

# ARPAS-UK REGULATION SPECIAL INTEREST GROUP

## Regulatory Matters and Progress Review - May 2024

ARPAS-UK Regulation SIG collates feedback from members on a regular basis and this paper is the outcome of our engagement within the REG SIG and with the broader community of members. It also documents our response to official consultations conducted by the CAA or the DfT in 2023-24. The objective is to:

- Contribute to the development in the UK of proportionate regulations and standards
- Develop a collaborative feedback loop with the CAA and other key stakeholders
- Formulate and disseminate proposals to issues and priorities identified.

Below is the summary, followed by a detailed explanation or position on each matter. The RAG colour code indicates our perception of progress made over the last 12 months.

### At the higher, strategic level

1. Future Flight Action Plan roadmap **Status: Green**
2. CAA organisational culture. **Status: Amber.**

### At the tactical level, day-to-day operations and CAA Roadmap 2024-25.

1. Project DiSCO digital platform to automate Specific Category PDRA submissions and approvals going live in April 2024. **Status: Green.**
2. OSC Operating Safety Cases review time and transparency **Status: Still Red.**
3. Engagement with the community, clear and simple guidelines, one website and news repository, clearly sign-posted, regular communication **Status: from Red to Amber.**
4. The proportionate introduction of SORA AND generic SORAs to enable standardised lower risk operations that industry needs, at scale . Educating all those involved on SORA methodology and risk quantification. **Status: Amber.**
5. The Atypical Air Environment (AAE) policy implementation, with recommended improvements as a stepping stone towards BVLOS. **Status: Green.**
6. Policing of illegal use of drones in the Open and in the Specific Categories. **Status: Red**
7. Flightworthiness approach on systems to enable more complex operations and engagement with peers in this area e.g. BMAA, BGA, LAA, LMA. **Status: Amber.**
8. Tiered Remote Pilot Competency levels with more practical training and UAS-relevant training. **Status: Amber.**
9. Airspace Integration: Mandated Electronic Conspicuity in select mandatory zones, for all airspace users. **Status: Amber.**

### CAA workstreams, April 2024

### Response in official consultation on Remote ID

## At the higher, strategic level

### 1. Future Flight Action Plan roadmap **Status: Green**

The Action was published by DfT in March 2024, with clear strategic objectives, including SO3 routine BVLOS UAS operations in controlled and uncontrolled shared airspace by 2027.

### 2. CAA organisational culture. **Status: Amber.**

Conservative and prescriptive approach of some CAA departments that are not sufficiently familiar with uncrewed systems and new technologies, such that progress in airspace integration is undermined. Resulting lack of a risk-based and coordinated approach, which would require a culture change in the organisation.

Lack of acknowledgment of what the commercial drone market actually is, which is primarily data capture using small UAS at low height and slow speed in urban environments, and BVLOS/ transport trials. Resulting inadequacies in the regulatory framework for the bulk of commercial operators (not in the open category, and very ambiguous PDRA01 framework on overflight in the specific category) - could evolve with SORA.

## At the tactical level, day-to-day operations and CAA Roadmap 2024-25.

In general, challenges are not so much wrt the topics, but in their implementation and the proportionality to the risk at hand, so that the cost of compliance is reasonable, proportionate, and regulatory developments are indeed industry enablers.

### 1. Project DiSCO digital platform to automate Specific Category PDRA submissions and approvals going live in April 2024. **Status: Green.**

Based on our members' feedback, project DiSCO, the Digitisation of applications in the Specific Category of Operations, the technical platform to submit applications for PDRA01 in the specific category, in a "declaration of compliance" scheme, is a success. Operational authorisations are received within days if not hours, and the whole process is user-friendly.

### 2. OSC Operating Safety Cases review time and transparency **Status: Still Red.**

We still receive feedback from many OSC operators about review times of several months, lack of communication on what's happening to their applications and of transparency on the

rationale for delays, and inconsistent positions between inspectors. Some of the issues highlighted are: no confirmation of receipt of OSC submission, poor reporting of status of OSC application back to applicant; time taken generally to complete an OSC approval; subjective nature of approvals; too much emphasis on paper-based oversight/approvals; CAA staff not prioritising and expediting good quality applications and dedicating resources reviewing poor quality OSCs when actually these should first be improved by the operator, possibly using a paid consultant.

