izgledu, svakako spadaju u nestandardna vozila.

U kontaktima sa drugim firmama u Rijeci koje su već izrađivale oklopna vozila, u Torpedu su u početku htjeli započeti sa serijskom izradom oklopljenih kamiona. Kako međutim takvih kamiona nije bilo na raspolaganju (za serijsku proizvodnju), a nije se uspjelo niti u kontaktima sa TAM-om, prišli su serijskoj izradi na vozilima koje su imali na raspolaganju. To su bili rovokopači GTR 75A s motorom od 70 KS koje je Torpedo proizvodio po talijanskoj licenci, a to su u osnovi bili modificirani traktori. Sa originalnog rovokopača skinuta je zadnja hidraulička ruka i žlica, napravljene su manje modifikacije i ugrađen je oklop.

Vozilo je zamišljeno kao transporter i naoružano vozilo. Prototip je nazvan HIAV (Hrvatsko Inženjersko Antiterorističko Vozilo). Naziv 'inženjerski' je imao radi toga što je zadržao prednju žlicu/nož, a namjena je bila rušenje barikada, dok je naoružanje služilo obrani tako osvojenih rasčišćenih barikada. Pored vozača i nišandžije mogao je prevoziti i 6 ljudi.

Ispitivanjem (upucavanjem) je odlučeno da se koristi oklop od jednostrukih limova brodske kvalitete debljine 12-15 mm pod kutem, jer se zaključilo da upotrebom raznih 'sendvič' oklopa ne mogu bitno povećati neprobojnost. Težina vozila je bila 9,2 tone.

Prvo vozilo (prototip, slika 50) je rađeno od 7.9.91. do 25.9.91. Neko je vrijeme ispitivan te je predan snagama ZNG 16.10.91. Nakon ispitivanja ugovorena je serijska izrada 15 komada i svi su zgotovljeni do kraja godine (vidi tablicu 2) te predani jedinicama HV-a. Još jedno vozilo je naknadno napravljeno te je predano snagama Specijalne policije na Kukuljanovu kod Rijeke (slika 201 na strani 54).

Naoružanje u okretnoj otvorenoj kupoli (sa oborivim stranama) se sastojalo od topa 20 mm M-75 (kao kod prototipa), teškog mitraljeza Browning 12,7 mm ili bestrzajnog topa 82 mm (M-60A).

Kako se vidi iz tablice, vozila su isporučena svim bojištima u Hrvatskoj. Prema dostupnim fotografijama



Straško oklopnjaci su bili uglavnom naoružani mitraljezima Browning ili nisu imali naoružanje (niti kupolu). S topom 20 mm je bio naoružan samo prototip, a izgleda da bestrzajac nije ugrađen niti u jednoga. Sudbina većine vozila nije poznata, ali se pretpostavlja da ih je većina preživjela rat te da su uglavnom negdje parkirani ili napušteni.

Tablica 2. / Table 2

No	isporuka delivery	predan operativnoj zoni, korišten / used by Op. Zone	sudbina / fate
1	16.10.91	OZ Rijeka, 111. brigada, Lika	vraćen u prvobitno stanje 1994 / back to original configuration 1994
2	20.11.91	OZ Karlovac, 137. brigada ?	
3	20.11.91	OZ Zagreb	
4	20.11.91	OZ Bjelovar	
5	20.11.91	OZ Osijek	
6	20.11.91	OZ Osijek, 131. brigada, Županija	sačuvan u VM Zagreb / preserved in VM Zagreb
7	20.11.91	OZ Zagreb	
8	20.12.91	OZ Rijeka, 128. brigada, Gospić	sačuvan u VM Zagreb* / preserved in VM Zagreb*
9	20.12.91	OZ Zagreb	
10	21.12.91	OZ Bjelovar	
11	21.12.91	OZ Osijek	
12	30.12.91	OZ Sisak, 17 DP, Sunja	napušten u Petrinji / abandoned Petrinja
13	30.12.91	OZ Split	
14	30.12.91	OZ Split	
15	30.12.91	OZ Karlovac, 110. brigada	
16	30.12.91	OZ Karlovac, 129. brigada	
17	3.7.92	PU Rijeka, Specijalna Policija	

* - još jedan Straško je sačuvana u VM Zagreb, ali se ne zna koji točno.

* - one more vehicle in the Military Museum (VM) collection but of unknown origin



First, these vehicles can hardly be called 'improvised' as they were ordered by the ZNG/HV and were built as a series of vehicles identical one to another. However, their characteristics as well as shape put them in the category.

In contrast with other companies in Rijeka which made some armored vehicles, at the Torpedo plant the idea was to make a series of armored trucks. Nevertheless, as truck chassis was not available for series production and contacts with TAM (the only truck producer in Slovenia) were unsuccessful, Torpedo began work on a chassis which was available off the shelf. This was the front-end loader type GTR 75A with a 70 HP engine, produced by the Torpedo factory under Italian licence. The rear hydraulic arm was removed from the tractor, small modifications made and armor added.

The vehicle was intended to fill the role of troop and weapons carrier. The prototype was designated HIAV (Croatian Engineering Anti-terrorist vehicle). It was given the designation of "Engineering" because it was supposed to destroy barricades and defend the occupied area with its armament. It could transport 6 fully equipped soldiers besides the driver and weapons operator.

After experimenting it was decided to use single angled layer of naval quality steel plates 12-15 mm thick as it was found that use of sandwich armour (steel and concrete) was much heavier not providing any more significant protection to the crew. The weight of the vehicle was 9,2 tons.

The prototype vehicle (photo 50) was built between September 7 and September 25, 1991. It was tested and delivered on October

16. After that a series of 15 identical vehicle was ordered and they were delivered according to Table 2. The last (17th) vehicle was built later and delivered to the Special Police forces at Kukuljanovo near Rijeka (photo 201 on page 54).

The armament in the open rotating turret was either a 20 mm automatic cannon M-75, a Browning .50 machine gun or a M-60A 82 mm recoilless rifle.

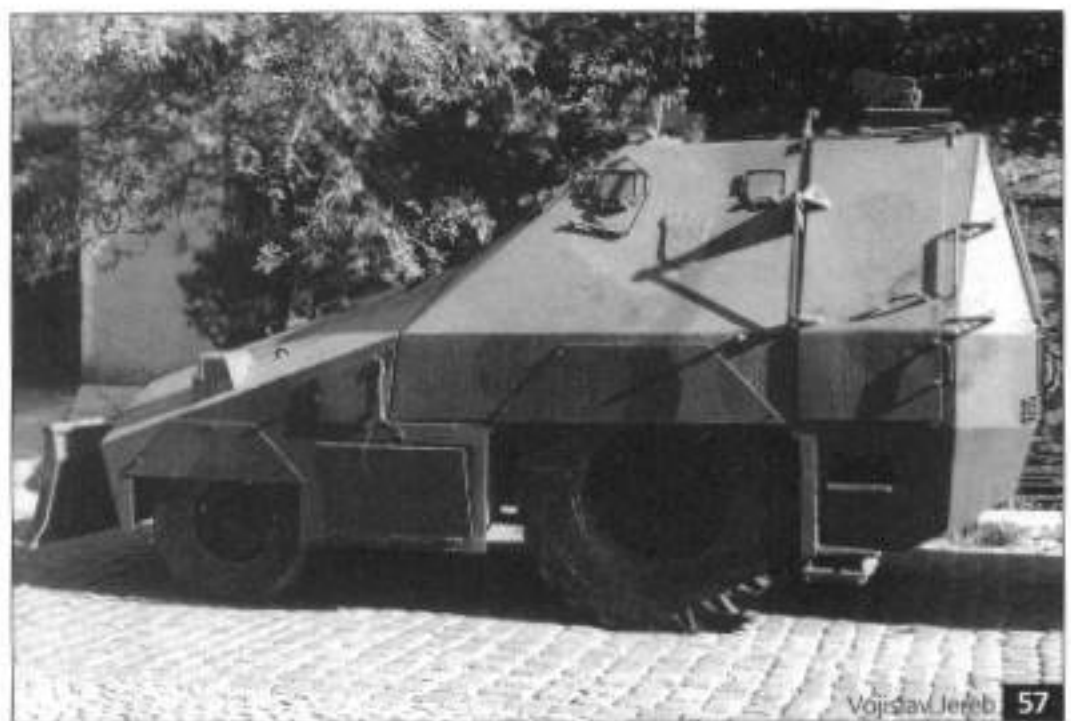
As seen from the table, the vehicles were delivered to all Operational Zones throughout Croatia. Only the prototype was armed with the 20 mm gun, most vehicles were armed with a machine gun, some were seen without armament while none were noted with recoilless rifles. The fate of most vehicles remains unclear. Most probably the majority survived the war and were abandoned somewhere after being withdrawn from use.



54 Silvano Jezina



55 Vojislav Jereb



Vojislav Jereb 57



56 Milerko Frčko



Vojislav Jereb 58



59 Boris Gregurić

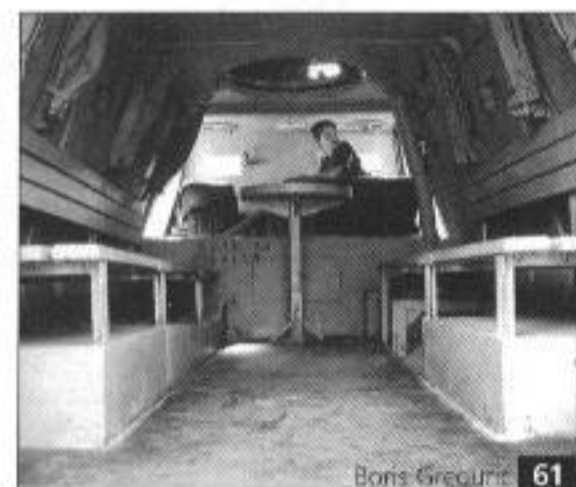
HRVATINA

Ovaj oklopljeni TAM izrađen je u halama zavarionice Dizel Motorne Proizvodnje (DMP) riječkoga 3. maja na Kantridi. Planiranje rada na ovom oklopnjaku započelo je početkom rujna, odmah nakon dovršenja rada na dva buldožera od *Konstruktor* (vidi), a projektnu dokumentaciju je izradio *Rijekaprojekt*. Kamion za tu svrhu je dala riječka Čistoća i to je bio TAM-190 T15B 4x2 sa motorom od 190 KS. Koncem rujna započeli su radovi i do konca listopada vozilo je dovršeno te je 2.11.91. predano snagama ZNG u Čavlima (slika 63). Kamion je bio oklopljen brodskim limom te je imao okretnu kupolu sa mitraljezom M-53 7,9 mm. Vozilo je jedno vrijeme korišteno u Rijeci (izvlačenje riječkog 13. korpusa JNA), a kasnije u sklopu 128. brigade u Lici. Nakon završetka sukoba 1991./92. vozilo je bilo u Rijeci (slika 62), a 1996. je predano Vojnom muzeju u Zagrebu (slika 59).

This armored TAM truck was built in the welding workshop of the Diesel Engine Production plant of the 3. Maj shipyard in Kantrida near Rijeka. Planning the construction of this vehicle begun after finishing work on the Konstruktor bulldozers (see) and the project blueprints were made at the offices of the Rijekaprojekt company. The truck was donated by the Čistoća communal company and was a TAM-190 T15B 4x2 with a 190 HP diesel engine. Work on the vehicle began in late September, the truck was finished in late October



60 Zdravko Kristić



Boris Gregurić 61

and handed over to ZNG forces in Čavle on November 2, 1991 (photo 63). The truck was armored with naval quality steel and a turret was built with a M-53 7,9 mm machine gun. The vehicle was in use for some time in the Rijeka region during the crisis up through the withdrawal of the JNA 13th Corps. Later it was used in Lika with the 128th Brigade and the vehicle remained in Rijeka until 1996 (photo 62) when it was handed over to the Zagreb Military Museum (photo 59).



62 Vojislav Jereb



Zdravko Kristić 63

IMPROVIZIRANI OKLOPLJENI KAMIONI u Pounju

Područje Banovine, posebno Pounja, bilo je među prvima koje je uvučeno u vrtlog rata. Radi karakterističnog reljefa oko rijeke Une, kretanje i transport dolinom rijeke, posebno od Hrvatske Kostajnice do Hrvatske Dubice i dalje nizvodno bilo je veoma izloženo neprijatelju s druge strane rijeke. Stoga je rana pojava improviziranih oklopljenih kamiona bila vrlo logična. 'Oklopljavanje' tih kamiona je bilo u pravom smislu riječi improvizacija – oklopljavani su samo dijelovi kamiona (najčešće da se zaštite ljudi), a za oklop su korišteni najrazličitiji priručni materijali – vreće sa pijeskom, debele daske, limovi bilo kakvog tipa. Računalo se na još dva faktora prilikom prijevoza na tim relacijama – iznenađenju i brzini.

Tako je na pr. na slici 64 kamion FAP-Mercedes sa vrećama pijeska postavljenim u teretnom prostoru kao zaštita protiv metaka. Crtež 65 prikazuje oklopljeni kamion TAM 'njuškaš' sa nazivom 'Mirna' iz istih krajeva. Na slici 66 prikazana je unutrašnjost jednog na brzinu prepravljenog teškog kamiona sa limenim pločama sa strane (i urezanim otvorima – puškarnicama) dok su s prednje strane posložene debele daske kao dodatna zaštita pored lima samog sanduka. Tipičan primjer je i kamion Kamaz Šumarije Sisak – Mehanizacije Kostajnica (slika 67), slikan 30. srpnja 1991. dan prije nego je krenuo, kao prvi u koloni, evakuirajući civilno stanovništvo iz Kostajnice. Kamion je oklopljen vrećama pijeska u teretnom prostoru, vrata i bočni prozori su oklopljeni rebrastim limom 5/6 koji se inače koristi za podnice, isto tako i kotači (ne vide se na slici), dok je na prednji dio vozila postavljen nož ralice kamiona, ali naopako, tako da zakrivljenje štiti prednji kraj. Na toj relaciji su također korištena neka vozila iz KT-BT serije iz Kutine (vidi).

IMPROVISED ARMORED TRUCKS in the Una river area.

The Banovina region, especially around the Una river, was the first to be involved in war. Because of typical relief convoys that had to travel through the Una valley, particularly between Hrvatska Kostajnica to Hrvatska Dubica villages and downstream, were exposed to enemy fire from the other side of the river. So early appearance of improvised armored vehicles was logical. The 'armoring' of these early vehicles was pure improvisation – only the most vulnerable parts of the trucks were protected with any available material – sandbags, wooden planks, metal plates of all types. Two other factors were counted on for protection of the vehicles – surprise and speed.

In photo 64 a Mercedes-FAP truck cargo bed is armored with sand bags to protect against bullets. Drawing 65 shows an armored TAM truck with the inscription Mirna 2 used in the same area. Photo 66 shows the inside of the cargo bed of a hastily armored truck equipped with metal side plates with firing ports cut in them and wooden planks protecting the front. A typical hastily armored truck is shown in photo 67, depicting a Kamaz truck of the Šumarija Sisak – Mehanizacija Kostajnica workshop photographed on 30th of July 1991, a day before it led a convoy of civilian refugees leaving Kostajnica. The truck is armored with sandbags in the cargo box. The cab doors and windows are covered with 5-6 rimmed plates usually used as floor plates while covering the front of the vehicle is the dozer blade attached over the engine. Along this route the KT-BT vehicles of Kutina were also used (see).



Vojislav Jereb collection 64



Vojislav Jereb 65



Vojislav Jereb collection 66



via Danko Isaković 67



68 Silvano Jozina

JANAF TOČKAŠI

Iako nije točno poznato koliko je vozila na točkovima oklopljeno u Janaf-u, svi se izvori slažu samo da je ukupno, što točkaša što gusjeničara, oklopljeno 18 vozila. Poznata su slijedeća njihova vozila:

Unimog-1 i Unimog-2 su bili potpuno oklopljeni kamioni tipa Unimog S404 4x4 (Mercedesove konstrukcije ali francuske proizvodnje) bez kupole i vrlo slični jedan drugome. Iako maskirno obojani oba su imala policijske tablice (starog tipa sa crvenom zvijezdom!). Prvog su nazvali Tomislav (prema idejnom tvorcu tih vozila), a zvali su ga i 'broj 1' i predan je snagama MUP/ZNG 23.7.91. Kasnije je na njega montirana kupola sa mitraljezom DŠK 12,7 mm. Korišten je na sisačkom bojištu, kod Sunje i Komareva. Ovaj oklopnjak je na sreću sačuvan do dana današnjeg i izložen je ispred zgrade Janaf-a kod Crnca.

Drugi Unimog je gotovo identičan prvom a korišten je također na sisačkom bojištu (Komarevo). Sudbina vozila nije poznata.

Treći točkaš iz Janaf-a je vjerojatno bio također oklopljeni Unimog S404 ali s potpuno oklopljenom kabinom, dok je teretni prostor bio otvoren s niskim oklopljenim stranama da bi u njega bio smješten top 20 mm M-75. Postoje fotografije vozila u radioni gdje je prepravljen kada mu je kabina osjetno smanjena (snižena) vjerojatno da bi se top mogao bolje iskoristiti. Vozilo je uništeno prilikom akcije čišćenja kod mjesta Pola (vjerojatno srpanj ili kolovoz 1991., presnimak fotografije br. 74).

Slijedeći oklopnjak koji je poznat je oklopljeni Land-Rover 4x4. Taj je raden prema novoj koncepciji sa lakim oklopom i jakim naoružanjem (bestrajni top 82 mm). Vozilo je predano na korištenje 57. samostalnom bataljunu (kasnije prozvanom 'Marijan Celjak') te je u jednoj akciji zarobljeno. Nakon Oluje vozilo je pronađeno, sa njega je skinut oklop, a sam džip (Land-Rover) je prodan na dražbi.

Peti točkaš za kojeg se sigurno zna da je oklopljen u Janaf-u je tzv. 'Pčelica' - vojni TAM110 T7 s pomalo čudnom kabinom – otud i neobično ime (slika 78). Jedine fotografije vozila prikazuju ga u plavoj boji pa je vjerojatno raden za Policiju. Tehničke karakteristike kao i sudbina vozila su nepoznati. Postoji video zapis vozila veoma sličnog 'Pčelici' uništenog tromblonima, te je moguće da se radi baš o tom vozilu.

Šesti oklopljeni točkaš je također bio raden na osnovi vojne 'stodesetke' ali s nešto klasičnijim izgledom kabine, a imao je i okretnu kupolu s mitraljezom Browning 12,7 mm. Također je bio plave boje (slika 79). Sudbina tog vozila nije poznata, ali je moguće da je baš to vozilo uništeno mitraljiranjem neprijateljskih aviona prilikom zauzimanja kompleksa Žežinci 16. i 17.9.91.

Sedmi točkaš za kojeg se samo pretpostavlja da je oklopljen u Janaf-u je oklopljeni troosovnac 'njuškaš' 'ZNG P-13'. Osim jedne fotografije vozila na kupskom frontu drugo ništa nije poznato.



Silvano Jozina 69



Predrag Jelc 70

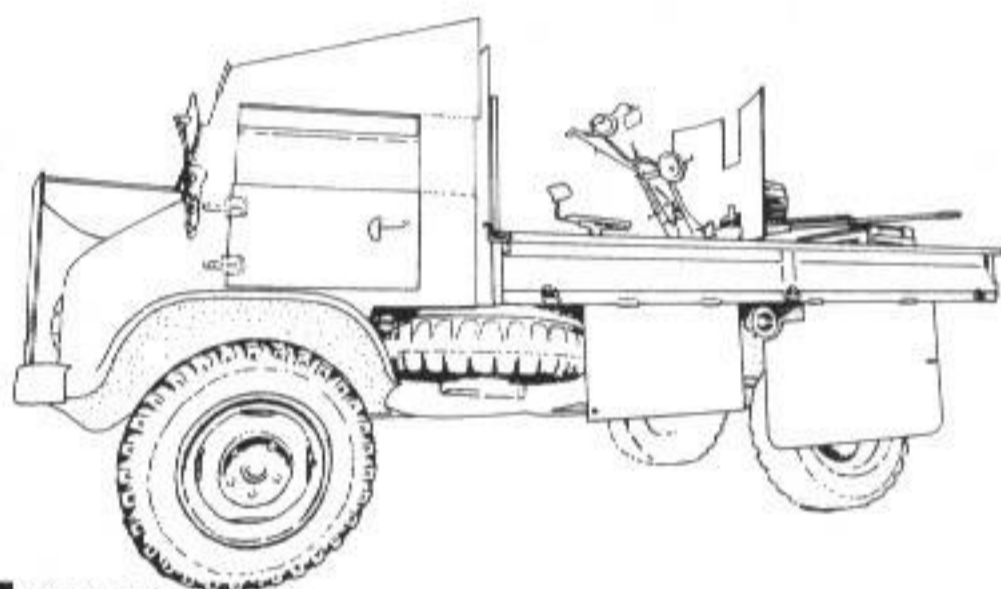
Navodno je još jedan kamion oklopljen u Janaf-u i to onaj doniran od čelnice 'Bedema ljubavi', no za taj kamiona nema pouzdanih podataka niti fotografija pa je moguće i da je to 'ZNG P-13'.



71 Tomislav Dedić via Vladimir Rogošić



Tomislav Dedić via Vladimir Rogošić 72



73 Vojislav Jereb



Tomislav Dedić via Vladimir Rogošić 74

Slike 71 i 72 prikazuju jednog od prvih točkaša, još bez kupole. Crtež 73 i slika 74 prikazuju oklopljenog Unimoga sa topom – na crtežu je kakav je izgledao u početku, a na slici nakon modifikacije i uništenja kod Pole.



76 via Vladimir Rogošić



via Vladimir Rogošić 75

Slike 75, 76 i 77 prikazuju prvog oklopljenog Unimoga s naknadno ugrađenom kupolom u akciji na sisačkom bojištu.

Photos 71 and 72 show one of the first turretless wheeled armored vehicles. On drawing 73 and photo 74 the armored Unimog with the gun is shown – the drawing shows the original configuration, while the photo shows the modified vehicle after it was destroyed near Pola. Photos 75, 76 and 77 shows the first JANAF built vehicle, in action on the Sisak front, after it was modified by the addition of a gun turret.



via Vladimir Rogošić 77

JANAF WHEELED VEHICLES

It is not known exactly how many wheeled vehicles were built in the Janaf plant. All sources agree only on the total number of vehicles built, wheeled and tracked, which was 18. Known vehicles were:

The first built, Unimog-1 and Unimog-2, used Unimog S404 4x4 light trucks chassis. The Unimogs used are believed to be of French production. Both Unimog 1 and 2 were very similar and had no turrets. Although painted in a camouflage pattern, both used old Police blue licence plates (with red stars!). The first was called Tomislav after the chief builder and was delivered to the ZNG on July 23, 1991. It was probably later fitted with a turret and a DŠK 12,7 mm machine gun. It was used on the Sisak front near Sunja and Komarevo and luckily it is preserved in Sisak in front of the Janaf building at Crnac.

The third Unimog was a kind of Gun Truck and only the cab was armored while the cargo bed was equipped with low armored sides where a single 20 mm automatic cannon was emplaced. There are also photos and video stills showing this vehicle being rebuilt with a much smaller and lower armored cab, big enough only for the driver. This was probably to allow the gun more rotation and depression to the front. Unfortunately the vehicle was destroyed during an operation near Pola, most probably during late July or early August 1991 (see reprinted photo 74).

The next vehicle was a Land-Rover. It was only lightly armored and equipped with an M-60 82 mm recoilless rifle. It was used for special operations raids by the 57th Independent Battalion and unfortunately it was captured by Serb forces. After the Oluja operation it was discovered, stripped of armor plates and later sold at auction.

The fifth wheeled vehicle armored at Janaf was the so called 'Bee' - a TAM110 4x4 with a strange armored cab (photo 78). The only available photographs show the vehicle in police blue livery so it was probably used by the Police. More technical details and fate are not known. There is a video showing a similar vehicle being struck by two anti-tank rifle grenades, tromblons, so it was probably destroyed.

The next vehicle was also an armored military TAM110 4x4 vehicle but with a more conventional cab appearance. A turret was mounted with a Browning .50 caliber machine gun (photo 79). The fate of this vehicle is not clear, but it is possible that this vehicle was the one destroyed by Yugoslav jets during the attack on Žežinci radar complex during 16 and 17 September 1991.

The final known improvised armored truck built by Janaf was the three-axle truck known as ZNG P-13. Only one photo of it is known on the Kupa river front and its fate remains mysterious.

Allegedly another truck was armored by Janaf and this is said to be the truck donated by the leading lady of the 'Bedem Ljubavi' organisation. There is no reliable data about this vehicle and it is possible that any of the above trucks were this one.



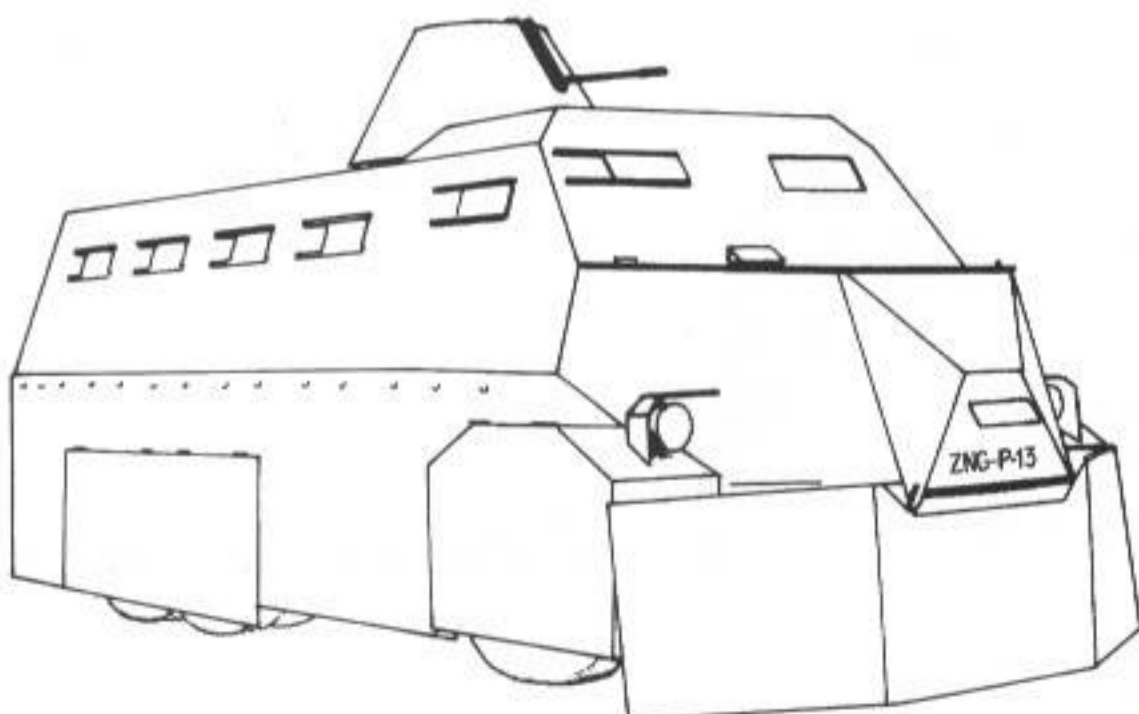
via Vladimir Rogošić 78



via Vladimir Rogošić 79



80 via Vladimir Rogošić



Vojislav Jereb 81

JANAF GUSJENIČARI

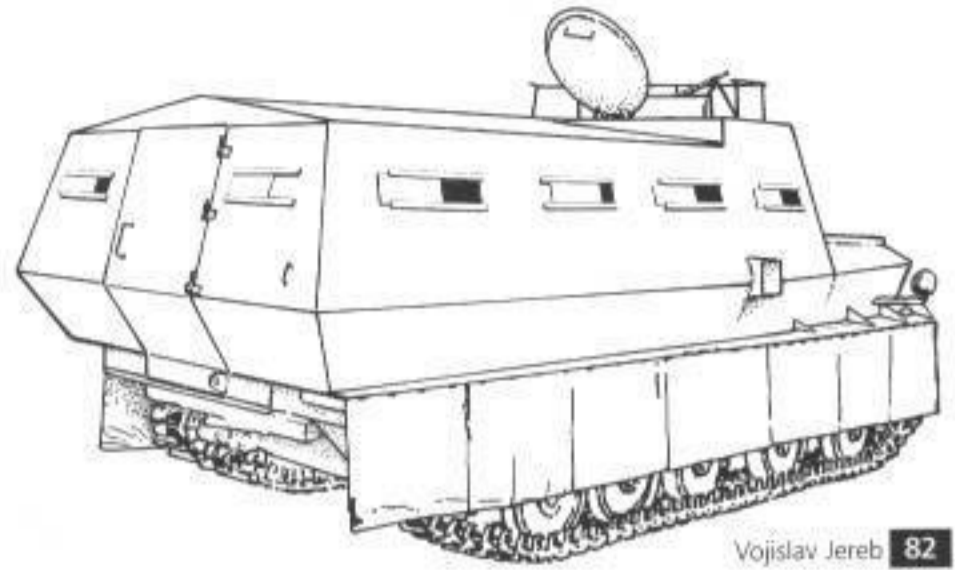
Janaf-ov pogon u Sisku (na području Crnca) je bio mjesto nastanka dviju serija vozila, od kojih je svakako vrlo neobična serija gusjeničara. U tu svrhu korišteni su stari napušteni artiljerijski traktori rashodovani od bivše JNA i prodani šumarijama za potrebe izvlačenja drva iz šume. Janaf je uspio sakupiti nekoliko komada od kojih je većina bila sovjetskog tipa M-2 (ili mađarske proizvodnje Czepeľ K-800, JNA oznaka GJ-800). Motori traktora su popravljani, sa njih je skinuto nadgrađe i umjesto toga ugrađivan oklop.

Za oklop su korišteni jednostruki limovi raznih debljina, a prepravljani su tako da je prednji dio ostao motorni prostor ('njuška' kao u originalnog traktora), a iza kabine je bio transportni dio za ljudstvo i materijal. Prvi primjerci su bili bez kupola, a kasnije su na njih montirane kupole napravljene u INA-Petrokemiji Kutina. Na koncu su svi osim jednog imali kupole sa mitraljezima (najčešće sovjetskim NSV 12,7 mm) dok je jedan bio bez kupole ali sa bestrajnim topom. Sa strane su imali tipične 'zavjese' od oklopne gume da djelomično štiti hodni dio (gusjenice).

Među njima je postojalo i jedno vrlo originalno vozilo popularno zvano 'Šerman' (prema tenku sa sličnim hodnim dijelom). To je bio prepravljani američki artiljerijski traktor tipa 'M4 18ton High Speed Tractor' pretvoren u oklopni transporter i naoružan trocjevcem 3x20mm na nadograđenoj platformi na stražnjem dijelu vozila.

Posljednje vozilo iz Janaf-a predano je snagama ZNG-a 1. listopada 1991. Nakon toga je 'proizvodnja' preivremeno prekinuta jer je područje izrade bilo pod stalnom neprijateljskom vatrom.

Nije točno poznato koliko je takvih gusjeničara napravljeno, pretpostavka je da ih je bilo ukupno 8 ili 9 komada. 'Šerman' je sačuvan (ispred upravne zgrade Janaf-a u Crncu) isto kao i 'ZNG P-14' (na osnovi artiljerijskog traktora M-2) te prvi iz serije (u vojarni u Petrinji), dok postoje fotografije za još četiri različita vozila, dakle sveukupno za sedam komada. Jedno vozilo su zarobile neprijateljske snage i bilo je napušteno kod sela Kukuruzari (nedaleko Hrvatske Kostajnice) do početka 2000. godine kada je razrezano za otpad.



Vojislav Jereb 82



Vojislav Jereb 83



Globus via David Spencer 84



85 via Vladimir Rogoši



via Vladimir Rogoši 86



87 via Vladimir Rogoši



via Vladimir Rogoši 88



89 via Vladimir Rogoši

Na slikama 85 i 86 je prikazan oklopnjak 'Sherman' – slika 85 u fazi izgradnje (kabina američkog artiljerijskog traktora prije skidanja) te gotov oklopnjak, restauriran i izložen nakon rata u Janafu. Slike 87 i 88 prikazuju faze skidanja nadgrađa i ugradnje oklopa na gusjeničare GJ-800, dok slike 89, 90 i 91 prikazuju neke oklopljene gusjeničare u akciji.

Photos 85 and 86 show the 'Sherman' – the cab of the American artillery tractor as it is being stripped down (photo 85) and the finished vehicle after restoration and display at JANAF. Photos 87 and 88 show the stripping down and armoring of the GJ-800 series of tracked tractors while photos 89, 90 and 91 show some of the vehicles in action.



90 fotodokumentacija HVG



uz dopuštenje HTV 91

JANAF TRACKED VEHICLES

The Janaf plant at Cmac near Sisak was the place where two interesting series of vehicles were designed, the tracked series being extremely interesting. For this purpose old military artillery tractors were used, sold as surplus to logging companies to drag cut logs. The Janaf people managed to collect several vehicles, most of which were ex Soviet M-2 models (possibly the Hungarian model Czepeľ K-800 with the JNA designation GJ-800). The engines of these vehicles were repaired, the bodies stripped and armored cabs built to replace them.

The armor consisted of single metal plates of different thicknesses and the shape of the finished vehicles resembled the original motor-cab-cargo box (rebuilt as a passenger/combat box) shape. The first vehicles were delivered without turrets, but later when turrets built by the Ina Petrochemical plant in Kutina became available, the Janaf vehicles were equipped with these. All were eventually equipped with machinegun turrets (most often the NSV 12,7 mm) except one which carried a 82 mm recoilless rifle. Sides and wheels were protected with typical armored rubber 'skirts'.

Among all of these vehicles there was a very interesting vehicle nicknamed 'Sherman' (probably because of the similarity of the wheels and tracks). This was a modified ex American M4 18-ton High Speed Tractor, also bought long ago as a military surplus vehicle. It was armored and a platform was built on the rear of the vehicle equipped with an M-55 three barreled 20 mm AA gun.

The last armored vehicle built by Janaf was delivered on October 1, 1991. After this 'production' stopped because of frequent mortar attacks on the plant.

It is not known exactly how many tracked vehicles were built. It is presumed 8 or 9 total. The 'Sherman' and the ZNG P-14 are preserved and displayed in front of the Janaf building. Another tractor, believed to be the first tracked vehicle built, is preserved in an Army barracks in Petrinja, while there are photos of four more vehicles that were in use, so seven vehicles can be positively identified. One was captured by rebel Serbs and was allegedly abandoned near a village not far from Kostajnica but was later cut for scrap.



92



via Vladimir Rogošić 93



94 Vojislav Jereb



95

PPK serija

Radi se o kamionima koji su pripadali PPK Karlovac (Prehrambeno poduzeće Karlovac) i koji su u sastavu 3. bojne 2. gardijske brigade korišteni za snabdjevanje opkoljenog Topuskog. Relacija za snabdjevanje je bila Karlovac-Rečica-Pisarovina-Pokupsko-G. Bučica-G. Taborište-Viduševac-Gredani-Topusko i trajalo je od 23.7.91. do 14.9.91. kada je Topusko napušteno.

Ti kamioni su bili samo djelomično oklopljeni (kabina) i to sa pločama lima debljine 5 mm koji su postavljeni na bočne strane (vrata i prozor) te na prednje vjetrobransko staklo kada su prolazili kroz okupirana područja. Korištena su četiri kamiona (od kojih jedna hladnjača), dva TAM-a 'njuškaša' (tipa 5000 ili sl.) i dvije manje Zastave 645.

Na slici 97 vidimo jednog takvog kamiona sa postavljenim bočnim oklopom, dok na slici 98 vidimo grupu iz sastava 110. karlovačke brigade koja je izvršavala snabdjevanje, a desno od nje se nazire Zastava sa oklopom. Ta grupa je 22.8. upala u zasjedu prilikom čega je poginuo D. Pintar (stoji drugi s desna).

