

A tragic event initiated Prof Dr Wolf A Kafka's SOKKS^{®i} odor source detection conditioning and training aids.



As theoretical physicist and zoologist Prof Dr Wolf A Kafka (20.11.1939, born in Wasserburg/Inn Germany) headed the physical and neuro-physiological research at the Max-Planck-Institute for Behavioral-physiology since more than 30 years. His research concerned the molecular basis and the industrial application of the physiology of odor reception and its discrimination – from receptor cell level up to the brain. Numerous developments, patents, and prizewinning documentations are based on his performances. He is member of several international renowned scientific societies and was neat member at the Peking University, Beijing in China. Since 1998 he is elected certification chairperson of the advisory Board of the Centre for Behavioral Sciences of Canines (CSC) of the Università degli Studi di Padova, Italy.

His connection to SOKKS[®] was initiated when one of his coworkers, a tight friend of him, was lost during his studies on insect olfactory communication and plant preferences in the Bavarian Alps. An immediately initiated intensive, more than 3 weeks lasting, search together with specialized detector dogs of the Bavarian police, however, remained without success.

Experienced on the problems on animal olfactory conditioning he initiated, in return for the generous support by the Bavarian Police, a co-operation with the ministry of the interior to optimize olfactory conditioning and training of search dogs.

His concept was focused on producing conditioning material (odor sources) fulfilling the following demands:

1. no regulatory handling restriction as is generally asked for compounds which are hazardous for humans, animals, and environment.
2. highest purity, so that conditioning should be avoided by any else components which are not essential to be detected, like solvent residues, phlegmatics, or any packaging contaminants. - In case of search of explosives, a detection of the latter ones could closure of an airport!
3. to improve highest quality of selectivity and sensitivity of detection, the evaporation rates of the conditioning material should be adapted to the thresholds, the lowest level, of detectable odors.
4. the conditioning material should be applicable as a multicomponent source, meaning that individual substance groups essential to be detected (as like explosives, or narcotics, or arsons, or corps and lost persons and so on) should each be realized by only one quality of conditioning source: conditioning sources for the quality of explosives should render an allover detection of essential explosives as like octogene, C4, TNT, TAPT, guns, mines, ..., sources for the quality narcotics should render a detection of cocaine, hemp, amphetamines, crack and crystal meth ..., and so forth. on.
5. the material should be applicable as a reference for at least 3 years, especially due to the separation into original, used, and waste training aids. ⁱⁱ
6. The handling of training aids should be easy, allow simulation of big odor source amounts and release nearly no contamination

The cooperation resulted in the production of various qualities of conditioning sources (small special prepared plastic hollow cylinders (length/diameter/wall thickness 50/6/2 mm “tubi”, each loaded with micro-gram amounts of the relevant compounds), first for explosives, later for narcotics and meanwhile for a long line of additional different qualities (paper money, corps, arsons, insects, fungi, and optional for nearly any volatile material). The material was named SOKKS[®] according to the first spelling of involved coworkers names.ⁱⁱⁱ

SOKKS[®] products have meanwhile gained the level of a world-wide standard conditioning and training tool in police, army, and such like institutions, even in the wide area of species protection, pest control, healthcare, and common dog training.

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ⁱ SOKKS[®] is a registered trademark: OHIM 012932232 since 06.10.2014

ⁱⁱ One should keep in mind that odorous training aids after their first presentation will not be the same as before, because they will inevitably be contaminated by everywhere existent else odorants. Depending on type and amount of adsorption, the following training phase(s) will thus each be performed with different smell-qualities. Such conditioning processes might then result in the well-known true-false-, and in turn, risky detection responses.

These are the actual training aids:

1. one glass bottle, labelled „SOKKS[®] (Original) “, each one to be applied only once. They have to be used as long as the animal is able to detect without failure. Never return a once used tubi back into “original”!
2. one empty glass bottle labelled „SOKKS[®] (Used)” to keep material once used. Used material will successively contaminate each other and therefore reinforce the conditioning process toward the “true” in the ongoing conditioning process.
3. one empty glass bottle, labelled „SOKKS[®] (Waste)” to keep strongly contaminated, e.g. bitten, tubi for disposition (Never dispose SOKKS[®] material in waste boxes! They might - by chance - else be indicated as “true” material, and thus render big problems in explosive detection in airports)

ⁱⁱⁱ despite the outstanding success, but caused by internal discrepancies within the ministry of interior the cooperation is meanwhile terminated in agreement