



Stakeholder First Consultation

Airway Q41 – Feedback Report



1. Introduction

Following the consultation in 2014 on a proposal to change the classification of part of airway Q41 to Class D below FL80, sponsorship of this Airspace Change Proposal has transferred from the General Aviation Alliance to the FAS VFR Implementation Group (FASVIG) which has the resources necessary to deliver this airspace safety improvement.

The first consultation demonstrated widespread support for the proposed change but practical difficulties in operating this airway as Class D were raised by NATS.

2. Responses

158 individual pilots responded to the consultation, all supported the need to remove Class A airspace from the lower levels of the main direct route from the UK mainland to the Channel Island and onward to France to improve safety. Some respondents found the present level of safety to be intolerable and as a result they would not use the route. All supported a change to Class D and many noted specific support for alternatives, particularly the removal of CAS from this area.

15 responses came from aviation organisations including member organisations, flying schools, flying clubs and groups and professional bodies. All supported the removal of Class A airspace and all supported the proposal to change the classification to Class D.

MOD supported the change noting that Plymouth Military provides an airway crossing service which it wished to retain and that it also provided a DACS for the adjacent DAs.

NATS supported a change but noted a range of difficulties in implementing and operating Q41 as Class D airspace. FASVIG discussed the policy issues with the CAA and it was apparent that there would need to be significant changes to achieve the original objective of the proposal. However, NATS supported the alternative option of changing the lower levels of Q41 to Class G. In their response they proposed that the base of Q41 be raised but only to 5,500ft to reduce the risk of infringement at the boundary with Solent CTA-9. A chart of Solent airspace is at Annex A and an extract of the NATS response is attached at Annex B.

No airline responded to the consultation. FASVIG was anxious that the position of Aurigny Airways was understood but despite telephone calls, emails and recorded delivery letters sent to the Flight Operations department, no response was received.

3. Development

NATS considered that maintaining an artificially low airway base of 5500ft (FL55) to the FIR boundary was necessary to mitigate against infringement of the Solent CTA. Aircraft flying northbound in Class G airspace along the course of a former Q41 will, if heading is maintained, encounter the Solent CTA at some point as its base steps down towards CTR-8 with a base of 3500ft and CTA-2 with a base of 2000ft. That applies regardless of the upper level of the airway. Aircraft using the route are almost certain to use a radar service and clearance into the Solent CTA should then be a matter of routine request. However, it is

likely that most traffic will anyway turn to avoid the Solent CTA before reaching it in order to achieve minimum track distance to any destination outside the Solent CTA. Descending to fly under CTA-8 would bring aircraft towards CTA-2 with a base of 2000ft and a more substantial turn to avoid the CTR would be needed with a concomitant increase in track distance.

Therefore, we do not consider that raising the base of Airway Q41 to either FL55 or FL75 increases Solent CTA infringement risk. Moreover, maximum aircraft safety benefit is achieved by raising the base of Q41 to the maximum compatible with other airway requirements. FASVIG considered FL75 to be the optimum level.

FASVIG considered where the northern extent of change to Airway Q41 should occur. It could terminate at the southern boundary of Solent CTA-8 where Q41 presently steps up to 5500ft. However, that would involve VFR aircraft in climbs and descents over the sea some 20nm south west of the Isle of Wight and we have already concluded that for safety, aircraft should remain as high as possible when flying over the sea. If the base of Q41 was raised to FL75 to the northern boundary of Solent CTA-8, climbs and descents would occur within 5nm of land which would be a significant safety advantage.

4. Conclusion

FASVIG concluded that the safest and most cost-effective option was to propose to raise the base of Airway Q41 between ORTAC and the Northern boundary of Solent CTA-8 and that the overall lowest risk would be achieved with a base of FL75. We recognised that this would need adjustment to the upper level of CTA-8 and some changes in control and LARS arrangements. We also considered that if it were implemented, publicity and guidance on how to fly safely in this area would be useful.