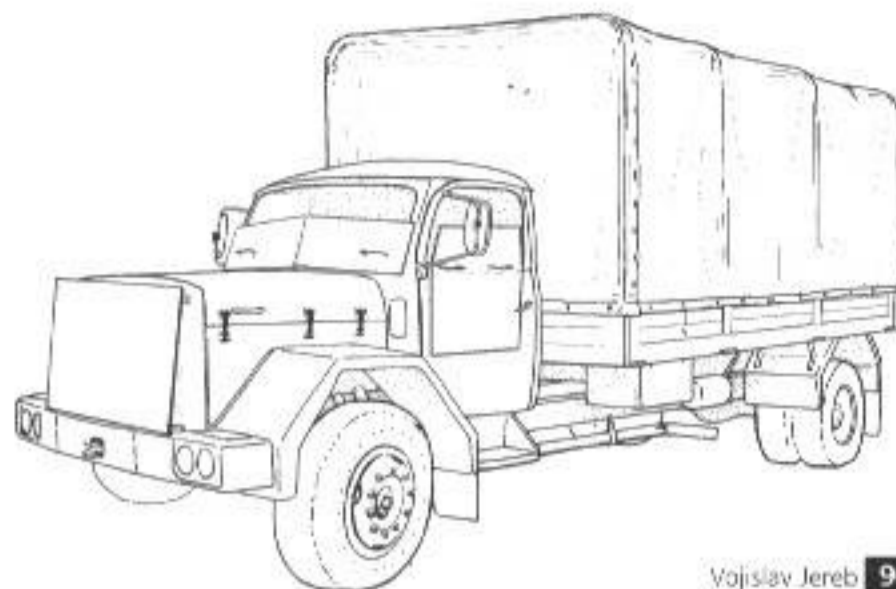
Po padu Topuskog vozila su bez oklopa vraćena u normalnu službu snabdjevanja u PPK.

Trucks belonging to PPK Karlovac (Karlovac Food Company) were used by the 3rd Battalion of the 2nd Guard Brigade to supply the besieged town of Topusko. The route used was Karlovac-Rečica-Pisarovina-Pokupsko-G. Bučica-G. Taborište-Viduševac-Gredani-Topusko and lasted from July 23, to September 14, 1991 when Topusko was abandoned.

The truck cabs were only partly armored with 5mm steel plates positioned over the cab doors and windows as well as on the front windshield but only when they passed the occupied areas. Altogether four trucks were used (one of which was a refrigerator van), two elder TAM-5000 trucks and two smaller Zastava 645 trucks.

Photo 97 shows such a Zastava Truck with only the side armor while photo 98 shows the personnel of the 110th Brigade from Karlovac which were in charge of the mentioned supply. This group was ambushed on August 22, when D. Pintar (second from right, standing) was killed.

After Topusko fell all trucks had their armour removed and returned to normal city supply duty.



Vojislav Jereb 96



Frane Smojver via Dubravko Halovanić 97



98 Frane Smojver via Dubravko Halovanić



Vojislav Jereb 99

SV. JURAJ

Jedan od kamiona korišten za dopremu hrane i municije te izvlačenje ranjenika iz poluokruženog Topuskog koncem ljeta 1991. bio je 'Sv. Juraj'. Vozilo je izrađeno na inicijativu pripadnika 3. bojne 2. A brigade smještene u Dugoj Resi. Osnova za izradu oklopnjaka je bio kamion Tatra-138 (6x6) koji je dobio od Hrvatskih cesta, a radovi na oklopljavanju vozila počinju kolovoza 1991. u radioni Metal-Elektrik u Mrežničkom Brigu pokraj Duge Rese. Krajem rujna vozilo je predano 2. gardijskoj brigadi 'Grom'.

Za zaštitu je korišten 'sendvič' oklop od čeličnih limova debljine 5 mm sa 5 cm pijeska između kao i jednostruke oklopne ploče 16 mm. Takav oklop je navodno štiti od pušanih zrna kalibra do 12,7 mm. Ukupna težina kamiona je bila oko 35 tona, a mogao je prevesti 25 - 30 gardista sa opremom i naoružanjem ili 10-tak ranjenika.

Vozilo je korišteno do 16.12.91. kada je 2. gardijska prebačena u Trstenik, a vozilo parkirano. Tokom bjesomučnih napada JNA na Karlovac pored vozila je pala granata od 130 mm te ga je prevrnula i oštetila. Vozilo je 1996. povučeno u tvornicu ABB radi uređenja, a namijenjeno je izlaganju u muzeju u Turnju.

One of the improvised armored vehicles used for food and ammunition supply as well as evacuation of the wounded from besieged Topusko was the 'Sv. Juraj' (St. Yuri). This vehicle was built on the initiative of the members of the 3rd Battalion of the 2nd 'A' Brigade then positioned in Duga Resa near Karlovac. The chassis upon which it was built was the Czech Tatra-138 6x6 truck received from the Hrvatske ceste (Croatian Roads) company. Work on armoring the truck begun in August 1991 in the Metal-Elektrik workshop in Mrežnički Brig near Duga Resa. The vehicle was handed over to the 2nd 'Grom' (Thunder) Guards Brigade in late September.

The protection was achieved with sandwich armor of two 5mm steel plates with 5cm of sand between them, as well as with single 16mm steel plates. This armor could protect the vehicle from projectiles up to .50 caliber. It weighed 35 tons gross and could transport 25-30 soldiers with equipment and weapons or 10 wounded on stretchers. The vehicle was in use until December 16, 1991 when the Brigade left for Trstenik and the truck was withdrawn from use. During the artillery bombardment of Karlovac a 130 mm shell landed near the vehicle which was flipped over and damaged. In 1996 the vehicle was towed to the ABB plant for restoration and display in the Turanj museum.



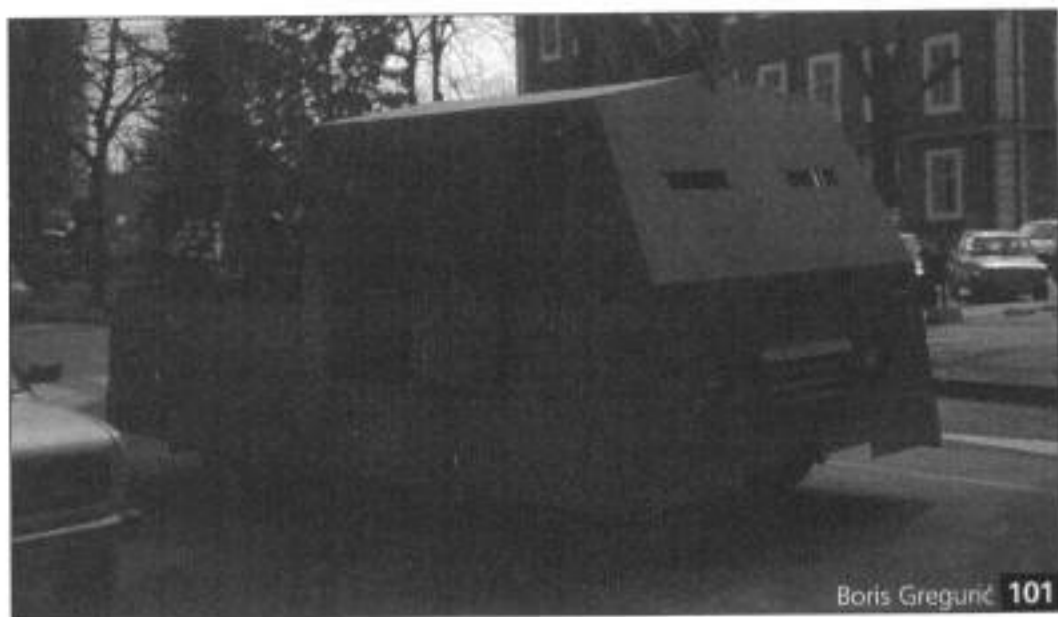
Dubravko Halovanić 100

VOZILA ŽELJEZARE SISAK

Nije točno poznato kada je i koliko vozila oklopljeno u Željezari Sisak, no prema dostupnim fotografijama pretpostavka je da je to napravljeno na barem pet vozila. Neka vozila, za koje se pretpostavlja da su njihovi proizvođači, prikazana su na slikama 101, 102 (kompletno vozilo na crtežu 103) kao i slikama 209 i 210 (na strani 57).

SISAK IRONWORKS VEHICLES

It is not known exactly how many vehicles were armored at the Sisak Iron Works nor when they were delivered. According to photographs of the vehicles used in that area it seems at least five vehicles were built. Some which are presumed to be from this source are shown in photos 101 and 102 (the complete vehicle shown on drawing 103) as well as photos 209 and 210 on page 57.



Boris Gregurić 101



Božena Rukavina, Zoran Rogošić 102

MINI-1 i MINI-2

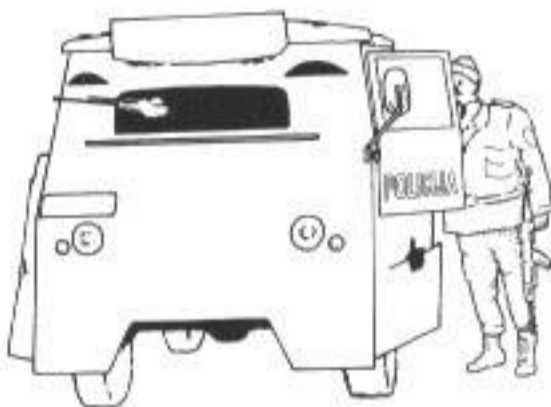
Za ta dva vozila se također pretpostavlja da su napravljena u Željezari Sisak.

Mini-1 je, radi svoje veličine, vjerojatno oklopljeni Pinzgauer (Styer-710K) i to iz najranijeg perioda rata jer ima na sebi natpis Policija.

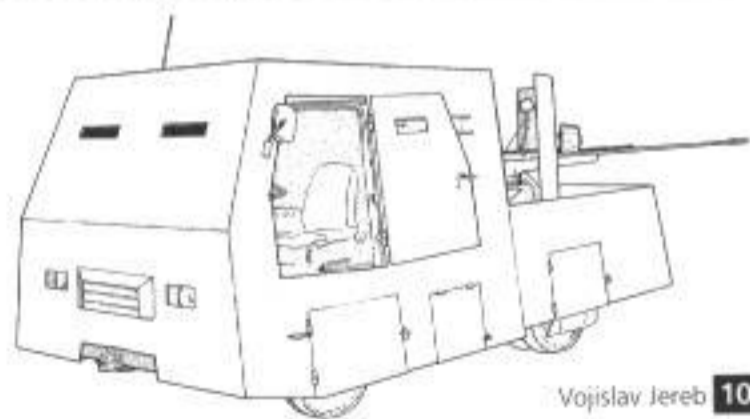
Mini-2 je u svakom slučaju, sudeći po natpisima, bio u sastavu '57. samostalnog bataljuna Marijan Celjak' koji se borio kod Komareva. Vozilo je također vjerojatno napravljeno u sisačkoj 'Željezari'.

Osnova vozila bi mogla biti, sudeći po jedinoj dostupnoj fotografiji, mali 'tamić' (TAM-80), a naoružanje na njemu teški mitraljez KPV 14,5 mm.

It is possible these two vehicles were built by the Željezara Sisak (Sisak Iron Works) too. Mini-1 is probably, from its size, an armored Styer Pinzgauer-710K used at the very beginning of the conflict judging by the inscriptions (POLICIJA). Mini-2 was for sure, judging by the inscriptions, belonged to the 57th Independent Battalion 'Marijan Celjak' which fought near Komarevo. This vehicle is most probably a Sisak Iron Works product too. The chassis for this vehicle is most likely a TAM-80 with long cab and the armament consists of a KPV 14,5 mm heavy machine gun.



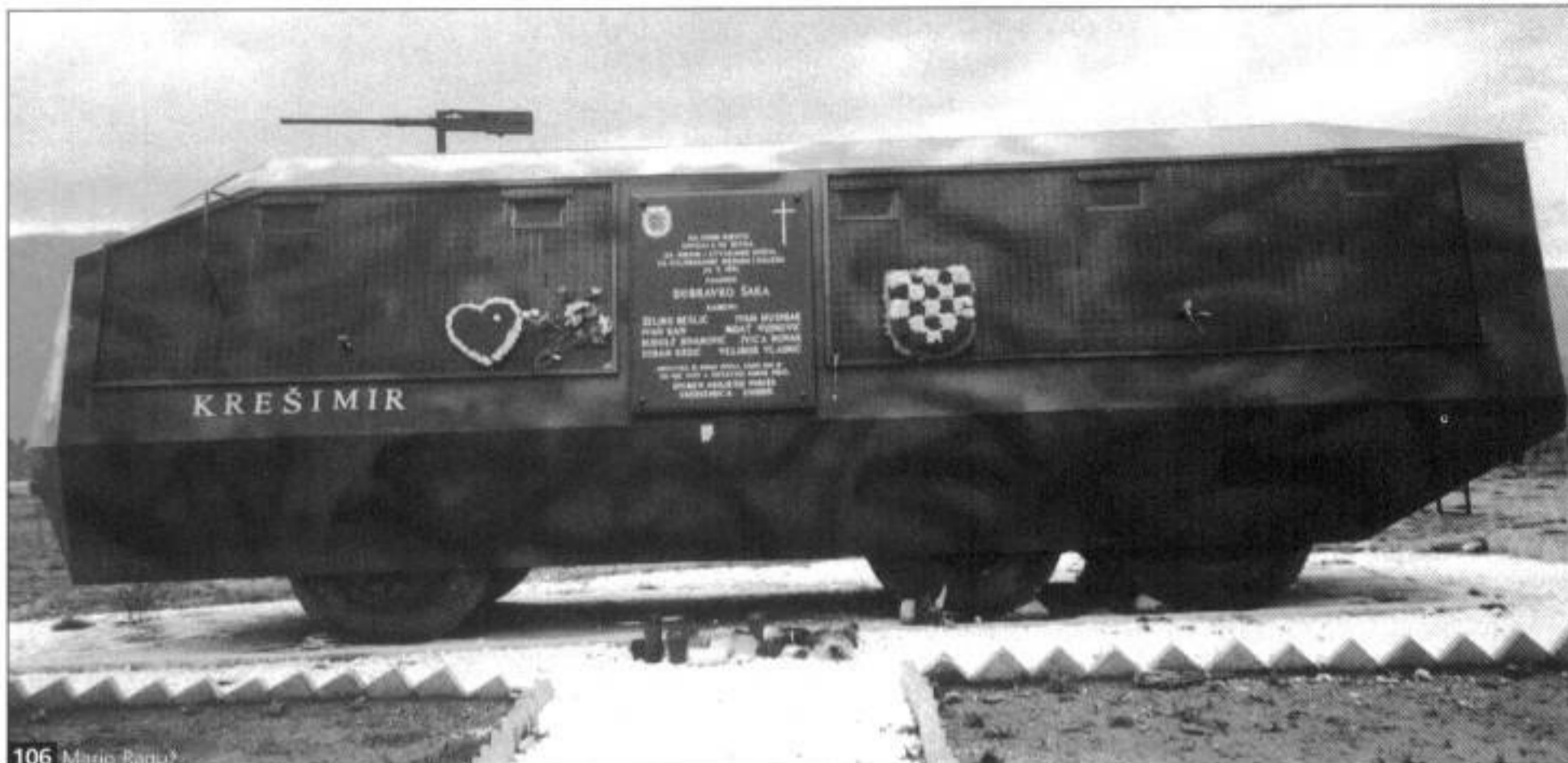
104 Vojislav Jereb



Vojislav Jereb 103



Vojislav Jereb 105



106 Mario Raguž

'KRALJEVSKA' SERIJA INDUSTROGRADNJE

Industrogradnjini pogoni *Remontind* i *Metalind* bili su početkom rujna 1991. mjesta gdje su napravljena sveukupno četiri improvizirana oklopnjaka koji su dobili 'kraljevska' imena prema hrvatskim povijesnim ličnostima. *Remontind* je započeo sa izradom dva vozila na osnovu kiperu Tatra-815 koji su dovučeni iz poslovne jedinice Indotrans, dok je *Metalind* započeo sa radom na dva kamiona TAM-260 T26 koje je *Autoprijevoz Otočac* namjenio ZNG-u kao oklopnu zaštitu.

Već 3. rujna 1991. *Remontind* je započeo i do 13. rujna završio montažu oklopa na vozilima koji su dobili imena Domagoj (po knezu Domagoju, 846-876) i Krešimir (po kralju Petru Krešimiru IV, 1058.-1075.). U isto vrijeme *Metalind* je oklopio dva otočka kamiona koji su dobili imena Tomislav (prema kralju Tomislavu, 910.-918.) i Hrvoje (prema vojvodi Hrvoju Kačiću-Hrvatiniću, 1380.-1416.). Sva četiri oklopnjaka su predana ZNG-u 14. rujna 1991. te su odmah prebačeni na šire područje Gospića.



107 Vojislav Jareb

Tomislav i Hrvoje su imali sendvič oklop na prednjem dijelu sa 12 mm lima, 40 mm betona i 8 mm nutarnjeg lima, sa strane je bio nešto deblji sloj betona dok je za ostale dijelove korišten jednostruki lim 8-10 mm. Ukupna težina vozila je bila oko 23 tone, od čega 13 tona oklopa. Gume su bile punjene pjenastom masom protiv propucavanja.

Domagoj i Krešimir su imali čeonu oklop od jednostrukog lima 20 mm dok je sa strane korišten sendvič oklop ukupne debljine 63 mm. Ukupna težina vozila je bila oko 22 tone.

Domagoja je koristila 2. bojna 118. brigade za prijevoz boraca iz Perušića do Starog Ličkog Osika. Krešimir je korišten na istom bojištu i uništen je 22. rujna 1991. iz bestrzajnog topa. Tomislav i Hrvoje su korišteni tokom cijelog Domovinskog rata nakon čega su povučeni, skupa sa Domagojem (slike 111 i 113), i sačuvani u Vojnom muzeju. Hrvoje je kasnije izložen kao spomenik na mjestu uništenja Krešimira u Ribniku kod Otočca (slike 106 i 107).



108 fotodokumentacija HVG



109 Boris Gregurić



Boris Gregurić 110



Boris Gregurić 111

INDUSTROGRADNJA 'ROYALTY' SERIES

The Remontind and Metalind plants of Industrogradnja company were places where four vehicles of the series known as 'Royalty' were built at the beginning of September 1991. Remontind begun work on converting two Czech Tatra-815 trucks donated by the Indotrans unit, while Metalind converted two TAM-260 T26 6x4 trucks donated by Autoprijevoz Otočac.

On September 3, Remontind began work and the vehicles were finished by the 13th. They were named after famous Croatian royalty – Domagoj (after Duke Domagoj, 846-876) and Krešimir (after King Petar Krešimir IV, 1058-1075). The Metalind's vehicles were built during the same period and received names Tomislav (after King Tomislav, 910-918) and Hrvoje (after Duke Hrvoje Kačić-Hrvatinić, 1380-1416). All four vehicles were delivered to ZNG forces on 14th September and immediately sent to the Gospić area.

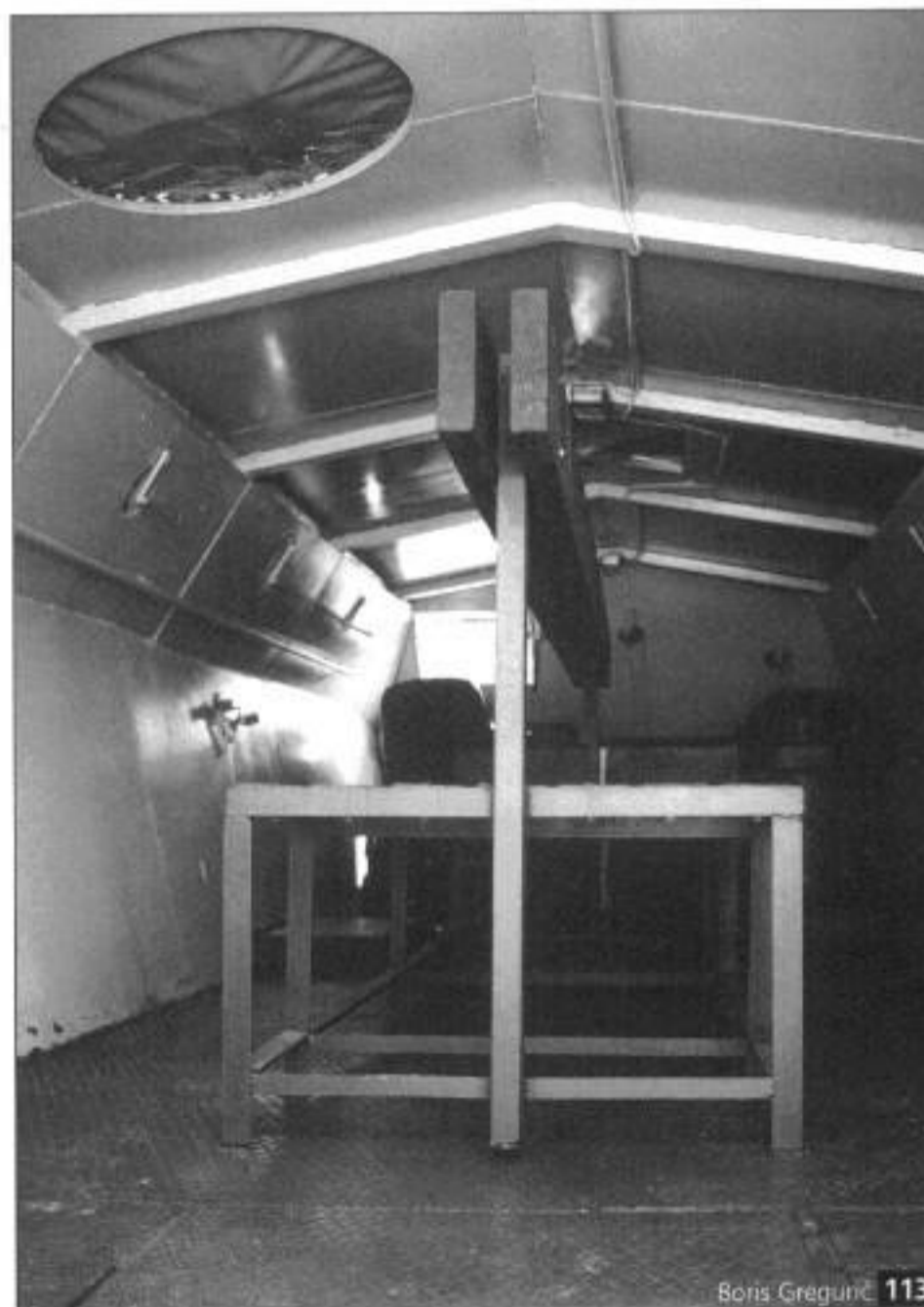
The Tomislav and Hrvoje vehicles were equipped with a sandwich type armor with steel plates of 12 mm, 40 mm of concrete and 8 mm steel on the front of the vehicles, somewhat thicker concrete layer on the sides and single 8-10 mm plates elsewhere. Total weight was 23 tons, 13 of which was armor. The tyres were filled with foam known as Tyrfill.

Domagoj and Krešimir had single plate 20 mm frontal armor while sides were protected with 63 mm steel-concrete sandwich. Total weight was 22 tons.



112 Vojislav Jereb

Domagoj was used by the 2nd Battalion of the 118th Brigade for troop transport from Perušić to Lički Osik. Krešimir was used in the same area and was destroyed on September 22, 1991 by a recoilless rifle. Tomislav and Hrvoje were used throughout the war and were withdrawn and preserved in the Military Museum together with the Domagoj (photos 111 and 113). Hrvoje was later displayed as a war monument on the place where Krešimir was destroyed (photos 106 and 107).



Boris Gregurić 113

OSA

Radnici zagrebačkog ZET-a (Zagrebački električni tramvaj) koji se nisu pridružili ZNG-u na svoj su se način uključili u obranu zemlje. U pogonu održavanja autobusa su već polovicom kolovoza započeli sa modifikacijom tri autobusa za potrebe ZNG-a i to prepravkom u sanitetska oklopna vozila. Korišteni su autobusi tipa Ikarus IK-115, a oklop je montiran na neuobičajen način – iznutra. Tako je gotovi autobus izgledao poput običnog autobusa sa staklima, ali je iznutra bio lim debljine 8 mm do visine 1,2 m od poda.

Prvi gotovi autobus je predan na korištenje 5. rujna 1991. i prozvan je OSA-100 (Oklopljeni sanitetski autobus, a 100 je bilo radi obilježavanja 100 godišnjice poduzeća), dok su ostala dva (OSA-101 i 102) predana nedugo nakon prvoga. Nije poznato gdje je korišten OSA-100, dok je OSA-101 korišten u vukovarskom konvoju (slika 114) ali je namjerno onesposobljen u Vukovaru nakon kvara motora. OSA-102 je korišten u 1. gardijskoj brigadi i od 1996. se nalazi u zbirci Vojnog muzeja u Zagrebu.

The workers of the ZET (Zagreb Electric Tram) company which did not join the ZNG forces wanted to be included in the defense effort. As early as August 1991 they began modifying some buses in the bus maintenance workshop. The goal was to armor them and enable ZNG to use them as armored ambulances. For this purpose Ikarus IK-115 buses were used and armor was built in an unusual manner – inside the existing bus coaches. At first glance the buses looked like regular buses with glass windows, while the 8 mm armor was used up to height of 1,2 meters from the floor.



uz dopuštenje HV 114

The first bus finished was delivered on September 5 and named OSA-100 (OSA for Armored Sanitary Bus, and 100 because it was the 100th anniversary of the company) while the other two (OSA-101 and OSA-102) were delivered within several days. It is not known where OSA-100 was used nor its fate. OSA-101 was used in the famous Vukovar convoy (photo 114) but was deliberately disabled in Vukovar after an engine failure. Osa-102 was used by the 1st Guards Brigade and is now part of the Military Museum collection.

TAZ-ov PRVI OKLOPNI AUTOBUS

Jedan od prvih sanitetskih oklopnih autobusa izrađen je u zagrebačkom TAZ-u koncem ljeta 1991. Potaknuti situacijom na bojištu, posebno u Vukovaru, radnici TAZ-a su prišli projektiranju i izradi oklopljenog sanitetskog vozila u drugoj polovici kolovoza. Za to je korištena šasija FAP-4420 na koju se nadgradio uglavnom sendvič oklop od pancirnih limova debljine 6 mm (izvana) i 5 mm (iznutra). Vozačevo staklo je bilo od neprobojnog stakla debljine 60 mm. Vozilo je moglo prevesti 24 ranjenika u ležećem položaju kao i dva člana medicinske ekipe.

Autobus je predan HV-u 9. listopada 1991. te je korišten za evakuaciju ranjenika iz Vukovara ali mu se pri tome gubi svaki trag.

TAZ FIRST ARMORED BUS

On of the first armored ambulance busses built was the one converted in the TAZ company during the Summer of 1991. Spurred by the situation, especially in Vukovar, the TAZ workers began designing and making an ambulance vehicle in late August. A FAP-4420 bus chassis was chosen and sandwich armor of 6 mm and 5 mm steel plates was added. The driver's glass



fotodokumentacija Večernjeg lista 115

window was made of 60mm thick bullet-proof glass. The vehicle could carry 24 stretchers plus two medical crew.

The finished bus was delivered to the HV on October 9, 1991 and was sent to evacuate wounded from the Vukovar area. Its final fate is unknown.

TAZ-ova serija OKLOPNIH AUTOBUSA

Poučeni pozitivnim iskustvom korištenja prvog oklopnog sanitetskog autobusa, HV je u TAZ naručio izradu serije od deset sanitetskih oklopnih autobusa.

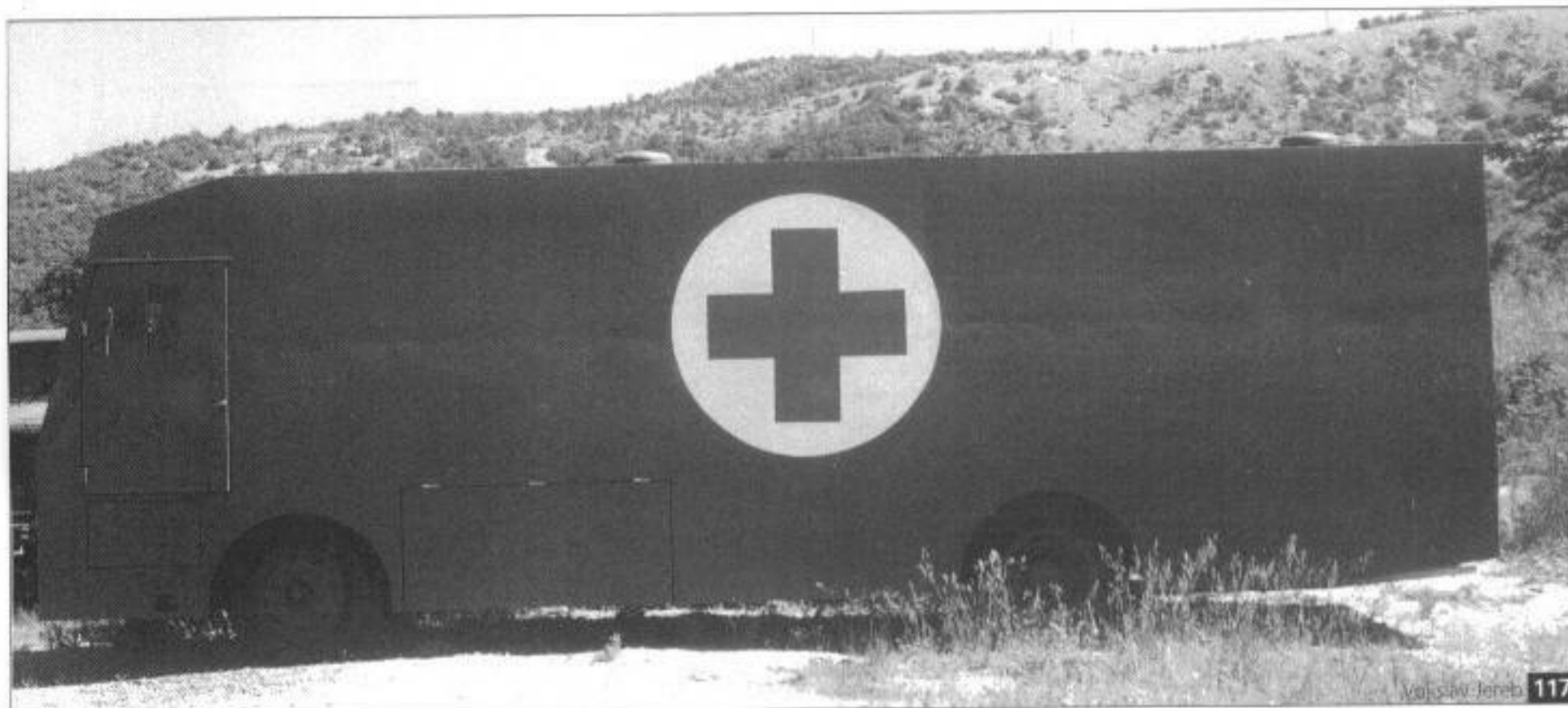
Ovi autobusi su rađeni na šasijama autobusa TAM 161. Nadograđivani oklop je bio tipa 'sendvič' sa pancirnim limovima 3 mm (izvana) i 5 mm (iznutra) kao i pancirnim staklom za vozača od 60 mm debljine.

Oprema tih autobusa je bila potpuna te je uz 18 sanitetskih ležaja tu bio i dodatni ležaj za hitne intervencije, rezervar vode, dodatna sklopiva sjedišta za medicinsko osoblje, ormarići za medicinsku opremu i sl.

Vozila su isporučivana sukcesivno, a posljednjih pet je predano HV-u 2. ožujka 1993. Korisnici i sudbina svih vozila nije poznata. Mnogi od tih autobusa su korišteni uključivo do operacije 'Oluja'. Vozilo koje je koristila 131. brigada (Županja) sačuvano je u zagrebačkom Vojnom muzeju (slike 120 i 121), jedno od prvih vozila korišteno je u 111. brigadi te je parkirano u Trsatskoj vojarni u Rijeci (slike 116 do 119), neki su viđeni u Bosni dok su drugi završili na vojnom otpadu.



116 Vojislav Jerić



Vojislav Jereb 117

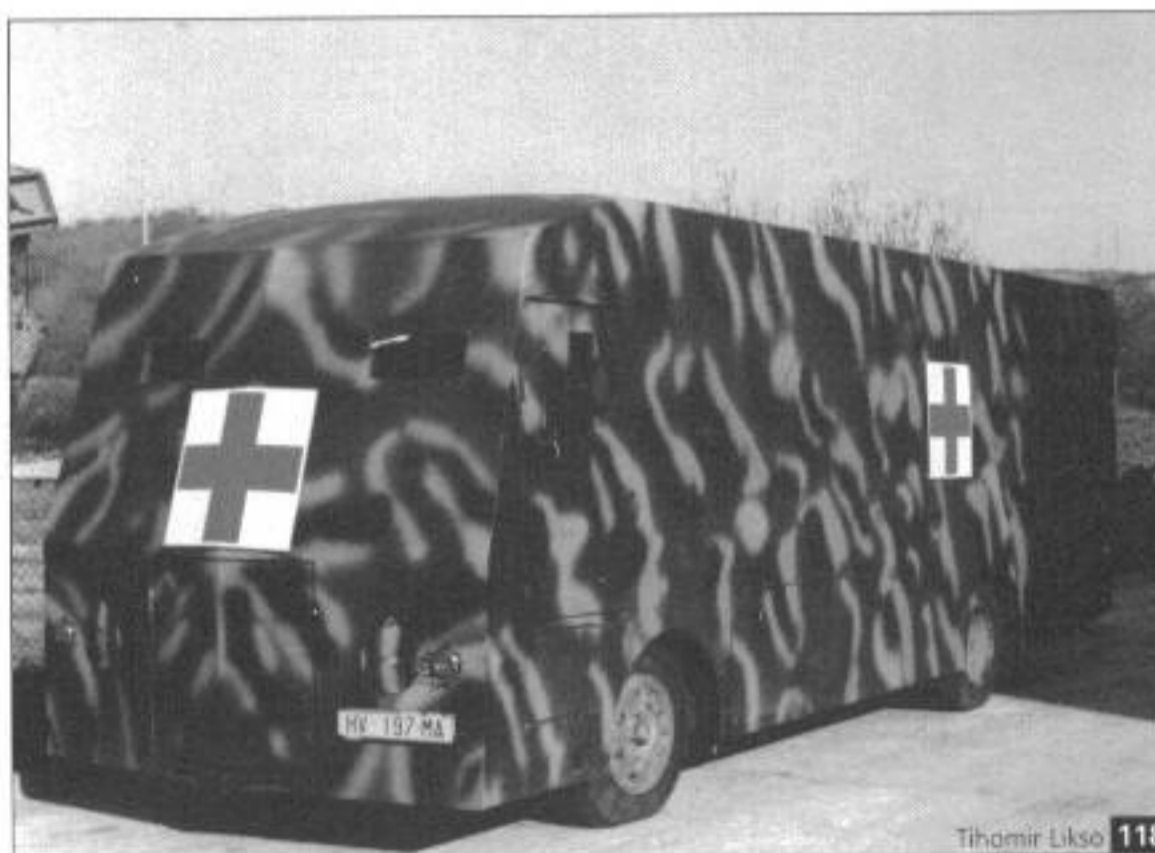
TAZ ARMORED BUS SERIES

With the experience of the first armored ambulance bus the HV placed an order with TAZ for the construction of a series of 10 armored ambulance buses.

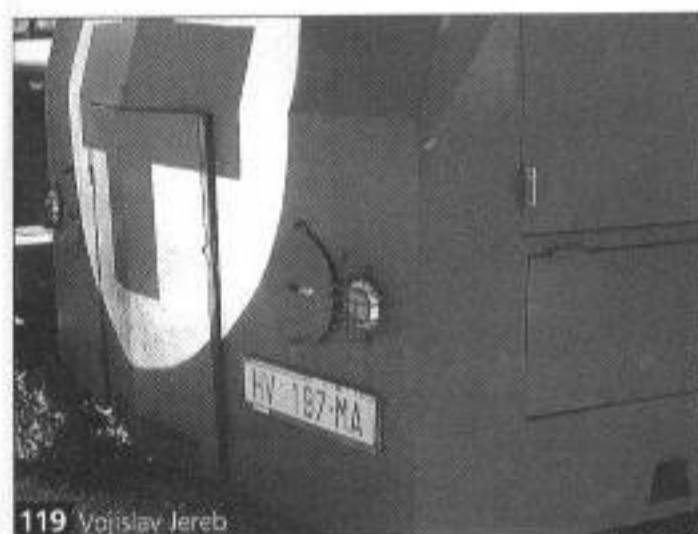
All these buses were built on TAM-161 bus chassis. The armor consisted of a sandwich of 3 mm (outside) and 5 mm (inside) steel plates as well as as 60 mm bullet proof glass for driver's window.

