

**Directorate of Airspace Policy**



# **Air Traffic Services Outside Controlled Airspace Review – Phase1 Report**

# AIR TRAFFIC SERVICES OUTSIDE CONTROLLED AIRSPACE REVIEW – END OF PHASE ONE REPORT

Reference:

A. STC/212/006/5/ATC dated 21 June 2001.

## 1. INTRODUCTION

- 1.1. Air Traffic Services Outside Controlled Airspace (ATSOCAS) are provided by many civil and military service providers. Policy for ATSOCCAS rests with the CAA and with regulatory authority remaining with CAA (SRG) and the MOD through either the Manual of Air Traffic Services Part 1<sup>1</sup> (MATS Pt 1) for civil service providers and the Joint Services Publication 552<sup>2</sup> for military service providers. More detailed guidance is provided in the civil and military AIP. Finer detail is provided in individual civil unit MATS Pt 2 and equivalent military documents (Gp Air Staff Orders, ASACS Orders and local Unit Order Books). Effectively, top-level policy is set by the CAA but may be modified by lower level documents where a local need is evident. However, this facilitates differences in service provision rules with resultant divergence of service provision standards. Additionally, ATSOCCAS has 'evolved' over many years and an appropriate understanding of the services available (and the associated advisory information or instructions that should be provided), together with pilot and controller responsibilities under the Scheme, is not consistently evident.
- 1.2. Concerns relating to ATSOCCAS provision have progressively increased in recent months. AAIB and Airprox incident reports frequently indicate either errors or a lack of understanding by both controllers and pilots. Feedback from CAA Safety Evening presentations where the audience largely consists of GA pilots, frequently contains reference to different service provision standards and control techniques, together with variations in the phraseology used. Feedback from CAA personnel presenting at these events consistently contains reference to the complexity and associated potential for misunderstanding the differences between RIS and FIS together with the lack of appreciation that RAS is an IFR service<sup>3</sup>. This IFR requirement is necessary in case a controller's advisory instruction necessitates flight in IMC. Recognizing these concerns, the CAA determined that a review of ATSOCCAS was necessary. Consequently an ATSOCCAS Review Steering Group (SG) and Working Group (WG) were formed, to work in parallel with 2 other groups which were considering Class G Activities and Class F Advisory Routes (ADR). Subsequently, the APC and SSC agreed that a CAA Outside Controlled Airspace SG (COCASG) should be formed to co-ordinate and oversee on behalf of the CAA, all policy initiatives that are required for aviation activities and air traffic service (ATS) provision within Class F and G airspace. The TOR for the ATSOCCAS WG were refined and reissued by the COCASG at their second meeting in July 2003. The ATSOCCAS 2002 WG TOR are at Annex A.

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<sup>1</sup> Executive editorial control of the MATS Pt 1 is the responsibility of the CAA (SRG).

<sup>2</sup> Executive editorial control of the JSP 552 (which replaced the JSP 318A) is delegated to HQ 3Gp ATC by MARG

<sup>3</sup> The IFR for flight outside controlled airspace are compliance with the minimum height rule and the Quadrantal Flight Level System.

## 2. AIM

- 2.1. The aim of this report is to establish the situation pertaining to the varying standards of ATSOCAS service provision, endeavour to identify reasons behind the situation and identify a suitable mechanism to deliver standardised ATSOCAS that meets the requirements of all airspace users.

## 3. PREVIOUS REVIEW

- 3.1. The previous ATSOCAS Review was concluded late in 1999 after over 5 years work. Conducted primarily from the service provider's perspective, complete policy agreement was not achieved. However, the primary service provision policy documents (MATS Pt 1 and JSP 552) were adjusted so that the meaning of the content was broadly the same. The civil and military AIP were subsequently amended to reflect the spirit of the 2 differently worded top-level policy documents. However, the alignment achieved under this review was relatively quickly eroded by a series of minor changes effected by the separate regulatory regimes, by local and, in some instances, unauthorised adaptation of the regulations, and by selective or limited service provision based on commercial perspectives or other external drivers.

## 4. POLICY DOCUMENTATION

- 4.1. As a first activity, the ATSOCAS WG undertook a detailed review of the 4 primary ATS policy documents:
- a. Civil Manual of Air Traffic Services Pt 1.
  - b. Military Joint Services Publication 552.
  - c. UK Civil Aeronautical Information Publication.
  - d. UK Military Aeronautical Information Publication.
- 4.2. The findings of this activity are at Annex B. It was established that there were 37 differences between the 4 documents. Three of these differences were considered by the WG to be major and these are discussed in more detail follows:
- 4.2.1. **Radar Vectors Whilst Under a RIS.** All 4 documents differ on the subject of the provision of vectors whilst providing a RIS. The UK AIP, Mil AIP and JSP 552 clearly state that the pilot remains responsible for terrain clearance. These documents then detail the requirement for ATSU to set parameters below which radar vectors will not be provided; the JSP 552 and Mil AIP then detail conditions under which this condition does not apply. The situation is further complicated by the fact that, under regulations stipulated in GASOs, ASACS units do not provide any radar service (RAS or RIS) below an "Area Safety Altitude". The MATS Pt 1 specifies that ATSU are to set parameters below which radar vectors will not be provided and then states that below these parameters, the pilot becomes responsible for his own terrain separation. Thus civil controllers are responsible for terrain separation for flight above the set parameters. By international agreement, civil ATS provision in the UK is based on ICAO principles unless a specific difference is filed and notified. These, primarily, focus on controlled airspace procedures, which, in this case, require a controller who vectors an aircraft to be responsible for the terrain clearance of that aircraft. No difference has been notified from this procedure. However, ICAO does not make provision for ATS in Class G airspace although in the UK such services are provided. Thus the ICAO precedent may not be the most appropriate option for air traffic services in Class G airspace,

although existing civil service provision reflects these policies which are then detailed in the MATS Pt 1. Conversely, military service provision is, primarily, focussed on the provision of ATS to aircraft operating in uncontrolled (or class G) airspace. Military service provision in controlled airspace broadly reflects civil regulations although there are some discrepancies. Regardless of the rationale and historical evolution of civil and military service provision, it is not acceptable to have policy divergence in such an important and potentially safety critical area. This aspect needs to be resolved as soon as is practicable.

- 4.2.2. **Request for Avoiding Action Whilst Under a RIS.** Uniquely, the MATS Pt 1 details that should a pilot in receipt of a RIS request avoiding action, then this request should be treated as a request for a change of radar service (e.g. upgrade to RAS). However, further guidance is given suggesting that such an upgrade is subject to controller workload and that where an upgrade is not possible, RIS should continue to be provided. This does have the potential to generate a scenario where a pilot requires a vector to ensure separation from a reported contact and which the pilot is unable to see (and is therefore unable to comply with the Rules of the Air) only to be told that such an upgrade is not possible. The problem is effectively caused because the pilot did not request an upgrade in ATS before flight conditions deteriorated or prevented visual acquisition.
- 4.2.3. **Procedural Service.** The JSP 552 and military AIP contain detailed guidance to the provision of a Procedural Service, the MATS Pt 1 and civil AIP do not. However, there is a fundamental difference between the civil and military approaches to service provision. From a civil perspective the whole of the MATS Pt 1 is guidance on 'procedural service' because this is the foundation stone of civil ATS provision. Military ATS provision is more closely aligned to the surveillance infrastructure employed (primarily radar) with a Procedural Service used for non-radar Approach Control at a few minor airfields and where individual radar contact identity cannot be easily maintained (e.g. TACAN holding patterns).

## 5. SERVICE PROVISION REGULATION

- 5.1. **Civil ATS Providers.** Civil ATS providers are regulated by the CAA Safety Regulation Group (SRG). Within SRG, the Air Traffic Services Standards Department (ATSSD) defines regulatory policy and sets requirements that are applied by 3 regional inspectorates for aerodrome operations and by a fourth for area control centre operations. Policies and requirements for the civil provision of ATSOCAS are published in the MATS Pt 1 and are interpreted and implemented at local unit level via the procedures contained in each air traffic service unit's (ATSU) MATS Pt 2. All civil ATS providers use civil ATCOs who have completed formal training courses at approved training centres. Controller competence at ATSU is ensured by a system of examination and continuing competence being assured by Local Competence Schemes (LCS) managed by local unit examiners. All unit examiners are trained and regularly tested by ATSSD. Each regional inspectorate has a number of inspectors who, as part of their duties, undertake the examination of civil ATCOs, examiners and audit the procedures used at ATSU.
- 5.2. **Civil Airfield ATSU.** Civil Airfield ATSUs provide ATSOCAS using their approach radar services, generally utilising capacity that is not required for the prime task of controlling traffic inbound to, and outbound from, the airfield. Evidence suggests that the interpretation of MATS Pt 1 procedures (as in the unit MATS Pt 2) varies from unit to unit, within each region and, indeed, across the regions. The level of service provided is subject to the constraints of airspace design, complexity and intensity of traffic, and the staffing provision at each ATSU. Particular concerns

result from the differing interpretations of separations required between traffic participating in a service and traffic not doing so, traffic requesting avoiding action when not receiving a radar advisory service, and the differing methodologies chosen by units to limit a service if a controller feels unable to offer a full service.