FASVIG

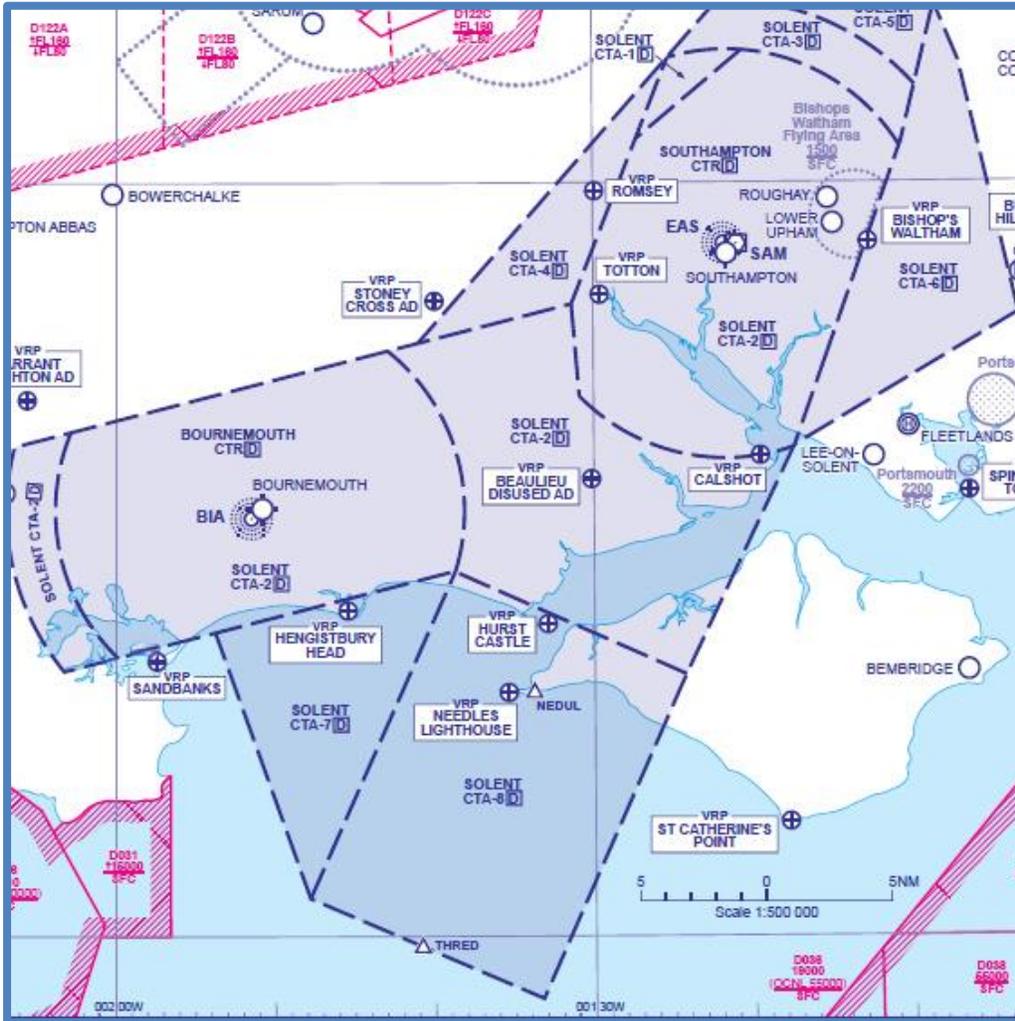
27 July 2016

Annex A: Solent CTA Chart

Annex B: Extract of NATS response to Q41 first consultation

Annex A

Solent Airspace



SOLENT					
CTA-1	D	$\frac{5500}{1500}$	CTA-6	D	$\frac{5500}{3000}$
CTA-2	D	$\frac{5500}{2000}$	CTA-7	D	$\frac{5500}{3500}$
CTA-3	D	$\frac{5500}{2000}$	CTA-8	D	$\frac{5500}{3500}$
CTA-4	D	$\frac{5500}{2500}$			
CTA-5	D	$\frac{5500}{2500}$			

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NATS RESPONSE TO Q41 RECLASSIFICATION PROPOSAL

Dear Reader

Thank you for providing NATS the opportunity to respond to your consultation and we have reviewed the consultation document with interest. As a member of the FAS VFR Implementation Programme 2015-2020 NATS supports activities which identify potential improvements in airspace utilisation and efficiency and is happy to fully engage where changes can be brought about for the benefit of all airspace users.

