

**Use of Recorded Data - Ambient Workplace Recording (AWR)**

Presented by TOC &amp; PLC

**SUMMARY**

Ambient Workplace Recording can enhance ATC safety investigations but raises legitimate concerns regarding privacy, retention, access, and potential misuse. ICAO guidance highlights the need for strict protections, limited scope, and appropriate retention, principles that should be clearly reflected in IFATCA policy. This paper recommends a dedicated AWR policy, aligned with ICAO standards, to restrict AWR use to safety investigations, establish agreed retention periods, and clarify access and oversight, while updating related policies for consistency and clarity.

**1. INTRODUCTION**

- 1.1. The review of operational communications and display recordings linked to incidents and accidents provides critical insights into contributing factors and supports the development of measures to help prevent recurrence.
- 1.2. In Air Traffic Control (ATC), recordings of radio and operational ground-ground communications and Situation (SIT) displays have been standard information sources to analyse for many years. More recently, however, the concept of Ambient Workplace Recording (AWR) has begun to emerge as an additional source of information to support analysis.
- 1.3. In much the same way as a Cockpit Voice Recorder (CVR) captures activity beyond radio transmissions, AWR can capture operational communications and actions undertaken by Air Traffic Control Officers (ATCOs) that are not reflected on radio and telephone channels or SIT displays. Such information can be highly valuable during safety investigations and may be used to inform procedural changes arising from those investigations to enhance aviation safety.

- 1.4. At the same time, ATCOs have expressed valid concerns regarding the potential use of AWR beyond the scope of safety-related investigations, particularly with respect to privacy. These concerns must be acknowledged and addressed as part of any discussion on current installations and where the introduction of AWR is being considered.
- 1.5. This paper examines existing IFATCA Technical and Professional Manual (TPM 2025a) policy LM 7.2.6 Use of Recorded Data, in relation to AWR, with an emphasis on ensuring that ATCO concerns are appropriately recognized and incorporated.

## **2. DISCUSSION**

- 2.1. The International Civil Aviation Organization (ICAO) recommends that background communications and the aural environment at ATC workstations should be recorded. Furthermore, it recommends that these recordings be retained for a minimum of twenty-four (24) hours (ICAO 2018a). ICAO also offers comprehensive requirements for the protection of accident and incident investigation records, which encompass recordings and transcripts from ATC units (ICAO, 2024a). The guidance clearly states that the identities of those involved shall remain confidential and must not be disclosed during investigations (ICAO 2024b). Despite these safety imperatives, ICAO recognises that AWR may be perceived by operational personnel as an intrusion into their privacy (ICAO 2016a). As such, ICAO includes a cautionary note in the protection framework stating that sharing or using these recordings for purposes outside aviation safety may jeopardise their continued availability to investigators, the loss of which would impede investigative efforts and impact aviation safety (ICAO 2024c).
- 2.2. The deployment of AWR technology at ATC workstations remains relatively limited on a global scale at present. As ICAO recommends the use of AWR, it may be prudent to assume that its use will be expanded in the future. Indeed, European regulations mandate its use with limited exceptions. Consequently, it is essential to address the concerns of ATCOs thoroughly to maintain a comfortable and effective working environment while considering the aviation safety benefits as usage expands.
- 2.3. A primary concern among ATCOs relates to the perceived intrusion into “private conversations” and the length of time AWR recordings are retained. Where clear and well-defined boundaries for AWR use are lacking, ATCOs may be more reluctant to agree to the overall concept, which could affect safety investigations, as recognised by ICAO. A lack of boundaries may also contribute to increased friction between ATCOs and management, adversely affecting the work environment.

