

Technical Note 08.20 / 01

Version 1.0



PMN 3 anti-personnel mine - Technical Description

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Foreword

Management practices and operational procedures for humanitarian mine action are constantly evolving. Improvements are made, and changes are required, to enhance safety and productivity. Changes may come from the introduction of new technology, in response to a new mine or UXO threat, and from field experience and lessons learned in other mine action projects and programmes. This experience and lessons learned should be shared in a timely manner.

Technical Notes provide a forum to share experience and lessons learned by collecting, collating and publishing technical information on important, topical themes, particularly those relating to safety and productivity. Technical Notes complement the broader issues and principles addressed in International Mine Action Standards (IMAS).

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Introduction ¹

The PMN 3 APM is reported to be in use in Chechnya, but is not likely to be encountered anywhere else.....yet. It utilises the new-shaped casing, so old apple-green, smooth-sided type casings encountered in Cambodia, Afghanistan are unlikely to contain PMN 3 type components.

It is stressed that the information on this munition has only been received from a single source and has yet to be corroborated.

The PMN 3 is reported to be an electronic booby-trapped version of PMN 2, incorporating both anti-handling and self-destruct features. The two mines use the same casing and are externally identical. It is believed that PMN -3 is marked on the side with the Cyrillic designation, but that this marking is often removed before the mine is laid.

¹ All information in this TNMA was kindly provided by Colin King Associates, who obtained it from single source information.

PMN 3 - Technical Description

1. Scope

This Technical Note provides "First Look" information on a possible new variant of the PMN series of APM.

2. Background

The PMN 3 could be the missing link in the Russian PMN series. Apparently, the PMN 3 is a variant of the PMN 2, but incorporates both anti-handling and self-destruct features. In some ways, this is a logical follow-on to the PMN and MS-3 anti-lift mine.

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3. Description

The PMN 3 uses the new type of PMN 2 casing in which the plastic securing ring at the top is ribbed and can be unscrewed; this allows the battery to be inserted and removed. The PMN 3 is significantly heavier than the PMN 2, reportedly weighing more than 600 g (compared to 420 g for the PMN 2), which suggests that additional steel fragmentation may be present. This, together with the battery and circuitry, should make the mine even more readily detectable.

Unlike the PMN 2, which contains 100 g of TG-40 (RDX/TNT), the PMN 3 contains 80 g of A-IX-1 (RDX/Wax).

4. Mode of operation

PMN-3 can be laid by hand or chute delivered from helicopters. The pneumatic arming mechanism is the same as that used in the PMN-2, with the removal of the side key releasing a spring-loaded bellows, which inflates in 2-3 minutes. However, in addition to releasing the detonator slide, a set of electrical contacts are closed to activate the electronic circuitry once the bellows are inflated.

The self-destruct options are 30 minutes, 1, 2, 4 or 8 hours. It is not clear whether the fuze functions when the battery discharges, or whether the self-destruct can be disabled (so that the mine is armed for the entire battery life). Because the mine may be laid either way up, the anti-handling feature functions when the mine is turned 90 degrees into the vertical plane (on its side), as it would be during the normal disarming procedure.