

## Chapter IV-3: The Tables of Organisation and Equipment (TOE) for Soviet Land Combat Units from 22nd June to 31st December 1941

As mentioned previously, the term TOE is essentially a US term. The Soviet equivalent term is *Shtaty* and the German term is *Kriegstarkenachweisungen* (KStN). The TOEs in an armed service show the internal composition, organisational structure and authorised equipment of the various combat units that make up that service.

TOEs were created by the military high command in order to meet the perceived demands that they believed were most likely to be placed on their armed forces. As such, TOEs often reflected the state of the tactical, operational and strategic thinking, in the armed forces at that time. However a country's economy, infrastructure and available manpower, were often unable to physically supply all the resources needed to create combat units with their full TOEs. In this sense, TOEs commonly did not reflect the reality: there was often a huge gap between a combat unit's TOE 'wish list' and the actual physical state of the combat unit.

In this chapter we will not attempt to quantify the actual equipment in combat units during Operation Barbarossa as this will be done in great detail in later chapters. We are concerned here with the 'authorised' structure and equipment of the various Soviet combat units available on 22nd June 1941 (i.e. Deployed (D)), and which became available up to 31st December 1941 (i.e. Mobilised and Deployed (MD) or Mobilised and Not Deployed (MND)).

As in most armies, many of the larger combat units in the Red Army, such as divisions, had a long history of evolution in terms of organisational structure. Obviously TOEs change over time as a country's situation, objectives, technology and understanding of war change. In the TOE descriptions below, we are concerned with a 'snapshot' of combat unit TOEs as used from June to December 1941, and will not recount the detailed history of the various types of combat unit outside this time frame. Some background history is provided on larger combat units if appropriate and for the reader's interest.

All TOEs are presented in the table format described in Part I 7. 1) of this work.<sup>1</sup> This chapter describes how to read TOEs in the table format as well as the abbreviations and nomenclature used in the TOE tables. For some larger combat units, TOEs are also presented in the traditional organisational chart format.

### Red Army Rifle Units

#### Rifle Divisions, 5th April 1941

The German-Soviet non-aggression pact was signed on 23rd August 1939, but a week before this the Red Army had already started mobilising new rifle divisions. The official mobilisation order, bringing reservists into the rifle divisions was issued on the 17th September 1939. The September 1939 rifle division was the largest authorised in the Red Army since the Russian Civil War, with an authorised strength of 18 841 men. Such a rifle division was much too large, complex and difficult to control for the Soviet Union to support large numbers of them. The result was that when the USSR attacked Finland in the Winter War in 1939-40, most rifle divisions facing the Finns had 14 to 15 000 men. Those divisions in non-active military districts were in considerably worse shape.

Following lessons from the Winter War, the Red Army's rifle divisions were modified with a new TOE on 13th June 1940. More sub machine guns, semi automatic rifles, and mortars were

<sup>1</sup> Refer to Part I 7. 1) – 'Military Simulations, and the General Structure of the Integrated Land and Air Resource Model – Tables of Organisation and Equipment (TOE) - TOE Representation in a Table Format'.

authorised to increase small unit firepower.<sup>2</sup> The division's support infrastructures were modified to reduce the number of vulnerable horses in the division from 6 208. One of the two divisional artillery regiments was supposed to be motorised, as were many of the divisional supply columns. However the motor vehicles required to fill this new TOE were simply not available in 1940 and early 1941. Apart from these minor changes the overall structure and size remained relatively unchanged.

On the 5th April 1941, new TOEs were issued which streamlined the organisation and resulted in a slightly reduced size. This rifle division TOE would represent the standard Red Army rifle division structure when the Germans attacked in June 1941. The combat, signal, transport and supply elements of an April 1941 Soviet rifle division are shown in table [Sov RD Apr 1941](#) and chart [Sov RD Apr 1941](#). It is based on *Shtat* No. 04/400 to 04/417 dated 5th April 1941.

On paper, a full strength 5th April 1941 rifle division was a large and powerful combat unit, and it would represent the strongest infantry type combat unit available to the Red Army in 1941/42. It had two artillery regiments compared to only one in most other army's comparable infantry divisions. In terms of heavy infantry weapons and AT guns it was superior to most contemporary armies, and was certainly comparable to a typical German infantry division. It should be pointed out however that not one rifle division in the Red Army was at its authorised strength in June 1941, with those in the Far East coming closest.

