GREEN

**Przemysław Skulski** 

### T-34-85 After WW2

Camouflage & Markings 1946-2016





#### Przemysław Skulski

Colour illustrations
Piotr Kowalski

# T-34-85 After WW2 Camouflage & Markings

1946-2016

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Editor in chief Roger Wallsgrove

Editorial Team Bartłomiej Belcarz Robert Pęczkowski Artur Juszczak

> Colour profiles Piotr Kowalski

> Cover design Artur Juszczak

> Cover art Piotr Kowalski

DTP Stratus sp. j.

*Translation* Jarosław Dobrzyński

Proof-reading Roger Wallsgrove

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# T-34-85 POST-WAR ERA

he end of the Second World War was not the end of the T-34-85's career. Production of the Soviet medium tank in its 85 mm gun-armed version was continued in the USSR until at least 1946. At the beginning of the 1950s, licence production of the T-34 was launched in Czechoslovakia and Poland. A modified version of the T-34-85 was developed in Yugoslavia and produced in a short series. In many other countries, T-34-85 tanks underwent modernisation to a greater or lesser extent, ranging from relatively minor updates of the powerplant, communication and observation systems, to the construction of new self-propelled guns based on the 'eighty-five'.

The political situation after the end of the Second World War, and the Cold War-era division of the world, created opportunities for the export of the T-34-85 to many countries. Such vehicles were delivered not only to all Warsaw Pact countries, but also many African, Arab and Asian countries and even to Cuba. These tanks were being delivered to developing countries as late as the 1970s. They were exported not only from the USSR, but also from other countries of the Eastern Bloc: Czechoslovakia, Poland, Yugoslavia and East Germany.

The T-34-85s saw combat in numerous conflicts in the latter half of the 20<sup>th</sup> century, including in Korea and Vietnam, and other wars in the Middle East and Africa. In the 1990s T-34-85s saw combat in the Balkan conflict. Even this was not the end of the combat career of the 'eighty-five', with some examples of the tank seeing combat during the conflicts in Ukraine (2014), Yemen (2015) and Syria (2016).

The great number of operators meant that the paint and marking schemes were diverse, and thus particularly interesting.

Furthermore, little is known about the history of the tank with several of its operators, such as Togo, Mali or Mongolia. Thus, the legendary T-34-85 continues to hide numerous secrets, making it important to maintain attempts to clarify details of its service.

### PRODUCTION OF THE T-34-85 AFTER THE END OF THE WW2

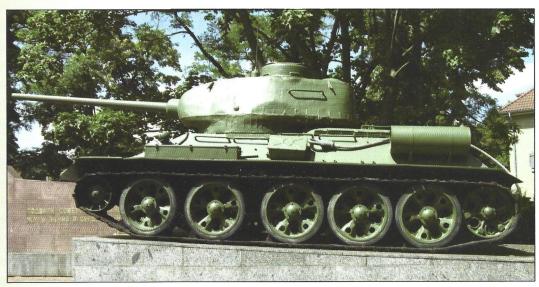
Production of the T-34-85 continued in the USSR after the end of the Second World War, although it is not clear when it finally ended. According to Russian sources, production was continued until 1946 in three factories: No. 183 in Nizhny Tagil, No. 112 in Gorki and No. 174 in Omsk. Available records after the end of the war (from June 1945) indicate that 9,263 tanks were produced, 6,562 in 1945 and 2,701 in 1946. Some sources, including US intelligence, however, suggest that production continued until 1950, though this information has not yet been confirmed. It is estimated that during 1944-46 a total of 25,900 T-34 tanks armed with 85 mm guns were produced.

Postwar, the quality of manufacture significantly improved in comparison with wartime production. This was apparent in the quality of the turret casts, which were less coarse, and the joints of the hull armour plates, among other features. It seems that post-war production tanks had a standardised turret based on the turret developed in Plant No. 174 in Omsk. Interestingly, Soviet T-34-85s were not modernised for several years after the war. Only at the beginning of the 1950s

T-34-85 (Plant No. 183), modified to Model 1969 standard on the monument in front of Deutsch-Russisches Museum in Berlin-Karlshorst. The tank features equipment characteristic for this modification and so-called Starfish wheels.





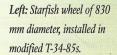


did some tanks start to receive updates, the initial changes being made in vehicles undergoing overhauls and consisting mainly of the installation of V-34-M11 engines in place of the V-2-34. Not until the 1960s were two sweeping modernisation programmes implemented for the T-34-85. The first such programme included the following modifications:

- Installation of V-34-M11 engine in place of V-2-34.
- Improvement to the engine cooling system
- Installation of the new 10RT-26E wireless set
- Installation of new sighting and observation instruments and lights (such as BVN and FG-100) Vehicles thus modified were unofficially designated T-34-85 model 1960. In the late 1960s, further changes were introduced, consisting of an upgrade of the communications system (R-123 wireless sets), sighting instruments, and introduction of new wheels, of the so-called 'Starfish' pattern. The matter of wheels deserves clarification. In the case of modernised T-34-85s, wheels of 830 mm diameter were used, the same as in the T-44M tank and AT-T tractor. These were similar, but differing in appearance from wheels used on the T-54/T-55 tanks which had smaller openings and a diameter of 810 mm. According to some sources the modernised vehicles were unofficially designated Model 1969 and intended mainly for export to developing countries. However, it is not clear whether or not such a designation was used at the time, although it allows for better identification of the tanks. In some countries (Vietnam, for instance), such vehicles were designated T-34-85M.





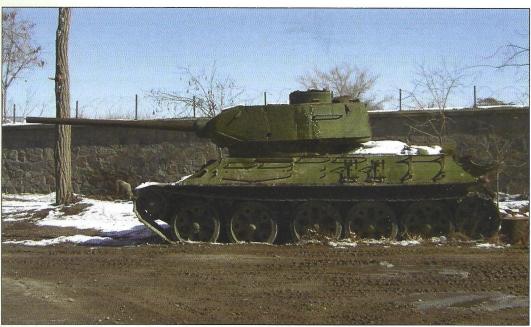


Right: A Starfish wheel from T-54/T-55 tank of 810 mm diameter. It has also smaller openings than the wheels used in modernized T-34-85s.



A modified T-34-85 Model 1969 delivered to Yugoslavia. In JNA service these tanks were designated T-34B.

A modified T-34-85 (Plant No. 174) abandoned in Afghanistan, early 2000s.



A modified Bulgarian T-34-85 (Plant No. 112). Holders for 200-litre fuel drums on rear hull and set of lines for rigging the unditching beam are visible.



# LICENCE PRODUCTION

n addition to the USSR, T-34-85 tanks were produced under licence in three countries: Czechoslovakia, Yugoslavia and Poland. The T-34-85 may also have been manufactured under licence in China, according to some sources, but this has not been confirmed. It is most likely that a decision to launch licence production of the 'eighty-five' was made in 1954, but did not come into effect due to the purchase of a licence to produce the T-54 tank.

#### CZECHOSLOVAKIA

In the early 1950s production of T-34-85 was launched at the ČKD Sokolovo works in Prague. Later, production of the T-34 was also initiated at the Joseph Stalin Factory (ZJVS) in Martin, Slovakia, which was initially a sub-contractor. The Czechoslovak tanks had slightly different turrets than the Soviet ones, with a different shape to the lower edge and a smoother texture (although both Czechoslovak and Polish turrets were probably based on post-war Soviet patterns). The finish was also much better, especially in comparison with those of Soviet wartime production. Czechoslovak tanks differed in equipment (having, for instance, light hoods and Notek lights). Other distinctive features of tanks produced in Czechoslovakia were: a signalling device at the left-rear of the hull for communication between the infantry desant (soldiers riding aboard the tank) with the crew; an additional antenna port on the roof of the turret; exhaust pipe fairings with a scalloped base plate (although similar exhaust pipe fairings appeared also on some Soviet T-34s, even of wartime production, and some Polish-made tanks), and a set of lines for rigging the unditching beam.

A total of 2,736 tanks of this type were built during 1952-58. By 1971, a total of 1,409 had been exported to Bulgaria, Egypt, Romania, Syria and Hungary (among which were 110 tanks of Soviet production).

On the basis of the T-34-85 several interesting designs that went into production were developed in Czechoslovakia. These included the VT-34 recovery vehicle, JT-34 crane, MT-34 armoured bridge-layer, PCHT-34 chemical reconnaissance tank and PB-34 heavy bulldozer. An unrealised project of 1954 to rearm the T-34-85 with the SHK vz.44s 100 mm gun should also be mentioned. In the face of technical problems, and the purchase of a licence to build the T-54, the idea was abandoned. The concept of a self-propelled anti-aircraft gun armed with the 57 mm R10 weapon was built as a prototype. Concepts for self-propelled anti-aircraft guns armed with R12 guns (designation LP-157) and quadruple-mounted 12.7 mm vz. 53 machine guns were abandoned at the stage of the mockup. The concept of installing quadruple 57 mm anti-aircraft gun on a T-34-57 mm tank chassis was realised only in the form of a model.

A T-34-85 of Czechoslovak construction (later equipment configuration). Shape of the turret and equipment different than in the Soviet-made tanks are visible.



JT-34 armoured crane developed in Czechoslovakia, preserved at Lešany military museum.



#### YUGOSLAVIA

Yugoslavia purchased a licence for T-34-85 production, possibly as early as the late 1940s. However, extensive changes were introduced – the shape of the turret and hull armour plates was altered and only the powertrain remained unchanged. The muzzle brake from the S-53 gun was also installed. Particularly interesting is the fact that the auxiliary armament comprised two



Teski Tenk Vozilo A – a Yugoslav modernization of the T-34-85, preserved at Kalemegdan fortress museum in Belgrade.

German MG-42 machine guns and an American 12.7 mm Browning machine gun (installed on the turret). Only a few tanks (sources differ as to whether there were 5, 7 or 9), designated *Teski Tenk Vozilo* A (or A-1) were produced in Petar Drapsin works in Mladenovac. In May 1950 the tanks were shown at a victory parade and were later used as training vehicles in the training regiment at Banja Luka. A probable cause of abandoning work on this interesting but unusual tank was the inflammation of political relationships between Stalin and Tito, and the delivery of American equipment (M47 Patton tanks) to Yugoslavia. One such vehicle is preserved in the Belgrade military museum (Kalemegdan fortress).

Other Yugoslavian projects are worthy of note. One of them was the vehicle designated *Teski Tenk Vozilo B*, a development of the aforementioned A-model, armed with a 90 mm gun. In the mid-1950s another T-34-85 modernisation project was instigated to rearm the tank with a 90 mm gun (probably the American M3). The project received the designation M628 and codename 'Galeb', but possibly was not implemented (according to some sources two prototypes were built).

POLAND

In the early 1950s, after many organisational and technological problems had been overcome, series production of the T-34-85 was launched at the 'Łabędy' Engineering Works in Gliwice-Łabędy. The pattern vehicle was post-war production model built in Soviet Plant No.183 in Nizhny Tagil. Initially the production level of 3,000 tanks per year was planned, but this proved unrealistic. Initially components not produced in Poland were imported from the USSR and then replaced by Polish products when the latter were available; 85 mm tank guns were produced by Stalowa Wola steelworks, machine guns by General Walter Metal Works (Łucznik), V-2 engines by Nowotko Engineering Works in Warsaw, and armour plates by Stalowa Wola and Batory steelworks. Vehicles built in Poland were unofficially called "duck".

Production was continued until 1955 (according to some sources until 1956) and a total of 1,380 Polish 'eighty-fives' were built. Of these, 1,108 were delivered to Polish Army units and the rest were exported, to the East German *Nationale Volksarmee* and Vietnam among others.

On the basis of the research conducted in the late 1950s, two stages of modernisation of the tanks were carried out. The first stage, designated T-34-85M1, included: introduction of an engine heater; adaptation of the engine to run on various types of fuel; change of air filters; reinforcement of the chassis; introduction of power steering; increase of gun ammunition supply; replacement of the forward machine gun with a coaxial weapon (which resulted in reduction of the crew from



A T-34-85 of Polish production.

The turret of Polish T-34-85

- similar to the Czechoslovak
turret, but a bit different in
shape.



five to four men); installation of holders for 200-litre fuel drums, and replacement of communication systems. The second modernised variant, designated T-34-85M2 included, in addition to the M1 modifications: additional sealing and adaptation for fording bodies of water across the bottom (cut-off valves on exhaust pipes, snorkels); infra-red instruments; boxes mounted on the fenders, and a stowage box on the rear wall of the turret. All tanks produced in Poland and some of Soviet production were modernised to the T-34-85M1 standard. The modernised tanks, regardless of the extent of the modernisation, were designated T-34/85M. The modernisation programme was carried out by the Army Engineering Works in Siemianowice Śląskie.

The T-34-85 was also the basis for development of several types of armoured recovery vehicles. The first and simplest was constructed by the removal of the turret, fairing the crew compartment over with armour and fitting a dome for the commander. The vehicle was also equipped

Polish T-34-85M2 – modification adapted for crossing deep water obstacles on the bottom.



with necessary tools and towing lines. Another was the CW-34 tractor, based on the Czechoslovak design (VT-34), equipped with a 30-ton winch. In the 1960s The Military Institute of Armour and Motor Vehicle Technology developed a vehicle designated WPT-34 (wóz pogotowia technicznego, technical emergency vehicle), tasked not only with providing technical assistance for damaged vehicles, but also first aid for the crewmembers. Therefore it was fitted with necessary equipment and tools for recovery (including a 1-ton crane), and medical equipment. The WPT-34 vehicles were built not only on the basis of the T-34-85 tanks, but also Su-85/Su-100 self-propelled guns. Another Polish design based on the T-34-85 was an armoured hydraulic crane, but this never went beyond the prototype stage.



Polish recovery vehicle based on the T-34-85 – CW-34, preserved at White Eagle Museum in Skarżysko-Kamienna, Poland.



The T-34-85 was the basis for development of WPT-34 technical support vehicle. The vehicle in the photographs is preserved at the Lubuskie Military Museum in Drzonów.

#### ASIAN CONFLICTS

In the early 1950s the North Korean Army was a true power in the field of armour. Its strength in tanks of more than 250 T-34-85s put it second only to the USSR and USA (forces based in Japan) in terms of the armour strength in the region. These tanks made up the core of the assault forces that invaded South Korea on 25 June 1950. The most important unit was the 105<sup>th</sup> Armoured Brigade, consisting of three regiments, the 107<sup>th</sup>, 109<sup>th</sup> and 203<sup>rd</sup>. The T-34-85 tanks were operated also by a training unit, the 208<sup>th</sup> Tank Training Regiment, the newly formed 16<sup>th</sup> and 17<sup>th</sup> Armoured Brigades, and five regiments (the 41<sup>st</sup>, 42<sup>nd</sup>, 43<sup>rd</sup>, 45<sup>th</sup> and 46<sup>th</sup>). During the first weeks of the war the 105<sup>th</sup> Armoured Brigade, co-operating with the infantry, pushed South down the Korean Peninsula virtually unopposed. Columns of T-34 tanks caused panic among the defenders, who had no experience in fighting armoured forces. Also noteworthy is the success achieved by the crew of a North Korean T-34-85 on 2 July 1950, which allegedly shot down a F-80C Shooting Star fighter with gunfire. The information is hard to verify because sources differ on the dates of the incident, and some suggest that it was an F-51D Mustang fighter which fell victim to the tank.

The arrival of US Army troops, armed with M24 Chaffee light tanks, in early July 1950 did little to challenge North Korea's superiority in armoured forces. The desperate situation was improved only by the deployment of M4A3E8 Sherman, M26 Pershing and later M46 Patton tanks, with their thicker armour and heavier firepower compared with the Chaffee. Also important was the skill and experience of the American crews, many of whom were World War Two veterans. Equally important in stopping the North Korean advance was the fact that the Allies had gained air superiority. Many T-34-85s were also destroyed by special tank-busting teams armed with Super Bazookas.

In autumn 1950 the scales of victory began to lean toward the Allies, especially when British units with Centurion tanks joined the combat. According to American data, North Korean forces had lost more than 239 T-34-85s by the end of 1950. The fiercest fighting involving armour went on until spring 1951, when the front line stabilised on the 38th parallel. From then on the war entered a phase of positional warfare and the role of armoured units diminished.



Wreck of a North
Korean T-34-85 from the
105th Armoured Brigade,
which was destroyed by US
aircraft on a bridge near
Suwon in early October 1950.



From February 1951 armoured units of the Chinese "volunteers" took part in the fighting, These comprised four regiments: the 1<sup>st</sup> and 2<sup>nd</sup> Armoured Regiment of the 1<sup>st</sup> Armoured Division, and the 6<sup>th</sup> Independent Armoured Regiment. In June 1952 the 3<sup>rd</sup> Armoured Regiment was replaced by the 4<sup>th</sup> Armoured Regiment. Fighting in Korea confirmed the many advantages of the T-34-85 in difficult terrain and climate conditions. However, analysis conducted by the USA revealed that one of the main disadvantages of the Soviet tank was poor crew protection. About 75% of Chinese and North Korean tank soldiers affected by direct hits were killed. In case of the US tanks this figure

An American soldier next to a wreck of a T-34-85 destroyed on 20 July 1950.



North Korean T-34-85s destroyed during fierce fighting near Waegwan in autumn of 1950.



North Vietnamese T-34-85s of the 202<sup>nd</sup> Armoured Regiment lined-up for a review in 1971. Note that vehicles had different road wheels and equipment (some had FG-100 infra-red headlight for night driving).

stood at less than 20%. It is also reflected in the losses sustained in tank warfare. In tank engagements the Americans (Sherman and Pershing crews) destroyed 97 T-34-85 tanks, losing only 34 tanks (according to American data).