The equipment of the buses were completed with 18 stretchers, an additional bed for urgent interventions, a water tank, additional seats for medical crew, sanitary equipment cabinets etc.

The vehicles were delivered successively, the last 5 being handed over on March 2, 1993. The recipients and fates of all the vehicles are not known, but most were in use until the Oluja operation in Summer 1995. The vehicle used by the 131th Brigade from Županja ended up in the Military Museum collection (photos 120 and 121). One of the first vehicles, used by the 111th Brigade, was withdrawn from service in an Army barracks in Rijeka (photos 116 to 119), while several turned up in Bosnia and others at junk yards.



Tihomir Likso 118



119 Vojislav Jereb



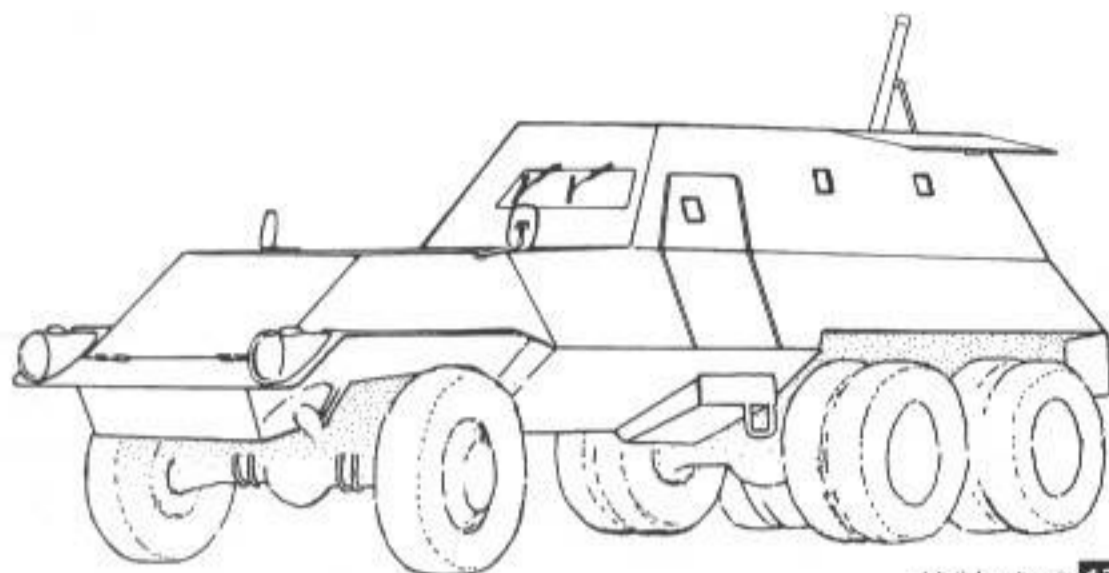
Boris Gregurić 121



120 Boris Gregurić

SAMOHODNI MINOBACAČI

Nakon izrade prvog oklopnog autobusa u TAZ-u se prišlo realizaciji ideje o izradi samohodnog (pokretnog) minobacača od 120 mm. U tu je svrhu Geotehnika dala kamion tegljač tipa Magirus 232 (proizvodnje 1975) na kojeg se, uz pomoć Brodarskog Instituta, montirao kako oklop tako i osnovno oruđe. Oklop se sastojao od 'sendvič' konstrukcije od limova 10 mm izvana i 6 mm iznutra, a između je uliven beton sa kvarcnim pjeskom. Po ugradnji oruđa izvršena su ispitivanja koja su pokazala da je opterećenje pri ispaljivanju preveliko te se odlučilo prenamijeniti vozilo. Ono je od milja nazvano 'Zagi', isporučeno je 29. studenog 1991. te je prikazano na TV kako se koristi bez minobacača (kao transporter) (slika 123), a na koncu je napušteno na jednom zabačenom mjestu (slika 124).



Vojislav Jereb 122



123 uz dopuštenje HTV



David Spencer collection 124

Neuspjeh s prvim samohodnim minobacačem nije obeshrabrio konstruktore te se već koncem 1991. prišlo izradi drugog vozila identične namjene i sličnog izgleda. Ovaj puta je kao šasija uzet vojni TAM150 T11 6x6 na kojeg se ugrađuje oklop i minobacač 120 mm. Kao zaštita se ponovno ugrađuje 'sendvič' od pancirnih limova 10 i 6 mm.

Vozilo je zamišljeno kao višenamjensko jer su umjesto minobacača mogli biti ugrađeni protuavionski top ili PA rakete ili slična oruđa. Pri tome se radilo već o potpuno razvijenom projektu koje je bilo sve samo ne improvizacija i, kako je glavna ratna opasnost već prošla, moglo se studijoznije pričati rješavanju raznih problema.

Dovršeno vozilo je nazvano 'Kiseli' (crtež 125) te je predano 108. brigadi u proljeće 1992. Korišten je u borbenim uvjetima te se na osnovu pozitivnih iskustava prišlo daljnjoj razradi ideje.

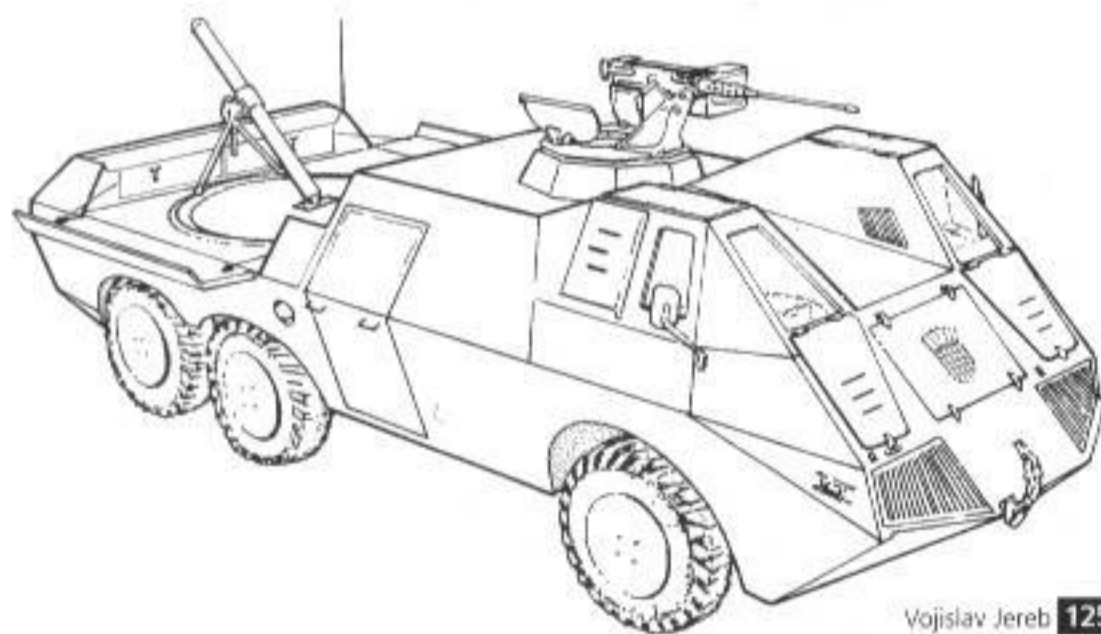
Iskustva sa 'Kiselim' su bila osnova za izradu dva slična vozila na istim šasijama kamiona TAM150 6x6 (crtež 126). Postavljeni oklop je bio također 'sendvič' od limova 10 i 6 mm, te je vozilo težilo ukupno 10.500 kg. U vozilu je bilo prostora za smještaj 6 poslužitelja minobacača koji su mogli u roku manjem od 2 minute postaviti sistem u vatreni položaj.

Oba vozila su dovršena do 7. siječnja 1993. i korištena su od akcije Maslenica nadalje, do kraja rata. Koristila ih je 4. gardijska brigada. Oba vozila su sačuvana i postala su dio zbirke Vojnog muzeja (slike 127 do 130).

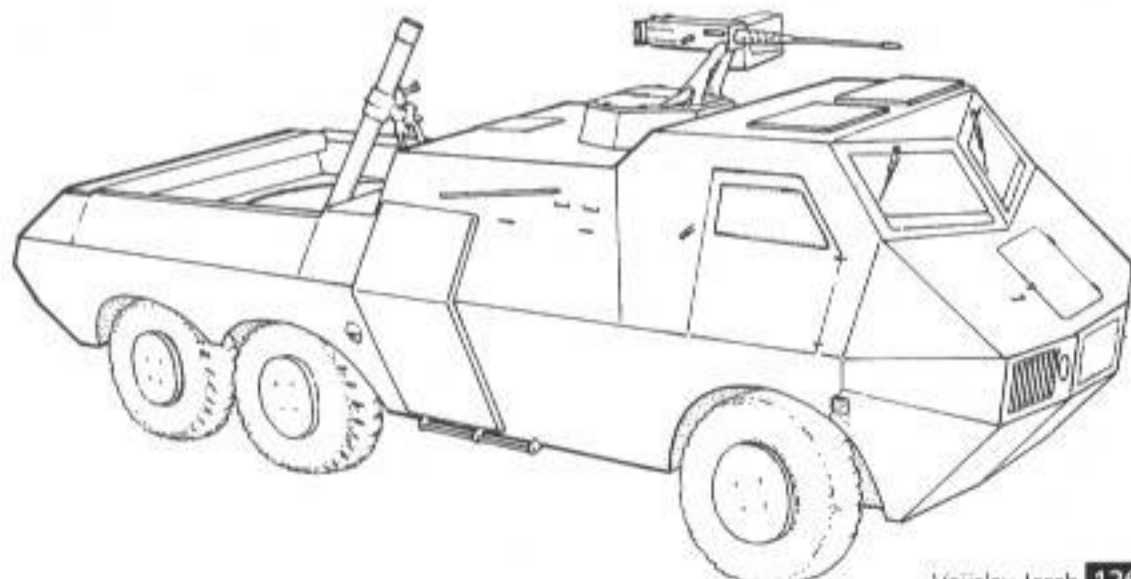
Konačni razvoj višenamjenskog samohodnog minobacača prikazan je u dijelu 'Razvijenih vozila' na str. 88.

SELF PROPELLED MORTARS

After completing the first armored bus, the TAZ bus factory was involved in the development of armored self-propelled 120 mm mortars. For this purpose the Geotehnika



Vojislav Jereb 125



Vojislav Jereb 126

company donated a Magirus 232 tractor truck (1975 model). With the assistance of the Brodarski institut (Naval Institute) the armor and weapon were added. The armor was of the sandwich type with 10 mm external plates, 6 mm internal plates, and quartz sand concrete in between. After the installation of the main weapon the vehicle was tested, but the load proved to be too much, so the vehicle was turned into a personnel carrier. The vehicle was named 'Zagi' and it was delivered on November 29, 1991. It was shown on TV in use without the weapon (photo 123) and later was abandoned in a field and stripped of some of its plates (photo 124).

The failure of the first attempt did not discourage the designers and by the end of 1991 they began work on a new design. This time a TAM150 T11 6x6 truck of military origin was chosen which was armored with sandwich armor of 10 mm and 6 mm thick plates, and equipped with a 120 mm mortar. The concept was that the vehicle could be used to carry a number of different weapons in place of the mortar such as an anti-aircraft gun, an anti-aircraft missile launcher or similar weapons. This was far beyond an improvised design and as the worst of the war had passed the design could be developed at a normal pace. The finished vehicle was named 'Kiseli' (drawing 125) and was delivered to the 108th Brigade in the spring of 1992. It was used in combat and the experience was evaluated for the development of the concept.

Two more similar vehicles were built on military TAM150 6x6 chassis (drawing 126). Identical armor was used and the finished vehicles weighed 10.500 kg. The vehicle could carry 6 mortar crewmembers that could activate the weapon and bring it to firing status within 2 minutes.

Both vehicles were finished on January 7, 1993, just in time for the 'Maslenica' operation. They were in use by the 4th Guards Brigade until the war ended in 1995. Both are preserved in the Military Museum collection (photos 127 to 130).

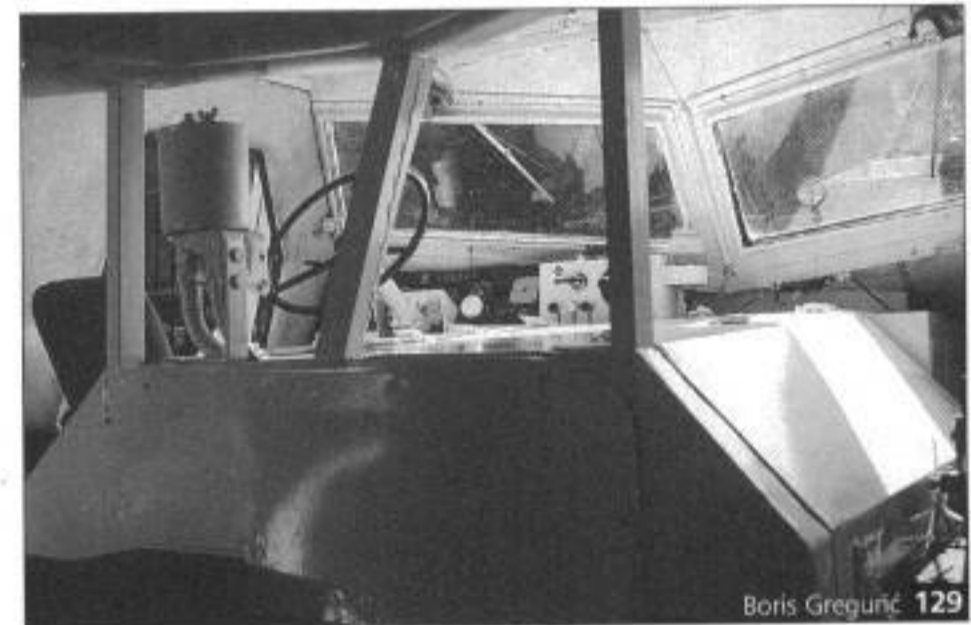
The final design of the self-propelled mortar concept is shown in the Developed vehicles section (on page 88).



Boris Gregurić 127



128 Boris Gregurić



Boris Gregurić 129



Boris Gregurić 130

HIDROELEKTRA

Hidroelektra je od početka bila veoma aktivna u izradi improviziranih oklopnjaka. U tu svrhu je koristila teške kamione, pretpostavlja se tipa Tatra-138 i TAM-260, na koje je postavljala oklop od jednoslojnih limova. U početku su na krovu imali samo otvore za postavljanje mitraljeza dok su kasnije montirane (nekima vjerojatno i naknadno) manje kupole (s mitraljezom) za zaštitu poslužioca oružja. Zapažena su barem četiri različita tipa okretnih kupola.

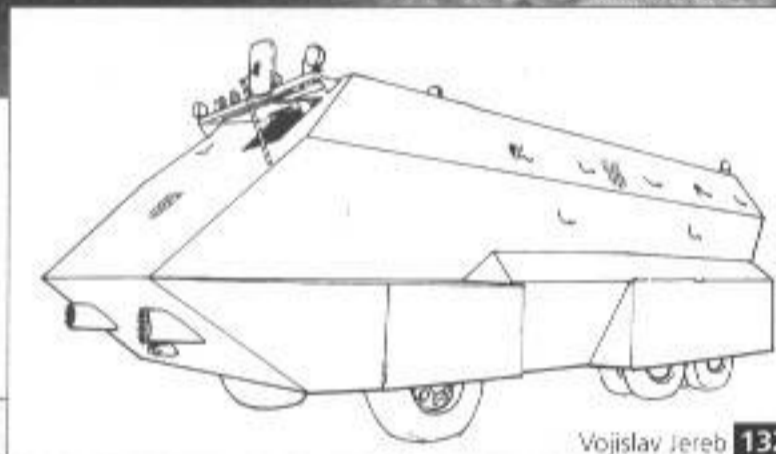
Ukupno se pretpostavlja da je napravljeno 10-tak vozila u srpnju i kolovozu 1991. godine. Korišteni su vrlo mnogo, posebno na području kupačkog bojišta kao i zapadne Slavonije (Okučani, Pakrac, Lipik).

Od poznatih sudbina tih vozila, jedno je vozilo zarobljeno od krajinskih Srba, nekoliko vozila je završilo put Bosne, a jedno je pronađeno napušteno u Zadru (slika 132).

From the beginning the Hidroelektra company was involved in improvising armored vehicles. Heavy trucks were used, most often Tatra-138 and TAM-260 models. All were armored with single sheet steel plates. In the beginning, there were only hatches on the roof from where a weapon could be used to provide fire support. Later, a number of different types of turrets were developed. At least four different turret types were noted.

It is presumed that around 10 vehicles were built during July and August 1991. They saw extensive service, particularly on the Kupa front and in Western Slavonija (Okučani, Pakrac and Lipik).

It is known that the Krajina Serbs captured one vehicle, some were used later in Bosnia - Herzegovina and one was found abandoned in Zadar (photo 132).



Vojislav Jereb 132



132 Rajar Simonović



134 uz dopuštenje HTV



uz dopuštenje HTV 135

HE-1

Hidroelektra je izradila i ovog neobičnog crnog oklopnjaka koji je navodno bio na bojištu kod Pakraca u sastavu 1. 'A' brigade 'Tigrovi'. Po završetku korištenja vozilo je privremeno povučeno u Vojni muzej, a odande je izložen na Savici kod Zagreba (slike 136 do 140).

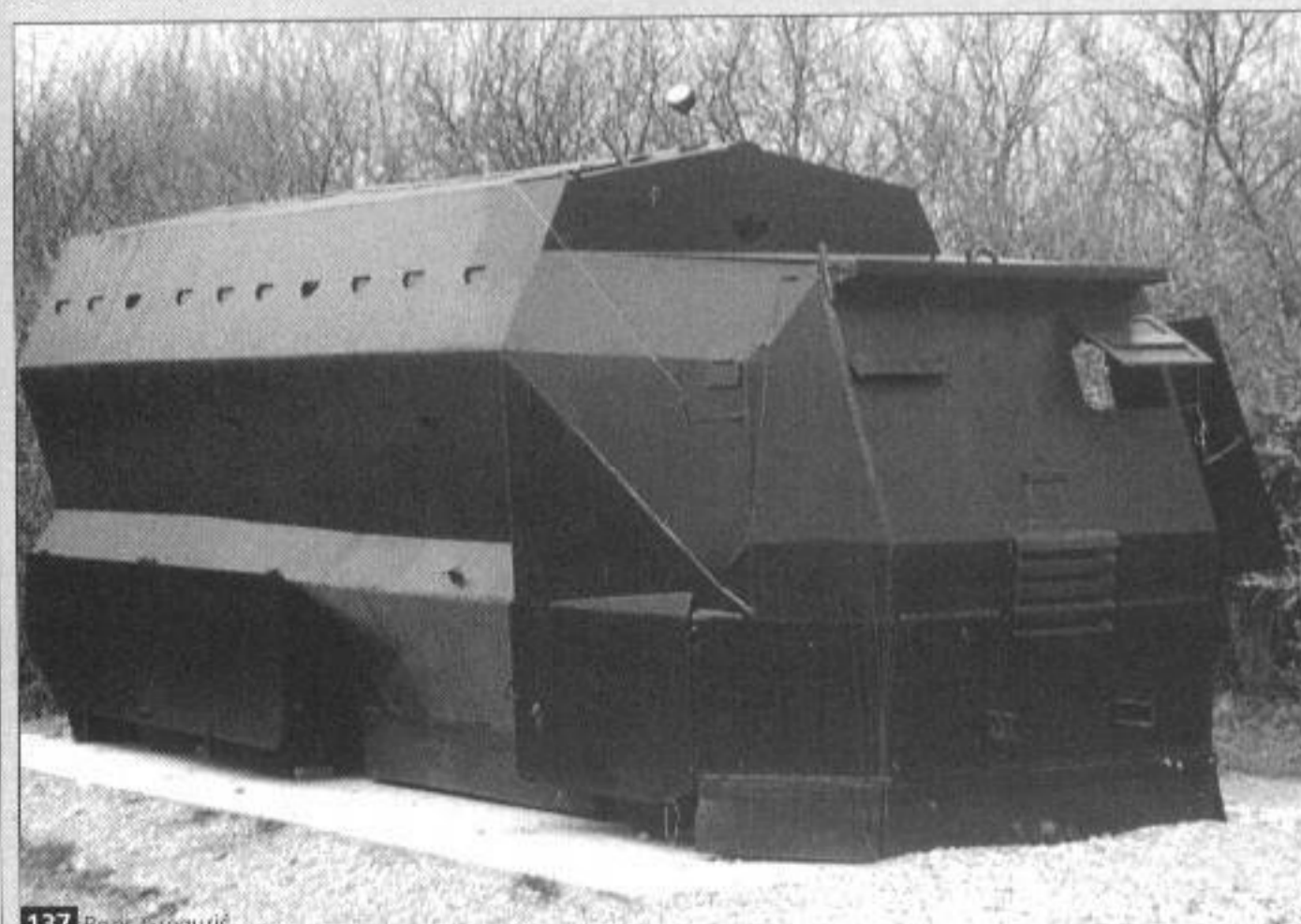
Osnova vozila je kamion FAP 6x4, a ima oklop od jednostrukih čeličnih limova. Prema konstrukciji izgleda da je ovo jedno od prvih Hidroelektrinih vozila. Sa svake strane ima ništa manje nego 10 otvora-puškarnica (vidi i sliku 213 na str. 59).

The Hidroelektra plant made this unusual black armored vehicle which was allegedly used in the Pakrac war zone during 1991 by the 1st 'A' Tiger Brigade. After it was no longer used it remained for a short time at the Military Museum and later was displayed in Savica near Zagreb (photos 136 to 140).

The chassis used was a FAP 6x4 truck and the armor was of single steel plates. On each vehicle side there are no less than 10 firing ports. It seems that this was one of the first Hidroelektra improvised armored vehicle construction (see photo 213 on page 59 too).



136 Boris Gregurić



137 Boris Gregurić



Boris Gregurić 138



Boris Gregurić 139



Boris Gregurić 140

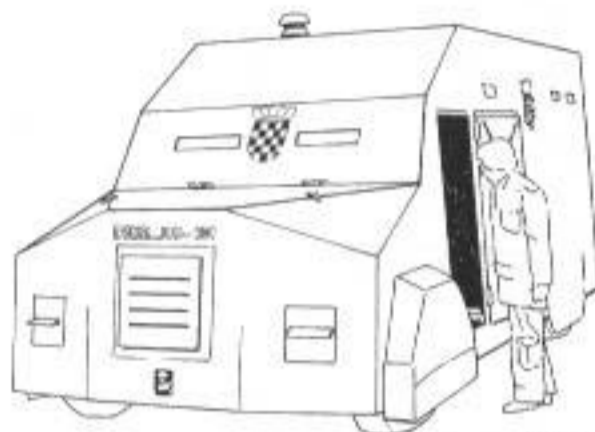
DOMOLJUB-101

Rade Končar SES je početkom rujna 1991. pokrenuo izradu oklopnog vozila za potrebe Policije. Kao osnova je uzet kamion TAM-5000 koji je povučen iz njihovog pogona održavanja u stečaju. Planiranje i izrada vozila su dovršeni u roku od tjedan dana. Limovi su dobiveni od PJ Generatori, sam oklopnjak je dovršen u SES-u. Vozilo je dovršeno 30. rujna 1991. i predano lokalnoj policijskoj stanici. Dobilo je prigodni naziv 'Domoljub-101'. Korištenje i sudbina vozila nisu poznati.

At the beginning of September 1991 the Rade Končar-SES company began work on an armored vehicle for Police duties. A TAM-5000 chassis was taken from one of their subsidiary companies. The plans and construction of the vehicle was completed in a week. The steel plates were acquired from the PJ Generatori plant while the vehicle was finished at the SES workshops. It was delivered on September 30, 1991 to the local Police station. It was named 'Domoljub-101'. Further use and fate of the vehicle is unknown.



141 via David Spencer



Vojislav Jereb 142



via David Spencer 143

OKLOPNA MANEVARKA

U Rade Končaru su došli na zamisao da oklope jednu manevarku radi mogućnosti nesmetanog komuniciranja i rada unutar firme prkoseći snajperskoj vatri koja je s okolnih zgrada ometala normalan rad u prvim tjednima rata. U tu svrhu je uzeta manevarka tipa TMD 22-119. Da bi se smanjila površina nišanja snajperistima prihvaćena je ideja o montaži zakošenog oklopa ali od veće gornje širine vozila prema manjoj donjoj širini. Time se dobio neuobičajen izgled cijelog vozila. Zadržana je uobičajena kabina koja je, kao i cijelo vozilo, samo obložena oklopnim limovima. Cijeli posao oko montaže oklopa je završen u 7 dana. Pored vozača mogla je prevesti do 15 ljudi.

Nije poznato da li je i gdje ovo šinsko vozilo korišteno. Još se uvijek nalazi u Zagrebu.

and work inside the company despite sniper fire from the higher buildings surrounding the factory. A TMD 22-119 trolley was chosen. The inclined projectile paths of rooftops sniper's bullets caused the design team to adopt an upward sloping shape, instead of a flatter downward sloping shape which would offer more surface area to target. This gave an unusual appearance to the overall vehicle. The original driving cab was preserved intact and then covered, along with the rest of the vehicle, in armored plates. The vehicle was completed in seven days. Besides the crew it could carry 15 passengers. It is not positively known whether this vehicle was used in action. The vehicle is still in Zagreb.

ARMORED TROLLEY

In the first weeks of war the workers at the Rade Končar company came up with the idea of armoring a trolley for undisturbed communication



Paul Malmassari 144



145 Paul Malmassari



146 fotodokumentacija HVG



via Vladimir RogošiĆ 147

JANKO GREDELJ

Janko Gredelj (sadašnji TŽV Gredelj) je za vrijeme najveće opasnosti za Hrvatsku napravio nekoliko cestovnih vozila te prepravljao neke oklopne vlakove.

Od vozila nije točno poznato koliko ih je ukupno oklopljeno. Jedno od tih vozila, sa tipičnim znakom propinjućeg konjića na hladnjaku (poput Ferrarijevih automobila) i nazivom 'Janko 102' viđeno je i slikano na Banijskom bojištu u jesen 1991. To vozilo je preživjelo rat i do 2000. godine se nalazilo u samoj tvornici.

Od ostalih oklopnjaka poznato je da su 'gredeljevci' radili na oklopljenom 'kontejnerskom' vlaku. Na vagone toga vlaka montirani su samo bočni i krovni dijelovi kontejnera koji su se mogli vrlo lako pomicati jer su bili na kotrljajućim ležajevima. Ispod naoko teretnog vlaka tj. kontejnera bili su skriveni topovi i mitraljezi koji su odmah po pomicanju kontejnera ulazili u akciju. Nije poznato gdje se sada nalazi taj vlak, iako su ostaci navodno viđeni u Zagrebu.

Radnici TŽV Gredelj su navodno radili i na oklopljavanju još jednog vlaka koji je korišten (ili je trebao biti korišten) na području Osijeka. Ništa detaljnije nije poznato o tom vlaku, ostaci kojeg su navodno viđeni u okolici Osijeka.

The Janko Gredelj (now TŽV Gredelj or Railway Car Factory Gredelj) company made, during the most critical period for Croatia, several armored vehicles and worked on some armored trains.

It is not known exactly how many vehicles were finished. One of this vehicles, with a Pegaso horse effigy on the hood, like on the Ferrari cars, named 'Janko 102' was seen and photographed in the Banija front in Autumn 1991. This vehicle survived the war and until 2000 was parked in the factory courtyard.

The Gredelj factory was working on an armored container train. However, it is not exactly clear where the conversion took place. The train was set up to look like an ordinary cargo train, but the container sides and roofs were modified to fall or roll away so the guns and machineguns hidden underneath could be rapidly put into action. The fate of the train is not known, but parts of the train were allegedly seen in Zagreb.

Another armored train visited the Gredelj factory. This train was probably built in Osijek and allegedly there are still some pieces of it remaining.



148 Boris Gregurić



Boris Gregurić 149



Boris Gregurić 150



151 David Spencer collection



David Spencer collection 152

SOKOLI

Tri vozila pomalo neobičnog izgleda izrađena su u Autoservisu Borongaj u Zagrebu tokom rujna 1991. Kamione za izradu oklopnjaka tipa Zastava 640 dala je Jamnica, i po montaži oklopa dobivaju nazive Sokol-1, Sokol-2 i Sokol-3. Prvi i treći ulaze u sastav 61. samostalnog bataljuna u Jastrebarskom u listopadu. U prosincu 1991. Sokol-1 je prebačen na pakračko bojište. Daljnje korištenje vozila nije poznato.

Sva tri vozila su na prednjoj ploči imali natpis 'Sokol' i mali broj vozila (1, 2, 3). Jedno od tih vozila je pronađeno na otpadu u Zadru (slike 160 i 162), vozilo broj 3 je sačuvano u zbirci Vojnog muzeja u Zagrebu, a sudbina trećeg vozila je nepoznata. Isto poduzeće je navodno oklopilo još jedan kamion, također sa nazivom 'Sokol' (slika 163). Pretpostavlja se da je izrađen na šasiji kamiona TAM-80 i to prije gore spomenute serije od tri komada Sokola. Korištenje i sudbina tog vozila nije poznata.

Three vehicles of unusual appearance were built by the Autoservis Borongaj workshop in the western Zagreb suburbs during September 1991. The Zastava 640 trucks upon which this armored vehicles were built were donated by the Jamnica mineral water company. After completion they were named Sokol-1, Sokol-2 and Sokol-2 (sokol – hawk). The first and the third vehicle were used by the 61st Independent Battalion based at Jastrebarsko in October. In December the Sokol-3 was driven to the Pakrac front. The final use of the vehicles is not known.

All three vehicles had the inscription 'Sokol' on the front glacis plate with a small number of the vehicle (1, 2 or 3). One of the vehicles was found in a junkyard in Zadar (photos 160 and 162), the No.3 is preserved at the Zagreb Military Museum while the fate of the third vehicles remains unclear.

The same workshop was allegedly responsible for the construction of another vehicle also with the inscription 'Sokol' painted on it, but of more orthodox design (photo 163). It was probably built on a TAM-80 chassis before the unusual Sokol trio. Use and fate of the fourth vehicle is unknown.



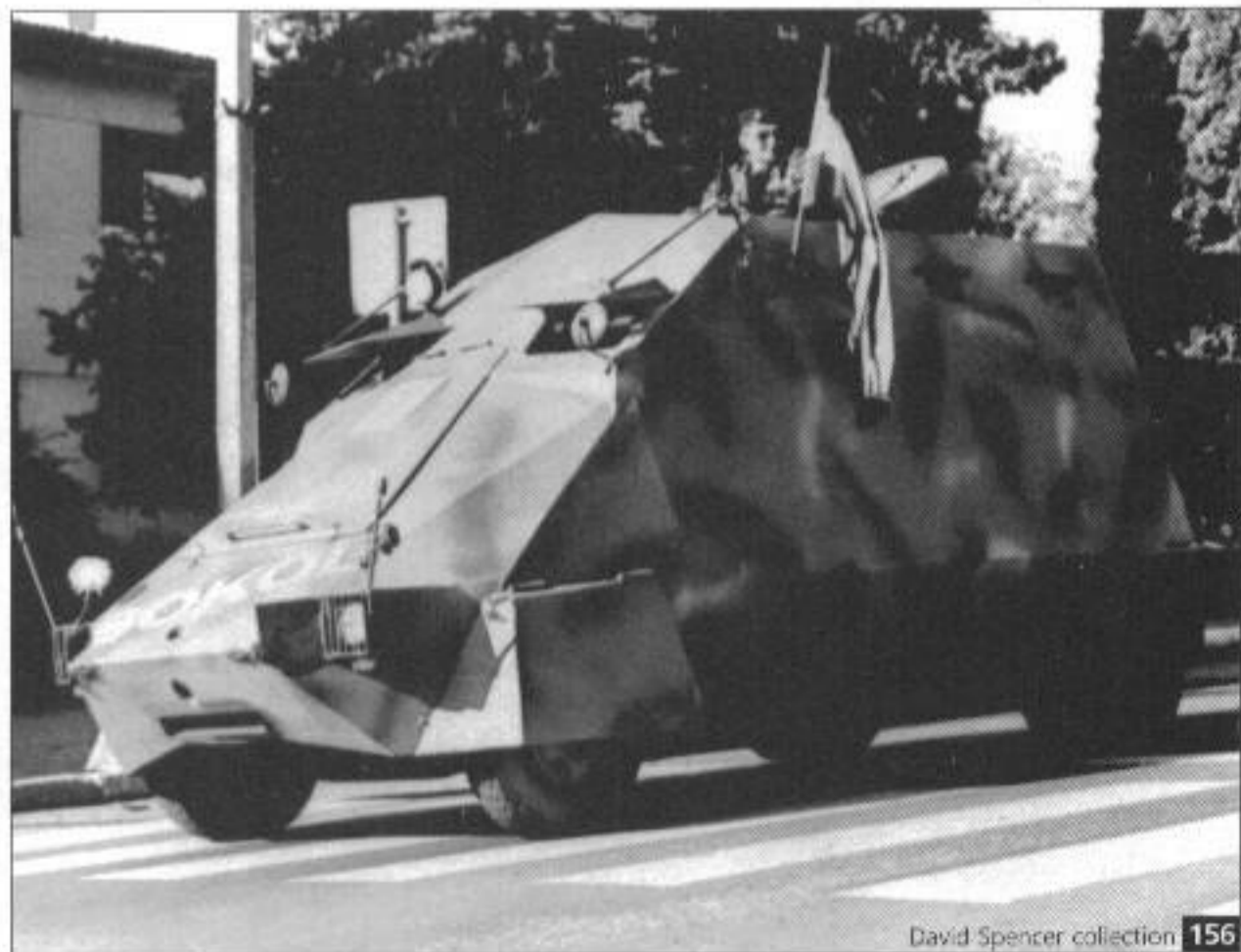
David Spencer collection 153



154 David Spencer collection



155 Miljenko Frčko



David Spencer collection 156



157 Miljenko Frčko



Miljenko Frčko 158



159 Miljenko Frčko



Đorđo Samodol 160



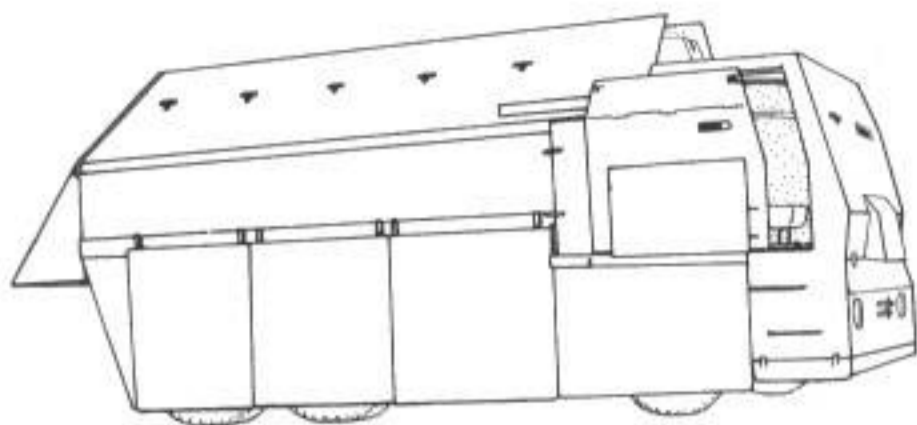
Đorđo Samodol 162



Miljenko Frčko 161



via David Spencer 163



164 Vojislav Jereb

MAMUT-1

Ovaj oklopnjak je nažalost poznat po tragičnoj pogibiji 11 gardista kod Kusionja nedaleko Pakraca. Nije točno poznato kada je i gdje vozilo izrađeno, vidljivo je da je osnova bio TAM-ova troosovinac TAM-260 T26. Prema snimkama objavljenim na TV, izgleda da je za oklop korišten rebrasti lim 5/6 mm debljine. Po dovršetku na vozilo je s prednje strane napisano POLICIJA TOP PAKRAC 2, a na bočnim stranama POLICIJA PAKRAC. Fotografija uništenog vozila objavljena je u knjizi L. Poggialija 'Guerra in Croazia'.

This vehicle became known for the tragic death of 11 ZNG soldiers near Kusionje not far from Pakrac. It is not known when exactly the vehicle was finished. The chassis is certainly a TAM-260 T26 6x4 truck, and it seems that ribbed 5/6 mm steel plates were used for the outer skirting. After being delivered the inscriptions 'Policija Top Pakrac 2' on the front and 'Policija Pakrac' on the sides were added. A photo of the destroyed vehicle was published in L. Poggiali's book 'Guerra in Croazia'.