Apart from the difference between actual and authorised personnel and equipment, there were also at least three major weaknesses in the rifle division's structure.

- The overall signal and communication elements of the division.

Below battalion level, communication consisted solely of a combination of runners and wireman. At battalion level there was meant to be a battalion signal platoon with four backpack RRU radios, one 6-PK radio, and additional wire/optical squads. This meant that only one backpack radio was authorised per rifle company (with 177 men), and none were authorised for the battalion's support companies. In reality, most rifle companies didn't even have this one radio.

At the regimental level the signal elements were strangely organised. The regimental artillery platoon (or battery) had six RRU radios, one for each 76mm infantry gun, but the 120mm mortar platoon had only a wire team with a cart. The regimental signal company was authorised only one 5-AK radio, two 6-PK radios, and two wire/optical platoons. The regimental reconnaissance, AT and AA units had no dedicated signal personnel or radio. One can only guess how these critical units, especially mobile reconnaissance, communicated with the regimental HQ!

At the divisional level the artillery regiments and AA battalion had adequate authorised signal units, although they usually physically lacked them, while the AT battalion contained no signal assets at all. On top of this, the divisional reconnaissance battalion, one of the most critical units in the division in terms of communication, only had radios in a few armoured cars and up to three radio trucks. Almost all the rifle division's tankettes (with the exception of those in the Far East), had already been withdrawn from the reconnaissance battalions by June 1941 to form the new mechanised corps, and the tankette company wasn't authorised radios anyway.

In summary the entire rifle division's tactical communication net, already weak on paper, was wretched for lack of radios. The ability of the division to coordinate its subordinate units, and for these units to call for any support (such as effective indirect artillery fire), was severely

<sup>2</sup> The Finns had tactically made good use of SMGs, and mortars. The Soviets also stepped up production of the new Tokarev SVT-40 semi-automatic rifle, SMGs and mortars.

compromised. This was less critical in fixed defensive positions but often proved catastrophic in the more mobile battles imposed on the Red Army in the summer of 1941.

- The logistical support structures.

The reduction in personnel and horses from the 1939 rifle division was mainly the result of reduction in the divisional support structures. The overall regimental supply and support structures were reduced by 25% from 1939. The artillery batteries in the artillery regiments lacked the integrated ammunition supply columns normally associated with such units, considerably reducing the individual artillery battery's tactical flexibility. In the reconnaissance battalion the only support elements of note in the entire battalion was a five man maintenance section in a single truck. This was meant to support a battalion with 26 armoured vehicles! In addition the AT battalion had virtually no ammunition or supply trains at all.

Almost all the motorised supply and transport elements, normally distributed through a division's subunits, were concentrated in the divisional motor transport battalion, which was supplied with only one radio. With this, the transport battalion was supposed to coordinate its activities across the entire division: supplying ammunition, food, fodder, and petroleum products to a disparate range of unit types. Similarly to communications, this might just work in a static defence situation but soon falls apart in any attack situation where the division's subunits move independently, or even if the division is fighting in a flexible (mobile) defence mode.

- The degree of overall motorisation.

In terms of trucks, the rifle division was authorised to have around 90% of the number in a German first wave infantry division of similar size. However the typical truck in a German infantry division had a lift capacity of around 2.5 tons while the typical truck in a rifle division had a lift capacity of around 1.5 tons. On top of this the rifle division had only 7% of the light transports and only 3% of the motorcycles of a German first wave infantry division.<sup>3</sup>

The most damaging thing of all, which will be examined later, was that the German infantry divisions actually had most of their authorised motor vehicles while most rifle divisions in June 1941 had only a small proportion of their authorised motorised transport.

### **Rifle Divisions, 29th July 1941**

Following the disastrous border battles in June and July 1941, the Soviet General Staff realised that the big pre-war authorisation tables could not be sustained. Existing rifle divisions were rapidly being reduced to a fraction of their pre-war strength and newly mobilised divisions, which could never reach the pre-war TOE levels, needed to be combat ready as soon as possible. In other words, if the actual strength could never reach the TOE then the TOE had to be reduced to a more realistic level.

