

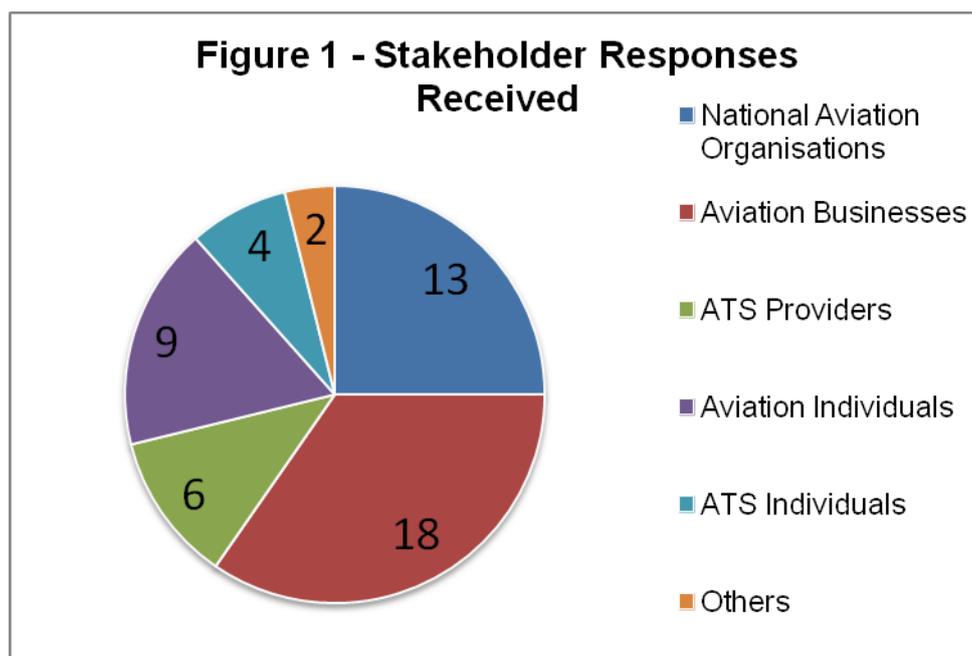
Consultation on the Policy to Introduce a Harmonised Transition Altitude of 18 000 ft in the London and Scottish Flight Information Regions

Aviation Stakeholder Consultation – Feedback Report

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Introduction

1. This document provides feedback to aviation stakeholders who participated in the consultation on the policy to harmonise the Transition Altitude (TA) both inside and outside controlled airspace (CAS) in the London and Scottish Flight Information Regions (FIRs) at 18 000 ft¹. The consultation commenced on 31 January 2012 and closed on 1 May 2012. Although consultation material was distributed only to members of the National Air Traffic Management Advisory Committee (NATMAC), responses were also received from other organisations and individuals - all responses were considered. Figure 1 provides an overview of the responses received.



2. There were 52 responses to the consultation. As requested in the Consultation Questionnaire, 32 respondents indicated that they flew within or outside CAS in the London and/or Scottish FIRs; 10 respondents indicated they were involved with the provision of an Air Traffic Service within the London and/or Scottish FIRs. The remaining consultees were either not specific in regard to these 2 questions or had retired from aviation.

3. Of the 52 responses received, 13 were from national aviation organisations representing a wide range of airspace users including commercial, general and military aviation. The size of membership of such organisations varied from the relatively small to significant in numbers, with one such organisation responding on behalf of over 30 other smaller groups. There were 18 responses from aviation businesses including airlines and local commercial operators. ATS providers, both national and regional accounted for 6 responses received. In addition, there were 9 individuals from aviation and 4 individuals from ATS provision who responded. Others accounted for the remaining 2 of the responses received.

4. Overall the response rate was considered satisfactory for this stage of the formal consultation. Comments received from this initial consultation, will inform the ongoing work on the development of a Concept of Operations (CONOPS), which in turn will form the basis for the

¹ Some possible exceptions, such as in Delegated Air Traffic Service Airspace where services are provided by another state.

second consultation that is due to commence in late 2012. Comments from both consultations will be reflected in the final CAA Regulatory Impact Assessment.

5. In the event that a representative organisation or individual wishes to present new evidence or data on this consultation prior to the proposed second round of consultation, it should be submitted, in writing, to the following:

Director of Airspace Policy
CAA House
45-59 Kingsway
London,
WC2B 6TE.