## **Retention time**

- 2.3.1. As outlined in Section 2.1, current guidance specifies a minimum retention period of twenty-four (24) hours. While this does not explicitly account for recordings extracted for investigative purposes, such data are typically exempt from standard retention timelines. This approach aligns with existing guidance for telecommunications logs, which mandates a minimum retention of at least thirty (30) days, with extended retention for logs relevant to investigations (ICAO 2016b). Given that recording systems are generally computer-based and have limited storage capacity, these retention periods are also used to inform storage planning and trigger automatic deletion to manage available space effectively.
- 2.3.2. In developing its 2006 recommendation (ICAO 2006), ICAO likely drew on the long-standing benchmark of retaining operational records for a minimum of thirty (30) days. In addition to telecommunication logs, other operational data, such as surveillance recordings (ICAO 2018b), flight progress strips (ICAO 2016c), datalink records (ICAO 2017), and meteorological information (ICAO 2025), are likewise subject to a minimum thirty (30) day retention standard. While the link to this benchmark is not explicitly documented, it is reasonable to infer that the group responsible for the ICAO AWR recommendation weighed retention periods against factors such as storage demands, equipment limitations, and, most importantly, the requirements of aviation safety. The decision to establish a minimum of twenty-four (24) hours suggests that ICAO considered this duration sufficient to meet its safety objectives.
- 2.3.3. More recently, some stakeholders have suggested extending the minimum retention period for AWR recordings to align with the thirty (30) day standard applied to telecommunication logs. While ICAO's current recommendation requires "at least the last twenty-four hours of operation" (ICAO 2018a), it is possible that States and ANSPs may, at their discretion, adopt longer retention times. The central issue, however, is whether such extensions are truly driven by operational safety needs and not only by logistical factors such as investigator response times.

## **Intrusion of Privacy**

- 2.3.4. ATCOs have expressed significant concerns regarding the potential intrusion into their privacy posed by AWR. A key challenge arises from the fact that some operational communications, such as verbal coordination of altitude or route changes, are conducted informally between ATCOs in close proximity and are not captured by recorded communication channels. Consequently, these verbal exchanges may not be documented, potentially creating gaps in the evidentiary record

during safety-related investigations. While ATCOs are entitled to a reasonable expectation of privacy in the workplace, this right must be carefully balanced against the legitimate operational imperatives of the aviation sector, particularly the conduct of effective incident and accident investigations to maintain and enhance safety standards.

- 2.3.5. During periods of lower operational demand, ATCOs often engage in informal, interest-based conversations with nearby colleagues while in position. These spontaneous interactions, which are not directly related to task performance, contribute to building interpersonal rapport and strengthening team cohesion, as well as combatting fatigue. Such informal communication can enhance collaboration and support more effective teamwork during high-pressure situations. (TNCR Staff, 2025).
- 2.3.6. Casual exchanges among ATCOs frequently include moments of frustration or “venting,” which play a crucial role in fostering mutual support and reinforcing workplace relationships (Craw, 2023). Nevertheless, these candid remarks may sometimes contain opinions that, if overheard or taken out of context, risk being misunderstood or deemed inappropriate. A significant concern among ATCOs is that such informal conversations will be recorded through AWR systems and potentially extracted and used solely for disciplinary actions against them.
- 2.4. To address these legitimate concerns while still enabling the potential benefits, it is essential to establish clear and comprehensive policies and procedures governing the retention, access, and use of AWR system recordings. Furthermore, the development of these frameworks should be undertaken collaboratively between MAs and the ANSP to be able to strike a balance between ATCO concerns and the ANSP logistical concerns.
- 2.5. The existing IFATCA policy with regards to recorded data, LM 7.2.6 Use of Recorded Data policy, is all encompassing, mentioning audio, visual, and AWR. Confusion is possible as components of the policy are not intended to apply to AWR while others are AWR specific. In addition, the policy does not use similar terminology to ICAO nor does it have any comment on retention time for recordings. The policy currently states:

**LM 7.2.6 Use of Recorded Data**

**Audio and visual recordings and AWR are confidential and shall not be released to the public.**

**Audio and visual recordings and AWR shall not be used to provide direct evidence, such as in disciplinary cases, or to determine controller competence.**

**Except for AWR, recorded data shall be used only in the following cases:**

- a) when investigating ATC related accidents and incidents;**
- b) for search and rescue purposes;**
- c) for training and review purposes provided all ATCOs affected agree.**
- d) for the purposes of adjusting and repairing ATC equipment.**

**Access to recorded data shall be limited to authorised personnel. Authorised personnel shall be mutually agreed by the controllers' representative and the appropriate authority. Recorded data used shall be identical to that presented at or originating from the relevant controller's position.**

