



PART 105 MOS ASAP TECHNICAL WORKING GROUP TASKING INSTRUCTIONS and **THIRD REPORT**

1 and 10 November 2022

The Part 105 Manual of Standards (MOS) Technical Working Group (TWG) is established to operate and report to the Aviation Safety Advisory Panel (ASAP) in accordance with the Terms of Reference of the ASAP dated November 2021 (or as amended).

BACKGROUND/CONTEXT

Part 105 of the Civil Aviation Safety Regulations (CASRs) was made in December 2019 and commenced on 2 December 2021. Consequential to this change, the existing legislative instruments that presently apply to parachuting will automatically be repealed on 2 December 2023 after the Part 105 Manual of Standards enters into force. Part 105, in conjunction with Part 149 of CASR, will therefore supersede the existing legal framework for parachuting operations that is established through those legislative instruments. Until that time, a sport aviation body that is yet to be issued an Approved Self-administering Aviation Organisation (ASAO) certificate, may continue to operate under those arrangements.

Since December 2019, the Civil Aviation Safety Authority (CASA) has progressed developing the draft Part 105 MOS and seeks to consult with the TWG prior to conducting a public consultation activity.

It is intended that the TWG reviews the draft MOS as it is developed for convenience, however the draft MOS is intended to be publicly consulted as an entire document.

PURPOSE

In conducting this activity, the TWG is to utilise relevant technical expertise and industry sector insight for the analysis, development and review of legislation in accordance with agreed policy principles.

The TWG will:

- Provide industry sector insight and understanding of current needs and challenges.
- Provide current, relevant technical expertise for the development, analysis and review of legislative and non-legislative solutions to the identified issues.
- Assist with the development of policies, regulations, advisory materials and transition strategies.
- Provide endorsement and or conditional endorsement of policies, regulations, advisory materials and transition strategies for consideration by the ASAP and CASA.

SPECIFIC OBJECTIVES

1. The TWG is to evaluate whether the draft Part 105 MOS will:
 - a) Achieve the policy intent/identified key proposals
 - b) Be implementable by the Australian aviation industry
2. The TWG is to provide a concise summary to the ASAP recommending either:
 - a) That the ASAP endorse the Part 105 MOS.
 - b) That the ASAP endorse the Part 105 MOS provided certain issues are resolved.
 - c) That the ASAP does not endorse the Part 105 MOS due to underlying policy inconsistencies.

KEY POLICY PROPOSALS

The Part 105 MOS will apply to individuals and organisations involved in sport and recreational parachuting from aircraft and the operators of those aircraft.

The Part 105 MOS will, in conjunction with the Part 91 and 105 regulations, specify the operating rules for these aircraft as well as rules for the safe conduct of parachuting activities. It is intended that the MOS will, where appropriate, contain the rules presently in legislative instruments and CASA-approved operations manuals.

The Part 105 MOS will include delayed start dates for requirements introducing changes unable to be reasonably complied with by the commencement date of the MOS.

The scope of the Part 105 MOS will cover:

- baseline requirements for the safe conduct of parachute descent operations;
- reserve and emergency parachute equipment standards and maintenance of such equipment;
- pilot training and flight time requirements for the issue of ASAO-administered authorisations;
- pilot requirements for descents from recreational aircraft and balloons;
- equipment and instrument requirements for parachuting aircraft;
- personnel fatigue management (to come into force in late 2023);
- loading of parachuting aircraft;
- maintenance requirements for aircraft used in parachute training operations.

TWG MEETINGS

- 1 November 2021: First TWG report provided to ASAP
- 9 August 2022
- 23 September 2022: Second TWG report provided to ASAP
- 1 and 10 November 2022: Third TWG report provided to the ASAP

ROLES AND RESPONSIBILITIES

CASA	TWG Members
<ul style="list-style-type: none"> • Organise meetings and workshops, and produce agendas, papers and supporting materials • Facilitate meetings and workshops • Record insights and findings • Communicate openly and consistently with TWG members about project status and issues • Respect the time of all TWG members by minimising work required to achieve outcomes 	<ul style="list-style-type: none"> • Commit to supporting the project objectives and timeline • Engage and collaborate constructively at all times • Prepare for working group activities by reviewing agendas, papers and supporting materials • Provide timely and considered advice in meetings, and between meetings as required • Respond to requests for feedback on draft materials within agreed timeframes

CONSENSUS

A key aim of the TWG is that a consensus be reached, wherever possible, in the finalisation and preparation of advice for the ASAP.

