LUCH
STATE KYIV
DESIGN BUREAU

UKROBORONPROM
Ukrainian Defence Industry

CORSAR

LIGHT PORTABLE MISSILE SYSTEM

"Corsar" Light Portable Missile System is intended to:

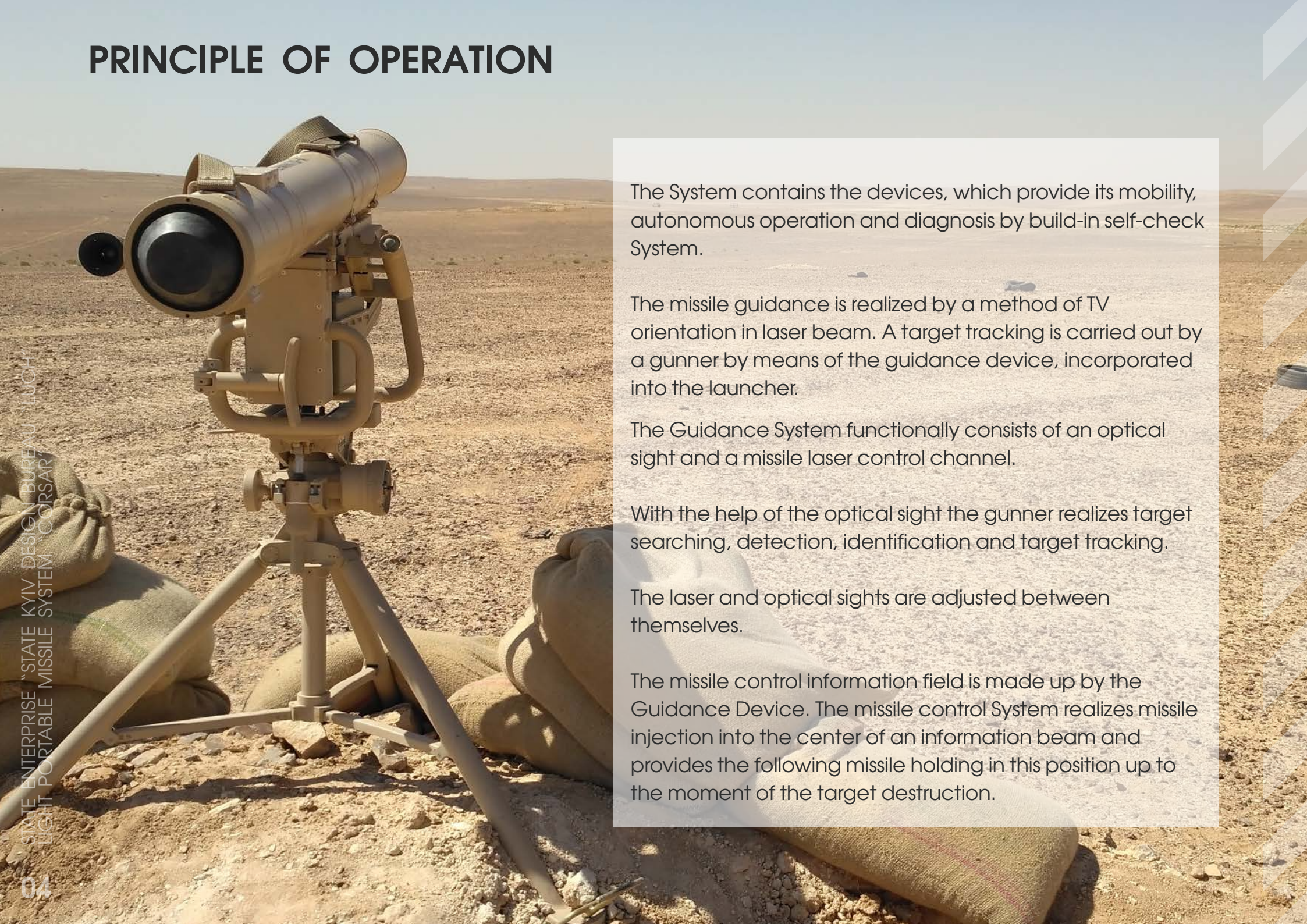
- defeat light armored objects, field type constructions (pillbox, concrete blockhouse), hovering helicopters and manpower when firing with guided missile with high-explosive fragmentation warhead (item RK-3OF);
- defeat modern armored motionless and moving objects equipped with combined, carried or monolithic armor, including ERA protection, and also hovering helicopters when firing with guided missile with tandem hollow-charge warhead (item RK-3K);
- gain practical skills when firing with guided missile with inert warhead (item RK-3I).