- 5.3. The 3 ATSSD regional inspectorates are aware of the above issues and, generally, maintain a consistent attitude to the interpretation of requirements, although unit specific differences often require discussion and agreement on resolution. All 3 inspectorates are of the opinion that the high level guidance contained in MATS Pt 1 requires increased consistency and clarification.
- 5.4. **Area Control Centre Units.** Area Control Centre Units (ACCU) are regulated by the ATSSD En-Route Regulation Section (ERR). ACC radar controllers provide ATSOCAS to traffic entering and leaving controlled airspace and the London Area Control Centre (LACC) provides a dedicated Flight Information Service (FIS) within the London FIR using Flight Information Service Officers (FISOs). In the case of the Scottish Oceanic Area Control Centre (ScOACC), controllers provide ATSOCAS throughout the Scottish FIR in Class F & G airspace. They routinely provide RAS and Air Traffic Advisory Service (non-radar) within Class F airspace (ADR), and RIS and/or FIS within Class F & G airspace. Within Class G airspace RAS is not routinely available to all flights, although it may be provided in some circumstances as detailed in the unit's MATS Pt 2. FISOs at ScOACC also provide FIS within a defined area of the Scottish FIR during the period 08-2000 hrs daily. Where FIS is provided at LACC or ScOACC, it is worth noting that there is a clear requirement<sup>4</sup> to provide warnings to pilots in receipt of this service where aircraft are, or may become, in dangerous proximity to each other. However, no guidance is provided to controllers as to what constitutes 'dangerous proximity' in this context.
- 5.5. As noted above for the Airfield ATSU, the services provided by ACCU suffer from some lack of consistency at the different units and differing interpretations of the service to be provided within the units' MATS Pt 2. Particular issues raising concern are limitation of a service to aircraft participating in a Radar Advisory Service, the constitution of FIS, as well as differences in procedures between application of services at ACCU and airfields.
- 5.6. Once again, the ATSSD ERR inspectors are aware of these issues and attempt to provide consistent (within the ACCU regime and with airfield units) guidance to the ATSU. They too believe that the MATS Pt 1 procedures and guidance on ATSOCAS requires clarification.
- 5.7. **Civil and Military Application of ATSOCAS.** The subject of ATSOCAS forms only a small part of the core civil controller training syllabus whilst it is a major element of military training. When it comes to the application of ATSOCAS, large differences exist between civil and military ATSUs, prime examples being the interpretations placed upon the provision of avoiding action under radar advisory service (RAS), and the reluctance of civil controllers to limit the service when circumstances dictate that they should. Much of the traffic using ATSOCAS utilises both civil and military services, and the differences in the two can lead to misinterpretation and confusion for pilots and controllers. It appears that there is little direct co-ordination on this subject between the civil and military service providers, or the relevant regulatory bodies, although the recent formation of a high level co-ordination SG, consisting of representatives from ATSSD and HQ STC (3 Gp), has provided the impetus to review and resolve issues such as this but much work remains to be done.

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<sup>4</sup> MATS Pt 1 Sect 4, Chapter 3, Page 2, Para 3.

5.8. One such issue that has been partially addressed during the period of Phase 1 of the ATSOCAS Review, relates to controller and pilot responsibilities for terrain separation. Following tragic Controlled Flight into Terrain (CFIT) incidents and the conclusion of subsequent legal processes, the CAA and MOD agreed that there was a need to bring the existing differing civil and military service provision standards into alignment with each other, and as far as practicable with the associated ICAO standard. Although some military service provision requirements for military aircraft operations would still exist, these should be able to be eliminated during the ATSOCAS WG's later work when due account of the ICAO standard can be effected as amended or replacement services are developed.

**5.9. MOD Service Providers.**

- 5.9.1. **RAF.** ATSOCAS are provided by controllers located at airfields and area radar units, Air Surveillance and Control System (ASACS), including Control and Reporting Centres, 1 ACC and AEW/AWACs platforms and air weapons ranges.
- a. **RAF Airfields.** ATS provision at RAF airfields is the responsibility of HQ 3 Gp (Gp Capt ATC). With the exception of the airfields at Barkston Heath, Wattisham, Woodvale, Wyton, Middle Wallop and Gibraltar where ATS are provided under contracted arrangements, all controllers are either permanent or reserve Service personnel who have successfully completed the Joint Air Traffic Control Course. Each airfield unit has at least one Local Examining Officer (LEO) who may examine individual controllers on an individual control task basis for competency on behalf of the permanently established ATCEB. All military ATCOs, including LEOs, are examined regularly by the ATCEB (i.a.w. GAI 1012 and JSP 552). LEOs are nominated by unit commanders and are appointed by the ATCEB after detailed examination in all control positions.
  - b. **RAF Area Radar Units.** The regulation of area radar units reflect the procedures used at RAF airfields. However, area radar services are not provided under contracted arrangements.
  - c. **Air Defence Units.** The provision of services by Weapons Controllers (WCs) at UK ASACS Ground Units is regulated by the HQ 3 Gp ASACS STANEVAL Team (AST), operating under the auspices of HQ STC (HQ 3 Gp, C2 Support Availability). All RAF WCs are either permanent or reserve service personnel who have successfully completed the RAF School of Fighter Control (SFC) Weapons Control Course (WCC). Exchange officers from other NATO Nations and the RN (who already have a formal control qualification from their own organizations) attend a 6-week 'UK Air Ops Foundation Course' at the SFC, followed by a period of consolidation training at their exchange unit. Thereafter, each individual is awarded operating endorsements by authorized Awards Examiners (AEs) as required. All WCs are examined within one year of qualification by the AST, and every 2 years thereafter."
  - d. **Air Weapons Ranges (Military Controllers).** The regulation of air weapons ranges reflect the procedures used at RAF airfields. Controller examination, including the award of endorsements, is implemented by the ATCEB.
  - e. **Nimrod MPA.** During SAR operations, when Nimrod MPA are operating as the On –Scene Search Commander, co-operating aircraft may be provided with a FIS for the purpose of supplying information useful for the safe and efficient conduct of flight

- 5.9.2. **RN.** The provision of ATSOCAS by RN personnel predominantly occurs at RN airfields and Plymouth Radar, as well as at the RN School of Fighter Control. Although the RAF HQ 3 Gp ATC Staff have Lead Command, Common-Service responsibility for ATS provision, all other aspects are the responsibility of FLEET (SO1 ATC & Ops Spt).
- a. **Naval Air Stations.** The provision of ATS at RN airfields is the responsibility of FLEET (SO1 ATC & Ops Spt). All controllers are either permanent or reserve Service personnel who have successfully completed the Joint Air Traffic Control Course. Each airfield unit has at least one Local Examining Officer (LEO) who may examine individual controllers for competency. All military ATCOs, including LEOs, are examined regularly by the RN ATC Examining Team who also approve LEOs after detailed examination in all control positions. The ATC examining team is formed under the auspices of Fleet War-AV SO1 ATC/ Ops Spt, who is also responsible for its policy, but its implementation is vested in SO2 ATC. To be appointed to that post the incumbent must have been a LEO in the preceding appointment; and would have undertaken formal training and assessment to achieve that endorsement. In addition, that individual would have previously been co-opted as a member of the examination team at units other than their own. However, there is no formal rationalisation of this transfer of responsibility where each new incumbent undergoes formal training and assessment. Neither is there any formal regulatory interface between the RN and RAF regulatory bodies although we are aware that embryonic discussions are taking place regarding the possible formation of a Joint Examining Board.
  - b. **RN Fighter Controller Training Unit.** RN Fighter Controller (FC) training is undertaken at RNAS Yeovilton. Here, ATS and fighter controller radar services are provided from a common operations room within the ATC tower. Controllers operate under a Local Area Certificate of Competency. This scheme, although unique to the RN, is effective, promoting safety and commonality in the services provided. However, during a visit to RNAS Yeovilton, it was discovered that RN FC personnel appointed to warships or to embarked Sea Harrier Squadrons are not supported by this Scheme. In these roles, regulation appears to be fragmented and lacking supporting documentation of the appropriate responsibilities and procedures to be utilised; joined-up regulation between MOD regulatory bodies is not readily evident.
  - c. **RN Tactical Helicopter Control.** Helicopter Tactical Controllers undertake professional training at the RN School of Aircraft Control at RNAS Yeovilton using simulation trainers. After completion of professional training, controllers provide ATSOCAS to helicopters in the tactical environment and undergo regular checks by FOST staff when at sea or by RNASC staff when at Yeovilton. ASAC and ASW Observers also provide Tactical Helicopter Control. It was not possible to identify formal and joined-up regulatory approaches in either discipline.
- 5.9.3. **Army.** The provision of ATS at Army units is the responsibility of the RAF on a Lead-Service basis under the same arrangements as those for RAF-operated airfields. Whilst one unit is staffed by military ATCOs, the majority have contracted civilian control staff. Military ATCOs are examined in the same manner as those employed at RAF military-staffed airfields. Contracted civil ATCOs are examined in the same manner as Contracted Service Providers.

