Military Aviation Authority
MAA

MAA Flyer

Issue 1 - Nov 15

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Desert Hawk 3

INTRODUCTION OF RPAS REGULATION

On 19 January 2015 the UK Military Aviation Authority (MAA) concluded a 15 month, end-to-end review of Remotely Piloted Air System (RPAS) regulations with the introduction of a bespoke Regulatory Framework. This marked a significant milestone for the MAA as it not only formalised RPAS regulation as distinct from manned aircraft, but also streamlined the process by which RPAS are introduced into Defence.

RPAS have been a feature of military aviation since World War I and their regulation, where appropriate, had essentially been an adaptation of regulations for manned aircraft. Whilst these were adequate for a small inventory in a predominantly test environment, the increasing employment of RPAS and proliferation of small air vehicles highlighted the need to review the application of regulations to RPAS. Specifically, legacy regulations did not adequately reflect the risk to life (RtL) that smaller RPAS posed, their often unique modes of operation and even their means of procurement compared to manned platforms.

In September 2013, in recognition of the need to develop a more proportionate and effective regulatory regime for RPAS, the MAA formed a Multi-Disciplinary Team (MDT) to conduct an end-to-end review of RPAS regulations and to make recommendations for a more appropriate regulatory regime.

Key stakeholders were invited to establish 'tiger team' panels to deep-dive into key areas of regulation and the wider RPAS community was invited to comment on early drafts prior to official release for wider consultation. This highly consultative approach, whilst novel, was entirely appropriate for the task and ensured an efficient and effective drafting and review process. Furthermore, dialogue with the Civil Aviation Authority (CAA) and other NATO regulators ensured alignment and proportionality with emerging global regulatory sets.

All RPAS destined for use in the UK Defence Air Environment, regardless of size, must be presented to the MAA for categorisation. Within the newly established MAA system 6 classes of RPAS have been established, each of which determines the regulatory regime that must be complied with, from light touch for Class I(a) to full compliance with the MAA Regulatory Publications (MRP) for classes II and III.

Whilst Maximum Take off Weight (MTOW) is used as the starting point for MAA RPAS categorisation, it is the intended use and operation of the RPAS that is considered to be a potentially more significant factor in understanding the 2nd and 3rd party RtL. By taking into account aggravating or mitigating factors in the employment of an RPAS it is possible for an RPAS to move up or down the categories into one with a more appropriate regulatory regime regardless of MTOW. Whilst specific examples cannot be given, the intent of the categorisation system is to ensure that an unduly complex regulatory regime is not imposed on an RPAS by virtue of its MTOW. Conversely, it may be considered appropriate to subject a small RPAS to a more demanding regulatory regime if its activity is assessed to increase the RtL.

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AVM Paul Atherton
Director MAA

NOTE FROM THE DIRECTOR

Welcome to the first issue of the MAA Flyer.

The aim of this quarterly publication is to continue to develop the engagement between the MAA and the Regulated Community, and to share with all personnel within the Defence Air Environment (DAE) those work strands that are currently focussing the MAA's attention. Hopefully, this will provide you with a greater understanding of us as the Regulator, what we do and highlight developments in the wider DAE; this will then allow you greater awareness of opportunities that may exist for you to either share outputs from or influence future regulatory activity.

During my 3 year tenure in the MAA I have seen the organization mature immensely, but more importantly develop its relationships with the Regulated Community, both Service and Industry. We are now perceived as an Authority that is approachable and which adds value. I handover to RAdm Chivers in early December and am sure that the MAA will maintain its utility and relevance and continue to develop under the new Director.

Yours,

AVM Paul Atherton
Director MAA

RPAS continued

The MRP does not apply to the use of RPAS on military property by individuals or organizations which would be considered private, sport or recreation such as model aircraft flying clubs. That said, it still remains the responsibility of the RPAS operator to ensure that they meet any restrictions imposed at the operating location by the Head of Establishment as well as to review and comply with CAA RPAS regulations.

The scope of the MDT was to conduct a review of current RPAS regulations; it was recognised however that this would necessarily be only the first step on a longer journey as the use of RPAS continues to evolve. In particular, the proliferation of small RPAS such as Quadcopters procured at unit level for specific tasks such as surveying exercise areas or aerial photography was identified as an area for future consideration. The MAA has initiated further work strands to ensure that RPAS regulations address the needs of the Regulated Community.

It is anticipated that the introduction of these new, proportionate and pragmatic regulations will stimulate greater engagement with the MAA and enhance awareness of regulations across the whole RPAS community of operators. A much clearer regulatory regime has established the foundations for the next generation of RPAS in the Defence Air Environment and will help unlock the vast potential of this critical capability in the future.