165 uz dopuštenje Radija 101

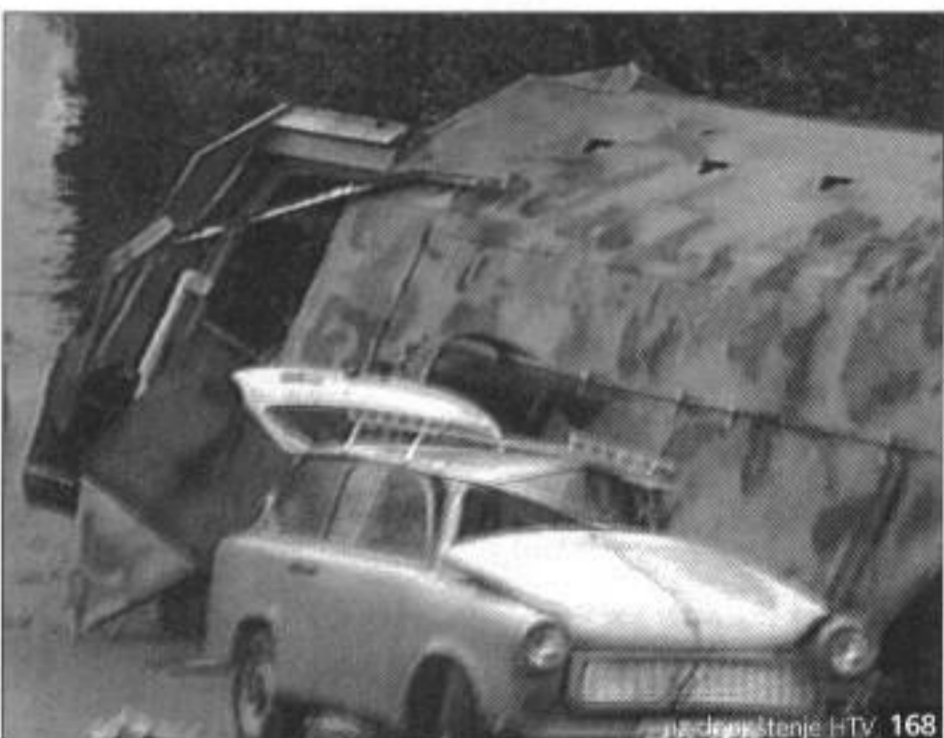


VHS snimci RADIJA 101

uz dopuštenje Radija 101 166



167 uz dopuštenje HTV



uz dopuštenje HTV 168

MAMUT-2

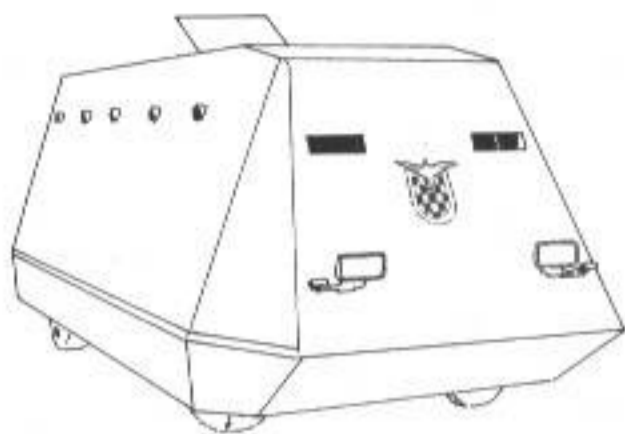
Slika koja dokazuje postojanje ovog oklopnjaka (slika 169) slikana je u Dalmaciji u zaleđu Zadra ali neobična sličnost povezuje to vozilo sa 'Mamutom-1'. Naime, osim bočnih oklopnih strana ispod kosog stražnjeg oklopnog izlaza, sve drugo je gotovo identično sa spomenutim vozilom. Porijeklo i sudbina vozila nisu poznati.

A photo which confirms the existence of this vehicle (photo 169) was taken in the Dalmatian region not far from Zadar and the marked similarity to the 'Mammoth-1' design is evident. Except for the flat skirts under the rear armored exits all other parts on both vehicles are very similar. Both the manufacturer and the fate of the vehicle are unknown.



David Spencer collection 169

ČAZMATRANS



Ovo vozilo neobičnog izgleda je izrađeno u radionici Čazmatransa (transportnog poduzeća iz Čazme) rujna 1991. Osnova je bio kamion tipa Zastava 640 AN, a oklopljen je senvič oklopom s limom 5 mm izvana i 3 mm iznutra. Razmak između limova (4 cm) ispunjen je pijeskom. Ukupna težina vozila je bila 6,8 tona. Pripadnicima 2. bojne 105. brigade vozilo je predano početkom listopada 1991. Sačuvano je u zbirci Vojnog muzeja. Slike prikazuju vozilo prilikom mimohoda u Zagrebu rujna 2001. povodom 10. godišnjice početka Domovinskog rata. Na slikama je vozilo već renovirano i svježe pobožano, a na sebi ima reklame za mimohod i prateću izložbu.

This vehicle of unusual 'cone-shape' design was built in the Čazmatrans (a transport company in Čazma) workshop in September 1991. A Zastava 640 AN 4x2 truck chassis was used. The sandwich armor used for protection consisted of 5 mm steel plates, 40 mm of sand and 3 mm inner steel plates. Total weight was 6,8 tons. It was handed over to the 2nd Battalion of the 105th Brigade in early October 1991. The vehicle is preserved in Zagreb at the Military Museum. The photos show the vehicle during a parade commemorating the 10th anniversary of the beginning of the war in Zagreb in September 2001. For this occasion the vehicle was freshly painted and refurbished and there are some posters on the vehicle for the accompanying exhibition.

170 Vojislav Jereb



Boris Gregurić 171



172 Miljenko Frčko



Miljenko Frčko 173

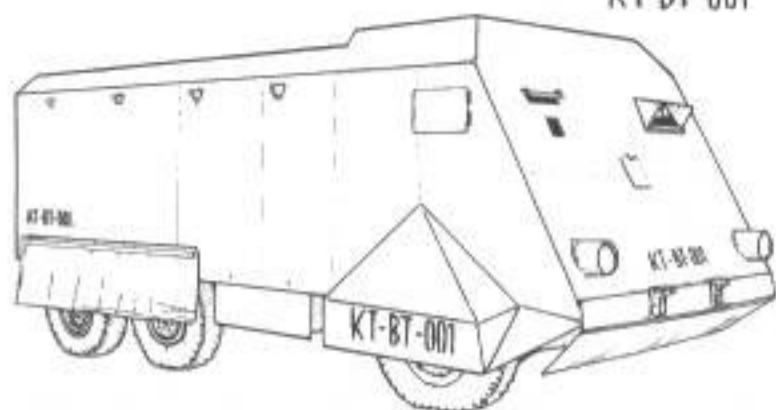


174 Miljenko Frčko



Miljenko Frčko 175

KT-BT 001



KT-BT serija

Zamisao za izradu prvog vozila, koja će kasnije biti poznata pod akronimom KT-BT serija, je nastala nakon što su radnici kutinskog *Enikona* gledali na TV prilog o isporuci prvog oklopnjaka *Dalmacije Dugi Rat* 11. srpnja 1991. Odmah su se uhvatili posla te su odlučili oklopiti prvo vozilo koje su smatrali prikladnim. Bio je to jedan vojni DAF YA-328 s pogonom na svih 6 kotača, kupljen u Holandiji. Nakon priprema uspjeli su ga oklopiti u rekordnih 72 sata. Na njega su montirali oklop od jednostrukih limenih ploča i već je 5. kolovoza krenuo na probnu vožnju do onda još slobodnog Jasenovca (crtež 176). Vozilo je dobilo oznaku KT-BT-001, KT prema Kutini, BT prema Boži Tataroviću, idejnom tvorcu vozila, a 001 jer je to bilo prvo vozilo. Nakon toga je odmah krenuo za Kostajnicu jer je tamo bilo najpotrebnije. Po povratku na vozilo je ugrađen krov od limova jer se pokazalo vrlo opasnim prevoziti ljudstvo u oklopnjaku bez krova u kanjonu Une. Po dovršetku prvog, na vojnom otpadu JNA u Podsuseđu kod Zagreba kupili su 5 kamiona predstavivši se kao šumski radnici iz Bosanske Krupe. Od tih kamiona tri su bila u voznom stanju, a dva su morali tegliti. Tako su formirali kolonu koja je bila pod policijskom pratnjom sa upaljenim rotacionim svjetlima, na što su se snage JNA na Plesu uzbunile uvjere da se radi o nekom napadu, te su poslale helikopter da to osmotri. Pratio ih je sve do Ivanić-Grada. Tako je ispalo da je JNA pratila konvoj koji je kupio stare JNA kamione da ih prepravi u oklopnjake koji će tući tu istu JNA! Već 12. kolovoza 1991. počela je izrada oklopa za KrAZ-a koji će postati KT-BT-002 na prostorima 'Enikona' blizu Petrokemijskog kompleksa. Po dovršetku je taj oklopnjak poslan za Vukovar i kasnije je još jednom išao do Vukovara. Borbena upotreba tog vozila je nalagala bolju oklopnju zaštitu od jednostrukih limenih ploča, pa je već na KT-BT-003 gotovo cijelo vozilo zaštićeno i dodatnom mrežom na cijevnim nosačima, koja je služila za aktiviranje tromblonskih granata. KT-BT-004 i KT-BT-005 su imali najrazvijeniju zaštitu jer se već koristio sendvič oklop sa čak 10-12 cm betona između limova, kao i zaštita od žičane mreže. Već teški kamioni (7-8 tona težina praznih kamiona) imali su ovako oklopljeni preko 20 tona! Na koncu su napravljeni i elementi (oklop) za još dva kamiona (KT-BT-006 i KT-BT-007), koji su poslani u okruženi Pakrac, a isporučeni su kamionima sporednim putevima. Pretpostavlja se da su složeni i korišteni na pakračkom bojištu. Sudbina nekih vozila je poznata: i 'jedinica' i 'trojka' se još nalaze u Kutini blizu Petrokemije, 'dvojka' je dugo bila ispod nadvožnjaka autoceste kod Brodica ali je nedavno razrezana, dok su 'četvorka' i 'petica' dugo bile smještene na parking u Domobranske pukovnije u Novoj Gradišci. Krajnja sudbina tih, kao i 'pakračkih' KT-BT-ejaca nije poznata.

176 Vojislav Jereb



177 Nenad Šetina



178 Nenad Šetina



Nenad Šetina 179



180 Nenad Šetina

The workers at the Enikon company of Kutina came up with the idea of building their own armored vehicle after watching the delivery of the first vehicle made by the Dalmacija company of Dugi Rat on TV at the beginning of July 1991 (see HOT vehicles). This was the origin of the KT-BT series. The workers set about the problem immediately and decided to armor an appropriate vehicle as soon as possible. The chassis chosen was an ex Dutch military DAF YA-328 6x6 truck, one of many vehicles purchased around Europe from military surplus dealers. After thorough preparations were made, the truck was armored in 72 hours. Single steel plates were used for armor protection and on August 5 the vehicle was taken for a test drive to Jasenovac, then still in Croatian hands (drawing 176). The vehicle was given the designation KT-BT-001, KT stood for Kutina, BT stood for the principle designer (Božo Tatarović) while '001' was the series number. After the test drive the vehicle was sent to Kostajnica where it was most urgently needed. After the initial experience it returned to Kutina where a steel plate roof was added to the vehicle. It had been discovered to be too vulnerable to fire from higher elevations in the Una river canyon. Posing as Bosnian lumber cutters, the group went to Zagreb a few days later and purchased five surplus ex JNA military trucks from the Podsused junk yard. Three of the vehicles could be driven under their own power, while the other two had to be towed away. As the trucks had to be escorted by the police with the flashing blue lights, it nearly caused an incident. The JNA headquarters initially thought that the 'military convoy' was some type of attack, and they put their forces on alert. The JNA sent a helicopter to observe the column and finally a comic situation developed in which the JNA provided a military escort to the convoy of ex JNA trucks which had been purchased to fight the same JNA forces! The JNA escorted the convoy to Ivančić-Grad. As early as August 12 work began on armoring the first of the KrAZ trucks in the 'Enikon' area near the huge Kutina Petrochemical plant. This truck was given the designation KT-BT-002 and was immediately sent in a column to Vukovar and back. It then made a second trip to the same destination. The combat experience of both journeys indicated that more armor protection needed to be added and the third vehicle (another KrAZ-255) was equipped with stand off wire mesh to resist anti tank grenades. The next vehicles (KT-BT-004 and KT-BT-005) received even more sophisticated protection from sandwich armour with 10-12 cm of concrete (!) and full wire mesh protection. The already heavy trucks (7-8 tons empty) weighed around 20 tons when completed. Armor plates for the final two trucks of the series, KT-BT-006 and KT-BT-007, were delivered in kit form to units in Pakrac. As Pakrac was under siege, the armor had to be delivered over secondary roads. They were allegedly assembled and used in the Pakrac area.

The fate of some of the vehicles is known – KT-BT-001 is still parked near the Petrochemical plant together with KT-BT-003. Number 'two' was parked for a long time under a highway bridge near Brodica but was later cut for scrap, while '004' and '005' were parked at the Nova Gradiška regimental barracks. The fate of the vehicles allegedly assembled in Pakrac is not known.



via Borivoje Radojčić 181



KT-BT-005
Ivan Ožanić via Božo Tatarović 182



183 Nenad Šetina



Nenad Šetina 184



Nenad Šetina 185



Nenad Šetina 186



187 Nenad Šetina

Ostaci trećeg oklopnjaka iz KT-BT serije (slika gore) slikani 2001. godine u Kutini blizu Petrokemije svjedoče o improviziranom oklopu korištenom na tom ogromnom kamionu. Mnogi dijelovi oklopa nažalost već nedostaju (limovi sa prednjih i stražnjih kotača, vrata vozača, lim ispred hladnjaka motora) ali bez obzira na to možemo uživati u detaljima vozila. Isto tako su na prednjem dijelu 'petice' (KT-BT-005, slika dolje) i 'četvorke' iza nje vidljivi detalji, posebno zaštitnih mreža protiv tromblona. Slikani su neposredno pred dovršenje, vjerojatno krajem kolovoza 1991.

Remains of the third KT-BT series truck (above), taken in 2001 at Kutina near the petrochemical plant. Notice the large appearance of this truck. Although many parts are missing (plates above the wheels, doors, armor plate in front of the engine grill) the basic details of this vehicle can be appreciated. The same is true of the photo below, in which the fifth vehicle (KT-BT-005) and the fourth behind it also reveal much detail especially of the wire mesh protection. The photograph was taken during delivery of the vehicles, most likely in late August 1991.



188 Ivan Ožanić via Božo Tatarović



via Ivan Pavlović 189

(gore) Prvi dovršeni oklopnjak za snage ZNG-a slikan 11. srpnja 1991. u krugu tvornice *Dalmacija* u Dugom Ratu bio je pobojan u policijsku plavu boju s bijelom ukrasnom crtom. Obratiti pažnju na neobične otvore i stepenice na zadnjem dijelu vozila za ulaz i izlaz posade. Na taj način se pokušalo maksimalno zaštititi borce prilikom te osjetljive faze u borbi, kada gardisti ne mogu koristiti oružje za obranu.

(above) The first armored vehicle finished for ZNG use was photographed on July 11, 1991 at the *Dalmacija* plant in Dugi Rat. The vehicle is painted in police livery, blue with white trim. Note the unusual exit hatches. It was done this way to protect the soldiers as much possible while entering or exiting the vehicle under fire.

(dolje) Slikan gotovo na identičnom mjestu kao i vozilo na gornjoj slici, drugi dovršeni oklopnjak iz *Dalmacije* (HOT-011) u trenutku blagoslivljanja šampanjcem, vjerojatno 17. kolovoza 1991., neposredno prije isporuke snagama 4. 'A' brigade. Na slici se jasno vidi kupola za mitraljez kojeg prvi oklopnjak nije imao.

(below) Pictured almost at the same place as the the previous photo, the second vehicle finished at the *Dalmacija* plant was HOT-011 seen here being baptised with champagne, most probably on August 17, 1991, moments before being delivered to the 4th Brigade. In the photo the machinegun turret is clearly visible, an feature which the first vehicle lacked.



via Ivan Pavlović 190



191 Dražen Bulat

(gore) Slikan pored mjesta Donji Rujani u Bosni i Hercegovini prosinca 1994., oklopnjak TM15-HT085 pokazuje u potpunosti svoju moćnu pojavu. S izvrsno pogodnom četverbojnom maskirnom shemom sasvim se uklapa u okoliš, pa susret s takvim vozilom, bez obzira na sve njegove nedostatke, sigurno ne može ostaviti čovjeka ravnodušnim.

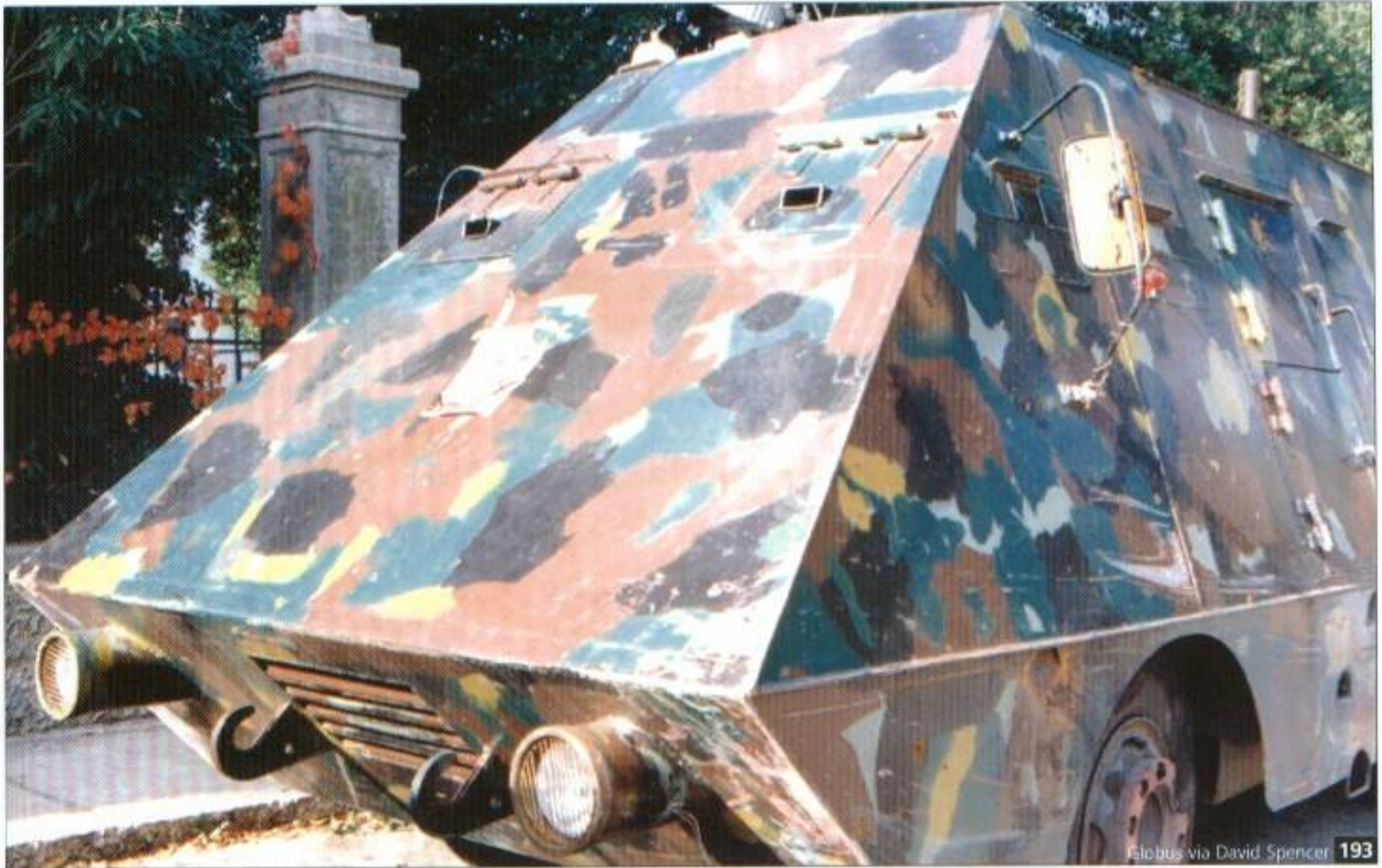
(above) Photographed near Donji Rujani in Bosnia-Herzegovina in December 1994, TM15-HT085 shows its mighty appearance. With a very successful camouflage pattern it blends in perfectly with the landscape and encountering such a vehicle, despite its shortcomings, cannot help but make an impression on the ordinary soldier.

(dolje) Ljeti 2001. godine u vojarni u Kninu još je uvijek stajao napušten Brodosplitov oklopnjak SC015-HT082 napravljen na Scammellovom kamionu. Vozilo je nekada bilo u sastavu splitske 114. brigade, a nakon zarobljavanja koristile su ga i srpske paravojne snage. Nakon 'Oluje' je pronađen blizu Knina.

(below) Withdrawn from service and photographed during the Summer of 2001, SC015-HT082 lies neglected at the Knin barracks. The vehicle was built in the Brodosplit shipyard on the chassis of a Scammell truck and was used by the 114th Brigade. After being captured it was used by the Serbs but was later recovered intact near Knin during Operation 'Oluja'.



192 Radovan Živžvić



Flobus via David Spencer 193



194 via Milenko Kotarac

Izvrstan pogled na prednji dio oklopnjaka Majsan na kojem je jasno vidljiv utjecaj Brodosplitove TM serije oklopnjaka (slika 193). Okretanje prednjih kotača prilikom pokrivanja oklopom je uvijek predstavljalo velik problem što je na ovom oklopnjaku riješeno tako da je kotač ostavljen neoklopljen. Bez obzira na to, gume su punjene pjenom koja sprečava ispuhavanje prilikom pogotka. Svojim futurističkim izgledom i bojanjem, Brodosplitov oklopni vlak kao da je pripremljen za neki SF film, a ne za ratovanje (slike 194 i 195). Posebno krasne i čiste linije ima oklop lokomotive 'Kenedijevke'.

Excellent view of the front of the armored vehicle named Majsan (photo 193). The influence of the Brodosplit TM series of vehicles is clearly evident. How to protect the front tyres and still be able to steer was a permanent problem. In this case it was solved by leaving the front tyres exposed and filling them with antiballistic foam.

With its futuristic appearance Brodosplit's armored train looks like it has been built for a role in a science fiction movie, not for war (photos 194 and 195). The armor of the 'Kennedy' locomotive has especially neat and beautiful lines.



via Milenko Kotarac 195



196 Egon Hreljanović

Oklopnjak BiB Mk.II slikan na dan svog dovršenja neposredno prije isporuke snagama ZNG-a 18.11.1991. na Kukuljanovu kod Rijeke. Četverbojna maskirna shema je ukrašena trobojnim imenom (natpisom na boku) Sv. Fran kao i metalnim grbom RH te nezaobilaznim zastavicama za uvećavanje svečanosti. Obratiti pažnju na ovalne 'vizire' (oklopna stakla) na prednjem dijelu, porijeklom sa starih američkih tenkova (vjerojatno s kupola zapovjednika na tenkovima M-47 Patton).

The BiB Mk.II armored truck photographed on the day of its delivery to the ZNG on 18.11.1991 at Kukuljanovo near Rijeka. The four color camouflage pattern has been decorated with three color inscription of the vehicle's name (Sv. Fran), a nice metal Croatian shield and some national flags to make the ceremony more solemn. Note the oval armored glass pieces on the front. They originally belonged to some scrapped American tanks (probably M-47 Patton commander's cupolas)



197 Egon Hreljanović



Vojislav Jereb collection 198

(gore) Pogled na oklopnjaka sa natpisom 'Zeus' na prednjoj ploči koji će biti službeno kršten u 'Sv. Vid' vjerojatno dan ili dva kasnije. Slikan na Kukuljanovu pokraj Rijeke u garaži Rijeka-Ceste, izvrsno se dobiva dojam veličine vozila, vjerojatno oklopljenog 'tamiča' (TAM-80).

(above) A view of a hastily armored truck with the inscription 'Zeus' on the front plate, christened 'Sv. Vid' only a day or two later. Photographed at the Rijeka-Ceste garage in Kukuljanovo near Rijeka, this photo provides a clear indication of the size of the vehicle which is probably a small TAM-80.

(dolje) Četvrt bočni pogled na Hrvatinu, proizvod riječkog 3. maja, ispred Pomorskog i povijesnog muzeja u Rijeci 1995. Iako je maskirna shema popravljana, vjerojatno radi rđanja, sa smeđe-crvenim prajmerom, u osnovi je ostala ista kakva je bila 1991. prilikom primopredaje vozila.

(below) A quarter left view of the armored truck Hrvatina made by the 3. maj shipyard in Rijeka. The photo was taken in front of the Naval and Historical Museum of Rijeka in 1995 and apart from small brown-red primer patches probably because of rust, the camouflage pattern remains generally the original one.



Vojislav Jereb 199



200 Vojislav Jerab

Straško 131. brigade pred uređenje za Vojni muzej (slika 200); posljednji Straško slikan u Specijalnoj policiji na Kukuljanovu kod Rijeke (slika 201), prvi Straško na položaju u Lici kod Glibodola koncem 1991. u sastavu 111. brigade (slika 202) te Straško 3. bojne 110. brigade patrolira ulicama Karlovca pred Novu godinu 1992. (slika 203).



vojislav jerab collection 201



202 Marijan Božar



Duško Halvarić 203

A 'Straško' armored tractor of the 131st Brigade just before being refurbished for the Military Museum (photo 200), the last converted tractor of the Special police unit in Kukuljanovo near Rijeka (photo 201). The first converted tractor belonging to the 111th Brigade on the Lika front near Glibodol in late 1991 (photo 202), and a tractor of the 3rd Battalion of the 110th Brigade patrolling Karlovac on New Year's Eve, 1992 (photo 203).



Dvije fotografije kamiona preuređenih u tipične improvizirane oklopnjake. Gore vidimo Unimoga 5404 njemačke konstrukcije ali francuske proizvodnje kojeg je sisački Janaf pretvorio u oklopljenog transportera, Radi se o njihovom drugom oklopljenom točkašu. Još je bez kupole i ima policijske tablice s crvenom zvijezdom! Dolje je kratki TAM-170 kiper oklopljen potpuno zavarenim oklopom od jednostrukih limova. Slikan je na vojnom otpadu u Požegi.

Two photos of trucks transformed into armored vehicles. Above is an Unimog 5404 of German design but French production which was armored by Janaf in Sisak. This is their second wheeled vehicle converted into an armored transport prior to modification by adding a machinegun turret. It still carries Police registration plates with a red star! Below is a short wheel base TAM-170 dump truck with a completely welded armour skirt made of single sheet steel plates. It was photographed in the Požega dump yard.





206 *Đorđević Čimović*

Dva Janafova oklopnjaka slikana poslije rata. Na gornjoj slici je prvi oklopnjak, napušten bez motora ispred *Graditelja* u Sisku modificiran naknadnom ugradnjom kupole s mitraljezom. Maskirna shema na kupoli je radi toga nešto drugačija.

Na donjoj je slici vozilo sa oznakom ZNG P-14 sačuvano u originalnoj maskirnoj shemi ispred upravne zgrade Janafa u Crncu.

Photographs taken after the war of two tracked armored vehicles. The above photo shows the very first such vehicle built, photographed abandoned after the engine was removed in front of the Graditelj factory in Sisak. Note that it has been modified by installing a machinegun turret which carries a slightly different camouflage pattern.

The vehicle below carrying the inscription ZNG P-14 is preserved in its original paint pattern in front of the Janaf main building at Crnac.



207 *Predrag Jel*



fotodokumentacija HVG 208

(gore) Industrogradnja oklopnjak Tomislav snimljen nakon Oluje 1995. u sastavu 9. gardijske brigade. Iako na sebi ima oznake za brzu identifikaciju (bijeće točke i uzdužne crte) maskirna shema vozila je još uvijek ona originalna iz 1991. godine.

(above) Tomislav, made by Industrogradnja photographed after Operation Oluja (Storm) in 1995 while part of the 9th Guards Brigade. Although it received quick identification marks (white dots and stripe) the camouflage pattern is still the original 1991 paint.

Nekad (slika 209) i sada (slika 210) izgled popularne Berte III sa sisačkog ratišta.

Then (photo 209) and now (photo 210) how the once popular Berta III looked on the Sisak front.



iz dopisnice HTV 209



210



211 Damir Samardžić

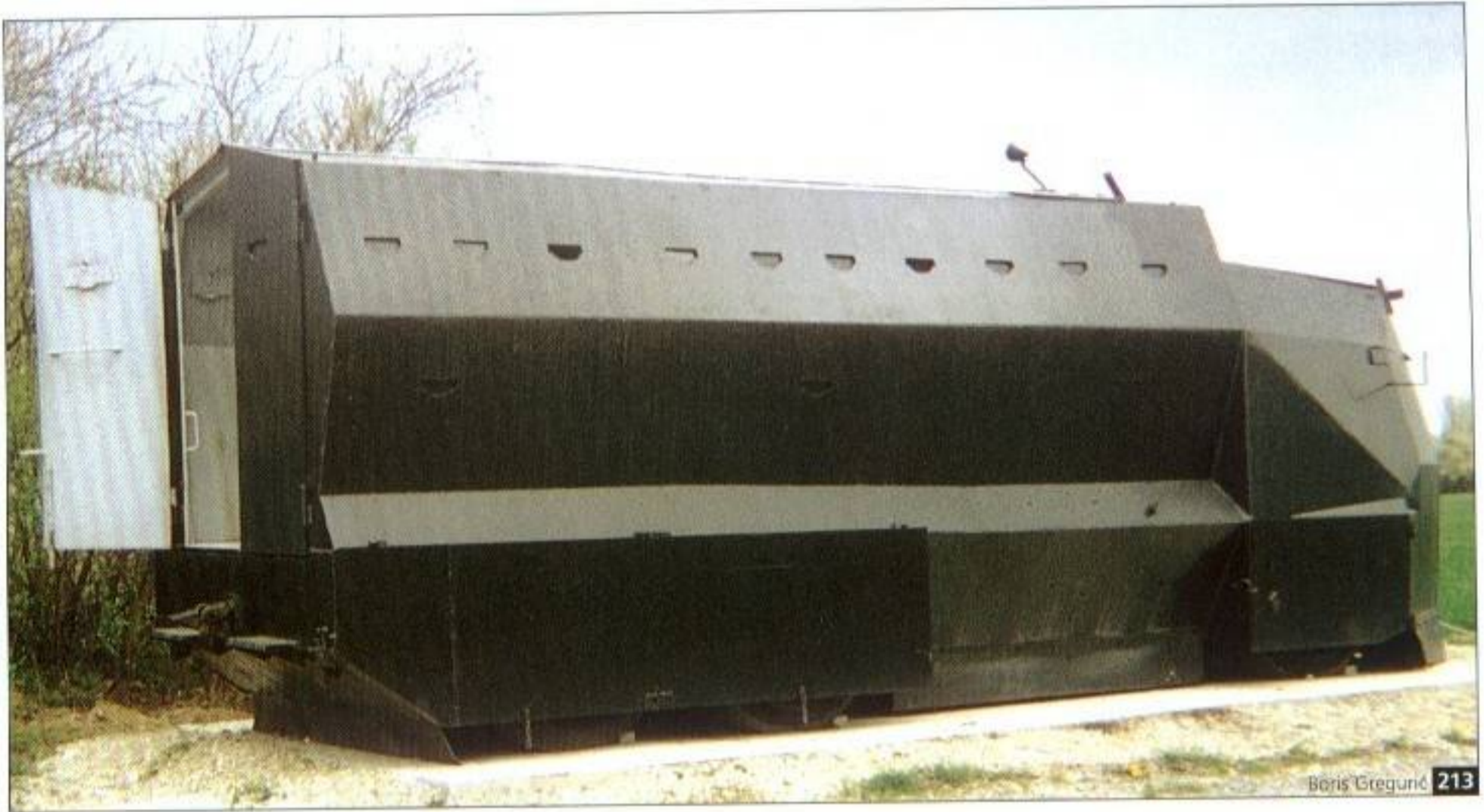
(gore) Ovaj TAZ-ov oklopni sanitetski autobus slikan je na vojnom otpadu u Zadru 2000. godine. Nije poznato u sastavu koje je brigade bio. Zanimljivo je da je zadržao originalnu maskirnu shemu. Pored skinutih vratiju vozača jasno se vidi sendvič oklop (dupli limovi) koji je korišten kao zaštita.
 (above) Photographed at a military junk yard in 2000, this armored ambulance bus retained its original camouflage pattern. It is not known in which brigade it was serving. Note the sandwich type armour with double steel plates visible where the driver's door was removed.

(dolje) Jedan od dva samohodna minobacača, koji su razvijeni iz 'Kiseloga', slikan prilikom mimohoda povodom 10-godišnjice početka rata u Zagrebu rujna 2001. godine. Vozilo je u sastavu zbirke Vojnog muzeja uređeno i renovirano te se održava u voznom stanju.

(below) One of two self propelled mortar vehicles developed from the 'Kiseli' prototype photographed during the September 2001 parade in Zagreb to celebrate the 10th anniversary of the beginning of the war. The vehicle is part of the Military Museum collection and is kept in driving condition.



212 Boris Gregurić



Boris Gregurć 213

(gore) Crno čudovište iz Hidroelektrinih pogona izloženo u Savici kod Zagreba. Navodno je ovo vozilo oduvijek bilo obojano crnom bojom, a jedini natpis na njemu, pored državnog grba, je bilo bijelo slovo 'Z' nepoznatog značenja.

(above) A black monster from the Hidroelektra plant displayed at Savica near Zagreb. It is probable the vehicle was painted black during the whole war period and the only inscription, besides the national shield symbol, was a white 'Z' of unknown meaning.

(dolje) Oklopnjak nepoznatog porijekla slikan listopada 1991. u Bjelovaru. Osim tipa podvozja o njemu ništa drugo nije poznato.

(below) A wheeled armored vehicle of unknown origin photographed at Bjelovar in October 1991. Except for the chassis everything else remains a mystery.



Boris Gregurć 214



215 Damiir Mirkalaus

Slikan na svom posljednjem počivalištu, prvi oklopnjak iz kutinske KT-BT serije (gore) pokazuje svoje oblike. Taj manji oklopnjak na šasiji holandskog vojnog DAF-a 6x6 je uglavnom zadržao sve elemente (osim poklopaca stražnjih kotača) koje je originalno imao. Četvrti i peti oklopnjak iz te serije prikazani na dan primopredaje snagama ZNG (dolje).

Photographed at one of its last parking places the first armored truck of the KT-BT series from Kutina shows its shape (above). The small vehicle was a modified Dutch military DAF 6x6 truck and luckily retains most of its armour (except the rear wheels covers) as it was originally built. The fourth and fifth vehicle of the series photographed on the day they were delivered to the ZNG (below).



216 van Gennep, Božo, Todorov



Dražen Bašić 217

(gore) Oklopnjak Boban napravljen u vinkovačkom Graditelju cijeli je svoj borbeni vijek proveo u policijsko plavoj boji. Takav se i danas nalazi ispred zgrade PU Vinkovačke.

(above) The Boban armored truck spent all its combat life in Police blue livery and was retired in this scheme in front of the Vinkovci Central Police Station.

(dolje) Oklopljena VW buga kakva je videna u Njivicama na otoku Krku neposredno po završetku sukoba 1991.-92. Na slici se dobro vide detalji oklopa motora otpozadi.

(below) The armored VW bug as it was seen soon after the 1991-92 conflict on the Krk island where it had been withdrawn. The rear armor protecting the motor can be clearly seen.