The System provides firing from prepared and unprepared positions, using the Mount and without it in day and night time with the use of Thermal Imager.

SPECIFICATIONS

Firing range, m	100-2500
Guidance System	semiautomatic by laser beam
System readiness time for firing from the moment of voltage supply, s	not more than 10
Warhead:	
• tandem hollow-charge, armor penetration behind ERA, mm	not less than 550
• high-explosive fragmentation with EFP, armor penetration, mm	not less than 50
Weight, kg:	
• launcher with thermal imager	12
• mount	8,3
• missile in container	15,5
Overall dimensions, mm:	
• missile caliber	107
• container length	1180
• container outer diameter	113
Operating temperature range, °C	from minus 40 up to +60

PRINCIPLE OF OPERATION



The System contains the devices, which provide its mobility, autonomous operation and diagnosis by build-in self-check System.

The missile guidance is realized by a method of TV orientation in laser beam. A target tracking is carried out by a gunner by means of the guidance device, incorporated into the launcher.

The Guidance System functionally consists of an optical sight and a missile laser control channel.

With the help of the optical sight the gunner realizes target searching, detection, identification and target tracking.

The laser and optical sights are adjusted between themselves.

The missile control information field is made up by the Guidance Device. The missile control System realizes missile injection into the center of an information beam and provides the following missile holding in this position up to the moment of the target destruction.

THE SYSTEM COMPOSITION

"CORSAR" light portable missile System consists of:

- Guided Missile in Transport and Launching Container (RK-3OF; RK-3K; RK-3I) - type and quantity of items are defined by supply contract;
- Launcher with Guidance Device;
- Thermal Imager;
- Mount.

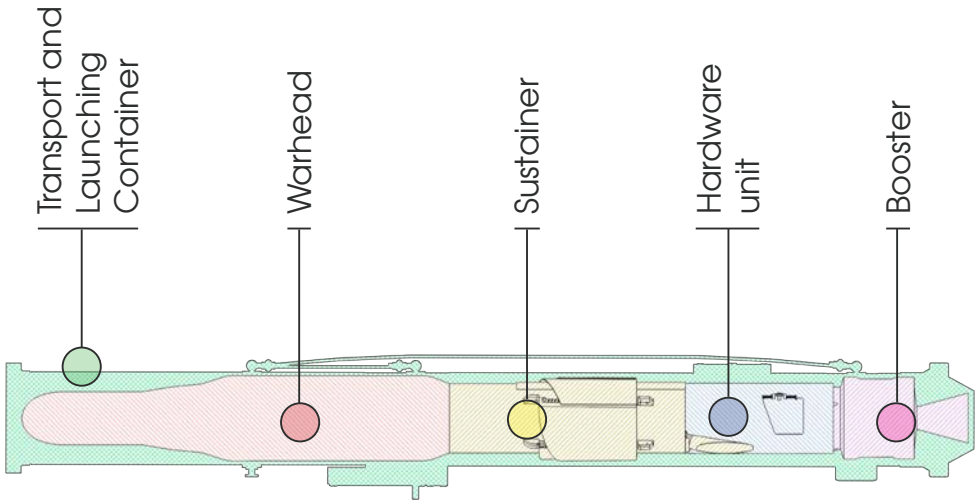
GUIDED MISSILE IN TRANSPORT AND LAUNCHING CONTAINER

Missile control in flight is carried out in the information control field created by the laser beam of an optical quantum generator of the Guidance Device.

TRANSPORT AND LAUNCHING CONTAINER (with missile)	
Weight, kg	not more than 15,5
Length, mm	1180
Outer diameter, mm	113
GUIDED MISSILE	
Weight, kg:	
• missile	not more than 10,5
• high-explosive fragmentation warhead	3,5
• tandem hollow-charge warhead	4,3
Length, mm	910
Outer diameter, mm	107

The Guided Missile in Transport and Launching Container consists of:

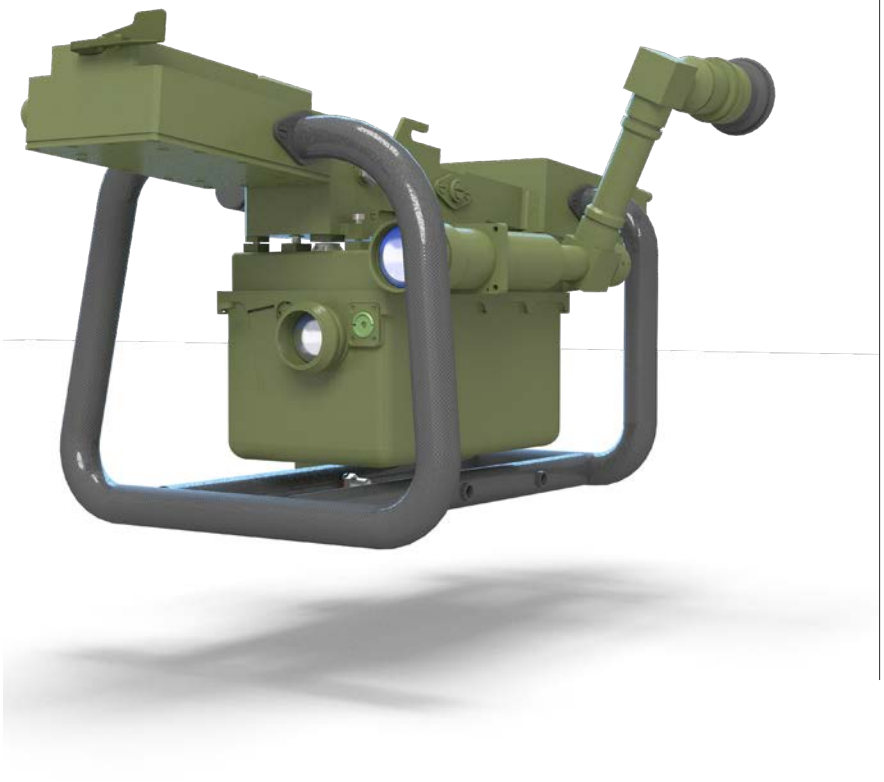
- Guided Missile components:
  - Warhead,
  - Sustainer,
  - Hardware unit.
- Transport and Launching Container;
- Booster.



LAUNCHER

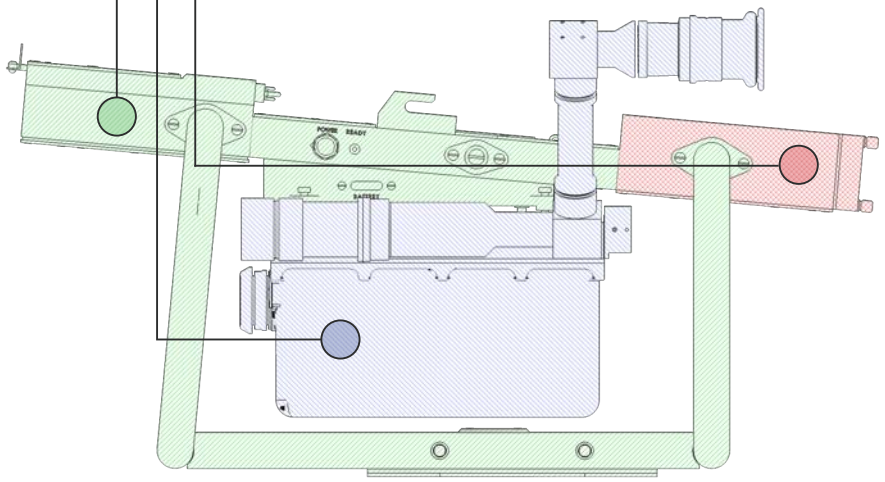
The Launcher is intended for layout of the missile in container on the launching frame, providing of the missile departure from the container (missile initiation command forming).

Weight, kg	10
Power supply module battery rated capacity, A·h	not less than 6
Power supply module voltage, V	+(15±2)
Average power consumption, W	not more than 100
Overall dimensions, mm	600x300x290



The Launcher consists of:

- Launching frame,
- Guidance Device,
- Power Supply Module.



GUIDANCE DEVICE

The Guidance Device is intended for:

- missile control laser field formation;
- target detection, identification, recognition and missile guidance on a target.

Weight, kg	not more than 4,9
Optical sight magnification	8x
Optical sight field of view angle, …°	not less than 5
Overall dimensions, mm	300x220x216

The Optical System of the Guidance Device is functionally composed of two channels:

- ***Sighting channel*** forms an image of the terrain, targets and allows the gunner to overwatch them;
- ***Information channel*** forms the control field of the missile.