Our response is broken down into providing a set of general comments on elements of the consultation, opinions and impacts of the different options proposed, and our recommended option for implementation.

1. General

- 1.1. It is understood the proposal's aim is to improve the safety of GA operations between the UK and the Channel Islands where today the height and lateral track of these operations are constrained by Class A airspace and a Danger Area. The proposals are focussed on reducing the extent of Class A airspace but no consideration has been given to reviewing the geographical extent of Danger Area D036. Breakout workshops as part of NATMAC 77 in April this year reviewed the work packages within the FAVIG Implementation Programme 2015-2020, and it was agreed that airspace review activities under package A should consider *all* airspace structures for suitability and release, not just controlled airspace. This principle should have been applied when proposing mitigations for the current airspace constraints over the channel.
- 1.2. The VFR route between the Cherbourg Peninsular and the mainland is mentioned as an existing mitigation but GA pilots have expressed concern about this airspace reservation. No explanation is provided as to what the concerns are or how they may be addressed as part of a review of all the airspace structures in that area, and so the proposals as presented are not fully representative of all the available options for change.
- 1.3 It is stated that the safety of GA operations in the event of engine failure would be increased significantly if the currently available cruising height of 3,000ft could be raised to 6,000ft. This is understood but doesn't accord with preferred option to raise the base of Class A airspace to FL80. NATS has taken note of the GAA's requirements for a safe glide range in our recommendation for change (see below).

- 1.4 NATS has been made aware of proposals around Q41 for some time and informal 'consultation' between the GAA and Swanwick/NATS Southampton took place in 2014. At that time NATS, as the major aviation stakeholder in the area, was clear that there were potential issues with the draft proposals as we understood them and we were happy to meet to address the issues and to develop a joint position going forward. It was unfortunate that the GAA did not feel the need to fully engage with us during the informal phase and even during the formal consultation when it became clear that the proposals had not materially changed, we perceived reluctance by the GAA to meet with us. We don't believe this lack of engagement has helped NATS support the proposals and the GAA's preferred option.
- 1.5 The proposal to re-classify Q41 as Class D is claimed to have no noise or visual impact because the airspace would lie almost entirely over the sea. NATS questions this as re-classification would at least extend from the southern boundary of Solent CTA-9 to the northern boundary of Solent CTA-5, much of which lies over land and increased GA activity over these areas would have an impact on perceived noise and visual intrusion levels. Whilst this is not considered to be great, nevertheless no environmental assessment has been made on the impact of an increased number of all aircraft (existing IFR and VFR) flying over populated areas.
- 1.6 A minor point is that the bases of airways are always declared as whole numbers plus 500ft e.g. 6,500ft, FL125 (ICAO). The proposal to re-classify Q41 with a base of FL80 (presumably to align with the revised Channel Islands airspace) would not be acceptable in airspace design terms and as an illustrative example, it would need to be either FL85 or FL75.

2. Options

2.1 Option A - Do nothing

This option is not supported by NATS as we believe there are opportunities in this area to release controlled airspace for the benefit of GA.

2.2 Option B - Re-classify Q41 to Class G airspace up to FL80

Given the safety rationale explained in Para 2.6, it's difficult to understand why Option B is considered "impracticable". Releasing any controlled airspace above FL35 would be assumed to have benefit for GA in terms of glide range after engine failure, flexibility of operation in planned routing and operating height, and the ability to maintain VFR in met conditions that would not be allowable in controlled airspace. NATS fully supports Option B, albeit with a modification (see below) as it will deliver the maximum benefit to the GA community.