The result was a new set of rifle division TOEs issued on the 29th July 1941, specifically *Shtat* No. 04/600 to 04/616. This rifle division TOE would represent the standard for all newly mobilised rifle divisions until December 1941. The TOE, 29th July 1941 Soviet Rifle Division (combat, signal, transport and supply elements) is shown in table **Sov RD July 1941**. The overall personnel strength reduction in these reduced rifle divisions was 25%, while personnel in the individual rifle regiments were reduced by 15%. On face value, this reduction doesn't appear to be too bad. However the reduction in weapons and equipment was considerably more severe than the personnel reductions.

<sup>3</sup> The 5th April 1941 rifle division TOE called for 22 light transports (cars or equivalent) and 16 motorcycles, while a German first wave infantry division called for 335 light transports and approximately 530 motorcycles.

At the platoon level each rifle platoon was authorised only two LMGs (as opposed to four), reflecting the shortage of these weapons. In addition, the pre-war rifle platoon's 50mm mortar squad was dropped.

At the company level, a mortar section was added (with only two mortars to support the rifle company), while the pre-war rifle company's MMG platoon was abandoned. Thus, although the new rifle company still had 91% of the personnel in the pre-war rifle company, it had only six LMGs and two mortars compared to the previous twelve LMGs, three mortars and two MMGs. This means that the newly mobilised rifle companies only had approximately 49% of the firepower of the pre-war rifle companies.<sup>4</sup>

At the battalion level, the supporting mortar company was initially only a mortar platoon (with two 82mm Mortars for divisions formed in July 1941), but was expanded to a full company (with six 82mm Mortars) in August 1941. The rifle battalion's AT platoon (originally equipped with two 45mm AT guns) was dropped, and the battalion's support units were reduced.

At the regimental level the numbers of 120mm mortars, 76mm infantry guns and AAMGs were all reduced. Although six new AT Rifles were authorised in each new rifle regiment, these were only issued in November 1941, because ammunition for them was not in production until late in 1941. The regimental supply company also lost one of its 20 man platoons along with its twenty two horse wagons.

The most dramatic downsizing in the new rifle divisions was in the AT and artillery units at the divisional level. The divisional AT battalion was completely dropped leaving only the 18 45mm AT guns in the rifle regiments to defend the whole division. This represents a reduction of 67% in AT guns from pre-war rifle divisions, which had 54 AT guns. The number of artillery regiments was halved while the number of artillery batteries was reduced from 15 (with 60 artillery pieces) to only six (with 24 artillery pieces). To make matters worse, the new 'small' artillery regiment had only two battalions with 16 76mm guns and eight 122mm howitzers. This is a massive reduction in firepower from the 16 76mm guns, 32 122mm howitzers and 12 152mm howitzers in a pre-war rifle division. Not only were the guns reduced but the number of radios per artillery battalion fell from 12 to 7, and the wire communications were reduced as well. Thus newly mobilised rifle divisions had less responsive artillery and they were even less capable of indirect fire operations than the pre-war divisions.

Further reductions at the divisional level included: elimination of any armoured reconnaissance vehicles in the divisional reconnaissance battalion, elimination of all radios in the AA battalion, elimination of the bridging column and 'block' company with MMGs in the engineering battalion, and the reduction of flame-thrower units to one flame-thrower platoon (although the number of flamethrowers in the division remained at 30).

Apart from reductions in heavy weapons across the board, particularly AT guns and artillery, the next most dramatic reduction in the 29th July 1941 rifle division's combat capability was the level of authorised motorisation. This was achieved by reducing the divisional motor transport battalion to a truck company, and simply eliminating many divisional support units including the artillery maintenance section, veterinary hospital and traffic regulation platoon. The authorised transport was reduced from 585 trucks and 22 light transports to 198 trucks and four light transports. As the pre-war rifle divisions already had weak support infrastructures, the newly mobilised division's support structures can only be described as token at best. Some authors and simulation designers dramatically underestimate the impact of divisional support structures on

