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WORKING PAPER

ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

IMPLEMENTATION OF THE REVISED ANNEX 14 VOLUME 1 STANDARDS AND RECOMMENDED PRACTICES ON OBSTACLE LIMITATION SURFACES (OLS)

(Presented by Singapore)

EXECUTIVE SUMMARY

This paper updates the Assembly on the progress regarding the revised ICAO Annex 14 — *Aerodromes*, Volume I — *Aerodrome Design and Operations*, Standards and Recommended Practices (SARPs) on obstacle limitation surface (OLS), and the initiatives by ICAO to support States in their implementation of the revised OLS SARPs.

The revised OLS SARPs were adopted by the ICAO Council on 28 March 2025, following a review of the OLS SARPs that spanned a decade since 2015. These revisions became effective on 4 August 2025 and will become applicable to all States from 21 November 2030.

The ICAO OLS Task Force comprises subject matter experts from States and international organisations, with the Rapporteur from Singapore. The ICAO Secretariat and the Task Force are developing implementation support initiatives to facilitate States in transiting to the revised OLS SARPs.

Action: The Assembly is invited to:

a) note ICAO's initiatives to support States in their implementation of the revised Annex 14, Volume 1, OLS SARPs by the applicability date of 21 November 2030;
b) urge States to fully utilise ICAO's implementation support initiatives, and to implement the revised OLS SARPs at the earliest opportunity;
c) encourage States to identify and inform ICAO of the types of additional support that States may require to implement the revised OLS SARPs; and
d) urge the ICAO Secretariat to consider additional implementation support as required by States, and to provide regular updates at Category 1 and 2 ICAO events on States' implementation status.

Strategic Goals:	This working paper relates to *Every Flight is Safe and Secure*.
Financial implications:	No additional resources required.
References:	Annex 14 — *Aerodromes*, Volume I — *Aerodrome Design and Operations* Doc 9981, *Procedures for Air Navigation Services Aerodromes (PANS) — Aerodromes* Doc 9137, *Airport Services Manual, Part 6 – Control of Obstacles*

1. BACKGROUND

1.1 The 38th ICAO Assembly in 2013 called for a significant review of the Annex 14-*Aerodromes* obstacle limitation surface (OLS) Standards and Recommended Practices (SARPs). In 2015, an ICAO OLS Task Force (OLSTF) was established and assigned the task of reviewing the effectiveness of the existing SARPs, given that the requirements were established in the 1950s, and to address the growing pressure faced by States to intensify land developments around their aerodromes. It comprises subject matter experts from ICAO member States and International Organisations[1].

2. ICAO'S REVISION OF THE OLS SARPS IN ANNEX 14 TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

2.1 The objective of ICAO OLSTF's review is to ensure that the OLS SARPs stipulated in Annex 14 Volume 1 – *Aerodromes Design and Operations* are effective in protecting airspace around an aerodrome against obstacles that could potentially affect aviation safety. As part of the review, the OLSTF took into account technological advancements in navigation equipment capabilities and aircraft avionics as well as the emergence of modern instrument flight procedures.

2.2 The OLSTF also took into account the fact that the "one size fits all" concept on which the current OLS requirements are based, no longer addresses the various types of aircraft and flight operations conducted at aerodromes, and may not be reasonable to be enforced in a uniform manner on all aerodromes. To enable more effective safeguarding of surfaces surrounding aerodromes, as well as the ability to free up airspace not required for aircraft operations for non-aviation uses such as land development, the review also sought to give States the ability to decide on the surfaces to adopt based on the type of operations at each aerodrome.