2.3 Option C - Re-classify Q41 to Class C up to Flight Level 80

This option is not supported by NATS. The reasoning is broadly aligned with NATS response to the Heathrow CTR re-classification which is included as Annex B in the consultation document.

2.4 Option D - Re-classify Q41 to Class D up to Flight Level 80

- 2.4.1 The consultation material does not address ATS provision within the new Class D airspace, except for the statement that the "...change from Class A to Class D is likely to result in NERL seeking to change or delegate the control of this airspace, which may lead to changes in staffing and funding." Technically the airspace could be delegated but no consideration has been given as to who the new ATS provider might be.

2.4.2 The airspace referred to in Option D is currently managed by three different agencies: Swanwick LAC (Sector 21), Swanwick LTC (TC SW DEPS) and NATS Southampton (SOLENT RADAR). The following section details the operational, training and system impacts on these NATS agencies if one or other were to provide an ATS from FL35 to FL80 in the re-classified airspace.

3. Operational impact

3.1. TC SW DEPS

3.1.1 The division of airspace around the Solent CTA is complex. A simple re-classification to Class D up to FL80 to the northern edge of Solent CTA-5 would impact the following airspace ATS arrangements and delegations, which have been designed to create the most efficient operation for IFR traffic in the area:

- TC SW DEPS is responsible for Q41 from its southern intersection with L980 northwards,
- TC SW DEPS delegate FL70 and below to SOLENT RADAR within the lateral confines of the SOLENT CTA to the north of SAM,
- TC SW DEPS delegate FL100 and below to SOLENT RADAR south of the centreline of L620 within the confines of Q41,
- The base of Q41 to the north of the SOLENT CTA is FL65, as is the FUA Q41 airspace to the north west of SAM.

3.1.2 Re-classifying the airspace to Class D to the north of Solent CTA-9 would noticeably increase complexity of ATS provision in this area. TC SW DEPS controllers would be required to integrate and co-ordinate VFR and IFR traffic into, and out of, the revised Q41 and would now also be required to issue joining clearances for traffic from the north requesting entry into the airspace. The increase in controller workload would have a negative impact on overall sector capacity.

3.1.3 All traffic routing to the north of the Solent CTA and not able to or requiring to route within the northern part of Q41 (Class A) would have to descend below FL65 by this boundary. This further complicates the ATC task and increases the risk of errors.

3.1.4 All flights intending to operate within the re-classified Q41 airspace would have to file IFR FPLs in order for the flight to be activated and tracked within NATS' flight data processing system (NAS) and for the flight information to be available to the controller (VFR flight plans are not held within, or tracked or updated by NAS). As TC SW DEPS does not normally handle VFR flights, flight tracking and clearance for these flights would have to be managed by hand written strips and this is a marked increase in workload. See below for training impacts.

3.1.5 Due to the nature of their operation, VFR flights may not be able to adhere to the single planned sector exit flight level into the next sector. All coordination would therefore be manual.

3.1.6 Overall, managing and integrating IFR and VFR flights in Class D airspace would be a fundamental change of task for this TMA sector and would require extra training. Providing an ATS for VFR flights would mean a reduced capacity to handle IFR flights in the LTMA, which would not be acceptable to our core customers and would directly impact RP2 performance targets.

3.2 SOLENT RADAR

NATS Southampton is currently not in a position to provide an ATC Service in the proposed Class D airspace between ORTAC and the southern boundary of the Solent CTA. For the part of the re-classification that overlies the Solent CTA, the current delegated functions provide operational efficiencies and any changes would incur cost from re-negotiation and extra training.

3.3 Sector 21

3.3.1 Sector 21 is responsible for Q41 at FL125 and below from the southern edge of L980 to THRED, and from FL195 and below between THRED and ORTAC.

