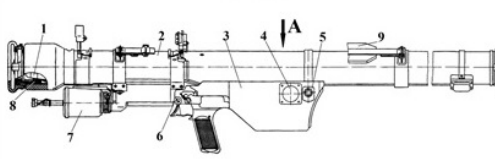
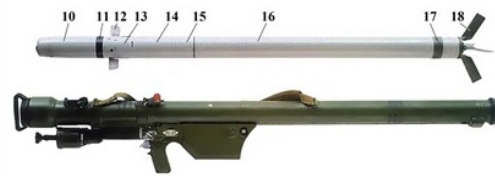

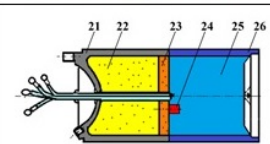
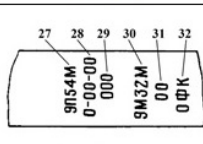
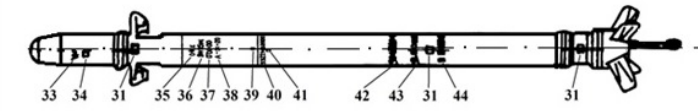
		FWP Ammunition	ANNEX B-14
FIELD of AMMUNITION		Anti-aircraft artillery	
CALIBER		72 mm	
NAME		High Explosive - Anti-aircraft Fragmentation Guided Missile	
TYPE		HE-FRAG	
NAME/ASSIGNED MARK (original)		9M32, 9M32M	
COUNTRY of ORIGIN		Union of Soviet Socialist Republics and Czechoslovakia	
DEPLOYMENT METHOD		Fired by 9K32 for 9M32M Cmpena-2, 9K32M for Cmpena-2M	
MISSILES			
abbreviation		9M32	9M32M
another name		9K32 Cmpena-2	9K32M Cmpena-2M
NATO reporting name		SA-7A Grail	SA-7B Grail
weight of missile [kg]		9.15	9.80
missile weight in container [kg]		14.5	15.0
length of missile without wings [mm]		1420	1440
length of container [mm]		1490	1500
index of guidance head		9342	9346
index of warhead			9H15M
weight of warhead [kg]		1.17	1.17
weight of A-IX-20 explosive [kg]		0.37	0.37
weight of rocket motor propellant [kg]			4.20
guidance		single channel with thermal guidance head	
effective range of the target departure [km]		3.40	4.20
effective range of the target arrivals [km]			2.80
maximum target height [km]		0.05 to 1.50	0.05 to 2.30
missile speed when leaving the container [m.s⁻¹]			28
average speed [m.s⁻¹]		430	500
maximum speed of the target approaching/receding [m.s⁻¹]		~220	150/260
self-destruction [s]		12 to 15	14 to 17
index of fuze		9322	9322M
type of fuze		electromechanical, contact - gusty, with mask safety, self-destruct function	
PACKING			
Number of rocket in the crate	2	Weight of full crate (9R68) with rockets in container [kg]	59
DESCRIPTION			
9M32, 9M32M are used for destruction of low flying targets - aircraft and helicopters. Missiles consist of warhead (5), rocket motor (7), guidance head (1), electronic block with autopilot (4) and fuzes (6).			
COLOR and MARKING			
Body missile colour:	Light grey	Text colour of missile:	Black
SAFETY CONSIDERATION THREAT			
Do not touch and not move unexploded rocket projectile.			
NOTICE			
Body inert warhead colour is black and text colour of inert warhead is white.			

DRAWINGS/CUTAWAY/STENCILING	LEGEND
9K32M	
	1 - Missile 9M32M; 2 - Container of 9K32M; 3 - Trigger mechanism; 4 - Buzzer; 5 - Rear fixing mechanism; 6 - Front fixing mechanism; 7 - Power supply block; 8 - Locking pawl of gyroscope; 9 - Carrying belt; 10 - Guidance head; 11 - Front of centring collar; 12 - Rudders; 13 - Rudder part; 14 - Warhead; 15 - Fuze; 16 - Rocket motor; 17 - Back of centring collar; 18 - Stabilizing wings;
	19 - Index of inert warhead; 20 - Index of inert fuze; 21 - Body of warhead; 22 - Bursting charge; 23 - Booster charge; 24 - Detonator; 25 - Block of fuze; 26 - Body of fuze; 27 - Index of container;
Missile 9M32M-Pract. with INERT warhead	
	28 - Series - year of manufacture missile - index of manufacturer; 29 - Serial number of container; 30 - Index of missile; 31 - Serial number of missile; 32 - Marking of warhead effect; 33 - Index of guidance head; 34 - Serial number of guidance head; 35 - Marking of warhead effect; 36 - Index of warhead; 37 - Series - year of warhead manufacture - index of manufacturer; 38 - Index of explosive; 39 - Serial number of warhead; 40 - Index of fuze - index of manufacturer - series - year of fuze manufacture;
	VIEW "A" 
	41 - Index of fuze; 42 - Index of missile; 43 - Series - year of missile manufacture - index of manufacturer; 44 - Series - year of missile assembly - index of assembly factory
9M32M	