**IFATCA is opposed to the use of visual AWR on the basis of invasion of privacy.**

**AWR shall only be used to aid in incident and accident investigations to improve aviation safety.**

**Prior to the installation of AWR, legislation shall be in place which prohibits the use of any recorded information against a controller in any criminal or civil litigation. The legislation should provide for substantial penalties for any breach.**

**The AWR system, including user management and access to the recordings, should be managed by an independent authority within the ANSP, chosen jointly by management and Member Association(s).**

**Before being published in an incident or accident report, non-relevant information shall be removed from AWR transcripts.**

2.6. Given the sensitivity of AWR and its specific treatment within ICAO documentation, including a retention period that differs from that of air-ground and ground-ground communications (collectively referred to as telecommunications) as well as surveillance data, it is proposed that a separate policy be developed for AWR, distinct from LM 7.2.6.

2.6.1. In developing a new AWR policy, attention should be given to the type of recordings (audio and/or visual), their intended scope of use, retention periods, and access controls. Consideration should also be given to establishing appropriate safeguards governing the use of AWR recordings in legal proceedings.

2.6.1.1. The current LM 7.2.6 already indicates IFATCA's opposition to visual AWR, so language to that effect must remain.

- 2.6.1.2. Considering the sensitivities surrounding AWR and ICAO's observations regarding the potential use of recordings for purposes beyond safety investigation (ICAO 2024c), the scope of use should be clearly restricted to incident and accident investigation activities. In addition, a clearly defined retention period should also be established through agreement between the MA's representative and the appropriate authorities. This retention period should balance the need for timely access to recordings with the avoidance of unnecessary long-term storage when recordings are no longer required for investigative purposes. In determining an appropriate retention period, ICAO's minimum requirements should be used as guiding parameters within the collaborative decision-making process.
- 2.6.1.3. It is prudent to include a provision that clearly defines the management and access rights to the AWR system and its recordings. Any AWR policy should be developed collaboratively and mutually agreed to by the MA's representative and the appropriate authority. Such measures would help address concerns regarding potential misuse or unintended access to AWR recordings.
- 2.6.1.4. To reinforce ICAO's position regarding the need for State laws and regulations to protect AWR recorded data (ICAO 2016c), it would be appropriate to include a statement reflecting this requirement within the AWR policy.
- 2.6.2. Following the removal of AWR from LM 7.6.2, there is an opportunity to update the policy to align with ICAO terminology, specifically adopting the terms "telecommunication logs" and "surveillance data," and to establish a retention period. In addition, a reordering of items in the policy can occur to create a suitable logical flow similar to that of the AWR policy. This update would ensure consistency with the new AWR policy.
  - 2.6.2.1. ICAO does not categorize recordings as 'audio' for communications or 'visual' for surveillance. The standard terms are 'telecommunication logs', which includes pilot controller communication (ICAO 2018c), and 'surveillance data.' Revising IFATCA policy to adopt this terminology would ensure closer alignment with ICAO nomenclature.

2.6.2.2. Establishing common language with regard to a retention period would support alignment with the AWR policy and provide consistency within the TPM. As with the AWR policy, this period should correspond to ICAO's minimum retention standards.

2.6.3. In both the new AWR policy and the amended Use of Recorded Data policy, an explicit requirement to address the removal of identifying information in transcripts is unnecessary, as this requirement is already addressed under IFATCA policy LM 7.2.4 - Protection of Identity (TPM 2025b).

### 3. CONCLUSION

3.1. AWR has the potential to provide valuable additional insight during the investigation of incidents and accidents, thereby supporting the continuous improvement of aviation safety. However, its introduction and use raise legitimate and well-founded concerns among ATCOs, particularly with respect to privacy, and the risk of misuse beyond safety-related purposes. These concerns, if not adequately addressed, risk undermining trust, workplace cohesion, and the willingness of ATCOs to support the availability of recordings for safety investigations.

3.2. ICAO guidance recognises both the safety benefits of AWR, and the sensitivities associated with its use, emphasising the need for strict protections, limited scope, and appropriate retention periods. As AWR adoption is likely to expand, including through regulatory mandates in some regions, it is essential that IFATCA policy clearly reflects these principles while safeguarding the reasonable expectations of privacy held by ATCOs.