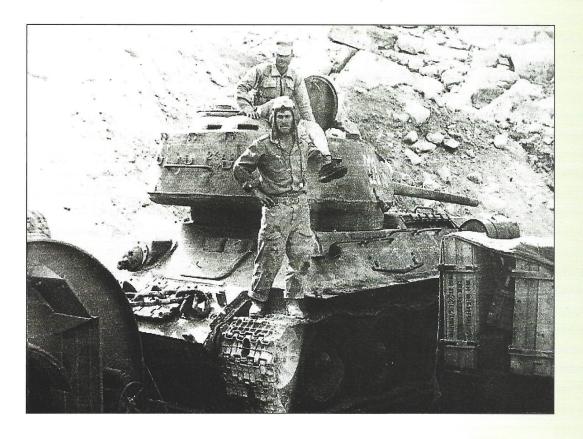
In 1959 the first North Vietnamese armoured unit armed with T-34-85 tanks, the 202<sup>nd</sup> Armoured Regiment, was formed. These tanks were used during 1967-75 against the Americans, although at that time the Vietnamese already had more modern vehicles (PT-76, T-54/55) at their disposal. It



A North Vietnamese T-34-85 from the 203<sup>rd</sup> Armoured Regiment with desant during fighting near Fire Support Base Charlie, spring of 1973. It is a modernized (Model 1969) tank, but some wheels are of wartime production.

turned out that the older tanks did well in difficult terrain and challenging climate. (Interestingly, the last delivery of T-34-85s from the USSR took place in 1973). The Vietnamese 'eighty-fives' from the 273<sup>rd</sup> Armoured Regiment took part in the final act of the war – the capture of Saigon in April 1975. The North Vietnamese also operated anti-aircraft vehicles developed in China, with twin 37 mm Type 63 cannons mounted on T-34-85 hulls (one such vehicle is preserved at the Aberdeen museum). Vietnamese T-34-85s took also part in the invasion of Cambodia and in 1979 they probably saw combat in the border conflict with China.

The last instance of combat use of T-34-85s in Asia was the war in Afghanistan in the 1980s. They were operated by Afghan Army units and according to some sources, also by Mujahedeen.



A T-34-85 of Afghan government forces on CHMZAP-5247 tank trailer, early 1980s.



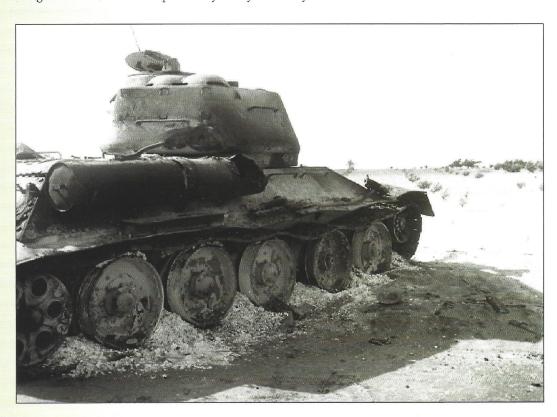
Afghan soldiers with a T-34-85 (probably of Plant No. 183 production), modernized to Model 1969 standard, 1980s. The tank has no markings or tactical number.

#### IN THE MIDDLE EAST

Another region, where 'eighty-fives' saw combat was the Middle East. The first tanks of this type in the region (mostly of Czechoslovak production) arrived in Egypt in 1956, and were assigned to the 1<sup>st</sup> Armoured Brigade and probably the 2<sup>nd</sup> Armoured Brigade. Another unit was the 85<sup>th</sup> Tank Battalion, based in Cairo. It seems that by autumn 1956, only the 1<sup>st</sup> Armoured Brigade, called the "Soviet" brigade due to its equipment, had attained operational status. However, the combat debut of Egyptian T-34-85s was not impressive. During Operation 'Kadesh', Israeli units destroyed or captured at least 27 of the tanks (although other figures have also been published – e.g. 27 tanks captured and a dozen or so destroyed). It turned out that against Israeli Shermans and AMX-13s these tanks had almost no chance, but to great extent this was due to the difference in crew training level – excellent on the Israeli side and very poor on the Arab side.

In the late 1950s/early 1960s Syria also received T-34-85 tanks (deliveries from the USSR and Czechoslovakia). During the Six Day War in 1967 war the Arabs already used more modern T-54/55 tanks, but the T-34-85s were still in first line units, both Syrian and Egyptian. They mostly equipped armoured battalions assigned to infantry units. In June 1967 the T-34-85s were assigned, among others, to the Egyptian 2<sup>nd</sup>, 3<sup>rd</sup> and 7<sup>th</sup> Infantry Divisions. In case of the Syrian forces the situation was somewhat different. The T-34-85s also equipped battalions assigned to infantry units, but two armoured units as well – the 14<sup>th</sup> and 44<sup>th</sup> Armoured Brigades. Encounters with Israeli tanks (M50 and M51 Sherman, Centurion, M48 and M60 Patton) revealed that the T-34-85 was an obsolete weapon; in the Sinai, Egypt lost as many as 250 of these vehicles. The outcome of the fighting in the Golan Heights was more favourable for the Arabs – in combat in difficult terrain, Zahal lost about 160 tanks, while losses in the Syrian units amounted to 73 tanks (T-34-85, Panzer IV and T-54) and a dozen or so self-propelled guns (Su-100 and StuG III).

In another Arab-Israeli conflict – the Yom Kippur war of 1973 – the T-34-85s were used on a limited scale for auxiliary tasks. The obsolete tanks also found another application. After the Six Day war the Syrians placed numerous T-34-85s as stationary firing and observation points along the Israeli border and on in the Golan Heights. Also, self-propelled guns based on the T-34 chassis, designated T-34/122 were operated by the Syrian Army. These were Soviet D-30 howitzers mounted



A burnt-out wreck of an Egyptian T-34-85 in the desert. The photograph was probably taken during the Six Day War in 1967.



A Syrian T-34-85 (Czechoslovak production) lost during the Six Day War in 1967. The rail with grip for 12.7 mm DShK machine gun, characteristic for the Syrian tanks is well visible. The condition of the wheels indicates that the tank was burnt.

A group of Israeli citizens taking a trip to the battlefield after the end of the Six Day War in 1967. The T-34-85 tank has an identification triangle (probably red) painted on the forward fender.





A Syrian T-34-85 of Czechoslovak production captured by Israeli forces during the Six Day War in 1967. The rail with machine gun mount had been dismantled. The number 33 on the turret was probably painted by the new owners during inventorying of the captured materiel. Remains of the red identification triangle are visible on the turret.

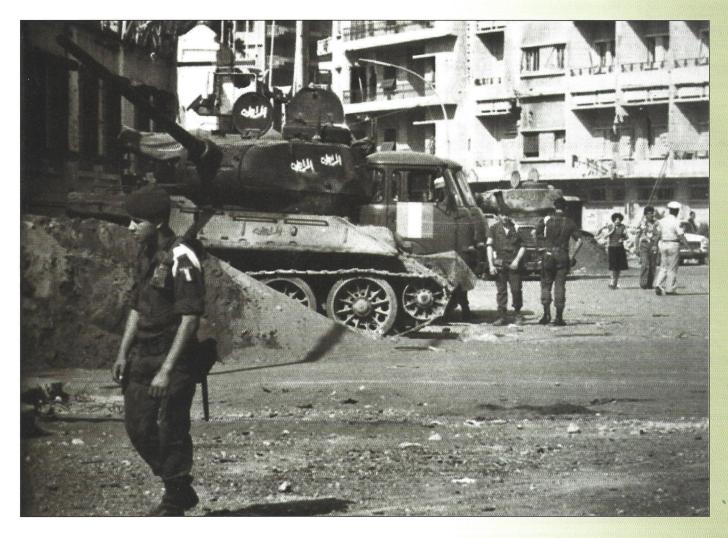


Another Syrian T-34-85 of Czechoslovak production lost during the Six Day War. A white lettering—the name of an Arab hero of the war with Israel is visible on the turret. on a T-34-85 hull. In 1973 such vehicles equipped battalions assigned to the 1<sup>st</sup> and 3<sup>rd</sup> Armoured Divisions. Probably only the vehicles of the 1<sup>st</sup> Armoured Divisions saw combat (these were battalions of the 4<sup>th</sup> and 91<sup>st</sup> Armoured Brigades). Similar modifications were made by the Egyptians, with 100 mm BS-3 guns (and, according to some sources, the D-10) installed in some vehicles as well as examples with the D-30 howitzer. These were far more sophisticated designs than the Syrian howitzers, as the new armament was partially built into the standard T-34-85 turret. It is not known exactly when these vehicles were built, but it is most likely that they were created at the end of the 1960s and beginning of the 1970s. These vehicles probably saw combat in the Yom Kippur war, indicated by the fact that some were captured by Israel.

Other Middle East conflicts in which the T-34-85s saw combat were the 1962-70 civil war in North Yemen (in which Egyptian units equipped with T-34-85 tanks were involved in the fighting, supporting Republican forces, until 1967) and fighting in Lebanon (involving tanks used by units of pro-Syrian militia). According to some sources the T-34s were used in limited numbers by Iraq during the early period of the war with Iran (1980-1988). The Israelis also operated captured T-34-85s, but it seems that this was restricted to training units. The tanks were also displayed on parades, but never used in combat. Some captured tanks were used as observation points on the Syrian border and according to some sources tanks-bunkers were also placed near some kibbutzes.

The 21<sup>st</sup> century did not bring the combat career of the T-34 to an end. Known photographs depict T-34-85s during the rebellion in Libya in 2014, although it is not known whether or not they were used in combat. Photographs taken in 2015 show T-34-85s used in the fighting in Yemen. There are also photographs and film showing T-34s used in the civil war in Syria. These vehicles are probably not roadworthy, and used as static firing points. However, information is fragmentary and it is difficult to generalise or draw conclusions from the available reports.

A T-34-85 tank (Plant No. 183), operated by units of pro-Syrian militia in Lebanon in the early 1980. Also interesting is the tank in the background, particularly the inscription on its turret.



#### IN AFRICA

The T-34-85 was used with success in African conflicts during the 1970s and 1980s (including in Egypt, Somalia, and West Sahara). On the largest scale these tanks were used by Ethiopian forces against the rebellion in Eritrea and in the war with Somalia during 1977–78. (The Somalis also used the T-34-85).

Angolan 'eighty-fives' fought against UNITA troops and subsequently supported Namibian

South African soldiers with an Angolan T-34-85 of Plant No. 112 with two single ventilators, modernized to Model 1969 standard, captured during Operation "Protea" in 1981. Angolan 'eighty-fives' fought against UNITA troops and subsequently supported Namibian units in combat against the RSA (Operation 'Protea', 1981). From 1975, Cuban T-34-85s with crews sent by Fidel Castro as "fraternal aid" participated in the fighting in Angola. They saw combat both against UNITA and South African forces. The experience of fighting in Angola revealed that in combat against infantry, particularly when they were poorly trained, the T-34-85 could still be effective. However the T-34 revealed its obsolete nature in engagements with advanced armoured cars such as the Panhard, AML-90 and Ratel-90. Advanced anti-tank guns and missiles were also deadly for the T-34-85.



#### POST-WAR EUROPE

Europe was also the scene for use of the T-34-85 after 1945. In numerous countries these tanks were used to suppress anti-communist riots, including Polish T-34-85s on the streets of Poznań in June 1956. At least two of these tanks (including one sporting the tactical number 203) were captured by the insurgents and used to shell the Public Security Office's building. The T-34-85 tanks were used by the units of the Soviet Army Group in Germany for suppressing riots in East German cities in June 1953 (chiefly in Berlin). Soviet and East German T-34s were used for guarding the construction of the Berlin Wall in 1961. Polish and East German units participated in Operation 'Danube', using T-34-85 tanks during the intervention of Warsaw Pact nations in Czechoslovakia in 1968.

The 'eighty-fives' saw combat on the largest scale in Hungary in October and November 1956. During the fighting in October some Hungarian army troops took the side of the insurgents, who



A T-34-85 (Plant No. 183) captured by Hungarian insurgents in Budapest in autumn of 1956. Note the white circle on the turret, in place, where usually the Hungarian government forces insignia was painted.



A T-34-85 (Plant No. 183) captured by Hungarian insurgents in Budapest in autumn of 1956. Markings of the revolutionary forces painted on the turret are visible.



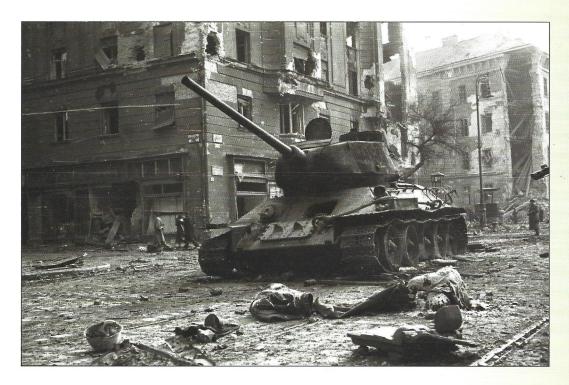
An insurrectionary T-34-85 (Plant No.112, with two single ventilators) with markings on the turret and fender.

thus obtained several T-34-85 tanks. However, the largest numbers of these vehicles were operated by three Soviet units which played a major role in suppressing the rebellion, the 2<sup>nd</sup>, 17<sup>th</sup> and 33<sup>rd</sup> Guards Mechanised Divisions. Several T-34-85s were burnt out in street fighting in Budapest. To destroy Soviet tanks and self-propelled guns the Hungarians used antitank and antiaircraft guns, grenades and Molotov cocktails.

In 1974 Cypriot Greeks attempted to repel the Turkish invasion (operations 'Attila I' and 'Attila II'). Thirty-two T-34-85s, delivered from the USSR via Egypt equipped two companies of the 23 Epilarhia Meson Armaton (Medium Tank Battalion). These were tanks from various factories, of wartime production but which had probably undergone modernisation patterned on the Model 1969 tank before delivery. In Cyprus, 12.7 mm Browning M2/M2HB machine gun mounts were installed on the turrets. At the outbreak of the hostilities the tanks stayed near the towns of Keryneia and Famagusta. Due to their poor technical condition and weak leadership, the tanks were not



Soviet T-34-85s on the streets of Budapest, autumn of 1956. A tank with tactical number 432 (of Plant No. 183 production) is visible in the foreground.



A burnt-out T-34-85 (Plant No. 183) on a Budapest street in autumn of 1956. The fighting in the city proved costly and hard for the Soviets, but their overwhelming superiority led to suppression of the Hungarian Revolution.

able to stop the Turkish invasion. In encounters with M113 armoured personnel carriers the crews of the T-34-85s scored some successes, but had little chance against M47 and M48 Patton tanks. Eleven tanks survived the war and in the autumn of 1974 they were assigned to a new unit – the 21st Reconnaissance Battalion (21. EAN). The T-34-85s remained in the inventory of the Cypriot units until 1984.

During the fighting in Cyprus in the summer of 1974 around 10-11 'eighty-fives' fell into Turkish hands. At least one of them was used against the Cypriot Greeks. After the war the Turks formed a special unit for operations in the enemy's rear using the captured T-34-85s.

In the 1990s the T-34 saw action again in the conflicts caused by the break-up of Yugoslavia. Although the Yugoslavian army (JNA) operated modern tanks (T-55 and T-72/M84) in 1991, T-34-85s were still in the inventory of reserve and training units. A large number of these tanks (several hundred) were also in JNA's storage depots. The 'eighty-fives' were used on various scales in virtually all Balkan conflicts of that time: the 'Ten Day War' in Slovenia, fighting in Croatia (1991-95) and the war in Bosnia (1992–95). During the first period of the conflict with the Croatians (1991–92) the Serbian units used the T-34s during the fighting in Krajina and in the southern sector of the front, near Dubrovnik. During the hostilities a number of these tanks fell into Croatian hands. One of the most famous Croatian T-34-85s was the tank named "Malo Bijelo" (Little White), operating near Dubrovnik as part of the 163<sup>rd</sup> Brigade 'Dubrovnik'. Reportedly this vehicle survived two antitank missile hits and its crew destroyed several enemy vehicles. Having driven out the Serbs the Croatians captured a dozen or so T-34-85 tanks, stored in JNA depots. The Croatians used T-34-85s during Operation 'Flash' in May 1995 in the Slavonia region, and operation 'Thunder' in August 1995 in Krajina. A dozen or so T-34-85s survived the hostilities and were later scrapped. (However, at the end of the 20th century, a few T-34-85s were known to be stored at a military base in the town of Benkovac).

Many tanks of this type also equipped Bosnian Serb units. Some were retrofitted with provisional additional armour for better crew protection. Based on available photographs it seems that the added protection mostly consisted of thick rubber matting (possibly to make the tanks less visible through thermal imaging). The tanks were used mainly in the infantry support role as self-propelled artillery. Information about the use of T-34-85s during the Balkan conflicts is still fragmentary, which results in part from the fact that the tanks were used not only by military units but also local militias.



A Turkish soldiers inspects a T-34-85 (Plant No. 183) operated by the Cypriot Greeks in 1974. Until recently it seemed that the last use of a T-34-85 in Europe took place during anti-government riots in Budapest in October 2006, involving a tank that had been on display at an exhibition commemorating the Hungarian uprising of 1956. However, in 2014, after the outbreak of fighting in eastern Ukraine, the T-34 saw combat again. Museum exhibits and tanks taken from monuments were used by pro-Russian separatists. It is not known, how many tanks were put into operation, but at least two such cases are known. One ex-museum T-34-85 was used in Lugansk and another one, with additional improvised armour, was used by the so-called National Cossack Guard in the town of Antratsit. It should be noted here that the first case of combat use of a T-34-85 tank taken from a monument probably took place in the early 1990s during hostilities in Nagorno-Karabakh. The tank was taken from a monument (or, according to other sources, stolen from a museum) by Armenians and used in combat for about a month. As the original engine was not serviceable, a diesel engine from a Kamaz truck was installed instead.