Vojislav Jerić 218



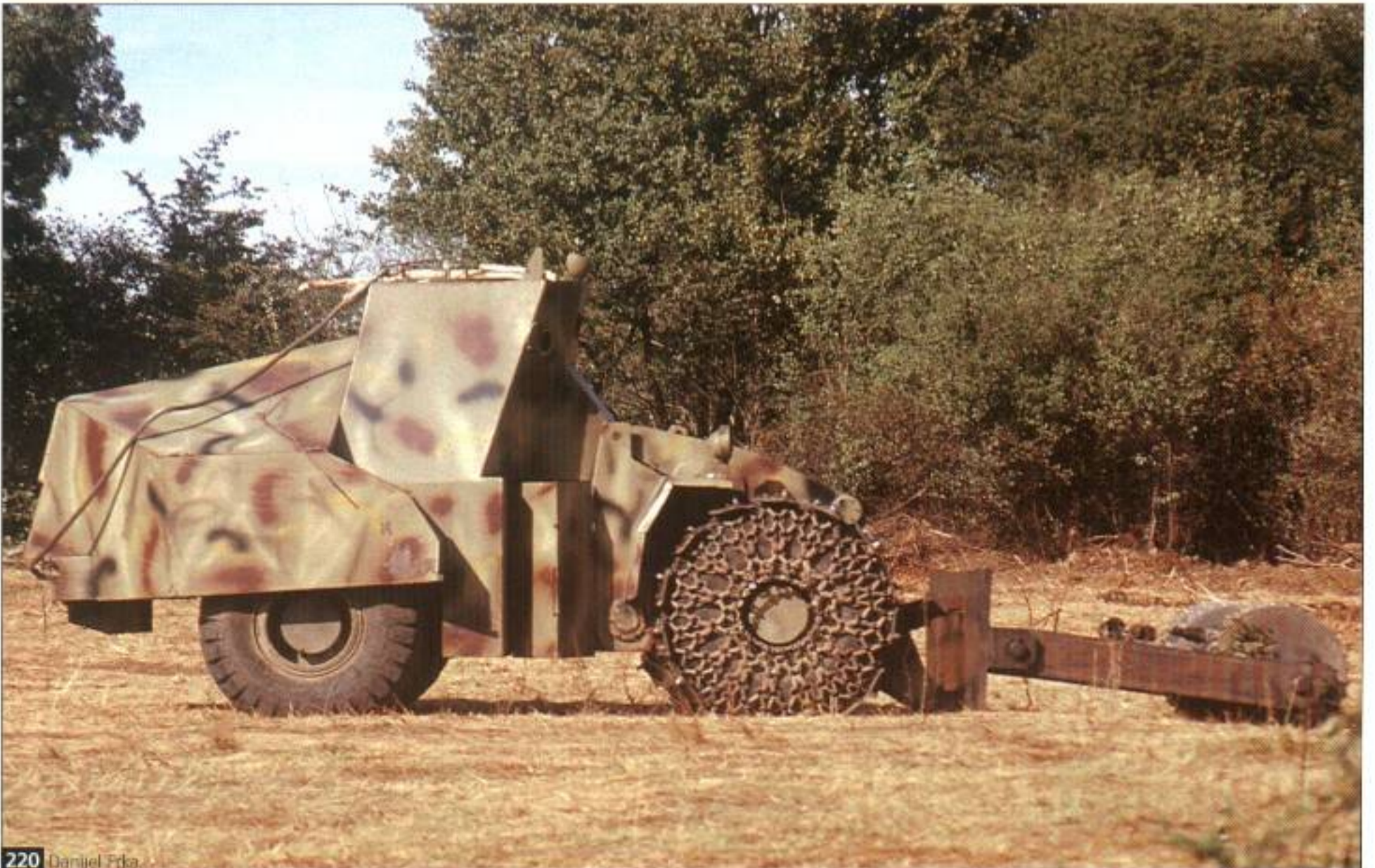
219 Dražen Bulat

Pogled na desni bok oklopnjaka za kojeg se pretpostavlja da je oklopljeni kamion tipa DAF YA-328. Neobičnost je postojanje dvije kupole, od kojih je jedna fiksna (za osmatranje) a druga okretna (za korištenje oružja, vjerojatno mitraljeza). Vozilo je slikano poslije rata nedaleko Vinkovaca.

A right side view of the of the vehicle which is presumed to be built on the chassis of a DAF YA-328 truck. Note the unusual two-turret layout, of which the front is a fixed turret presumed to be for observation while the rear is a rotating machinegun turret. The vehicle was photographed near Vinkovci shortly after the 1991/92 war.

(dolje) Tipološka slika oklopljenog ULT-a preuređenog u čistača mina. Prema maskirnoj shemi izgleda da se radi o 'Gladnom Juri'. Slikan je krajem 1992. na Plesu gdje je dugo obavljao poslove razminiranja.

(below) A typical photo of the armored ULT front-end loader converted into a mine clearing vehicle. According to the camouflage pattern it seems it is the vehicle 'Gladni Jura' (Hungry Yuri). It was photographed in late 1992 near the Pleso airport where it was used for a long period in the mine-clearing role.



220 Danijel Fida



Dario Viljaric 221

Dva tipična predstavnika oklopljenih improviziranih čistača mina iz perioda neposredno po završetku sukoba početkom 1992. Gore je mlatilica na šasiji nekadašnjeg artiljerijskog tegljača GJ-800 izvučenog iz otpada i preuređenog u pulskom Uljaniku, slikana u zaleđu Zadra 1993. Dolje je minočistač sa valjcima (kotačima) neposredno po dovršenju, vjerojatno u radioni sisačkog Janafa. Šasija je također artiljerijski tegljač, ali novijeg sovjetskog tipa ATS-59.

Two typical armored mine clearing vehicles from the immediate post 1991 war period. Above is a flail on a tracked GJ-800 artillery tractor chassis recovered from a dump and rebuilt in the Uljanik shipyard in Pula. The photo was taken in the Zadar ravine in 1993. Below is a mine clearing vehicle with heavy wheels immediately after its completion, probably in the JANAF workshops at Sisak. The chassis is a tracked artillery tractor too, but of a more modern Soviet ATS-59 type.



via Vladimir Rogože 222



223 Nedeljko Pinezic

Dva tipična primjera civilnih kamiona pretvorenih u 'topovnjače'. Gore je polu-oklopljeni 'tamić' (TAM-80) sa duplom kabinom, koji je nekad pripadao poduzeću Most kopno - otok Krk, korišten u Lici. Oko teretnog prostora je postavljen lim radi zaštite (još u žutoj boji prajmera), a naoružanje sačinjava teški mitraljez Browning 12,7 mm. Dolje je potpuno neoklopljeni kamiončić Mercedes 508D s dvostrukim teškim mitraljezom KPV 14,5 mm na slavonskom bojištu.

Two typical civilian trucks converted into terrible Gun Trucks. Above is a semi-armored small TAM-80 truck with a long cab, once used by the Coast to Island Krk Company, here on the Lika front. The cargo box is armored with steel plates in primer paint and the armament consist of a .50 caliber Browning heavy machine gun. Below is a small unarmored Mercedes 508D 4x2 truck with a twin KPV 14,5 mm machine gun mount on the Slavonian front.

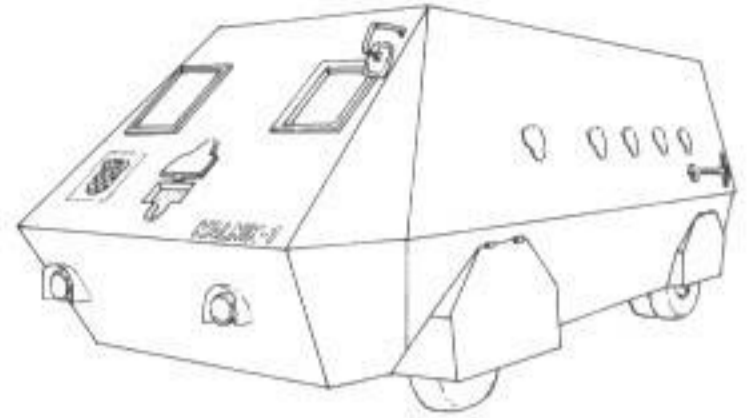


224 Nenad Setina

KALNIK-1

Vozilo sa nazivom 'Kalnik-1' je izrađeno u tvornici Tvik u Križevcima. Neobičnost na njemu su veliki prozori za vozača i suvozača sa oklopnim staklima, kao i otvor na prednjoj ploči istog oblika kao i puškarnice sa strane. Taj otvor je vjerojatno samo servisni (za sajlu vitla). Postoje fotografije vozila iz rata gdje na prednjoj strani ima i veliku naljepnicu s hrvatskim grbom. Slika 226 je slikana u Dugom Selu, u vojarni 2. gardijske brigade 1992. godine.

The vehicle named 'Kalnik-1' was made at the Tvik plant at Križevci. What is most unusual about the vehicle are the large windows for the driver and co-driver, much larger than expected for an armored car. Another unusual feature is the odd shape of the hatch on the front armor plate, similar to firing port covers. It is presumed this hatch was used for the winch cable. There are photos of the vehicle with a large Croatian shield sticker on the front plate. Photo 226 was taken in 1992 at the 2nd Guards Brigade barracks at Dugo Selo near Zagreb.



Vojislav Jereb 225



Gordan Laušić 226

NOSOROG

Usprikoš imenu i ukupnoj težini od gotovo 27 tona, 'Nosorog' je izgledom jedan od najelegantnijih improviziranih oklopnjaka. Izrađen je u tvornici Našice-cement gdje su uzeli jedan kamion Tatra (vjerojatno tipa 138) iz rudokopa i početkom kolovoza 1991. ga oklopili za potrebe patroliranja i transporta. Taj posao je trajao 17 dana, a kako nisu imali iskustva stalno su nešto eksperimentirali i improvizirali. Koristili su sendvič oklop od limova 20 mm između kojih je bio prostor koji se mogao napuniti pijeskom. Kupola je bila okretna sa mehanizmom na biciklističke pedale i u nju je montiran mitraljez 'Šarac' M-53. Po isprobavanju je dodan protuteg na zadnjem dijelu. Vozilo je koristio rezervni sastav Policije Orahovice do kraja 1991. nakon čega ga koristi 132. brigada do studenog 1992. Danas se nalazi u zbirci Vojnog muzeja u Zagrebu.

Despite its name (Rhinoceros) and overall weight of 27 tons this vehicle is one of the most elegant looking improvised armored transports of the war for liberation of Croatia. It was built in the Našice-Cement plant where they chose a



Boris Gregurić 228



227 Boris Gregurić

Tatra-138 6x6 truck for the chassis and armored it at the beginning of August 1991. It was intended for patrolling and transport duties. The work took 17 days and as the workers were inexperienced in this kind of work

much was improvisation and experimentation. A sandwich type armor was used with 20 mm steel plates and the area between the plates filled with sand. The turret had a turning mechanism using bicycle pedals. Armament was a M-53 7.9 mm machinegun. After testing a counterweight was added to the rear. The vehicle was used by the Reserve Police force of Orahovica until December 1991 when it was handed over to the 132th Brigade which used it until November 1992. It is preserved in the Military Museum.

RUŽA HRVATSKA

Radi vrlo uspješnih i često objavljivanih fotografija, 'Ruža Hrvatska' je vjerojatno jedan od najpoznatijih i najpopularnijih oklopnjaka. Izrađen je u Varteksu i ugrađeni oklop je uglavnom pratio konture kamiona 'njuškaša' koji je služio kao osnova. Osim korištenja u Varaždinu prilikom osvajanja JNA vojarni, daljnje korištenje nije poznato. Neki izvori govore da je vozilo bilo zarobljeno i da je pronađeno napušteno na području Pounja. Na slici 229 vozilo je prikazano u radioni prilikom dovršenja, dok slike 230 i 231 pokazuju vozilo prilikom promotivne vožnje ulicama Varaždina.

Because of the often published high quality photos, 'Ruža Hrvatska' (Croatian Rose) armored truck was one of the best known and



Krešo Đurić via Josip Novak 229



230 Krešo Đurić via Josip Novak

popular armored trucks. It was built at the Varteks plant and the shape of the armor very closely follows the shape of the truck from which it was converted. Except for being used during the 'Battle of the Barracks' siege of JNA barracks during September 1991, nothing is known of its participation in other fighting. Some sources suggest it was captured by the Serbs and later found abandoned in the Una river area. Photo 229 shows the vehicle in the workshop being finished, while photos 230 and 231 show the vehicle driving through the streets of Varaždin on the day it was finished.



Krešo Đurić via Josip Novak 231

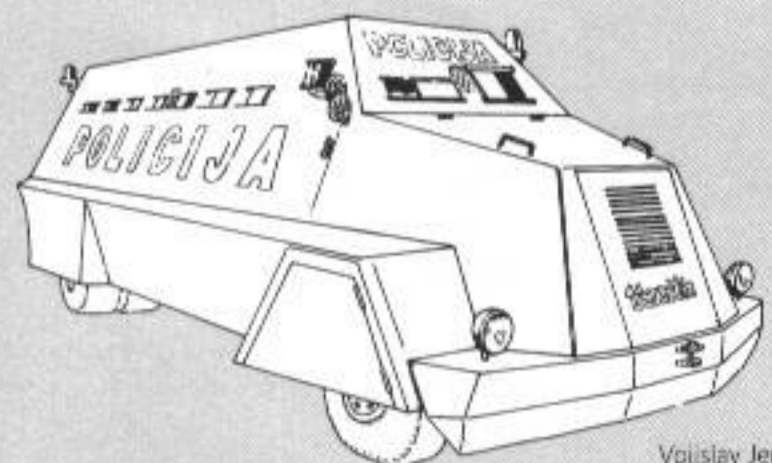
POLICIJA VARAŽDIN

Zanimljivi oklopnjak na osnovi vjerojatno civilnog kamiona 4x2 izrađen je u Varaždinu, najvjerojatnije u pogonima Vindije (slika 232 i crtež 233). S ogromnim natpisima POLICIJA viđen je u Varaždinu tokom rujna 1991., prilikom borbi za vojarnu JNA kao i zarobljavanja 32. korpusa JNA. Sudbina oklopnjaka nije poznata.

A very interesting armored vehicle most probably made on a civilian 4x2 truck chassis (photo 232 and drawing 233). Judging by the Varaždin inscription on the front plate it seems the vehicle was built at the Vindija food plant. With its large POLICIJA inscriptions it was seen during the 'Battle of the Barracks' in September 1991 around Varaždin, involved in the siege of JNA barracks until the capitulation of the JNA 32nd Mechanised Corps. The fate of the vehicle is not known.



232 Vojislav Jereb collection



Vojislav Jereb 233



234 Boris Gregurić

BJELOVAR-1

Sve što se zna o postojanju ovog oklopnog kamiona je da je slikan u Bjelovaru listopada 1991., a autoru fotografija je rečeno da je izrađen na osnovi kamiona TAM-5000. Porijeklo i sudbina oklopnjaka su nepoznati. Vidi također sliku vozila u boji (slika 214 na str. 59).

All that is known about this vehicle is that it was photographed in October 1991 in Bjelovar and the photographer was told it is based on a TAM-5000 truck. The manufacturer and the fate of this vehicle remains unknown. See also a color photo of the same vehicle on page 59 (photo 214).



Boris Gregurić 235



236

AUTODUBRAVA

Dva gotovo identična vozila ovog tipa bili su vrlo zanimljive 'mješovite' konstrukcije. Teretni metalni sanduk kipera na kamionima TAM-260 T26 je iskorišten kao dio oklopa, a unutar sanduka je posatavljen metalom obložen prostor za prijevoz, tako da se u stvari dobio sendvič oklop od dva lima. Zanimljivo je da ti metalni kontejneri ubačeni u sanduke nisu imali krova već su samo bili pokriveni ceradom. Kabina kamiona je također bila oklopljena. Kamione je navodno oklopila zagrebačka Auto-dubrava. Nije poznato gdje su korišteni. Slika 237 je slikana 1992. u vojarni 2. gardijske brigade u Dugom Selu. Svojedobno je i zagrebački Vjesnik objavio sliku (br. 236) ova dva oklopnjaka.

Two almost identical vehicles of this type show a very interesting 'mixed' construction. The metal cargo bed of the TAM-260 T26 dump trucks is used as an armor layer while inside another metal box has been built for additional protection to form 'sandwich' armor. The interior metal 'container' has no roof protection but is covered with tarpaulin. The truck's cab was also armored. Both trucks were allegedly armored by the Auto-dubrava company in Zagreb. It is not known where they were used. Photo 237 was taken in 1992 at the Dugo Selo 2nd Guards Brigade barracks. The Vjesnik newspaper published at that time a photo of both trucks (small insert photo 236).



Gordan Laušić 237



238 uz dopuštenje HTV

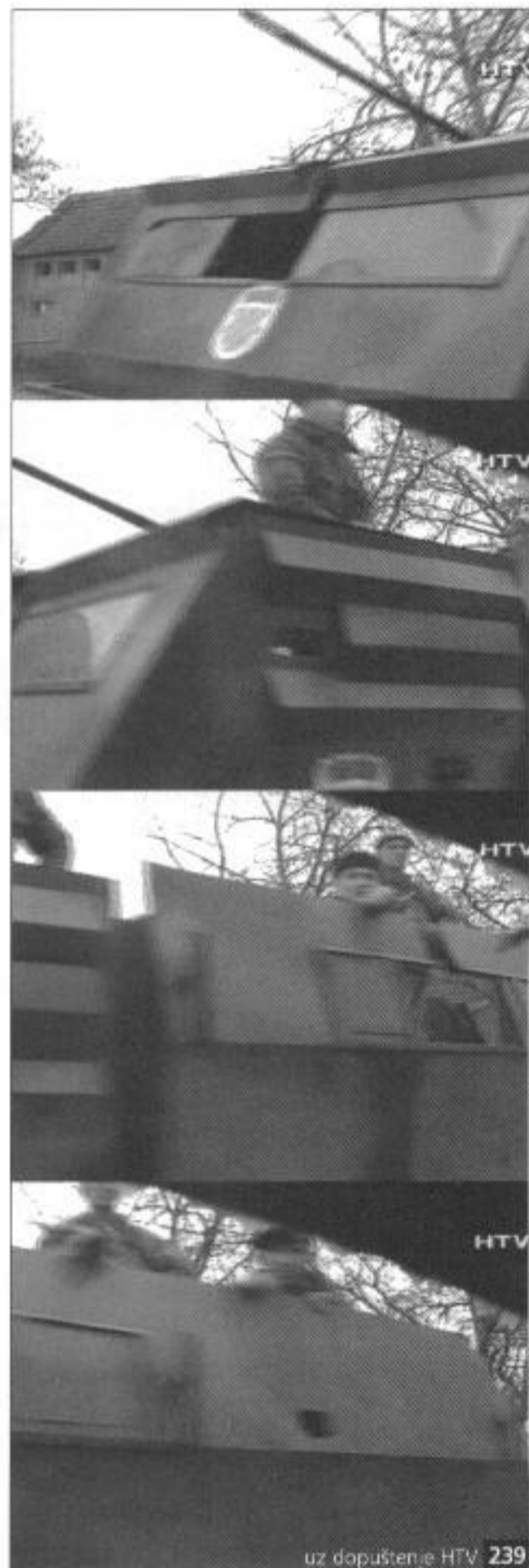
TAM-AA/AA-2

Oba prikazana vozila su jako slična i moguće je da se radi i o istom vozilu. Snimke oba oklopljena vojna TAM110 su prikazane na TV u reportažama s područja Slavonske Požege. Iz snimaka nije moguće mnogo zaključiti osim da je u sanduk vozila montiran jednocijevni top 20 mm M-75, da su za ojačanje oklopa na kabini korišteni kutnici zavareni na lim pa je dojam da se radi o nekakvom 'rebrastom' limu. Oklopnjak na slikama 239 (rekonstrukcija na crtežu 240) ima zanimljivi 'prorez' na oklopu kabine i sa strane da bi se sa topom moglo pucati bez elevacije prema naprijed i sa strane.

Both vehicles shown are very similar and it is possible that they are the same vehicle. Both armored TAM110 trucks were broadcasted on local TV from the Slavonska Požega area. From the stills it is not possible to conclude much, except that in the box of the truck a single 20 mm M-75 gun is mounted, and that to stiffen the armor plates around the cab angled iron was welded to them. In photos 239 (as well as in drawing 240, a reconstruction of the video stills) strange cuts in the sidewalls and cab allow the gun better depression and traversing angles.



Vojislav Jereb 240



uz dopuštenje HTV 239



241 uz dopuštenje HTV

MUP OSIJEK

Snimka isporuke tog vozila bila je emitirana na TV s komentarom '.... snage PU Osijek dobile su još jedno novo vozilo, donacija iz inozemstva' početkom listopada (6. ili 7.) 1991. i to je sve što je poznato o tom vozilu. S obzirom na kasni datum isporuke, vrlo je neobično da je vozilo bilo pobojano u policijsko plavoj boji sa bedževima MUP-a. Moguće je da je stvarno bilo namijenjeno patroliranju unutar grada Osijeka. Korištenje i sudbina vozila nisu poznati kao ni tehnički detalji podvozja.

A TV broadcast of this vehicle was shown at the beginning of October 1991 (6th or 7th) with the comment '.... Osijek Police forces has received another new vehicle, a donation from abroad' and that is all that is known about this vehicle. Looking at the rather late delivery date it is very unusual to see the vehicle being painted in police blue livery with MUP badges. It is therefore possible that it was intended for use inside the city of Osijek for patrolling. Technical details, use and fate of the vehicle remains unknown.



Dražen Bužat 242

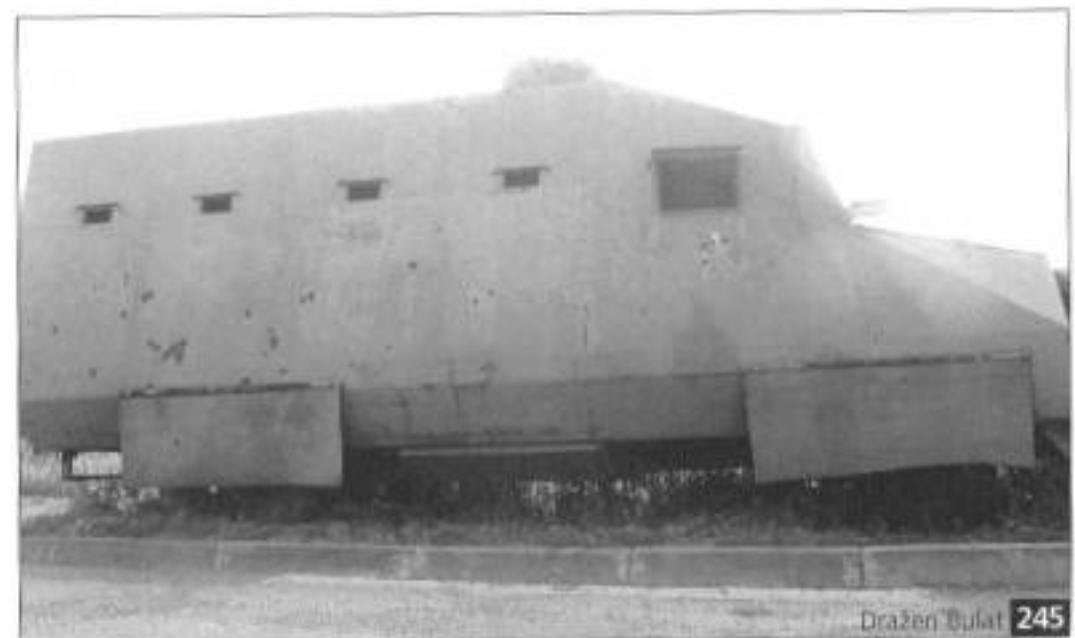
BOBAN

Ovo vozilo je bilo drugo po redu kojeg su napravili pripadnici Specijalne jedinice MUP-a iz Vinkovaca. Prvo oklopljeno vozilo je bila jedna Zastava od 5 tona, ali ju je bilo praktički nemoguće voziti. Onda su se odlučili za rashodovanog TAM-5000, popravili ga i oklopili u Graditelju. Rađen je 7 dana i noći i dovršen je 14.8.1991. Istu noć je krenuo za Vukovar. Kao oklop je korišten sendvič od lima i 4 cm gume, a oklop je postavljan bez nacрта, krojen i rezan na licu mjesta. Dodana je i kupola s jednostrukim limerim oklopom u kojoj je bio mitraljez ili RPG. Ime 'Boban osvjetnik' je dobio po legendi o Juri i Bobanu. Vozilo je preživjelo rat i parkirano je napušteno u PU Vinkovci (vidi sliku u boji na str. 61).

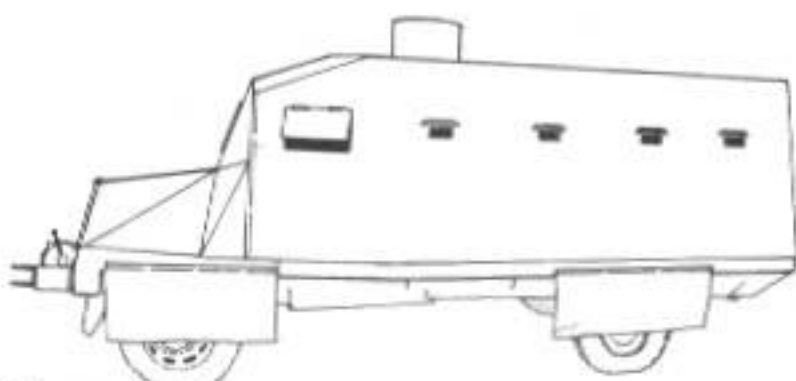
This vehicle was the second built by members of the Special MUP police force at Vinkovci. The first vehicle was an armored Zastava 5 ton truck which was, when finished, practically undrivable. Then they decided to armor an old TAM-5000 truck which was repaired and rebuilt in the Graditelj factory. Work on the vehicle took seven days and nights and on August 14, 1991 it was finished. The same night it was sent to Vukovar. The armor consisted of steel sheets and 4 cm of rubber. All the armored skirt was cut and welded in place without any blueprint. A small turret was added for a machine gun or RPG launcher. The turret had only one layer of steel plate. The vehicle was named 'Boban the Avenger' after the Jure and Boban legend. The vehicle survived the war and is parked at the Police station at Vinkovci (see a color photo on page 61).



Dražen Bužat 243



Dražen Bužat 245



244 Vojislav Jereb

ZENIT

Mehanička radiona PIK Kutjevo u Ovčari je zaslužna što je ovaj oklopnjak ugledao svijetlo dana. Radiona kao takva bila je vična improvizacijama radi prirode svog posla (popravak poljoprivrednih strojeva). Nije poznato koje vozilo su uzeli kao osnovu za hodni dio, ali su na to namontirali oklop u stilu 'pokretnog bunkera' s kupolom. Eksperimentiranjem (upucavanjem) odredili su kakav je oklop optimalan te se odlučili za sendvič od limova 10 mm izvana, 10 mm betona i 8 mm lima iznutra. Dovođen je 16.9.1991 te je odvezen u Požegu, a prva akcija je bila obrana od eventualnog napada JNA na mostu preko rijeke Orljave. Nakon korištenja vozilo je napušteno na jednoj livadi kod Požege gdje je i slikano.

The PIK Kutjevo mechanical workshop in Ovčara was responsible for armoring this vehicle. Being a workshop which spends most of the year repairing agricultural machines and living on improvisation, building such a vehicle was not a great problem for them. It is not known what vehicle was used for the chassis but the final product looked like a mobile turreted pillbox. They chose the combination for the armor by shooting at various combinations of steel plates. A sandwich of 10 mm outer plate, 10 mm of concrete and 8 mm inner steel plate was found to be optimal. The vehicle was finished on September 16, 1991 and driven to Požega immediately. Here its task was to block a possible JNA attack across a bridge on the Orjava river. The vehicle was later abandoned in a ravine for some time.



Marko Jeras 246



247 Marko Jeras



Marko Jeras 248

MIKEŠ

Ovo je bila prava 'zvijer' među oklopnjacima! Izrađen je u tvornici Tvin u Virovitici uz svesrdnu pomoć ostalih poduzeća. Kao osnova je uzeto vozilo za prijevoz namještaja tipa FAP-13. Kvalitetan lim za oklop je dovučen čak iz Slovenije, a cijelo vozilo je dovršeno za 10 dana. Dobio je naziv 'Mikeš' (stari naziv za Virovitičane). Korišten je oklop od jednostrukih limova debljine 12 mm sa strane a 20 mm sprijeda i straga. Iznutra su postojale komore da u slučaju pogotka ne stradaju svi borci (slika 249).

Predano je 127. brigadi 2. rujna 1991. Već na prvom zadatku Mikeš je pogoden ali su borci u oklopnjaku samo ranjeni, nije bilo poginulih. Radi toga je naknadno dodana zaštitna mreža oko vozila. Vozilo je sačuvano u zbirci Vojnog muzeja u Zagrebu. Neki izvori tvrde da su izrađena dva takva vozila.

Mikeš was a pure 'beast' amongst improvised armored vehicles in Croatia. It was built at the Tvin factory in Virovitica with the abundant cooperation from all the factories in town. A FAP-13 chassis was used as a starting point, while quality steel plates were brought from as far away as Slovenia. All the work was done in 10 days. It was named 'Mikeš' after an old name for the Virovitica inhabitants. The armor consisted of single steel plates of 12 mm on the sides and 20 mm on the front and rear. Inside there were several compartments to prevent a hit from killing all the crew (photo 249).

The vehicle was handed over to the 127th Brigade on 2 September 1991. During its first combat mission the vehicle was hit but the soldiers inside were only wounded. For more protection wire mesh was added. The vehicle is preserved in the Zagreb Military Museum. Some sources claim that another similar vehicle was also built.



Boris Gregurić 249

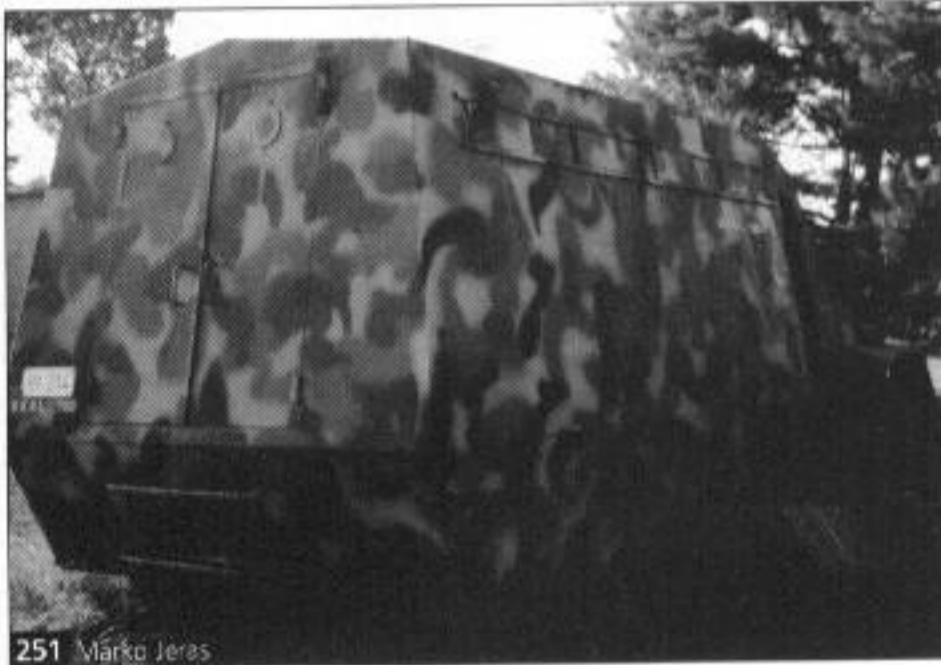


Boris Gregurić 250

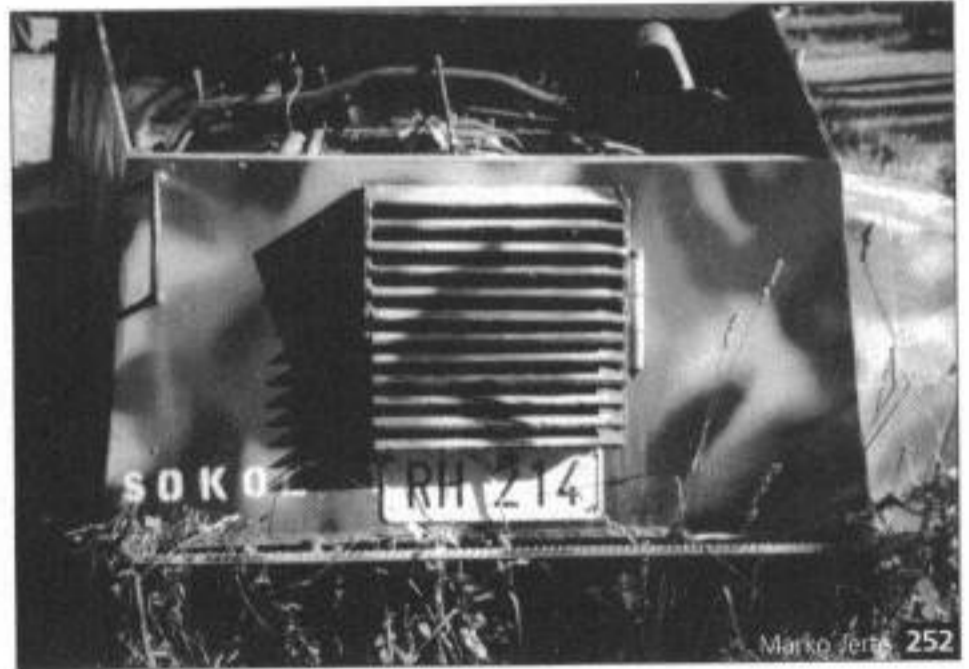
SOKOL-100

Kao i ostali sudionici ratnih zbivanja i u požeškom Pioniru su prionuli poslu da naprave oklop za snage ZNG-a. Ovaj oklopnjak je napravljen uzimanjem kamiona TAM-170 T14K (kipar) koji je olakšan skidanjem dijelova. Na to je montiran sendvič oklop od kvalitetnih limova koji se koristio za plinske boce debljine 10 mm, a između je ubacivan beton. Danonoćnim radom uspjeli su vozilo završiti 1. rujna 1991. kada su ga provozali Požegom, Pleternicom i ostalim mjestima. Korištenje vozila nije zabilježeno ali je vozilo preživjelo rat i jedno vrijeme je bilo napušteno na otpadu u Požegi (vidi i sliku 205 na str. 55).

Like other participants of war, the people in the Pionir of Požega decided to make some armored vehicles for their ZNG units. This vehicle was made on a TAM-170 T14K dump truck which was lightened by removing all unnecessary parts. Sandwich armor was added consisting of high grade 10 mm steel plates used to make domestic natural gas tanks, with concrete in between the plates. Working day and night they managed to finish the vehicle on September 1, 1991 when they drove it through Požega, Pleternica and other nearby places. The use of the vehicle is not known, but it survived the war and remained unused for some time in a Požega scrap yard (see photo 205 on page 55 too).



251 Marko Jeras



Marko Jeras 252



Marko Jeras 253



254 Marko Jeras



Marko Jeras 255



Marko Jeras 256



257 Gordao-Lausif

NOVI-1

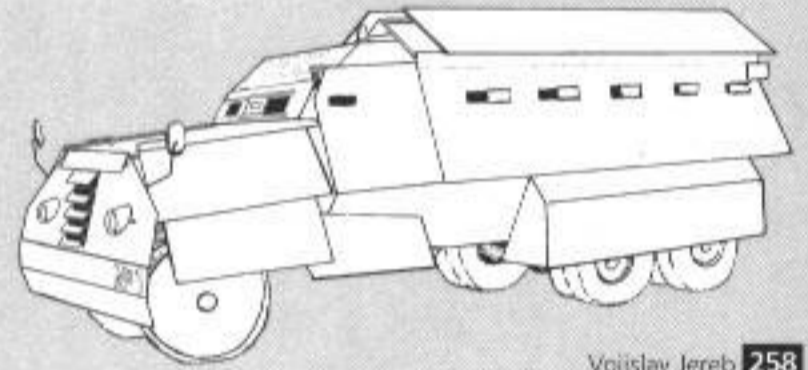
Ništa nije poznato o ovom oklopnjaku. Prema nekim detaljima vrlo je vjerojatno da je korištena šasija vojnog kamiona TAM110 T7 4x4. Prednji kraj i 'transportni' prostor podsjećaju na Janaf-ove modifikacije vojnih Tam-ova. Slika koju objavljujemo slikana je u zagrebačkoj vojarni 'Croatia' 1992.

Nothing is known about this vehicle. According to some details it is possible that the chassis was a military TAM110 T7 4x4 truck. The front end and the transport share similarities with some Janaf vehicles. The photo published was taken at the Zagreb barracks in 1992.

