



23 June 2017

SOUTHEND AIRPORT CONTROLLED AIRSPACE – POST IMPLEMENTATION REVIEW

1. Introduction

- 1.1 Approval was given by the Safety & Regulation Group (SARG) for London Southend Airport (LSA) to proceed with implementation of a controlled airspace (CAS) structure in the vicinity of the airport in January 2015. The airspace was introduced on 2 April 2015. The purpose of this document is to provide the outcome of a Post Implementation Review (PIR) in accordance with Stage 7 of the Airspace Change Process (ACP) as described in document CAP 725.
- 1.2 The aviation community affected by the Southend CAS change was alerted to the fact that a review was imminent via the Civil Aviation Authority (CAA) SkyWise website. They were invited to comment on how the change has been perceived since implementation. In addition to the submission and comments by LSA, responses were received from NATS Airspace Systemisation & Airports, the Future Airspace Strategy VFR Implementation Group (FASVIG) and the CFI of Modern Air at Fowlmere Aerodrome. Additionally there were responses from another flight instructor and three pilots who operate in the area affected by Southend CAS.

2. Background

- 2.1 Following its purchase by Stobart Group in 2008, there has been an ongoing programme of development at London Southend Airport, with a newly built terminal and control tower, an extended runway and a regular rail service running from Southend Airport station to Liverpool Street station in central London.
- 2.2 easyJet began operating services by opening a base at LSA in April 2012 and Irish carrier Aer Lingus Regional began regular flights to Dublin in the May. As a result, the airport has seen a rapid increase in passenger numbers. Around 620,000 passengers used the airport during 2012 with around 720,000 passengers in the twelve months following the commencement of these services. Passenger numbers grew to around 970,000 in 2013 and the total for 2014 was around 1,100,000. The figure for 2015 is lower at around 900,000 but the airport operator hopes to increase passenger numbers to five million per year by 2020.
- 2.3 This growth in passenger numbers has resulted in Air Transport Movements (ATMs) increasing significantly since 2011. Commercial Air Traffic (CAT) being reintroduced at LSA has resulted in ATMs rising from a figure of about 1,900 per year in 2011, to 7,270 in 2012, 9,481 in 2013, 11,545 in 2014 and 8,975 in 2015. The figure for 2016 is 8,278. Non-CAT movements consist of maintenance, repair & overhaul traffic (MRO), as well as GA, military, business and private aircraft.

3. Key Objectives

- 3.1 The airspace in the vicinity of LSA has given cause for concern in the past due to five Airprox incidents in recent years, including two Category A incidents. In both of these cases the UK Airprox Board concluded that the aircraft proximity meant that a serious risk of collision existed. Due to these safety concerns, the CAA encouraged LSA to consider the introduction of a Radio Mandatory Zone (RMZ), and this was implemented in time for the summer of 2014. However, due to the complex nature of the airspace, the high traffic density and the number of non-transponder equipped aircraft, many of which are not visible on radar, a RMZ was not considered to be a permanent solution for the airspace around LSA.
- 3.2 The LSA CAS ACP was therefore approved in order to enhance the protection of passenger-carrying CAT flights in the critical stages of flight and of other aircraft operating in the vicinity of LSA. The purpose of this PIR is to ensure that this is being achieved in the best and most efficient manner.

4. Air Traffic Management Requirements

4.1 Training

- 4.1.1 In order to prepare controllers for the airspace change, a training package was written in-house for Southend validated controllers. The package was approved by SARG and then delivered.

4.2 Staffing

- 4.2.1 Prior to the implementation of the LSA CAS ACP, the airport introduced a frequency split to better manage its traffic. It also increased the number of ATCOs by two, raising the total to eighteen. This means that two radar positions can be opened on a routine basis during busy periods. An extra ATC Assistant was also recruited making a total of three.
- 4.2.2 Figures provided by LSA for an interim six month review to the 2nd October 2015, show a total of seven transit refusals. This equates to less than 0.1% of the total of 7515 transit requests. The majority of these were due to controller workload, although on at least one occasion, alternatives were offered which the pilot was unable to accept.

4.3 Liaison

- 4.3.1 To ensure that based operators and the local flying community were aware of the implications of the airspace change, a series of presentations was arranged; two at Southend, one at Rochester and one at Stapleford. This also gave the opportunity for ATC to brief pilots on Class D procedures and to help address concerns caused by the establishment of the airspace.

4.4 **Documentation**

- 4.4.1 The Southend CTR/CTA was published in the UK AIP and on associated aeronautical charts as part of the regular AIRAC publication cycle.

5. **Military Air Traffic Management Requirements**

- 5.1 The MoD has not been adversely affected by the introduction of CAS at LSA and therefore they have not commented specifically on it.