3.3. This paper concludes that current IFATCA policy LM 7.2.6 - Use of Recorded Data requires revision to adequately address AWR. A dedicated AWR policy should be developed to reflect its distinct characteristics, risks, and operational considerations. Such a policy should explicitly limit the use of AWR to incident and accident investigations, establish collaboratively agreed retention periods guided by ICAO minimum requirements, and clearly define system management, access, and oversight arrangements. In parallel, LM 7.2.6 should be updated to remove AWR-specific provisions, align terminology with ICAO standards, and introduce consistent retention language for telecommunication logs and surveillance data.

3.4. By adopting a clear AWR policy, and encouraging a collaborative approach to AWR, IFATCA can support the responsible use of AWR as a tool for safety while addressing legitimate ATCO concerns, preserve trust in safety investigation processes, and ensure that aviation safety remains the overriding priority in the use of recorded data.

#### 4. DRAFT RECOMMENDATIONS

4.1. The following new policy proposal and policy amendments are proposed to enhance the clarity, consistency, and effectiveness of the relevant TPM policies.

##### 4.1.1. NEW Policy - Use of Recorded Data - Ambient Workplace Recording

It is proposed to create a new LM policy in TPM for Ambient Workplace Recording.

#### **IFATCA TPM (NEW), LM X.X.X – Use of Recorded Data - Ambient Workplace Recording**

##### **Proposal:**

AWR shall be restricted to audio recordings only.

AWR shall only be used to aid in incident and accident investigations to improve aviation safety. AWR not required for such purposes should be retained, from the time of its capture, for a period no longer than that which is agreed by the MA's representative and the appropriate authorities using the ICAO minimum for AWR as a guide.

The AWR system, including user management and access to recordings, shall be limited to authorised personnel mutually agreed by the MA's representative and the appropriate authorities.

AWR recordings are confidential and shall not be released to the public.

Prior to the installation of AWR, laws and regulations shall be in place which prohibits the use of any recorded information against a controller in any criminal or civil litigation. The laws and regulations should provide for substantial penalties for any breach.

##### 4.1.2. IFATCA TPM, LM 7.2.6 - Use of Recorded Data

It is proposed to amend the policy to remove references to AWR, provide consistency with the newly proposed AWR policy, and to align with ICAO nomenclature.

## IFATCA TPM (2025), LM 7.2.6 – Use of Recorded Data

IFATCA Policy is:

~~Audio and visual recordings~~ Telecommunication logs and surveillance data ~~and AWR~~ are confidential and shall not be released to the public.

~~Except for AWR, recorded data~~ Telecommunication logs and surveillance data recordings shall be used only in the following cases:

- a) when investigating ATC related accidents and incidents;
- b) for search and rescue purposes;
- c) for training and review purposes provided all ATCOs affected agree.
- d) for the purposes of adjusting and repairing ATC equipment.

Telecommunication logs and surveillance data recordings not required for such purposes, should be retained, from the time of its capture, for a period no longer than that to which is agreed upon by the MA's representative and the appropriate authorities using the ICAO minimum for telecommunication logs and surveillance data as a guide.

~~Access to recorded data~~ telecommunication logs and surveillance data recordings shall be limited to authorised personnel. Authorised personnel shall be mutually agreed by the MA's controllers' representative and the appropriate authorities.

~~Recorded data used~~ Telecommunication logs and surveillance data recordings shall be identical to that presented at or originating from the relevant controller's position.

~~IFATCA is opposed to the use of visual AWR on the basis of invasion of privacy.~~

~~AWR shall only be used to aid in incident and accident investigations to improve aviation safety.~~

~~Prior to the installation of AWR, legislation shall be in place which prohibits the use of any recorded information against a controller in any criminal or civil litigation. The legislation should provide for substantial penalties for any breach.~~

~~The AWR system, including user management and access to the recordings, should be managed by an independent authority within the ANSP, chosen jointly by management and Member Association(s).~~

~~Audio and visual recordings and AWR~~ Telecommunication logs and surveillance data recordings shall not be used to provide direct evidence, such as in disciplinary cases, or to determine controller competence.

## 5. REFERENCES

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ICAO 2024a, ICAO Annex 13, Aircraft Accident and Incident Investigation, 13<sup>th</sup> Edition, July 2024, Chapter 5, 5.12

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