THERMAL IMAGER

Availability and a model of the Thermal Imager is defined by the delivery agreement.

The Thermal Imager is intended for target image formation visible in IR spectrum in narrow, medium and wide FOV, and also for the image inversion and image quality adjusting. It is used for detection of IR emission in day and night time under difficult meteorological conditions and also concealed target detection.

Positioning range of the common target in night time, km	1,8
Sensor type	Long-wave (LWIR), uncooled
Spectral range, μm	8-12
Transducer sensitivity (NETD), mK	not more than 50
Angular field of view	6,2°x4,6°
Sensor resolution	640x480
Weight, kg	1,9
Overall dimensions, mm	210x240x100

MOUNT

The Mount is a mechanical device, which within the System provides:

- placement of the System in assembly at the selected position for suitable application;
- guidance in azimuth and elevation.

Weight, kg	8,3
Overall dimensions, mm	250x160x775
Guidance angle:	
• in azimuth, … °	360
• in elevation angle, … °	from minus 10 to + 20

The assembled Mount represents a construction which consists of:

- a tripod with folding legs;
- a platform with a fixing mechanism;
- an elevating guidance mechanism which provides platform rotation in the vertical plane by flywheel rotation;
- a frame with the horizontal guidance mechanism which provides rotation of the Mount components relatively to the tripod in the horizontal plane.

The horizontal guidance mechanism has a switch for rotation speed changing from normal to accelerated (in 3.15 times) and to the contrary.

TRANSPORTATION

The System in the manufacturer's packaging allows transportation by rail, water and air transport (including aircrafts without sealing of cargo compartments at altitudes up to 12 km) without distance and speed limits of transportation, without limits of quantity of loads and unloads, take-offs and landings.

The System in the manufacturer's packaging allows transportation by wheeled and caterpillar vehicles on all types of roads and off-roads with the maximum allowed in these conditions speeds of vehicles at the distance up to 10 000 km.

In the traveling position the System is carried by combat crew or delivered by automobile transport.
In order to deliver the System to the firing position, the components are placed in canvas packs and bags.
The permissible transportation distance of the System by road in packs is not more than 1000 km.
The permissible distance of carrying the System components in packs is not more than 100 km.

The combat crew composition required to deliver the System to the firing position is determined by the operating organization, depending on the distance to the firing position and the quantity of missiles in the packs.

COMPONENTS OF THE SYSTEM FOR DELIVERY TO THE FIRING POSITION

Pack with the launcher

Bag with the mount and pins in the casing

Case with the thermal imager

Pack with the missile

STORAGE

The System in the manufacturer's packaging can be stored in heated and unheated storages as well as in the field conditions.

The shelf life of the System depends on the storage conditions:

- 10 years in warehouse heated and unheated storages in the manufacturer's packaging;
- or two years in the field conditions in the manufacturer's packaging.

During storage the System can be transferred from one type of storage to another within the specified storage period. The sequence of alternation of the System storage types is unconditioned.

MAINTENANCE

Maintenance is carried out in order to check technical condition of the System and consists in periodic performance of works intended for keeping it in the constant combat readiness.

Additional control and testing equipment is not required during the System and Missiles operation.

The following types of maintenance are established for the System components:

- Running service (Routine maintenance),
- Maintenance No. 1

Running service is carried out by the operator during the hours foreseen by operating organization's day plan. Running service is conducted before and after the march and after the System was in unfolded position in the field, but at least once a month, if the System has not been used and was in the stowed position. The content of the works is in the Servicing manual of the System and they mainly consist of the external examination of the components and checking of the power supply charges.

Maintenance No. 1 is carried out by the operating organization once in every six months under operation or annually during storage. The content of the work is provided in the Servicing manual of the System and mainly consists in checking of the Guidance Device alignment.

TRAINING

The supplier of LPMS "CORSAR" can provide training of Customers' combat crews in principles of the System use.
By agreement of the Parties training can be carried out in the Customer's country.

The training program of System use covers 30 calendar days and consists of theoretical and practical courses Simulator Complex for Gunner's training to use LPMS "CORSAR" application as well as using KTK training and checking kit.

The training course ends with missile firing training.