Black Hornet Nano Helicopter

For further information on RPAS Regulations, visit **www.gov.uk/maa**

ASIMS V3 DEVELOPMENT UPDATE

ASIMS v3 development continues apace with a prototype having been delivered to the Knowledge Exploitation Team on 21 Sep 15 for initial MAA configuration (Beta) testing. The update aims to improve the DASOR data capture and to align the ASIMS tool with the Bowtie methodology. This will allow the Defence Aviation Community (DAC) to exploit ASIMS data more effectively.

It is anticipated that a version hosted on a stand-alone "test server" will be made available to the DAC in late November for initial familiarisation; there are 2 briefing sessions planned for early December, prior to live roll out during Dec 15. Further details once confirmed will be released via the ASIMS website.

ASIMS Statistics Application

A significant update to the ASIMS Statistics application has also been released, providing easy access to ASIMS data charts without the need for an ASIMS logon. The data can be manipulated according to Service, Station and Aircraft Type as needed, and is found through the following link: ASIMS Stats (this link is only available via Dii).

ASIMS v3 features include:

- A new taxonomy to provide greater clarity between an occurrence Outcome (the What) and Causal Factors (the Why) and to allow better compatibility with the Bowtie methodology.
- Incorporation of the Military Aircraft Register to allow auto-population of reporting fields.
- Introduction of #Tags to provide a better search function.
- Enhance the Occurrence Manager's (OM) functionality to assist OMs in their management of DASORs.
- Enhanced Findings section functionality to incorporate the new taxonomy and mandate the selection of an Outcome, Cause (where appropriate) and at least one Causal Factor.
- Improved Recommendation Management functionality.
- Introduction of new additional forms for Laser/HP Light Illumination, Human Fatigue and Lightning Strike.
- Incorporation of a new online training package.

FOCUS ON - MAA STRATEGY

MAA Strategy 2015 – 2020

The MAA Strategy document sets out the MAA's Vision and Mission for the next 5 years and breaks these down into 5 Strategic Outcomes and the Key Conditions needed to achieve success. The Vision is necessarily aspirational, and one that the MAA may never achieve, but it serves to drive continual improvement in the delivery of its Mission.

The Director Military Aviation Authority comments on the 2015 - 2020 MAA Strategy.

"The Military Aviation Authority (MAA) was established on 1 April 2010 in response to the recommendations made in the Haddon-Cave Review. Part of the Defence Safety Authority (DSA), the MAA is responsible for the regulation and assurance of the Defence Air Environment (DAE). It assures the safe design, maintenance and use of military Air Systems and their supporting infrastructure including all Air Traffic Management equipment.

Through independent audit and surveillance of the DAE, the MAA aims to provide the Secretary of State for Defence, through the DG DSA, the necessary assurance that appropriate standards of Air Safety are being maintained.

My strategy for the next 5 years has been compiled during the transition of the MAA into the DSA organization. As such, I will revise this document in 2016 when the Full Operating Capability (FOC) of DSA has been achieved."

The MAA Strategy document can be found on our website via this link.

REGULATION UPDATE

- **MAP-01 –** MAA/RN/2015/11 was released on 2 Sep 15 to inform the Regulated Community (RC) of the on-going review of MAP-01, potential for changes to the RA4000 series and draw the RC's attention to the mechanism for engaging with the MAA's Continuing Airworthiness Regulation Team during this period.

- **RA4900 Series -** The first major review of the CAMO regulations was released as a NAA on 14 Sep 15. The review addressed numerous RFCs, lessons learned from Oversight & Approvals during CAMO approval and – most significantly – the extension of the requirement to form military CAMOs supporting approved Contractor Flying organizations, which are required to nominate Mil CAMs.

- **RA1026 -** The first major review of RA1026 Aerodrome Operator is about to take place. Reg ATM will conduct a full review including the requirements laid down in the Defence Aerodrome Manual (DAM) and Defence Aerodrome Assurance Framework (DAAF). We would encourage the RC to engage fully in this review when it goes to NPA later this year.

- **RA1390 -** A new regulation, RA1390, titled 'Reduced Vertical Separation Minima (RVSM)' is due for imminent release. Following MAA analysis it was determined that RVSM equipment and operation needed regulation, and thus a new regulation, RA1390, has been constructed. The RA has successfully undergone internal MAA development and was reviewed by the regulated community under NPA. The regulation has been written together with MAA SMEs, particularly ATM who developed the military requirement against global constraints, and wider stakeholders including Defence Airspace and Air Traffic Management, and Defence Equipment and Support.

CERTIFICATION UPDATE

Air System Certification

- As described in the leading article, categorization panels are now underway for RPAS. The Desert Hawk 3, Voodoo, Banshee and Mirach boards have sat and agreed classifications for those systems.