- 5.9.4. **Contracted Service Providers.** Where military ATS are provided by commercial companies under contract arrangements and approval from ATSSD, unit licence endorsement examinations are usually conducted jointly by the relevant Regional SRG Inspectorate and, where available, a local unit examiner with a member of the RAF ATCEB in attendance. These units may also participate in the LCS system and the ATCEB is often invited to participate in the annual inspection/ audit of the system. However, the joint testing is not always possible and, as neither authority can possess a complete and detailed understanding of the other organisation's rationale, operational focus and task requirements, the possibility exists that some examinations may not be fully effective in promoting optimal standardised service provision.
- 5.9.5. **DPA.** ATSOCAS provided by MOD (DPA) agencies are the responsibility of D Flying ATC. Services at Boscombe Down are provided by RAF controllers who are regulated under the military Air Traffic Control Examining Scheme with additional input from D Flying ATC. The remainder of the DPA sites are staffed by civil ATCOs who are regulated in much the same manner as Contracted Service Providers.
- 5.9.6. **NATO AWACS Providers.** Under the working arrangements set out in the NATS/MOD Interface Document No 8 (Reference A), UK and foreign NATO AEW WC may provide elements of ATSOCAS in Class F and G airspace, MTA/MTRA and segregated airspace. These WCs effectively operate under the auspices of the UK MOD and ANO Article 126 (2). UK and UK-based foreign controllers are familiar with both UK airspace arrangements and ATSOCAS through exposure during professional training and/or operational duties; furthermore, these controllers are subject to an operating endorsement scheme regulated by the UK MOD. Foreign AEW WCs do not possess the same familiarity with UK airspace and, normally, have little detailed experience of ATSOCAS provision. More importantly, although operating within standards and procedures described in STANAG 1183 and Interface Document No 8 (a Mod/NATS MoU) foreign AEW WCs are not checked by a qualified National authority before providing services in UK airspace. Additionally, AEW WC currency requirements are less stringent than those specified for UK ground-station WC controllers. The currency requirement is for AEW WCs to control a minimum of 80 events within a rolling 6-month period; however, the 80 events do not have to be conducted in UK airspace. Consequently, it is evident that services provided by foreign AEW WCs are not appropriately regulated by an appropriate MOD or other National agency. As a result, familiarity with UK airspace regulations and currency in ATSOCAS provision is often degraded below the ideal level or may be virtually non-existent.
- 5.10. As part of this Review, the WG arranged a seminar that was attended by current examiners from the RAF ATCEB, RN and SRG Regional Inspectors. The approach adopted was to discuss a number of pre-determined scenarios that a controller under examination could be expected to resolve. The views of the individual inspectors/examiners were recorded and, subsequently, analysed; the results are detailed at Annex D. In general, the views of the examiners and inspectors were broadly consistent but some anomalies were identified that need to be addressed in later phases of work. These issues include:
- A requirement for guidance as to when to provide collision warning whilst providing FIS.
  - The clarification of controller responsibilities for flight close to obstacles (e.g. masts).
  - The viability of the military 're-route' option when providing a RAS and approaching an area of multiple conflicts.

- The extension of Mode C vertical separation dispensation to civil ATCOs. This military dispensation relates to the non-provision of avoiding action to aircraft at or above FL 100 where the Mode C of potential conflicting aircraft indicates it to below FL 70.
- The need to review the continued requirement for retention of RN-unique 'Terminal Control'.
- The clarification of controller actions when handling traffic leaving controlled airspace where conflicts are evident immediately adjacent to the exit point.
- The standardisation of controller actions where a pilot omits to specify the type of service required.
- The lack of guidance in MATS Pt 1 relating to co-ordination between ATCU, particularly where one aircraft pilot is in receipt of a RIS.

## 6. NEXT STEPS

- 6.1. Once the COCASG has accepted this report, NATS and MOD, as the National primary service providers, should be afforded an opportunity to comment. Thereafter, following incorporation of any essential changes or correction of any unintentional inaccuracies, the Report should be circulated to all areas of the aviation community in order to facilitate and encourage participation in the next phase of the Review. It is of paramount importance that modification to the ATSOCAS Scheme is founded on the airspace users or pilots' requirements; examination of file records indicates that this was not effectively achieved during the last review which appears to have been ATS-provider driven. A firm Statement of Requirement should then be produced to enable service providers to be consulted on how best to meet the need of all ATSOCAS users. Thereafter, future work is difficult to predict but an outline plan, which has been endorsed by the CAOCASG, is at Annex E for guidance. It should be noted that estimated dates for subsequent phases of work are included but that these represent best estimates at the conclusion of Phase 1 and will need to be adjusted as work progresses and the scope and size of the task becomes evident. Experience gained during Phase 1 proved that the original challenging target dates were optimistic and unachievable. Finally, the ATSOCAS WG should be expanded to include airspace user and, later, service provider representation.

## 7. AREAS OF CONCERN

- 7.1. During ATSOCAS WG discussions and work in support of this report, a number of areas of concern were identified:
- e. **Lack of Policy Liaison Between Service Provision Regulatory Bodies.** Although it was apparent that, in some instances, examinations were conducted jointly, this is not always the case. Liaison, both between civil and military authorities and between individual civil or military inspectorates, on service provision standards or techniques is inadequate.
  - f. **NATO AWACS Policy Documentation.** The NATS/MOD Interface Document which details the procedures for AEW aircraft operations in UK airspace superseded the original JOI 1/98. JOI 1/98 originated when DAP was part of NATS, prior to the first step of the NATS privatisation process. Effectively, an agreement between MOD and NATS facilitates AEW operations within UK airspace without the Airspace Regulator (DAP) having input to the interface document or the opportunity to apply regulatory sanction if required.

- g. **Policy Interpretation – Lower Level Documents.** ATSOCAS policy as set by the CAA is frequently modified, adapted or constrained by both civil and military lower-level documents. These modifications, although apparently well intentioned, distort the overall consistency in service provision that is required to ensure that pilots and controllers understand their responsibilities and what is required of them.
- h. **Lack of Commonality in Military ATS Used Outside CAS.** Although HQ STC (3 Gp) exercises Lead Command, Common-Service responsibility for military ATS on behalf of MOD (CAS), the RN uses a properly documented (within JSP 552) unique ATS (Terminal Control) which is not used by any other military ATCUs that operate similar tasks in the same uncontrolled airspace environment. During WG discussion and visits, it was not possible to identify any current justification (other than training for embarked operations outside of the UK) for retention of this service when appropriate weight is given to the HMG commitment for sustaining the UK's Joint and Integrated ATS provision and that civil and military aircraft freely interact in the uncontrolled airspace environment. Service provision is regulated by SO1 ATC/Ops Spt through his SO2. Policy is formulated at this level but endorsed via an SO2 ATC specialist by Captain Naval Aviation Policy. Normal consultation procedure is adopted to enable eventual incorporation within the appropriate single service document or JSP 552. .
- i. **North Sea Helicopter Advisory Services.** ATSOCAS provided to North Sea Helicopter operators have evolved away from the top-level policy standards in order to meet a specific need within a relatively unique operating environment. It is evident that the users are content with the modified services and that the controllers and pilots understand their responsibilities. However, the current situation does not appear to have formal CAA-wide endorsement, especially approval for the modification of ATSOCAS standards; this could be easily regularized through the issue of a formal policy dispensation.
- j. **Service Provision Responsibilities.** Within UK airspace, the primary responsibility for off-route service provision varies between the London and Scottish FIR. In the London FIR, MOD units are the primary service providers for off-route services and NATS provides the en-route services. There are some exceptions to this, namely those civil airports that participate in the LARS system or do not have connectivity to the air route system. However, within the Scottish FIR off-route area, both MOD and civil ATSU provide ATSOCAS within Class F and G airspace although NATS routinely proscribes the provision of RAS outside controlled airspace, other than on the advisory routes. There does not seem to be any logic behind the variances in these FIR arrangements relating to service provision responsibility. Furthermore, NATS provides non-radar services on portions of the ADR in airspace intensively used by military fast-jet ac. There is evidence to suggest that some commercial operators are not aware of the full implications of not receiving a radar-based service and this situation needs to be considered and addressed by the CAA ADR WG.
- k. **Prohibition of RAS Provision.** ScOACC and Pennine Radar are both NATS units that proscribe the provision of RAS within Class G airspace under specified circumstances. Little justification for this prohibition of RAS could be identified, other than an attempt to limit commercial liability, or as a perceived safety measure to resolve a shortage of resources due to commercial

considerations. All ATSOCAS services should be available in such airspace, especially where the user is a public transport commercial operator.

## **8. SUMMARY**

- 8.1. In view of the numerous policy differences and variations in the interpretation of service provision requirements by examining bodies (controller examination/standardisation), together with inadequate formal liaison between ATSOCAS regulatory bodies, it is not difficult to identify why service provision standards vary considerably from unit to unit. Consequently, it appears that doubt may exist for both pilots and controllers regarding individual responsibilities or of the differences between services available. In order to resolve long-established, but somewhat outdated, preconceptions, it may be necessary to develop replacement services for RAS and RIS and dispense with the existing names and acronyms. A new ATSOCAS Scheme, based, primarily, on the users' requirements, should be developed, simulated and tested under controlled conditions. This would have the advantage of delivering revised ATSOCAS that meet the needs of the aviation community and are within the ability of all service providers to deliver to a common standard. An outline plan of the anticipated steps to achieve this is at Annex E; however the timescales indicated are provisional as the true size of the task cannot be established at this stage. In order to prevent future divergence between policy documents, ATSOCAS should be governed by a single CAA-controlled policy document that provides the regulations, conditions, phraseology, pilot and controller responsibilities and guidance on service provision techniques. Deviation from ATSOCAS policy would only be authorized through the issue of a formal dispensation. Finally, the CAA will need to ensure that service providers do not modify the replacement services or provide them selectively due to commercial imperatives. There are existing mechanisms that could be utilized to achieve this provided an effective CAA-MOD regulatory regime was established.

