

Self-contained portable laser transmitter

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SELF-CONTAINED PORTABLE LASER TRANSMITTER

ABSTRACT

The international civil aviation organization recorded in 1985 4045 reports on birds impacts from 45 countries. Most of the impacts have occurred on airports or to their vicinity. Forty nine percent of them occurred at less than 30 meters from the ground and sixty two percent at less than 150 m (one hundred and fifty meters)

If we look carefully at diagram 1 it can be noticed that all collisions, near the ground, are due to birds surrounding the landing strips. Relevant airport Security people have to send the birds away from these dangerous areas.

Various means are used: falconry, fire of explosive cartridge, diffusion of recorder sounds through loud-speakers, rigorous control of agricultural areas, etc.....

In addition to these methods, it appears today that birds can be scared away with the use of a new device.

TECHNICAL PRESENTATION OF THE NEW DEVICE

This new device was first developed for remote-control in mountain environment in order to release snow avalanches preventively, it is a self contained portable laser transmitter composed of:

- 1 Helium-Neon laser tube
- 1 Beam enlarger telescope
- 1 Optical sighting device
- 1 Electrical supply with a transport bag
- 1 Temporary electrical commutation

The main originality of this equipment is that it is possible to adjust the sighting devices in order to have a perfect parallelism between the optical sighting line and the straight line emitted by the laser beam.

The aim of the telescope, set at the extremity of the laser tube is to reduce the divergence angle of the beam.

The spot sent out is about 2cm round when it comes out of the equipment and about 6cm at a distance of 1 kilometer.

The beam brightness varies as well according to the distance existing between the impact and the equipment. Recent measurements have been made and specific technical diagrams established.

There is only one specimen of this equipment, developed as a prototype. It corresponds exactly to the regulations of " French Norme" NF C 43-801 which defines the radiation security of laser equipments. The classification is III A

EQUIPMENT APPLICATION

We have been making several tests since December 1987, with Mister LATY, who is an ornithologist depending on the general delegation of French Civil Aviation.

First tests were made at the Tarbes-Ossun-Lourdes airport and we have had very good results on various birds such as: buzzards, lapwings, etc