

EXPERIMENTAL STUDY OF SHORT-BARREL SCATTERING-TYPE LAUNCHING DEVICE

A. G. Neskin, A. S. Kipkaev, A. N. Maloyaroslavtsev, O. A. Bychkov

FSUE «RFNC – VNIITF named after Academ. E. I. Zababakhin», Snezhinsk, Russia

The unmanned aerial vehicles (UAVs) are becoming increasingly popular and advancing rapidly. So, the need arises to develop the anti-UAV devices to protect critical assets from unauthorized aerial intrusion for surveillance, reconnaissance or other illegal purposes.

One of the ways to prevent drone intrusions into secured territories is to mechanically damage the UAV so that it could not fly.

This work is aimed to develop and experimentally test a launching device designed as a light-weight short-barrel ($L/d = 4$) launcher, 40 mm in diameter, that has a potential to be mounted on a small-sized drone.

As a part of this work, the effect of propellant powder weight, the pellets weight therein, pellet diameter, as well as jam thickness and geometry on the diameter of dispersion area of the pellets was experimentally studied.

This study allowed us to develop a small-sized shot-barrel launching device, 40 mm in diameter, as well as to optimize the pellets and powder charges, select the pellets weight and diameter, and obtain a geometric profile of the jam used for pellets dispersion.

The results obtained can be applied in the field of small-sized drones equipping.
