

## **RAFAT AIRSPACE REQUIREMENTS, INTENT AND PLANS**

### **Background.**

The Royal Air Force Aerobatic Team, officially known as RAFAT but more commonly referred to as The Red Arrows, perform high energy, highly dynamic low-level aerobatic displays in formations of up to 9 aircraft. They display in front of UK audiences during the summer and regularly deploy overseas as a key element of UK 'soft power' to promote UK interests worldwide. They are a British national asset, not just an RAF capability.

### **RAFAT Annual Training Programme.**

RAFAT training in the UK has hitherto taken place from late September to late March using protected airspace over the Team's home-base at RAF Scampton. This airspace volume has a 5nm radius, extends from the surface up to 9300ft AGL and is designated as EG R313. While training in the UK, there are normally 6 x 30-minute daily training slots (Monday-Friday), to allow 3 x slots for the main section and 3 x slots for the Synchro Pair. In early March the Team will put the different formation elements together and start their 9-ship training, with a requirement for only 3 x 30-minute daily training slots. The Team then depart the UK to perfect their display routine abroad, typically in eastern Europe where they take advantage of better weather. Following the Team's return to the UK in late May having achieved Public Display Authority, the UK Display Season typically provides the currency the Team need to keep their routine honed and thus practice display flying is infrequent during the summer months. Occasional in-season practices are however required for currency.

### **Airspace.**

Having protected airspace is deemed essential for the safety of the Team pilots and other airspace users to mitigate Loss of Safe Separation and Mid-Air Collision. When display flying, the Team generally fly at 360kts, from 100ft AGL up to approximately 8000ft AGL when the weather allows a vertical display routine. These flight profiles make reaction times slow, and it can be cumbersome to manoeuvre the formation reactively in response to a traffic sighting or alert. As all pilots take their formation references from the Team Leader, there are very few pairs of eyes looking out for other traffic and the Team rely on a radar service for early warning of intruders.

### **Future of RAF Scampton.**

Following the RAF's decision to sell RAF Scampton, the Team relocated to RAF Waddington in late 2022. There is considerable uncertainty about what will happen to RAF Scampton after it is sold by the MoD. Whatever the land area is used for in the future (and who owns it) will determine whether EG R313 remains useable by RAFAT for their display training. Therefore the RAF has had to examine alternative locations and airspace volumes for RAFAT practice flying.

The RAF's intent has been, and remains, to use EG R313 for as long as it is available and safe to do so. If and when it becomes clear that the airspace is not viable, alternative locations will have to be used by RAFAT to train and practice their display; one of the RAF's highest-profile operational outputs. This planning can be broken down into 3 broad options depending on what happens to RAF Scampton. These are outlined below:

**Option 1.** Continue to use EG R313 as the primary display practice location, but complete occasional 30-minute practice slots over RAF Waddington using the ACP-2019-018 airspace volume. This would allow the Team's supervisory chain to have regular opportunities to watch the training, which is harder to achieve when the Team practice entirely at a different location. It would also allow the Team's important charitable and corporate engagement programme to continue without the complications of having to transport people to/from Scampton. This option would also allow the local community to gain exposure to the Team's display activity and help RAFAT embed into RAF Waddington. This option will only see infrequent RAFAT flying over RAF Waddington utilising protected airspace proposed under this ACP, probably no more than 3-4 sorties per week during the peak corporate visit programme which normally runs from January to March. Such activity will be limited to the minimum required and will be almost completely restricted to the winter training months before the Team deploy abroad in late March/early April each year. Such limited

training will also provide vital information about the suitability of the site, should a different option be required.

**Option 2.** This option caters for a scenario where EG R313 becomes non-viable for RAFAT use in the near future. This is a realistic possibility. Should this occur, the Team will be forced to enact a contingency plan that has been developed to ensure they can continue training. This would see far greater use of RAF Waddington and the ACP-2019-018 airspace for Team training. RAFAT are currently assessing the suitability of RAF Waddington as a practice display location, including live use of the site using RA(T)s to gather data. Collected evidence and table-top assessment will lead to the production of a detailed risk assessment for sign-off by the Aviation Duty Holder and the Head of Establishment. If approved in full, RAFAT will be able to use RAF Waddington for all their training requirements.

**Option 3.**

RAFAT also currently have a TDA in place at RAF Syerston for evaluation as a Synchro Pair training site if RAF Waddington is not deemed suitable for all elements of their flying. In this event, the intent would be to use the TDA evidence to support a full ACP to establish airspace for the Synchro Pair to use RAF Syerston for approximately 3 months every winter, with main formation flying taking place at RAF Waddington. If the risk assessment concludes that RAF Waddington could be used for the Synchro Pair as well, then RAF Syerston will not be considered further.

**Downselecting Options and Making Compensating Reductions.**

The closure of RAF Scampton has required a reassessment of where RAFAT should train in the UK over the winter period. There are a great number of factors to consider for each location; ultimately the operating risk associated with each must be minimised as much as possible while still enabling maintenance of the operational output. The current interest in 3 different sites might give the impression of the RAF 'hedging its bets'; this is not the case. Because of the high-technical merit flying that RAFAT perform, very careful consideration must be given to each site in advance of it being chosen, including live-flying trials which themselves require protected airspace volumes. The continued uncertainty surrounding Scampton and EG R313 is also making future planning more challenging.

Once the best option is chosen (or events dictate which option we have to use), the RAF fully understand that airspace volumes which are no longer required may have to be discarded and removed. The RAF also understands the operational impact to other airspace users of simultaneous activation of large volumes of segregated airspace in close proximity; we would put protocols or mechanisms in place to reduce or avoid such simultaneous activations.

**Conclusion.**

Uncertainty surrounding the future of the Scampton site post-sale is making planning future RAFAT training operations challenging. What is clear is that RAFAT will require a large volume of protected airspace to mitigate the MAC risk while they train and in turn to preserve a safe operating environment for all airspace users. The RAF is assessing a number of sites for their suitability as RAFAT training locations should EG R313 become non-viable. Once an option is selected, the RAF understands that airspace volumes not planned for use will need to be removed in order to minimise impact on other airspace users.

## RAFAT DISPLAY SAFETY ASSURANCE

**Background.** RAFAT display activity is governed by both military and civil regulations: Military Aviation Authority Regulatory Article 2335 (MAA RA 2335) and Civil Air Authority Civilian Air Publication 403 (CAP403). Whilst the applicability of the regulations can differ for some display activity (RA 2335 over MOD Property, CAP 403 over Non-MOD Property) the most restrictive of the regulations will be applied.

**Assurance Activity.** Display activity, including practice displays, will only be conducted within the bounds of an (MAA or CAA as required) approved display area and remains subject to the same rigorous levels of supervision, coordination, and control, of a full public display. The approval of a display area and profile considers the proximity of congested areas and the risk to 3rd parties. In addition, each practice is subject to authorisation and supervision by the Flying Display Supervisor who holds an accredited Flying Display Director qualification. All display activity overhead RAF Waddington will be monitored by Air Traffic Control and the Flying Display Supervisor who maintains direct radio communications to the participating aircraft. All displays (including practice) are video recorded to support rigorous debrief. The first and highest priority of any debrief is always any safety elements.

**Conclusion.** RAFAT display flying, as with all military flying, is risk managed to levels that are 'As Low as Reasonably Practicable' and 'Tolerable'. Any activity that does not meet these criteria shall be ceased immediately until appropriate mitigation can be applied to assure continued safe conduct.