Snow white was the winter camouflage used on Soviet aircraft during the first three winters of the Great Patriotic War. During the first winter, until officially supplied colours became available, most aircraft in the field were camouflaged with whatever white finish could be found in the local area. Quite common was the use of a water-based white substance produced for use on fruit trees during the summer months to prevent insect damage. This coating dried to a very impermanent, chalky finish, rubbing off onto anything which brushed against the aircraft.

A well-known photo with a group of women presenting a Yak-7 to the Air Force. The fighters are in a somewhat shabby overall white camouflage. The fuselage inscription reads,"In the name of Marina Raskova from the women of Moldavia". Note the trainer in the background is without winter camouflage – a common practice

During the development of the standard white finishes it was found that the formulations were far from simple. Many of the common white pigments, e.g. those based on combinations of zinc and lead, were unsuitable or in very short supply. Thus, in October 1941, a casein-based colour designated MK-7 was developed (which interestingly was indistinguishable from snow when viewed in the ultraviolet end of the spectrum). It was supplied as a paste which was to be thinned with water for application. It was to be sprayed over the upper and side surfaces of aircraft in two coats, or applied by brush in one or two coats. For a fighter aircraft, 6 kg of MK-7 were required; for an Ilyushin Il-2, 9 kg; for an Ilyushin Il-4 or Tupolev SB, 15 kg; for Lisunov Li-2 (a license-built Douglas DC-3), 23 kg; for a Polikarpov Po-2, 8 kg; and for a Petlyakov Pe-8 heavy bomber, as much as 35 kg.

Beside MK-7, two other versions were developed in January 1942: MK-7Sh which used gypsum as a pigment and MK-7F, which included formaldehyde. This latter formulation presumably prevented freezing of the water-based paint during cold weather storage and application. Tests were also made with other white, water soluble colours, which were designated S-1, S-4a, S-4b, and S-4ab-1. MK-7 and its variants, however, were the most common materials in use. With these temporary white finishes applied, the maximum speed of an aircraft could be reduced by anywhere from 10 to 25 km/h.

All these temporary white paints were applied in two different ways. According to official instructions released on October 12, 1941, they should be used to cover all upper and side surfaces, except for national insignia. Thus finished, the aircraft should fly until the thaw set in. Areas where the white colour wore off were to be touched-up with additional MK-7. When the Spring thaw began it was necessary to wash off some of the white colour. When the snow was almost gone, the white colour was completely washed off with warm water or a caustic soda solution.

The second method, strictly unofficial, although widely used, saw the white paint applied in irregular fields, emulating the patterns of 'Summer' camouflage. The actual manner of application usually depended upon the local geography, the creativity of the painters and the quantities of the white paint available. Thus many one-off camouflage schemes were created.