## **9. RECOMMENDATIONS**

- 9.1. It is recommended that:
- a. The COCASG accept this report.
  - b. The COCASG authorize the ATSOCAS WG to initiate Phase 2 of the Review process (as defined at Annex E).
  - c. The COCASG should ensure that the revised interim policy on controller and pilot responsibilities for safe terrain separation (as detailed at Annex C) should be implemented as soon as practicable.
  - d. The MOD should initiate an independent safety review of embarked and airborne service provision outside segregated airspace. Upon conclusion of this review a revised operating agreement should be negotiated to the satisfaction of the CAA.
  - e. The CAA and the MOD should ensure commonality within their inspectorate and policy regulatory bodies.
  - f. The CAA should address the differences in off-route service provision responsibilities between the London and Scottish FIR, including the unavailability of RAS from ScOACC and Pennine Radar.

- g. The MOD, in conjunction with the CAA, should review the regulatory arrangements for MOD contracted service providers to ensure that they are both effective and promote common standards.
- h. The MOD should ensure that a common set of air traffic services are utilised throughout the uncontrolled airspace environment.
- i. The CAA and MOD should establish and maintain an effective formal standards interface between their regulatory bodies.
- j. The MOD should consider establishing a common inspectorate for all military radar service provision.
- k. The MOD should review the situation pertaining to RN Sea King operating regulations to eradicate unnecessary material and operating anomalies.
- l. The CAA ADR WG should take note of this report and consider what type of service is appropriate for GAT/CAT operating along the UK ADR.
- m. The COCASG should direct the ATSOCAS WG to ensure that all the minor points of service provision (as detailed at paragraph 15 of this report) are addressed and resolved during the later stages of the Review.
- n. There should be a single CAA-MOD ATSOCAS Policy Document that provides the regulations, conditions, phraseology, pilot and controller responsibilities (including those pertaining to terrain separation) and guidance on service provision techniques.
- o. Policy Dispensations should be required before service providers are allowed to diverge from the Policy Document.
- p. The North Sea Helicopter Advisory Service should be formally regularized through a policy dispensation at the same time as the single CAA-MOD ATSOCAS Policy Document is issued.

**Annexes:**

- A. ATSOCAS 2002 WG TOR.
- B. ATSOCAS Rules – Highlighting Differences in Policy Documents.
- C. ATSOCAS WG – Service Provision Regulation Issues.
- D. ATSOCAS Review Process Plan.

**TERMS OF REFERENCE FOR A CAA AIR TRAFFIC SERVICES OUTSIDE  
CONTROLLED AIRSPACE (ATSOCAS) REVIEW WORKING GROUP**

**1. INTRODUCTION**

- 1.1. In 1995, following a review of ATSOCAS, the CAA established a common standard of air traffic services provision by civil and military Air Traffic Service Providers (ATSPs) outside of Controlled Airspace. In recent years, there has been a divergence in the manner in which civil and military ATSPs apply ATSOCAS. Although DAP holds the policy lead for ATSOCAS, there are a variety of internal and external stakeholders who must be consulted. Internally, these include ATSSD, FOD, GAD. Externally, civil and military Air Traffic Service Providers (ATSPs) and all users of Class G airspace should be afforded an input.

**2. Aim**

- 2.1. Review current ATSOCAS provision and produce a draft report with options and recommendations for consideration by the ATSOCAS Steering Group (SG).

**3. Terms of Reference**

- 3.1. The CAA ATSOCAS WG is to:
- a. Produce an outline project plan for completing the study, including timelines and internal resource requirements.
  - b. Review the scope and definition of ATSOCAS.
  - c. Review the types of air traffic service currently available under ATSOCAS.
  - d. Identify variations in the way that controllers interpret and apply ATSOCAS.
  - e. Establish a list of external stakeholders (civil and military air traffic service providers and Class G airspace users).
  - f. Propose a process for ascertaining the views of external stakeholders.
  - g. Review the criteria to be applied for each type of ATSOCAS service and, if necessary, develop options and recommendations for change.
  - h. Review procedures for the provision of, and responsibility for, terrain warnings under ATSOCAS, including phraseology employed, and make recommendations for common procedures.
  - i. Develop guidelines for ATS providers that outline/define their responsibilities regarding the provision of ATSOCAS.

- j. Review the compliance monitoring process for military and civil ATS Regulators.
  - Consider how to increase the awareness of Class G airspace users of the aim and application of ATSOCAS.
  - Consider how to promulgate ATSOCAS policy.

#### **4. Composition of CAA ATSOCAS WG**

- 4.1. Whilst recognising the need to consult with a number of external stakeholders during the course of the ATSOCAS Study, the first step is to establish an agreed CAA viewpoint on ATSOCAS issues. Consequently, the CAA ATSOCAS WG will comprise representatives from GAD, FOD, ATSSD, DAP, SIDD and ASD. As the nominated JIG lead element for ATSOCAS issues, DAP will co-ordinate the process and Chair the ATSOCAS WG.

#### **5. Timescales & Deliverables**

- 5.1. Due to the range and variety of ATSOCAS stakeholders, reaching common agreement will require consultation and negotiation over a considerable period. The first aim of the CAA ATSOCAS WG is to produce a draft report that addresses the shortcomings of the current ATSOCAS system and provides options and recommendations for improvement. This draft report will be presented to the ATSOCAS SG for endorsement by late Jan 05 prior to being released for external stakeholder consultation.

## ATSOCAS RULES – HIGHLIGHTING DIFFERENCES IN POLICY DOCUMENTS

### Legend

	RAS
	RIS
	FIS
	Procedural Service

Blue	denotes differences in text
Red	denotes additional text

	Mil AIP	JSP 552	MATS Part 1	UK AIP
<b>RAS</b>	<p><b>1-6-1-3</b> RAS is an air traffic radar service in which the controller will provide advice necessary to maintain prescribed separation between aircraft participating in the advisory service, and in which he will pass to the pilot the bearing, distance and, if known, level of conflicting non-participating traffic, together with advice on action necessary to resolve the confliction. Where time does not permit this procedure to be adopted, the controller will pass advice on avoiding action followed by information on the conflicting traffic. Under a RAS the following conditions apply:</p>	<p><b>235.110.1</b> RAS is an air traffic radar service in which the controller will provide advice necessary to maintain prescribed separation between aircraft participating in the advisory service, and in which he will pass to the pilot the bearing, distance and, if known, level of conflicting non-participating traffic, together with advice on action necessary to resolve the confliction. Where time does not permit this procedure to be adopted, the controller will pass advice on avoiding action followed by information on the conflicting traffic. Under a RAS the following conditions apply:</p>	<p><b>1.4.1</b> A Radar Advisory Service (RAS) is an air traffic radar service in which the controller shall provide advice necessary to maintain prescribed separation between aircraft participating in the advisory service, and in which he shall pass to the pilot the bearing, distance and, if known, level of conflicting non-participating traffic, together with advice on action necessary to resolve the confliction. Where time does not permit this procedure to be adopted, the controller shall pass advice on avoiding action followed by information on the conflicting traffic. <b>Even though the service is an advisory one, controllers shall pass the 'advice' in the form of instructions.</b> Under a RAS the following conditions apply:</p>	<p><b>3.1.1</b> RAS is an air traffic radar service in which the controller will provide advice necessary to maintain prescribed separation between aircraft participating in the advisory service, and in which he will pass to the pilot the bearing, distance and, if known, level of conflicting non-participating traffic, together with advice on action necessary to resolve the confliction. Where time does not permit this procedure to be adopted, the controller will pass advice on avoiding action followed by information on the conflicting traffic. Under a RAS the following conditions apply:</p>