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<sup>4</sup> Calculated using Weapon Combat Power Coefficient (WCPC) values for LMG, MMG and 50mm mortars. Refer Part II 2. 1)– 'Part II - The Barbarossa Simulation's Resource Database - Methodology for Calculating a Weapon System's or Database Unit's Overall Combat Power Coefficient (OCPC) - Calculating individual Weapon Combat Power Coefficients (WCPCs)'.

combat operations. Although a division might perform well in certain situations for a few days, such as defending a static and well stocked position, without adequate support structures it is unable to sustain itself in combat conditions for long. In many such cases, the division literally disintegrated after intense and prolonged combat. An example of this is the combat performance of the many newly mobilised rifle divisions in the Vyazma-Bryansk pocket in October 1941. In this offensive over 657 000 Red Army soldiers were captured only 2-3 weeks after the operation started.<sup>5</sup>

So how can we estimate with reasonable accuracy, what the overall reduction in combat strength per rifle division was, using the 29th July TOE? One answer is to use the divisional 'size' equation and Minimum Divisional Size (MDS) value, detailed in Part I 10. of this work.<sup>6</sup> Using these equations, we find that a July 1941 rifle division's TOE was only 61% of the size of a pre-war rifle division's TOE. Accordingly, the new July 1941 rifle division was only 82% of the Minimum Divisional Size (MDS) value, compared to 135% for the pre-war rifle divisions. Based on the divisions being at full strength, these percentages represent a fair assessment of the difference in overall combat power between the July 1941 rifle divisions and the pre-war rifle divisions. In other words, at full strength the pre-war rifle divisions were close to being twice as strong as the newly mobilised rifle divisions.

The lack of support infrastructures in the newly mobilised divisions was not as dramatic as one might assume in 1941, primarily because the vast majority of pre-war rifle divisions were so short of motorised transport that in actuality their support structures weren't much better than the new divisions. However the few pre-war rifle divisions which the Red Army did manage to get near to their full TOE strength (such as those transferred from the Eastern USSR in late 1941), proved far more durable, persistent and potent in combat than any of the newly mobilised rifle divisions in 1941. Having said this, the smaller and weaker structure of the new divisions did enable the incredible number of 242 rifle divisions with the 29th July 1941 *Shtat* to be fully or partially mobilised in 1941. Of these, the huge number of 179 were Deployed (D), i.e. were assigned to active fronts and armies facing the Axis forces.<sup>7</sup>

### Rifle Divisions, 6th December 1941

Apart from shortages of equipment for the huge numbers of newly mobilised divisions, the Red Army unsurprisingly also found itself chronically short of well trained NCOs and officers to fill its ranks. The Soviet's somewhat panicky and massive mobilisation effort from June to October 1941 meant that the large majority of officers and men received, at best, rudimentary and cursory training. The enlisted men were largely drawn from a large pool of reservists with limited military experience from their compulsory military service, so the cursory to non-existent training was less critical. However the token training given to officers, particularly at the platoon, company and battalion levels, was far more serious.<sup>8</sup>

<sup>5</sup> Even though these divisions were cut off before surrendering, the speed with which they surrendered after being cut off and their inability to stop the initial penetration attacks indicate the true combat strength of these units. In addition, North West and West Front had had from early August to 30th September to prepare their defenses while Army Group Center's panzer and motorised divisions were sent west north and south.

<sup>6</sup> Refer to Part I 10. 2) – 'Military Simulations, and The General Structure of the Integrated Land and Air Resource Model - A 'Divisional Sized' or 'Division Equivalent' Combat Unit in WWII - Measuring Whether a Combat Unit can Reasonably be Called a Divisional Sized Combat Unit' for details on the equation used for calculating division size. The Minimum Divisional Size (MDS) value is essentially the minimum sized combat unit that can be reasonably called 'Divisional Sized' or 'Division Equivalent' in 1941.

<sup>7</sup> Refer to Part IV 7. 4) - 'The Soviet Armed Forces from June to December 1941: the Soviet Fully Integrated Land and Air Resource Model - Soviet Mobilisation after 22nd June 1941: The Actual Strength of all Soviet Land Combat Units Mobilised from 22nd June to 31st December 1941 - Red Army and Soviet Militia Rifle Units Mobilised from 22nd June to 31st December 1941' for full details on the Soviet rifle divisions mobilised in the second half of 1941.

