**Soviet Hawker Hurricane Specials**

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[](https://defenceoftherealm.files.wordpress.com/2015/08/hawker-hurricane-soviet-union.jpg)

*General Kuznetsov climbs from a British Hurricane in Soviet colors (history.net)*

The Soviet Air Forces were in an extremely poor state when the Germans struck east on June 22nd 1941. The vast majority of their aircraft were relatively impotent in the face of the advanced German Luftwaffe but worse still was the Soviet’s inability to detect incoming raids early enough to respond. Vast numbers of Soviet aircraft were destroyed on the ground by the Luftwaffe and their bases overrun before being used as forward operating posts against their former owners.

In London the opening of the eastern front by Hitler was greeted with staunch enthusiasm and some disbelief by the military leadership including Churchill who viewed it as an obvious blunder. Hitler hadn’t finished the fight against the British Empire in Western Europe or North Africa and now he was taking on the millions of Soviet soldiers. The superiority in numbers on the battlefield the Soviets were expected to offer however appeared to be evaporating before the eyes of the world as German and their Eastern European allies (Romania, Bulgaria and Finland) appeared unstoppable and once again Blitzkrieg produced victory after victory.

Churchill was no supporter of Stalin. In fact Churchill was a bitter opponent of his regime in Moscow and Communism at large but Nazi Germany was the more immediate threat and going on the principle of *the enemy of my enemy is my friend* Churchill offered his support to Stalin. What the Soviets needed were enough aeroplanes to help hold back the tide against the Germans while they relocated their own aviation manufacturing facilities further east out of range of German bombers. Churchill therefore ordered that large numbers of Hawker Hurricane and Supermarine Spitfire fighters be sent to the Soviet Union via the dangerous Arctic convoys to shore up the depleted Soviet fighter regiments. Additionally, RAF squadrons were sent to both fight alongside the Soviets and help train them by passing on their own experience against the Luftwaffe.

Given the prestige both these aircraft have in the UK it may come as something of a surprise that the Soviet pilots generally disliked their British mounts intensely. The Spitfire was especially unloved since its narrow undercarriage made it extremely awkward to land on the poorly prepared Soviet runways and was considered too fragile to operate effectively in the austere conditions. By contrast the Hurricane was a far more sturdy design that better suited the Soviet’s needs on the ground but in the air the aircraft was considered inferior to the German Messerschmitt Bf109E fighters. One thing the Soviets loathed on both aircraft was their relatively light armament and the fact that the guns were all located in the wings as opposed to around the forward fuselage as on Soviet and German fighters.

Nevertheless the two aircraft were still superior to many of the types the Soviets operated before and could at least hold their own against the Germans for the time being. With 2,952 Hurricanes being delivered to the Soviet Union it was inevitable that the aircraft would be modified in the field by the ever resourceful Soviets to either improve performance or to serve in other roles.

**Trainer Conversion**

[](https://defenceoftherealm.files.wordpress.com/2015/08/hawker-hurricane-soviet-union-two-seater.jpg)

*Hawker Hurricane two seater conversion (source unknown)*

For many of the Soviet pilots who survived the German onslaught in the early days the Hurricane was a big leap forward in performance compared to their biplanes such as the I-152 of which there were still 1,000 in service when the Germans attacked. The Hurricane also handled differently to equivalent Soviet designs and as a result the Soviets asked for a two-seater trainer version very early on.

Ten Hurricane Mk.IIs were selected for conversion which involved removing the armour behind the original pilot seat and effectively fitting a duplicate cockpit complete with second windscreen. The extra weight of the second cockpit necessitated the removal of eight of the Mk.II’s twelve Browning .303 machine guns and even then the remaining guns were only ever armed for training purposes. The two seat trainer never had full canopies fitted to them which as well as making them extremely cold in the harsh Soviet weather also caused buffeting problems at high speeds. A similar conversion for the Persian (Iran) Air Force resulted in the same problem leading them to design a blown transparent canopy for the second cockpit to improve the flow of air over the aircraft.