The CAA now has an additional budget to recruit staff, which hopefully will help resorb those review times – although onboarding new personnel will require training first.

The integration of OSC submissions, by then SORA individual applications, onto DiSCO will certainly transform the application process. However UK SORA SAIL is planned for mid-2025 and that timeline depends on a number of other works' completion.

What if we offer a peer review network?

What if the CAA disseminates the top 3-5 issues faced during their reviews, to avoid unnecessary delays?

### **3. Engagement with the community, clear and simple guidelines, one website and news repository, clearly sign-posted, regular communication Status: from Red to Amber.**

The new webpage dedicated to “[Flying in the Specific Category](#)” is clear and well-structured, with visual infographics, and is definitely a step forward. The CAA now also publishes a Monthly Future Flight newsletter which is clear and valuable. The DiSCO platform was pre-announced via a few emails sent directly to the community of PDRA01 holders.

However, we've noticed a few dysfunctional communication over the last couple of months, for example:

- Publication of [CAP722H 3<sup>RD</sup> edition](#) 9 April 2024 and [CAP2606](#) Ops Manual Template 10 April 2024 not referring to that latest CAP722H edition;
- CAPs published on Skywise and others not;
- CAP2606 Operations Manual not mentioning any form of overflight of uninvolved people at all when overflight of uninvolved people may be considered by the Remote Pilot subject to adequate risk mitigation as per CAP722H.

In terms of clarity of guidelines, we still receive feedback that the lack of clear guidelines on Acceptable Means of Compliance means that operators develop multiple arguments hoping at least one would be considered as a valid AMC. This results in Operations Manuals that are so complicated and excessive that they in turn become a barrier to safe operations.

Also in terms of clarity of guidelines, there are a relatively high number of CAPS relevant to drone operations, and it is difficult to understand what is really a reflection of what is required under law vs what is guidance and optional. Cf CAP2606 and CAP2606a 53 entries in flight log.

Also, a number of CAPs have been published in April May; dissemination and explanation would be very useful to the community.

- What about setting up a CAA bi-monthly or quarterly virtual meeting with REG SIG to engage on those matters ?
- What about making the recording or simply the outcome available to a broader drone community?

#### **4. The proportionate introduction of SORA AND generic SORAs to enable standardised lower risk operations that industry needs, at scale . Educating all those involved on SORA methodology and risk quantification. Status: Amber.**

The CAA stated that the UK will adopt a UK version of SORA, and we welcome that alignment with the international Specific Operations Risk Assessment SORA designed by JARUS, an international group of 60+ experts. Canada, China, Europe have adopted SORA yet their regulatory framework is quite different. JARUS plenary session voted in favour of SORA v2.5 mid-May, and UK SORA will be based on that 2.5 version.

However, we have the following concerns or open questions:

- Lack of information on areas where the UK would diverge from JARUS SORA, and information on the overall direction of travel, well in advance of final publication, so that industry can anticipate
- At last, define more PDRAs now generic SORAs, to standardise Risk Assessments and resulting Operational authorisations' processes on most common user cases. Work on PDRAs has been postponed by the CAA until UK SORA is defined, however this remains the #2 priority, after OSC review time reduction, based on recent members' feedback.

The first additional PDRAs/generic SORAs could pragmatically reflect industry needs with lower risk level:

- Reduced separation from uninvolved persons
- BVLOS in atypical air environment long range, infrastructure inspections
- BVLOS in atypical air environment at close range for building inspection

Below are previous positions by ARPAS-UK promoting more PDRA's. The rationale is unchanged under SORA, only those standardised concepts are now referred to as Generic SORAs.

In the Specific Category, a PDRA, Pre-Defined Risk Assessment, is an Operational Authorisation OA based on a predetermined set of prescriptive requirements. It is based on a standard operational scenario for which the CAA has already carried out the risk assessment. As a result, the drone operator does not need to do it, and instead, the drone operator must follow the prescriptive list of risk mitigations, and request an annual Operational authorisation OA by the CAA on that basis.

An Operational Authorisation that is not a PDRA requires an OSC, an Operating Safety Case, and its approval by the CAA team takes several months.

There is only 1 PDRA in the UK at the moment, PDRA01. It's been in place for several years (ex PfCO). Its privileges have become ambiguous as the ability to fly close to uninvolved people has become unclear.