The TWG will be guided by the ASAP Terms of Reference (Section 6 - attached) with respect to determining and documenting consensus.

MEMBERSHIP

Members of the TWG have been appointed by the ASAP Chair, following ASAP processes.

The Part 105 MOS TWG consists of the following members:

- David Smith
- Richard McCooley
- Ian Matthews
- Grahame Hill

The TWG CASA Lead, Brenda Cattle, was supported by CASA subject matter experts during the meeting.

The ASAP Secretariat was represented by Chace Eldridge.

MEETING SUMMARY

1 November 2022

- This meeting helped to establish separation between the Part 105 MOS and other associated legislative issues raised by the TWG for which the MOS has no legislative head of power. These issues were:
 - Aircraft type certification and carriage of passengers in excess of the manufacturer's published requirements.
 - Hot refuelling of parachuting aircraft.
 - Pilot-in-Command under supervision (PICUS) experience requirements for pilots of certain parachuting aircraft.
- The TWG members acknowledged that progressing the Part 105 MOS was not reliant on these issues being resolved; however, they would like to continue to work with CASA in a TWG forum to resolve the matters.
- Type certification and passenger restrictions for parachuting aircraft was discussed. Additional CASA staff and industry observers were in attendance who had technical expertise in these areas. Aircraft crashworthiness standards and the associated safety levels for parachutists when using single point restraints will be a consideration moving forward.
- CASA noted that various pathways exist for the approval of aircraft configuration changes to support parachuting operations. CASA is liaising with other National Aviation Authorities to see how they administer and approve aircraft for parachuting operations.
- The TWG members and CASA acknowledged the significant technical challenges, costs and timeframes associated with satisfying the Part 21 requirements. Although the Part 21 pathway remains an option for industry, additional pathways to facilitate compliance are being considered.
- Other Part 105 MOS matters were raised at the meeting. Specifically, CASA advised that there is no operational need for the Part 105 MOS to provide oxygen requirements for parachuting aircraft. The Part 105 MOS oxygen provision only provides a pathway to the applicable Part 91 MOS oxygen requirements. Moreover, there are currently no personnel fatigue management requirements. This chapter has been reserved to preserve the MOS structure for any future provisions that would be appropriate following consultation.
- PICUS jump pilot legislative requirements will be reviewed to determine if they can become more outcome based and will be presented to the TWG in the future.
- The action items and attendance from this meeting can be found in Appendix 2.

10 November 2022

- The primary purpose of this meeting was to review the latest Part 105 MOS exposure draft and for the TWG to determine its suitability for public consultation.
- The TWG discussed parachute certification and assembly standards. Following this, the TWG also clarified that they believe MOS provisions 2.04(2) and 2.07(3) should remain to ensure the continuity of standards approved by both CASA and the Australian Parachute Federation (APF). Some TWG members also believed the definition for reserve static line should explicitly state that it includes a main assisted reserve deployment system.
- The provisions around dropping items were discussed, with suitable outcomes for both TWG members and CASA. The TWG believed an explanatory note, outlining the clarification provided by CASA during the discussion, would be valuable.
- Minimum parachute opening heights were discussed in detail. Some TWG members proposed increasing the current minimum opening heights in the MOS. CASA noted that the opening heights in the MOS accommodate the existing arrangements documented in the CASA approved manuals of relevant organisations.
- CASA and the TWG members did not agree about including provisions for the use of target panels as a means of ground-to-air communication. Some TWG members commented that they are outdated, not currently used by their organisation, and using them could result in pilot confusion. However, CASA felt there was no need to remove the provision, as it provides a recognised alternative means of communication when radio communications are unavailable, and their use is not mandated.
- CASA’s written responses to the issues raised by the APF, and the subsequent changes to dropping provisions, were shared with the TWG following this meeting.