It is worth mentioning that during 2014-15, attempts to smuggle several T-34s seem to have been prevented. It is hard to determine if these were attempts to reinforce one of the sides of the Russo-Ukrainian conflict, but they show that nearly 80 years after its birth the T-34 is still a desirable weapon.



One of T-34-85s operated by the Cypriot Greeks, mid-1970s. The tank was modified to Model 1969 standard, but not all wheels were changed to so-called Starfish wheels. The bridge classification number is visible on the forward lower armour plate.

#### IN THE BAY OF PIGS

The only American country to operate T-34-85 tanks was Cuba. The Cubans commenced negotiations with the USSR about the delivery of the tanks in 1960 and the first T-34-85s arrived at the end of that year or beginning of the next. It is estimated that about 500 tanks of that type were delivered to this country from the USSR during 1960-63 (some came from Czechoslovakia). At the beginning of the invasion of US-trained insurgents at the Bay of Pigs on 17 April 1961, the crews of Cuban tanks were undergoing training at a base in Managua. Due to this fact only five



T-34-85 tanks were sent to fight back the landing near Playa Giron and Playa Larga. During the first attack on the positions of 'Brigade 2506' the insurgents burned one T-34 with bazookas. During the next day a dozen or so T-34-85s and Su-100 self-propelled guns arrived at the scene. The insurgents had only five M41 Walker Bulldog tanks at their disposal (some sources say that Brigade 2506 was equipped with M4 Sherman tanks and M8 armoured cars, but this is not borne out by most evidence). By 20 April 1961 the Cuban army defeated the enemy forces. On that day one of the T-34-85s reportedly shelled the insurgent supply ship *Houston*. A legend says that 'El Commandante' Fidel Castro himself took part in the action. In total during four days of fighting the Cubans lost five T-34-85s destroyed by the fire of M41 tanks, bazookas and 57 mm recoilless guns. One Walker Bulldog was destroyed by T-34-85 crews (the other ones were destroyed by other Cuban units or abandoned due to lack of ammunition).

Later the Cubans developed astonishing modifications of the T-34-85s, building self-propelled guns and howitzers on their chassis, or fitting 100 mm KS-19 and 130 mm KS-130 anti-aircraft guns or 122 mm D-30 howitzers to the existing hull. Tanks of this type were also placed along the Cuban coast as fixed firing points, defending the island against invasion.



A Cuban T-34-85 (of wartime production – the shape resembles turrets from Plant No. 183, but the trace of joining suggests the 8-part pattern of the Plant No.112 turret) on its way to the Bay of Pigs, April 1961. The tank has no markings. According to legend, this tank was commanded by Fidel Castro.

A T-34-85 tank and Su-100 self-propelled gun in the Bay of Pigs area after having defeated the invasion, April 1961. Probably it is a staged propaganda photo taken after the end of the fighting.

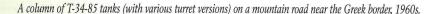
### PAINT SCHEMES AND MARKINGS

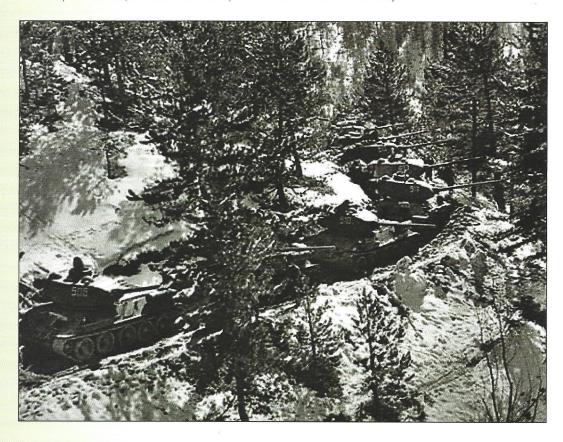
#### EUROPE

#### ALBANIA

This is one of the least known European T-34-85 operators. During 1955–56 a total of 138 tanks of this type were received from the USSR. According to some sources, 'eighty-fives' were also delivered to Albania from China, but this is improbable. About 70 tanks were in the Albanian army inventory in the early 21st century.

Based on the few photos available, it can be presumed that the standard T-34-85 paint scheme was olive green. The tanks sported white, three-digit tactical numbers on the turret sides.





#### Austria

In 1955 Soviet occupation forces leaving Austria handed over 27 T-34-85 tanks and several (probably ten) T-34T armoured recovery vehicles. The tanks were operated by *Panzertruppenschule* and *Panzerbatallion* 33, remaining in Austrian service until 1964. Later the tanks or their turrets were used as firing points in fortified regions, primarily on the Yugoslavian border.

The Austrian T-34-85s were painted overall in olive green. Initially this was Soviet 4BO paint, but after overhauls was probably replaced with Austrian *Bronzegrün*.

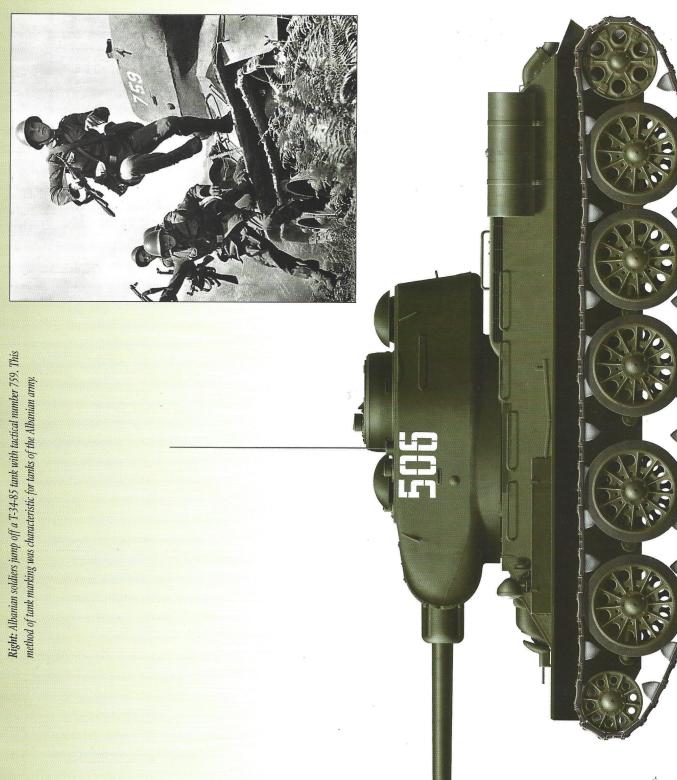
The tanks sported three-digit tactical numbers (for instance 111, 131, 132) painted in solid white or a white outline. They were painted on the turrets (sides and rear) and fenders (front and rear). Combined letter-digit markings were painted on command tanks (for instance I01). Some vehicles also sported unit tactical markings on the fenders (white). During the T-34-85 service the national marking in the form of an inverted white triangle in a red circle was used. The national markings were painted on the forward section of the turret, ahead of the tactical number.

Photographs of Austrian 'eighty-fives' with unit insignia painted on the turret are known from the period of the tank's service in the *Panzerbattalion* 33.



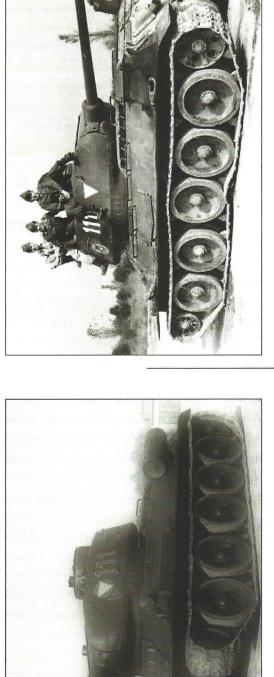
T-34-85 (of Plant No.183 production) preserved at a military museum in Vienna. The tank has the number I01 and marking of headquarters company.

The Austrians operated also T-34T recovery vehicles based on T-34-85 tank.



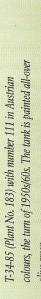
Albania

Albanian T-34-85 (Plant No. 174), with the tactical number 506, from an unidentified unit on the Albanian-Greek border at the turn of 1950s/60s. The tank is painted overall olive green.



Austrian T-34-85 (of Plant No.183 production) with tactical number 111 and unit emblem painted on the rear part of the turret.

## AUSTRIA



#### BULGARIA

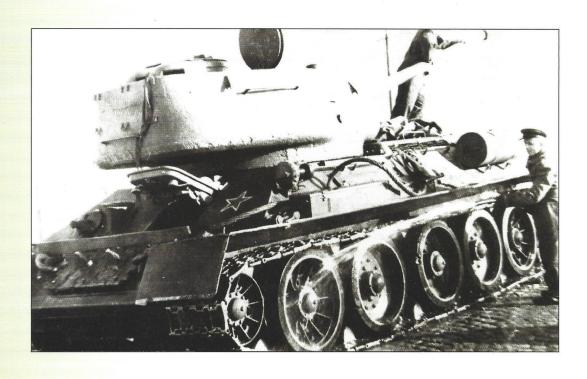
Bulgaria received 398 T-34-85 tanks from the USSR during 1946–48. They equipped the 1st Armoured Division and two armoured brigades, which were merged into to the 2nd Armoured Brigade in the early 1950s. After further deliveries from the USSR and Czechoslovakia in the mid-1950s the number of Bulgarian T-34-85s increased to almost 1,000.



Bulgarian T-34-85 of Czechoslovak production during an exercise with infantry in the 1950s. The tank has no tactical markings, which was a common practice in the early period of service in Bulgarian armoured units. Note fender edges painted white.

Around the end of the 1960s, the Bulgarian tanks underwent modernisation consisting of the installation of brackets for two 200-litre barrels on the rear hull, the addition of a box on the left side of the hull and, primarily, in the addition of a short cupola with an anti-aircraft machine gun mount on the loader's hatch. After the retirement of the T-34-85, the tanks' turrets were used in fortifications on the borders (mainly with Turkey).

The Bulgarian T-34-85s were painted all-over olive green. Initially this was Soviet 4BO paint, then, following overhauls, the tanks were re-finished in Bulgarian paints which had a dark green shade. Tactical numbers were white, usually of three-digit configuration. Red stars were sporadically painted on the turret or fenders. Some tanks had a wide white or yellow stripe painted on the turret. This was probably a marking used during manoeuvres and exercises.



A Bulgarian T-34-85 being washed after an exercise, the turn of 1940s and 1950s.

Note the lack of tactical markings and the red star on the forward armour plate.

#### Cyprus

The tanks that arrived in Cyprus in 1965 were painted overall olive green. During exercises in the late 1960s and early 1970s, some vehicles received improvised camouflage patterns applied with sand-coloured paint or mud. These schemes resembled the camouflage of the Turkish tanks, and tanks sporting these schemes may have played the role of 'enemy' vehicles.

Almost all tanks used by the Greeks during the fighting in Cyprus in the summer of 1974

were olive green. However, a photograph taken near Nicosia airport shows an 'eighty-five' in a two-colour disruptive pattern. According to some sources this provisional camouflage was made with mud. Two-colour camouflages – probably olive green and sand – appeared on the T-34-85s again, probably in the late 1970s and early 1980s, as shown by photographs of the tanks taken on the island.

No tactical numbers were painted on the turrets of Cypriot T-34-85s, the only markings being the insignia of the Greek armed

forces – a white cross in a light blue square or shield. An identification number, the same as that of the Greek armed forces, was painted on rear and front hull. This consisted of the Greek armed forces marking and two letters and three digits, e.g.  $E\Phi110$ . The numbers were all in the 101-132 range. On the lower plate of the hull tub, bridge classification numbers were painted. Some tanks used in the fighting with the Turks in 1974 had propaganda slogans painted on the turrets.

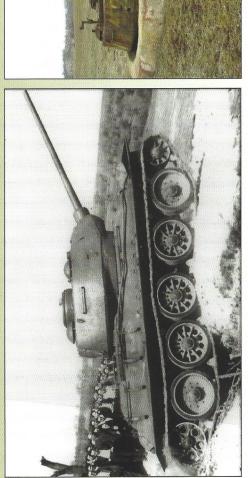
Many 'eighty-fives' were captured by the Turks during the fighting in summer 1974 in Cyprus. However, paint schemes of these tanks are not known.



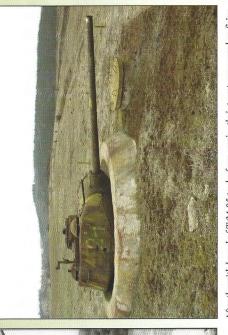
Modified Cypriot T-34-85 Model 1969 during exercises with infantry, probably early 1970s. The tank wears provisional camouflage made with mud.



A Cypriot T-34-85 photographed during exercise. It is hard to determine the date of the photograph, but it was probable the turn of 1970s and 1980s, when two-colour camouflages were used.



T-34-85 (Plant No. 174, turret with two single ventilators) during a display for civilians, late 1940s.

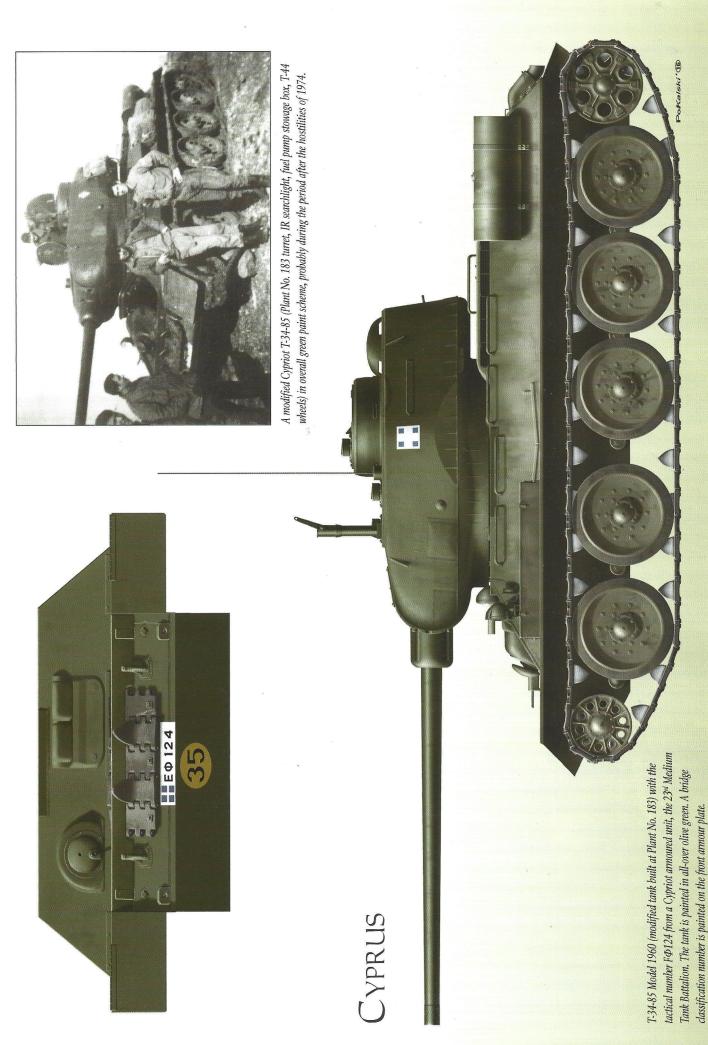


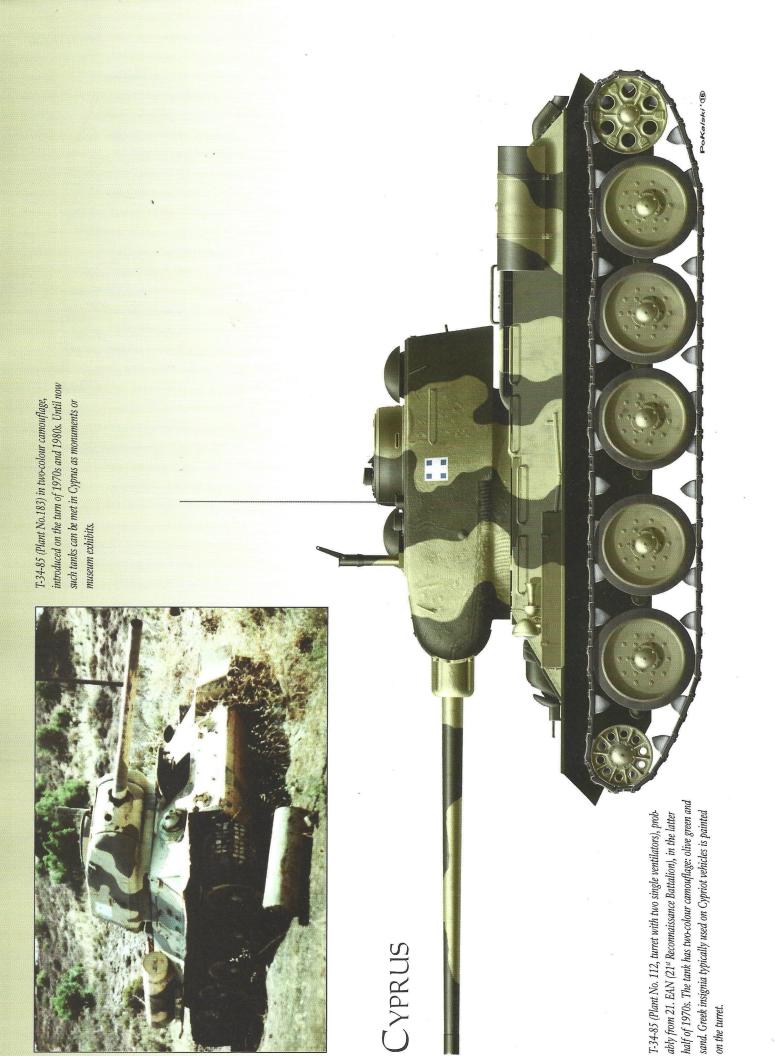
After the withdrawal of T-34-85 tanks from service their turrets were used as firing points in the fortifications on Bulgarian-Turkish border.