3.3.2 London Area Control controllers do not currently handle VFR traffic inside controlled airspace and in particular have no training in the operation of Class D airspace. Splitting Airway Q41 into Class A and Class D would be a unique operational arrangement at Swanwick but because Sector 21 traffic levels are modest and purely IFR, it is always operated combined (“Bandboxed”) with another sector, usually Sector 20, and the daily declared sector capacity is set accordingly. Requiring Sector 20/21 to control high intensity IFR traffic in Class A airspace and VFR traffic in Class D airspace at the same time (the consultation states up to 26 per day), is considered unsafe and would consequently require a reduction in overall IFR service delivery, which is not acceptable.

3.3.3 To enable the safe integration of IFR and VFR flights, a Sector 20/21 airspace re-design would be required with a dedicated Sector 21 position. See below for training and system impacts. Sector re-design costs alone, including revision to existing interface agreements and procedures between all ATSUs involved, would be in the region of £250k.

4. System Impact

4.1 Swanwick LAC operations use a suite of electronic controller tools known as iFACTS and NERC. Both systems are designed for an IFR only environment and rely upon strict adherence to ATC Level/Heading/Speed/Route clearances for safe operations. These systems have no provision to accommodate GA type VFR flights, which by their nature may not be able to adhere to such clearance tolerances limits imposed on IFR flights.

4.2 In order to provide for the operation of VFR flights in the proposed Class D airspace a fundamental re-design of both iFACTS and NERC (and potentially NAS) would be required. The degree of re-design, re-work, test and deployment, and associated costs have not been quantified at this stage but they are expected to be considerably above six figures.

4.3 For illustrative purposes simple changes requiring a single NERC build have cost between £4m and £10m, depending on the size and scope of changes implemented. It is questionable as to whether such a redesign is feasible or desirable on stability grounds as introducing major software changes to legacy systems is generally to be avoided, especially as these changes are not part of NATS’ 5 Year Business Plan to meet Reference Period 2 (RP2) requirements.

4.4 The OLDI (on-line data interface) system enables flight plan data exchange between Sector 21 and Jersey and this standard method of co-ordination is employed across all NATS’ interfaces with adjacent Area Control Centres. OLDI relies on flight plan data from NAS and as NAS does not track VFR flights (see 3.1.4), there is no automatic way of transferring this data; all exit and entry ATC co-ordination would therefore be manual and this increase in workload would reduce sector capacity. A change to the OLDI protocols to accommodate VFR flights is not foreseen due to its replacement by

2020 as part of the Deploying SESAR programme. Even if this were possible, due to their nature VFR flights may not be able to adhere to the single planned sector exit flight level as required by the European Standard OldI message standard.

- 4.5 NATS Southampton's Designated Operational Coverage (DOC) for its VHF Approach frequency would not support ATS down to the FIR boundary and it is unknown whether it could be extended or whether an alternative frequency with the necessary DOC would be required. Requests for amendments or new assignments have to be made to the European Frequency regulators and there is huge uncertainty over whether anything is achievable in the same timeframe as the proposed airspace change. Should an extension to the current DOC be feasible or a new frequency becomes available, it is estimated that the cost to upgrade the communication infrastructure would be in the region of £200k, plus labour. If a new frequency were necessary and available, the on-going annual OFCOM License fee would be about £10k/year.
- 4.6 NATS Southampton's Primary radar Surveillance (PSR) coverage does not support ATS down to the FIR boundary. Either the purchase of a more capable PSR radar or contractual data sharing from a third party would be needed. The feasibility of these options has not been analysed but it can be expected that the capex and opex costs, including on-going OFCOM License fees, would be appreciable.
- 4.7 Operation of a separate "Class D" Sector 21 (see 3.3.3) would require a separate VHF frequency. Similar to the NATS Southampton position, acquiring a new frequency with the necessary DOC is very problematic and not guaranteed within the same timeframe as the proposed airspace change. The implementation, maintenance and OFCOM License costs will be similar to those for NATS Southampton (see 4.5).
- 4.8 SSR code allocation would also be a limiting factor. NATS is a customer of the European CCAMS which allocates discrete, de-conflicted SSR codes for flights within European Airspace. VFR traffic is not included in CCAMS allocations, hence local SSR codes would have to be employed. Currently Swanwick LAC has access to a limited number of "special sector codes" for local use, which are allocated as part of the UK's Code Allocation Plan (CAP). There is no guarantee that extra codes can be acquired for VFR flights. Where these codes are available, assignment for each flight and pairing within NAS would be a manual process, adding further workload to the controller task.