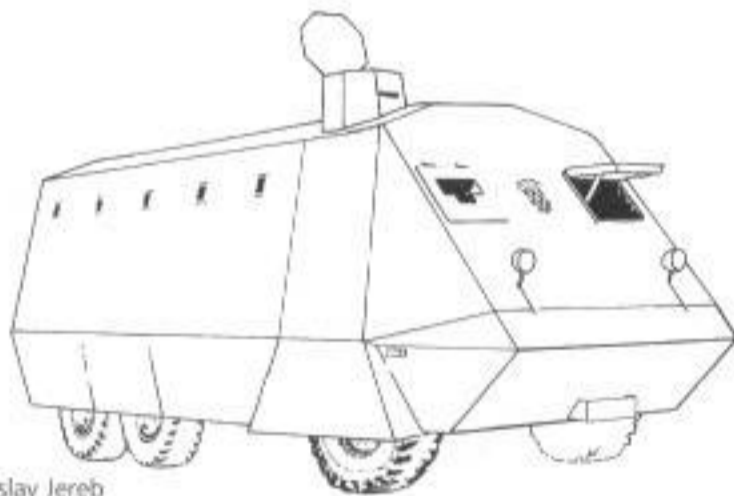
GMC

Osnova za izradu ovog oklopnog transportera je bio stari američki kamion GMC tipa CCW ili CCKW-353 kakvih je bivša JNA imala na tisuće. No kamion nije bio zaplijenjen od JNA već je davno prije toga rashodovan te ga je kupio jedan privatnik koji ga je početkom Domovinskog rata donirao za preuređenje u oklopnjaku. Oklopljen je u Križu kraj Zagreba no nije poznato kada, ali natpis POLICIJA na njemu sugerira da je preinaka dovršena u vrlo ranim fazama rata. Ovo vozilo se nalazi u zbirci Vojnog muzeja u Zagrebu.

The chassis for this armored vehicle was an old American CCW or CCKW-353 model GMC truck. The former JNA used thousands of this vehicles, but this one was not captured from the JNA. It was bought as surplus by a farmer, and when the war began the farmer donated the truck for conversion. The truck was rebuilt as an armored transport in the village of Križ near Zagreb but it is unclear when. The large POLICIJA inscription suggest it was done in the early stages of war. Now this vehicle is part of the Military Museum collection.



Vojislav Jereb 258



259 Vojislav Jereb

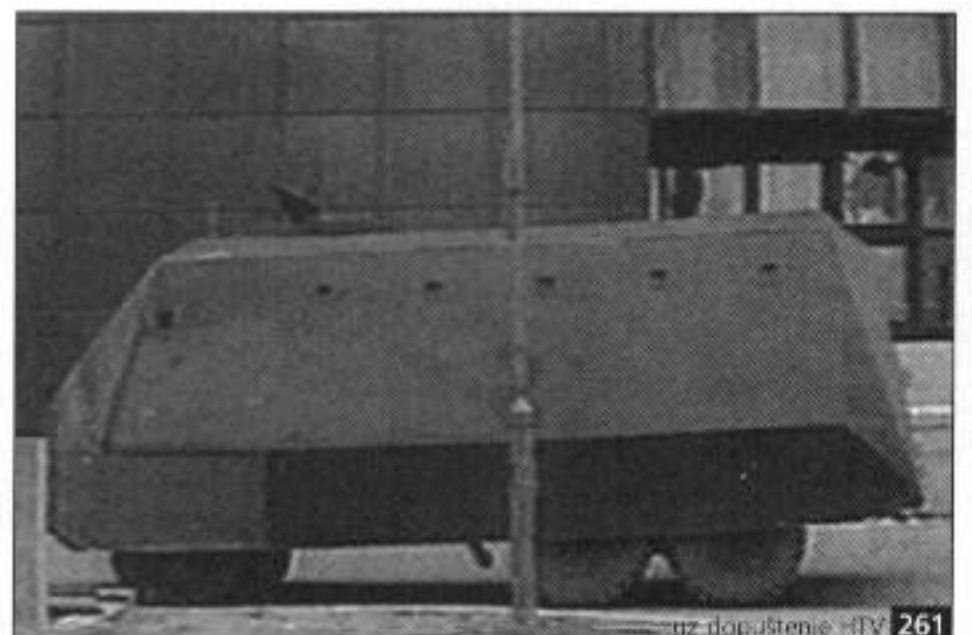
PULPIT-1

Jedno od rijetkih vozila napravljeno na šasiji vojnog kamiona TAM150 T11 6x6. Dva od tri izvora koje objavljuju slike tog vozila navode da je vozilo bilo u Osijeku pa je vrlo vjerojatno da je tamo i napravljeno. Na krovu ima vrlo tipičnu fiksnu kupolu u obliku osmerokuta što podsjeća na propovjedaonicu. Daljnje korištenje kao i sudbina vozila nisu poznati.

This is one of few combat vehicles made on a TAM150 T11 6x6 chassis. Two out of three sources publishing photos of this vehicle claim it was photographed in Osijek and therefore it can be supposed it was built there too. On top of the vehicle a strange pulpit like fixed turret was mounted. Use and fate of the vehicle is unknown.



260 uz dopuštenje HTV



uz dopuštenje HTV 261

PULPIT-2

Još jedno vozilo s kupolama poput propovjedaonice, slično kao i osječki oklopljeni TAM150 (vidi prijašnju stranu). Moguće je da su oba spomenuta vozila izrađena u istoj radionici. Osnova ovog vozila je nepoznata, ali s obzirom na jednostruke zadnje kotače moguće je da se radi o DAF-u YA-328 sa 'H' pogonom. U svakom slučaju vozilo je vrlo neobičnog izgleda, a dvije kupole (od kojih samo jedna okretna) ga čine jedinstvenim. Vozilo je slikano poslije rata u Vinkovcima, ali krajnja sudbina nije poznata.

Another vehicle with turrets resembling a pulpit, similar to the Osijek's armored TAM150 vehicle (see previous page). It is possible both vehicles were built in the same workshop. The chassis for this vehicle remains unclear but it is possible it was an ex Dutch military model DAF YA-328 with the typical H drive. In any case the appearance of the vehicle is unusual and two turrets (one of which is fixed) makes it unique. These photos were taken after the 1991 war in Vinkovci, but the final fate of the vehicle is unknown.



Dražen Bulat collection 262



Dražen Bulat 263



264 David Spencer collection



David Spencer collection 265



Dražen Bulat 266



267 Vojislav Jereb

VW COBRE

Jedan od rijetkih potpuno oklopljenih automobila je ova Volkswagenova 'buba'. Radi težine je postavljen samo bočni oklop i nema krova. Neobično je ipak da su kotači, kao jedan od najosjetljivijih dijelova na oklopnom vozilu, ostali van oklopne zaštite, ali je moguće da je originalno i to bilo pokriveno. Vozilo sa sve četiri strane ima puškarnice kao i proreze za osmatranje i vožnju.

Gdje je vozilo korišteno nije poznato. Viđeno u okolini Karlovca u studenom 1991., prikazan je u katalogu u Sisku povodom jedne od izložbi o Domovinskom ratu, a govori se da je korišteno i u Vukovaru. U svakom slučaju vozilo je preživjelo rat te je slikano u Njivicama na otoku Krku rujna 1992. Daljnja sudbina vozila je nepoznata (vidi sliku u boji na str. 61).



Vojislav Jereb 268

This rare completely armored civilian car was built on the chassis of a VW 'bug'. Because of the weight it is presumed that only the sides were armored, not the roof. Nevertheless it seems very unusual that no steps were taken to protect the tyres which are very vulnerable, but it is possible the original design called for this item too. The armor had firing ports on all four sides as well as observation apertures.

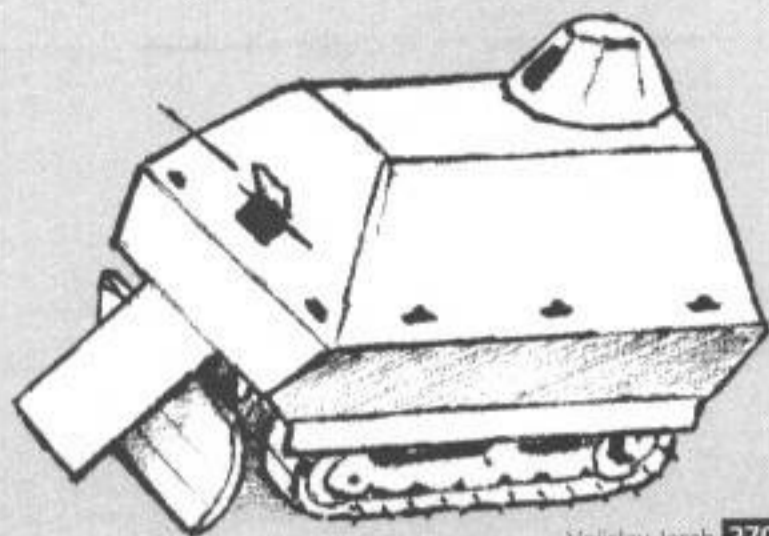
The use of this vehicle remains unclear. It was seen around Karlovac in November 1991, and was shown in a pamphlet during an exposition of war in Sisak, while some sources claim it was used in Vukovar. In any case the vehicle survived the war and was photographed on the island of Krk in September 1992. The final fate of the vehicle remains unknown (see also a color photo on page 61).



269 Vojislav Jereb

CATTERPILAR

Koliko se može zaključiti prema dostupnim video snimkama ovo neobično vozilo je napravljeno na osnovi buldožera gusjeničara. Puškarnice i mala kupola na zadnjem kraju vozila sugeriraju da je vozilo napravljeno kao borbeni transporter, a ako je pretpostaviti da je buldožer bio klasičnog oblika, izgleda da se unutar vozila sjedilo sa obje strane motora, a iznad vozačevog mjesta je bila kupolica, možda namjenjena samo za osmatranje. Izgleda kao da je vozilo bilo namjenjeno za rušenje u napadu (poput vozila Konstruktor-1), a štapovi na prednjem dijelu vozila su bili namjenjeni da zahvate i odstrane bodljikavu žicu. Jedino nije jasno čemu služi metalna ploča ispred noža buldožera. Vozilo je snimljeno već u prvoj polovici rujna no nije poznato gdje.

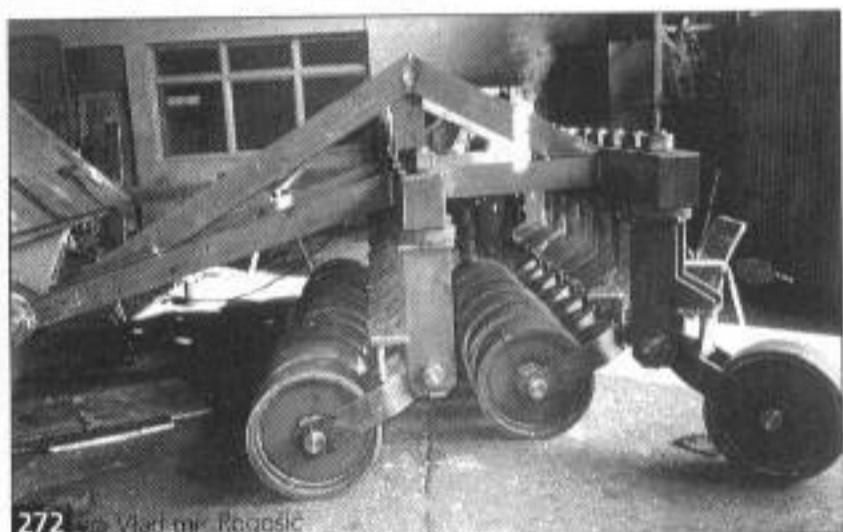


Vojislav Jereb 270

What can be concluded looking at available TV shots of this unusual vehicle was that it was built around a tracked bulldozer. Firing ports and the small turret suggest the vehicle was intended for use as a combat transport. If a classic engine/cab layout of the bulldozer is presumed it seems the rifleman were seated around the engine while the turret was above the cab position, possibly only for observation. It seems that the vehicle was intended to be used as a breakthrough vehicle (like the Konstruktor-1 vehicle). The arms on the front are to catch and pick up wire to break through a perimeter. What is inexplicable is the large rectangular sheet of metal hanging over the bulldozer blade. The TV shots were taken in early September but it is not known where.



271 Vojislav Jereb collection



272 via Vladimir Rogošić

JANAFOVI MINOČISTAČI

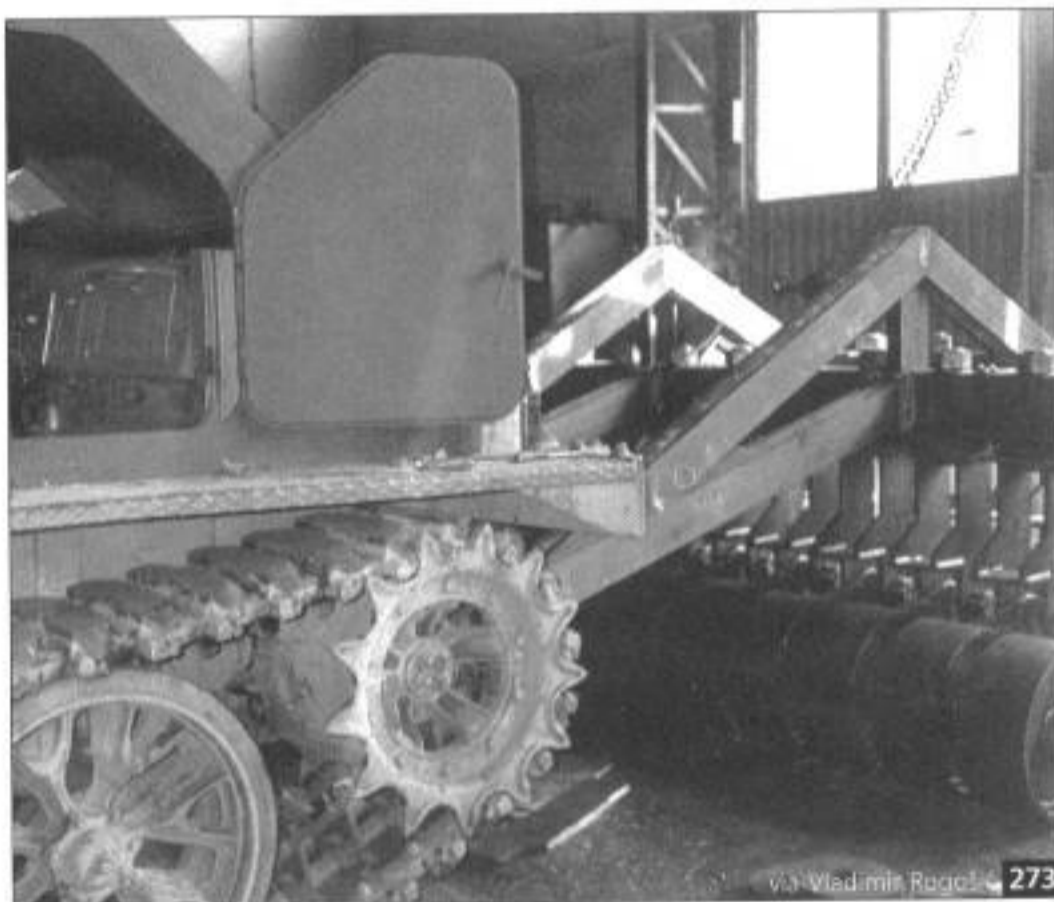
Barem dva vozila za razminiranje na osnovi gusjeničara su prepravljena i u Sisku, najvjerojatnije u Janaf-u. Oba vozila kao osnovu koriste sovjetski artiljerijski tegljač ATS-59 (JNA oznaka ATS M-59) zaplijenjen od JNA. Na oba su ispred vozila ugrađeni uređaji za razminiranje. Na jednom je to bila mlaticica sa lancima dok je na drugom ugrađen uređaj s teškim kotačima radi aktiviranja mina, a u oba slučaja uređaj se podizao sajlama i vitlom iz teretnog prostora tegljača. Na oba su vozila kabine posade naknadno oklopljene (originalno na tegljačima to nisu). Korištenje i sudbine vozila nisu poznate.

JANAF MINE CLEANERS

At least two mine clearing vehicles based on tracked vehicles were converted in Sisak, most probably in the Janaf plant. Both used the ex Soviet artillery tractors type ATS-59 (JNA designation ATS M-59) captured from the JNA. Both were equipped with a clearing apparatus mounted in front of the vehicle. One used a flail mechanism with chains while the other used a bank of heavy iron wheels which detonated the mines. In both cases the apparatus were lowered with a winch located in the cargo box. Both vehicles had their cabs armored for crew protection. Use and fate of the vehicles is unknown.



274 Vojislav Jereb collection



via Vladimir Rogošić 273



via Vladimir Rogošić 275



276 Dario Vulić

Dvije slike 'Gladnog Jure' u akciji. Obratiti pažnju na potpuno oklopljeno vozilo (buldožer ULT-150/160) te na dodani uređaj za razminiranje umjesto prednje žlice. Donja slika je slikana početkom 1992. kod aerodroma Pleso blizu Zagreba.

Two photos of 'Gladni Jure' (Hungry Yuri) in action. Note the fully armored vehicle (ULT-150/160 heavy front end loader) and the mine clearing device added in front. The photo below was taken in early 1992 near the Pleso airport in Zagreb.



277 Boris Gregurić



278 Paul Malmassari collection



Paul Malmassari collection 279

ULT (Gladni Jura, Kristijan)

Barem dva, a prema nekim izvorima čak četiri minočistača na osnovi buldožera točkaša tipa ULT-150/160 (proizvodnje 14. oktobar iz Kruševca) oklopljena su za potrebe razminiranja. Taj posao je navodno obavila zagrebačka Hidroelektra. Zanimljivo je da su vozila potpuno oklopljena, pa se pretpostavlja da su originalno bila namijenjena za potrebe razminiranja u borbi odnosno probijanja puteva kroz minska polja prilikom napada. Radi toga je,

pored teških metalnih kotača za samo razminiranje, ugrađena i jedna oklopna ploča odmah iza samog uređaja, dok su za dodatnu zaštitu posebno oklopljene i prednje gume vozila posebnim umetcima koji su se montirali na lance koje buldožer uvijek koristi na gumama.

Posebno je aktivno bilo vozilo koje je od milja nazvano 'Gladni Jura' (iako na sebi nije imalo taj natpis) koje je od 1992. nadalje bilo aktivno u razminiranju područja aerodroma Pleso. Sada se to vozilo bez motora nalazi u vojarni Prečko u Zagrebu. Drugo takvo vozilo imenom 'Kristijan Međimurje' je također preživjelo sukob i nalazi se u vojarni u Varaždinu.



280 Paul Malmassari collection

At least two while some sources claim up to four mine clearing machines were built on wheeled ULT-150/160 front end loaders. Originally these front end loaders were built by 14. oktobar at Kruševac, Serbia and it is probable they were captured from the JNA. The armor was most probably added at the Hidroelektra plant. It is interesting to note that the entire vehicle was armored which suggests that it was intended for combat mine and barricade clearance. For this purpose besides the the iron wheels for mine detonation an armored plate was positioned between the cabin and the iron wheels. Additionally small armor plates was added on the chains on the front tyres.

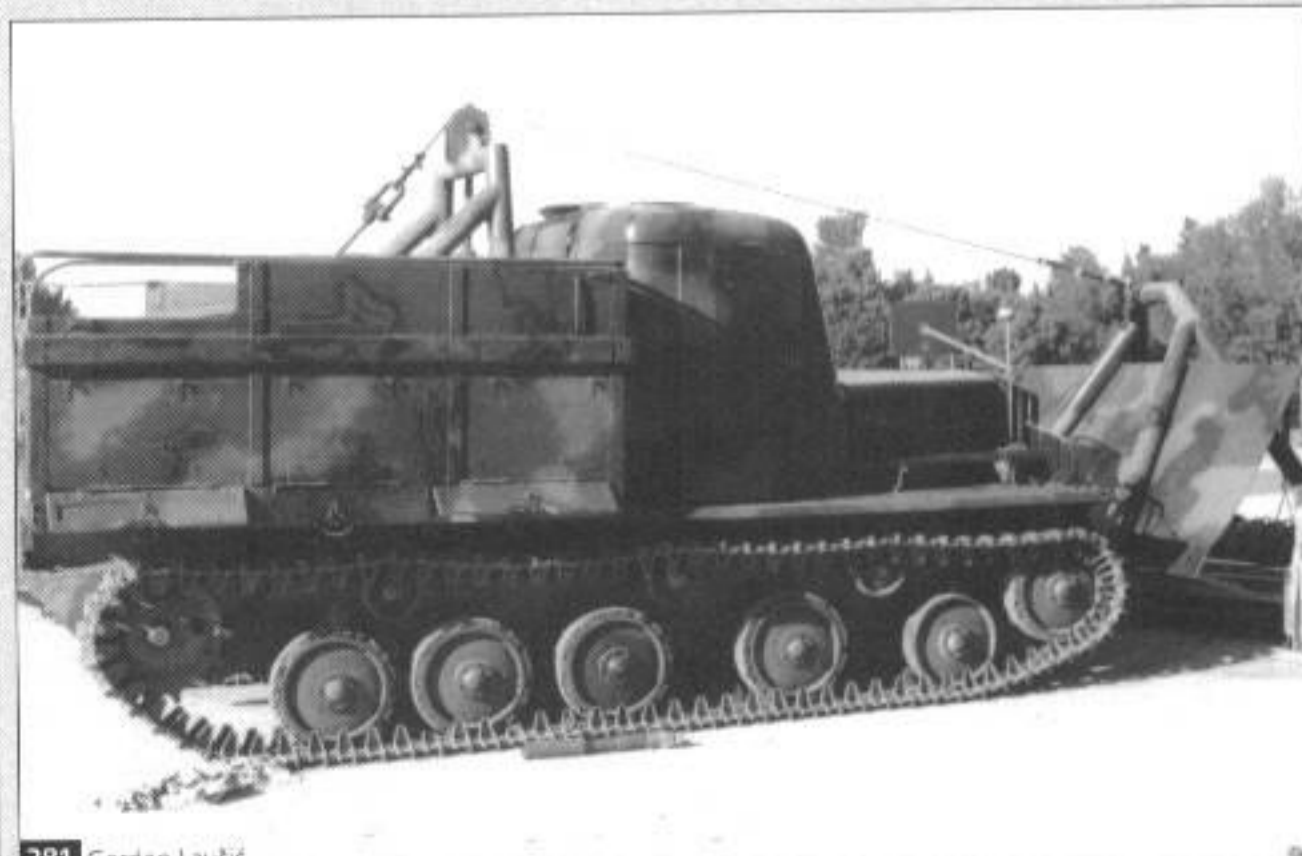
One vehicle was named 'Gladni Jura' (Hungry Yun) and it was very active from 1992 onwards especially around the Pleso airport area. The vehicle is now abandoned at an Army barrack in Zagreb without the engine. Another similar vehicle named 'Kristijan Međimurje' survived the war and is now parked in Varaždin.

ULJANIKOVI MINOČISTAČI

Ovo vozilo je jedno od dva koje je prepravilo pulsko brodogradilište Uljanik. Samo gusjeničko vozilo su pronašli na otpadu. Radi se o artiljerijskom tegljaču bivše JNA tipa M-2 (ruska oznaka, ili jugoslavenske oznake GJ-800) koji je rashodovan i vjerojatno prodan nekoj građevinskoj tvrtki.

Vozilo su uredili i na njega stavili uređaj sa rotirajućim bubnjem i lancima tako da je aktiviranje mina vršeno na principu mlatilice. Cijeli uređaj se mogao podizati i spuštati sjalom, a pored zaštitne ploče na prednjem dijelu i kabina vozila je dodatno oklopljena da se zaštiti prilikom eksplozije mina. Vozilo je korišteno u Lici i u zadarskom zaleđu (1993). Sudbina vozila nije poznata. Vidi sliku vozila u boji na str. 63.

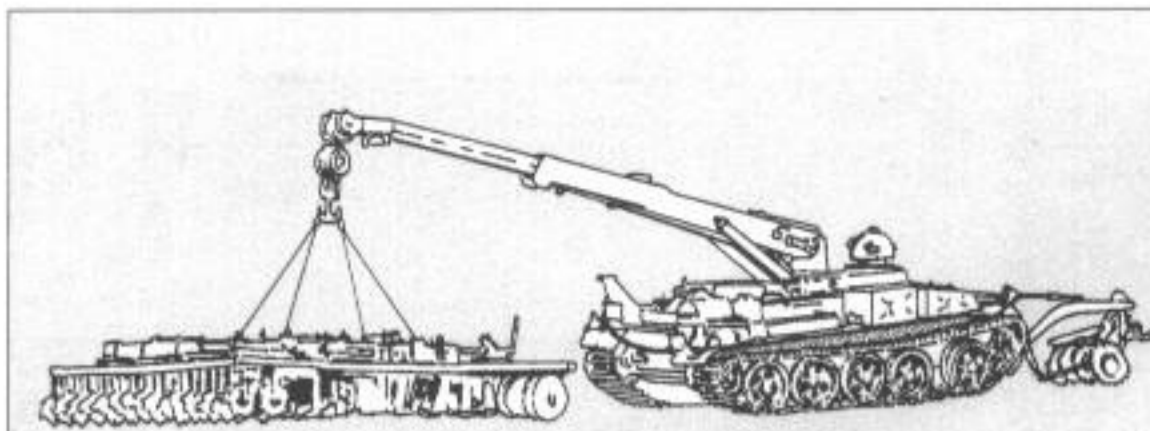
Drugo vozilo je bio modificirani viljar prepravljen i specijalno opremljen za dubinsko razminiranje pulskog aerodroma.



281 Gordan Laušić

ULJANIK MINE CLEANERS

This vehicle was one of two converted at the Uljanik Shipyard in Pula. The original vehicle was found in a scrap yard. This was a former type M-2 artillery tractor (Soviet designation, or JNA designation GJ-800) which was written off by the former JNA and most probably sold to a civil engineering company. The vehicle was repaired and put in order and a flail apparatus added in front using chains for mine detonation. The whole apparatus could be lowered with a cable and the cab was partially armored to protect the crew during the explosion of mines. The vehicle was used in the Lika region and later in 1993 in the Zadar area. See a color photo of the vehicle on page 63. The other vehicle was a forklift modified for airport mine cleaning duties.



282 Vojislav Jereb

OLT

Ovaj uređaj kojeg spušta inženjerijski tenk BTS-3 (JNA oznaka TZI) je izrađen u osiječkom OLT-u u suradnji s osječkim Centrom za mine. Kada je napravljen prvi uređaj, navodno je bio u izradi i drugi identičan. Korištenje uređaja nije poznato, kao ni sudbina.

The mine cleaning apparatus seen while being lowered from a BTS-3 (JNA designation TZI) was made at the OLT factory of Osijek together with the Osijek's Center for Mine Cleaning. When the first apparatus was finished allegedly another similar apparatus was under construction. Use of the vehicle and final fate remains unknown.



283 via Zdravko Zrno



via Zdravko Zrno 284



285 via Zdravko Zrno



via Zdravko Zrno 286



287 Marijo Roguž

MATAN

Ovu adaptaciju inženjerijskog tenka T-55, popularno zvanog TZI (tenk za izvlačenje) napravili su u splitskom Brodosplitu u suradnji sa stručnjacima 6. Operativne zone (slike 283 do 286). Ispred tenka su ugradili napravu koja je bila ustvari držač/vodilica željeznih kotača koji se koriste za razminiranje na sovjetskim uređajima KMT. Takva naprava je montirana dovoljno daleko od vozila te je isporbana čak na minama s 5 kg eksploziva. Uređaj je nazvan 'Matan' po jednom od vozača vozila. Nije poznato gdje je i kada korišten, ali sâm uređaj je pronađen napušten na zadarskom aerodromu 2000. godine (slika 287).

This modification of a T-55 ARV tank, locally known as 'TZI' (Tank For Recovery) was made at the Brodosplit Shipyard in Split in collaboration with mine experts of the 6th Operational Zone (photos 283 to 286). In front of the vehicle a huge apparatus was welded acting as a guide for several iron wheels, the same as used on the Soviet KMT series mine rollers. Such apparatus was far enough from the vehicle that even 5 kg mines could be detonated. The vehicle was named 'Matan' after one of the drivers. It is not known where it was used, but the apparatus was found abandoned at the Zadar airport in 2000 (photo 287).



M18 Hellcat IMCV

Izgled vozila obilježava njegovu funkciju – na samohodni top/lovac tenkova tipa M18 Hellcat zapijenjenog u trstaskoj vojarni u Rijeci, montiran je uređaj na kojeg su zavješeni teški brodski lanci. Svojom povlačenjem tj. težinom trebao je aktivirati mine. Nije poznato gdje je ovo vozilo prepravljeno u minočistača, ali je viđeno u akciji travnja 1992. u Gackom polju u okolici Otočca, u sastavu 119. brigade. Obratiti pažnju da je ispred tog vozila na slici 289 i minočistač iz *Uljanika* u zajedničkoj akciji razminiranja.

The appearance of the vehicle indicates its function – on an M18 Hellcat Gun Motor Carriage captured at the Trsat barracks near Rijeka an apparatus with heavy ship chains was mounted. Pushing the chains made the mines detonate. It is not known where and when the vehicle was converted but it was seen in action with the 119th Brigade in April 1992 in the Gacka valley around Otočac. Note that in photo 289 in front of the M18 is the Uljanik mine cleaner in a collective action.



OSTALI OKLOPNJACI

Koliko god mnogo materijala o improviziranim oklopnim vozilima smo uspjeli sakupiti, još uvijek ima određeni broj vozila koje nismo obuhvatili. Razlog je što je većina vozila izrađena u neuglednim i nepoznatim radionicama, često blizu mjesta sukoba, potajno, na brzinu, i osim sjećanja samih sudionika izrade ili korisnika tih vozila, drugih zapisa nema. Ne postoje nacrti, ne postoje fotografije. Nije teško doći do tih ljudi, treba samo znati koji su! A to nije lako doznati. Zato se, nažalost, moramo pomiriti s činjenicom da će određeni broj vozila, nadamo se čim manji, zauvijek ostati nepoznat široj javnosti. Nastojat ćemo da ova knjiga bude poticaj da se i neki od tih nepoznatih heroja jave i da se dozna nešto više o njihovom samozatajnom radu.

Postoje međutim i neka vozila koja su na neki način zabilježena ili nacrtana prema sjećanju, ali ne znamo ništa o njima. I ta vozila su, usprkos našim nastojanjima, ostala potpuno nepoznata.

OTHER IMPROVISED ARMORED VEHICLES

No matter how much data on improvised armored vehicles we manage to collect, there are still a number of vehicles that have not been identified or mentioned. This is because most of such vehicles were built in small and unknown workshops, often near the conflict areas, in secrecy, in a hurry and except for the memory of the men who built or used them there is no other data. Blueprints or photographs have not been uncovered. It is not difficult to speak with these men, but identifying them is not easy! Because of this, a number of vehicles, we hope very few, will continue to remain unknown to the public. This book is an attempt to stimulate these unknown heroes to contact us so we can learn of, and publish the stories about the products they made.

As the reader will notice, there are also some vehicles which were seen, photographed or sketched, but we have not been able to learn anything about them. These vehicles remain, despite our efforts, a complete mystery.



291 Vojislav Jereb

Tamove 'stodesetke' s vrlo tankim limenim bočnim stranama korištene od policijskih (slika 291) kao i (nakon toga) vatrogasnih jedinica. 'Stodesetka' na slici 293 je slikana u sklopu Vatrogasnog društva Čavle kod Rijeke i nepoznatog je porijekla i namjene.

TAM110 4x4 trucks with very thin metal plates on the sides, used by Police (photo 291) and later Fire Fighting forces. The photo 293 was taken at Čavle near Rijeka, but the true origin and purpose of the original truck remains unknown.



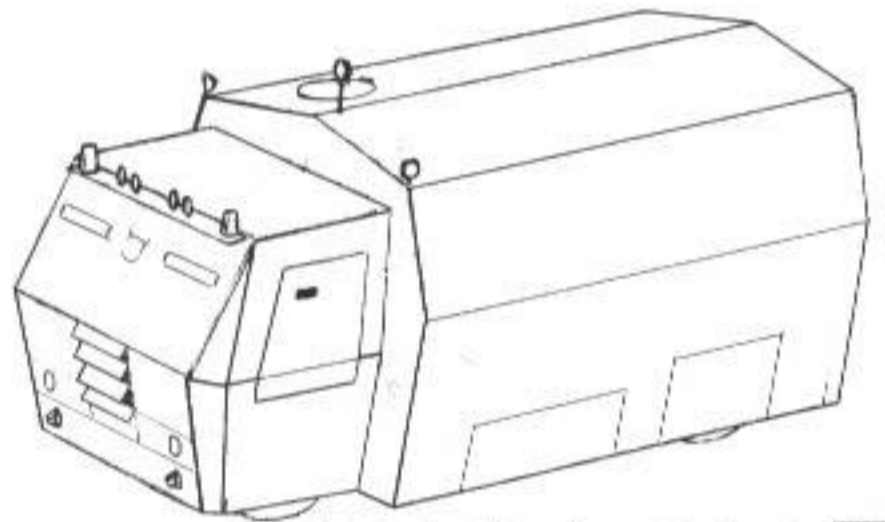
293 Vojislav Jereb



Vojislav Jereb collect. or 290

(gore) Slika nepoznatog vozila na nepoznatom mjestu u nepoznato vrijeme očito snimljena ručnom video kamerom (na HI-8 traci) prikazana u sklopu vijesti na HTV-u 1991.

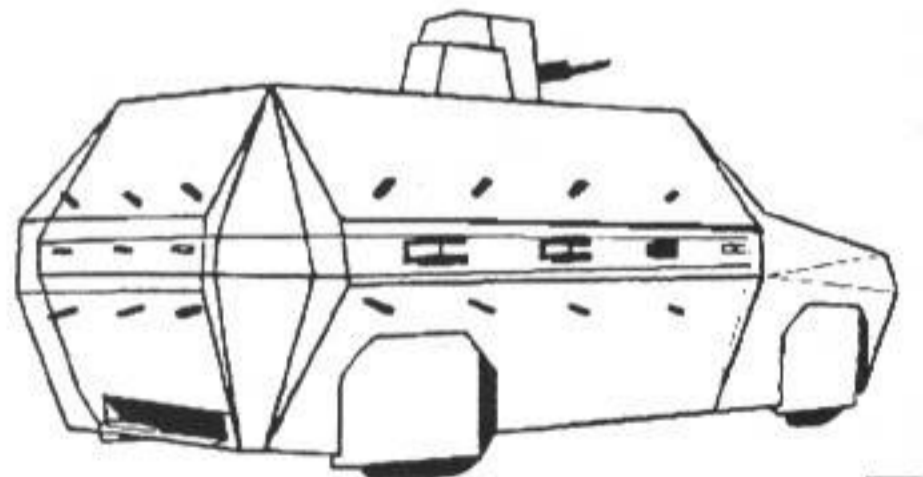
(above) A video still of an unknown vehicle in an unknown place and unknown time. Taken with a hand video (HI-8) it was shown in a news broadcast in 1991.



based on David Haug Armored Car Magazine 292

(gore) Izometrijski crtež vozila čiji su fotografija (od naprijed) i crtež u tri projekcije objavljeni u američkom časopisu 'Armored Car Magazine'. Iako je crtež nacrtan kao da se radi o dvoosovinskom vozilu što se iz slike ne vidi, velika sličnost sa Hidroelektrinom vozilom HE-1 sugerira da se možda radi o istom vozilu.