	Mil AIP	JSP 552	MATS Part 1	UK AIP
	<p>a. The service will only be provided to flights under IFR irrespective of meteorological conditions.</p> <p>b. Controllers will expect the pilot to accept vectors or level allocations which may require flight in IMC. Pilots not qualified to fly in IMC should accept a RAS only where compliance with ATC advice permits the flight to be continued in VMC.</p> <p>c. There is no legal requirement for a pilot flying outside CAS to comply with instructions because of the advisory nature of the service. However, a pilot who chooses not to comply with advisory avoiding action must inform the controller. The pilot will then become responsible for initiating any avoiding action that may subsequently prove necessary.</p> <p>d. The pilot must advise the controller before changing heading or level.</p>	<p>a. The service will only be provided to flights under IFR irrespective of meteorological conditions.</p> <p>b. Controllers will expect the pilot to accept vectors or level allocations which may require flight in IMC. Pilots not qualified to fly in IMC should accept a RAS only where compliance with ATC advice permits the flight to be continued in VMC.</p> <p>c. There is no legal requirement for a pilot flying outside CAS to comply with instructions because of the advisory nature of the service. However, a pilot who chooses not to comply with advisory avoiding action must inform the controller. The pilot will then become responsible for initiating any avoiding action that may subsequently prove necessary.</p> <p>d. The pilot must advise the controller before changing heading or level.</p>	<p>a) The service <b>shall</b> only be provided to flights under IFR irrespective of meteorological conditions.</p> <p>b) Controllers <b>can</b> expect the pilot to accept vectors or level allocations which may require flight in IMC. <b>Controllers should be aware that pilots may not be qualified to fly in IMC although operating under IFR. Should this situation arise the controller will be informed by the pilot.</b></p> <p>c) There is no legal requirement for a pilot flying outside controlled airspace to comply with instructions because of the advisory nature of the service. <b>However, should a pilot choose not to comply with advisory avoiding action then he will become responsible for his own separation and any avoiding action that may subsequently prove necessary.</b></p> <p><b>d) The controller will be advised before a pilot changes heading or level.</b></p>	<p>a. The service will only be provided to flights under IFR irrespective of meteorological conditions.</p> <p>b. Controllers will expect the pilot to accept vectors or level allocations which may require flight in IMC. Pilots not qualified to fly in IMC should accept a RAS only where compliance with ATC advice permits the flight to be continued in VMC.</p> <p>c. There is no legal requirement for a pilot flying outside CAS to comply with instructions because of the advisory nature of the service. However, a pilot who chooses not to comply with advisory avoiding action must inform the controller. The pilot will then become responsible for initiating any avoiding action that may subsequently prove necessary.</p> <p>d. The pilot must advise the controller before changing heading or level.</p>

	Mil AIP	JSP 552	MATS Part 1	UK AIP
	<p>e. The avoiding action instructions which a controller may pass to resolve a conflict with non-participating traffic will, where possible, be aimed at achieving separation which is not less than 5nm or 3000ft, except when specified otherwise by the regulating authority. However, it is recognised that in the event of the sudden appearance of unknown traffic, and when unknown aircraft make unpredictable changes in flight path, it is not always possible to achieve these minima.</p> <p>f. Information on conflicting traffic will be passed until the conflict is resolved.</p> <p>g. The pilot remains responsible for terrain clearance, although ATSU providing a RAS will set a level or levels below which a RAS will be refused or terminated.</p>	<p>e. The avoiding action instructions which a controller may pass to resolve a conflict with non-participating traffic will, where possible, be aimed at achieving separation which is not less than 5nm or 3000ft, except when specified otherwise by the regulating authority. However, it is recognised that in the event of the sudden appearance of unknown traffic, and when unknown aircraft make unpredictable changes in flight path, it is not always possible to achieve these minima.</p> <p>f. Information on conflicting traffic will be passed until the conflict is resolved.</p> <p>g. The pilot remains responsible for terrain clearance, although ATSU providing a RAS will set a level or levels below which a RAS will be refused or terminated.</p>	<p>e) <b>Controllers shall pass avoiding action instructions to resolve a conflict with nonparticipating traffic and, wherever possible, shall seek to achieve separation which is not less than 5 nm or 3000 feet, except when specified otherwise by the CAA.</b> However, it is recognised that in the event of the sudden appearance of unknown traffic, and when unknown aircraft make unpredictable changes in flight-path, it is not always possible to achieve these minima.</p> <p>f) <b>Controllers shall continue to provide information on conflicting traffic until the conflict is resolved.</b></p> <p>g) ATSU providing a RAS shall set a level or levels at or above which the aircraft will remain within the limits of radar cover and be provided with the requisite terrain clearance. Below this level or levels a RAS shall be refused or terminated.</p>	<p>e. The avoiding action instructions which a controller may pass to resolve a conflict with non-participating traffic will, where possible, be aimed at achieving separation which is not less than 5nm or 3000ft, except when specified otherwise by the regulating authority. However, it is recognised that in the event of the sudden appearance of unknown traffic, and when unknown aircraft make unpredictable changes in flight path, it is not always possible to achieve these minima.</p> <p>f. Information on conflicting traffic will be passed until the conflict is resolved.</p> <p>g. The pilot remains responsible for terrain clearance, although ATSU providing a RAS will set a level or levels below which a RAS will be refused or terminated.</p>

	Mil AIP	JSP 552	MATS Part 1	UK AIP
<b>RIS</b>	<p><b>1-6-1-4</b> RIS is an air traffic radar service in which the controller will inform the pilot of the bearing, distance and, if known, the level of the conflicting traffic. No avoiding action will be offered. The pilot is wholly responsible for maintaining separation from other aircraft whether or not the controller has passed traffic information. Under RIS, the following conditions apply:</p> <p>a. The Service may be requested under any flight rules or meteorological conditions.</p> <p>b. The controller will only update details of conflicting traffic, after the initial warning, at the pilot's request or if the controller considers that the conflicting traffic continues to constitute a definite hazard.</p>	<p><b>235.115.1</b> RIS is an air traffic radar service in which the controller will inform the pilot of the bearing, distance and, if known, the level of the conflicting traffic. No avoiding action will be offered. The pilot is wholly responsible for maintaining separation from other aircraft whether or not the controller has passed traffic information. Under RIS, the following conditions apply:</p> <p>a. The Service may be requested under any flight rules or meteorological conditions.</p> <p>b. The controller will only update details of conflicting traffic, after the initial warning, at the pilot's request or if the controller considers that the conflicting traffic continues to constitute a definite hazard.</p>	<p>A Radar Information Service (RIS) is an air traffic radar service in which the controller <b>shall</b> inform the pilot of the bearing, distance and, if known, the level of the conflicting traffic. No avoiding action <b>shall</b> be offered. The pilot is wholly responsible for maintaining separation from other aircraft whether or not the controller has passed traffic information. Under a RIS the following conditions apply:</p> <p>a) The service may be requested under any flight rules or meteorological conditions.</p> <p>b) The controller <b>shall</b> only update details of conflicting traffic, after the initial warning, at the pilot's request or if the controller considers that the conflicting traffic continues to constitute a definite hazard.</p>	<p><b>3.2.1</b> RIS is an air traffic radar service in which the controller will inform the pilot of the bearing, distance and, if known, the level of the conflicting traffic. No avoiding action will be offered. The pilot is wholly responsible for maintaining separation from other aircraft whether or not the controller has passed traffic information. Under RIS, the following conditions apply:</p> <p>a. The service may be requested under any flight rules or meteorological conditions;</p> <p>b. the controller will only update details of conflicting traffic, after the initial warning, at the pilot's request or if the controller considers that the conflicting traffic continues to constitute a definite hazard.</p>

	Mil AIP	JSP 552	MATS Part 1	UK AIP
	<p>c. The controller may provide radar vectors for the purpose of tactical planning or at the request of the pilot. However, vectors will not be provided to maintain separation from other aircraft, which remains the responsibility of the pilot. There is no requirement for a pilot to accept vectors.</p>	<p>c. The controller may provide radar vectors for the purpose of tactical planning or at the request of the pilot. However, vectors will not be provided to maintain separation from other aircraft, which remains the responsibility of the pilot. There is no requirement for a pilot to accept vectors.</p>	<p>c) The controller may provide radar vectors for the purpose of tactical planning or at the request of the pilot. However, vectors shall not be provided to maintain separation from other aircraft, which remains the responsibility of the pilot. There is no requirement for a pilot to accept vectors.</p>	<p>c. the controller may provide radar vectors for the purpose of tactical planning or at the request of the pilot. However, vectors will not be provided to maintain separation from other aircraft, which remains the responsibility of the pilot. There is no requirement for a pilot to accept vectors;</p>
	<p>d. The pilot must advise the controller before changing level, level band or route.</p>	<p>d. The pilot must advise the controller before changing level, level band or route.</p>	<p>d) The controller will be advised before a pilot changes level, level band or route.</p>	<p>d. The pilot must advise the controller before changing level, level band or route.</p>
	<p>e. RIS may be offered when the provision of a RAS is impracticable.</p>	<p>e. RIS may be offered when the provision of a RAS is impracticable.</p>	<p>e) RIS may be offered when the provision of RAS is impracticable.</p>	<p>e. RIS may be offered when the provision of a RAS is impracticable;</p>
	<p>f. Requests for a RIS to be changed to a RAS will be accepted subject to the controller's workload; prescribed separation will be applied as soon as practicable. If a RAS cannot be provided, the controller will continue to offer a RIS.</p>	<p>f. Requests for a RIS to be changed to a RAS will be accepted subject to the controller's workload; prescribed separation will be applied as soon as practicable. If a RAS cannot be provided, the controller will continue to offer a RIS.</p>	<p>f) Should a pilot request avoiding action, this shall be treated as a request for a change of radar service.</p> <p>g) Request for RIS to be changed to a RAS shall be accepted subject to the controller's workload; prescribed separation shall be applied as soon as practicable. If a controller cannot provide a RAS then he shall continue to offer a RIS.</p>	<p>f. requests for a RIS to be changed to a RAS will be accepted subject to the controller's workload; prescribed separation will be applied as soon as practicable. If a RAS cannot be provided, the controller will continue to offer a RIS.</p>

