CABINET OF CURIOSITIES

MILITARY HELIOGRAPH TYPE MANCE MK V

Iron, bronze, brass and glass
Circa 1940
MAH.R.2015.0020

In what concerns military actions, the communication is vital, reason why, since the Ancient Times, several forms and technologies were used for that purpose. In the visual communication forms, in which two positions in the field, more or less apart, communicate between them through visual signs, night or day, the light signals acquire a meaningful importance. At this level, the heliograph or optical telegraph is highlighted. It uses the reflection of the solar rays in a mirror for communication between two points in sight, through a code, more likely the Morse. Originally conceived in Germany, in 1821, by Carl Friedrich Gauss, from Gottingen University, for area boundaries, it was, for that reason, named as "heliotrope". The actual name came after the use in military communications, by Sir Henry Cristopher Mance, from the British Army Signaling Force.

This set is generally made of a main mirror that, aligned with the Sun, reflects, and emits the signal and a secondar mirror that, when there is not an alignment with the Sun, allows, thanks to its mobility, the projection of the sunlight in the main mirror. Associated to the main mirror there is, generally, a system that generates light impulses (flashes), of variable duration, in such a way that a code is transmitted. The signal range depends on the mirror diameter, in accordance with the prompt rule that large mirrors allow larger ranges, while the smaller ones would benefit from their portability, in sacrifice of the range.

The simplicity of its use and its range that, in a good visibility day, could reach several tens of kilometers, lead to a wide use between the late 19th century and the 20th century first half. In Portugal, in the 1880 decade, a military heliographic net, made of fix heliographs was planned but was just partially mounted. Portuguese militaries also developed heliographic equipment, as the "Martins" heliographs, produced in Portugal and used with British heliographs, until the 1950's, together with wire telegraphy and radio.

The heliograph Type Mance Mk V, belongs to the Angra do Heroísmo Museum Military and Weaponry Management Unit, special feature of this month. It was conceived to be mounted in a tripod, presenting the two usual 5 inches diameter mirrors and the hand system of light impulses generation as well. Being one of the portable heliographs with large diameter mirrors, it would allow ranges as far as 80 km. For a better portability, it could be partially disassembled and, together with its accessories, was packaged in a leather case.