[](https://defenceoftherealm.files.wordpress.com/2015/08/hawker-hurricane-soviet-union-two-seater-2.jpg)

*Hawker Hurricane two seater conversion (wp.scn.ru)*

There is some evidence to show that the conversions were not universal such as differently shaped aft cockpit openings. With the arrival of the newer Soviet types the Hurricane training role was negated and the aircraft were transferred to glider towing and other second-line duties where they were worked to death before scrapping.

**Alternative Armament**

Like the RAF before them the Soviets quickly learned that the Hurricane’s eight .303 Browning machine guns were too weak to adequately take on the German aircraft with their armour and self-sealing fuel tanks. The Hurricane Mk.II introduced a new wing with twelve .303 Brownings but this was hardly ideal while later models introduced four Hispano 20mm cannons. This had a far better punch and the Soviets did receive some examples of this variant but something needed to be done about the earlier variants.

[](https://defenceoftherealm.files.wordpress.com/2015/08/hawker-hurricane-soviet-union-shvak.jpg)

*Hawker Hurricane with ShVak cannons (ran-home.com)*

The Soviets looked to aero-gun designer B.G. Shpital’nyj from the Yakovlev design bureau in Moscow to design alternative weapon configurations for the Hurricane. With the impending replacement of the type in the fighter role Shpital’nyj was instructed to include ground attack weapons in his redesign. After considering several configurations he eventually settled on;

* 4x 20 mm ShVAK cannons
* 2x 7.7 mm ShKAS machine-guns
* 6x RS-82 ground attack rockets

Around 1,200 airframes were reworked to feature Soviet armament. As well as packing a harder punch against the Germans the Soviet armament also eased the supply chain since they no longer had to rely on replacement parts for the guns to come via the convoys from Britain. A large number of other less official conversions were undertaken in the field and these configurations varied depending on what was available.

This heavier armament had an unfortunate side effect however in that the extra weight caused a deterioration in performance forcing them to be used more and more for ground attack duties and avoiding German fighters altogether. Soviet pilots continued to complain about the Hurricane in this role stating that there was insufficient protection for the pilot and engine compared to the Il-2 Shturmovik and this resulted on more armour being scabbed on. This further reduced performance which in turn increased Soviet complaints.

**Artillery Spotter Conversion**

[](https://defenceoftherealm.files.wordpress.com/2015/08/hawker-hurricane-artillery-correction-spotter-conversion-soviet-union.jpg)

*Hawker Hurricane BV948 (airwar.ru)*

One of the more fascinating conversions carried out by the Soviets was the development of an artillery spotter/correction version designed to support long range artillery units. Having gained experience building the two seat trainers the Soviets went about converting the aircraft with a second position behind the pilot for an observer who faced rearward and was thus not as obstructed by the aircraft’s wing when looking down as the pilot was. This configuration actually produced what looked like a monoplane version of the earlier Hawker biplane bombers such as the Hawker Hind which share a design lineage with the Hurricane. The conversion also featured a port in the floor for the observer to look straight down below the aircraft and the fitting of a long radio aerial wire from the tail to the cockpit which was no doubt needed to communicate corrective instruction to the artillery units.

To help with defence the observer was given a single 7.7mm ShKas machine gun on a trainable mount. It is possible that like the trainer versions the artillery spotters also had a number of their Browning guns deleted to save weight. It is difficult to establish just how many airframes went through the conversion but researching this article two aircraft have been identified these being BV945 and BV948 which came from the Canadian production line. These aircraft apparently operated over the Leningrad, Volkhov and Kalinin fronts after which they were replaced in the role by Il-2m Shturmoviks. This indicates that the aircraft were operated up to 1943.

**Meteorological Reconnaissance Conversions**

With the introduction of the new breed of superior Soviet fighters the ever-complaining Soviet pilots could finally discard the Hurricane from frontline use but with such high numbers still available they were quick to press them in to use for other roles one of which was meteorological reconnaissance. According to some reports around 150 aircraft were modified for this role with equipment to measure air pressure and humidity as well as radio compasses to assist navigation. The aircraft flew frequently in advance of major operations to help ascertain the weather conditions which assisted in planning at staff headquarters. It seems this variant of the aircraft was quite well received by the Soviets and examples were still on charge as late as 1950!