TWG SUMMARY OF OUTCOMES – Third TWG Report, 1 and 10 November 2022

Topic 1 – Suitability of MOS for public consultation

FULL CONSENSUS / GENERAL CONSENSUS / DISSENT

Comments:

The TWG members were in general consensus that the Part 105 MOS was suitable for public consultation. They endorsed the MOS for public consultation but disagreed with the provisions permitting the use of target panels and the published minimum parachute opening heights. Some TWG members also recommended that the definition for a *reserve static line* should explicitly state that it includes a main assisted reserve deployment system. The TWG are satisfied that wider public consultation, with these outstanding items clearly identified, could help resolve any issues.

Additionally, some TWG members have outlined that they believe consultation and development of fatigue management provisions should be included as part of this body of work, and not be delayed for future inclusion.

Topic 2 – Appropriate forum to address outstanding associated legislative issues

GENERAL CONSENSUS / FULL CONSENSUS / DISSENT

Comments:

Although the Part 105 MOS was broadly endorsed by the TWG for public consultation, there are still two remaining issues that impact the parachuting community that do not fit within the Part 105 MOS. These issues are the maximum number of passengers permitted by the aircraft type certificate or flight manual and the flying experience requirements for jump pilots to operate a parachuting operation.

To resolve these identified issues in an appropriate forum, the TWG recommended that this group be expanded to consider aircraft certification and PICUS requirements. They also recommended the addition of new TWG members to broaden their expertise across these wider topics and recognised that different business areas within CASA would be responsible for certain issues.

CASA Lead Summary

Brenda Cattle

Comment:

CASA thanks the TWG members for their ongoing efforts to progress this work. CASA acknowledges the concerns raised by TWG members and will continue to work with the TWG to progress the Part 105 MOS to ensure it achieves the policy intent and provides safe and practical outcomes for the industry.

Regarding the agreement to continued industry engagement in resolving the additional matters, specifically aircraft certification and PICUS requirements, CASA looks forward to the feedback from the ASAP regarding how to best to utilise the TWG engagement model to once again ensure CASA's policy intent can be achieved with safe and practical outcomes.

Appendices

1. Extract from ASAP Terms of Reference
2. ADDITIONAL ACTION ITEMS FOLLOWING THE 1 NOVEMBER MEETING
3. APF COMMENTS FOR TWG ON 10NOV22 EXPOSURE DRAFT 105 MOS

Appendix 1

ASAP and TWG Terms of Reference regarding Consensus (Extract)

- 6.1 A key aim of the ASAP is that a consensus be reached, wherever possible, in the finalisation and preparation of advice to the CEO/DAS.
- 6.2 For present purposes, 'consensus' is understood to mean agreement by all parties that a specific course of action is acceptable.
- 6.3 Achieving consensus may require debate and deliberation between divergent segments of the aviation community and individual members of the ASAP or its Technical Working Groups.
- 6.4 Consensus does not mean that the 'majority rules'. Consensus can be unanimous or near unanimous. Consensual outcomes include:
 - 6.4.1 **Full consensus**, where all members agree fully in context and principle and fully support the specific course of action.
 - 6.4.2 **General consensus**, where there may well be disagreement, but the group has heard, recognised, acknowledged and reconciled the concerns or objections to the general acceptance of the group. Although not every member may fully agree in context and principle, all members support the overall position and agree not to object to the proposed recommendation.
 - 6.4.3 **Dissent**, where differing in opinions about the specific course of action are maintained. There may be times when one, some, or all members do not agree with the recommendation or cannot reach agreement on a recommendation.