We want more PDRA's or generic SORA, whatever word is used to describe a standard risk assessment, to:

- **Expand the scope of the commercially and legally accessible operations based on actual market needs.** PDRA01 was designed many years ago. It covers drones up to 25kg, and provides risk mitigation commensurate with that 25kg threshold. Today, many operations are conducted with COTS drones of 1-2kg, or say 4kg, and the new generation of sensors provide adequate data scanning accuracy for a number of applications. On the other hand, there is now a return of experience from many OSCs accumulated by operators and the CAA. Some operations are not that special anymore, the risk mitigations are well known. They could become a standard, i.e. a PDRA.
- **Deliver efficiency for both the drone operators and the CAA teams:** Pre-defined Risk Assessment PDRA's standardise the risk assessment, the Operations/Compliance Manual, the training and validation of the competencies, as well as the oversight of it. It provides a standard that can be reviewed like a multiple choice assessment, as opposed to a case-by-case assessment file and review.
- **Improve compliance:** PDRA's are much simpler than a full blown operational safety case OSC. It would encourage pilots and operators to work within the system. This would particularly apply for PDRA's covering scenarios between the Open and Specific categories.

### **Overflight / safety mitigations when flying close to uninvolved people.**

A clear, unambiguous and adequate framework is now lacking since re-wording of the Specific Category PDRA01 end 2022. Flying a sub900g C1 drone over people, or a sub 4

kg C2 drone close to people in slow mode, are possible in the Open Category in Europe, but it is almost an OSC operation in the UK, which is disproportionate. Even in absence of class-marking, there should be an accessible regulatory framework targeted at the bulk of the market.

As a way to resolve this issue, we'd like to suggest that using:

- a drone with class-mark C1 (900g) or C2 (4kg) for the Open category under EASA rules,
- a drone that received RPAS Safety Assurance under Canada's Advanced operations framework

are acceptable risk mitigations in terms of overflight within similar boundaries, under the PDRA01.

## **5. The Atypical Air Environment (AAE) policy implementation, with recommended improvements as a stepping stone towards BVLOS. Status: Green.**

A consultation on Atypical Air Environment was held in April 2024, below are extracts of our formal response.

ARPAS-UK supports the introduction of the Atypical Air Environment policy, as an incremental step to facilitate BVLOS operations in lower risk environments, where no other aircraft is expected to be, for example just above assets that are inspected. These will already unlock a lot of economic value, and help the industry accumulate experience and flying hours in BVLOS. Our top recommendations are:

- The height, or the vertical and horizontal distance from the asset, the obstacle: we recommend expanding those distances, to 60 m in height, and 30 m horizontal distance. A number of asset owners request a minimum distance which is more than the current proposal, for Health and Safety reasons, or to avoid collision with their assets. 50m is often the reference minimum distance. Flying too close to an asset can be a hazard.
- Consent of private property owners: we'd recommend simply refer to case Law Bernstein vs Skyviews 1978.
- Evolution from a case by case review under an OSC approval to a generic SORA or a PDRA as soon as operational experience is accumulated, say within 12 months.
- Refer to locations or assets rather than use the word "route" which can be very restrictive for data capture.
- Electronic Conspicuity: we'd recommend expanding the means of EC beyond ADS-B 978 MHz.

Additional points identified since:

- Coordination with local flying clubs.

- The lack of an Ofcom licensing regime for EC Electronic Conspicuity requirements to Atypical Air Environment could undermine commercial application if not resolved.

## **6. Policing of illegal use of drones in the Open and in the Specific Categories. Status: Red**

Policing of illegal activity for UAVs in the Open Category and in the Specific Category is within the CAA's remit if we follow the 2026/17 MoU signed by the CAA and the Police. It means that airspace infringements are not a police matter unless clear criminal activity (not covered by the ANO) is being undertaken. The CAA is not equipped with teams on the ground to police those infringements. The Police forces may not be fully aware of the issues and have more important criminal activities to tackle.

In practice, rogue drone operators have little to fear. We are also concerned about operators conducting professional work without the right set of training and authorisations, providing poor quality data capture, dragging down the industry professionalism and image with end-user industries.