6. **Areas of Contention**

6.1 **Safety**

- 6.1.1 **Comment from the CFI of Modern Air:** “My personal experience since the introduction of the new Class D around Southend is much higher traffic conflict between LAM and DET VORs with several close encounters with GA traffic and more recently 'commercial' helicopters. We are all being squeezed into tighter airspace and sadly I feel it cannot be long before a tragedy occurs with a collision bringing the situation to the forefront. I do appreciate that formal infringements have been reduced however there remains confusion and the airspace is cluttered with traffic in receipt of service from Farnborough, traffic listening only to Essex and squawking accordingly, and traffic talking to North Weald and/or Stapleford, all squeezed below 1500ft QNH and then having to run the gauntlet from LAM to DET VORs with several instances recently of traffic in receipt of service from Southend and another talking to Farnborough passing a bit too close for my comfort! It may be unrealistic but personally I would raise the LTMA from 2500ft to 3000ft QNH from Thurrock to BPK VOR; when I am returning home IFR inside the LTMA I never get descent below 4000ft (obviously), and that chunk of airspace would relieve a pinch point.”

Post PIR consultation, revised comment from the CFI of Modern Air:

“Since writing this I have transited this airspace approximately fifty times and can say that Southend ATC does an excellent job and they appear to have better liaison with Farnborough Radar with handovers. 'Retain squawk and contact Southend' is much more the 'norm', increasing safety in my opinion.”

- 6.1.2 **Comment from private pilot/instructor 1:** “In terms of enhancing safety efficiently, I sent Southend a request regarding implementation of a listening squawk. To date I've not had any acknowledgement. They apparently considered it in conjunction with Class D implementation but for some reason decided against.”

Response from LSA: LSA discussed the issue of a listening squawk in depth prior to the implementation of CAS. It was also discussed with other airspace users during 'roadshows' as it was a frequently asked question. However, after thinking it through, it was decided not to go ahead with a listening squawk as it was deemed safer for aircraft to call Southend Radar. It was felt that this would better enable Southend to assist users with the dimensions/areas of the new airspace and thereby lessen the impact of an infringement. If an infringement was to occur, Southend felt they were more likely to be able to provide immediate assistance to the infringing traffic. LSA would have reservations about the idea of fewer pilots communicating with them, (i.e. just wearing a listening squawk,) as it feels the overall situational awareness for other pilots in the vicinity would be diminished.

- 6.1.3 **Comment from private pilot/instructor 2 (Andrewsfield):** “The fact remains that there is a choke point created by Southend, LCY and Stansted CAS, in which training

traffic from North Weald, Stapleford and Andrewsfield operate and these need to be widened out. This is made worse by an increase in the amount of training traffic operating out of North Weald and I do not believe this was taken into account in the original design.”

- 6.1.4 **Comment from LSA:** During the ACP process, Southend reduced the size of the CTR to the South West and the overall dimensions of CTA 4. Pilots are encouraged to establish communication with Southend radar to request transit/entry into Southend CAS.

6.2 **Avoiding the Southend CTR/CTA**

- 6.2.1 **Comments in ‘Flyer’ magazine:** There has been some debate within GA organisations and on sites such as ‘Flyer’ magazine Forum regarding the Southend CTR/CTA. These comments appear to be mainly centred on the implementation of the airspace in the first place rather than the management of it, and therefore they are largely outside the scope of this PIR. Nonetheless, comments have been noted both for and against the implementation.

6.3 **Size and Classification of CAS in relation to Commercial Traffic Figures**

- 6.3.1 **Comments from the CFI of Modern Air:** “I would point out that Southend is very similar to several French, German and Belgian airports which seem to manage without such a large CTR - it actually looks to me to be bigger than Stansted and Luton's or even Gatwick? An A320 does not actually 'need' that size especially being fed directly from/to a TMA and I find it quite surprising we have afforded such a large allocation of airspace to a relatively low utilisation hub.”
 - 6.3.2 **Comment from private pilot/instructor:** I do wonder if quite so much CAS is required for the relatively small number of CAT flights but the actual implementation seems OK with the current level of traffic.
 - 6.3.3 **Comment from private pilot:** I am staggered by these statistics, with the CTA at Southend occupying as much as Luton yet with less than 10% of the traffic and in the last year its movements have shrunk by almost 25%. It seems grossly disproportionate. Less than 20 flights a day on average and the level of work put on GA to accommodate this is also disproportionate. I believe it should revert to Class G with an ATZ and ILS approaches like Cranfield.
 - 6.3.4 **CAA response to the size of the Southend CTR/CTA:** Whilst the Southend CTR/CTA is indeed larger in size compared to several other LTMA airports, this is in part due to the fact that Southend sits in an area where the base levels of the LTMA start to rise as they get further from Heathrow. This requires more vertical CAS to provide connectivity to the LTMA to provide the required level of security for LSA arriving and departing traffic. For most airports beneath the LTMA, their traffic is managed largely within the airspace of the LTMA rather than within their CTRs/CTAs. For Southend, this is not an option as the airspace above LSA is already fully utilised for other LTMA traffic, notably arrivals to London City Airport.
- ## 6.4 **Application of a Radio Mandatory zone (RMZ) or Transponder Mandatory Zone (TMZ)**
- 6.4.1 No comments were made by stakeholders responding to the PIR regarding the replacement of the LSA Class D CTR/CTA with any other class of airspace, including an RMZ or TMZ.