<sup>8</sup> The lack of well trained NCOs and officers in the newly mobilized divisions would also have had a strong influence on their combat performance compared to the better trained core personnel in the pre-war rifle divisions.

One of the outcomes of the trained officer and NCO shortage was that many Red Army units could not efficiently integrate direct and indirect fire weapons on the battlefield. In response to this, on 12th October 1941 the People's Commissariat for Defence ordered all 50mm and 82mm mortars to be withdrawn from the rifle battalions and concentrated in a single regimental mortar battalion. This was a retrograde step in terms of responsiveness and flexibility in supporting infantry attacks, because the mortar battalion had only a single radio and relied primarily on land lines. It did however enable the rifle regiment to concentrate its mortars to support a particular battalion. At the same time all 120mm mortars in the rifle regiments were to be concentrated in a divisional mortar battalion. This latter step also served to strengthen the weak artillery capability of the new rifle divisions, and may be when the Red Army began to regard the 120mm mortar as an artillery weapon and not an infantry weapon. However the divisional mortar battalion initially didn't have a single radio, or any motorised vehicles to move its 120mm mortars.

On 6th December 1941 a new rifle division TOE were issued, specifically *Shtat* No. 04/750 to 04/769, shown in table **Sov RD Dec 1941**. This incorporated the mortar unit changes described above into all new rifle divisions. In addition, increasingly available LMGs meant three LMGs were authorised for each rifle platoon, while a new SMG company and an AT company with 27 AT rifles were authorised in each rifle regiment. The signal assets in the December rifle regiment decreased even further, consisting of a single radio in each battalion HQ, and two radios in the regimental signal company and 76mm infantry gun battery/platoon.

At the divisional level the AA battalion was reduced to one battery of six 37mm AA guns with the 76mm AA guns being dropped, while the divisional AT battalion was reintroduced. The latter was really an AT company with 12 AT guns. The authorised weapon was the 57mm M1941 AT gun, but as production of this weapon amounted to only 320 before it was stopped, it is unlikely any rifle divisions received this weapon in 1941. The standard 45mm AT gun was issued in its place.

On balance, the 6th December rifle division had very similar overall combat and staying power to the 29th July rifle division. Using the 'size' equation we find that a full strength December 1941 rifle division's TOE was only 69% of the size of a pre-war rifle division's TOE. The December rifle division was still only 93% of the Minimum Divisional Size (MDS) value, compared to 135% for the pre-war rifle division. Apart from adding an LMG to each platoon, most of the other changes were the equivalent of 'tweaking' the 29th July TOE. The fundamental weaknesses in communications, support infrastructures and artillery remained. In any event 36 rifle divisions with the 6th December 1941 *Shtat* were mobilised before the end of 1941, but only three partially mobilised divisions were Deployed (D) before the end of the year.<sup>9</sup>

### **Rifle Brigades, 22nd June 1941**

On the 22nd June 1941, there were five separate rifle brigades deployed in the Red Army. These were the 8th on the Hango Peninsula, the 3rd on the islands of Oesel (Saaremaa) and Dago (Hiiumaa), and the 1st, 4th and 5th in the 1st Red Banner Army, Far Eastern Front. These rifle brigades were not really common or standard organisations in the Red Army and seemed to have been created for special assignments such as coastal garrisoning duties. They usually performed these duties alongside other smaller support units such as coastal artillery, AA defence units and separate engineer and rifle battalions.

The rifle brigade organisations varied depending on their mission, but they usually included two rifle regiments, a light artillery regiment, an AT battalion, an engineer battalion, a signal company and brigade support units. The rifle regiments had similar elements as those in the April 1941 rifle division, except the brigade sometimes had additional rifle battalions, and the support units were generally scaled down. This was because the brigades were mostly performing garrison

<sup>9</sup> Refer to Part IV 7. 4) (see note 8 above) for details on the Soviet rifle divisions mobilised in the second half of 1941.

duties from fortified positions with stockpiled supplies, and although heavy weapons were required, they did not need the equivalent transport and supply infrastructure as a fully mobile rifle regiment.