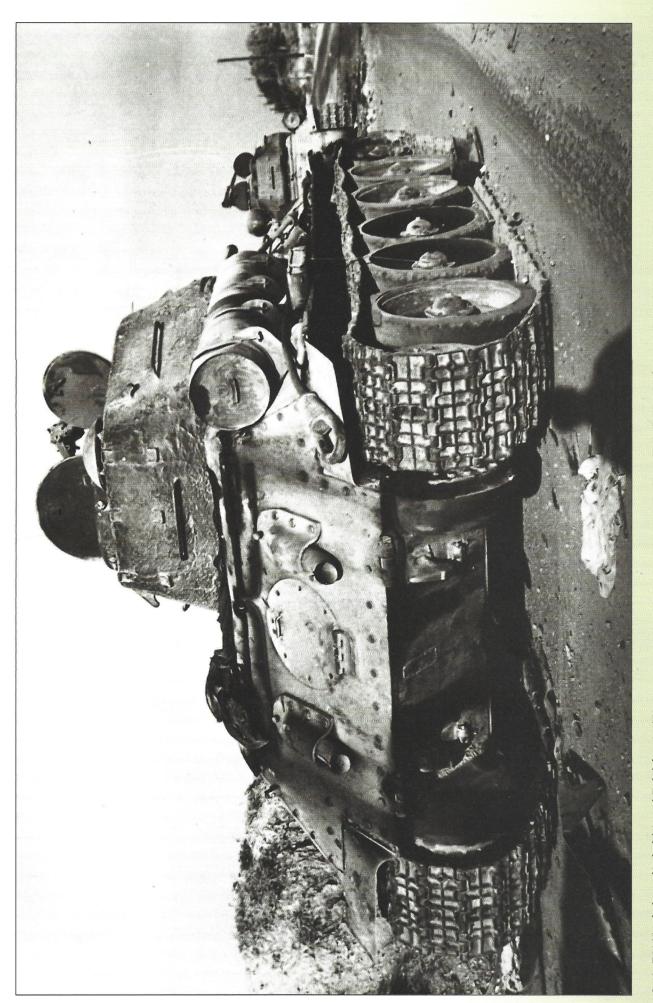










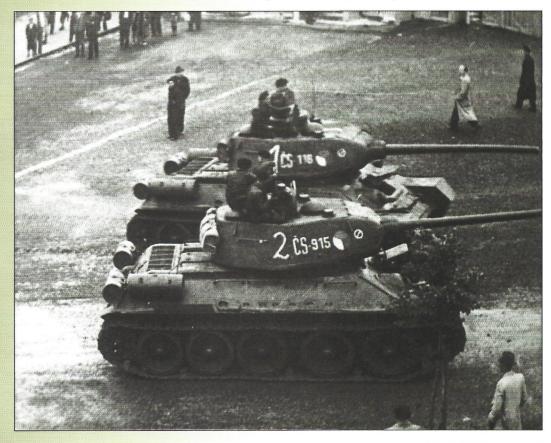


Cypriot T-34-85 tanks destroyed in the fighting with Turkish forces in 1974.

#### CZECHOSLOVAKIA

Two Czechoslovak T-34-85a (Plant No.112) with markings wased immediately after the end of the Second World War. Large 1 and 2 digits seem to be platoon or display markings.

During the first years after the end of the Second World War, T-34-85 tanks were delivered to Czechoslovakia from the USSR. A total of 297 tanks were delivered to Czechoslovak units by 1950. More were licence built in Czechoslovakia. The ČSLA received a total of 1,437 tanks of domestic production (731 made by ČKD and 706 by ZJVS). The year 1956 saw the largest number of T-34-85s in the inventory of the Czechoslovak army, with 1,701 tanks recorded. Over the following years these were gradually replaced by the tanks of T-54/55 family, though as late as 1971, a total of 780 T-34-85s were still in the inventory of ČSLA. In late 1980s these tanks, of which around 90 vehicles remained, were operated only by training units.



In the initial period after the end of the Second World War, Czechoslovak T-34-85s retained wartime paint schemes. Some tanks were painted allover olive green (Soviet 4BO paint), while others sported an olive green (4BO) and dark brown (6k) disruptive pattern. Later the tanks were painted all-over khaki of slightly lighter shade than the Soviet paint. In winter, especially during exercises white camouflage patches were applied. According to official documents, on the T-34-85s multi-coloured disruptive patterns, including sand and brown



A T-34-85 of Czechoslovak production with number 234 in transit, 1950s. Note light on the front armour plate is visible.

paint were to be applied. The instruction that was initially in force in the ČSLA was a translation of a Soviet document, even mentioning Soviet 6K and 7K paints. In the 1960s new rules of applying multi-coloured camouflages were developed in Czechoslovakia. However, it is hard to find photographs confirming the application of such paint schemes to the T-34-85s in practice.

Just before the end of the Second World War the national insignia (red-white-blue roundels divided radially into thirds, the blue part uppermost) were painted on the T-34-85s of the 1<sup>st</sup> Independent Czechoslovak Armoured Brigade. This rule was retained in the early post-war period. After the war, tactical markings, consisting of the letters ČS and a number, e.g. ČS-673 and ČS-774 were added. On some tanks the pre-war *utočna vozba* marking of combat vehicles (a white circle with a slanting arrow inside) was applied.

In the 1950s roundels in national colours were not applied on Czechoslovak T-34-85s, but some tanks sported small red stars on their turrets, usually in front of the tactical number. At the end of the 1950s and beginning of the 1960s, new markings appeared. Initially this took the form of a red star with a Czech lion inside. In 1962 the Czech lion in a pentagonal shield, in a thin red outline, became the new national marking for a brief time. On 27 December 1962, an order was issued saying that from February 1963 the national marking on all ČSLA vehicles would be the three-colour roundel. The diameter was 15 cm and the roundel had a 5-mm blue outline. The blue part of the roundel faced forward.

The tactical numbers were usually three-digit, less frequently two-digit. Their standard colour was white and they were placed on the sides of the turrets and sometimes also on the rear. The aforementioned order of December 1962 specified that the number was to be 50 cm long and 25 cm wide. However it seems that these dimensions were not strictly adhered to.

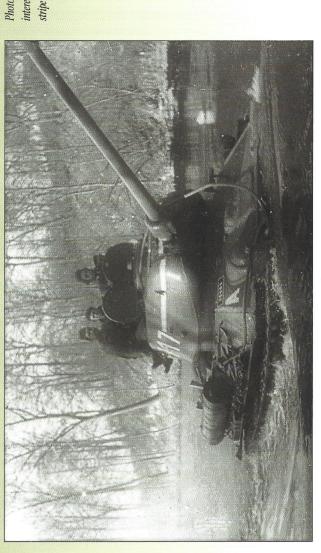
In the 1950s on ČSLA vehicles, including tanks, the identification numbers were applied. In the case of the T-34-85 these were five-digit (e.g. 86197) or six-digit (e.g. 132 136) numbers. White digits were painted on a black rectangular plate mounted at the front and rear of the hull.

During exercises, various markings were used, usually in the form of stripes painted on the turrets. A photograph is known to exist of a Czechoslovak T-34-85 with large letter 'A' on the forward hull. Other examples of non-standard markings include names written on the turrets, such as "Janošik", "Lidice", "Ležáky". These may have been applied for parades and displays only.



Czechoslovak military vehicles during exercise in the 1950s. A T-34-85 of domestic production with number 696 is visible in the foreground. Note the red star painted on the turret.

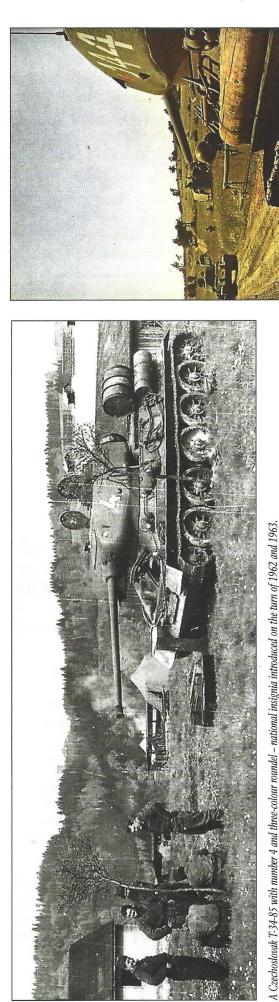
interesting markings - a registration plate on the front armour plate, the letter A on the hull and white identification Photographs of a Czechoslovak T.34-85 taken during army maneuvers in the 1950s. The tank number 117 has very stripe on the turret.



CZECHOSLOVAKIA



wears winter camouflage - white camouflage patches on basic dark unidentified unit of the ČSLA, in the latter half of 1950s. The tank green colour. Notably, this tank is fitted with an engine heater on the rear armour plate.





T-34-85 (Czechoslovak production) with the tactical number 144, from an unidentified unit of the ČSLA, in the latter half of the 1950s.

#### FINLAND

At the end of the Second World War, the Finns had seven T-34-85 tanks, captured during fighting with the Red Army in the summer of 1944. These vehicles remained in the Finnish Army inventory for the purpose of crew training, and, despite technical problems, they remained in service in this role until the end of the 1950s. The last T-34-85 was written off in September 1962. The T-34-85s operated by the Finns were modified by the installation of fender reinforcements, folding lights and the addition of toolboxes and baskets.

During the post-war period the vehicles received one-colour paint schemes – all surfaces were painted Moss Green. Finnish registration numbers (PS.245-1 through PS.245-7) were retained, painted on the front and rear of the hulls. On the turrets (sides and rear) the national white-blue-white roundels were applied.

Finnish T-34-85 (Plant No. 183), tactical number Ps 245-7 of PsR Parolannummi, summer of 1952. The tank, wearing standard Finnish post-war markings underwent modifications in Finland – new fenders, stowage boxes and equipment.



#### Yugoslavia: Serbia-Croatia-Bosnia and Herzegovina

During the Second World War, Yugoslavia received 65 T-34-85 tanks from the USSR, which equipped the 2<sup>nd</sup> Armoured Brigade. After the end of the war the Soviets delivered 66 more tanks, which equipped the 5th Armoured Brigade, followed by a further 308. Following the deterioration of Yugoslav-Soviet relations, local factories commenced production of spare parts for T-34-85 tanks and V-2-34 engines, to become independent from Soviet supplies. Further deliveries of the tanks from the USSR took place during 1966-68, following the improvement of political relations. A total of 600 modified T-34-85 Model 1960 tanks then arrived in Yugoslavia, receiving the local designation T-34B. Some of the tanks (including those delivered previously) were modified by the Yugoslavs. The most characteristic alteration was the addition of an anti-aircraft machine gun (12.7 mm Browning M2) on the turret and installation of an additional light on the right side of the hull.

The T-34-85 tanks operated by the Yugoslavian army were painted olive green. In the early period after the war this was

Soviet 4BO paint. After overhauls and modernisations the tanks were painted with coatings of domestic production, slightly lighter and more green than the Soviet paint. Initially, three-digit white tactical numbers were painted on the turrets. Later new, smaller, four- and five-digit tactical numbers, also white, superseded the three digit numbers.

The T-34-85s operated by the Croatians wore diverse paint schemes. Some were olive green. On others, brown camouflage patches were applied (such paint schemes were used in the early period of fighting, 1991–92). Some tanks sported three- or four-colour camouflage – light green and brown patches on an olive green background. In four-colour schemes, black was added to the above colours. On the turrets and hull fronts, shields in the Croatian white and red chequer



Yugoslav T-34-85s on a parade in the 1950s. In the foreground is a tank of Plant No.174 production, with an interesting emblem on the turret – a silhouette of a tank on white background.



A Yugoslav T-34-85 (Plant No.183) at an exercise in the 1970s. The tactical number 2697 and small red star are well visible.

Yugoslav T-34-85s in one of JNA depots. Interestingly, one of the tanks has four-digit number (2884) and the tank next to it – a five-digit number (18704). The photograph shows the shade of the basic reen colour, in which Yugoslav army vehicles were painted.



A Serbian T-34-85 (modified tank of Plant No. 183 production) damaged during battle of Stary Grabovec near Vukovar in 1991. Note inscription on the turret – JNA Jugoslavija. Moreover, the tank has old Yugoslavian tactical number 18018 and a new one – 6 - on the forward part of the turret.

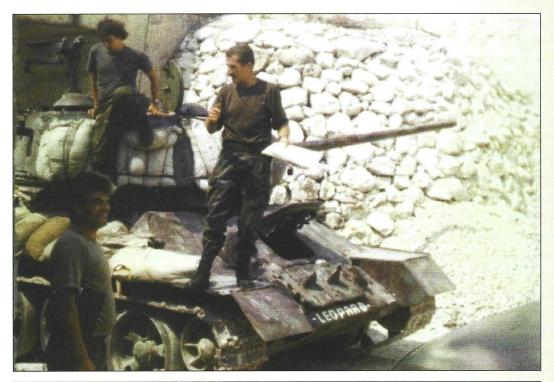




Abandoned Serbian T-34-85, tactical number 2610, Operation Joint Endeavor, February 1996. pattern were painted. Some tanks had individual names applied, such as "Belaj Bager", "Demon", "Mungos", "Malo Bijelo", "Pas", "Sv.Kata", and "Babo-ZNG".

Interesting paint schemes, unfortunately poorly documented with photographic evidence, were apparently worn by tanks used during combats in Bosnia and Herzegovina by the Bosnians and Bosnian Serbs. Some received camouflage of brown and/or sand camouflage patches applied on basic olive green. A photograph exists of a tank with the shield insignia and lettering 'BiH'. Some tanks with additional covers made of thick rubber on the hull and turret had markings (e.g. death's heads) and names (e.g. Deliye) painted on these temporary covers.

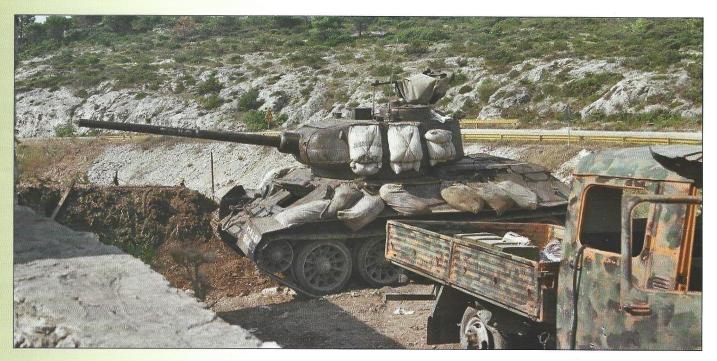
After Macedonia gained independence in the autumn of 1991, four T-34-85 from the JNA inventory, which Serbs did not manage to evacuate, were found in the new state. These vehicles were for a short time on the equipment of the Macedonian army, and then they were withdrawn (probably went to the monuments and to the museum). Unfortunately, it was impossible to get the details of their short service, as well as information about their camouflage and marking.



T-34B (modernized T-34-85), named "Leopard", operated by the Croatians near Dubrovnik in 1991–1992. Note provisional sandbag protections. The tank wears a two-colour camouflage.



One of the most famous
Croatian T-34-85s "Malo
Bijelo", which survived two
antitank shell hits in the early
period of the hostilities and its
crew destroyed several enemy
vehicles. The tanks wears
two-colour camouflage. In the
photo showing the left side
of the tank the inscription
"Sokol" on the gun barrel is
visible.



Croatian T-34B (modernized T-34-85) with white and red shield on the front armour plate. The tank wears two-colour camouflage and sandbag protections. According to some authors it was characteristic for the tanks operated by the Croatians near Dubrovnik during 1991–1992.

Croatian T-34-85 tanks at Benkovac military base, late 1990s or early 2000s. The photo is interesting because it shows not only various versions of the tanks, but also various paint schemes.