Determining and Documenting Consensus

- 6.5 The ASAP (and Technical Working Groups) should establish a process by which it determines if consensus has been reached. The way in which the level of consensus is to be measured should be determined before substantive matters are considered. This may be by way of voting or by polling members. Consensus is desirable, but where it is not possible, it is important that information and analysis that supports differing perspectives is presented.
- 6.6 Where there is full consensus, the report, recommendation or advice should expressly state that every member of the ASAP (or Technical Working Group) was in full agreement with the advice.
- 6.7 Where there is general consensus, the nature and reasons for any concern by members that do not fully agree with the majority recommendation should be included with the advice.
- 6.8 Where there is dissent, the advice should explain the issues and concerns and why an agreement was not reached. If a member does not concur with one or more of the recommendations, that person's dissenting
- 6.9 If there is an opportunity to do so, the ASAP (or Technical Working Group) should re-consider the report or advice, along with any dissenting views, to see if there might be scope for further reconciliation, on which basis some, if not all, disagreements may be resolved by compromise.

Appendix 2

ADDITIONAL ACTION ITEMS FOLLOWING THE 1 NOVEMBER MEETING

- For matters that do not relate to the Part 105 MOS, the TWG have requested the ASAP to determine the most suitable way for continued industry engagement in resolving the additional matters.
- In awaiting this decision, the following additional action items were agreed upon.
 - Skydive Australia will liaise with Textron to find out what their aircraft certification process is and share this information with the relevant parties within CASA.
 - The APF will assist CASA with gathering information on the range of aircraft currently utilised for parachuting activities and their respective certification processes and flight manuals.
 - CASA will review the flight time requirements mentioned in sub regulation 105.080 (5)
- A follow-up meeting date to discuss these actions has not been set.

ATTENDANCE

The Part 105 MOS TWG meeting was attended by:

- Dave Smith
- Grahame Hill
- Richard McCooey
- Ryan Roche (Industry observer)
- Mark Edwards (Industry observer)

Apologies

- Ian Matthews

CASA Representatives:

- Ben Challenger
- Stephen Fickling
- Graham Levitt
- Brenda Cattle
- Klaus Schwerdtfeger

The ASAP Secretariat was represented by Chace Eldridge and Mwala Puteho.

Appendix 3

APF COMMENTS FOR TWG ON 10NOV22 EXPOSURE DRAFT 105 MOS

The latest draft deals with most of our concerns and, these remaining few, need to be resolved after which APF considers the draft 105 MOS will be suitable for public consultation.

Ian Matthews from the Australian Skydiving Association (ASA) has informed APF that ASA will not be applying for a 149/105 certificate. Therefore permitting a lower parachute opening heights in the 105 MOS for potential new applicants is a retrograde step.

- 1.04(1) APF recommends including a definition for a **reserve static line** in 1.04(1) in the same way that there is a definition for an **automatic activation device** in 1.04(1) to describe the essential features of an AAD.

Another commonly used device called a **Main Assisted Reserve Deployment System** (MARD) performs the same function as a reserve static line but operates differently.

By including a definition in 1.04(1) for **reserve static line** and having the definition encapsulate the MARD, by name, it will permit the MARD to be an alternative in 5.40(6)(a) to an automatic activation device in 5.40(6)(b).

- 2.04(2) In relation to a reserve parachute assembly, APF maintains it is incorrect to claim a parachute manufactured and certified under 103.18 of the Civil Aviation Orders is taken to meet the requirements of TSO-C23.

Only the FAA can issue a TSO authorisation allowing the parachute to be identified as complying with FAA TSO-C23.

While CAO 103.18 allowed for the TSO-C23, it also allowed for other standards to be approved by CASA. APF Equipment Standard APF081014-G specifies other standards that have been deemed acceptable by CASA and APF. When CAO 103.18 was repealed, it was left to APF to determine what parachute certification standards to approve.

It would be better to state in 2.04(2) '*equipment approved, at the time CAO 103.18 was in force, is permitted to remain in service despite CAO 103.18 being repealed*'.