Confidentiality

6. Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004). If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals with, amongst other things, obligations of confidence. In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the CAA.

7. The CAA will process your personal data in accordance with the DPA and, in the majority of circumstances, this will mean that your personal data will not be disclosed to third parties.

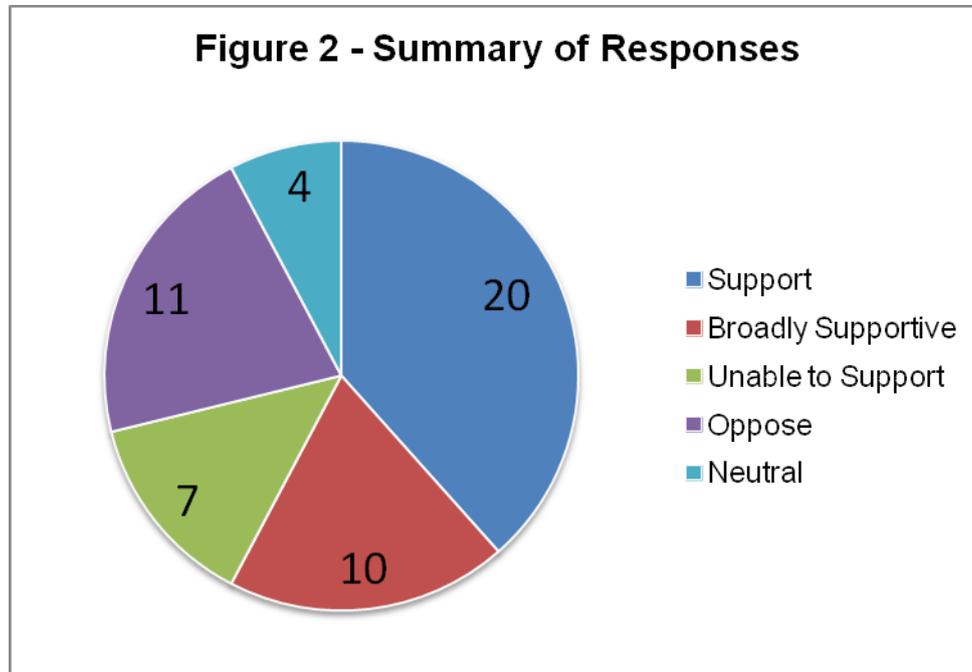
Feedback

8. The feedback provided in this document will focus on the analysis of the comments received and the key themes identified by stakeholders.

9. The aim of the Harmonised TA Consultation Document was to provide the necessary background, and much of the necessary detail to enable stakeholders to begin assessment of the relative merits of the policy to harmonise the TA in the London and Scottish FIRs at 18 000 ft. It was highlighted at the beginning of the consultation that work on the development of altimeter setting procedures and a review of the UK Altimeter Setting Regions (ASRs) had yet to be finalised, but given the timelines associated with the overall proposal, it was considered that formal consultation on the policy should commence without these elements. Altimeter setting procedures and changes to current ASRs are crucial elements in developing the CONOPS for an 18 000 ft TA.

Statistical Analysis

10. Figure 2 below summarises the opinion expressed by stakeholders in regard to introduction of a Harmonised TA of 18 000 ft.