Mil AIP	JSP 552	MATS Part 1	UK AIP
<p>g. For manoeuvring flights, which involve frequent changes of heading or flight level, RIS may be requested by the pilot or offered by the controller. Information on conflicting traffic will be passed with reference to cardinal points. The pilot must indicate the level band within which he wishes to operate and is responsible for selecting the manoeuvring area but may request the controller's assistance in finding a suitable location. The controller may suggest re-positioning on his own initiative but the pilot is not bound to comply.</p> <p>h. The pilot remains responsible for terrain clearance. ATSUs providing a RIS will set a level or levels below which vectors will not be provided, <i>except when specified otherwise by the regulating authority.</i></p> <p><b>NOTE</b> Military ATSUs are authorised by MOD DNO ASP, MOD(DPA) and HQ MATO to</p>	<p>g. For manoeuvring flights, which involve frequent changes of heading or flight level, RIS may be requested by the pilot or offered by the controller. Information on conflicting traffic will be passed with reference to cardinal points. The pilot must indicate the level band within which he wishes to operate and is responsible for selecting the manoeuvring area but may request the controller's assistance in finding a suitable location. The controller may suggest re-positioning on his own initiative but the pilot is not bound to comply.</p> <p>h. The pilot remains responsible for terrain clearance. ATSUs providing a RIS will set a level or levels below which vectors will not be provided other than in the following circumstances:</p> <p style="color: red;">(i) Providing vectors to pilots performing radar to visual recoveries to an airfield in accordance with</p>	<p>h) For manoeuvring flights which involve frequent changes of heading or level, RIS may be requested by the pilot or offered by the controller. Information on conflicting traffic shall be passed with reference to cardinal points. <i>The controller will be advised of the level band within which the pilot wishes to operate.</i> The pilot is responsible for selecting the manoeuvring area, but may request the controller's assistance in finding a suitable location. The controller may suggest re-positioning on his own initiative, but the pilot is not bound to comply.</p> <p>i) <i>ATSUs providing a RIS shall set a level or levels at or above which the aircraft will remain within the limits of radar cover and be provided with the requisite terrain clearance. Below this level, or levels, vectors shall not be provided and the pilot becomes responsible for his own terrain clearance.</i></p>	<p>g. for manoeuvring flights, which involve frequent changes of heading or flight level, RIS may be requested by the pilot or offered by the controller. Information on conflicting traffic will be passed with reference to cardinal points. The pilot must indicate the level band within which he wishes to operate and is responsible for selecting the manoeuvring area but may request the controller's assistance in finding a suitable location. The controller may suggest re-positioning on his own initiative but the pilot is not bound to comply;</p> <p>h. The pilot remains responsible for terrain clearance. ATSUs providing a RIS will set a level or levels below which vectors will not be provided, <i>except when specified otherwise by the regulating authority.</i></p>

	Mil AIP	JSP 552	MATS Part 1	UK AIP
	<p>disregard the conditions at sub-para h regarding levels below which vectors will not be provided to pilots in receipt of a RIS</p>	<p>regulation <b>415.135.2a.</b></p> <p>(ii) Positioning aircraft for a Short Pattern Circuit (SPC), or practice SPC, in which case controllers may provide vectors to an aircraft no lower than 500ft below levels depicted on the radar vector chart when within 10nm of the airfield.</p> <p>(iii) Local orders define conditions under which controllers may pass vectors to Station-based aircraft flying below radar vector chart heights.</p> <p>(iv) A pilot in emergency, including aborting from low level, requires vectors below radar vector chart heights (or area safety altitude or pilot's own safety altitude). Under such circumstances, controllers have a clear duty of care to offer as much help as possible in the safest manner. Accordingly, the controller is to warn the pilot that 'I cannot guarantee terrain clearance' but should take</p>	<p><b>NOTE</b> If a controller considers it appropriate to vector RIS traffic then this shall be done in accordance with the above procedures. However, controllers must always bear in mind that a pilot could well refuse a vector as it may conflict with the purpose of the flight and so reliance should not be placed on being able to solve all tactical conflicts by the use of headings.</p>	

	Mil AIP	JSP 552	MATS Part 1	UK AIP
		account of terrain and obstacles wherever possible whilst giving vectors.		
FIS	<p><b>1-6-1-6</b> FIS is a non-radar service provided, either separately or in conjunction with other services, for the purpose of supplying information useful for the safe and efficient conduct of flight. Under a FIS the following conditions apply:</p> <p>a. Provision of the service includes information about weather, changes of serviceability of facilities, conditions at aerodromes and any other information pertinent to safety.</p>	<p><b>235.125.1</b> FIS is a non-radar service provided, either separately or in conjunction with other services, for the purpose of supplying information useful for the safe and efficient conduct of flight. Under a FIS the following conditions apply:</p> <p>a. Provision of the service includes information about weather, changes of serviceability of facilities, conditions at aerodromes and any other information pertinent to safety.</p>	<p><b>5.1 A Flight Information Service</b> (FIS) is a non-radar service provided, either separately or in conjunction with other services, for the purposes of supplying information useful for the safe and efficient conduct of flights. Under a FIS the following conditions apply:</p> <p>a) Provision of the service includes information about weather, changes of serviceability of facilities, conditions at aerodromes and any other information pertinent to safety.</p>	<p><b>1.1.2.1</b> Flight Information Service as described in ICAO Annex 11 Chapter 4 is available to aircraft flying outside Controlled Airspace and Advisory Routes. It is provided by the appropriate ACC through a Flight Information Service Officers (FISO) operating on specially allocated RTF channels. In addition to normal FIS, the FISO will:</p> <p>(a) On receipt of a request for joining or crossing clearance of Controlled Airspace or Advisory Routes either:</p>

Mil AIP	JSP 552	MATS Part 1	UK AIP
<p>b. The controller may attempt to identify the flight for monitoring and co-ordination purposes only. Such identification does not imply that a radar service is being provided or that the controller will continuously monitor the flight. Pilots must be left in no doubt that they are not receiving a radar service.</p> <p>c. Controllers are not responsible for separating or sequencing aircraft.</p>	<p>b. The controller may attempt to identify the flight for monitoring and co-ordination purposes only. Such identification does not imply that a radar service is being provided or that the controller will continuously monitor the flight. Pilots must be left in no doubt that they are not receiving a radar service.</p> <p>c. Controllers are not responsible for separating or sequencing aircraft.</p> <p>d. Where a controller suspects, from whatever source, that a flight is in dangerous proximity to another aircraft, a warning is to be issued to the pilot. It is accepted this information may be incomplete and the controller cannot assume responsibility for its issuance at all times or for its accuracy.</p>	<p>b) The controller may attempt to identify the flight for monitoring and co-ordination purposes only. Such identification does not imply that a radar service is being provided or that the controller will continuously monitor the flight. Pilots must be left in no doubt that they are not receiving a radar service.</p> <p>c) Controllers are not responsible for separating or sequencing aircraft.</p> <p><b>5.2</b> In addition to the above, controllers will, subject to workload, provide pilots with information concerning collision hazards to aircraft operating in Class C,D,E,F or G airspace when self evident information from any source indicates that a risk of collision may exist. It is accepted that this information may be incomplete and the controller cannot assume responsibility for its issuance at all times or for its accuracy.</p>	<p>(i) Inform the pilot that he should change frequency in time to make the request direct to the appropriate ATC Unit at least ten minutes before ETA for the entry or crossing point; or</p> <p>(ii) Obtain the clearance from the appropriate ATC Unit himself/herself and pass it to the pilot on the FIR frequency.</p> <p>(b) Pass ETA to destination aerodromes in special circumstances, such as diversions, or at particular locations when traffic conditions demand it. Normally, however, pilots who wish destination aerodromes outside Controlled Airspace to have prior warning of arrival should communicate direct with ATC at the aerodrome concerned, at least ten minutes before ETA.</p>

	Mil AIP	JSP 552	MATS Part 1	UK AIP
				<p>(c) Accept airborne flight plans and pass the information to the appropriate authority.</p> <p>(d) Operate a very limited warning system of proximity hazards. Whenever possible, the FISO will tell aircraft of known traffic in the vicinity and will also warn them when his/her information clearly suggests a possibility of dangerous proximity. However, he cannot assume responsibility for the accuracy or completeness of this information because:</p> <p style="padding-left: 40px;">(i) Position reports passed to him/her may be unreliable in the absence of accurate navigational or position fixing aids;</p> <p style="padding-left: 40px;">(ii) Many civil and military aircraft not communicating with ATC fly on a multiplicity of tracks and altitudes in the</p>