Table **Garrison on Oesel, Dago** shows the organisation for the 3rd Rifle Brigade garrison on Oesel (Saaremaa) and Dago (Hiiumaa). Also shown are two separate rifle battalions and a rifle company attached to the brigade. The details of the June 1941 rifle brigades varied in each district and also depended on support units and equipment available. Refer to Part IV 6. for details of the actual equipment in these units.<sup>10</sup>

The 1st, 4th and 5th Rifle Brigades were all disbanded in the first week of the war, to fill up the rifle divisions and fortified sectors in the Far Eastern Front. The 8th Rifle Brigade held the Hango Peninsula against light Finnish opposition until November 1941.<sup>11</sup> At this time the deteriorating situation around Leningrad meant its supply lines were in jeopardy and the Hango Garrison was much more useful defending Leningrad. Thus from the 19th to 30th November 1941, the entire garrison was evacuated by the Baltic Fleet and the 8th Rifle Brigade survived 1941.<sup>12</sup> The garrison on Oesel and Dago was not so lucky. Almost the entire garrison of approximately 20 000 men was lost in October 1941 after the Germans invaded and cleared the islands.

### Rifle Brigades, 15th October 1941

By the end of July 1941, mobilisation orders had called up over 5 500 000 Soviet reservists into active service. In addition, by the end of the year at least another 4 000 000 personnel volunteered for militia or other 'volunteer' units and most of these ended up in the regular army. Most of the 'volunteers' were without any military training whatsoever. Despite filling the huge holes left by losses in regular units, and forming all the new rifle divisions described above, there were still several million available personnel remaining.

The question posed by the Soviets was, how to get these men into combat in the shortest possible time? The addendum to this question 'and with a reasonable chance of survival against the most combat proficient army in the world?' does not appear to have been seriously considered in the minds of the hierarchy in the Soviet regime. The problem facing the Red Army was that new rifle divisions appeared to take too long to create from scratch: even the new reduced strength units with less than one months training, were apparently taking too long! In addition, the officers capable of handling even the simplest rifle division were in very short supply, while staff officers able to supply, command and control large organisations were even more limited.

The apparent solution was to form smaller 'self contained' combat units in the form of rifle brigades. These could be formed quickly from similar sized training units and would be much easier to control in a rapidly changing combat situation. Essentially, a rifle brigade was a third of a rifle division with around three rifle battalions, a light artillery battalion and support units. The initial establishment of these formations began in September 1941. The early TOEs for rifle brigades varied considerably, and the only standard TOE seems to have been issued on 15th October 1941, specifically *Shtat* No. 04/730 to 04/739. The 15th October 1941 rifle brigade is shown in table **Sov RB Oct 1941**.

It should be noted that rifle brigades were an emergency measure to get troops to the front line ASAP, so there was a large variation in organisations used despite the official 15th October TOE (*Shtat*). Nevertheless, this *Shtat* most typically represents the organisation of rifle brigades in 1941. The rifle brigade had no regimental organisation, no indirect fire artillery, and very rudimentary

<sup>10</sup> Refer to Part IV 6. – 'The Soviet Armed Forces from June to December 1941: the Soviet Fully Integrated Land and Air Resource Model – The Actual Strength of all Soviet Land combat Units in a deployed (D) State on the 22nd June 1941'.

<sup>11</sup> The Finns only committed their 17th Infantry Division to carry out 'light attacks' against the heavily fortified Hango defences.

<sup>12</sup> Almost 5000 personnel were lost in this operation, mostly at sea.

signal and supply-support capacity. Although the 15th October rifle brigade *Shtat* called for 55 supply trucks in the brigade's only supply company, it is doubtful if most supply companies were ever lucky enough to receive half this number. Using the 'size' equation we find that a full strength October 1941 rifle brigade's TOE was only 24% of a pre-war rifle division's TOE. Even at full strength, the October rifle brigades were only 33% of the Minimum Divisional Size (MDS) value. Therefore, in terms of size, the October 1941 rifle brigades were equivalent to a third of a small WWII rifle-infantry division and in terms of overall combat power they were equivalent to even less than this.