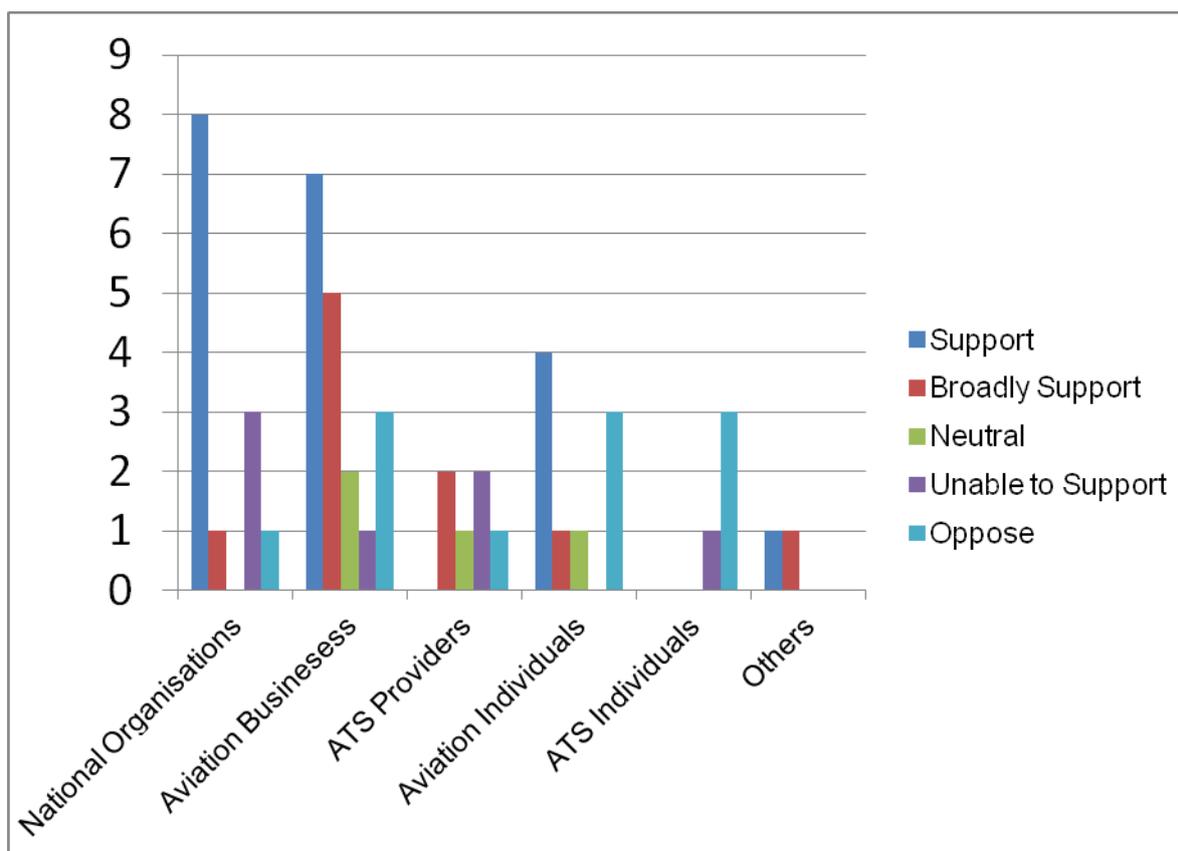


11. Given that the consultation document did not contain specific details of the procedures to be employed, it was not unexpected that a fairly high number of respondents were unable to firmly commit to simply supporting or opposing the policy to harmonise the TA at 18 000 ft at this stage. Therefore assessment of responses was expanded to encompass those who were, based upon their comments, considered to be broadly supportive, unable to support or neutral.

12. Of the responses received, 20 consultees expressed support for the policy, 10 consultees were broadly supportive although expressed some concern, for example in regard to implementation costs or timelines, or in favour of the implementation of an interim level until wider European harmonisation was in place. There were 7 consultees who did not oppose the policy for an 18 000 ft TA, but required more information, primarily on the concept of operations and cost impact, before committing one way or another. There were 11 who opposed the proposal, and 4 whose comment were considered neutral.

13. Figure 3 below shows the breakdown of responses received in respect to the views expressed by groups.

Figure 3 Responses by View



14. The National Aviation Organisations that provided comment on the consultation were generally in favour of a harmonised TA in the London and Scottish FIRs. The majority of Aviation Businesses were also supportive or broadly supportive of the change. None of the ATS providers felt that they could declare their support to the new TA at this stage; the majority of those that did respond to the consultation were evenly split broadly supportive/unable to support at present. The aviation individuals that commented tended to either be fully supportive of the proposal or fully opposed to it. The 4 ATS individuals who responded did not support the change and the comments from the 2 respondees that did not fall into any of the other groups were positive.

15. There were 13 consultees that suggested an alternative level for the TA. Of this 7 suggested 6 000 ft either as a satisfactory level for all UK operations; for their specific operation or as an interim level until a wider-European harmonised high TA could be implemented. There were 4 consultees that suggested 10 000 ft as an alternative TA level, primarily as a level that did not conflict with preferred cruising levels and also as a level which aligned roughly with some operators' 'systems check' point. One consultee suggested 7 000 ft as a UK-wide TA to account for terrain clearance and a further consultee suggested 5 000 ft to best suit their operational environment.