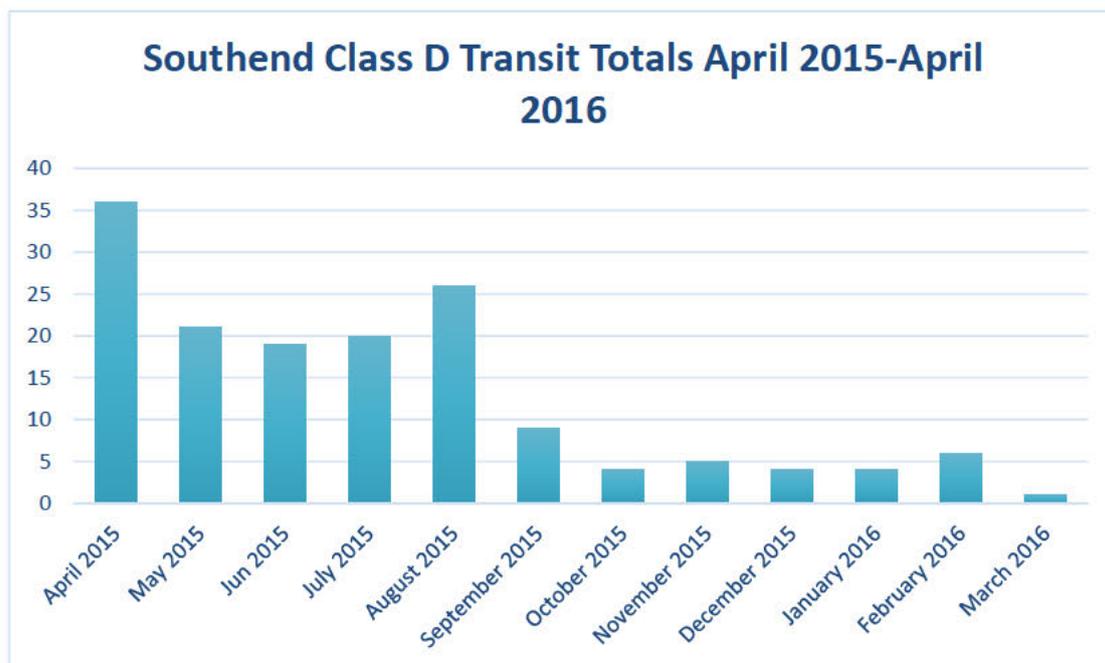
7. Environmental Effects

- 7.1 **Comment from private pilot/instructor:** “Class D beginning at 3500ft above Mersea Island, where I live, has not caused any noise issues to date. They route the odd easyJet over the island but it is quite rare.”
- 7.2 **CAA comment:** Overall, the environmental effects of the Southend CAS are likely to be minimal. The main effect will be for traffic which is unable to, or which chooses not to, transit the airspace and which will therefore follow an extended routing. The amount of this traffic is not quantifiable.

8. Effectiveness of Change

8.1 CAS Transits

8.1.1 There were 247 IFR and 10,392 VFR transits of the Southend CAS from inception of the airspace on 2nd April 2015 to 4th April 2016. These are broken down by month in the following table:

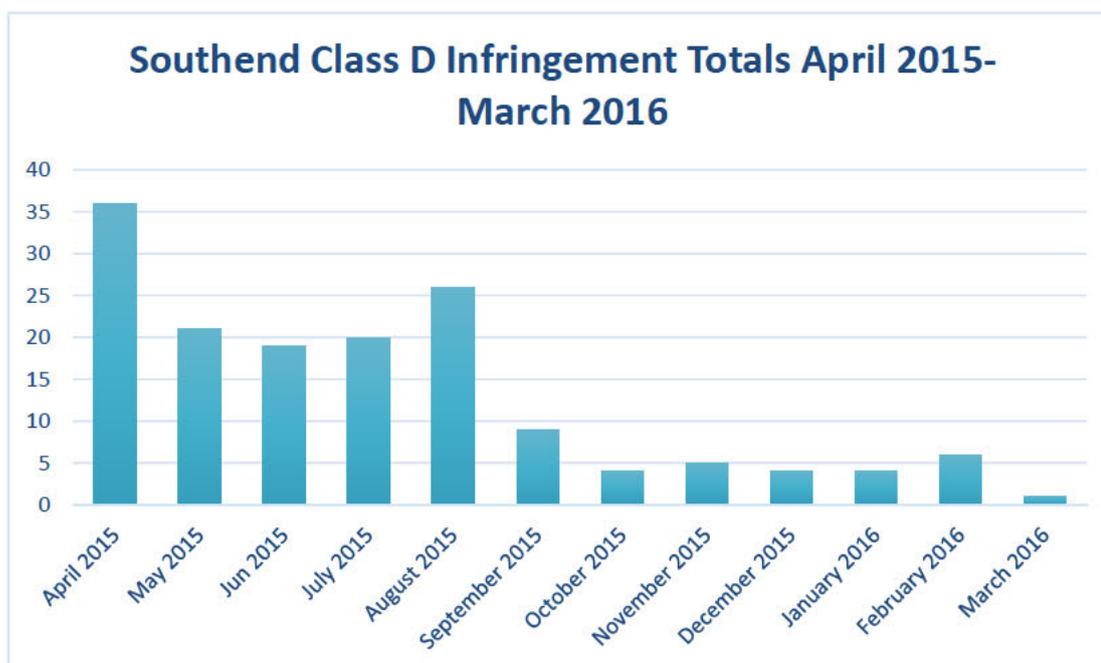


8.2 Refusal of Entry into Southend CAS

8.2.1 In the first year of operations there have been a total of nine refusals of entry to Southend CAS. These were down to a combination of controller workload, RT loading and conflicting CAT traffic, although on at least one occasion an alternative was offered which the pilot was unable to accept. This equates to less than 0.1% of Southend's transit traffic over the year; a figure which is considered acceptable.

8.3 Southend CAS Infringements

8.3.1 In the 12 months since inception, there have been a total of 155 CAS infringements. As can be seen from the table below, there were 36 infringements in the first month and 21 in the second month. Between autumn 2015 and spring 2016, this has reduced to an average of less than five infringements a month. Although this might be expected to rise again over the summer months, it is hoped that the figures will reduce considerably as the local aviation community gets used to the existence of the airspace.



8.3.2 Southend Airport's approach to minor CAS infringements has been the adoption of a policy to educate rather than chastise during the initial year of implementation. Southend made the decision to only file an MOR following an infringement if the pilot could not be educated; for example, if the pilot could not be traced.

8.4 General Comments on the Effectiveness of the Change

8.4.1 **Comment from NATS:** The introduction of the airspace in 2015 was a complex change that has provided benefits to both units, NATS and LSA, in the protection of IFR GAT. The RMA design associated with the airspace has been through two iterations to address issues with the initial introduction and the LAMP1A ACP. This second change has facilitated additional airspace for Southend operations.

8.4.2 **Comment from private pilot/instructor 1:** "Regarding the implementation of Controlled Airspace I have personally experienced good service and friendly ATC. I regularly fly through Southend's Class D and they look after me all the way past Canterbury. When conducting instructing or biennial review flights, mainly in the Clacton area, I've always been able to get a squawk and Traffic Service."

8.4.3 **Comment from private pilot/instructor 2:** "When the CAS was initially proposed I was concerned that it would have an impact on my operations. It has, but maybe not as bad as I had feared. If I want a quiet cockpit with minimal R/T distractions, I often operate further north than I would have prior to the introduction of this CAS, (to keep well away from it), hence adding a bit of flight time to lessons. When operating near

or requiring a clearance into Southend CAS, I've found Southend ATC to be very helpful. A service or clearance can quickly be obtained nearly all of the time. The airport seems to have provided enough ATC staff to provide a good service without undue delays. Opening Director when they are busy seems to work well to relieve the load on the Radar frequency."

8.4.4 **Comment from private pilot/instructor 3 (Andrewsfield):** "I am a regular user of Southend CAS and the adjacent area, and have flown something like 400 hours in and around it since the CAS was introduced. This is a personal submission to the PIR, but I believe it represents the view of other pilots and instructors at Andrewsfield. Experience in using the Southend CAS: Generally it works OK; Southend controllers are helpful in allowing access to their CAS. Long may it continue! There appear to be enough staff to cover the workload. Refusals to enter CAS are few in my experience."

8.4.5 **Comment from the CFI of Modern Air:** "I do appreciate that formal infringements have been reduced, however there remains confusion and the airspace is cluttered with traffic in receipt of service from Farnborough, traffic listening only to Essex and squawking accordingly, and traffic talking to North Weald and or Stapleford, all squeezed below 1500 QNH and then having to run the gauntlet from LAM to DET VORs with several instances recently of traffic in receipt of service from Southend and another talking to Farnborough passing a bit too close for my comfort!"

Post PIR consultation, revised comment from the CFI of Modern Air:

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8.4.6 **Comment from LSA:** Southend controllers have done their absolute best to ensure the airspace is available to all airspace users. LSA believes that they have proven their management of the airspace by the extremely low refusal rate (less than 0.1%). LSA always tries to allow aircraft to transit with the least possible disturbance. They also try to create ways to allow easy access for aircraft conducting general manoeuvres, indeed they regularly allow aircraft to enter the entirety of CTA4, a very popular area, so that they can conduct general handling.

8.4.7 **Comment from LSA:** Following approx. 6-8 months after implementation LSA went back to Rochester to conduct a presentation and offer the chance for questions and comments. LSA did the same at the Seawing club at Southend, where the club also invited pilots from local airfields. LSA did not receive any adverse comments on their conduct of the airspace. The same offer was made to Stapleford but LSA was advised that it was not currently necessary given that Southend was doing as stated and were not adversely affecting their business.