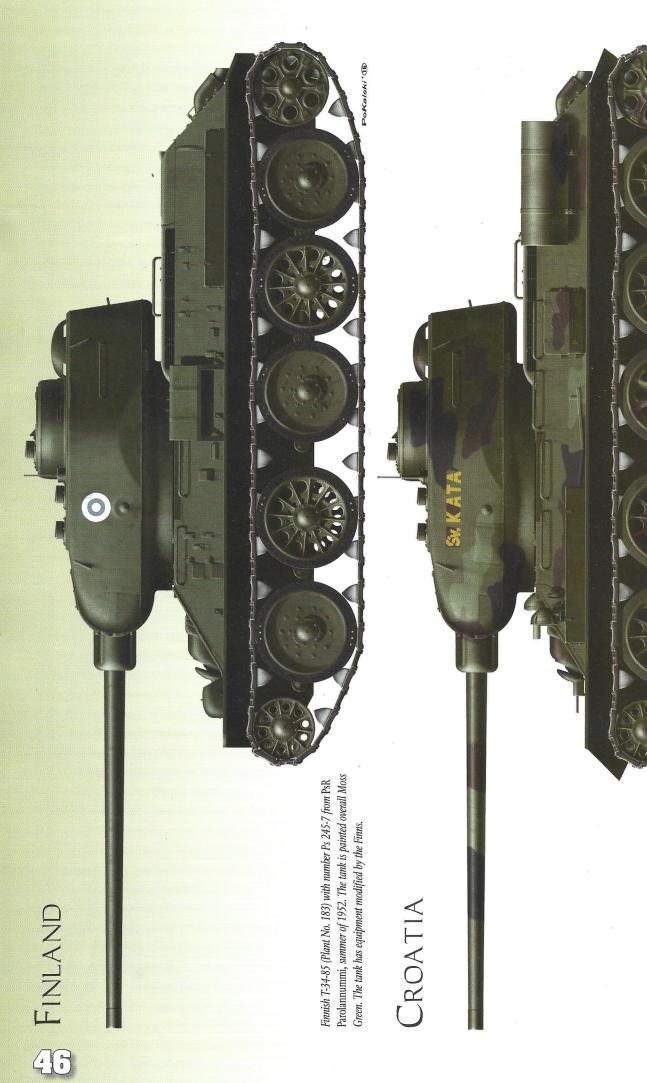




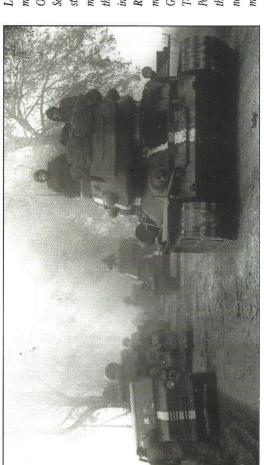
Bosnian (ex-Yugoslovian) T-34-85 with additional covers made of thick rubber, near the town of Dobroj, spring of 1996 (so after the end of the hostilities). Such provisional "armour" was frequently carried by tanks operated by Bosnian units.

One of the most interesting photographs of a T-34-85 in Bosnian hands, taken probably in 1993. The tank wears two-colour camouflage (sand splotches on basic green background) and the Bosnian coat of arms with the lettering BIH on the turret. The back of the turret is covered with rubber skirts.



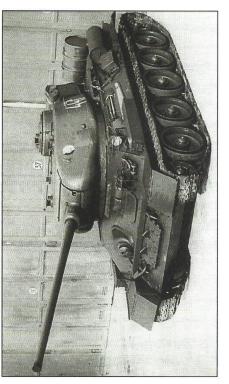


the Croatian army, named "Sv. Kata", at Benkovac military base at T-34B (a T-34-85 from Plant No. 183, modified in Yugoslavia) of the turn of 20th/21st centuries. The tank has a four-colour camouflage – light green, olive green, brown and black.



not all tanks underwent the full markings applied to vehicles of the Warsaw Pact forces during Operation "Danube", August-Polish production). Analyzing September 1968. Note white Left: A column of East German T-34-85m tanks during stripes - quick identification T-34-85m standard (tank of the photos one may see that invasion of Czechoslovakia. Right: A model example of modernization of the East German "thirty-four" to

modernization. The tank sports complete markings - tactical number and national insignia.

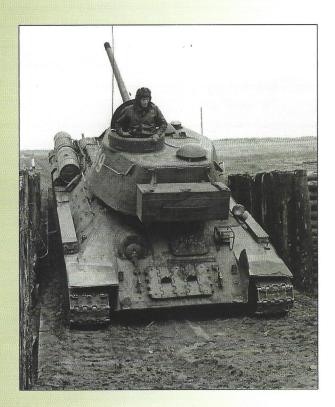






ter half of the 1960s. The tank is painted all-over olive green.

#### EAST GERMANY



A T-34-85m (Plant No. 112) during drivers' exercises, June 1964. A stowage box on the back of the turret is visible.

In the post-war period T-34-85 tanks equipped East German units. A total of 1,346 tanks of this type were operated by the Kasernierten Volkspolizei and then the Nationale Volksarmee, including 285 tanks delivered from Poland during 1955-561. East German 'eighty-fives' underwent a number of modernisations. In the late 1950s some received special air heaters, facilitating operation at low temperatures. The air heater was installed on the rear armour plate. These vehicles were designated T-34-85 m.O. (mit Ofen - with heater). However, this was not indigenous German design, but an adaptation of a Russian one. Work began on a tank adapted for fording water obstacles, and another that could swim. In the 1960s, a programme of modernisation consisted of the installation of 24-volt electric system, R-113/26 wireless set, more efficient air filters, new boxes for tools (on the hull) and for crew's equipment (on the back of the turret), 200-litre fuel drums on the rear hull and light shrouds. These tanks were designated T-34-85m. About 100 tanks were upgraded to the command version, designated T-34-85m(K), with the addition of a further wireless set.

East German T-34-85s were painted all-over olive green. Initially only tactical numbers (two- and three-digit) were painted on the tur-

rets. At the turn of 1950s and 1960s, three-digit numbers, painted on the middle section of the turret, were introduced with the insignia of the DDR ahead of the number.



T-34-85 (Plant No.183) of the NVA with tactical number 436 during exercise in late 1960s.

<sup>1.</sup> The price of a tank delivered from Poland amounted to 214,834 DM.

After the end of the Second World War paint schemes and markings of Polish T-34-85s did not change – the tanks were painted overall Soviet olive green (4BO). From the early 1950s, Polish dark green (khaki) paint began to be used. In the mid-1960s, regulations for multi-colour disruptive pat-

terns were developed, which consisted of three or four colours. In the case of three-colour patterns, the colours were dark green (khaki), yellow-khaki (dark sand) and black, while the four-colour pattern added light green. Both patterns were intended for the period from spring to autumn (and was thus called summer camouflage). As during the Second World War, a white paint scheme was stipulated for operations in snowy landscape. Casein paints were used and removed following the spring thaw. The extent to which such paint schemes were used is questionable. It seems that only a small number of tanks received such paint schemes. Photos of T-34-85s, probably taken in the late 1960s, show multi-colour camou-



flages. According to some sources, these were worn by tanks of a training regiment, probably being part of the Warsaw Military District. No photograph showing a T-34-85 in multi-colour winter camouflage complying to the rules developed in the mid-1960s appears to have been published yet. Sometimes all surfaces of the tank were painted white, quite precisely and sometimes the white camouflage was made up only of white patches and streaks. Interestingly, often only the turrets were camouflaged with white and the hulls remained dark green (khaki).

In the early post-war years, approximately until 1948, wartime tactical markings were used. After that, three- and four-digit numbers were introduced, although in some units, exceptions in the form of single or two-digit numbers could be found. Also the size and shape of the digits were diverse. In the 1950s, large digits, almost to the full height of the turret, prevailed, usually painted on the sides of the turret, but sometimes on the back. Sometimes small numbers were also placed

A T-34-85 of Polish production, tactical number 013 in the 1950s. The tactical marking indicates that the tank is assigned to 22<sup>nd</sup> Medium Tank Regiment. This name was used from 1957, previously the unit was named 22<sup>nd</sup> Independent Tank Regiment (till 1954) and 22<sup>nd</sup> Tank and Self-Propelled Gun Regiment (1954-1957).



A T-34-85, tactical number 2773 from an unidentified Polish Army unit, 1950s. Note the tactical number repeated on the ramrod box and fuel drums.



A Polish T-34-85 (Plant No. 183), tactical number 8735 from an unidentified Polish Army unit, 1950s. The number on the turret seems to be purposely soiled (stark contrast with the eagle). on toolboxes, fuel tanks and even unditching beams. In the 1960s and 1970s, smaller numbers were applied, usually only on the turret sides. Some units (of training regiments, probably of the Warsaw Military District) used very distinctive tactical numbers, painted in the form of a dotted outline. These were usually applied on tanks in multi-colour camouflages.

From the late 1940s to the early 1960s, the white eagle was the national insignia painted on Polish T-34-85s. The shape of the eagle was similar to that of the state coat of arms. Its size was 30–50 cm and it was placed on the sides of the turret (on the forward section, ahead of the tactical

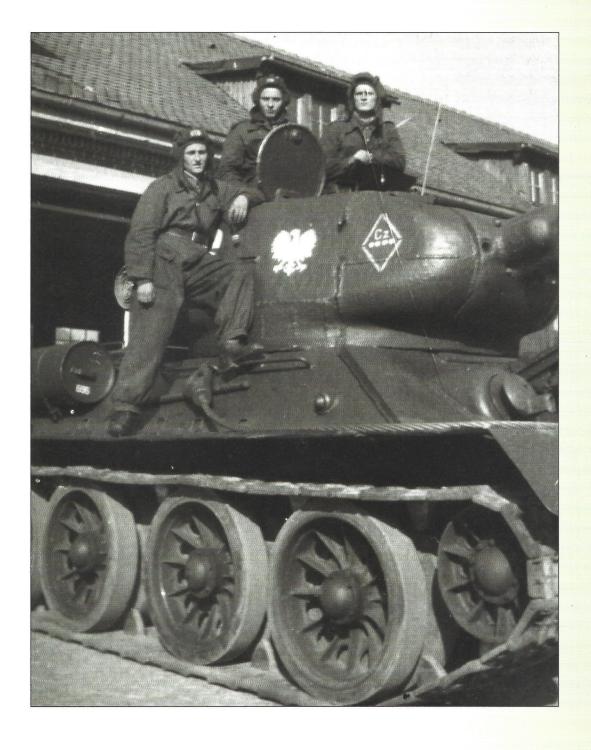


A T-34-85 (Plant No. 183), from an unidentified Polish Army unit, 1950s. The tanks has interesting markings – tactical number 658 and number 4 ahead of the eagle. It could be a marking of a subunit or used during exercise.

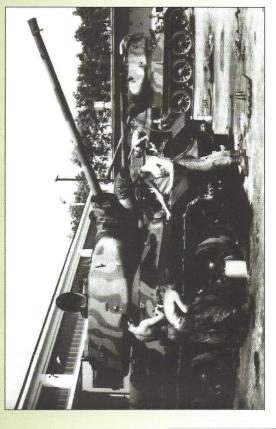
number. The tanks belonging to Coastal Defence Unit had an eagle merged with an anchor painted on the turrets. In the 1960s the insignia was changed – the eagle was replaced by a white and red rhombus.

Tactical markings were sporadically applied to the Polish T-34-85s, apparently most often taking the form of geometric figures (rectangles, rhombuses, circles), though this is very poorly documented. Some of the T-34-85 tanks which were seen on the streets of Poznań in June 1956, and previously in exercises at Wędrzyn and Biedrusko training areas, bore these markings. The tactical symbols were usually located on the turrets and often also on front hull armour plates. However, it cannot be ruled out that some of the tactical markings were applied only during training exercises and manoeuvres. On the tanks participating in the exercises, other markings, indicating assignment to individual units, were also applied. Photographs of Polish T-34-85s with large digits or identification stripes painted on the turrets and/or hulls for the duration of exercises are known.

The anchor was a particular tactical marking, painted on the front armour plates of tanks assigned to Coastal Defence Unit.



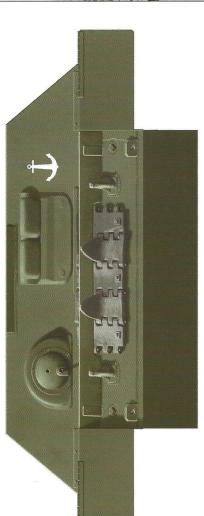
A Polish T-34-85 (Plant No. 174, with etalon-type turret) with tactical number 696 and very interesting tactical marking.

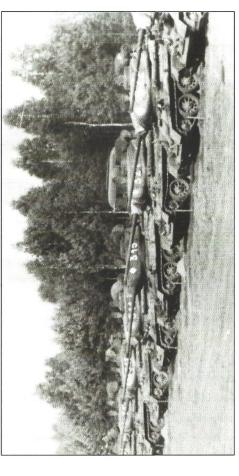


A very interesting photo, taken probably in the 1960s, showing a T-34-85M2 (of Polish production) in three-colour camouflage, compliant to the spring scheme of multi-colour camouflage developed in the 1960s.





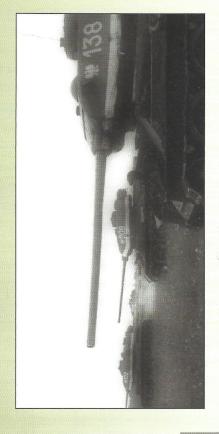




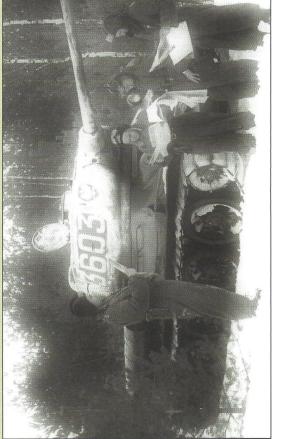
Modernized Polish T-34-85M2 tanks from an unidentified Polish People's Army unit, 1970s. The tanks wear a national insignia in form of white and red rhombus. The tanks in the photograph have three-digit tactical numbers. On some tanks they must have been painted quite recently, because rectangles blanking out previous numbers are

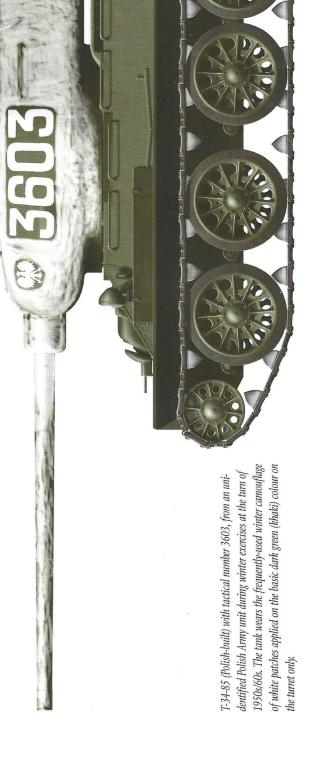


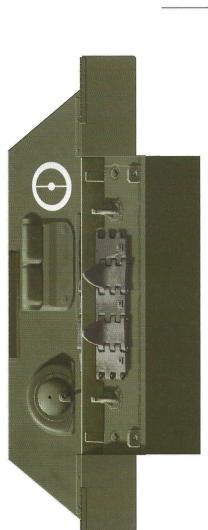
T-34-85 (from Plant No. 183) in Polish colours with tactical humber 2731, from the Coastal Defence Unit, with the distinctive, original anchor-with-eagle emblem of this unit, late 1950s. The anchor was also painted on the forward armour plate. The tank is painted all-over dark green (khaki).

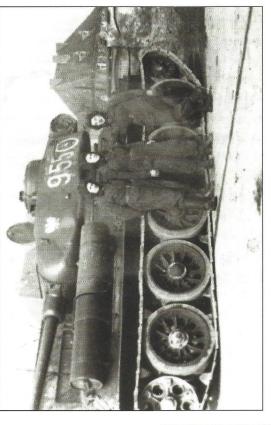


T-34-85 tanks (produced by various plants) of the Polish Army during exercises in the 1950s. White stripes are quick identification markings used during maneuvers.

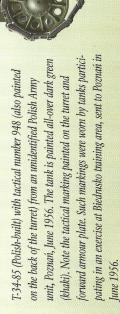




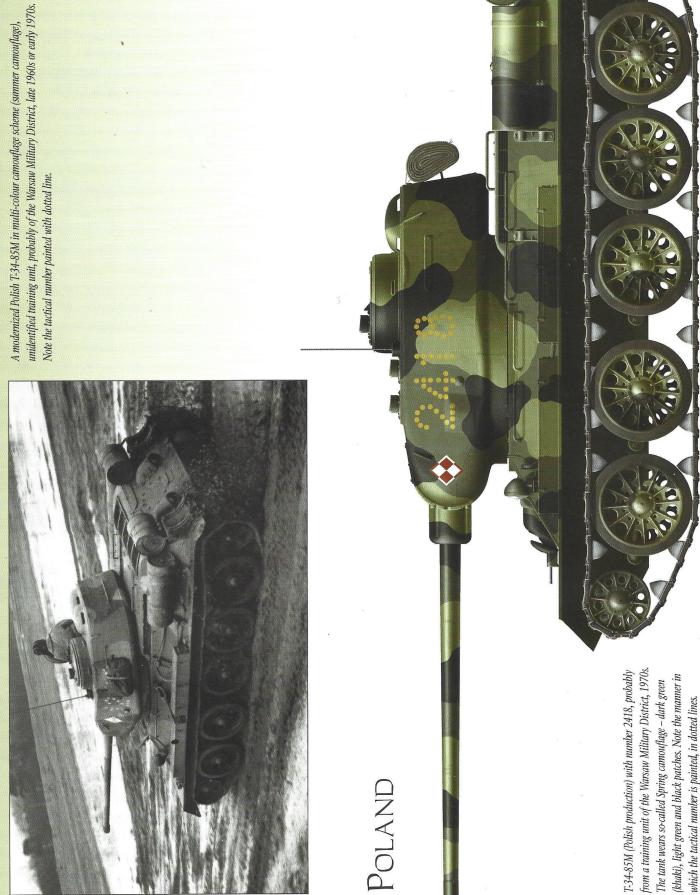




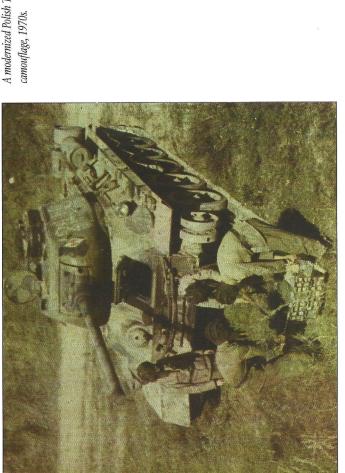
A Polish T-34-85 (Polish production), with tactical number 955 and tactical marking on the back of the turret. Such markings were worn by some tanks used in June 1956 to suppress the uprising in Poznań.







from a training unit of the Warsaw Military District, 1970s. (khaki), light green and black patches. Note the manner in The tank wears so-called Spring camouflage – dark green



A modernized Polish T-34-85M in multi-colour camouflage, 1970s.