- 2.04(4)(a) A reserve parachute assembly may, and very often, comprise parts from different manufacturers. It's very common to combine a reserve canopy from one manufacturer with a harness/container from a second manufacturer to make up the **reserve parachute assembly**). In fact manufacturers often specialise in either canopy manufacture or harness/container manufacturer in the same way there are airframe manufacturers and engine manufacturers.

Accordingly, the packer and/or rigger must determine the compatibility of the resulting assembly which involves using more than one component manufacturer's requirements.

For your information: APF Equipment Standard APF14062019-G gives advice on how to determine compatibility of components from different manufacturers.

FAA AC 105-2E has similar wording to deal with compatibility, including, combining military surplus components (which do not meet the TSO-C23) with components which do meet TSO-C23.

2.07(3) The comments made above applying in 2.04(2) in relation to a **reserve parachute assembly** also apply to an **emergency parachute assembly**.

4.02(3) Regulation 105.090(1)(c) and 105.095(1)(c) both allow a thing to be dropped if done so in accordance with an authorisation from a Part 105 ASAO. It is overreach for 105 MOS 4.02(3) to say: *A person may cause a thing to be dropped, if CASA has approved, in writing, the person to drop the thing.*

Every time a parachutist has a malfunction of their main parachute the parachute (thing) is dropped. As 4.02(3) is presently drafted, it implies written permission from CASA is required before cutting away!

Flags are carried on some display descents and if the flag malfunctions it needs to be released. APF has an equipment standard dealing with flags and a release and recovery system for such eventualities.

Inflatable boats, hoops, streamers, etc have been used during parachuting freefall descents and, of themselves, do not present a danger to persons and property on ground when the location and circumstances surrounding the 'dropping of things' is properly managed. APF Exposition

APF recommends 4.01 provide for dropping of things over a populous area in an emergency and 4.03 provide for dropping things other than over a populous area where the 105 ASAO Exposition provides for this to be undertaken such that the thing does not create a hazard to another aircraft, a person or property.

5.06 Note APF recommends the note say 'AIRC' is short for 'air, inspect, repack and compatibility verified'.

5.10(4) APF recommends this requirement apply on or after 2 December 2023. The same recommendation applies to 5.40(3) & (5). This deferred date was most likely at the request of ASA.

5.11(6)(b) APF recommends that where it says the 105 ASAO procedures must include a requirement that the person conducting the assessment physically inspect the equipment be changed to remove the word *physically*.

Removing the word 'physically' will permit assessment to be conducted using technology such as photos, video, and such like. This applies to 5.11A(9)(b) too.

There are remote places where parachute descents take place and, a suitably qualified person is not physically available to make the necessary assessment.

5.12 APF recommends adding a new para 5.12(3) to allow for multiple main parachute canopies to be inspected, at the same time, for compatibility with a particular harness/container assembly.

5.29(b)&(c) For 5.29(b), APF recommends setting the minimum opening height for students at 2500 ft AGL. And for 5.29(c), APF recommends the minimum be 2000 ft AGL. These are what APF sets as its minimums.

The lower minimum opening heights were for ASA and, as advised, APF has been informed ASA is not intending to apply for a 149 /105 certificate.

5.47 The APF recommends the references in 5.47 to target panels as one means of ground to air communication be omitted from the 105 MOS. Target panels are not used by the APF at any drop zone. The exception being a 'cross' is sometimes used at a parachute display to indicate the centre of the display drop zone.

Radios are used exclusively for ground to air communication at all parachute training operations. The target panels were included, APF presumes, because ASA has them in its documentation.

There is a further reason to remove reference to target panels, and in particular the cross. A cross may imply the airport, or airport runway, is unserviceable. This has caused confusion to some pilots in the past as to what a 'cross' on an airport means.

5.55(3) The APF understands the Australian Ballooning Federation is not intending to apply to become a 131 ASAO. The 105 MOS should probably therefore provide for 131 AOC holders to conduct parachute descents from a balloon.

This will affect 7.04 unless the 131 MOS permits other than a 131 ASAO to conduct parachute drops.