	Mil AIP	JSP 552	MATS Part 1	UK AIP
				<p style="text-align: center;">FIR.</p> <p>1.3 It is emphasized that FIS only provides flight information and the FISO will often stress this fundamental aspect of the service by prefacing his messages to the aircraft with the phrase 'You are informed that..... ; particularly when there is a possibility of conflicting air traffic. The FISO cannot:</p> <p>(a) Exercise positive control over aircraft; or</p> <p>(b) Issue clearance to alter course, climb or descend; or</p> <p>(c) Give positive advice on the avoidance of collision.</p>
Procedural Service	<p><b>1.6-1-5</b> Procedural Service is a non-radar air traffic service in which the prescribed standard separation minima, based on reported levels and positions are applied between participating aircraft. Procedural Service is applied:</p>	<p><b>235.120.1</b> Procedural Service is a non-radar ATS in which the prescribed standard separation minima, based on reported levels and positions are applied between participating aircraft.</p> <p>Procedural Service is applied:</p>	Nil Entry/Not Defined	Nil Entry/Not Defined

	<b>Mil AIP</b>	<b>JSP 552</b>	<b>MATS Part 1</b>	<b>UK AIP</b>
	<p>a. For the separation of aircraft in holding patterns.</p> <p>b. When it is impracticable to provide a radar service due to radar failure or reduced radar performance.</p> <p>c. When an ATC unit is providing an approach control service to participating IFR traffic without the use of radar.</p>	<p>a. For the separation of aircraft in holding patterns.</p> <p>b. When it is impracticable to provide a radar service due to radar failure or reduced radar performance.</p> <p>c. When an ATC unit is providing an approach control service to participating IFR traffic without the use of radar.</p>		

## ATSOCAS WG - SERVICE PROVISION REGULATION ISSUES

### INTERPRETATION OF SERVICE PROVISION

#### 1. FIS

1.1. *Civil and military ATC regulations require controllers providing a FIS to provide ‘collision warnings’ when able. What criteria do you expect controllers to utilise to judge when to transmit or not (i.e. what constitutes an impending collision in radar presentation terms)?*

Civil	RAF	RN
<p>Controllers judgement when there is information that there is a risk of collision. There is a conflict in that controllers are often criticised for over controlling when providing a FIS.</p> <p>Current wording of description of FIS derived from the provision of the service at ATCCs.</p>	<p>If perceived risk of collision and controller has capacity pass traffic information. Criteria for calling traffic difficult to quantify since it would depend on aircraft types, relative speeds and workload; a guideline would be a perceived risk of collision or conflicting traffic likely to come within 1000 ft/2nm.</p> <p>Many military pilots feel that they are over controlled and think that service provision under FIS and RIS are similar. Would prefer to have the old option of a listening watch.</p>	<p>Controllers judgement that a dangerous situation exists.</p>

1.2. Points arising:

- a. The allocation of a squawk to an aircraft under FIS for the controllers benefit, although good and acceptable practice, can lead to a pilots confusion as to the precise level of service being provided, particularly when traffic information has been passed.

- b. FIS squawks are not necessarily verified or validated. Civil controllers required to, military optional.
- c. The concept of FIS was originally associated with the service provided at ATCCs. The gradual expansion of provision and definition has deflected from the original intention.
- d. By expanding the caveats associated with FIS controller subjectivity has been eroded. Controllers are more aware of their duty of care and rule based system of service provision.
- e. Although not strictly within the WG TORs the provision of FIS is a key consideration given the blurring of the distinction between it and the provision of RIS and the subsequent impact on pilot perception of the service being provided. Regulators all express this concern.
- f. The concept of 'listening watch' should be re-examined.

1.3. What action would you expect a controller to take when providing a FIS when a pilot states that or other information indicates he is flying in close proximity to the ground/obstacles?

Civil	RAF	RN
Remind pilot of SSA plus pressure setting. Pass warnings of significant hazards (e.g. masts and other).	Same but provision of warnings objective.	Initially no action but significant warnings if deemed appropriate.

1.4. Points arising:

- a. All agreed that there was no real difference in interpretation but that the nature of warnings/information was very subjective.
- b. The nature of FIS varied according to the type of ATSU/FISU.

**2. RIS**

2.1. *What distance criteria (lateral/vertical) would you expect controllers to use to judge whether to provide traffic information?*

Civil	RAF	RN
Protective elongated bubble around the aircraft, basically 5nm/3000 ft, greater distance in direction of flight. Will vary according to airspeed. Traffic called if likely to infringe the protected area.	5nm radius laterally, 3000ft vertically. Traffic called if likely to penetrate area at a distance appropriate to the closing speed.	Same as RAF.

2.2. *By what distances (lateral/vertical) would you expect a controller to provide/have provided such data?*

All agreed that timing depended on speeds, predicted degree of confliction and workload. Also visibility from some aircraft types often prevents early sighting of traffic by pilots. Equally, some aircraft are particularly difficult to sight, the Grob Tutor was quoted as one such example. Size, shape and familiarity of aircraft types were all influencing factors; subjectivity was a key word covering matters such as judgement, training, experience. However, all would expect the information to be passed to allow sufficient time for the pilot to scan the identified area before the conflicting traffic enters the protection zone.

2.3. *What would you expect a controller to do when providing a RIS if, whilst working to capacity and having called potential conflicting traffic, the RIS requests a vector to avoid?*

Civil	RAF	RN
Pass advisory avoiding action to resolve conflict and reconsider service level afterwards. Go for best separation achievable but 'gap' acceptable.	Same as civil.	Same as civil.

2.4. Points arising:

- a. GW said that the entry in MATS PT 1 stating that a request for avoiding action should be interpreted as a request for a change in service was introduced to provide guidance after one major civil ATSU restricted the provision of RAS.
- b. CP reaffirmed the necessity to prevent ‘document creep’ in the form of local interpretation of procedures which result in divergence from the regulatory standard.

2.5. *What action would you expect a controller to take when providing a RIS when a pilot states or radar information indicates that he is flying in close proximity to the ground/obstacles?*

Civil	RAF	RN
Same as FIS paragraph 2 but provide vectors if requested but not if below permitted radar service altitude/level. Pass relevant warnings. If pilot requested a RAS when in a climb but below SSA only a RIS would be offered together with a request to ‘advise passing’.	Same as FIS paragraph 2 - pilot has responsibility for terrain clearance. Aircraft climbing from or descending to low level to be provided with a RIS when below SSA and pilots warned that they are responsible for terrain clearance. Also pass other significant warnings relevant to aircraft’s route, eg. high ground, ATZs, CAS.	Same answer as in FIS paragraph 2.

2.6. Points arising:

- a. BP said that military pilots did not always appreciate the constant referral to responsibility for terrain clearance.
- b. CP asked about warnings to aircraft climbing up from low level. GW said in extremis permissible to give traffic information/turn when not formally identified. BP mentioned the problem of departing aircraft still below the vector chart height when a controller is technically unable to use a turn to achieve separation. Members highlighted rule variations in local instructions; CP said that this could be confirmation that subordinate units are varying rules without recourse to the policy makers. PH said that there had been a number of occasions recently where DNO, in order to be able to continue to meet the operational requirements, had issued exemptions to HQSTC regulatory changes to JSP 552; responsibility for terrain clearance was one such example.

- c. Military regulations introduced as a result of incidents have complicated the choice of actions available to controllers and sometimes lead to confusion.
- d. CG said commercial pilots are aware of inconsistencies in service provision. GG said that GA pilots, particularly those less experienced, are often confused as to where the dividing line of responsibility between pilot and controller lies. She also thought that the problem was exacerbated by the inadequate level of information on ATC services provided to new PPLs who are subsequently reluctant to ask for a RIS, opting instead for FIS.

**3. RAS**

3.1. *What actions and options would you expect a controller providing a RAS to undertake when approaching an area of multiple conflicts?. Assuming no other influencing factors, what order would you expect the controller to use these actions/options?*

Civil	RAF	RN
Same as RAF but offer of re-route not prescribed.	Advise that pilot is approaching an area of high traffic density. If appropriate offer a re-route. If refused limit service. Call any traffic and pass vectors to achieve best separation possible. Advise pilot that may be unable to maintain standard separation.	Same as RAF.

3.2. *What action would you expect a controller to take when having issued advisory avoiding action the pilot reports ‘good VFR’ or ‘happy to continue’?*

Civil	RAF	RN
Acknowledge and leave responsibility for separation with the pilot. However, this course of action is now under review. No guidelines currently available.	Acknowledge and leave responsibility for separation to pilot. Only update if considered that a dangerous situation is developing or controller believes the pilot has misidentified the conflicting traffic.	Same as RAF.

3.3. *With respect to ‘pop-up’ type radar contacts, what criteria lateral/vertical would you expect a controller to use when deciding whether to issue traffic information and then avoiding action or avoiding action followed by traffic information?*

Civil	RAF	RN
Same as RAF.	Inside 5nm issue avoiding action then report traffic. When time permits before conflicting traffic approaches within 5nm give advisory avoiding action and attempt to provide standard separation. Same actions if pop up traffic is within 3000 ft or 5000 ft, depending on the airspace classification.	Same as RAF but use Terminal Control for landing traffic.

3.4. *When faced with a confliction to a normal transit track in solid radar coverage, clear of the ground and not requiring any form of service limitation, when would you expect a controller to request a pilot’s flight conditions?*

Civil	RAF	RN
No requirement.	No requirement.	No requirement.

3.5. Points arising:

- a. CP acknowledged the unanimous response to this scenario but explained that there had been recent AIRPROX incidents where controllers had asked for flight conditions and delayed taking avoiding action until separation was lost.