16. There were 18 consultees who expressed a degree of preference for one of the Potential Implementation Options outlined in the consultation document as follows:

- a. One for Option 1 (Altimeter Setting Areas (ASAs)² utilising forecast QNH).

² For the purpose of this document and to distinguish from current ASRs, an ASA is considered an airspace of defined dimensions below the 18 000 ft TA.

- b. Two for Option 2 (ASAs utilising forecast QNH with a separate value derived for use inside CAS).
- c. One for Option 3 (ASAs utilising forecast QNH outside CAS. Within CAS structures an actual QNH from a nominated aerodrome would be used).
- d. Fourteen for Option 4 (Use actual QNH values in the Scottish and London FIRs).

17. Consultees were asked to give, if possible, an indication of costs that they or their organisations might anticipate through making the required implementation changes. There were 16 respondees that provided comment, of which only 3 (all airlines) provided an estimate; these varied from several hundred of pounds to several hundred of thousands of pounds. Other airlines provided an indication of costs varying from 'limited' to 'potentially significant'. Similarly, some ATS providers considered that costs could be 'minimal', but the most of the larger ATS providers, although not committing to any figure, indicated significant cost concerns.

Key Themes

18. In examining the responses received from stakeholders a number of key themes emerged from those respondees who raised concerns with the policy. By and large the issues identified were not unexpected; particularly as the altimeter setting procedures and information on the review of the UK ASRs were not included in this consultation document. The Key Themes along with explanatory notes and CAA comment is at Annex A.

Next Steps

19. During the consultation a considerable amount of work was undertaken by the TA Project Team (TAPT) to develop the concept of operations to support the policy to harmonise the TA in the London and Scottish FIRs at 18 000 ft. This work supported by feedback from this consultation will form the basis of a second consultation that is planned for late 2012. Details of the second consultation will be distributed to the same stakeholder list as the first consultation in due course. The output from the work undertaken by the TAPT and the comment received from both consultations will form the basis of the final Regulatory Impact Assessment (RIA) of the proposal.

Key Themes raised during Consultation on the Policy to Introduce a Harmonised Transition Altitude of 18 000 ft in the London and Scottish Flight Information Regions³

Serial	Key Theme	Explanatory Note	Comment
1	Increase in workload for aircrews.	For aircraft cruising at altitudes below the new TA frequent adjustments for the actual QNH would be necessary.	It is acknowledged that under certain circumstances there could be a requirement for aircrews to increase the number of altimeter adjustments with a raised TA. However, in other situations, such as with some Class G operations, there may be a requirement to select only one pressure setting for example for aircraft operations in the vicinity of an aerodrome or short transit flights. Consideration must also be given to the overall benefits of a harmonised TA particularly in regard to a single policy applicable at all aerodromes and to airspace structures with associated simplification of airspace definition and standardisation of procedures. It is also acknowledged that benefits must be measured against any safety issues which result from the change in TA.
2	Increase in controller workload.	Increase in controller workload due to requirement for more QNH changes. Possibly no margin to increase manpower: increase in controller workload mitigated by a reduction in controller capacity and thereby reduction in output. The regular mixed use of hPa	It is agreed that there will be situations when controllers will have to provide more information on pressure than currently – this is most likely in controlled airspace (CAS). Increased controller workload and associated safety concerns is one of the prime considerations for the TAPT in their development of CONOPS. It is also agreed that for some controllers there may be a need for less regular changes to pressure values than are currently required, such as for those operations when aircraft no longer require to transition the TA as it would be significantly higher, or for aircraft operating in the vicinity of an aerodrome and short transit flights. Also,

³ The Key Themes raised have been forwarded to TA Project Team to inform their ongoing work.