Defence Standards

- The MAA has commenced full review of Defence Standard 00-970 (DS970), Design and airworthiness requirements for service aircraft. Initial work to define the task is underway and all interested parties are invited to contribute to the in-depth work which is expected to start in early 2016. Details are contained in Regulatory Notice 2015/13 on the MAA's website.
- Following the issue of DS970 Part 5, Large Aircraft; work is underway to review Part 3, Small Fixed Wing Aeroplanes. The review, which will align the Part 3 with EASA Certification Specification 23, is due to be completed by mid 2016.
- Regulation relating to Ship Air Release is being proposed and was available for comment on the MAA website under Notice of Proposed Amendment 15/19 which closed on 31 Oct. The regulation is aimed at providing a regulatory framework to permit MOD aircraft HM/MOD ships to operate together, including defining the interfaces between the associated organizations

Maritime

- A compliance assessment has been undertaken of the new build Off Shore Patrol Vessel design.
- QE Class compartment inspection is due to commence imminently as part of a staged certification process to support Contract Sea Trials due at the end of 2016.

APPROVALS UPDATE

Design Approved Organization Scheme (DAOS)

- The number of Design approved organizations stands at 101, with the 100th approval granted to FLIR Systems Inc. on the 24 Aug 15.
- The first MAA approval for an organization to hold Design Privileges was issued to BAE Systems (Warton) for Typhoon.
- The DAOS Branch participated in the MAA review of the German, Italian and Spanish Authorities supporting Mutual Recognition of other regulators by the MAA.
- In response to the NPA for the introduction of the Type Airworthiness Engineering (TAE) 5000 Series Regulations, the DAOS Branch is developing a new audit Compliance Check List and a generic Design Organization Exposition template. Industry representatives will be invited to contribute to this work to share understanding of the implementation of the new regulation.
- RA1005 'Contract with Competent Organizations' has been re-issued, clarifying the requirement for approval activity where the MOD contracts a design organization through an intermediate organization such as a service provider.

Maintenance Approved Organization Scheme (MAOS)

MAOS currently comprises 43 approved organizations across 91 sites, including 3 organizations that have been approved via the MAOS Supplement route. A further 12 organizations have submitted applications to join the scheme. The disappointing trend in the number of CARs being raised as a direct result of the poor performance of Quality Management Systems (QMSs) continues.

Continuing Airworthiness Management Organization Scheme (CAMO)

The CAMO approval scheme comprises 47 organizations; of these, 32 have gained Sub Part G approval, with the remainder undergoing MAA assessment. A number of unapproved CAMOs have had some significant challenges to overcome, including: manpower resourcing levels within the Quality Manager role (resulting in an immature QMS) and in demonstrating adequate control of the continuing airworthiness tasks for MRCOA platforms. The CAMO regulations (RA 4900 series) have recently been revised following a NPA with the regulated community. From a CAMO Airworthiness Review (Sub-Part I) perspective, 27 approvals have been granted.

Contractor Flying Approved Organization Scheme (CFAOS)

The CFAOS transition is now complete, with all contracted flying organizations transferred to the scheme. The MAA CFAOS branch is to conduct a Learning From Experience (LFE) exercise with industry to gain feedback on the transition process, which will be used to inform future work across the MAA. The LFE forum will be hosted by BAES at Warton on 18 November 15, with a cross-section of CFAOS companies in attendance.

REVIEW OF THE 5000 SERIES REGULATORY ARTICLES AND INTEGRATION OF EUROPEAN MILITARY AIRWORTHINESS REQUIREMENTS (EMAR) 21

The Design and Modification Engineering (DME) Regulatory Articles (RA) 5000 Series (excluding the RA 5600 and 5700 series) have undergone a major review. In addition, the RA 5800 series has been introduced to integrate European Military Airworthiness Requirements (EMAR) 21 into the MAA Regulator Publications (MRP).

The Development of EMAR 21

The European Aviation Safety Agency (EASA) conducts common regulatory activity over civil aviation in Europe, assisted by National Aviation Authorities. Hitherto, there is no such common regulatory agreement between European National Military Aviation Authorities (NMAA).

In Nov 08 European Defence Ministers (including the UK) agreed to the formation of the Military Airworthiness Authorities (MAWA) Forum facilitated by the European Defence Agency (EDA), with the aim of harmonizing airworthiness arrangements across the participating Member States (pMS). A Basic Framework document was developed to support this work, which lays out the high level principles and introduces the concept of the EMARs. A number of Task Forces were created to develop these EMARs, most of which have now been published.

The starting point for the development of the EMARs was the relevant EASA civil regulations, which were adapted to account for the fundamental differences of the Military Air Environment.