9. Other Benefits

9.1 Other than those already recorded, no other specific benefits have been identified as a result of the introduction of Southend CAS.

10. Operational Impact

10.1 LoAs were agreed to ensure appropriate airspace sharing arrangements were in place following the establishment of the Southend CTR/CTA and these are currently under review.

LoAs were established with:

- Barling
- Burnham
- St Lawrence
- Tillingham
- Stoke
- Canewdon Paras
- Stow Maries
- British Balloon & Airship Club
- Blackwing
- Essex & Suffolk Gliding Club
- Kent Gliding Club
- British Gliding Association (BGA)

LSA are currently undertaking discussions with other airspace users with the intention of creating additional LoAs in due course.

11. Airspace Change Process Issues & CAA Recommendations for Refinement

11.1 Access to CAS for Radio Equipped Aircraft

11.1.1 **Comment from FASVIG:** FASVIG was briefed by TAG Farnborough that they had sought advice from Southend as to how they manage a Class D CTR/CTA when it is overlaid with Class A airspace. As a result of that, FASVIG was informed that VFR aircraft with no transponder in Farnborough airspace would be constrained to 500ft below the upper limit of the Class D airspace and that this was in compliance with a directive from the CAA. However, FASVIG understands from the CAA that there is no such directive and suggests that if Southend is applying such a restriction it should be removed.

LSA comment: The response to Farnborough was based on an agreement between Southend and TC Ops, rather than a directive from the CAA.

CAA comment: This restriction as applied by Southend is logical, in that traffic in Class A airspace above would not expect to be separated by only 500ft from traffic in any form of CAS below. CAS traffic would only anticipate such a scenario if flying at the lowest available level in CAS.

11.1.2 **Comment from FASVIG:** FASVIG believes that there may be a coordination issue for aircraft entering the zone from the south which are obliged to contact Rochester for ATZ crossing, but the time available from leaving the ATZ to reaching the Class D boundary is then too short to obtain a clearance if the frequency is at all busy. Although FASVIG has no direct experience of it, similar considerations must apply to aircraft departing Rochester to the north. Without a clearance aircraft are constrained below 1500ft amsl increasing unnecessary risk and intrusion. At other commercial airports it is common for one unit to issue a clearance on behalf of the other ATS unit and in this instance it might be useful for Southend to arrange a coordination process with Rochester to make the airspace more welcoming. Coordination is one of the keys to safe and efficient airspace in the busy southeast and FASVIG would welcome CAA support to deliver it.

CAA comment: The CAA agrees that Southend and Rochester should negotiate a suitable coordination process to enable traffic from or overflying Rochester to obtain a transit clearance through Southend Class D airspace in a timely manner.

11.2 Access to CAS for Gliders, Hang Gliders, Paramotors and Non-radio Aircraft

11.2.1 **Comment from FASVIG:** Following its recent work with TAG and various gliding organisations, it is clear to FASVIG that gliders, hang gliders, paramotors and the like are not normally able to access Class D airspace, so avoid the area without asking for a clearance. Because these do not feature in the ANSP refusal statistics this exclusion is not recorded but does exist. Of the 20,000 aircraft on the UK register and the 7000 or so unregistered UK aircraft, about 10,000 fall into this category and tend to be excluded from CAS. With Southend commercial traffic reducing month on month since before the establishment of the CAS, there should be room for this excluded traffic inside the CTR and CTAs, but it would need special arrangements. These could be based on LoAs and perhaps the French AIC on glider R/T procedures which FASVIG states the CAA is aware of. FASVIG believes that the ANSP could promote such a change through the various S&RA organisations and if needs be FASVIG would be willing to facilitate that. FASVIG recognises that whilst LoAs can permit access for some specific regular scenarios, they can only provide limited mitigation of the CAS access issue for these 10,000 aircraft, but nonetheless it is needed.

CAA comment: Whilst the CAA recognises the difficulty for gliders, hang gliders, paramotors and non-radio aircraft to access CAS, if pilots choose not to attempt to contact the ANSP by whichever means, then these movements cannot be classed as exclusions. Class D CAS does not routinely permit the presence of non-radio traffic, however, there may be some opportunities for the pilots of gliders, hang gliders, paramotors and non-radio aircraft to access the airspace under prescribed circumstances. Part of the access issue appears to be a lack of understanding amongst the operators of such aircraft of the problems associated with permitting such traffic inside CAS and on the restrictions this puts on the ANSP involved in relation to separation from other traffic. Despite this, it should be noted that LSA has LoAs in place with Essex & Suffolk Gliding Club, Kent Gliding Club and the British Gliding Association (BGA). The CAA therefore strongly encourages operators of gliders, hang gliders, paramotors and non-radio aircraft to approach Southend to arrange access to CAS, with the expectation that the Air Traffic Control unit will facilitate this where possible.