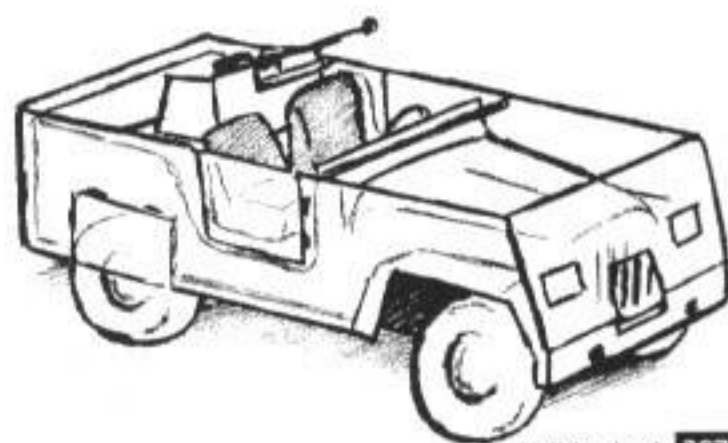
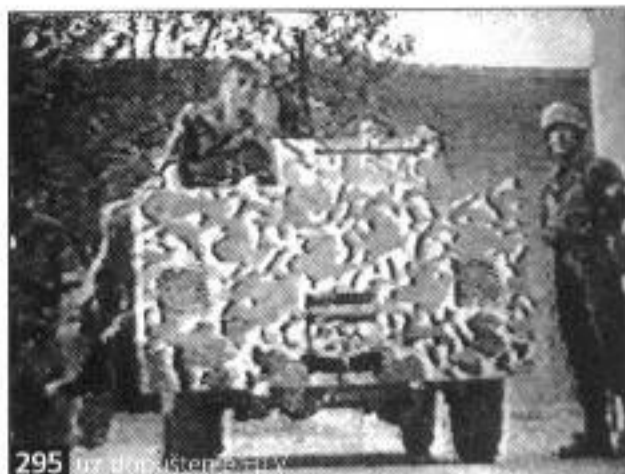
(above) An isometric drawing based on a photo and 3 view drawing published in the American publication 'Armored Car Magazine'. Although the 3-view drawing is made on the assumption that the vehicle was a 2 axle truck, from the frontal view photo this cannot be clearly seen. A strong resemblance to the Hidroelektra HE-1 truck suggest the possibility that it is the same vehicle, or another very similar to it.



Peter Cooke Tank TV 294

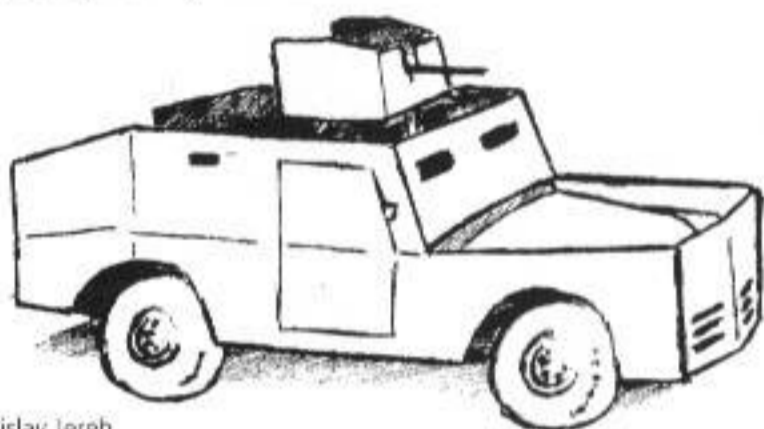
(gore) Crtež vozila objavljen u novozelandskom časopisu 'Tank TV' baziran na osnovi video snimke iz doba kolovoz-rujan 1991. objavljenog u britanskom časopisu 'Tankette'. Nije poznato mjesto gdje je snimljen.

(above) The sketch of this vehicle was published in the New Zealand magazine 'Tank TV' based on a video still from August or September period published in the British 'Tankette' magazine. It is not known where it was taken.



Dva vozila za koje se pretpostavlja da su oklopljeni džipovi. Snimka jednog je objavljena na HTV-u (slika 295 kao i rekonstrukcija na crtežima 296 i 297) ali nije poznato iz kojeg područja, dok je drugi (crtež 298) viđen 1993. na području Slunja, pa je moguće da je ili zarobljen ili lokalne srpske izrade.

Two vehicles believed to be armored jeep-like machines. The first was seen in a broadcast of Croatia TV (photo 295 and drawings 296 and 297) that was later rebroadcast by CNN. The location is unknown. The other (drawing 298) was photographed near Slunj in 1993 and is possibly a vehicle captured by the Krajina Serbs from the Croats.



U sastavu 1. gardijske brigade je bio i VBR s djelomično oklopljenom kabinom (slika 300), a u Zagrebu postoje ostaci nepoznatog oklopnjaka (cestovnog ili šinskog vozila?) s natpisom 'Grič-991' (slika 299).

Pored ovih nepoznatih oklopnjaka za koje postoje barem nekakve slike ili skice kako su izgledali, postoje još i podaci za vozila koja su izrađena, a da se ne zna niti kako su izgledala. Tako su navodno u Našicama napravljena 3 oklopnjaka, u Orahovici još jedan, a u zagrebačkoj automehaničarskoj radioni na Resniku je prepravljeno 5-6 kamiona u nekakve oklopnjake. U sastavu 73. samostalnog bataljuna je postojao jedan oklopljeni kamion s košarom kakve često susrećemo po gradovima za servisiranje rasvjetnih stupova. Taj je bio kompletno oklopljen, a namjera je bila postaviti mitraljez na košari. Poslan je u Vukovar ali je radi okruženja ostao ispred grada (kod Marinaca). Podizna košara je korištena sa video kamerom za osmatranje neprijateljskih položaja, ali se košara toliko tresla da nije bilo koristi od toga.

Jedan oklopljeni fičo nepoznatog porijekla je djelovao u sastavu 102. brigade nedaleko Sunje u prosincu 1991. godine. U Metkoviću je navodno isto napravljen jedan oklopnjak.

The 1st Guards Brigade had a multiple rocket launcher with an armored cab (photo 300), and the remains of another one with the inscription 'Grič-991' was seen recently at the Zagreb railway station. It is not known if this was a road or a railway vehicle (photo 299).

Besides these vehicles for which there is at least a photo, still or sketch, there are also rumors of vehicles that were supposedly built, but nothing has been uncovered about their history appearance. For example, at Našice three vehicles were supposedly built. At Orahovica another one was built, while at the Zagreb car-workshop at Resnik up to 5 or 6 trucks were reported to have been armored. The 73rd Independent Battalion had a truck with a hydraulic arm and basket, used frequently in cities to maintain street lamps. Supposedly the vehicle and the basket were completely armored with the intention to mount a machine gun in the basket. The vehicle was sent to Vukovar but could not penetrate into the besieged town. Then it was thought that a video camera could be placed in the the basket for battlefield surveillance 'from above' but the idea was unsuccessfull because of the basket vibrations. One armed Fiat car of unknown origin was fighting with the 102th Brigade near Sunja in December 1991. At Metković another vehicle was armored too.

SRIJEDA

NOVI LIST

GODINA XLV • RIJEKA, 25. RUJNA 1991. • BROJ 263 • CIJENA 15 DINARA

NOVI LIST JE UTEMELJIO FRANO SUPILO 2. SIJEČNJA 1900.

JUČER U KRUGU »RIJEKA-CESTF« NA POTOKU

NOVI »OKLOPNJAK« SV. VID

Oklopno borbeno vozilo preuzeo zapovjednik Zbora narodne garde Rijeke Sergio Rabar.

RIJEKA — Radnici »Rijeke« rekorderi su na ruku (u slučaju da su) napravili oklopno borbeno vozilo i jače ga predali predstavnicima Zbora narodne garde Rijeke.

Borbeno oklopno vozilo zapravo je pretvoren kamin TAM na kojem je radilo 10 ljudi.

Uz riječi zahvale oklopno vozilo, koje se može koristiti za ulaz u borbu i priza osim vozila osim borbeno, preuzeo Sergio Rabar zapovjednik Zbora narodne garde Rijeke.

Daru radnika »Rijeke-cest« ZNG Rijeke dano je ime »Sveti Vid«, po imenu zaštitnika grada.



H. P.-F.M. Pretvoren TAM prije odlaska na Kukuljevićevu



oklopno vozilo i prvi



Ja dosta mina

PREDsjednik KRIZNOG ŠTABA OPĆINE RIJEKA SLAVKO LINIĆ O VIŠEDNEVNIM KONTAKTIMA S KOMANDOM RIJEČKOG KORPUSA

PREGOVORI IZ OTOČIĆA

MISIJA EVROPSKIH PROMETNIČARA RAZGOVARALA U PULJU O KONTAKTIMA S CIVILNIMA



Pravac vojarna. Polje je očišćeno, na redu su otočki ratari



NOVO OKLOPLJENO SANITETSKO VOZILO Sigurnije do ranjenika

ZAGREB — Pokazalo se da neprijatelj ne preza ni od pucanja na vozila Crvenog križa i na ranjenike, zbog čega su često u opasnosti i medicini i njihovi pacijenti. Stoga je prije desetak dana počela izrada oklopljenog sanitetskog vozila, kojim će se ranjenici sigurnije prevoziti do bolnica. Vozilo je veličine autobusa, oklopljeno je

dvostruko specijalnim limom i štiti od laka pješčanog oružja. Sanitetski oklopljenik ima 24 ugrađena kreveta te još dvadesetak mjesta za sjedenje i stajanje, stožer, liječničku stolicu, vodu, grijanje i ventilaciju. Misija stvu stvar, koje će ga upotrijebiti samo gdje najpotrebnije, bit će izvršena sutra. (H. P.)

Snimio D. STROSSER



Poruka je jasna: Hrvatska — Komarovo



Vozilo koje je osmišljeno i napravilo Hrvatska vojska u akciji kod sela Oštrca

Novine su u ratno vrijeme redovno obavještavale o korištenju improviziranih oklopnjaka i topovnjača. Na prethodnoj stranici prikazano je nekoliko karakterističnih članaka i fotografija objavljenih tokom sukoba 1991./92., a na ovoj stranici nekoliko članaka iz poratnog vremena.

During the war newspapers reported regularly about the use of improvised armored vehicles and gun trucks. On the previous page shown are some typical articles and photos of the 1991/92 period while on this page some articles from the post-war period are shown.

28. 9. 2014

NOVI LIST

SVEČANOST U SPECIJALNIM VOZILIMA TORPEDA

Oklopna vozila za vojni muzej

RIJEKA – «Specijalna vozila Torpeda» reparirala su dva oklopna vozila ručne izrade koja su tijekom Domovinskog rata bila izrađena u Torpedu i djelovala na ličkom ratištu. Cilj reparacije, čije su troškove od oko 70 tisuća kuna podmirili Grad Rijeka i Primorsko-goranska županija, je korištenje tih vozila za potrebe Vojnog muzeja u Zagrebu. Stoga je jučer u Torpedu upriličena svečana primopredaja repariranih oklopnih vozila između predstavnika «Specijalnih vozila», Ministarstva obrane i Županije primorsko-goranske. Direktor «Specijalnih vozila» Neven Dedić tom je prigodom istaknuo da ova vozila nisu imala stratešku obrambenu funkciju u Domovinskom ratu, ali su zavrjedila veliku pažnju s obzirom na to da su izrađena ručno i de facto u ilegalni, a sve kako bi doprinijela obrani Hrvatske. Torpedo je do prosinca 1991. godine izradio i HV-u predao četrdeset takvih vozila.

B. S.



S primopredaje vozila...

PRIPREMA SE IZLOŽBA »SJEĆANJE NA DOMOVINSKI RAT« KOJA ĆE U LISTOPADU BITI OTVORENA U KLOVIČEVIM DVORIMA

KOLONA OKLOPNJAKA NA TRGU BANA JELAČIĆA

Dio krila jednoga od oba aviona koja su pala kraj Sibenika, odore milicionara krajine, 54 detaljne karte vojnih operacija, prvi oklopnjaci sastavljeni po seoskim radionicama... samo su neki od 1400 eksponata izložbe «Sjećanje na Domovinski rat» što će javnosti biti predstavljena u Klovičevim dvorima na gornjogradskom Jezuitskom trgu u Zagrebu od 1. do 31. listopada. Godinama prikupljani izlozci spremni su u zagrebačkom Vojnom muzeju, čiji su stručnjaci osmislili uzbudljivu izložbu s performansama, videoprojkcijama i instalacijama.

Na 1800 četvornih metara izložbenoga prostora posjetitelji će ulaziti preko balvana, da bi uz zavijanje sirena i zvuke bombardiranja sišli u podrum prolazeci pokraj vreća pijeska i barikada. Uvod je to u prvu izložbenu temu «Početak agresije». Odore krajinske vojske i milicije izložene su kao strašila. Prostorija «Bitka za Vukovar» ukvirena je daščanom ogradom koja simbolizira obruč s dnevnikom 90 dana opsade apliciranim na ogradu. Sa svoda više dijelovi granata, a u sredini je zid oružja obrane.

Slijede prostorija s rešetkama «Logor», s autentičnim predmetima koje su izrađivali zatočnici, «Kulturna baština na nišanu» te dio s lutkama u svim varijantama odora - tema «Stvaranje Hrvatske vojske, zatim «Rat za vojarnu», «Bojista», «Hrvatska ratna mornarica u obrani Jadrana», «Čime se branila Hrvatska», «Misija EZ-a» prikazana u rotaciji stražarima...
 VUKOVAR - Ovo stin je do sada obišlo 100 deminiranih i deset dana, nov stroj za deminiranje učini za jedan sat. Protvod je to osječkog Centra za mine i OET-a, a riječ je o preinaciranome sjelosprikladu, kojim se sada uklanjaju mine do 25 cm dubine - obustavlja me Zelenko dakle, ovaj stroj poteklo je od pukovnika Slavka Stojanovića. Opreku se isporuka još jednog stroja čija je izradba financirala čija je izradba financirala...
 SLONOVNA DUMIČIĆA 10



Brže deminiranje
 VUKOVAR - Ovo stin je do sada obišlo 100 deminiranih i deset dana, nov stroj za deminiranje učini za jedan sat. Protvod je to osječkog Centra za mine i OET-a, a riječ je o preinaciranome sjelosprikladu, kojim se sada uklanjaju mine do 25 cm dubine - obustavlja me Zelenko dakle, ovaj stroj poteklo je od pukovnika Slavka Stojanovića. Opreku se isporuka još jednog stroja čija je izradba financirala čija je izradba financirala...
 SLONOVNA DUMIČIĆA 10

dubrovnik
 S RATNOG TRONA U ZABORAV I DRAČU
MAJSAN - DUBROVAČKA LEGENDA
 Prvi zadaci tog oklopnog vozila bili su izvlačenje ljudi iz skloništa...
 U Klubu 90, u Banja...
 temu »Oklopnjaci domov...«

MORH ne dopušta objavljivanje knjige o hrvatskim oklopnjaci

Piše Vlasta NEZBROJIC
Ministarstvo obrane Republike Hrvatske, uzplaćeno talasom optužbi za zloupotrebu vojne snage protiv...
Tvorci prvog vojnog oklopnjaka ostali su bez ordena i ne rade



POTREBA ZA POVIJESNIM STRUČNJACIMA

novosti
 U Klubu 90, u Banja...
 temu »Oklopnjaci domov...«



«Drogirani ustaše», njihov projekt, ime duguje legendi po kojoj je neki beogradski reporter u izvještaju s fronte izjavio da «drogirani ustaše bombe bacaju i na pola kilometra udaljenosti»...
 Prvi MINOČISTAČ HV, DJELO ŠKVERSКИH KONSTRUKTORA, USPJEŠNO POLOŽIO PRVE TESTOVE
»MATAN« KREĆE U MINSKA POLJA



TOPOVNJAČE

Prema svom 'oklopu' kamioni topovnjače ne spadaju u improvizirane oklopnjake, ali smo ih ipak svrstali na ove strane radi svojih originalnih rješenja, iako nije niti potpuno točno da svi nisu bili oklopljeni. Mnogi od ovih kamiona su imali nekakav oklop ili na vozilu, ili na samom oruđu.

U svakom slučaju potreba za naoružavanjem vozila i omogućavanje brzog mijenjanja vatrene položaja topova većih kalibara i velike vatrene moći (automatskih), rezultirala je naoružavanjem mnogih kamiona. Kako su u početku bili na raspolaganju samo neki topovi Bofors 40mm na mornaričkim postoljima, takvi su montirani na kamione. Kasnije su kamioni najčešće naoružavani jednocijevnim ili trocijevnim topovima 20mm. Pred kraj 1991. i početkom 1992. u zemlju su stigli i dvocijevni i četverocijevni teški mitraljezi KPV 14,5 mm te su takvi kompleksi vrlo rado montirani na kamione radi manje težine i trzaja ali još uvijek velike vatrene moći.

Šasije topovnjača su u početku bili obični civilni kamioni, od 'tamiča' (TAM-80) do težih FAP-13, ali zaplijenom terenskih vojnih kamiona s pogonom na sve kotače, posebno TAM110 i TAM150 ti se kamioni, radi svoje prohodnosti, sve više koriste u te svrhe. (Pogledati i vozila Željezare Sisak)

GUN TRUCKS

Although Gun Trucks do not fit neatly into the category of 'Improvised armored vehicles', because of their appearance and improvised solutions they are included in these pages. Some of them were, nevertheless, partly armored, in some cases only the guns while in others the cabs too.

In any case the need for heavy armament capable of changing firing position quickly and delivering a respectable punch resulted in the arming of many trucks. As in the beginning only large 40 mm naval Bofors guns were available, these were mounted on truck beds. Later trucks were armed with lighter and more suitable single or triple barreled 20 mm guns. By late 1991 and early 1992 twin and quadruple KPV 14,5 mm heavy machine guns were available and they were found very suitable for the purpose because of their light weight and recoil but nevertheless high volume of fire.

The Gun Truck chassis were in the beginning common civilian trucks, ranging from the small TAM-80 4x2 1-ton trucks to the heavier 5-ton FAP-13. With the capture of large quantities of military all-wheel-drive equipment, TAM110 4x4 and TAM150 6x6 trucks were the most often trucks used.

Look also at the Željezara Sisak (ironworks plant) vehicles.



Nedeljko Pinezic 301



fotodokumentacija HVG 302



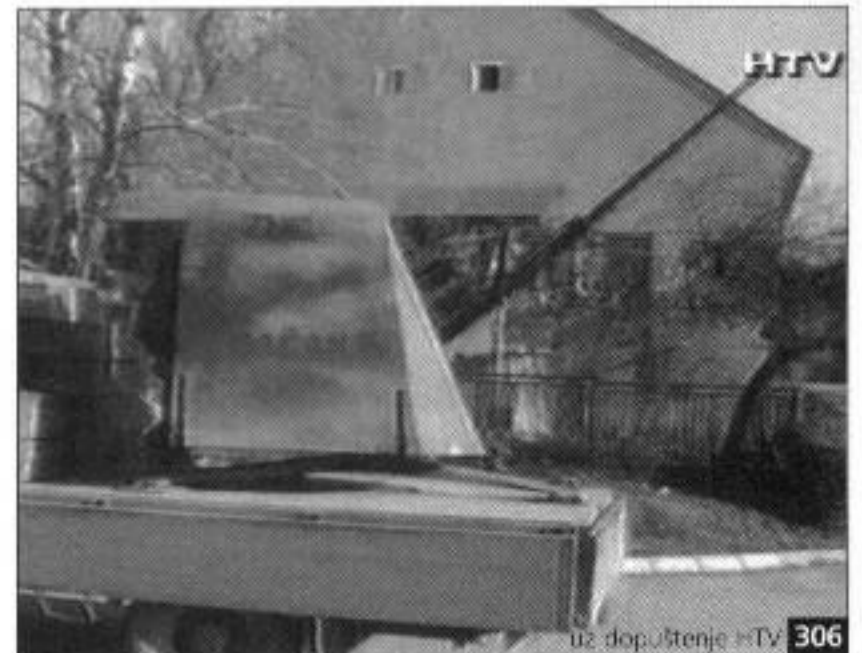
303 David Spencer collection



fotodokumentacija HVG 304



305 fotodokumentacija HVG



uz dopuštenje HRTV 306

307 Vojislav Jereb



Crteži nekih naoružanih vozila, uglavnom iz samih početaka sukoba (srpanj-kolovoz 1991.) rekonstruirani prema fotografijama i snimkama objavljenim u dnevnoj štampi ili na TV. Crtež 307 prikazuje džip tipa Jeep CJ8 s automatskim topom 20 mm na području Kostajnice, crtež 308 naoružanu prikolicu s mitraljezom NPV 12,7 mm i polukružnim limenom štitom u Vukovaru, crtež 309 terensko vozilo Nuova Campagnola (Fiat-Zastava 1107J) vjerojatno JNA porijekla, naoružanog teškim mitraljezom KPV 14,5 mm, a crtež 310 prikazuje 'tamića' s topom 20 mm M-75 u oklopnoj kupoli na položaju na autocesti, vjerojatno u okolici Okučana. Serija slika (311) pokazuje naoružane prikolice, od kojih su prve tri slikane u okolici Bjelovara.

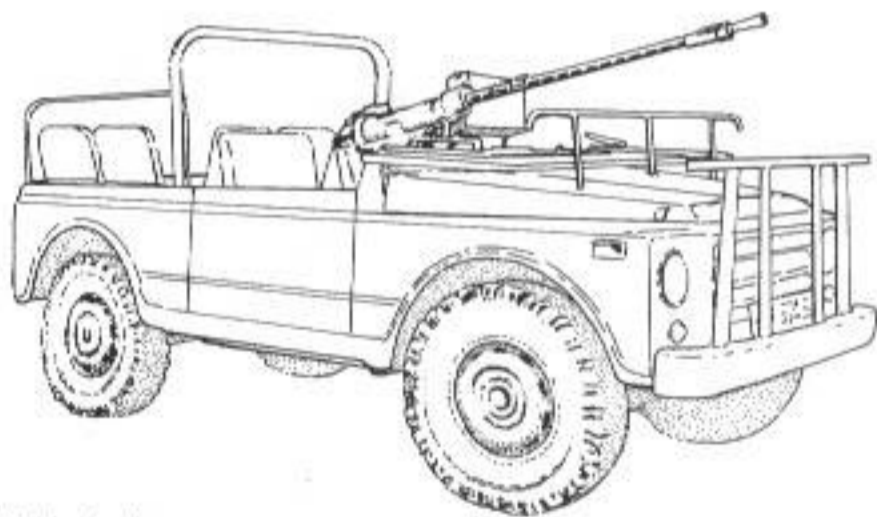
rojatno u okolici Okučana. Serija slika (311) pokazuje naoružane prikolice, od kojih su prve tri slikane u okolici Bjelovara.

Several drawings of some armed vehicles form the very beginning of the conflict (July-August 1991) based on photos from newspapers and TV news. The drawing 307 shows a civilian 4x4 CJ8 Jeep with a 20 mm automatic canon as seen in the Kostajnica area. Drawing 308 depicts a trailer armed with a NSV 12,7 mm heavy machine gun and a semi-circular steel plate protection in Vukovar, while drawing 309 shows a locally built Fiat-Zastava 1107J Nuova Campagnola with a 14,5 mm KPV heavy machine gun mounted in the central position.

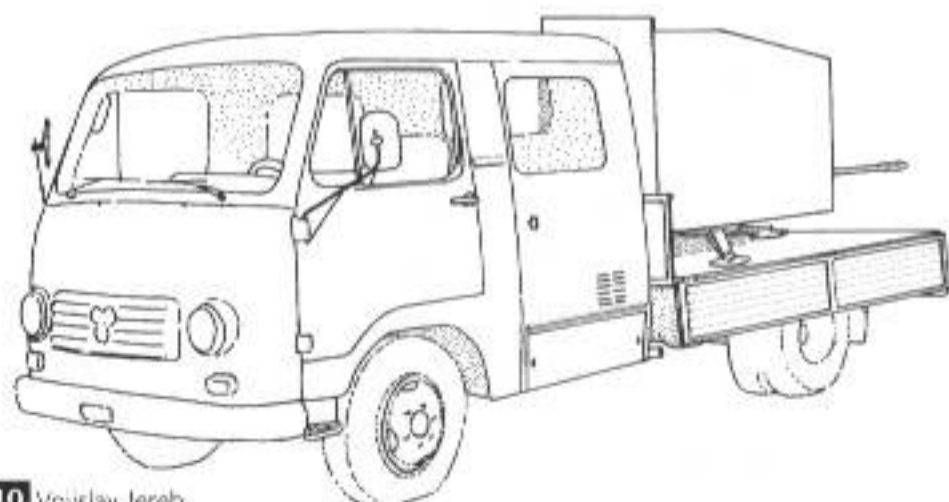
Drawing 310 shows a TAM-80 truck with a 20 mm M-75 cannon in an armored turret firing on a highway, probably near Okučani. Finally in photos 311 there are some TV stills of heavy machineguns on simple car trailers, the first three taken near Bjelovar.



Vojislav Jereb 308



309 Vojislav Jereb



310 Vojislav Jereb



uz dopuštenje HTV 311

RAZVIJENA VOZILA

Iako je netočno napisati da su iz improviziranih oklopnjaka razvijena druga, modernija i 'normalnija' oklopna vozila, ipak je činjenica da su za razvoj i proizvodnju tih vozila u Hrvatskoj korištena i iskustva tih prvih oklopnjaka.

Riječki *Torpedo* je na izradi prototipa oklopnog vozila koji će kasnije dobiti oznaku LOV (lako oklopno vozilo) i biti 'praotac' cijele serije vozila, počeo raditi već koncem 1991. godine, dakle dok je proizvodnja Straška još bila u punom zamahu. Ispitivanja prototipa LOV-a vršena su u proljeće 1992., a zadnji je Straško isporučen srpnja te godine!

Naravno da su za izradu tih sada već konvencionalnih vozila korištene sasvim druge tehnologije – za šasiju je uzet provjeren kamion vojnog porijekla TAM110 4x4 (prototip je izrađen na šasiji bivšeg JNA kamiona koji je izvučen iz ruševina JNA skladišta u Podhumu izvan Rijeke), a kao oklop su korišteni već pravi pancirni limovi. Nakon prototipa je slijedila i serija u nekoliko grupa, a izrađeni su u nekoliko podvarijanti. Do 'Oluje' je već bio izrađen priličan broj vozila tako da su aktivno korišteni prilikom oslobađanja okupiranih teritorija Hrvatske.

VEHICLE DEVELOPMENT

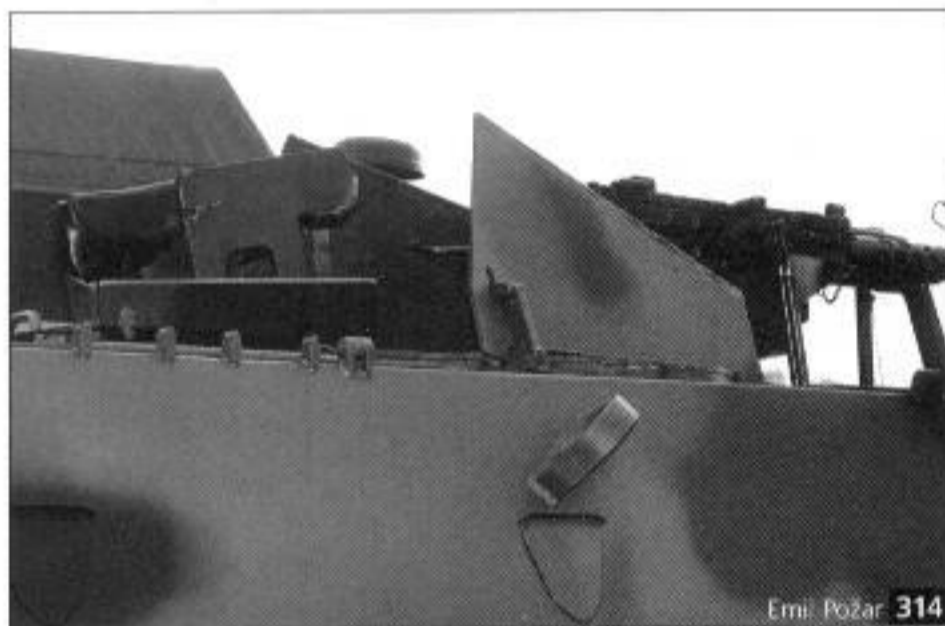
Although it is not true that from the first improvised vehicles other more modern vehicles were developed it is likely that some experiences from those strange constructions were of great use. At the same time while the Torpedo factory from Rijeka was building the 'Straško' series, they were working on the prototype of a true armored vehicle that would become the 'LOV,' the first of a whole family of vehicles. Testing of the first LOV was completed in early 1992, even before the last 'Straško' was delivered! For the construction of these more conventional vehicles, more sophisticated technology and materials were used. The LOV family of vehicles were based on the TAM110 4x4 military chassis. Hardened steel plates were used for the armor. After the prototype, several series of vehicles were built in different variants. Up to Operation 'Oluja' many vehicles were produced and used in combat, both in Krajina and Bosnia.



Emil Požar 312



313 Emil Požar



Emil Požar 314



315 Igor Petravić



izgled prototipa Lakog oklopnog vozila (LOV) riječkog Torpeda za vrijeme ispitivanja na Učki početkom 1992. godine (gore). Modifikacija lakog oklopnog vozila montažom višecijevnog raketnog bacača na stražnjem dijelu vozila (službena oznaka LOV-RAK) prikazanog na sajmu u Zagrebu (dolje).

The Torpedo LOV (LOV - Lightly Armored Vehicle) prototype as seen during initial trials on the Učka mountains near Rijeka in early 1992 (above). A LOV modification developed with the installation of a multiple rocket launcher on the back of the vehicle as shown on a fair in Zagreb. Official designation is LOV-RAK (below).



Zagrebački Končar je krenuo sličnim putem te je kao osnovu koristio troosovinsko vozilo vojnog porijekla TAM150 6x6. U ovom slučaju se radi o izradi platforme za potrebe protuavionske zaštite montažom lansera tipa Strelja-10. Vjerojatno je od JNA zaplijenjena određena količina samih lansera (lansirnih kabina s oruđima) no nedostajala su vozila. U Končaru su oklopili navedene kamione i na njih uspješno montirali raketne lansere. Pretpostavlja se da su izrađena samo dva takva vozila koja su korištena aktivno do 'Oluje' i nakon toga (slike 318 do 320).



Dario Vuljanić 318



319 fotodokumentacija HVG



Dario Vuljanić 320



321 fotoarhiva Brodarskog instituta



322 fotoarhiva Brodarskog instituta

The Končar factory followed a similar pattern and used a three axle military TAM150 6x6 vehicle chassis to develop an armored vehicle to fulfill the requirement to carry several Strelja-10 launching platforms captured from JNA stocks (cabs with missile launchers). At Končar they armored the trucks and mounted the launching platforms. Only two such vehicles were presumed finished and used in combat through Operation 'Oluja' (photos 318 to 320).

Brodarski institut i tvornica TAZ iz Zagreba su na osnovi nekoliko tipova eksperimentalnih samohodnih minobacača razvili višenamjensko oklopljeno vozilo. To vozilo je prikazano na slikama 321 i 322 i očit je utjecaj prijašnjih konstrukcija na završni proizvod. Kao polazna osnova korištena je šasija kamiona TAM150 T11 6x6. Pored glavnog oruđa na vozilu su montirane i dvije protuoklopne rakete 'Maljutka' (9M14). Vozilo, dovršeno kao prototip, vjerojatno je još u razvoju i nije poznato da li je ušlo u serijsku proizvodnju.

The Zagreb Naval Institute and the TAZ factory developed a self-propelled mortar which was the final product after several attempts that were both unsuccessful and successful. The vehicle shown in photos 321 and 322 has been heavily influenced by previous designs. As a base a TAM150 T11 6x6 truck chassis was chosen. Apart from the main weapon (a 120 mm mortar) two 'Maljutka' 9M14 anti-tank missile launchers were mounted on the side of the front cab of the vehicle. The vehicle was finished as a prototype and is probably still in the development stage, not yet entering series production.

MV-1, MV-2, MV-3

Potpuno novu seriju malih gusjeničkih vozila, posebno konstruiranih za namjenu razminiranja, izradilo je zagrebačko poduzeće *Dok-Ing* počevši od 1997. Prvo od tih vozila nazvano MV-1 prikazano je u medijima u travnju mjesecu 1997. Radilo se o daljinski upravljanom gusjeničkom vozilu relativno male težine (705 kg) sa zračno hlađenim dizel motorom motorom od 35 KS. Za razminiranje je koristilo princip mlatilice koja se nalazila na dugačkim rukama ispred vozila da se smanji mogućnost oštećenja prilikom eksplozija mina. Na rukama su i kotači na koje se ruke oslanjaju prilikom akcije razminiranja tj. vrćenja mlatilice (slika 323).

Tokom 1998. je razvijeno vozilo MV-2 koje je imalo nešto kraće ruke (teleskop), i radi toga su mlatilica i valjak su bili zaštićeni svojim okloпом (slika 324).

Isti pricip je zadržan na trećem vozilu koje je dalje razvijano. Težina tog vozila, nazvanog MV-3, je porasla na 3,7 tona, a koristi motor od 114 KS. Mlatilica (promjera 0,9 m i širine 1,8 m) i valjak su zaštićeni okloпом na teleskopu. Novina ovog vozila je mogućnost upravljanja razminiranjem iz drugog vozila, također lako oklopljenog ali potpuno zaštićenog od eksplozija mina. Svrha drugog vozila (MVP-1) nije samo upravljanje mlatilicom već i kontrola razminiranosti terena iza mlatilice sa senzorima te obilježavanje sumnjivih mjesta da bi ih kasnije provjerili pirotehničari (slike 325 do 327).

A completely new series of small tracked vehicles developed especially for mine clearing was built by the Dok-Ing company of Zagreb from 1997 onwards.

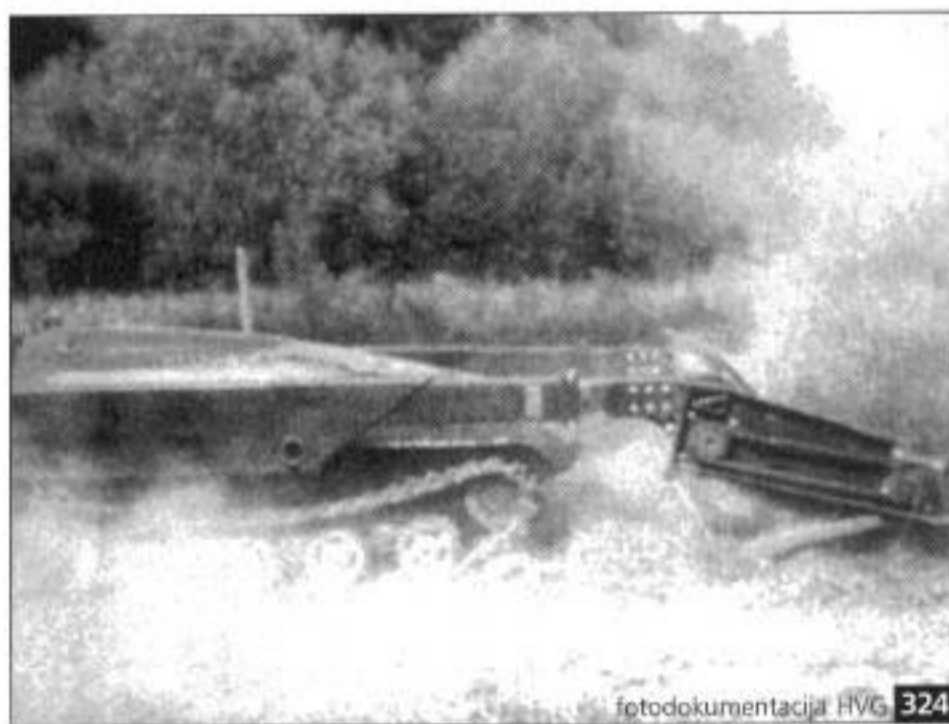
The first vehicle (called MV-1) was shown to the media in April of that year. This was a small remote controlled tracked flail weighting only 705 kg with an air cooled diesel engine of 35 HP. For mine clearing a chain flail was used on long arms in front of the vehicle with large wheels that serve as a ground support once the arm was lowered and began flailing (photo 323).

In 1998 another similar vehicle was developed. The vehicle (called MV-2) had shorter telescopic arms with no wheels and with additional armour around the flail and roller mechanism (photo 324).

The same principle was retained for a more developed vehicle (MV-3). The weight of this vehicle was raised to 3,7 tons with a diesel engine of 114 HP. The flail (of 0,9 m diameter and 1,8 m length) and the roller were protected by armor on the telescopic arm. The new feature of this system was the possibility for the remotely controlled flail to be controlled from another small tracked vehicle, also armored against mine explosions. The purpose of the second vehicle (MVP-1) was not only to remotely control the flail but also to control the cleared area behind the flail, automatically signalling suspicious places for final clearing with explosives (photos 325 to 327).



fotodokumentacija HVG 323



fotodokumentacija HVG 324



325 fotodokumentacija HVG



fotodokumentacija HVG 326



327 fotodokumentacija HVG



328 Vojislav Jereb



329 Danijel Sika



330 Vojislav Jereb



331 Vojislav Jereb collection



332 Vojislav Jereb

PODVOZJA (ŠASIJE)

Na slijedeće dvije strane prikazano je nekoliko tipičnih vozila čija su podvozja (šasijske) korištena kao osnova za izradu oklopnjaka, od onih potpuno oklopljenih na kojima se ne vidi niti detalj osnovnog vozila, do poluoklopljenih transportera, neoklopljenih 'topovnjača' i specijalnih vozila za čišćenje mina. Sva prikazana vozila su ona koja smo u to vrijeme svakodnevno susretali i u pravom smislu riječi su 'pokupljeni' sa ceste, oklopljeni i poslani u borbu.