The implementation of EMARs offers the prospect of providing a common framework against which NMAAs are able to benchmark airworthiness regulations and systems of other nations, whilst retaining sovereignty. The integration of EMAR 21 (and other EMARs) into the MRP will be advantageous to establishing Recognition with other NMAAs. There are significant benefits to be realised (in terms of time and cost savings) from a more co-ordinated framework for military airworthiness for multi-national programmes; activities (for example Type Certification) carried out to similar rules and processes will not have to be repeated in total by each nation operating the same type design.

It is important to note that the EMARs are only a Requirement and do not constitute Regulation. However, each pMS will need to declare whether their national Regulations meet or partially meet the Requirements of the EMARs. Notwithstanding the effort and education that will be necessary to transition the current RA 5000 Series to a format and content that reflects EMAR 21, there would be a potential long-term disadvantage if the UK retained legacy regulations while other European NMAAs (and civil aviation) moved forward with a more modern and universal style.

Proposed Regulations

The RA 5000 Series review forms part of the MAA's programme to review the whole of the MRP in addressing the accuracy, relevance and coherence of the extant RAs. The integration of EMAR 21 into the RA 5000 Series introduces the RA 5800 series, which has been structured in line with EMAR 21 Subpart designation.

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A400M "The City of Bristol"

LAUNCH OF THE DEFENCE ACCIDENT INVESTIGATION BRANCH

Defence Safety Authority

On 1 October 15 the Defence Accident Investigation Branch (Defence AIB) launched. The Defence AIB brings together the Land Accident Prevention and Investigation Team (LAIT), the Serious Equipment Failure Investigation Team (SEFIT) and the Military Air Accident Investigation Branch (MilAAIB) into a single accident investigation organization within Defence.

Following the formation of the Defence Safety Authority (DSA) on 1 April 2015 Director General DSA (DG DSA) became the primary Convening Authority for Service Inquiries pertaining to safety-related fatalities, serious injuries and major equipment failure or loss, with the LAIT, SEFIT and MilAAIB coming under his command. Under a newly appointed OF5 Head, reporting directly to DG DSA, the Defence AIB draws together these three established accident investigation teams into one organization, calling on Maritime investigators when required. This provides a consistent approach for accident investigation across Defence and improves efficiency through the rationalisation of existing capabilities. For further information, please see 2015DIN05-029 (this link is only available via DII).

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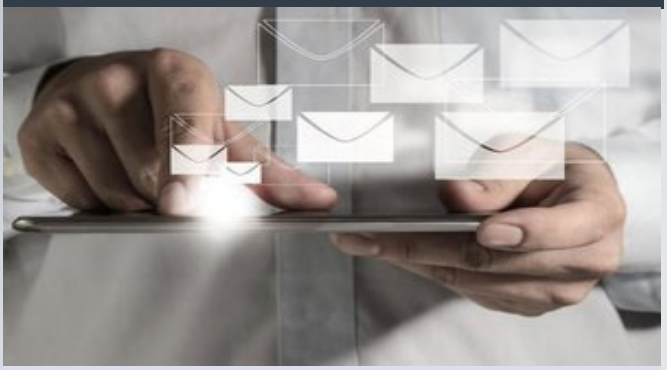

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The provision of these alerts does not remove the responsibility of the regulated community to make regular reference to the MRP (as detailed in MAA01), but provides a convenient tool to highlight changes as they occur.

Full details on how to use this function is contained within our email alert guide on our website – click here to sign up!

5000 Series continued

Any duplication between the new RA 5800 series and extant RAs (such as for Design Organization Approvals) has been eliminated by incorporation into the new RAs. Accordingly, EMAR 21, through the RA 5800 series, will become the new certification, design and modification baseline. Those extant RAs which are not duplicated and remain relevant (having been reviewed as described above) will be retained in the wider RA 5000 Series.

One major change from current regulation will be the ability for the Type Airworthiness Authority (TAA) to privilege industry to take additional responsibilities for the classification and self-approval of changes in type design, similar to that provided for in EASA Part 21. The TAA will be able to request the MAA assesses the Design Organization for privileges, to be included in the scope of approval, which will be subsequently enabled by the TAA.

Typhoon

The introduction of the RA 5800 series extends the scope of the RA 5000 Series to cover Certification of a military Air System presents an opportunity to emphasize the change in structure of the RA 5000 Series. To differentiate between the new and legacy documentation, the outcome of the review will see the RA 5000 Series retitled as 'Type Airworthiness Engineering (TAE)'.

FEEDBACK

The MAA Flyer welcomes your feedback. If you have any views on the content of this newsletter, or suggestions for future content, please contact us via DSA-Enquiries@mod.uk.

For enquiries relating to the MRP, please contact us via DSA-MAA-MRPEnquiries@mod.uk