



WORKING PAPER

ASSEMBLY — 39TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 31: Other high-level policy issues to be considered by the Executive Committee

**THE NEED FOR RISK ASSESSMENT GUIDANCE AND PERFORMANCE-BASED CRITERIA
IN AIRCRAFT DISINSECTION**

(Presented by the United States)

EXECUTIVE SUMMARY

The current Zika outbreak is the latest vector-borne disease prompting States to consider whether aircraft disinsection as provided for in ICAO Annex 9 — *Facilitation* is needed. Standards in Annex 9 permit disinsection using only those chemical and non-chemical methods recommended by the World Health Organization (WHO). Until now, WHO has only made recommendations on chemical means of disinsection.

Assembly Resolution A37-14, which remains in force, requested the Council to urge the WHO to continue to explore and assess the efficacy and safety of non-chemical as well as chemical disinsection methods in light of the adverse health effects and discomfort associated with chemical methods, and encourages Contracting States, in collaboration with the WHO, to develop and adopt performance-based criteria for disinsection.

In April 2016, an *ad hoc* Advisory Group of the WHO focusing on aircraft disinsection recommended that Member States undertake a risk assessment relating to the probability of the importation and presence of mosquito vectors for the Zika virus and use this to inform their disinsection policies. It further stated that the WHO should develop a framework for assessment and recommendation of new vector-control approaches to both chemical and non-chemical disinsection methods. The Advisory Group also identified the need to control vectors at international airports.

There is a compelling need for ICAO, working with the WHO, to develop guidance on a three-pronged approach to controlling the spread of disease-bearing vectors through international aviation by: (i) agreeing upon performance-based criteria for non-chemical as well as chemical disinsection; (ii) requesting that the WHO provide specific guidance on the components of a scientifically-based risk assessment model for States to use in determining whether to require aircraft disinsection; and (iii) providing an effective means for information-sharing regarding vector control and disinsection measures and status at international airports.

Action: The Assembly is invited to:

- a) note the work undertaken since the 38th Assembly;
- b) note that Assembly Resolution A37-14 remains relevant and of increasing urgency;
- c) determine that cooperative efforts of ICAO and WHO are critical to mitigating the risk of aviation-related spread of disease-bearing vectors; and
- d) adopt the proposed resolution contained in the Appendix to this paper.

<i>Strategic Objectives:</i>	This working paper relates to the Safety, and Environmental Protection and Sustainable Development of Air Transport Strategic Objectives.
<i>Financial implications:</i>	The activities referred to in this paper will be undertaken subject to the resources available in the 2017-2019 Regular Programme Budget and/or from extra budgetary contributions.
<i>References:</i>	Doc 10022, <i>Assembly Resolutions in Force (as of 4 October 2013)</i> Annex 9 — <i>Facilitation</i> WHO International Health Regulations (2005) Report of the WHO Ad-hoc Advisory Group on aircraft disinsection for controlling the international spread of vector-borne diseases, Geneva, Switzerland, 21-22 April 2016 A38-WP/38 Presented by the Council of ICAO to the Technical Commission: “Summary of Work Undertaken Since the 37 th Assembly in the Area of Non-Chemical Disinsection of the Aircraft Cabin and Flight Deck for International Flights” State letter AN 1/67-16/57, dated 8 June 2016 – <i>Zika virus and the launch of the web-based Airport Vector Control Registry</i>

1. INTRODUCTION

1.1 International concern over the spread of Zika through mosquito vectors has prompted a number of States to require proof of disinsection for aircraft originating from known Zika-affected States and territories. Disinsection is permitted under ICAO Annex 9, using chemical or non-chemical means recommended by the World Health Organization (WHO) and considered efficacious by the Contracting State. Until now, the WHO has only made recommendations on chemical means of disinsection. States vary in terms of the chemicals they find acceptable and those that are prohibited.

1.2 At the 38th Assembly, the Council presented a progress report on implementation of Assembly Resolution A37-14, which remains in force and which encourages State development, in collaboration with the WHO, of performance-based criteria for disinsection. The Council had been requested to urge the WHO to explore non-chemical disinsection techniques and their effectiveness in light of concerns over possible adverse health effects of chemical methods and associated discomfort for passengers and crew. The Council report noted that it was awaiting the results of further research on the use of “air curtain” techniques and other non-chemical methods and that further information on chemical and non-chemical techniques would be reported at the 39th Assembly.

1.3 On 1 February 2016, the WHO, upon advice of the Emergency Committee on the Zika Virus, declared the clusters of neurological disorders associated with the Zika virus outbreak to be a public health emergency of international concern and issued a number of temporary recommendations, including that standard WHO recommendations regarding disinsection of aircraft and airports should be implemented. The second meeting of the WHO Emergency Committee, convened in March 2016, repeated its recommendation and added that countries should consider the disinsection of aircraft.

2. DISCUSSION

2.1 The Zika virus is associated with the risk of neurological disorders including microcephaly, which can result in profound birth defects when pregnant women are exposed to the Zika

virus, as well as Guillain-Barre Syndrome, which causes human paralysis. Zika can be transmitted through mosquito vectors and via human-to-human contact (specifically, sexual transmission). The fear of the international spread of the virus, particularly into States that as yet do not have any reported cases or the identified vector species, has prompted a number of States to implement disinsection requirements under Annex 9 for aircraft originating from a State where Zika is known to occur, and chemical disinsection has been the required form. It has been reported that at least one State has begun requiring chemical disinsection regardless of the originating point of the flight. Chemical disinsection presents public health concerns for travellers and flight crew and may have undetermined embrittlement and other consequences for aircraft, instruments and avionics. Yet, chemical disinsection has not been known to be more effective than non-chemical disinsection methods, as has been discussed at prior Assemblies, and further, there is evidence that vector species are becoming resistant to many of the disinsection chemicals in use.