11.3 FASVIG Comments of Terminal Airspace Design Policy

11.3.1 **Comment from FASVIG:** When easyJet began operations at Southend, the LAA established collaboration with Southend ATC which would enable them to better manage GA aircraft whilst minimising CAT exposure to risk in Class G airspace. To facilitate this, Southend would not clear departing aircraft to take-off until they had a clearance to climb directly into the London TMA, and the LAA would promote the use of Southend ATSOCAS to GA pilots. Unfortunately, although easyJet reported that this worked well, Southend later abandoned the arrangement unilaterally. Subsequently, CAT aircraft flew extensively below the TMA until TC were able to merge them into the main London airport's traffic and that process and routing is now established as discrete blocks of CAS for the sole use of Southend traffic. However, innovative air traffic coordination tools are now available which could coordinate Southend departures and arrivals into the TMA, automating the manual procedure that was originally in place and mitigating the need for this additional controlled airspace and enabling efficient airspace sharing.

CAA comment: The procedure agreed between the LAA and Southend was set up before CAS was introduced at the airport. Although this procedure may have appeared to work well from easyJet's perspective, the airline and its pilots will not have been aware of the internal ATC coordination which takes place between Southend and adjacent TC sectors to allow an aircraft to depart into CAS. The large number of LTMA airports means that there is insufficient airspace in the current LTMA to provide discrete routes for Southend traffic which are separated from all other LTMA traffic. TC controllers therefore need to ensure that a Southend departure is only released when subsequent tactical climb and vectoring clearances can be managed safely. At busy times the TC controller may be unable to issue a clearance into CAS for a Southend departure. In order to avoid excessive delay to Southend departures, the only solution may be for the departure to get airborne but remain below CAS until it can be identified and climbed tactically into CAS by the TC controller. This issue is a consequence of the outdated design of the LTMA, and issues such as this will not easily be resolved unless and until future airspace changes are able to deliver more efficient LTMA, with discrete, separated routes for each arrival and departure flow, including those for Southend.

11.3.2 **Comment from FASVIG:** The CAA will be aware that in FASVIG's report on Farnborough airspace we will be proposing that the establishment of additional layers of CAS below the London TMA to serve one airport is negating the benefits that lie at the heart of the FAS deployment programme and represents outdated design practice. The consequence of the present Southend design is that the founding principle of the FAS, that of balancing the needs of all airspace users, is not being met. Commercial Air Traffic is now consuming more controlled airspace than it needs and is not using it efficiently when the solution already exists and is already funded.

CAA comment: The requirement to balance the needs of all airspace users is indeed a founding principle of the FAS and the CAA believes that, in the case of Southend, it has been met by implementing the best available solution to fit the current situation. Although the CAA acknowledges that the airspace may not be easily accessible for certain categories of airspace user, Class D status means that it is not only available to Southend but can be accessed by most pilots whose aircraft are fitted with radios.

11.3.3 **Comment from FASVIG:** The approach to airspace design could be made radically different if the ANSP took advantage of both departure and arrival management tools in use at Heathrow and Gatwick. Both airports operate Airport Collaborative Decision Making (A-CDM) tools that, if deployed to the airports north of London, would allow NATS to coordinate Southend departures and arrivals, as the ANSP can receive real time traffic information simultaneously from other airports. This information contains data concerning the departure and arrival of all aircraft using the airports and utilises predictive tools to provide a high degree of accuracy of the traffic situation in the TMA. This enables tactical management of the aircraft flows without the extensive layer of additional CAS. All of this information is freely available to NATS and its use to offset the need for additional controlled airspace is essential for modern airspace. It would not seem difficult to amend the algorithms within A-CDM to include Southend traffic which averages less than 33 CAT movements per day over the last year. We are aware that positive investment proposals for A-CDM at Stansted and Manchester have already been delivered to MAG. Moreover, European funding of up to €3.0 billion has been made available to airports, airspace users and ANSPs to deploy air traffic management functionalities such as these, all of which is designed to modernise the way in which traffic will be managed in future in situations exactly like Southend. So a better airspace solution is now available.

CAA comment: Coordination and radar control are two very different elements of a controller's job. Although A-CDM and other air traffic coordination tools could indeed

provide support to controllers managing Southend traffic, they would not resolve the controller's main issue which is to tactically manage Southend arrivals and departures in a safe manner. This is brought about by the lack of sufficient airspace to support all the airports in the LTMA, and therefore Southend, whose airspace and procedures are the most recently introduced, suffers by having the least efficient method of accessing CAS. As stated previously, this issue will not easily be resolved unless and until the LAMP project is able to deliver a much more efficient LTMA design, with discrete, separated routes for each arrival and departure flow.

- 11.3.4 **Comment from FASVIG:** FASVIG proposes that the CAA should direct London Southend Airport, and other north London airports, to examine the tools and procedures now available with a view to modernizing their operations in this congested airspace as envisaged by the vision of the Future Airspace Strategy.

CAA comment: Unfortunately, as stated previously, the solution to the modernisation of Southend's airspace and ATC procedures rests more with the redesign of the surrounding airspace than with the implementation of ATC tools. Even if the airspace is redesigned, it may well be that the best solution in this instance remains the Class D airspace structure which is currently in place. Whilst the CAA would encourage airports to examine the tools and procedures available to assist them in their operations, the Regulator does not feel it is appropriate or necessary to direct LSA, or any other airport, to do so.