## **7. Flightworthiness approach on systems to enable more complex operations and engagement with peers in this area e.g. BMAA, BGA, LAA, LMA. Status: Amber.**

Flightworthiness is one of the CAA's 4 pillars to enable BVOS operations at scale. The status is amber because we have no visibility on the matter, or on RAE-F and UK-product SAIL mark.

Below are extracts of ARPAS-UK's responses to formal consultations on the matter.

Having manufacturing standards is key so that the safety argument relies not only on the remote pilot competency and the organisation's processes, but also on the system itself, so that more complex operations are enabled.

In terms of focus, our view is that the CAA should focus on manufacturers' standards in the Specific category and flight worthiness where the UK OEM base is most active, and where the GDP growth and societal benefits may be more tangible.

The drone industry is a global tech industry. The UK is a small market and international alignment will bring scale for UK manufacturers/industrial base. Therefore it is key to broadly align with international markets.

Additional note: we understand from manufacturers active in the UK and in Europe that the process of class-marking/product requirements raises issues, where few (3?) companies only have taken on the role of RAE-F, possibly because the business case/volume of business is challenging. It would be useful to collect that return of experience from Europe (vetting process on documentation vs actual flying hours without safety incidents,



competency of the vetting entity, pricing of that service to manufacturers, dealing with rapid product updates and product re-validation...).

## 8. Tiered Remote Pilot Competency levels with more practical training and UAS-relevant training. Status: Amber.

Remote Pilot Competency is one of the CAA's 4 pillars to enable BVOS operations at scale. There were 2 consultations on the matter, below is our response to the last consultation.

We welcome the idea of levels of remote pilot competency training, and the additional focus on practical training. Let's not forget that, at the end of the day, piloting is still a practical activity as opposed to a purely desk-based or paper-based activity. We advocate competency and high standards of professionalism. In the January 2024 Remote Pilot Competency RPC consultation, we made the following main comments:

- RPC Level 1:

There is little/no? difference in the privileges with the GVC. Therefore, it should just be acknowledged that it would eventually replace the GVC. RAEs will probably stop offering the GVC if/when RPC L1 is in force.

Having said that, it is essential that current GVC holders do not have to redo (and pay) for training to get a RPC Level 1. For example, it could be valid until the same revalidation period as RPC L1. It might be the rationale for the comments collected during the initial consultation that the GVC should remain in parallel to RPC L1 even though there is little difference between them.

RPC Level 1 should not enter into force on its own, it would be better if it enters into force with the RPC L2 Atypical for example, else the industry could consider it as regulatory changes and cost of compliance with no benefit (same privilege as GVC).

The levels are structured around incremental air risk, and does not mention ground risk. Yet, depending on the UK SORA version, the market could need training specific to reduced distances from uninvolved people, or flying in higher density areas, if it is not covered in RPC Level 1. There could be other training curriculum needs that deliver market value before considering the big jump to RPC L3, for example in the survey, inspection, search and rescue and mid-range delivery spaces if they are not adequately covered by L1 and/or L2.

- RPC Level 2:

The privilege is to fly in ARC-a, i.e. in Atypical Air Environment. You should specify "BVLOS" in ARC-a. It would make sense to review the training curriculum with the final AAE policy currently under consultation so that both go hand in hand.



- RPC Level 3

The privilege is to fly BVLOS in ARC-b.

Until the UK SORA is adopted, it can be premature to launch a training programme since we don't know what the actual regulatory framework will be. We don't know the requirements for sharing airspace (like the specifics of EC mandated or not, FIS provision requirements etc).

RPC L3 curriculum should respond to the question: what additional RP training is required to fly in non-segregated airspace ARC-b (vs L2 atypical) where there will be other airspace users? in BVLOS with a fully automated system, with different ways to identify and deal with abnormal situations (deep mechanical and technical engineering is probably of little use to the RP when dealing with an emergency situation), flying sub 120m, with different ways and technologies to perform Detect and Avoid.... and not assuming the RP is actually manually piloting, detecting with his/her own eyes and ears, flying at higher altitudes in the clouds etc.

These simple questions do not appear to be the driver in the curriculum described in Appendix B . Instead, it seems to be a copy-paste from a PPL documentation with a serious amount of completely irrelevant items, whereas the key questions do not appear to be well answered.

