

1/16/2006

HR 70-14

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CENTRAL INTELLIGENCE AGENCY  
WASHINGTON, D.C. 20505

15 November 1977

MEMORANDUM FOR: The Director of Central Intelligence  
FROM : William W. Wells  
Deputy Director for Operations  
SUBJECT : WARSAW PACT JOURNAL: The M-10 Gas Mask

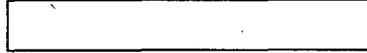
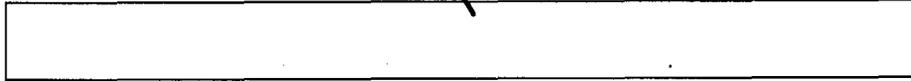
1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on articles from a SECRET Soviet publication called Information Collection of the Headquarters and the Technical Committee of the Combined Armed Forces. This article describes and gives technical data on the M-10 gas mask. The gas mask was adopted as standard equipment in the Czech Army in 1969. This journal is published by Warsaw Pact Headquarters in Moscow, and it consists of articles by Warsaw Pact officers. This article appeared in Issue No. 1, which was published in 1970.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned [redacted]

[redacted]  
William W. Wells

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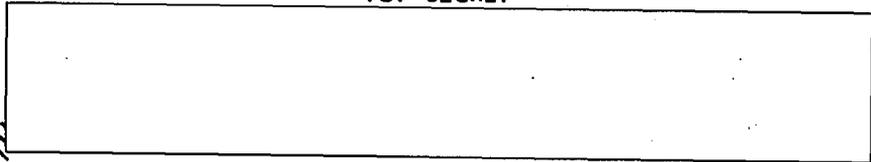
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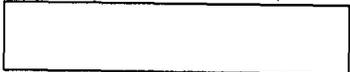
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# Intelligence Information Special Report

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COUNTRY CZECHOSLOVAKIA/WARSAW PACT



DATE OF INFO. 1970

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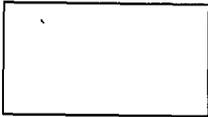
WARSAW PACT JOURNAL: The M-10 Gas Mask

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article from a SECRET Soviet publication called Information Collection of the Headquarters and the Technical Committee of the Combined Armed Forces. This journal is published by Warsaw Pact Headquarters in Moscow, and it consists of articles by Warsaw Pact officers. This article describes and gives technical data on the M-10 gas mask. The gas mask was adopted as standard equipment in the Czechoslovak People's Army in 1969. This article appeared in Issue No. 1, which was published in 1970.

End of Summary



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### THE M-10 GAS MASK

In 1969 the Czechoslovak People's Army adopted as standard equipment a combined-arms gas mask designated M-10, designed to protect the respiratory organs, eyes, and face from fumes and aerosols of toxic substances, bacterial agents, and radioactive dust.

The M-10 gas mask (Figure 1) is of the non-canister type, made in the form of a mask with a strap system for securing it to the wearer's face.

The facepiece of the gas mask is made of high-quality, physiologically harmless rubber. It has a lining inside. The goggles of the gas mask (1) are of the panoramic type, made of transparent plastic. In the front part of the mask is mounted a valve unit with exhalation vents (5) and a diaphragm unit (6). On the side surfaces of the mask are intake valve holders (2) which connect from the inside of the mask with the filter elements (3).

The facepiece is made in three sizes, determined from anthropological measurements.

The lining, fastened inside the mask, has two intake valves and reliably separates the space in front of the mouth from the space around the eyes. This made it possible to reduce the harmful area within the gas mask to 150 milliliters and to decrease fogging of the goggles from breathing.

The panoramic goggles provide a total field of vision of 70 percent, binocular vision of 75 percent. When using the gas mask at low temperatures, it is planned to use auxiliary goggles (4) worn outside the main goggles. The use of double goggles prevents fogging and freezing of goggles for four hours at a temperature of -20°C. For personnel with vision defects, special corrective lenses are attached to the goggles from the inside.

Panoramic goggles retain their hardness and transparency when boiled in decontamination solution and are also unharmed by toxic liquids.

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The valve unit has two exhalation valves separated from each other by the physiological space. The valve unit has a coefficient of inleakage equal to  $1 \cdot 10^{-3}$  percent. Above the system of exhalation valves is mounted the sound-transmitting diaphragm providing speech comprehensibility of 98 percent, which makes it possible to give voice commands with confidence and to work easily with communications means.

The filter elements. In the gas mask, two filter elements are used at the same time, installed on the inside of the mask in the areas to the side of the cheeks.

On the outside of the filter element is installed a plastic pipe, which passes through an opening in the facepiece, is held by the elastic walls of this opening, and connects with the valve unit for inhalation.

The new structure of the filter elements helps to reduce weight, makes it possible to place them inside the facepiece, and decreases resistance to inhalation.

The basis of the filter element is a sorbic mixture of fine-grained sorbent, submicron glass fibers, and plastic fibers. The sorbic mixture is also covered on two sides by filter material.

The filter elements can be changed. About 2.5 minutes are required for trained soldiers to change the two filter elements.

Spare filter elements packed in plastic foil are kept in the gas mask case.

The strap system of securing the facepiece consists of a strap over the back of the head and a skull-cap of plastic straps, the fit of which can be altered by means of adjustable buckles. This type of securing system does away with the unpleasant feeling of pressure on the head and provides for better use of the gas mask.

The gas mask case is made of textile fabric. It has a strap for carrying over the shoulder, with an attachment for affixing it to the belt. The case reliably protects the gas mask against dirt and rain. The structure of the case ensures rapid and convenient removal of the gas mask.

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PRINCIPAL TECHNICAL SPECIFICATIONS OF THE GAS MASK

Weight of gas mask -- 1200 grams, weight of case -- 400 grams

Resistance to inhalation at an air flow rate of 30 liters per minute -- 20 kilograms per square meter, at 120 liters per minute -- 85 kilograms per square meter.

Resistance to exhalation at an air flow rate of 30 liters per minute -- seven kilograms per square meter, at 120 liters per minute -- 30 kilograms per square meter.

The gas mask does not protect against carbon monoxide.

The facepiece can withstand a light pulse of 20 [kilolumens?] per square centimeter per second.

The gas mask is not damaged by an overpressure in a shock wave of one kilogram per square centimeter. The facepiece does not lose its properties after three two-hour decontamination boilings.

It takes eight seconds for a trained soldier to put the gas mask into combat condition.

The gas mask in combat condition does not hinder combat actions, and it permits engaging in small arms fire and working on combat equipment or with the various communications devices and means except optical devices.

In order to assist troops in mastering the new M-10 gas mask in the Czechoslovak People's Army, it is planned to issue training slides and to prepare an instruction manual on the use and repair of the gas mask.

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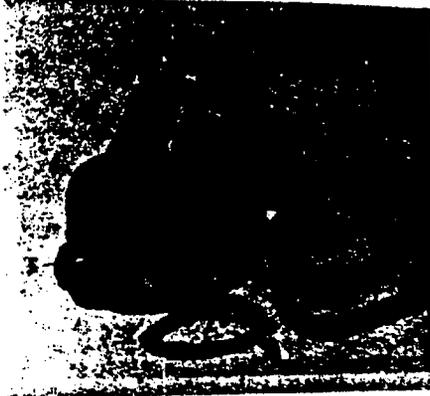


Figure 1. The M-10 gas mask

- 1 - panoramic goggles of transparent plastic;
- 2 - intake valve holders;
- 3 - filter element;
- 4 - auxiliary goggles;
- 5 - unit with exhalation vents;
- 6 - diaphragm unit.

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