2.3 Following thorough reviews spanning over a decade, the OLSTF developed a set of revised Annex 14, Volume 1, OLS SARPs ("revised OLS SARPs") which require less airspace to safeguard aircraft operations, while still ensuring aviation and air navigation safety (see the Appendix to this paper for an illustration of the differences in airspace required to safeguard aircraft operations between the existing and revised surfaces). The reviews involved analysing flight track data to determine the containment surfaces needed to safeguard aircraft operations to the runway. Surfaces were classified into either obstacle free surfaces (OFS) or obstacle evaluation surfaces (OES), which collectively ensure that no objects that could affect aviation safety are unaccounted for. The OFS are surfaces closer to the runway which are critical for aircraft in the final phase of approach to land. The OES, on the other hand, are surfaces intended to protect the flight procedures and operations conducted at the runway. To ensure a holistic review of the OLS SARPs, the OLSTF also worked with ICAO's Flight Operations Panel and Instrument Flight Procedure Panel and took into account input from international organisations such as International Coordinating Council of Aerospace Industries Associations (ICCAIA), Airports Council International (ACI), International Air Transport Association (IATA) and International Federation of Air Line Pilots' Associations (IFALPA). States were consulted via ICAO State Letter AN 4/1.1.58-23/33 dated 30 May 2023.

2.4 The revised OLS SARPs, which were adopted by the ICAO Council on 28 March 2025, became effective on 4 August 2025 and will become applicable to all States on 21 November 2030.

[1] OLSTF members are: (States) Australia, Austria, Brazil, People's Republic of China, Canada, France, Germany, Italy, Japan, Republic of Korea, Spain, United States, and the United Kingdom; (International Organisations) ACI, European Union Aviation Safety Agency, IATA, IFALPA, and ICCAIA.

3. SINGAPORE'S IMPLEMENTATION OF THE REVISED OLS SARPS

3.1 Singapore has embarked on the implementation of the revised OLS SARPs. The overall implementation process involves five phases, with significant resources required for interagency coordination and cross-sectoral work. Singapore's implementation phases, which proceeded concurrently, are as follows:

Phases	Activities
Planning	(1) Determine the type of operations conducted at each aerodrome based on current and future operational needs; (2) Identify the revised surfaces required to protect current and future operations, including potential aerodrome expansions; and (3) Identify affected stakeholders and develop an engagement plan.
Application	(1) Adapt the surfaces to national requirements, including to account for any airspace restrictions such as those due to military operations, local operating conditions and the existing obstacle environment within and around the aerodromes.
Template development	(1) Develop a composite height template for all affected aerodromes comprising the applicable surfaces at each aerodrome based on the revised OLS SARPs and applicable national requirements; and (2) In areas where surfaces overlap, to determine the more limiting surface.
Communication	(1) Socialise the expected changes arising from the revised OLS SARPs to various stakeholders, including aerodrome operators, and land use planning and infrastructure agencies; (2) Share the implementation plan and key milestones with stakeholders; and (3) Manage queries and feedback from stakeholders.
Legislative amendments	(1) Identify affected national legislation; (2) Prepare amended national legislation; (3) Consult stakeholders; and (4) Publish amended national legislation.

4. ICAO'S IMPLEMENTATION SUPPORT FOR STATES

4.1 The changes to Annex 14, Volume 1, OLS SARPs require a paradigm shift in how States understand and apply the OLS, and States may therefore require assistance from ICAO to transition towards the new Annex 14 requirements.

4.2 The ICAO Secretariat has worked with the OLSTF through its Rapporteur to identify and develop training, aids, and programs to assist States' transition. As a result, a dedicated ICAO course on the revised OLS, a website on OLS implementation and other initiatives that help ease the generation of the revised OLS surfaces at their aerodromes have been developed. ICAO will roll out the OLS training course[2] and work with the respective regional offices to arrange for webinars and workshops in the coming months.

[2] The first run of the OLS training course is scheduled for December 2025. A similar workshop was also conducted by the ICAO APRO from 2 to 5 September 2025. Similar workshops are being planned for the other regional offices.

4.3 States are also encouraged to share their implementation plans and challenges faced in applying the revised OLS SARPs. This information can then be accessed, through a common ICAO platform, by other States to support their implementation of the revised OLS SARPs. Through such sharing, ICAO will be able to calibrate its transition efforts to support the implementation of the revised OLS SARPs in a more targeted manner.