5. Manpower and Training impact

- 5.1 On the assumption that all systems could be modified to accept VFR flights, there would be a requirement for a training programme for controllers. This would entail training in
 - The handling VFR flights
 - Operation of the revised systems
- 5.2 For Swanwick LTC, additional training to provide an ATS in the proposed Class D airspace would be similar to that required by the re-classification of the London CTR to Class D: one day of simulation training, two hours of CBT and a presentation. There are currently 60 TC SW controllers who would need training and the cost is estimated at approximately £75k.
- 5.3 For Swanwick LAC there are 75 controllers currently qualified to operate Sector 21 and to enable them to provide ATS in Class D airspace it is estimated that they would each require a minimum of 2 days additional training to that required for TC SW controllers; these training costs are estimated at £300k. In addition there would be requirement for training in the operation of the modified ATC systems (iFACTS, NERC etc.) and these daily costs can be assumed to be similar for the airspace training costs.

- 5.4 Whilst controllers undergo the necessary training, there might also be a consequential impact to NATS service delivery as those ATCOs being trained would not be available to support the operation. NATS would not be willing to accept any penalty for reduced ATC capacity at Swanwick as a result of airspace changes not planned for in the current 5 Year Business Plan and as agreed as part of the RP2 settlement.
- 5.5 For NATS Southampton to provide an ATS in the new Class D airspace down to ORTAC, a new operating position would have to be installed and staffed by an additional four controllers. The on-going manpower cost is estimated to be in the order of £400K per annum.

6. Recommendation

- 6.1 Option D is technically feasible but for the reasons set out above, NATS is not in a position to provide an ATS in the new Class D airspace without considerable investment in human and system resource. This investment has not been identified as part of the RP2 settlement on NATS and further consideration is not considered a high enough priority to warrant a re-scheduling of current business plans.
- 6.2 Given the issues in the section 'Safety of GA Operations between UK and Channel Islands', it's difficult to see why releasing the airspace to Class G is not given further consideration. Retention of controlled airspace for around six IFR flights per day appears difficult to justify on numbers alone and the consultation material makes no assessment as to how these IFR flights might continue to receive an ATS whilst operating outside controlled airspace.
- 6.3 **NATS is happy to recommend Option B as the solution, with a caveat that the new base of Q41 be declared as 5,500ft rather than FL75 (FL 80 is not ICAO compliant).** The CAA Airspace Infringement Group has already identified the Solent CTA as one of five controlled airspace infringement hotspots and declaring Class G from below FL75 would mean that for northbound VFR flights approaching the Solent CTA, to remain outside controlled airspace would require a descent to below 3,500ft. In effect a large controlled airspace 'wall' at the boundary of CTA-9 might lead to new infringements and therefore NATS proposes that this potential risk can be mitigated by having the base of Q41 as 5,500ft.
- 6.4 Option B with the base of Airway Q41 as 5,500ft would;
- offer a significant benefit to GA in terms of operational flexibility and safety mitigation.
 - also be co-incident with the Solent CTA, simplifying the airspace structure in this area by reducing potential airspace busts that could result from the adoption of a higher level for the base of Q41.
 - not constrain GA operations should met conditions in the new Class D airspace not permit VFR flight.
 - mean that a LARS for any VFR or IFR flight would still be available from Bournemouth Radar (fully funded). UK FIS would also be available from Plymouth Radar during its hours of operation.
 - be implemented at relatively low cost (minor procedure and system changes) and in a short timescale
 - quickly realise benefits under the FAS VFR Implementation Programme 2015-2020.
- 6.5 **We specifically ask the GAA to ensure that any planned implementation date for a change is fully co-ordinated with NATS (Swanwick and Southampton) to ensure that the necessary internal procedure/system changes and controller training/briefing are properly programmed.**