The 1941 rifle brigade became essentially a collection of rifle battalions and some heavy weapons. Many of these units were formed directly from training brigades with the conversion taking at most a few weeks. This was so common the Germans thought the official designation of these units was 'student brigades'. Although this expedient system got large number of troops into the front line, their effective contribution to the overall Red Army's combat power was dubious. Lacking in both training and heavy support weapons, these brigades suffered horrendous casualties, frequently melting away after a week or less in combat. Without even basic supply and support infrastructure these units were simply unable to sustain themselves for any period. Asked to hold a section of front line, they were at a huge disadvantage against an enemy employing combined arms, indirect fire artillery and other heavy weapons.

When tallying the total number of divisions mobilised in the USSR in 1941, many authors have used two rifle brigades to be the equivalent of a rifle division. However in terms of realistic combat power, three to four Soviet October 1941 rifle brigades were the approximate equivalent to a newly mobilised rifle division. Presumably the two brigades equals one division dictum stems from the western conception of a brigade. Whatever the reason, the large majority of current literature on Operation Barbarossa grossly overestimates the overall combat power of almost all Soviet brigade types mobilised in 1941. This overestimation is also often carried through to some Barbarossa simulations where the over simplistic two brigades equals one division idea continues.

In hindsight, even some Soviet commentators believed the rifle brigades were a mistake. It is arguable that the manpower would have been better used in forming more highly trained replacements or new divisions, even though these would not have appeared on the front line until a few weeks or months later. Certainly the 1941 rifle brigades were expedient, but did they need to be so expendable as well?<sup>13</sup>

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<sup>13</sup> Refer to Part IV 7. 4) – 'The Soviet Armed Forces from June to December 1941: the Soviet Fully Integrated Land and Air Resource Model - Soviet Mobilisation after 22nd June 1941: The Actual Strength of all Soviet Land Combat Units Mobilised from 22nd June to 31st December 1941 - Red Army and Soviet Militia Rifle Units Mobilised from 22nd June to 31st December 1941', for details on the individual Soviet rifle brigades mobilised in the second half of 1941.



## Ski Battalions, 1941

Arguably the most dramatic failure of the Red Army in the Winter War with Finland was its lack of success in creating and training specialised ski combat units. The Finnish ski battalions inflicted enormous and often fatal damage on the much larger Soviet units, which were almost immobilised in the heavy snow and freezing conditions. The only ski troops the Red Army created during the Winter War were improvised affairs from personnel with some skiing experience.

Learning from their experiences in Finland, the Red Army formed several ski regiments as training units in 1940. These were mostly in the Archangelsk, Siberian and Urals Military Districts. There were still no dedicated combat capable ski units in the Red Army in June 1941. This time it was due to the massive expansion of the Red Army, which simply did not have spare resources for purely seasonal units. From late October to November 1941 the Red Army started to form its first regular ski battalions. This time the Red Army had a better reserve of ski troops to call on. However due to the enormous losses in 1941 and the scramble to mobilise new units, most of the initial batch of ski battalions were formed by simply pulling out every man in an existing unit who could ski, and throwing together the resultant personnel into a 'ski battalion'. The first ski battalions were therefore again mostly improvised units, many of which were quickly formed by local army or even rifle division HQs using their own personnel and equipment resources. Most of these units had no time to train for combat before being committed to the Soviet counter offensive in December 1941. Having rudimentary skiing skills is not equivalent to having a trained and experienced combat unit which can move and fight on skies in bad weather and conditions. The result was that the relative combat proficiency of the Soviet 1941 ski battalions was not much better than regular rifle troops. They did naturally have much better mobility than most other units in snow and blizzards.

Table **Ski Bat** shows the organisation for a typical ski battalion in 1941. The most apparent thing from this TOE is the lack of heavy weapons that could be moved by skis. This is why the ski battalion was best used as a mobile harassing force rather than attempting to slug it out with German infantry.

The only full ski brigade to see action in 1941 was the 1st Ski Brigade. This unit also demonstrates the improvised nature of these units, because the 1st Ski Brigade was formed entirely from the 2nd Light Rifle Brigade in December 1941. The 2nd Light Rifle Brigade was originally formed in the 7th Army in September 1941 from mountain training units, so a large proportion of its personnel would likely have had skiing experience.