

Biosecurity New Zealand

Tiakitanga Pūtaiao Aotearoa

Aircraft Disinsection QRM 2021

Invasive Species Team, MPI.

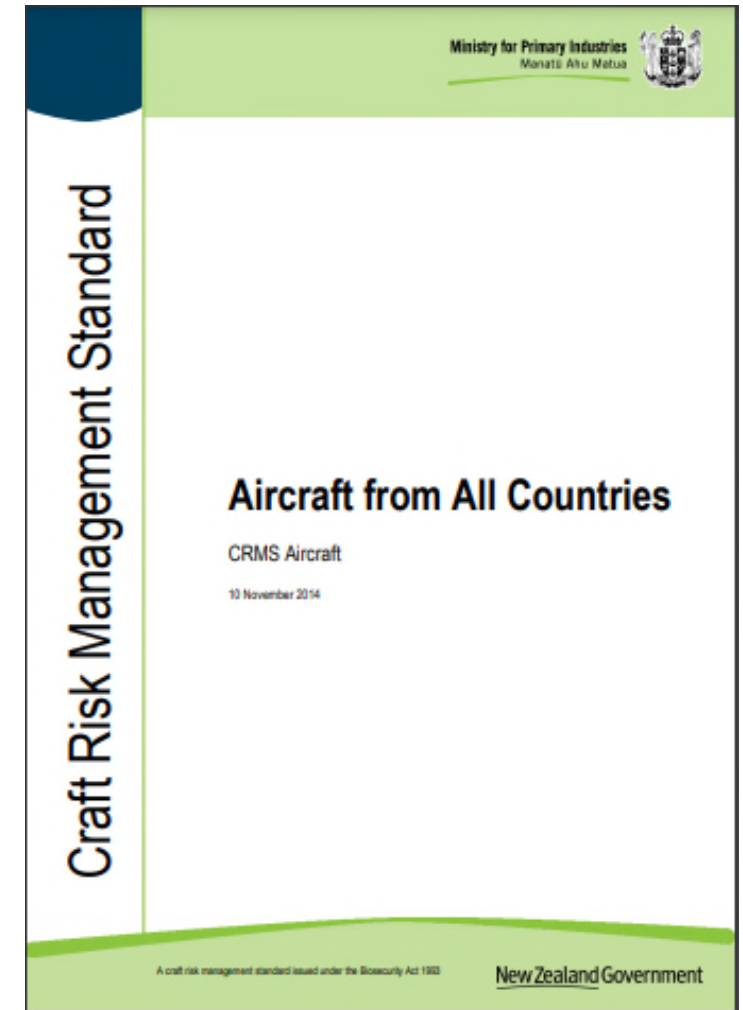
Erin Gillespie

Ministry for Primary Industries
Manatu Ahu Matua



Aircraft Requirements: An Overview

- The Ministry for Primary Industries (MPI) sets out the requirements for aircraft that arrive in New Zealand under the **Aircraft from All Countries Craft Risk Management Standard (CRMS)**.
- The CRMS manages biosecurity risk and contamination by:
 - Requesting information required by MPI to assess aircraft risk
 - Specifying the actions an Aircraft (its operator) must undertake to reduce, contain or remove biosecurity risk and contamination.
 - Specify the approved systems under which these actions can be taken.
- Disinsection is a requirement for all Aircraft arriving in New Zealand under the CRMS to meet both MPI and Ministry of Health (MoH) legislative requirements.



Disinsection – Definition and History

- Disinsection is internationally recognised as an effective method for reducing the spread of vector borne diseases, particularly those carried by Mosquitoes.
- Recommended and defined by the World Health Organisation as *“the procedure whereby health measures are taken to control or kill insect vectors of human diseases present in baggage, cargo, containers, conveyances, goods and postal parcels.”*
- An earlier survey of 73 International flights arriving in New Zealand from the pacific region showed:
 - 3,629 insects found
 - an average of 50 insects present in the cabin of each flight
 - 10 of which were mosquitoes.
- Disinsection has been undertaken in New Zealand in one form or another since 1940 and has been captured under the CRMS since 2014.

Disinsection – A joint effort

The current requirements for Aircraft disinsection are set out in the World Health Organization (WHO) aircraft disinsection methods and procedures. These form the base standard of disinsection.

Additional measures required for entry into Australia and New Zealand are detailed in the Schedule of Aircraft Disinsection Procedures for Flights into Australia and New Zealand.

<https://www.who.int/publications/i/item/9789240014459>

- The Schedule was developed and is maintained collaboratively between Australia Department of Agriculture, Water and the Environment (DAWE) and NZ MPI.
- MPI and DAWE co-manage Airline Disinsection Compliance Agreements held with various airlines.
- These agreements approve an airline to perform certain types of disinsection.
- The Schedule includes four methods of Aircraft Disinsection:
 - Residual (RD)
 - Pre-embarkation (PED)
 - Pre flight and Top of Descent (to be replaced with Pre-departure Cabin treatment as of 2nd August 2021)
 - Spray on Arrival (SOA)

Residual:

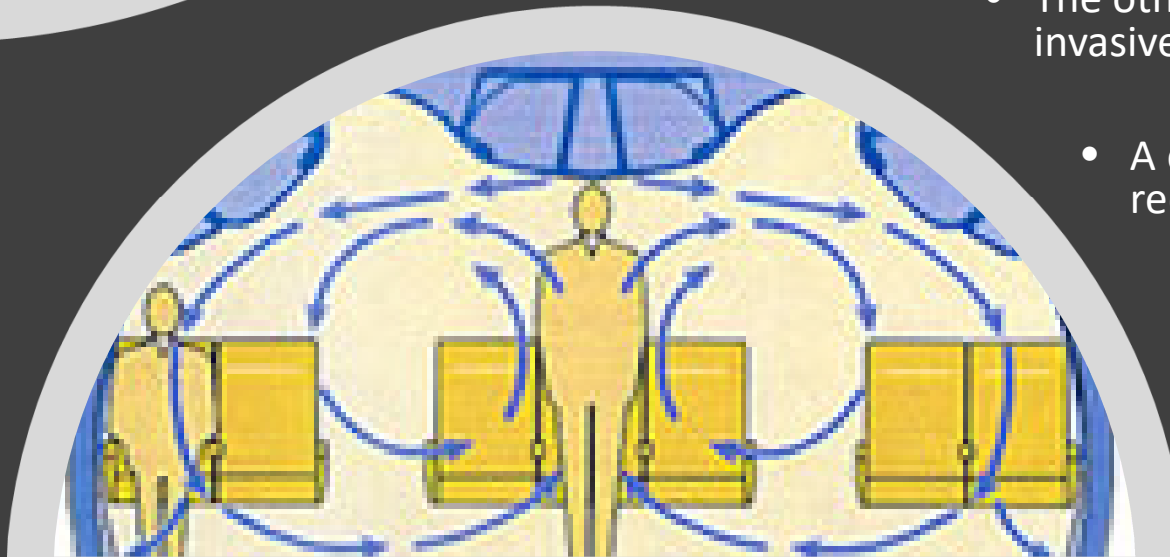


- All internal surfaces of the cabin and hold are sprayed with a 2% permethrin residual insecticide
- Completed without crew or passengers and valid for 8 weeks
- Designed to kill any invertebrates that land on or walk over surface
- One of the preferred options for Industry as it's less invasive for passengers and crew
- A compliance agreement with MPI or DAWE is required.



Pre-embarkation cabin disinsection (PED)

- Carried out pre-flight with lockers and cupboards open
- Currently completed with aerosol containing 2% permethrin
- Completed after catering has been loaded and prior to passengers boarding
- The other preferred option for Industry as it is less invasive for passengers and crew
- A compliance agreement with MPI or DAWE is required
- Holds can be residually treated or airlines may opt for Pre-flight(pre-departure) hold disinsection.






Pre-flight and Top of Descent

- Pre-flight HOLDS:
 - One-Shot can containing 2% permethrin and 2% *d*-phenothrin is activated after cargo is loaded and doors are closed.
- Pre-Flight CABIN (Part 1):
 - Aerosol containing 2% permethrin sprayed with lockers and cupboards open.
 - Completed after catering is loaded and prior to passengers boarding.
- Top of Descent CABIN (Part 2):
 - In-flight spray at top of descent using an aerosol containing 2% *d*-phenothrin in the cabin aisles only.

A large orange circle on the left side of the slide, partially cut off by the edge.

Pre-departure Cabin treatment

- Replacing pre-flight and top of descent Cabin treatment as of 2nd August 2021
 - Treatment is completed after passengers have boarded, service doors are closed, and lockers are open
 - Prior to aircraft leaving the airbridge
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- A yellow dashed line in the bottom right corner, consisting of several short, curved segments.

Spray on Arrival (SOA)

- Cabin and holds are sprayed under supervision of an MPI Inspector on arrival
- Passengers can wait on the airbridge if they have medical concerns, they cannot take any luggage with them and must return to collect their belongings at the end of the procedure
- Used when:
 - Aircraft arrive without a compliant treatment
 - Live insects have been seen on board during transit
 - Often used for private flights that involve irregular and unpredictable flight schedules
- Not encouraged as the usual method of disinsection
- More invasive for passengers.



Disinsection – Verification methods

- Compliance agreements – co-managed by MPI and DAWE to allow residual and PED disinsection. Part of this approval are desk top reviews of procedures and of video footage of an application
- Aircraft Disinsection database – airlines update and review their aircraft data and disinsection status, MPI and DAWE can also view and edit this data.
- Bioassays for PED and Residual efficacy:
 - Laboratory bred non-resistant house flies (*Musca domestica*) are used as they require a higher dose of insecticide than mosquitoes
 - Cages are placed throughout the aircraft (cabin and hold) and include a control
- Physical checking of cans and certificates on arrival
- Spray on arrival under Inspector Supervision if required



Looking forward

- Australia are funding technology development for real time measurement of pyrethroids on aircraft surfaces – this is intended to replace live fly bioassays in the future.
- An on-going issue with disinsection is the restrictions of use of WHO recommended chemicals overseas, MPI and DAWE are working with WHO regarding the process for alternative active ingredients.
- Changes to the Australian/New Zealand Schedule of Aircraft Disinsection are being made as new WHO Aircraft disinsection guidelines and recommendations have recently been published.