2.2 Despite past Assembly attention and direction, including Resolutions, on the need to amplify research and development efforts on non-chemical methods of disinsection and risk mitigation measures to optimally eliminate the presence of disease-transmitting vectors on aircraft, chemical disinsection remains the only WHO-recommended choice for those States that have imposed disinsection requirements. The negative practical consequences from the imposition of chemical disinsection requirements have ranged from service disruptions, to inconsistent or conflicting requirements among States, to costly fleet redeployment for air carriers as they attempt to satisfy conflicting State requirements.

2.3 There appears to be a low probability that mosquito vectors on aircraft will imperil travellers or introduce Zika into as-yet unaffected States. Yet there still remains an urgent need to establish appropriate protocols for addressing the risk of vector importation and vector-borne diseases on aircraft for use in combating the current Zika crisis and for future ones. Although past Assemblies have encouraged such measures they remain incomplete. Fundamentally, still lacking are the tools needed to guide States in determining whether and how to implement appropriate measures for managing vector-borne disease risks.

2.4 Based on the immediate health risks presented by the Zika virus, the perceived need to limit the international spread of potentially disease-bearing vectors by aircraft, and the temporary recommendations issued by the WHO regarding possible disinsection of aircraft and airports, there is a need to accelerate development of guidance for aircraft disinsection. Given the health concerns surrounding chemical disinsection for travellers and crew, particular emphasis must be placed on acceptable, effective and appropriate non-chemical and mechanical means of aircraft disinsection.

2.5 The WHO, having already developed a recommended guideline for chemical disinsection should now be engaged in the development of appropriate guidance in regard to non-chemical disinsection.

2.6 It is imperative that ICAO, working in cooperation with the WHO, develop the guidance tools that will facilitate the ability of States to implement appropriate and proportionate measures to prevent the introduction of mosquito vectors and vector-borne disease through aircraft carriage. This must be done without simply resorting to potentially hazardous chemical methods which may already be, or become, ineffective given current resistance patterns.

2.7 The guidance tools can be developed using a three-pronged approach to vector-borne disease risk management, with the following components: First, as previously identified by ICAO in Assembly Resolution A37-14, it is critical that ICAO, in collaboration with the WHO, develop performance-based criteria for all disinsection requirements, including non-chemical or mechanical means of disinsection.

The WHO has developed a recommended guideline for chemical disinsection of 80 per cent efficacy (i.e., an 80 per cent death rate of insects) within 24 hours of chemical treatment. However, performance-based criteria are needed for disinsection in general, including non-chemical measures, which may result in more stringent criteria given the demonstrated effectiveness of such measures as air curtains and blowers.

2.8 Second, it is highly appropriate for ICAO, working with the WHO, to develop specific guidance on the components of a scientifically based risk assessment model for States to use in determining whether to employ vector control measures, which may include aircraft disinsection. A traditional model that begins with hazard identification and documentation and follow-up risk management/mitigation processes, adapted from that presented in the ICAO *Safety Management Manual (SMM)* (Doc 9859), at Chapter 5, will provide a reasonable starting point for this purpose.

2.9 The third component, establishment of an effective means for information-sharing on the status of vector controls and disinsection measures at international airports, has already been initiated by ICAO in collaboration with the Airports Council International and the International Air Transport Association. ICAO has developed an Airport Vector Control Registry to facilitate the sharing and dissemination of information on individual airport vector control measures that are in place. Airport controls may obviate the need for aircraft disinsection, as the incidence of flying insects within the airport interior or the vicinity of aircraft entry points (cargo bay doors as well as passenger doors) may be largely reduced where fans or air curtains are employed and standing water, a known mosquito-breeding ground, has been eliminated. Where such information is available and made transparent to other States, it would inform a State's risk assessment as to whether additional measures are necessary and appropriate for flights originating from another State. Airport reporting through the ICAO Airport Vector Control Registry must be strongly encouraged by States to maximize its utility and effectiveness.

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APPENDIX

DRAFT RESOLUTION FOR ADOPTION BY THE 39TH SESSION OF THE ASSEMBLY

33/xx: Performance-based criteria and guidance material on aircraft disinsection and vector control measures

Whereas the most recent outbreaks of vector-borne diseases have resulted in Contracting States imposing chemical disinsection requirements;

Whereas the World Health Organization has not issued recommendations regarding non-chemical disinsection methods;

Whereas there is strong evidence that chemicals are becoming increasingly ineffective in combatting vector-borne diseases as insect resistance to chemicals increases;

Whereas the lack of World Health Organization-recommended non-chemical disinsection methods leads to Contracting States continuing to require only chemical disinsection methods;

Whereas despite past Assemblies having encouraged development of performance-based criteria for disinsection requirements, in collaboration with the World Health Organization, insufficient progress has been made in this regard;

The Assembly:

1. *Directs* that the Council engage with the World Health Organization to develop:
 - a) performance-based criteria to evaluate all disinsection methods, including non-chemical means of disinsection;
 - b) recommendations regarding non-chemical disinsection methods; and
 - c) guidance on the components of a scientifically-based risk assessment model for Contracting States to use in determining whether to employ vector control measures that include but are not limited to aircraft disinsection.
2. *Urges* Contracting States to require pest management control programmes around airports and related facilities, which would mitigate the need to impose aircraft disinsection requirements;
3. *Urges* Contracting States to encourage airport reporting to the ICAO Airport Vector Control Registry and to keep the information current;
4. *Requests* the Council to report on the implementation of this Resolution at the next Assembly; and
5. *Declares* that this Resolution supersedes Resolution A37-14.

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