7-34-85M2 (Polish production), with the tactical number 1147, from an unidentified Polish Army unit in the 1970s, The tank is painted overall dark green (khaki).

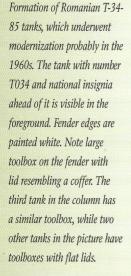
54

#### ROMANIA

During 1952–54 the Romanian army received 250 T-34-85 tanks, delivered from Czechoslovakia. Romania also received around 60 tanks from the USSR. Some Romanian 'eighty-fives' were probably modernised at the turn of the 1960s and 1970s by the installation of locally made water obstacle crossing systems. Some tanks were also retrofitted with additional boxes mounted on the fenders.

Initially the Romanian T-34-85s were painted all-over olive green (probably Soviet 4BO paint). Following overhauls the tanks were painted with Romanian khaki paint. Tactical numbers were usually three-digit. In the 1950s a national marking of a red star in a white circle was painted on some tanks. Later the insignia took the form of a red star with a Romanian roundel inside. In the early 1990s Romanian blue-yellow-red roundels were seen on the T-34-85s remaining in service.

A Romanian T-34-85 (Czechoslovak production) being cleaned after exercise in the 1950s. The tank has the tactical number 651 and national insignia painted aft of the tactical number. The edges of the fenders are painted white.







#### UKRAINE

Tanks used by pro-Russian separatists during the fighting in Ukraine in 2014 had diverse paint schemes, mainly those they wore when in the museums or on the monuments they were taken from. However, sometimes additional elements, such as tactical numbers or slogans were applied. An example is the T-34-85 used by the National Cossack Guard in the area of the towns of Antratsit and Perevalsk. The number 135 and inscription "For Antratsit" were painted on its turret.



A T-34-85 Model 1969 tank (Plant No. 183 production) on a monument in the town of Antratsit.



In 2014 the same vehicle saw combat in pro-Russian separatist units after having been taken out from the monument and rearmament.

#### HUNGARY

Tanks used by the Hungarian National Army were painted all-over olive green (Soviet 4BO paint). Three-digit tactical numbers were typically applied on both sides of the turret. Many tanks had the national insignia – a red star in a green-white-red circle – painted on the front of the turret. Some tanks had a wide vertical white or yellow stripe painted between the national insignia and tactical number (probably to distinguish them from the tanks used by insurgents).

In the autumn of 1956, some tanks were captured by Hungarian insurgents. Emblems referring to the pre-war Hungarian coat of arms were usually painted on the turrets and sometimes also on the hulls and fenders. On some tanks only the red star in the HNA marking was painted over. Patriotic slogans were spontaneously painted on some tanks.

A Hungarian T-34-85 (Plant No.183), tactical number 353, of the government forces, Budapest, autumn of 1956. Note the Hungarian national insignia and white or yellow identification strip. According to some sources it was the tank used by the commander of Hungarian revolutionary forces, General Pal Maleter (1917–1958), although it seems improbable.

A captured T-34-85 (Plant No. 112 with two single ventilators) in the hands of Hungarian insurgents and with applied new markings. Budapest, autumn of 1956.



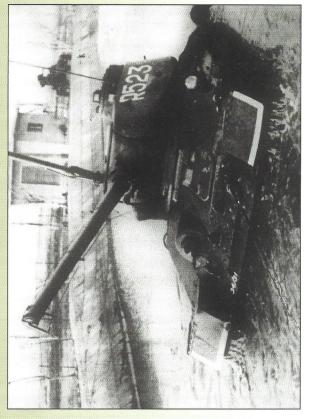




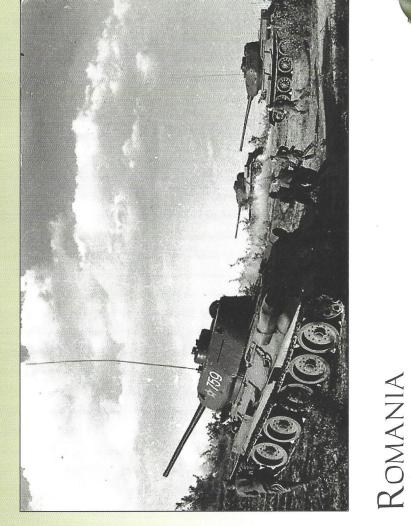
A Hungarian T-34-85 (Plant No.183) with insurrectionist markings and patriotic slogans. Budapest, autumn of 1956.

Two Hungarian T-34-85s (both of Plant No.183 production) blocking a bridge in Budapest autumn of 1956. The photograph is interesting because the tank on the right has a pre-insurgency insignia of the Hungarian army with a red star. The tank on the left has the red star painted over.





A Romanian T-34-85 (Czechoslovak production) with tactical number R523 crossing a water obstacle. Note the number 34/31 on the front armour plate and white fender edges.



T-34-85 (Plant No. 112, turret with two single ventilators) with the tactical number 759, from an unidentified Romanian unit, late 1950s. The tank is painted all-over olive green.

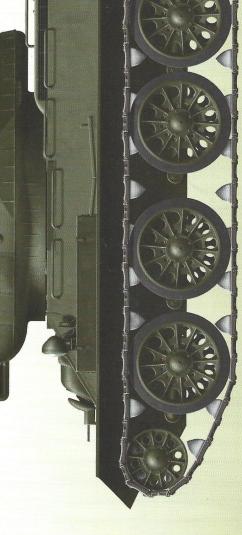


# Ukraine



T-34-85 Model 1969 (modernised tank from Plant No. 183) used by pro-Russian separatists in Donbas in 2014. The tank had been taken off a monument and had its armour reinforced, before being used in combat for a period near the town of Antratsit – hence the inscription "For Antratsit" on the turret. Subsequently the tank was again placed on the monument. A truly extraordinary career!

## HUNGARY

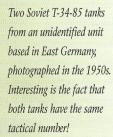


T-34-85 (Plant No. 183) with number 807, from an armoured unit of the Hungarian People's Army, captured by the insurgents in October 1956. The tank is painted overall olive green.

#### USSR

After the end of the Second World War the Red Army operated about 18,000 T-34-85 tanks. Initially the vehicles retained their wartime paint schemes and markings, but later (in the second half of the 1940s) the paint schemes began to be unified, with all surfaces painted olive green (4BO).

In the case of post-war T-34-85s, geometric tactical markings, widely used by the Soviets during the Second World War, were rarely applied. Tactical numbers were usually two- or three-digit. Sometimes red stars appeared on the tanks – usually on the turrets and sometimes on the fenders.







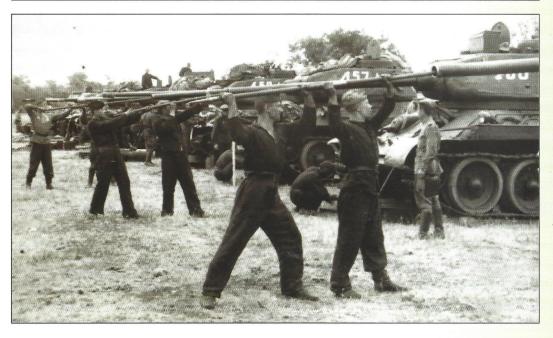
Inspection of crews of Soviet T-34-85s in one of Far Eastbased units, late 1940s. These are tanks of various versions, but of wartime production. Note different shape of tactical number digits.



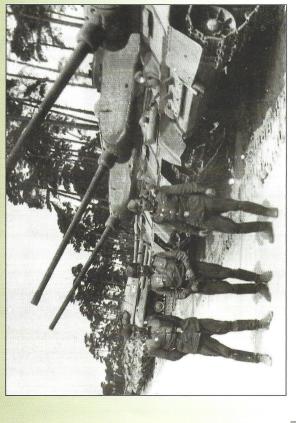


Soviet tank on a Budapest street, October 1956.
Surprising is not only the lineup of various types of tanks – PT-76, T-34-85 and IS-3, but also the fact that the "thirty-four", tactical number 833 is a tank of early wartime production with D-5T gun.

Soviet tank soldiers pose next to a T-34-85 (probably of unit, late 1940s/early 1950s.



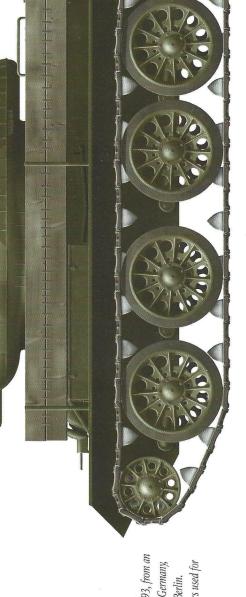
Maintenance work on Soviet T-34-85 tanks from an unidentified unit based in East Germany. Apart from the tactical numbers the tanks have also red stars painted on the turrets.

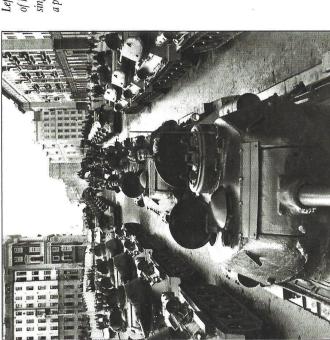


T-34-85 and IS-3 tanks from the 41st Independent Armoured Regiment, based at Forst Zinna (East Germany, near Polish border). It was the training unit of Soviet Army Group in Germany. The T-34-85s have no tactical markings.





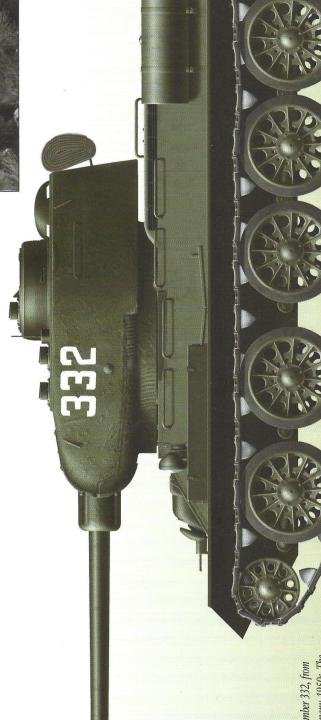




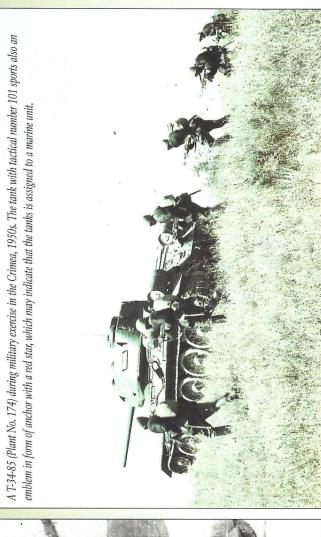
USSR

Left: A column of T-34-85s (mostly of Plant No. 112 production with two single ventilators on the turrets) ready for a parade in Moscow, 1945 or 1946.

A modified Soviet T-34-85 model 1960, tactical number 338 during winter maneuvers, probably early 1960s.



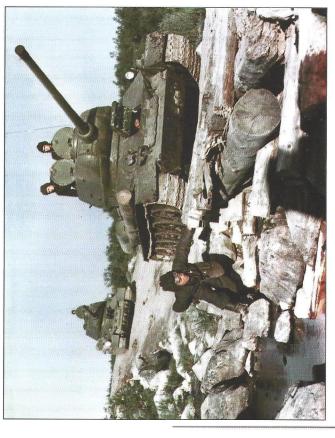
T-34-85 (Plant No. 112), with the tactical number 332, from an unidentified Soviet unit based in East Germany, 1950s. The tank is painted overall olive green.





USSR

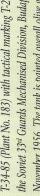




T-34-85 tanks from an unidentified training unit, 1950s. The tanks have no tactical markings and are painted overall olive green (4BO paint).



the Soviet 33<sup>st</sup> Guards Mechanised Division, Budapest area, November 1956. The tank is painted overall olive green. T-34-85 (Plant No. 183) with tactical marking T-23 from



#### ASIA

#### AFGHANISTAN

During 1955-57 the Royal Afghan Army received 25 T-34-85 tanks from the USSR. In 1978, when the communists took over, the Soviets sold 150 T-34-85 tanks to Afghanistan. They remained in the inventory until 1987.

The tanks were painted olive green. Three-digit tactical numbers were placed on the sides of the turrets. The national insignia was often painted ahead of the number – initially of the royal army, then of the 'democratic' forces.

Wreck of an Afghan T-34-85 (of Plant 112 production), photographed in the early 21st century. Note the road wheels (Starfish, from T-44) lying next to the wreck – they apparently differ from the wheels of the T-54/55 tank family.



#### CHINA

At the end of the 1940s and beginning of the 1950s, 1,837 T-34-85 tanks were delivered from the USSR to China (some Chinese sources give the number 1,964, but this also includes tanks armed with 76 mm guns). According to Western sources, vehicles in the inventory of People's Liberation Army were designated Type 58, but this is not confirmed by Chinese sources. Sometimes-stated designations of modified tanks, such as Type-58-I or Type-58-II, were also not used. However, there is no doubt that the tanks underwent some modifications, consisting of the addition of a cupola with 12.7 mm DshK anti-aircraft machine gun mount on the loader's hatch, reinforcement of hinges on the rear hull plate and installation of some components of the Type 59 tank (gunsight, lights and probably road wheels). The Chinese built many interesting vehicles based on the T-34-85. An example of a vehicle that entered series production was an anti-aircraft tank armed with two 37 mm Type 63 cannon. They were operated not only by the Chinese People's Liberation Army, but also the Vietnamese. One of the most interesting modifications was the tank equipped with 12 TPO-50M flamethrowers, mounted in pods on the sides of the turret.

In the early period the Chinese T-34-85s were painted all-over olive green with Soviet 4BO paint. White, three-digit tactical numbers were painted on the turrets. Some vehicles had the national insignia – Chinese red star – painted ahead of the tactical number. The tanks used by the Chinese "volunteers" in Korea sported only tactical numbers.

It is unclear whether or not Chinese tanks ever sported multi-colour paint schemes when in service. Admittedly photographs of such vehicles are known, but these generally depict tanks at shows or in displays of the equipment at schools or military units. Such paint schemes were probably not used during operational service. It is hard to determine when such paint schemes appeared, but it was probably in the late 20<sup>th</sup> century.



Chinese T-34-85s during a parade at Tienanmen Square in Beijing, early 1950s. Tanks in single colour (olive green) paint scheme with standard markings.

Crews of Chinese T-34-85 prior to a parade in Beijing, early 1950s. The Chinese received tanks made by various Soviet production plants, which is apparent in this photograph. The tanks in the first row were produced by Plant No.112 (left) and No.174 (right). Interesting is the fact that the crews are four-man.



A "volunteer" crew of a Chinese T-34-85 (Plant No.183) with number 215, who distinguished themselves during the Korean War. According to some sources in 1953 they destroyed several enemy vehicles and strongpoints. Unfortunately this information is hard to verify.





A Chinese T-34-85 (Plant No.183) photographed during exercise, probably in the 1950s. Note very untypical marking on the turret.



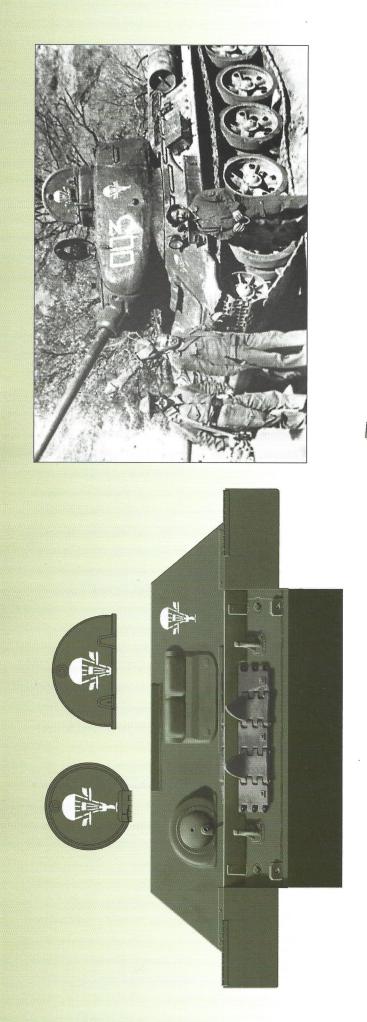
A modified Chinese T-34-85 (Plant No.183) at Chinese military museum in Beijing. A cupola over the loader's hatch is visible.



Anti-aircraft tank developed on the basis of T-34-85. It was armed with two 37 mm Type 63 cannons. These vehicles were operated not only in the PRC, but also in North Vietnam. Photographed is the vehicle preserved at Aberdeen museum, USA



Among the Chinese modifications of the T-34-85 this one seems to be the most weird.
Pods with 12 TPO-50M heavy flamethrowers were mounted on both sides of the turret.





turret, hatches and front armour plate suggesting ties with an T-34-85 Model 1969 (Plant No. 183), with the tactical number 003 from an unidentified Afghan unit, 1980s. The tank is painted all-over olive green. Note markings on the airborne unit.

T-34-85 (Plant No. 183) with the number 412, from an unidentified armoured unit of the Chinese People's Liberation Army during a parade at Trananmen Square in Beijing, early 1950s. The tank is painted all-over olive green (probably Soviet 4BO paint).