Slika 328 prikazuje tipični teški kamion kiper tipa **Tatra-138** s motorom od 180 KS i pogonom na svih šest kotača, originalne češke konstrukcije iz kasnih 50-tih godina koji su koncem 80-tih već bili zastarjeli i uglavnom izašli iz upotrebe.

Slika 329 prikazuje artiljerijski traktor **GJ-800**, sovjetske konstrukcije iz kasnih 40-tih godina koji je proizveden i u Mađarskoj, a modifikacija je vršena i u Jugoslaviji. U ratu 1991./92. JNA takve traktore više nije koristila već su bili rashodovani ali je nekoliko takvih sakupljeno po otpadima ili šumarskim poduzećima koji su ih kupili s JNA otpada i koristili u šumama za izvlačenje. Originalno su imali motor od 125 KS. Slika 330 prikazuje kamion **TAM-80**, popularnog 'tamiča' kakvih je u Hrvatskoj početkom sukoba bilo na tisuće. Vrlo robustan i izdržljiv kamion, dobro pogođene konstrukcije sa motorom od 80 KS i pogonom na zadnje kotače, bio je česta platforma kako za manje oklopnjake tako i za prve topovnjače najčešće ugrađivanjem jednocjevnog topa 20 mm. Na slici je varijanta s duplom kabinom i dugim međuosovinskim razmakom.

Artiljerijski traktor **ATS-59** na slici 331 je sovjetskog porijekla. Za razliku od drugih gusjeničkih traktora korištenih za izradu oklopnjaka ovaj nije 'nabavljan' na otpadu ili od šumarskih poduzeća, već je zapljenjen od JNA jer je još bio u naoružanju za vuču artiljerijskih oruđa. Kako su ti traktori zapljenjeni krajem rujna 1991. više nisu korišteni za izradu improviziranih oklopnjaka već su kasnije preuređivani u razne minočistače.

Na slici 332 je utovarivač-rovokopač tipa **Torpedo GR 75A** kojeg je riječka tvornica radila po talijanskoj licenci i koji je uzet kao osnova za seriju oklopnjaka tipa Straško (HIAV). Torpedo je izradio preko 200 takvih utovarivača. Šasija tih vozila je znatno modificirana, uređaj za dizanje prednje žlice/noža je pojednostavljen i na njih je ugrađen oklop od broskog lima.

These pages show some typical vehicles whose chassis were used as the basis for the construction of improvised vehicles. Some were totally modified that after completion the original vehicle could not be discerned. Others were partly armored or converted into unarmored gun trucks. Finally, some were turned into armored or unarmored mine clearing vehicles. All these vehicles came from every-day Croatian life of the time and were simply picked from normal activities, armored and sent into battle.

*Photo 328 shows a typical heavy construction type **Tatra-138** 6x6 dump truck with a 180 HP diesel engine, of original late 1950s Czech construction. By the 1980s they were obsolete and mostly withdrawn from use.*

*Photo 329 shows a type **GJ-800** artillery tractor. It was built in the Soviet Union in the late 1940s, and also built in Hungary as the Czepeľ K-800 and modified in the former Yugoslavia. By the 1991/92 war they had been withdrawn from the JNA arsenal but several were in use in the forestry industry or simply recovered from junk yards. The original diesel engine could develop 125 HP.*

*Photo 330 shows a **TAM-80** 4x2 utility truck, a very popular and well liked truck usually called 'little Tam'. At the outbreak of war thousands were in use in the civilian as well as in the military sector. It was of very sturdy and robust construction with an 80 HP engine often used for smaller armored vehicles or as a platform for single barreled 20 mm guns. In the photo a long cab and long wheel base example is shown.*

*The **ATS-59** tracked artillery tractor (photo 331) was of Soviet origin too. Unlike other tractors this type was not taken from junk yards but many were captured from the JNA during the 'barracks war' in September 1991. As conventional armored vehicles were captured too, improvised armored vehicles were no longer needed but some of these tractors were turned into improvised mine clearing vehicles.*

*Photo 332 shows a **Torpedo GR 75A** front end loader. They were built under Italian license at the Torpedo factory at Rijeka and more than 200 were built. This vehicle was used as the basis for the Straško (HIAV) vehicles. Some minor modifications to the front end loading mechanism and chassis were made and steel plates were added for armor.*

CHASSIS

Na slici 333 je prikazan tipičan buldožer na kotačima – ovaj je tipa **ULT-160** proizvodnje 14. oktobar iz Kruševca u Srbiji. Mnoštvo takvih strojeva s motorom od 150 ili 160 KS je bilo u upotrebi u građevinskim tvrtkama ali i u inženjerskim jedinicama JNA. Neka od tih vozila su prepravljena u improvizirane minočistače.

Slika 334 prikazuje teški kamion **TAM-260 T26** s motorom od 260 KS. Ti kamioni, proizvedeni u mariborskom TAM-u, imali su pogon na zadnjim osovina (6x4) ili na svim osovina (6x6), a radi svoje robusnosti kao i zrakom hlađenog motora, često su korišteni za najteže oklopnjake koji su izrađeni u samom početku sukoba.

Slika 335 pokazuje tipičan kamion isporučen kao furgon za prijevoz namještaja. U ovom slučaju radi se o kamionu **FAP-1220** s motorom od 120 KS, proizvodnje kruševačkog FAP-a, no slični modeli su također korišteni. Furgoni ovog tipa i iz ove tvornice (TVIN) su bili polazna osnova za izradu dva oklopnjaka tipa 'Mikeš' u Virovitici.

Na slici 336 je prikazan jedan od najčešćih i najtipičnijih kamiona viđanih na našim cestama sedamdesetih ali i osamdesetih godina. To je poznata serija TAM-ovih 'njuškaša' sa zrakom hlađenim motorima raznih snaga, a imali su oznake **TAM-4500**, **TAM-5000** i **TAM-5500** (gdje je brojčana oznaka značila nosivost), a kasnije su oznake dobivali prema snazi motora i nazivnoj nosivosti. Kako je takvih kamiona bilo za rashod u jako velikom broju, vrlo su često korišteni za izradu oklopnjaka ili kao artiljerijske platforme za montažu topova i teških mitraljeza.

Još i prije pada okruženih JNA vojarni, tipično vojnički kamion kakav je bio **TAM110 T7** (slika 337) bio je u sastavu nekih policijskih snaga kao i nekih civilnih poduzeća za rad u teškim terenskim uvjetima. Pogonjen zrakom hlađenim motorom od 110 KS to je bio standardni kamion u naoružanju JNA, a kao vrlo robusno vozilo dobro je poslužilo kao osnova za neke od prvih oklopnjaka.

*Photo 333 shows a typical wheeled bulldozer of the period. Here a **ULT-160** vehicle is seen, built by the 14. oktobar factory in Kruševac, Serbia. Many such vehicles with a 150 or 160 HP diesel engine were in use with construction companies and several were in use with the engineering units of the JNA. Some of these vehicles were rebuilt as armored mine clearing vehicles.*

*The heavy **TAM-260 T26** truck (photo 334) was a product of the TAM factory at Maribor, Slovenia. It had a 260 HP air cooled engine and could be ordered in 6x4 or 6x6 versions. Due to their sturdiness and air cooled engine it was a simple and welcome basis for many improvised armored vehicles built at the beginning of the conflict.*

*A truck converted to a furniture van shown on photo 335 was the basis for the 'Mikeš' improvised armored vehicle. The truck was of the **FAP-1220** type with a 120 HP diesel engine, built by the FAP factory at Kruševac. The truck shown in the photo belongs to the TVIN company and resembles the one used for conversion into armored trucks in 1991.*

*Photo 336 shows a typical, most common type of truck with a 'cab behind engine' layout. Such trucks were seen in thousands throughout Croatia during the 1970s and 1980s. This was a very popular type built by the TAM factory in the **TAM-4500**, **TAM-5000** or **TAM-5500** series. The number indicated the maximum recommended load (in kilograms). Later the designation changed according to the engine power. All had air cooled diesel engines of different powers. There were many such trucks near retirement due to their age and mileage, but with the outbreak of war many were used either to build armored vehicles or as mobile gun or machine gun platforms.*

*Even before the surrender of the JNA barracks several military type **TAM110 T7** 4x4 trucks (photo 337) were used by the Police forces or by some civilian companies which needed good off-road trucks. With its 110 HP air cooled engine it was the standard 4x4 truck of the Yugoslav Army (JNA). This very sturdy truck was used as the basis for several of the very first improvised armored vehicles.*





338 uz dopuštenje HTV



339 uz dopuštenje HTV

OSTALI 'KORISNICI' IMPROVIZIRANIH OKLOPNJAKA

Zanimljiva strana ratovanja u Hrvatskoj bila je i korištenje oklopnjaka sa 'one druge strane'. Nije nam pri tome namjera analizirati eventualnu izradu improviziranih oklopnjaka u radionicama 'Krajine' ili BiH već samo korištenje i sudbinu oklopnjaka koje su zarobili hrvatskoj strani.

Vojska 'Srpske krajine'

Poznato je da je nekoliko oklopnjaka zarobljeno u borbama u jesen 1991. godine i neki od njih su bili korišteni i nakon toga na strani neprijatelja.

Među tim vozilima bilo je i jedno gusjeničko vozilo Janaf-a za koje nije poznato kada i gdje je palo u ruke neprijatelju (slika 342). Vjerojatno je to isto vozilo pronađeno nedaleko Kostajnice nakon Oluje, ali je kasnije razrezano. Poznato je da je jedan gusjeničar Janaf-a završio i u Bosni, ali nije jasno kako. Viđen je s ogromnom kupolom u jednom 'collection point-u' UN-a nedaleko Sarajeva, no nije jasno da li je vozilo tamo korišteno (sa srpske ili neke druge strane) ili je tamo dovezeno prilikom sakupljanja tehnike. Od Janaf-ovih vozila bio je zarobljen oklopljeni Land-Rover s bestrzajcem, ali je nakon 'Oluje' pronađen, te je kasnije prodan bez oklopa. Jedno od zarobljenih vozila bilo je i Hidroelektrino vozilo koje je zarobljeno vjerojatno u borbama oko Pakraca i Lipika početkom listopada 1991. godine, a vozilo je bilo pobojano još u plavu policijsku boju sa rotacionim (policijskim) svjetlima (slike 338 i 339).

Već smo spomenuli da je u borbama kod Vrlike zarobljen jedan oklopnjak iz Brodosplitske serije (SC015-HT082) koji je kasnije isto tako pronađen nakon 'Oluje'. Još jedan splitski oklopnjak (SC15-HT081) je viđen i slikan u okolici Bihaća (UN), no nije jasno čijoj je strani pripadao, muslimanskoj ili srpskoj (slike 340 i 341).

Navodno je oko Kostajnice nakon 'Oluje' pronađen i jedan oklopnjak iz Varteksa (moguće Ruža Hrvatska) no taj podatak nije dokumentiran fotografski.

OTHER USERS OF IMPROVISED ARMORED VEHICLES

An interesting part of the war in Croatia was the use of improvised armored vehicles by the enemy side. Here we will not discuss possible production of such vehicles in Krajina or BiH workshops, but only the use of captured Croatian vehicles by those belligerent sides.

Republika Srpska Army

It is known that several vehicles were captured in combat during Summer and Autumn 1991 and some remained in use after capture.

Amongst them was a Janaf tracked vehicle but is not known when and exactly where it was captured (photo 342). The same vehicle was found near Kostajnica after the war but was later cut up for scrap. Another tracked Janaf vehicle ended up in Bosnia but is unclear how. It was seen with a huge turret at a UN collection point outside Sarajevo but remains unclear if the vehicle was brought there or it was used in that area, and by which side (Serb or Bosnian). Another Janaf vehicle, the armored Land-Rover with the recoiled rifle was also captured only later to be recaptured by the Croats during the 'Oluja' operation.

One of the Hidroelektra three axle vehicles was captured in combat in the area of Pakrac and Lipik in early October 1991 (photos 338 and 339). The vehicle was painted in Police blue livery with Police lights.

It was mentioned earlier in the book that near Vrlika a Brodosplit vehicle (SC015-HT082) was captured, and later found near Knin. Another Brodosplit vehicle, the SC15-HT081 was seen and photographed by UN forces in the Bihać area probably being used by the Serbs (photos 340 and 341).

Finally, a Varteks made vehicle was allegedly found near Kostajnica after the 'Oluja' operation. It is possible the vehicle was 'Ruža Hrvatska'.



340 David Spencer collection



341 David Spencer collection



David Spencer collection 342

HVO i Armija BiH

Nije točno poznato koliko je i kojih improviziranih vozila završilo u BiH na strani HVO-a u ratu 1992. i 1993. Fotografski materijal iz toga perioda je prilično mršav i, ukoliko na vozilima ne postoje izrazite oznake, nije moguće utvrditi kojoj strani pripadaju (HVO ili Muslimanima).

Barem četiri Hidroelektrina vozila troosovinca su korištena u Bosni. Neke su slikali pripadnici jedinica UN-a, a fotografije drugih su objavljene u novinama. Fotografija jednog takvog vozila s natpisom '... Herceg-Stjepan' objavljena je u Slobodnoj Dalmaciji listopada 1992. (slika 343). Slika drugog pokazuje vozilo u rukama Armije BiH, a objavljena je 1995. u časopisu 'Raids' (slika 346). Jedno vozilo s kupolom je objavljeno u časopisu 'Jane's Intelligence Review', dok je još jedan slikan u voznom parku HVO-a u Tomislavgradu nakon rata (slike 344 i 345).

Oklopnjak 'Domagoj' je slikan u zapadnoj Bosni s jedinicama HOS-a pa se zaključuje da je jedno vrijeme korišten i tamo. Meksička televizija je objavila snimke o opsadi Sarajeva na kojima je vidljiv i jedan 'Straško' s oznakama crvenog križa, u ili pored Sarajeva. BBC je 1993. emitirao snimke iz Viteza na kojima je bio vidljiv i jedan TAZ-ov sanitetski oklopni autobus. Već je ranije spomenuto da je i 'Poskok' (HOT-111 iz Dugog Rata) završio svoj ratni put vjerojatno u Bosni.

Dakle sve zaraćene strane su imale razloga koristiti i zarobljena vozila ovog tipa, bez obzira na sve nedostatke improvizacija na kojima su takva vozila koncipirana i izrađena.

HVO and BiH Army

It is not known exactly how many improvised vehicles found their way in Bosnia and Herzegovina with the HVO forces in the 1992-93 war. Photographic evidence is rather poor and due to the fact that many of these vehicles did not carry any kind of visible insignia it cannot be determined which side used them (HVO or Muslim).

At least four Hidroelektra 6x4 armored vehicles were used in that area. Some were photographed by UN forces, others were published in newspaper photos. A photo of one with the inscription '... Herceg-Stjepan' was published in October 1992 in Slobodna Dalmacija newspaper (see insert 343). Another vehicle in Bosnian hands was published in 1995 in the 'Raids' magazine (photo 346). A vehicle with a turret was published in Jane's Intelligence Review' while another one was photographed in a HVO vehicle park in Tomislavgrad after the war (photos 344 and 345).

ka kronika



RAVNO JOŠ BE...
JAVNE S...
**Po dok...
u Neum**
NEUM -
točnu ob...
Ravno još n...
kolektivni S...
gustinski se...
kvalitativn...
Ravno p...
površni u n...
sve, što us...
sve S...
je opre...
le o...
loz...
u...



Vojislav Jereb collection 344



346 Yves Delbay

The 'Domagoj' vehicle was photographed in Western Bosnia with some HOS units and it can be concluded it was used there too. The Mexican TV broadcast footage of the Sarajevo siege showing a 'Straško' vehicle with red cross markings, in or near Sarajevo. The BBC broadcast some footage in 1993 from Vitez showing amongst other things an armored ambulance bus without red cross markings. It was mentioned earlier that HOT-111 ('Poskok') also found its way in Bosnia.



Vojislav Jereb collection 345

Među ostalim korisnicima zanimljivih oklopnjaka na kotačima bilježimo i jednog novinarskog Pinzgauera (model 712) s oklopnim nadgrađem proizvodnje Cachleitner (slika 347), slikanog 1993. oko Maslenice.

Another interesting user of unusual wheeled armored vehicles was the press with this Cachleitner armored Pinzgauer-712 6x6, photographed in the Maslenica area in 1993 (photo 347), obviously not of Croatia origin.



Silvano Jezina 347

A DANAS?

Danas, desetak godina nakon sudbonosnih događaja koji su uvjetovali nastanak mnogobrojnih improviziranih vozila, pitamo se da li se i gdje neka od tih vozila mogu vidjeti i opipati?

Dio vozila je za vrijeme rata u borbama uništen. Neka od vozila su, nakon što je prestala potreba za njima, vraćena u prvobitno stanje i nastavila su raditi posao za koji su ustvari namijenjena (tu se prvenstveno radi o skupocjenim građevinskim strojevima (slika 348), rijetko o 'običnim' kamionima).

Mnoga vozila su jednostavno ostala na terenu gdje su korištena – što radi kvarova, što jednostavno radi prestanka potrebe za njima. Osjeća se potreba da se barem dio tih vozila spasi, konzervira i spremi u spomen za buduće generacije. Zato se pojavljuju pojedinci, grupe i institucije koji nastoje lokalizirati i sakupiti ta vozila.

Radi toga smo na sljedećoj strani izložili gdje se nalaze neka vozila, bilo 'na terenu' bilo sakupljena da čekaju restauraciju ili izlaganje. Namjera te mape je da ukoliko želite vidjeti neka od tih vozila 'u živo' da ih potražite na spomenutim mjestima.

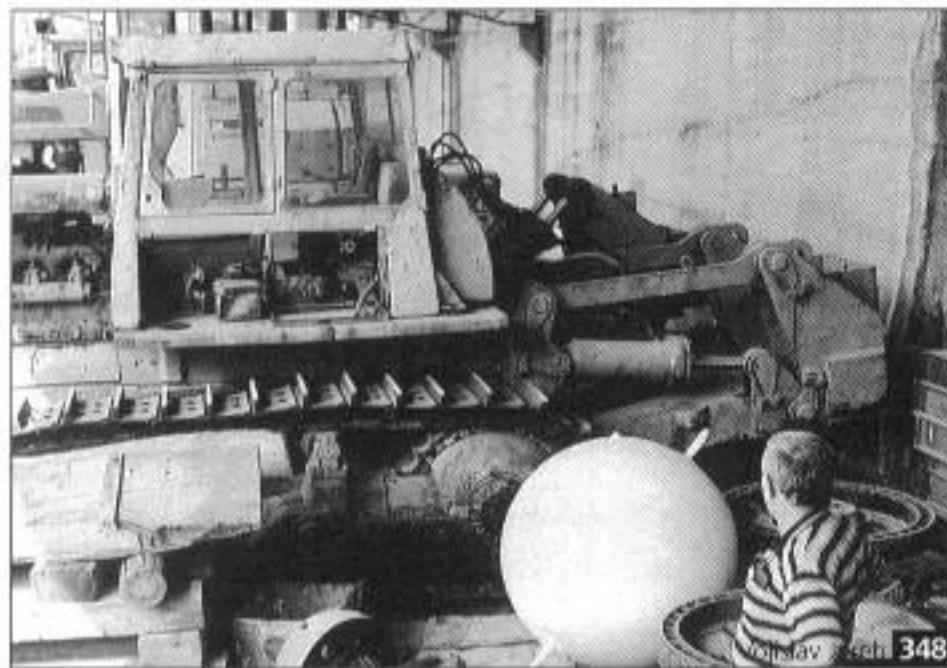
Danas (konac 2001. godine) imamo nekoliko mjesta gdje su javno izložena neka od tih sakupljenih vozila. Jedno od tih je ispred upravne zgrade Janafa u Crncu kod Siska. Tamo se nalaze, pored ostalih eksponata na otvorenome, i tri oklopnjaka iz njihove (Janafove) serije, i to dva gusjeničara (Šerman i ZNG P-14) te jedan točkaš (prvi oklopljeni Unimog sa naknadno ugrađenom mitraljeskom kupolom).

Jedan oklopnjak (Hrvoje) je postavljen kao spomenik u Ribniku kod Gospića, na mjestu uništenja sličnog oklopnjaka (Krešimira) i pogibije branitelja rujna 1991. godine.

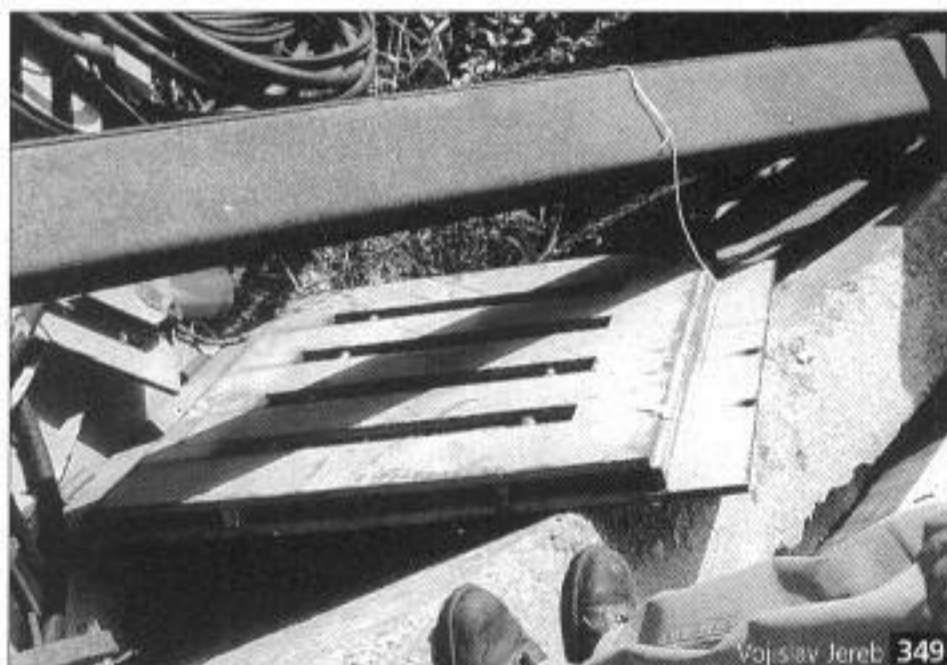
Jedan od prvih Janafovih gusjeničara je izložen unutar jedne vojarnje u Petrinji, a crni Hidroelektrin točkaš je izložen u Savici kod Zagreba (slika 350).

Veliku kolekciju oklopnjaka je sakupio Vojni muzej u Zagrebu (koji djeluje pod Ministarstvom obrane RH), čak 35 oklopnjaka. Dio tih oklopnjaka je restauriran, a neki od njih su dovedeni u vozno stanje. Nažalost Vojni muzej još nema lokacije u Zagrebu niti stalnu postavu, te su ti oklopnjaci danas parkirani u Borongaju. Za nadati se da će tako vrijedna zbirka improviziranih vozila vrlo uskoro ugledati svijetlo dana i biti stalno dostupna mnogim znatiželjnicima.

Slična postava vozila iz Domovinskog rata, među kojima i barem jednog oklopnjaka (Sv. Juraja) priprema se i u Turnju kod Karlovca. Za nadati se da će i ta postava uskoro otvoriti svoja vrata posjetiteljima.



348



Vojislav Jereb 349



350 Bozja Greguric



351 Vojislav Jereb

AND TODAY?

Today, ten years after the fateful events which led to the creation of so many strange and wonderful machines, we continue to search for surviving vehicles, photographs and stories about those vehicles. Our information is still far from complete.

A portion of the vehicles were destroyed in battle. Another part were converted back to their normal roles, mostly the more expensive construction vehicles (photo 348), less frequently the 'ordinary' trucks.

Many of the vehicles remain in the regions where they were used – either because of engine failures, more often because they were simply no longer needed. Therefore there is a need to collect and save at least part of these vehicles for future generations. Many persons and organisations help localize and collect these vehicles.

On the following page a map is provided showing all known locations of vehicles which survived the war. This will enable the reader to visit at least some of those vehicles.

By the end of 2001 there were several places where vehicles were displayed. One of those places is in front of the main building of the Janaf company at Crnac near Sisak. Along with other exhibits, there are three Janaf's improvised vehicles, two tracked ('Sherman' and 'ZNG P-14') and a wheeled vehicle (the first armored Unimog with added turret).

One vehicle (Hrvoje) is displayed as a war monument near Ribnik not far from Gospić where another vehicle (Krešimir) was destroyed and a ZNG soldier killed in September 1991. Another Janaf's tracked vehicle is displayed inside an Army barracks at Petrinja, while the black Hidroelektra vehicle is displayed at Savica near Zagreb (photo 350).

A large collection (35 total) of improvised vehicles is in the hands of the Military Museum in Zagreb (which is under the direction of the Ministry of Defence). Part of the vehicles have been restored to driving condition. Unfortunately the Museum has still no place to display all the vehicles and they are parked away from the public eye at the Borongaj barracks. One can only hope that this valuable collection will soon be completely revealed so the vehicles can be fully admired.

Another similar collection of vehicles used during the Patriotic war, among which is at least one improvised armored vehicle (Sv. Juraj) is being prepared for display at Turanj near Karlovac. Our hope is this will happen soon too.



Mapu nacrtao/map by Boris Gregurić

- | | | |
|---|--|---|
| <p>1 - Drniš
HTxxx
(gdje)
(location)</p> | <p>7 - PETRINJA:
"Straško"
napušten u vojarni 2.GBr
wfu in the 2nd Guards Brigade barracks</p> | <p>12 - VINKOVCI:
Boban
parkiran u MUP Vinkovci
wfu in the Vinkovci Police station</p> |
| <p>2 - DUBROVNIK / KONAVLE:
Majsan
na livadi nedaleko grada
wfu in a field, near the town</p> | <p>8 - POŽEGA:
Sokol 100, Zenit
u vojarni
wfu in the barracks</p> | <p>13 - ZADAR:
Matan
samo uređaj, na aerodromu
wfu at the airport</p> |
| <p>3 - DUGA RESA:
Sv.Juraj
parkiran u ABB
wfu at ABB plant</p> | <p>9 - RIJEKA:
Konstruktor-1
parkiran, bez oklopa, u Mihačevoj Dragi
wfu, stripped of armour, in Mihačeva Draga</p> | <p>14 - ZAGREB:
HE-1
izložen na Savici
on display at Savica</p> |
| <p>4 - KNIN:
SC15 HT082
u vojarni / wfu in the barracks</p> | <p>Bus-2
u vojarni Trsat
wfu in the Trsat barracks</p> | <p>Mine-1 ("Gladni Jura")
parkiran u vojarni Prečko bez motora
wfu in the Prečko barracks, no engine)</p> |
| <p>5 - KUTINA:
KT-BT-001, KT-BT-003
parkirani kod INA-Petrokemije
wfu near INA-Petrokemija plant</p> | <p>10 - SISAK:
SO(W)-11, SO(T)-10, SO(T)-6
izloženi ispred upravne zgrade JANAF-a
on display in front of the JANAF building</p> | <p>zbirka Vojnog muzeja
Military museum collection:
BiB Mk.2, Bus-2, "Čazmatrans",
Domagoj, GMC, Hrvatina, Janko,
Mikeš, Nosorog, OSA-102, Sokol-3,
SPM (2), "Straško" (3), Tomislav</p> |
| <p>6 - LIČKI RIBNIK:
Hrvoje
izložen kao "Krešimir"
displayed as "Krešimir"</p> | <p>11 - VARAŽDIN:
Mine-1 ("Kristijan")
parkiran u vojarni
wfu in the barracks</p> | |

U pripremi / Forthcoming titles



**OKLOPNA VOZILA I
OKLOPNE POSTROJBE U
DRUGOM SVJETSKOM RATU
U HRVATSKOJ**
I. dio - Saveznička oklopna
vozila

Dinko Predoević

Hrvatska je u završnoj fazi drugog svjetskog rata u sporazumu sa saveznicima formirala dvije oklopne brigade. Uz mnoštvo fotografija ispričana je priča o ljudima i njihovim vozilima koji su u nizu žestokih bitaka duž Jadranske obale, Srijema i Slavonije, potiskujući njemačke divizije, kraj rata dočekale u Trstu spojivši se sa savezničkim snagama u Italiji. Prikazani su tenkovi T-34 i Stuart, oklopni automobili i samohotke sovjetske, američke i engleske proizvodnje. Meko ukoričeno, A4 format, 96 strana, preko 300 crno bijelih fotografija.

**ARMORED UNITS AND
VEHICLES IN CROATIA
DURING WWII**
Part I - Allied armored
vehicles

by Dinko Predoević

During the final days of WWII with the assistance of the Allies, the NOV (People's Liberation Army of Yugoslavia) formed two armored brigades. Lavishly illustrated with period photographs the story of these men and their equipment is told. The brigades fought a fierce campaign against the Germans along the Adriatic coast, Srijem and Slavonia regions, ending the war in Trieste, Italy. Shown are T-34 and Stuart tanks, armored cars of Soviet, American and British origin.

96 pages, softbound, A4 format with more than 300 black and white photographs.

Moguće naručiti na: www.adamic.hr
Available at: www.adamic.hr

Namjera i cilj izdavanja biblioteke HRVATSKA RATNA POVIJEST je prikazivanje povijesnih činjenica u riječi i slici, vezanih uz ratove i vojske u kojima je sudjelovao hrvatski narod ili koji su se doticali hrvatskih prostora. Ni u kojem slučaju namjera autora i izdavača nije da veliča, idealizira ili opravdava niti jednu ideologiju ili političku orijentaciju.



**OKLOPNA VOZILA I
OKLOPNE POSTROJBE U
DRUGOM SVJETSKOM RATU
U HRVATSKOJ**
II. dio - Oklopna vozila sila
osovine

Dinko Predoević

Nastojeći obuzdati i slomiti gerilski rat vođen u Hrvatskoj 1941-45 godine, njemačka okupaciona sila posize za svim raspoloživim zalihama trofejnog naoružanja. S druge strane talijanska okupaciona sila u istu svrhu upotrebljava sve što ima. Nastaju i nestaju razne oružane formacije te je ova knjiga pokušaj da se fotografijom i tekstom prikažu oklopne formacije suprostavljenih strana opremljenih njemačkom i talijanskom tehnikom, te vozilima prikupljenim od armija poraženih njemačkim nastupanjem početkom drugog svjetskog rata. Meko ukoričeno, A4 format, 96 strana.

**ARMORED UNITS AND
VEHICLES IN CROATIA
DURING WWII**
Part II - Axis armored
vehicles

by Dinko Predoević

Trying to break the partisan war in Croatia 1941-45, German occupation forces employed all types of captured armament. Concurrently, the Italian occupation forces also used a very diverse inventory of weapons. Due to the fierceness of combat, different units appeared and disappeared. Lavishly illustrated with photographs this book documents the armored units of the German and Italian forces, as well as vehicles of the armies defeated by the German advance in 1939-41.

96 pages, softbound, A4 format.



**HRVATSKA ZRAKOPLOVNA
LOVAČKA LEGIJA**

Danijel Frka i Josip Novak

U knjizi je prikazana povijest Hrvatske zrakoplovne lovačke legije koja je najveći dio svojega ratnog djelovanja izvršila na Istočnom bojištu u sastavu njemačkog zrakoplovstva. Opisani su ratni zadaci, zračne pobjede, tipovi aviona te piloti koji su bili u sastavu ove jedinice. Knjiga je opremljena velikim brojem neobjavljenih fotografija i brojnim ilustracijama. Meko ukoričeno, A4 format, 96 strana.

CROATIAN FIGHTER LEGION

by Danijel Frka and Josip Novak

This book describes the history of the Croatian Volunteer fighter unit that flew on the Eastern front under German command. All aircraft types used are described, with lists of pilots and victories.

The book is richly illustrated with a large number of previously unpublished photographs. 96 pages, softbound, A4 format.



**POMORSKO ZRAKOPLOVSTVO
1918.-1941.**

Danijel Frka i Vladimir Isaić

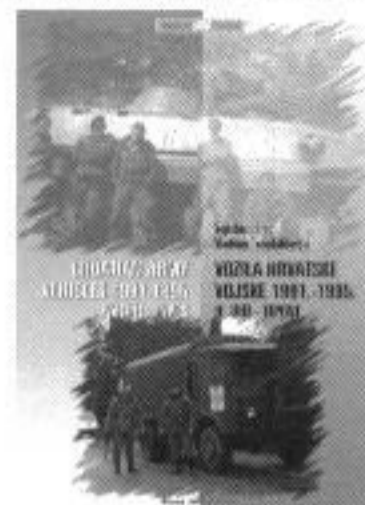
Knjiga predstavlja tipove aviona koji su korišteni u Pomorskom zrakoplovstvu Kraljevine Jugoslavije u razdoblju od njegovog nastanka 1918. godine pa do njegova uništenja 1941. godine. Opisana je kratka povijest svakog pojedinog tipa hidroplana i njegovog služenja u zrakoplovstvu. Prikaz dopunjuje velik broj do sada neobjavljenih fotografija i ilustracija. Meko ukoričeno, A4 format, 96 strana.

**NAVAL AIR FORCE OF THE
KINGDOM OF YUGOSLAVIA,
1918-1941**

by Danijel Frka and Vladimir Isaić

This book discusses flying boats and floatplanes used by the Naval Air Force of the Kingdom of Yugoslavia from its inception in 1918 until its demise in 1941. A brief history of every type of aircraft is provided as well as its use by the Air Force.

The book is illustrated with many previously unpublished photographs and quality illustrations. 96 pages, softbound, A4 format.



**VOZILA HRVATSKE VOJSKE
1991-1995, II dio - tipovi**
Foto album

**CROATIAN ARMY VEHICLES
1991-1995, PART II - TYPES**
A PICTORIAL HISTORY

by Vojislav Jereb and Vladimir Trendafilovski



**AUSTROUGARSKI BOJNI
BRODOVI I. SVJETSKOG RATA**

**AUSTRO-HUNGARIAN
BATTLESHIPS OF WORLD
WAR ONE**

by Zvonimir Freivogel

Do sada izdano / Already published



knjiga 1 - Book No.1 ISBN 953-219-024-3

VOZILA HRVATSKE VOJSKE 1991-1995

I dio - bojanje i označavanje - Foto album

Boris Gregurić i Vojislav Jereb

Hrvatska je početak agresije 1991. dočekala bez prave vojske koja nije raspolagala sa pravim vojnim vozilima. Uz više od 340 crno-bijelih i kolor fotografija u prvoj knjizi na ovu temu prikazano je kako su se civilna i zarobljena vojna vozila bojala i maskirala od samih početaka, te kojim su se i kakvim oznakama služile hrvatske snage.

Meko ukoričeno, A4 format, 96 strana od čega 32 u boji, preko 340 fotografija.

**CROATIAN ARMY VEHICLES 1991-1995
PART I - COLORS AND MARKINGS - A
PICTORIAL HISTORY**

by Boris Gregurić and Vojislav Jereb

Croatia began the war of 1991 with no army and had no military vehicles. The first part of the series discusses how the early civilian and captured military vehicles were painted and camouflaged, together with the insignia and identification markings. Illustrated with more than 340 black and white and color photographs, 96 pages (32 in color), softbound, A4 format.



352 fotodokumentacija HVG



353 Emil Požar

(gore) Slikan u garaži na zasluženom odmoru, ovaj Straško je maskiran u tipičnu četverbojnu maskirnu shemu u kakvoj su vozila izlazila iz rječkog Torpeda 1991. godine. Slikan je vjerojatno u Virovitici 1992. ili 1993.

(dolje) Iako slikan srpnja 1992. po završenom ustroju HV, TAZ-ov oklopni sanitetski autobus u sastavu 111. brigade ima originalnu maskirnu shemu kao kod primopredaje. Kasnije će višebojna maskirna shema biti zamijenjena jednolično tamno zelenom.

(above) Taken in an Army garage this 'Straško' armored tractor was painted in a four-color camouflage pattern typical of most of the vehicles produced at the Torpedo factory in Rijeka. This photo was probably taken in Virovitica in 1992 or 1993.

(below) Although photographed in July 1992 after the definite organization of the HV (Croatian Army), the armored ambulance bus made by TAZ of the 111th brigade retains the original camouflage pattern in which it was delivered. Later the vehicle would be repainted in overall dark green.

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