We recommend scrapping Appendix B for L3+ altogether, and start instead with a relevant basis. We are not aware of a BVLOS training programme by other aviation authorities, but there are internal training courses by RAEs, operators, and OEMs including for military / large platform OEMs. The BVLOS Sandbox participants likely have internal training programmes, or have a good view of what they expect from the RP. Why not leverage those as a starting point?

- RPC Level 4

What if the most important question becomes the RP competency to manage/oversee multiple fully-automated drones, with a high level of safety, considering in a 1:30 ratio – rather than IFR rules?

Are we sure we need a 4th level, and/or do we have a good view of what additional training would be required vs L3 at this stage? Do we need to define all levels at once? Maybe the most practical is to start by Atypical PRC L2 in conjunction with the AAE policy first, learn from it then move to the next level.

## 9. Airspace Integration: Mandated Electronic Conspicuity in select mandatory zones, for all airspace users. **Status: Amber.**

Airspace Integration is one of the CAA's 4 pillars to enable BVLOS operations at scale.

The CAA has set-up TRA (Temporary Reserved Area) sandboxes as a means for industry and the CAA to trial BVLOS flights using the Airspace Policy Concept, and the feedback we have from members is positive.

The status is Amber as Electronic Conspicuity is going through another round of WG and report as opposed to implementation of the EGIS report – although the recommendation is likely to be the same, i.e. ADS-B as the reference

technical standard. Also, some would argue that limiting EC to ADS-B only may be challenging for other airspace users, and a more nuanced Conspicuity Information Domain to support an industry wide concept so all air users are conspicuous could be preferable.

Finally, anyone having submitted an Airspace Change Proposal to access airspace for BVLOS flight trials will know how challenging and onerous it is.

## CAA workstreams, April 2024

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### CAA workstreams

**Mandate**

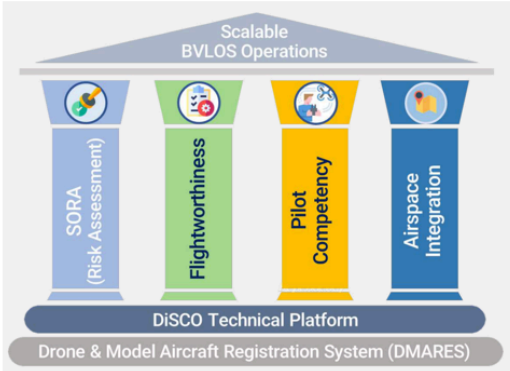
A regulatory framework is required to enable the sector to grow and enable the UK to benefit from the new technologies including RPAS. The CAA is being asked to develop that framework to enable the achievement of Specific category BVLOS in non-segregated airspace by 2024

**Programme Workstreams**

<b>1. BVLOS Integration Governance Structure</b> Documented governance of BVLOS Ecosystem for both internal and external stakeholders	<b>6. Scalable Operations</b> Ensuring the CAA processes and standards are such that BVLOS operations are scalable
<b>2. RPAS Road Map and engagement</b> BVLOS Roadmap – A roadmap to routine BVLOS in <u>non-segregated</u> airspace in the near medium and short term.	<b>7. Airspace Environment</b> How will airspace environments evolve to include routine BVLOS
<b>3. Flightworthiness of Aircraft</b> Defined standards, Industry Guidance and mechanisms to ensure the aircrafts robustness.	<b>8. Airspace Services</b> How will airspace services evolve to include routine BVLOS
<b>4. Pilot Competency</b> Defined standards, Industry guidance and mechanism pilot competency	<b>9. Cost and Charges</b> What will the charging model be for BVLOS operations
<b>5. Safe Operations</b> Clear definition for industry of the system wide approach to risk for BVLOS operations	



We aim to be an enabler of safe aviation innovation and to govern and guide the journey from good idea to sustainable operations



The diagram illustrates the 'Scalable BVLOS Operations' framework. It features a central structure with four pillars: SORA (Risk Assessment), Flightworthiness, Pilot Competency, and Airspace Integration. These pillars are supported by a 'DiSCO Technical Platform' and a 'Drone & Model Aircraft Registration System (DMARES)' at the base.

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## Response in official consultation on Remote ID

Below is ARPAS-UK's response on Remote-ID as part of a consultation in 2023.

