

Disinfection and Disinsection

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Plan

- ❖ Disinfection
 - Definition
 - Why a problem?
 - Challenges
- ❖ Disinsection
 - Current methods
 - Problems
 - Non-chemical methods

Disinfection (WHO)

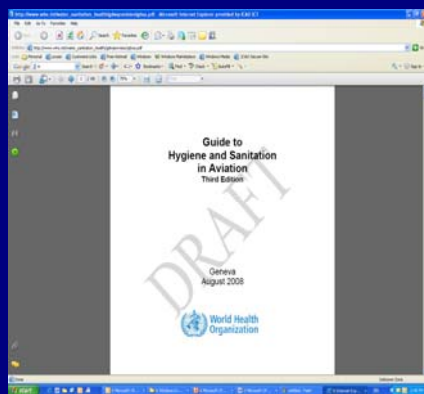
- ❖ The procedure whereby measures are taken to control or kill infectious agents on a human or animal body, on a surface or in or on baggage, cargo, containers, conveyances, goods and postal parcels by direct exposure to chemical or physical agents.



Sodium hypochlorite (bleach)

- ❖ Strong oxidising agent
 - ❖ Good disinfectant
 - ❖ Inexpensive
- BUT**
- ❖ Dissolves aluminium
 - ❖ Reduces fire retardant properties
 - ❖ Not suitable for use on aircraft

WHO Guide to Hygiene and Sanitation



- ❖ 2nd edition published 1977
- ❖ 3rd edition in draft:
Chapter 3:
Cleaning and Disinfection

**What did second edition recommend
as suitable disinfectant for aircraft?**

**Recommended attributes for aircraft
disinfectant**

- ❖ *Safety of active ingredients for humans*
- ❖ *Environmental safety*
- ❖ *Spectrum of microbiocidal activity*
- ❖ *Materials compatibility*
- ❖ *Transport, storage and inventory control*
- ❖ *Directions for use*
- ❖ *Speed of activity*
- ❖ *Freedom from off-gassing and volatile organic chemicals (VOCs)*

Recommended products

- ❖ Modified hydrogen peroxide
- ❖ Contains surfactants and chelators + other ingredients
- ❖ Produced by single company (Canada)
- ❖ [Alcohol 70-75%: alternative but difficult to handle/store]

Public health authority Aircraft operators

- ❖ Both need to consider aircraft disinfection requirements prior to an event
- ❖ Aircraft manufacturer may need to be involved

Disinsecton

Disinsection – definition (WHO)

- ❖ The procedure whereby measures are taken to control or kill the insect vectors of human diseases present in or baggage, cargo, containers, conveyances, goods and postal parcels

International Health Regulations (2005)

“Conveyance operators should permanently keep conveyances for which they are responsible free of sources of infection or contamination, including vectors and reservoirs. Every conveyance leaving an area where vector control is recommended by WHO should be disinfested and kept free of vectors”.

Passenger terminals and the area within 400 m of airports should be kept free of vectors

Diseases of concern

- ❖ Malaria
- ❖ Dengue
- ❖ Yellow Fever
- ❖ Chikungunya fever (similar to dengue)
 - Transmitted by Aedes mosquito

Current WHO approved chemicals

- ❖ Pyrethroids – synthetic chemicals based on natural extract of chrysanthemums
 - Permethrin (longer lasting)
 - D-phenothrin (short-lived)
- ❖ Both rapidly broken down and human effects are minimal
- ❖ Anecdotal reports of passengers feeling unwell after spraying

WHO approved methods

- ❖ Residual
- ❖ Pre-flight & top of descent
- ❖ Blocks away



Air curtain: non-chemical disinsection



Courtesy WHO



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