- 11.3.5 **Comment from FASVIG:** FASVIG intends to propose to FASIIIG that the roll out of A-CDM and the consequent reduction in the need for CAS should become a core part of the FAS programme and FASVIG will be looking to the CAA for policy support on that.

CAA comment: A-CDM is undoubtedly a useful tool in terms of assisting controllers to manage their traffic flows, and the CAA would encourage its use where it can be seen to be of assistance from an ATM perspective. However, it cannot be assumed that the implementation of such tools will automatically resolve all ATM issues, as they do not in themselves resolve ATC conflicts.

12. Conclusions & Recommendations

12.1 LSA Conclusions

- 12.1.1 LSA applied for CAS during 2014 and implemented on 2nd April 2015. LSA total aircraft movements and passenger numbers since 2011 are:

Year	Air Transport Movements	Passengers
2011	1,937	42,515
2012	7,270	623,588
2013	9,481	970,073
2014	11,545	1,102,888
2015	8,975	900,634
2016	8,278	874,411

From an LSA perspective, the introduction of controlled airspace in the vicinity of Southend has been a success as it has enhanced safety in the vicinity of the airport. The airport recruited more staff, developed a comprehensive training package and involved other airspace users. The airport operator states that it always tries to allow aircraft to transit with the least possible disturbance. LSA also tries to create ways to allow easy access for aircraft conducting general manoeuvres, for example, regularly allowing aircraft to enter the very popular area of CTA4 so that they can conduct general handling.

12.2 Stakeholder Conclusions

12.2.1 NATS has stated that, as a result of the issues it experienced, particularly with coordinating implementation timings between adjacent ATS units, the CAA should consider:

- An improvement to the process for determining and notifying implementation dates for future airspace changes. (...*completed in the 2016 CAP 725 update; Stage 2, Para 2.4*)
- Improvements in the efficiency of the airspace in the Southend area along the lines suggested in paragraphs 12.2.2-12.2.4.

12.2.2 **Comment from NATS:** The procedures associated with CTA-8 are complex though appear to work. However, NATS challenges the usefulness of this airspace to Southend and proposes that part of this airspace could be more efficiently used by Swanwick TC rather than Southend, e.g. 4500ft and above could be TC Thames levels with agreements on GA access to this airspace via an LoA.

CAA comment: The TC/Southend LoA currently specifies the following for CTA8 interaction:

Southend will co-ordinate with TC Thames any IFR traffic in CTA8 at 4000ft or above. TC Thames shall notify this traffic to TC South. Southend will ensure any Southend departures are clean of traffic in Southend CTA8 prior to transfer to TC Thames. TC Thames shall co-ordinate with Southend any non-Southend flights prior to penetration of Southend CTA 8. Co-ordination can be aircraft specific or for a defined time period. (As the airspace is Class D, TC controllers are qualified to operate within it.)

The perception by TC is that TC Thames needs to use CTA8 at 5000ft more often than Southend, and therefore there are far more phone calls originated by TC than Southend.

The CAA suggests that TC and LSA co-ordinates a better method of utilising the airspace in CTA8 above 4500ft. This could involve Southend delegating 4500ft and above to TC Thames with Southend having the right to claw back the airspace if there is a VFR transit or a need to utilise the airspace for other purposes.

12.2.3 **Comment from NATS:** The Class G airspace immediately north of Thurrock between the LTMA 2500ft and LSA CTA/CTR adds complexity to the area, provides non-optimal protection to the TC Thames and Southend ATS operations and has limited accessibility for GA not working Southend. NATS believes that it would be beneficial to change this airspace to either LTMA, base 2500ft or to LSA CTA Class D, base 2500ft.

CAA comment: The CAS introduced as a result of the Southend ACP was based on the minimum required for Southend to carry out its tasks. Any extra CAS requirement in this area would need to be the subject of a separate ACP.

12.2.4 **Comment from NATS:** Whilst not specifically a TC issue, there would be benefit in lowering part of the CLN CTA east of TRIPO from 5500 to 4500ft, or extend the Southend CTA immediately east of TRIPO to assist with ensuring Southend arrivals remain within controlled airspace. The current procedures require Southend to descend aircraft from 6000ft to 5000ft and depending on the runway in use and local

RMA constraints, the descent sometimes needs to commence prior to the CTA boundary.

CAA comment: This issue was recognised by the CAA at the time of approval of the airspace. In view of the location of the descent area, i.e. over the sea in an area of relatively low GA traffic, it was felt that with current traffic levels at Southend, the ANSP was perfectly capable of providing a deconfliction service for its inbound traffic.

12.2.5 Comments/recommendations from private pilot/instructor (Andrewsfield):

Comment from private pilot/instructor: “I would like the PIR to present a map showing which parts of CAS are actually used by CAT traffic, and how frequently, to ascertain whether the airspace could be reduced in size (as was done at Norwich).”