In order to optimize the training process of LPMS crews and economical use of combat missiles, the supplier delivers by agreement with the Customer:

- "CORSAR" simulator for the individual preparation of the gunner and the commander of LPMS "CORSAR";
- Weight dimension mock-up of the Anti-Tank Guided Missile in the Transport and Launching Container for training the crew of LPMS operation;
- Training cut-away mock-up of the Anti-Tank Guided Missile in the Transport and Launching Container for study Missile design and composition.

THE SIMULATOR SYSTEM

CORSAR simulator is intended for training, forming and improving practical skills for working with CORSAR light portable missile system and it allows to:

- study the parameters, characteristics, composition, rules and procedures of using the system for its intended purpose;
- form and improve the skills of searching, detecting, recognition, tracking and defeating of simulated targets under various conditions;
- perform simulated launches without expenditure of ammunition and system service life;
- check and evaluate the quality of theoretical knowledge and acquired practical skills;
- save information about the training results in computer data-base;
- evaluate the level of training according to the test results.

COMPOSITION OF CORSAR SIMULATOR

- Launcher;
- Visualization kit;
- Missile simulator;
- KTK-M training and checking kit (availability is specified by the supply agreement);
- Operational documentation.

ADVANTAGES OF THE SYSTEM

The use of advanced technologies and technical solutions allows the system to meet modern requirements:

- Possibility of firing from prepared and unprepared positions, both from the mount and from a trench parapet;
- Destruction of armored targets behind explosive reactive armor by means of hollow-charge Warhead application;
- Guidance System high-noise immunity against organized jamming;
- Guidance channel security is achieved by low-power level of emission;
- High accuracy and advanced range of fire;
- Possibility of firing on maneuverable targets (helicopters, combat reconnaissance vehicles, armored vehicles).

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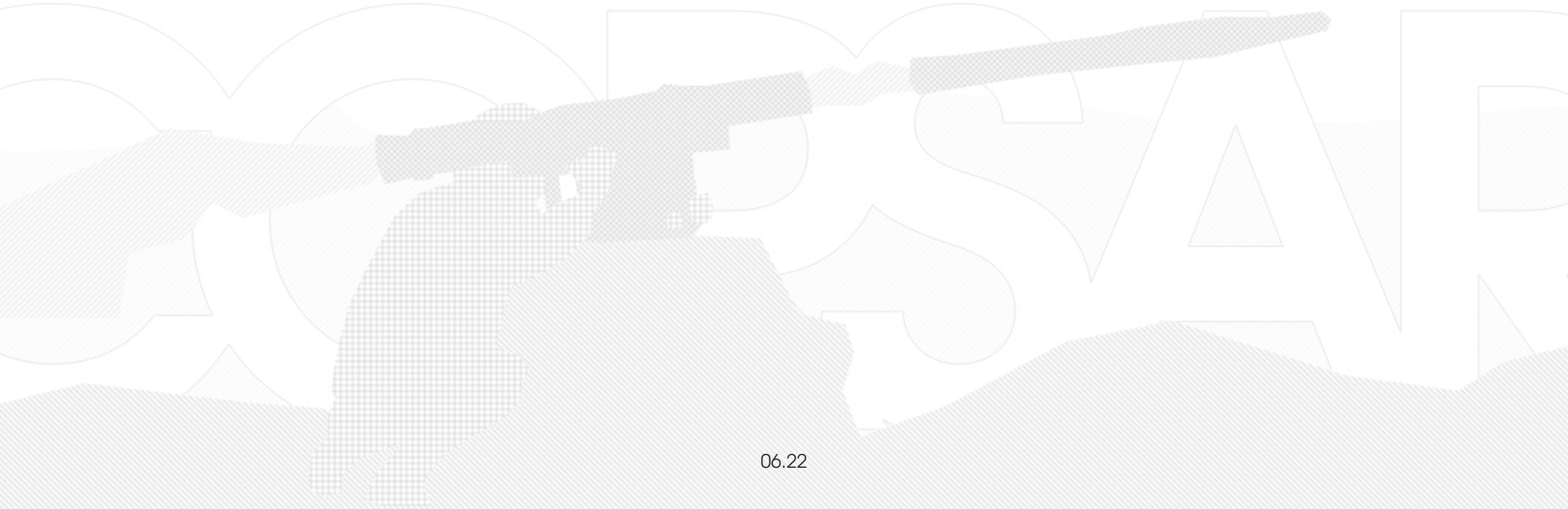

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