#### NORTH KOREA

T-34-85 tanks were delivered to the North Korean army from the USSR and PRC. Their exact number has never been specified, a reasonable estimate indicating about 500. The tanks were painted olive green and had white three-digit tactical numbers painted on the turrets.

North Korean T-34-85 (Plant No.183), number 207 demonstrating water obstacle crossing.



A burnt-out wreck of T-34-85 (Plant No.112 with two single ventilators) from the 16th Armoured Brigade near Yongsan, October 1950.



T-34-85 tanks at a parade in Pyongyang on the occasion of the North Korean national holiday, probably in the 1960s. The tanks wear ssocalled parade paint scheme, with white wheel trim. Similar schemes were also used by the USSR and some other Eastern Bloc nations.



#### VIETNAM

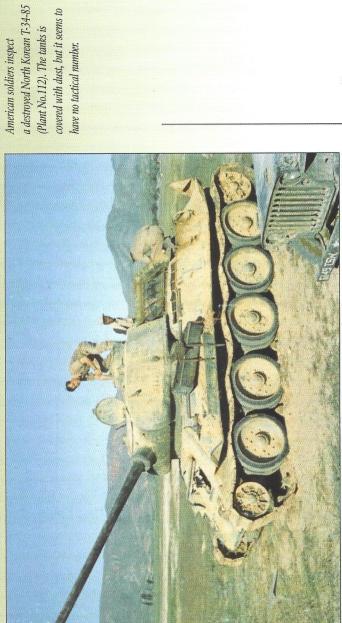
Tanks operated by North Vietnamese units were painted olive green, which quickly faded in the monsoon climate. Three-digit tactical numbers (usually yellow or white) were painted on the turrets. On many vehicles, five-pointed stars within dashed-outline circles were painted ahead of the number, both elements in yellow. According to some sources the background of the Vietnamese insignia was red and according to others, red and blue. Photographs confirm both versions were used. It seems that initially the background was red and later red and blue. Interestingly, analysis of the photographs suggests that in the case of the two-colour background, there were versions with the background colours in the order red-blue, and some blue-red.



A T-34-85 (Plant No. 112, with two single ventilators) from an unidentified North Vietnamese unit. The tank has the national insignia in the most frequent form, with red background.

T-34-85 tanks of North Vietnamese Army during a night exercise, early 1970s. Visible in the foreground is a tank with tactical number 158, modernized to Model 1969 standard. Note the characteristic method of painting of the tactical number, with a gap in the middle.



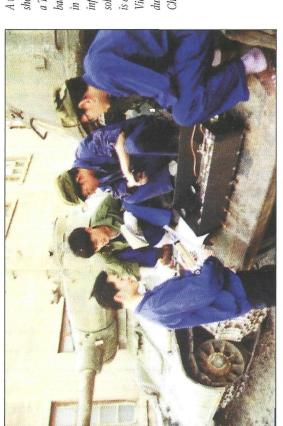


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Destroyed North Korean T-34-85 tanks, produced by various plants. The shape of digits of the tactical numbers is also diverse.

North Korea

North Korean T-34-85 (Plant No. 174) with tactical number 215 from the 108th Tank Regiment of the 105th Armoured Brigade, Seoul, 27 June 1950. According to some sources it was the first North Korean tank to enter Seoul. The tank is painted overall olive green.



A very mysterious photograph, showing Vietnamese mechanics at a T-34-85 tank. The tank in the background is a vehicle modernized in China. It is difficult to find information confirming that PRC sold such tanks to Vietnam. There is also no information that the Vietnamese captured such tanks during the border conflict with China

Chinese soldiers posing on a burnt-out wreck of a Vietnamese T-34-85 Model 1969 tank near Lang Son

in 1979.

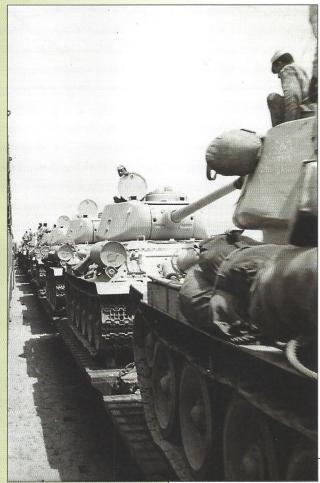
VIETNAM

T-34-85 Model 1969 (Plant No. 183) with the tactical number 111, from the 202<sup>14</sup> Armoured Regiment of the People's Army of Vietnam, 1971. The tank is painted overall olive green. According to some sources in Vietnam these vehicles were referred to as T-34-85M, but this is not confirmed.

## MIDDLE EAST

In the post-war period the T-34-85s entered service in armoured units of numerous Arab countries. The tanks sported diverse paint schemes – some remained in their original olive green livery, others received desert camouflage, both in single and multi-colour schemes.

#### EGYPT



Egyptian T-34-85s (Czechoslovak production) on railway wagons, autumn of 1956.

The Egyptian army was the largest Middle Eastern T-34-85 operator. A total of about 500 tanks were delivered from the USSR and Czechoslovakia (at least 290 of which were delivered during 1955-57). The Egyptian tanks had some distinctive features, making them easily recognisable: the forward section of the fender was slightly upturned, the exhaust pipes were extended, and a tool holder was installed on the turret. Some Egyptian tanks had a 12.7 mm DShK anti-aircraft machine gun mount installed on the turret. In the 1970s a modification of T-34-85 was developed by Egyptian No.5 Works, consisting in retrofitting more modern equipment and wheel skirts. This proposal did not enter series implementation.

Paint schemes and markings of Egyptian T-34-85 tanks have been the subject of controversy and disputes between authors focussing on this subject. It seems that during the conflicts in 1956 and 1967 the basic paint scheme consisted of applying sand colour paint on all surfaces. Information about multi-colour (two-tone) paint schemes has not been confirmed by photographic material, although it cannot be ruled out that such paint schemes were worn by T-34-85s. For example, multi-colour camouflage was certainly worn by T-34-122 howitzers used by the Egyptians during the Yom Kippur war.



A T-34-85 (Czechoslovak production) during a parade in Cairo, summer of 1956. The tank wears an overall sand paint scheme.



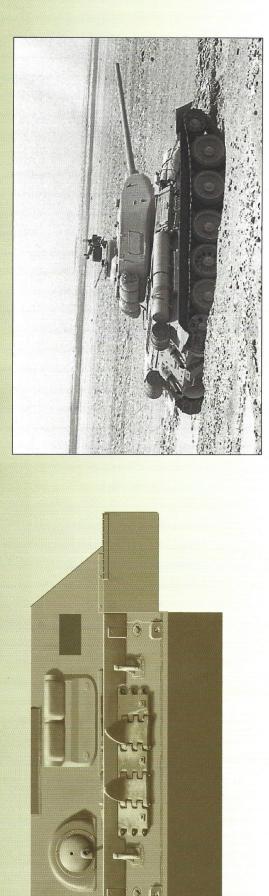
A wreck of Egyptian T-34-85 (Czechoslovak production) destroyed during the Six Day War in June 1967. Note the tactical marking on the turret – two-colour rectangle.

Regarding tactical markings, the Egyptian armoured forces symbol was a green-red or blueviolet rectangle, the colours divided by a diagonal line. During the conflicts in 1956 and 1967 green and red triangles were painted on turrets and forward hulls (usually at the left of the front armour plate) of the Egyptian T-34-85s. However, the identification of these markings is difficult. This is also the case with gun barrel markings, said to consist of wide green (and perhaps also blue) stripes applied in the middle or at the end of the barrel. It can be speculated that the location of the stripe denoted the sub-unit. In photos taken during a parade in Cairo (before the outbreak of the Suez crisis) thin, black stripes (one, two or three) are visible on T-34-85 gun barrels, though again, the purpose of this marking is hard to confirm. Egyptian units used geometric symbols as tactical markings - circles, squares and rhombuses located on the front armour plate, to the left of driver's hatch. Registration plates were placed on the fenders at the front and rear. These contained the inscription "army" in Arabic and a four-digit number. In the late 1960s and early 1970s, threedigit tactical numbers began to be applied to Egyptian T-34-85s on the forward section of the turret, and sometimes also on fenders. According to some sources, some vehicles also had Egyptian flags painted on the turrets. A few photographs confirm that this was the case, but not when the markings were applied as the dates the photographs were taken are unknown.

In the photos from the aforementioned parade in Cairo in 1956, interesting emblems are visible on the turrets of T-34-85s: a rhinoceros, a warthog, an elephant, and pyramids. According to some sources, these were parade markings, but this is not certain as such emblems can also be seen in photos of Egyptian vehicles in combat conditions.



A column of Egyptian military vehicles destroyed during the Six Day War in June 1967. The T-34-85 has a tactical marking in form of rectangle on the turret.



\$ YOU

An Egyptian T-34-85 (Czechoslovak production), photographed in the desert, probably late 1960s/early 1970s. The tank has no tactical markings. Of interest are local modifications: DShK machine gun on the turret, raised forward part of the fender, additional boxes, including one in the lower part of the hull and long exhaust pipes.

EGYPT

Egyptian T-34-85 (Czechoslovak production) from an unidentified unit, on parade in Cairo, 1956. The tank features Egyptian modifications – an upturned forward section of the fender, and shovel grip on the turret. Note tactical markings on the gun barrel and front armour plate.



#### IRAQ

The Iraqi army operated several hundred T-34-85 tanks, delivered during the 1960s and 1970s. According to some sources, they saw use even during the early period of the Iraq-Iran war, but this cannot be confirmed.

It is very difficult to find information about paint schemes and markings of Iraqi T-34-85 tanks. They were probably covered with an all-over sand colour paint scheme. Multi-colour schemes cannot be ruled out, but the only known photo depicting a T-34-85 in two-tone sand-and-tan camouflage, taken in 1982 on the outskirts of Baghdad, shows a tank acting as monument or children's playground apparatus, and the scheme it wears is not necessarily authentic.

Tanks of the combat units sported three – or four-digit tactical numbers painted on the turrets (forward section). According to some authors, Iraqi flags were painted on the turrets of some tanks, but this information has not been confirmed by photographic evidence.

#### ISRAEL



During fighting with Egypt and Syria, the Israeli army captured at least a few T-34-85s. These tanks entered Zahal's inventory, but were not used in combat. The tanks were painted green and sand, and had no markings except for the bridge classification sign – a white number 33 in a dark blue circle with red outline on the right fender.

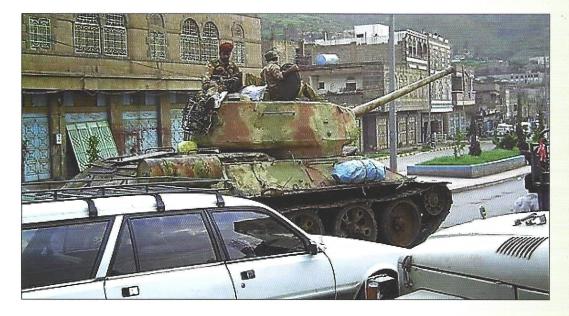
Left: A T-34-85 (Czechoslovak production) displayed at a parade on the occasion of the  $9^{th}$  anniversary of Israel's independence. On this occasion several tanks of this type were displayed. They were probably repainted in Israel. Bridge classification symbol – white number 33 on dark blue circle with red outline is painted on the right fender.



Israeli soldiers posing with a captured T-34-85 (Czechoslovak production). It is an Egyptian tank captured in 1956. Interestingly, the forward section of the fender is upturned, but it is not a raised fender, featured by many Egyptian "eighty-fives".

#### YEMEN

Based on the evidence of a few photos, it can be stated that T-34-85 tanks used during fighting in Yemen in 2015 wore diverse paint schemes. However, usually the tanks had three-colour camouflages: green and tan camouflage patches sprayed onto a basic sand colour. Some tanks probably remained in overall sand livery. No tactical numbers are visible in available photographs.



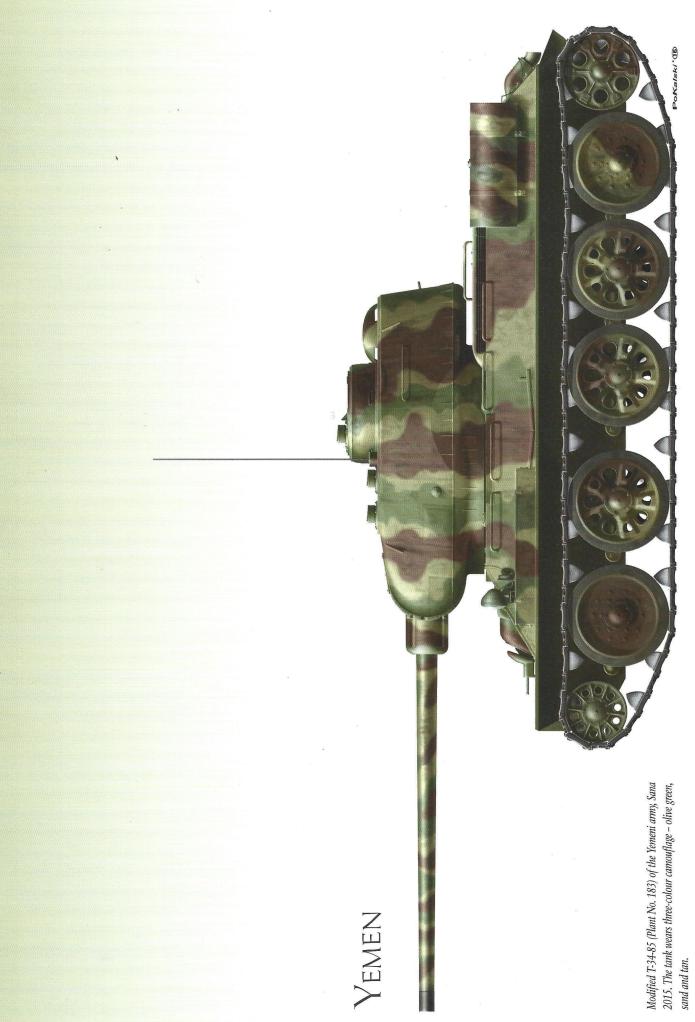
A modified T-34-85 (Plant No. 183) in the street of Yemeni capital Sana in 2015. The tank wears a three-colour camouflage, worn also by Su-100 self-propelled guns.

#### LEBANON

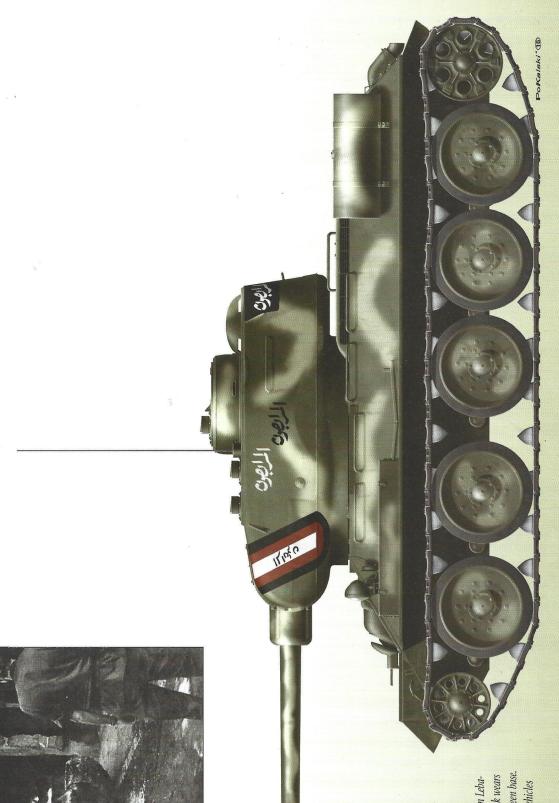
During the hostilities in Lebanon in the 1970s and 1980s, T-34-85 tanks were operated by units of the pro-Syrian militia and Palestine Liberation Organisation (the tanks had reportedly been delivered from Hungary, but this has not been confirmed). The paint schemes of these vehicles were diverse and seemingly arbitrary, and therefore it is hard to generalise. However, it seems that many vehicles wore a two-colour camouflage, with sand brown patches over a basic olive green colour. The shade of this colour and size of the patches were diverse. Patriotic slogans or even photographs of local heroes were often placed on the tanks.



T-34-85 of Czechoslovak production, operated in early 1980s by pro-Syrian militia units during fighting in Beirut. The tanks wears two-colour camouflage – sand splotches applied on basic olive green.



Modified T:34-85 (Plant No. 183) of the Yemeni army, Sana 2015. The tank wears three-colour camouflage – olive green, sand and tan.



LEBANON

T-34-85 (Plant No. 183) used during the Civil War in Lebanon by pro-Syrian militia units, Beinut 1982. The tank wears two-colour camouflage – sand patches on an olive green base. Note inscriptions and markings frequently seen on vehicles used by pro-Syrian militia.