4.4 Due to the effort and resources needed by States to implement the revised OLS SARPs, ICAO has determined that a longer transition period of 5 years is warranted. It is expected that States may require support to transition to the revised OLS SARPs by the applicability date of 21 November 2030. In this regard, it is recommended that States identify and inform ICAO of the types of additional support that they would need in the course of implementation. To support timely implementation of the revised OLS SARPs by States, the ICAO Secretariat is also urged to partner States by developing additional implementation support initiatives as required and providing regular updates at Category 1 and 2 ICAO events, including the next 43rd Assembly in 2028, on States' implementation status and any additional implementation support initiatives by ICAO.

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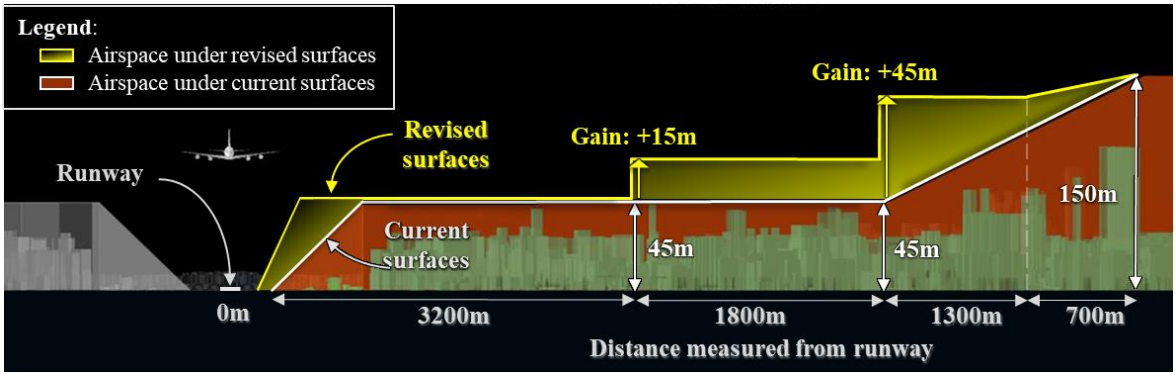
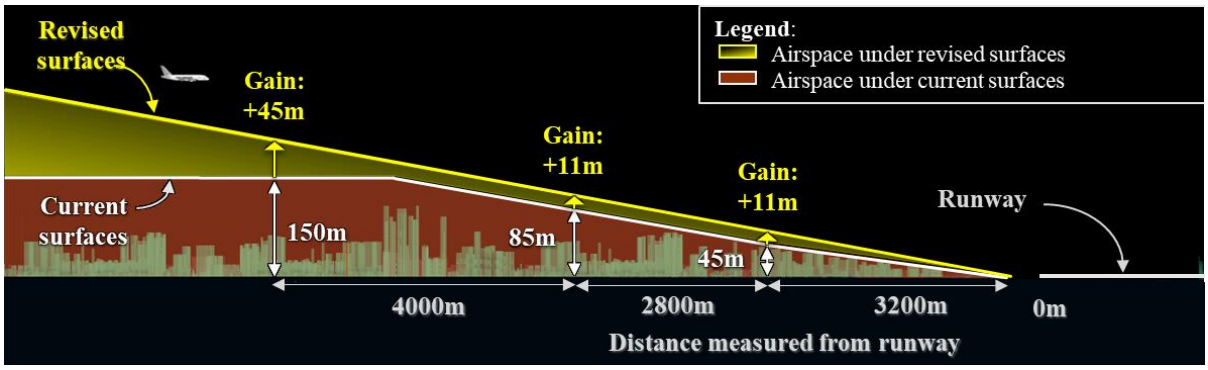
APPENDIX

ILLUSTRATION OF DIFFERENCES IN AIRSPACE REQUIRED TO SAFEGUARD AIRCRAFT OPERATIONS BETWEEN EXISTING AND REVISED SURFACES

<u>Chart 1</u>: Along the runway



<u>Chart 2</u>: At the ends of the runway[3]



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