3.6. *When providing a service at FL120, what criteria would you expect a controller to apply to potential conflicting aircraft (not 'pop-up' contacts) in respect of traffic information/avoiding action under the following conditions:*

- Non-transponding or non-Mode C.
- Transponding with Mode C.

Civil	RAF	RN
<u>Non-transponding or non-Mode C:</u>  Same as RN.	Same as RN.	Take avoiding action and call the traffic. Reverse if time permits.
<u>Transponding with Mode C:</u>  Call and avoid. Dispensation not available to civil controllers.	Attempt to achieve standard separation or apply the Mode C vertical separation dispensation:  <p style="text-align: center;"><u>Below FL100.</u> A minimum vertical separation of 3000 ft, returns not to merge.</p> <p><u>Above FL100.</u> As below FL100 except that if Mode C indicates it to be below FL70 returns may be allowed to merge.</p>	Same as RAF.

3.7. Points arising:

- a. There are differences between civil and military rules for passing avoiding action.

3.8. *When controlling an aircraft leaving controlled airspace or receiving same aircraft on release from an ATCC, what would you expect a controller to do when faced with conflicting radar contacts adjacent to the edge of controlled airspace?*

Civil	RAF	RN
In theory maintain heading and level until leaving CAS then take avoiding action. In practice take avoiding action when deemed appropriate.	Take avoiding action as necessary even if still within CAS or call traffic, ask for type of service pilot requires once clear of CAS - if RIS do not take avoiding action.	Same as RAF.

3.9. Points arising:

- a. This scenario generated much discussion and solutions were not immediately identified.
- b. Action would depend on experience level of receiving controller.
- c. Civil legal advise is that controller would be liable in the event of an incident if no action taken.
- d. Flight deck perception is that if talking to a controller then flight is being protected irrespective of the legal obligation on the controller and irrespective of the class of airspace.
- e. Foreign pilots are not always aware of the different levels of service. Military would make the decision on whether to provide RAS or RIS, probably starting with a RAS. Civil would ask if IFR before providing RAS.
- f. This scenario needs further consideration.

3.10. *What action would you expect a controller to take when pilot requests a RAS and states, or radar information indicates, that he is flying in close proximity to the ground/obstacles?*

Civil	RAF	RN
Same as RAF.	Same as previous scenarios. Pass warning/SSA. RAS provided when aircraft above SSA.	Same but dispensation to provide radar service to RN and contract aircraft at lower levels below the SSA/radar vector chart altitude.

3.11. *What techniques would you expect a controller to utilize when a pilot requests a RAS and a descent to continue VFR?*

Civil	RAF	RN
Descend to SSA/RVC minimum altitude. Ask intentions. If pilot wishes to continue descent change/cease service.	Descend to SSA/RVC minimum altitude under RAS, on reaching/approaching ask intentions. Further descent at pilots discretion under RIS. Warn about terrain clearance.	As RAF but dispensation over the sea for RN aircraft under RAS/RIS when in solid radar cover.

3.12. Points arising:

- a. Whilst there is an anomaly in the RN provision of service it only applies to RN aircraft as an operational expedient. Similarly there are RAF and Civil modified services directed at specific operators.

#### 4. **RADAR GENERAL**

4.1. **Limitation.** *Controllers are required to limit service provision for specified reasons. What criteria (lateral/vertical) do you expect controllers to use to judge when to apply such limitation?*

Civil	RAF	RN
In accordance with the list in MATS Pt 1.	In accordance with the list in JSP 552 which is the same as MATS Pt 1.	Same as RAF.

4.2. Points arising:

- a. Radar filters can also effect radar performance.
- b. Radar overhead - limitation dependant on height.
- c. With an aircraft in descent limitation will be dependant on the range from the overhead.
- d. The decision on when to limit service is subjective.

4.3. **Terrain Clearance.** *What regulations would you expect a controller to apply when a pilot requests or needs vectors (as part of a radar controlled recovery) when the controller is aware that the aircraft is (or will be) close to terrain or obstacles?*

Civil	RAF	RN
Already covered.	Already covered.	Same but RN could use Terminal Control.

4.4. Points arising;

- a. Not all non-Naval pilots or controllers are familiar with the meaning and implications of the RN service Terminal Control.
- b. Similarly, not all foreign pilots are aware of the actual nature/level of services being provided under ATSOCAS.

4.5. **Service Request.** *What action would you expect a controller to take when a pilot calls for a service but does not specify the type of service required?*

Civil	RAF	RN
Ask whether IFR or VFR. Service is provided accordingly.	Ask what service required subject to point arising at para 3.9.e.	Same as RAF.

4.6. Points arising:

- a. Discussion revisited the unknown traffic on first contact scenario. Similar points as previously, controllers to offer avoiding action on the basis of ‘traffic thought to be you’. Some concerns about terrain clearance.

**5. LICENSING**

5.1. *How are unit examiners selected? Are they allowed to access controller competency?. How are examiners examined or authorised to discharge their responsibilities?*

Civil	RAF	RN
<p>SRG - by advertisement and interview. Subject to passing examiners course. Do not require to hold all ratings.</p> <p>Unit Examiner selected by SATCO subject to passing the examiners course run by SRG.</p> <p>All first rating validations carried out by SRG examiners.</p>	<p>ATCEB - By Personnel Management Agency (PMA) in consultation with SO1 ATCEB. Must have both terminal and area ratings.</p> <p>Unit LEOs - by SATCO, possibly in consultation with PMA, subject to passing examiners course.</p> <p>ASACS Ground Units - AEs are appointed by SO1 Trg and Manpower, HQ 3 Gp, in consultation with unit training staffs. After an initial AE check by HQ3 Gp training staffs, AEs are managed by AST and operate iaw the HQ 3 Gp AE Handbook; they are authorised to discharge their responsibilities iaw the ASACS Training Directive. STANEVAL personel are selected by SO1 C2 Support Availability, HQ 3 Gp, in consultation with PMA, and endorsed by Gp Capt C2 Support (acting on behalf of AO Battlespace Management). STANEVAL personnel are authorized to discharge their duties iaw the ASACS STANEVAL Directive.”</p>	<p>The current Staff ATCO holds the responsibility. Must have previously been a unit LEO. When carrying out unit examination he is accompanied by an LEO from another unit or one of the RN Shawbury instructors. Staff ATCO always carries out initial ab-initio license checks.</p> <p>Unit LEOs - One comes with the appointment. DSATCO also nominated as LEO. Staff ATCO examines LEO’s. At sea SATCO issues endorsements to fighter controllers to carry out talk downs; air traffic controllers only do homer (director/approach) duties.</p> <p>Staff ATCO examines the ATC aspects of fighter controller validation examinations.</p>

5.2. Points arising:

- a. RN system is unique given the special requirements at sea.

**6. OTHER MATTERS ARISING**

- 6.1. Absence of guidance in MATS PT1 on inter unit co-ordination procedures. Introduction of procedure would be assisted if RIS rules require pilot to inform ATC before changing level.
- 6.2. The policy makers, regulators and examiners and policy holders need to adopt a firmer stance with units that modify service provision unilaterally and without endorsement.

## **ATSOCAS 2002 WG – WORK PLAN**

Five 5 phases of work envisage.

- Phase 1 - Establish current situation and devise work plan/schedule.
- Phase 2 - Consult with airspace users to establish ATS requirement(s). Consult ATS providers to establish mechanisms/draft procedures.
- Phase 3 - Devise and test new procedures. Draft new regulations.
- Phase 4 - Formal NATMAC consultation, production of CAP document and implementation.
- Phase 5 - Review.

### **Phase 1.** Estimate: Complete by March 2005.

Internal CAA WG to produce a paper/report for COCASSG consideration.

- Review paper/report against other CAA 'Class G' initiatives.
- Approve report for external exposure.

### **Phase 2.** Estimate: May 2005 - March 2006.

1. Controlled exposure to MOD and NATS.
2. Expose report/paper to airspace users and other ATS providers.
  - Workshop/seminar with individual airlines that regularly operate off-route to capture CAT-specific needs.
  - Workshop/seminar to establish other user requirements issues with user-group organisation lead person(s).
3. Produce ATSOCAS Statement of User Requirement.
4. Establish ATS provider views/proposals/best practices/concepts to meet Statement of User Requirement.
5. Produce Phase 2 Report.

### **Phase 3.** Estimate: April 2006 - November 2006.

1. Devise new procedures and draft regulations.
2. Legal consultation.
3. Evaluate/prove.
  - Simulate.

- Refine.
  - Proving simulation (if required) <sup>1</sup>.
4. Safety evaluation.
  5. Draft all documentation.
  6. Scope controller re-training/briefing requirement (including modification requirement for ATC courses).

**Phase 4.** Estimate: December 2006 – November 2007.

1. Formal NATMAC Consultation. 8 weeks.
2. CAP Production.
3. Education/training.
4. Trial revised procedures.
5. Refine procedures.
6. Implement. Target Implementation: May 07.
7. Monitor.

**Phase 5.** Estimate: January 08.

1. Review.
2. Modify.
3. Establish Annual Review cycle and ATSOCAS Policy Gp.

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<sup>1</sup>. If any new procedure includes reduced separation criteria, safety simulations could result in an extension of the process which would delay the planned timetable.