We agree with the proposal and the principle of a digital license plate, however Remote ID is so contentious that it would require a dedicated consultation. Again, collecting return of experience from other jurisdictions would help clear or better address some of the issues raised by the community

There are many critics of Remote ID, especially that It can easily be circumvented by those who are targeted. People with malicious Intent will find ways to hack it or get around it. Questions are raised on the quality of the dataset used to justify the security and infringements issues. There is certainly no consensus among our members that it will be useful, and a concern that the industry will indirectly pay for an unnecessary programme.

Having said that, as an organisation, we support the principle of Remote ID for the following reasons:

- We understand that it has become compulsory in the USA in September 2023, and January 2024 In Europe, therefore drones will be equipped with It anyway
- It serves social acceptance, supports security operations around CNI sites
- It will enable more effective policing

A key question is Funding. The Remote ID functionality will be embedded in many drones already since it is becoming mandatory in the USA and Europe, and the retrofit add-on are not very expensive. However, the IS system itself may be onerous, especially considering the huge amount of data collected and stored. It is a security requirement, will it be funded by the Home Office?

If that is the case, Remote ID raises the important Issue of GDPR, Data Security, who has access to what data, and the implications in terms of Just Culture.

- Remote ID Data Security in a Just Culture

The International Civil Aviation Organization (ICAO) emphasises the importance of protecting sensitive safety data and maintaining the separation between judicial processes and safety investigations in aviation. This principle is outlined in Annex 13 to the Chicago Convention, which deals with Aircraft Accident and Incident Investigation.

Key Points from ICAO Annex 13:

Protection of Safety Data: Annex 13 stipulates the need to protect safety data, such as cockpit voice recordings and flight data recorder information, to ensure that they are used solely for safety investigation purposes and not for apportioning blame or liability.

Separation of Judicial and Safety Investigation Processes: The Annex underscores the importance of ensuring that the processes of judicial and regulatory actions are separate from the safety investigation. This separation is crucial to ensure that safety investigations focus on understanding the causes of an incident to improve future safety, rather than on assigning fault or liability.

**Confidentiality and Non-Disclosure:** The Annex mandates the confidentiality of certain types of safety information to encourage candid reporting and cooperation from flight crew and other personnel. It restricts the use of this information in judicial or disciplinary proceedings, except under specific, tightly controlled circumstances.

**Just Culture Principle:** Implicit in these guidelines is the promotion of a 'just culture,' which encourages reporting and transparency in safety matters without fear of punitive actions, except in cases of gross negligence or willful violations.

The principles laid out in ICAO Annex 13 are integral to fostering a culture of safety in aviation worldwide. They ensure that safety investigations are conducted in a manner that prioritizes learning and improvement in aviation safety, free from the influence of legal or disciplinary actions. Exactly the same principles must be applied to the RPAS environment.

#### – Remote ID and Data Security Concerns

The implementation of Remote ID in unmanned aircraft systems (UAS) is a significant step towards enhancing airspace security and accountability.

However, it raises critical concerns about data security. As Remote ID systems transmit sensitive information, including the operator's identity, location, and flight details, robust safeguards must be established to protect this data from unauthorised access or misuse. This is crucial to maintain operator

privacy and prevent potential exploitation of data for purposes other than safety and security. Ensuring the integrity and confidentiality of the information collected via Remote ID is paramount, particularly in light of increasing cyber threats and the vulnerability of wireless communication networks.

#### – Separation Between Judiciary and Investigation

Furthermore, in the context of UAS regulation and enforcement as in manned aviation, it's essential to maintain a clear separation between judicial processes and safety investigations. This separation ensures that investigations into UAS incidents are conducted with the primary objective of improving

safety and understanding the root causes, rather than attributing blame or liability. Such a distinction is vital for fostering a just and fair culture in the aviation sector, encouraging open reporting and cooperation from UAS operators. It also prevents potential conflicts of interest and ensures that judicial proceedings, if any, are based on impartial and independently gathered evidence, thereby upholding the principles of justice and due process.

In conclusion, as the UK moves forward with the implementation of Remote ID for UAS, careful consideration must be given to data security measures and the preservation of a clear demarcation between judicial proceedings and safety investigations. This approach



will not only protect the interests of UAS operators but also enhance the overall efficacy and integrity of aviation safety regulations.

\*\*\*\*\* The end \*\*\*\*\*