**Engine Conversion Proposals**

In the early stages of the war keeping the Hurricane flying relied largely on supplies getting through from Britain particularly concerning the 1,480hp Merlin XX engine. Concerns at the rate of which these supplies were getting through coupled with the threat of U-Boats and the Luftwaffe cutting off the convoys led the Soviets to consider replacing the Merlin with their own engines.

Three engines were considered;

* Shvetsov M-82A 14-cylinder air-cooled radial engine (1,570hp)
* Tumansky M-88B 14-cylinder air-cooled radial engine (1,100hp)
* Klimov M-105 V12 liquid-cooled inline engine (1,100hp)

Converting the Hurricane to a radial engine such as the M-82A or M-88B would have required extensive work whereas fitting the M-105 would offer a reduction in performance. Therefore the plan was dropped entirely and no conversions were carried out.

**Other Conversions…**

**Air Ambulance**

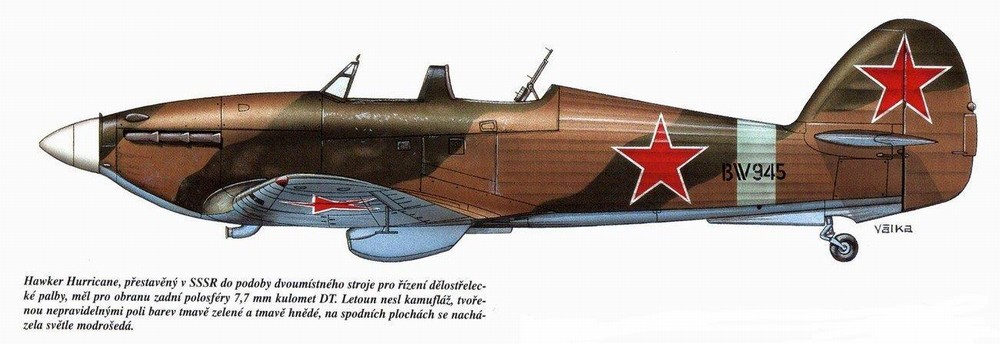
As strange as it might sound at least one Hurricane was modified as an air ambulance. Details are sketchy and no photos or even a description of what the modification involved appear on the internet but what is known is that it was a two seater that was used and the conversion was carried out in the field.

**Ski-Fighter Conversion**

A number of Hurricanes had skis fitted in place of their regular landing gear to allow them to operate off snow covered airstrips in the thick Soviet snowstorms of winter. The skis were fixed and actually lightened the aircraft because of the removal of the heavy wheels and hydraulics. The conversion was similar to a Canadian conversion although it is likely this is just a coincidence. Attempts were made to produce a retractable ski system but it proved too problematic and was dropped.

**Tactical Reconnaissance Versions**

A small number of aircraft had AFA-1 reconnaissance cameras fitted in the rear fuselage. Lacking the speed or altitude to escape interception from the newly introduced Bf109F or Focke-Wulf Fw190 the conversion was not a great success and was used only temporarily.

[](http://img.wp.scn.ru/camms/ar/79/pics/1_17.jpg)

Unit: unknown  
Serial: **BW945**  
Hawker Hurricane, rebuilt in USSR into shape of double-seater for artillery fire control, had 7,7 mm machine-gun DT to rear hemisphere defence. The plane wore camouflage created of irregular fields of dark green and dark brown, on the bottom surfaces pale blueish-grey colour appeared.

**Tail gunner: Degtyarev 7.62mm m/g.**

**Additional wieght of the tail gunner: 200kg**

"During WW II, several Hawker Hurricanes were delivered to the Soviet Union, and were subject to numerous modifications, some rather far-going. In one of the modified batches the Hurricanes were equipped with additional post for a rear gunner with a ShKAS machine gun. These aircraft were used for long range artillery spotting. The gunner was also a spotter to correct the artillery fire. In order to facilitate his task, a port was cut out in the bottom of the aeroplane. Some 20 aircraft were converted that way. They flew in Leningrad, Volkhov, Kalinin Fronts.

Some aircraft were converted for photo reconnaissance. An AFA/I camera was fitted in the fuselage behind the pilot. These machines went to special reconnaissance regiments.

Source: <http://1000aircraftphotos.com/Contributions/KleinBernhard/6755.htm>