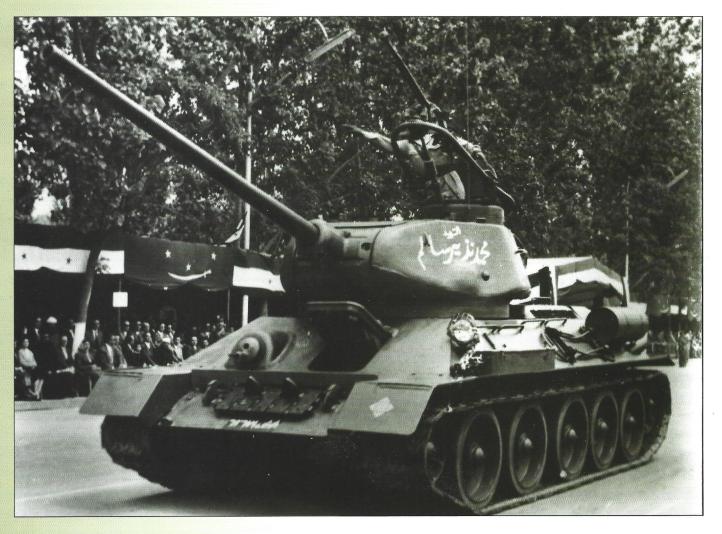
#### SYRIA

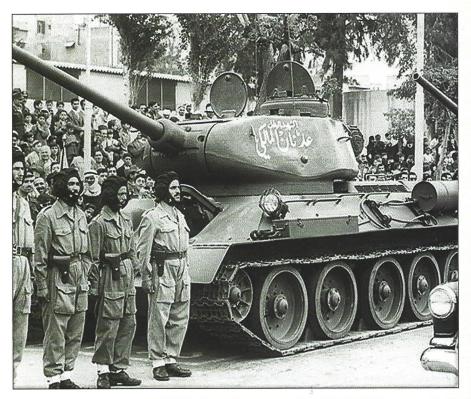
T-34-85 tanks were delivered to Syria from the USSR and Czechoslovakia. In total at least 220 'eighty-fives' were delivered to this country. The Syrians made minor modifications, of which the most distinctive was the installation of a 12.7 mm DShK anti-aircraft machine gun mounted on the commander's hatch.

Initially the tanks were painted dark green. However, photographs taken in 1961, during the crisis caused by the breakup of the Egyptian-Syrian union, show tanks participating in a parade wearing disruptive camouflage. It seems that this consisted of tan patches applied over a basic green colour. A few colour photographs, although of poor quality, seem to confirm the multi-colour camouflages. Moreover, photographs of Syrian tanks captured by Israel in 1973 show that some T-34-85s sported three-colour camouflages, with sand and tan patches applied on the basic green colour. Some sources say that the third colour was not tan, but grey. Indeed, in some pictures the camouflage patches appear to be grey.

As far as tactical markings were concerned, distinctive inscriptions could be seen painted on the turrets of some tanks, honouring Syrian heroes of the 1948 war with Israel. They were used from the early 1960s to the early 1970s. At that time, white tactical numbers, usually of three digits, appeared. In the 1960s a small, white (five-digit) serial number and inscription "Army" were painted on the front armour plate. In that decade the Syrians also used geometric tactical markings – circles and triangles. They were usually painted on the turrets, but also on the front fenders. During the Six Day War, white circles were painted on the turret roofs of the Syrian tanks as quick recognition markings for friendly aircraft.

A Syrian T-34-85 (Czecho-slovak production) during a parade in Damascus in 1961. The tank wears a typical dark green paint scheme and markings. The name of an Arab hero of the war with Israel was painted on the turret. Registration plate is fitted to the front armour plate and the tactical marking is painted on the fender.









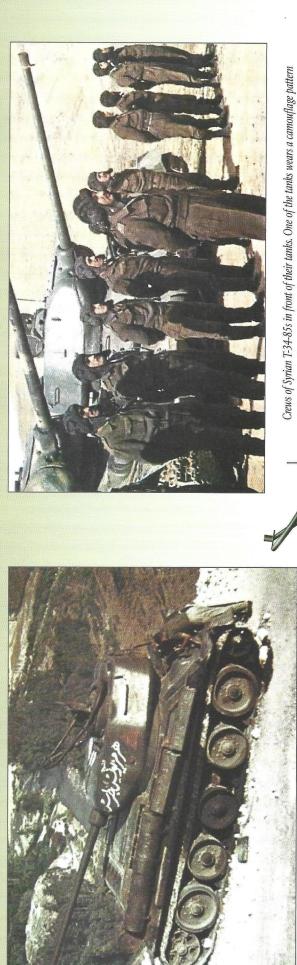


Above, left: A Syrian T-34-85 (Czechoslovak production) photographed during a military parade in Damascus. According to some sources this photograph was taken in April 1957, which means that the deliveries of these tanks to Syria took place earlier than some sources say (early 1960s).

Above: Commander of a T-34-85 tank photographed during Egyptian-Syrian crisis in 1961. The photograph is of poor quality, but the tank might have worn two-colour camouflage.

Middle: Wreck of a Syrian T-34-85 (Czechoslovak production) burnt during the Six Day War in June 1967. The markings suggest that the tank was assigned to the 44th Armoured Brigade.

Turret of a destroyed Syrian T-34-85 with lettering (name of a hero of the war with Israel).



Crews of Syrian T-34-85s in front of their tanks. One of the tanks wears a camouflage pattern similar to that of Syrian T-55 and T-62 tanks in the 1970s.

T-34-85 (Czechoslovak production) in Syrian colours, Six Day War, Golan Heights area, June 1967. Note the inscription on the turret, red identification triangle and white circle on the roof of the turret - an aerial identification marking.



Another proof that Syrian multi-colour camouflage schemes existed. The photograph shows stocks of materiel captured by Israel in 1973. T-34-85 tanks were converted to shelters of fixed fring points.



SYRIA

T-34-85 (Czechoslovak production) in Syrian colours, of an unidentified unit, probably at the turn of 1960s/70s. The tank wears an atypical camouflage scheme – brown patches in form of hand prints applied on a dark green background on the turret.

## AFRICA

T-34-85 tanks also proved to be attractive export goods in Africa. They found their way to many countries: Algeria, Angola, Congo, Guinea, Equatorial Guinea, Guinea-Bissau, Ethiopia, Libya, Mali, Mozambique, Somalia, Sudan, Togo and Zimbabwe. Interestingly, in addition to exports from the USSR, numerous other countries exported or re-exported tanks to African nations, including China, Czechoslovakia and East Germany. However, this matter is poorly documented and photographs are rare, and therefore only a selection of paint schemes used in African countries as documented by photographic evidence can be described below.

#### ANGOLA

The number of T-34-85 tanks operated by Angolan army (FAPLA) units is not known exactly. This uncertainty results from the fact that they had been delivered by the USSR and Czechoslovakia, while Cuba also granted tanks in "fraternal support". It can be estimated that in the 1970s between 125 and 200 T-34-85 tanks were delivered to Angola.

Most tanks wore an overall olive green paint scheme. Analysing photographs of tanks captured by the South Africans and wrecks of tanks destroyed during the hostilities suggests that some may have had camouflage consisting of brown patches on a basic olive green background. As far as tactical markings are concerned, some tanks had none, some had white tactical numbers (usually three-digit), and other tanks had white tactical letter-numeric designations, e.g. 9F1, O-321.

T-34-85 Model 1969 tanks captured by the South Africans during Operation "Protea" in 1981.



#### ETHIOPIA

At the beginning of the 1980s, more than 100 T-34-85 tanks had been delivered to Ethiopia by two countries, the USSR and East Germany. Most tanks featured modifications characteristic of the T-34-85 Model 1960 and Model 1969. Ethiopian T-34-85s took part in the fighting with Somali units in Ogaden province, where their opponents were often other T-34-85s. Several Ethiopian tanks of this type were captured by the insurgents of the Western Somali Liberation Front. Based on the few photos available, it seems that the main colour of Ethiopian 'eighty-fives' was olive green. Tactical markings do not appear to have been used.

#### Mozambique

About 40 T-34-85s were delivered to Mozambique during 1977–78 from the USSR, Czechoslovakia and East Germany. The tanks were painted olive green, as they had been delivered. There is no information about tactical markings.

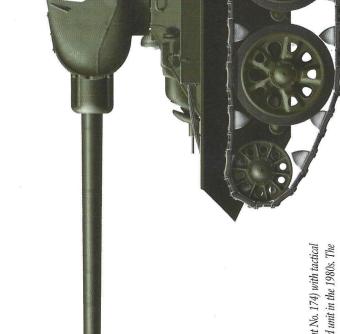
#### SOMALIA

The first Somali T-34-85s were olive green with white, three-digit tactical markings (e.g. 122, 212). It cannot be ruled out that some tanks had four-digit numbers. However, the size and shape of the digits were not standardised. As far as national insignia are concerned, there were two types: the first was a black and red square divided in half, with dark circle and a white star inside. The other type was much simpler – a red and black square divided diagonally. On some tanks, white stars in a white-outlined circle were also painted (usually on the forward armour plate). This was probably a marking used only during military parades. Tanks used in the late 1970s had registration plates on the front and rear hull, with the Arabic inscription "Army" and a four-digit number. The quality of available photographs does not allow individual numbers to be established, unfortunately.



The crew of a Somali T-34-85 Model 1969 pose in front of their tank. The photograph was taken in 1978, during the conflict with Ethiopia. Note bright painted muzzle of the gun, early version of the national insignia (black and red square) and tactical number 122.

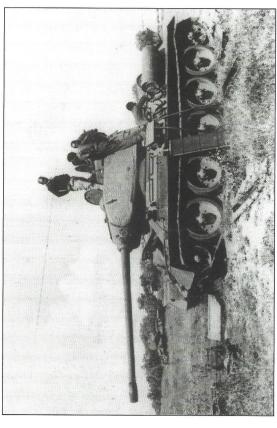




ANGOLA

Angolan T-34-85 Model 1969 (Plant No. 174) with tactical number O-230, from an unidentified unit in the 1980s. The tank is painted all-over olive green.

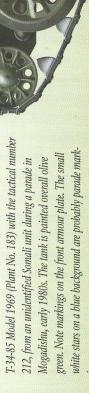




conflict operated T-34-85 tanks. The photograph shows an Ethiopian tank captured by the Somalis. It is a tank produced by Plant No.112 (with two single ventilators), During the Somali-Ethiopian war in Ogaden province in 1978 both sides of the modernized to Model 1969 standard. The wheels remained unchanged.

SOMALIA

T-34-85 Model 1969 (Plant No. 183) with the tactical number green. Note markings on the front armour plate. The small 212, from an unidentified Somali unit during a parade in Mogadishu, early 1980s. The tank is painted overall olive



#### ZIMBABWE

The units of the guerrilla organisation called the Zimbabwe People's Revolutionary Army (ZIPRA), which was the armed force of the Zimbabwe African People's Union, operated around 10 T-34-85 Model 1960 tanks. There is no information where the tanks were delivered to Zimbabwe from, and what their subsequent fate was, other than one such tank preserved at a military museum in Gweru.

The tanks probably had two-colour paint schemes of olive green with brown camouflage patches. The shade of the brown paint appears to have varied greatly, though it should be remembered that in the African climate, paints tend to fade very quickly.



A T-34-85 Model 1969 tank (Plant No. 183 production) preserved at Gweru military museum. The tank has two-colour paint scheme, although it is difficult to make conclusions about tanks operated in Zimbabwe judging by the museum exhibit.



### AMERICA

#### CUBA

The first T-34-85 tanks delivered to Cuba, and used to repel the invasion in the Bay of Pigs, were painted olive green. At that time the tanks had probably no tactical numbers.

Later the tanks were probably painted dark green. White, three-digit tactical numbers were applied on the turrets. Some tanks had a small star painted near the tactical number. Small, white stars were also sporadically painted on front fenders.

# MODERNIZATIONS CZECHOSLOVAK T-34-85

T-34-85 tanks of Czechoslovak production preserved at Lešany, Králíky, Rokycany and Smržovka museums. These tanks, although very similar to each other, differ in some details.





A Czechoslovak T-34-85 preserved at Lešany museum. The tank has the equipment of early 1950s.

A Czechoslovak T-34-85 displayed at Cihelna show in Králíky. The tank has equipment modernized in the 1960s.







Details of the turret of Czechoslovak production. Note the quality of the casts and additional antenna mount on the turret roof.





Gun yoke of a Czechoslovak T-34-85.



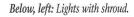
Rear section of the hull of a Czechoslovak T-34-85 with external fuel tanks. Note wide hinges on the rear armoured plate (6-segment, not 5-segment as the Soviet ones).



Rear section of the hull of another T-34-85 of Czechoslovak production with narrow hinges.



Forward section of the hull of a T-34-85 of Czechoslovak production.





The signaling device for communication between the desant and crew characteristic for tanks of Czechoslovak production.



# YUGOSLAV TESKI TENK VOZILO A

A Yugoslavian tank *Teski Tenk Vozilo A* preserved at the military museum in the Kalemegdan fortress in Belgrade. Note the new shape of the turret and hull armour plates. The drivetrain remained unchanged.





















# POLISH T-34-85

Basic versions of Polish production T-34-85s. The photographs show tanks preserved at Armoured Weapon Museum in Poznań, Polish Arms Museum in Kołobrzeg and in private collections.

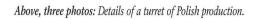




General view of a T-34-85 of Polish production.











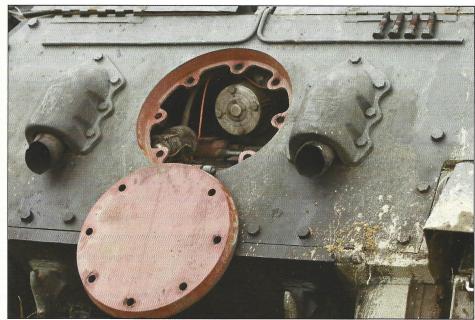
Tracks of a Polish T-34-85.



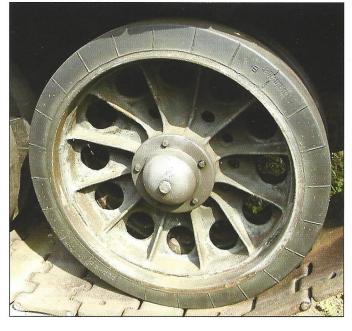
Open engine compartment hatch (transmission). Exhaust tubes with distinctive cornugated shrouds.

Below: Perforated road wheels used in most tanks of Polish production. However, some Polish T-34-85s had solid wheels (like the Czechoslovak tanks).

Below, right: Idler wheel of a Polish T-34-85.







# POLISH T-34-85M2

Polish T-34-85M2 of Polish production, modified for crossing deep water obstacles on the bottom. The photographs show tanks preserved at museums in Bydgoszcz and Mirosławiec.



A T-34-85M2 preserved at Land Forces Museum in Bydgoszcz.





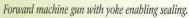
Above: Turret and middle section of the hull. The stowage box on the back of the turret and the snorkel are visible.



Rear section of the hull – fittings for cutoff valves on the exhaust pipes are visible.



Rear section of the hull with louvres enabling sealing the engine compartment.





The roof of the turret with modifications enabling sealing and installation of the snorkel.



## BULGARIAN MODERNIZATIONS

The T-34-85 tanks operated by Bulgarian armoured units underwent modernization, probably in the 1960s. Although the scope of modifications was diverse, they usually consisted in addition of holders for 200-litre fuel drums on the back of the hull, installation of a stowage box on the left side of the hull and holders for BDSh smoke cannister immediately aft of it. On the right side the set of lines for fitting the unditching beam. However, most surprising were small turrets and anti-aircraft machine gun mount on the loader's hatch.





Modernized Bulgarian T-34-85 (probably of Omsk Plant No.174 post-war production).



Modernized Bulgarian T-34-85 (so-called mushroom-type turret with two single ventilators of Gorki Plant No.112 production)





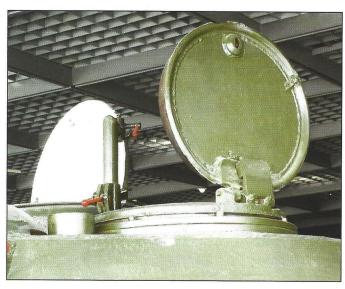




Modernized Bulgarian T-34-85 of Czechoslovak production, preserved at Korean War Memorial in Seoul.

Left, left below: T-34-85 turret with modifications characteristic for Bulgarian tanks.

Below: The turret with machine gun mount on loader's hatch.



Below, below right: Holders for 200-litre barrels on the back of the hull.



# CHINESE MODERNIZATIONS

A T-34-85 of wartime Soviet production (Plant No.174) modernized in China. The tank has new cupolas for the commander and on the loader's hatch (with machine gun mount) and modernized hinges of the rear armour plate and transmission compartment door. The tank shown in the photos had no exhaust pipes with their armoured shrouds.



## ROMANIAN MODERNIZATION

A T-34-85 of Czechoslovak production, modernized in Romania probably on the turn in 1960/70. The tank is adapted for crossing water obstacles on the bottom. It was also fitted with additional equipment, such as the toolbox on the left side of the hull and holders for unditching beam rigging line. This tank is preserved at the military museum in Bucharest.









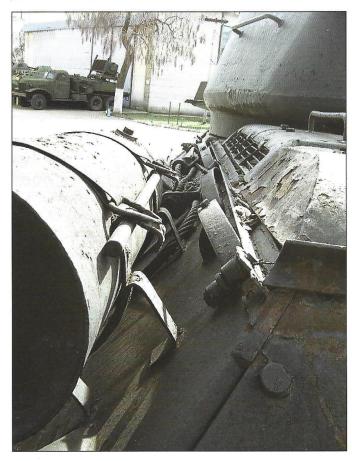












Installation for crossing water obstacles on the bottom on Romanian T-34-85.

#### T-34-85 After WW2 Camouflage & Markings 1946-2016

The Russian T-34 was possibly the best medium tank of World War Two, and was a major influence on all subsequent tank designs. It served in huge numbers with the Soviet Army and its allies, and was also used by their enemies! This book continues the story of the T-34-85, this time in post-war service. Information is included about post-war production in the USSR, and licensed versions made in Czechoslovakia, Yugoslavia and Poland. A brief summary of the T-34's involvement in conflicts and active service up to 2016 is given. The most important part of the book describes the camouflage and markings of T-34-85s in service around the world. There are more than 40 especially commissioned colour profiles, and over 150 black-and-white and colour photographs, many never previously published.