LSA comment: This would be difficult to achieve and all areas are utilised in any case. Due to the restricted airspace levels available and overlaid RMA buffers, Southend is restricted vertically and there is therefore an increased likelihood of more lateral separation being applied.

Comment from private pilot/instructor: “The airspace design was predicated on a certain number of movements, and I believe the number of movements is actually substantially less than forecast. The PIR must present the data on actual vs forecast movements and make a recommendation accordingly to reduce the size of CAS.”

Comment from private pilot/instructor: “It is unclear what the criteria are for using the Director frequency. Typically aircraft are transferred from Radar to Director for a CAS transit at busy times, which I understand, but often they are not transferred back to Radar on leaving CAS. Why not? Further clarity of use and consistency would benefit student and low hours pilots. (The use of Stansted Director in Stansted's CAS is much more consistent).”

LSA comment: Where workload allows, Director occasionally retains control of transiting aircraft, trying to reduce the amount of frequency changes for the pilot.

Comment from private pilot/instructor: “For traffic outside CAS, could 4575 be used as a listening squawk to reduce pilot and controller workload?” Please see the Response from LSA at paragraph 6.1.2.

Comment from private pilot/instructor: “Simplification and reduction of CAS size is particularly pertinent because the Southend design is complex with many sectors with different levels, which a pilot or instructor has to manage when remaining clear. If there are parts which are little used, they should be released, or re-classified as class D(HX); i.e.no specific working hours.”

CAA comment: Despite the relative complexity of the Southend CAS, it was designed to be the minimum required to fit with Southend's needs and therefore a reduction in the complexity would inevitable mean extra CAS to level out the different bases etc. Additionally, the CAA does not see that a re-classification to indicate no specific working hours would be of any benefit. The CAA will continue to monitor all CAS usage to ensure that, in their opinion, it continues to meet the needs of most stakeholders.

Comment from private pilot/instructor: “What reductions in airspace and improved performance climbs and descents could be achieved through LAMP (London airspace rationalisation project)?”

LSA Comment: Even with the implementation of LAMP 1A procedures, Southend departures are initially restricted to 3000ft. Additionally, arrivals need to descend to comply with the limitations of the RMA.

CAA Comment: Only a revised LTMA design which enables Southend traffic to climb and descend continuously can enable lower levels of the Southend CTA to be released. This will not occur until the next element of the LAMP project is implemented.

12.3 Regulatory Conclusions

- 12.3.1 The CAA is satisfied that implementation of CAS at Southend has generally been beneficial in terms of meeting the key objectives of protecting aircraft in the instrument approach and initial departure phases of flight, whilst not disproportionately constraining access to other airspace users, except those that are not radio equipped. Indeed there have been no safety related events since the inception of the CAS associated with itinerant traffic and LSA in/outbound IFR traffic. SARG (Airspace Regulation) confirms that LSA has been proactive and co-operative, both in its approach to managing its airspace and in its engagement with the CAA. Protecting the travelling public and placing the needs of the passenger at the centre of any proposal is also in line with CAA policy. Based on well advanced airline discussions, LSA is confident that its annualised target of circa 2.5 million passengers by 2019 is a realistic prospect, despite a recent reduction in aircraft movements.
- 12.3.2 The traffic mix rather than overall traffic numbers, and a number of safety incidents were the main drivers behind the original approval of CAS and the fact that LSA has been proactive in making every effort to allow access to motorised, radio equipped aircraft since CAS implementation also greatly mitigates against those GA pilots who choose not to request a transit of the airspace for fear of a refusal. Since implementation of Southend CAS, there has been one AIRPROX involving IFR traffic in CTA7 at 3000ft. The IFR traffic reported observing a parachute (paramotor/glider) at a similar altitude, approx. 0.5nm away. If this traffic was indeed above 2500ft, it should have been in contact with Southend ATC.
- 12.3.3 The CAA encourages operators of gliders, hang gliders, paramotors and non-radio aircraft to approach Southend to arrange access to CAS where possible.
- 12.3.4 It is likely that the implementation of the Southend CTR/CTA has improved overall safety for traffic operating within CAS although this is likely to have negatively affected the efficiency of some flights in the area, notably non-radio traffic and soaring gliders which now avoid the area.
- 12.3.5 Provided LSA continues to liaise with the local GA community in the way it has done to date and in the manner suggested, this should help to mitigate the impact of Southend CAS.
- 12.3.6 From an environmental perspective, the implementation of CAS around LSA has had minimal effect on traffic utilising the airport as arrival and departure routes have not been affected as a result of new CAS. Any change to the use of the airspace may revolve around traffic which now routes around the new CAS rather than transiting across it, although figures for such traffic cannot be estimated. For suitable aircraft, further efforts by LSA to enable and encourage traffic to transit the airspace should help to alleviate this issue, although it is recognised that this will not be an option for all traffic.

12.3.7 The overall regulatory conclusion is that the CAS around LSA is working adequately. There are still options for improvement as previously stated however, the procedures as implemented should continue subject to the considerations mentioned previously.

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SARG

Signed off by

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