		and Inches (US military) adds another layer of complexity.	some Air Traffic Service (ATS) providers, in the Aerodrome ATS environment for example, are likely to benefit from a more predictable and, in some cases, a simplified Air Traffic Management (ATM) operational environment.
3	Reduced ATM capacity.	Increased controller workload, particularly within CAS, will lead to a reduction in the number of flights the ATM system can cater for.	Although it is recognised that there may be an increased controller workload within CAS, in regard to the busy TMA environment pre-consultation assessment indicated that a harmonised high TA supports capacity enhancing TMA procedures. Efficiency of aircraft operations in TMAs has also the potential to increase through the availability of more levels ie removal of the TA/Minimum Flight Level (MFL) interaction at lower levels of the TMA. A high TA has the potential to improve future airspace design and transitions between airspace. There are benefits in raising the TA; however, the CAA and TAPT are cognisant that there may be a specific level at which the benefits start to be outweighed by the risks.
4	Capacity impact during change period.	Any change would result in a period of training and transition for ATM, which in turn could result in reduced capacity for that period.	Imposing regulation that would impact on capacity is highly undesirable at all times. Air Traffic Service (ATS) would ensure that every effort would be made to make certain that pre-implementation simulation and training would be as effective as possible in order to minimise the impact of change, including during the transition period. Pre-implementation work would also ensure that the transition period would be as short as possible and timed to occur during periods of minimum demand. All education and training programmes must be complete prior to implementation.
5	Loss of FLs.	Particularly on low pressure days when FL200, as well as FL190, may not be available, the loss of FLs in the En-route environment may result in a reduction of capacity in CAS.	The loss of a usable level/s in ACC sectors is considered a manageable issue, NATS, as the most appropriate organisation to determine such matters, have been highly engaged and influential throughout the project, including representation within the TA Oversight Group, Steering Group and Project Team. It is NATS' considered view, and obviously in their interest, that any change to their operation does not present regulation that would impact on overall capacity – a view obviously supported by the CAA. Any potential change would be subject to appropriate and extensive NATS simulation, and operational and safety assessment. FL190 may be available on a tactical basis.

			<p>The following statistics gives examples of unavailability of FL190 & FL200 based on historical analysis by the Meteorological Office of pressure data over a 5-year period:</p> <ul style="list-style-type: none"> • In London TMA FL 190 would be unavailable 42.8% of the time and FL200 0.20% of the time. • In Manchester TMA FL190 would be unavailable 48.5 % of the time and FL200 0.45% of the time. • In Scottish TMA FL190 would be unavailable 52.9% of the time and FL200 0.97% of the time.' <p>It must be noted that although a higher harmonised TA may result in the loss of cruising levels in the En-route environment, the TMA environment would not lose levels, as is the case under current arrangements.</p>
6	Loss of optimal cruising levels.	FL 190 will not be available as a flight plannable cruising level thus incurring a cost penalty for some operators.	FL190 may be available on a tactical basis. Due to relatively low demand, cruising levels in the vicinity of FL190 are extremely likely to be available, be they FLs or altitudes. Statistically, it has been shown that the number of aircraft/operators with a preferred cruising level of FL 190 is small and thus the availability of adjacent levels is highly likely.
7	Increased airspace complexity.	The airspace structure will be more complex because each portion/segment of the airspace will need to carry an added description of the altimeter setting to be used within or beneath it.	The situation today is complicated, different TAs, different operations in and outside CAS, and use of ASR pressure settings and actual QNH. The complexity of airspace is an important consideration for the CONOPS development. Any increase in complexity for aircrews and controllers that impacts on overall efficiency and capacity is undesirable. In accordance with CAA Future Airspace Strategy (FAS) principles, all changes will be justified on the grounds that they will directly reduce the risk, and/or contribute, to the development of a fundamentally safer system or at the very least maintain current levels of safety whilst delivering benefits in other areas.
8	Additional flight plan level change.	Every flight plan crossing the UK FIR boundary below the level of the new TA would need to include an additional level change.	Initial assessment by the TAPT considered this not to be unduly restrictive, but it is acknowledged that there may be additional flight planning and database input requirements. Potential use of transition/buffer area at boundaries. Change in CAS en-route procedures would be subject to rigorous NATS simulation, assessment, training, safety management and

			implementation programmes.
9	An increase in CAS	Any increase in CAS through additional routes or change in holding patterns that affects specific operators would not be acceptable.	This would not be anticipated as a direct consequence of the introduction of a harmonised higher TA; any future changes to the boundaries of CAS would be subject to the Airspace Change Process.
10	Level bust risk moving from existing TA to the new high level TA.	Level bust risk moving from a low altitude close to existing TA to the new high level TA in the vicinity of 18 000 ft - pilots forgetting to set 1013 in a climb. Also risk of pilots accidentally changing to 1013 at a low altitude instead of at 18 000 ft.	Aircrews climbing above the high TA in CAS would be under the control of an ATS provider – controllers are highly likely to confirm/change Flight Level (FL) on first contact. Particular levels are routinely used as a trigger for systems checks within the cockpit, included in these is a check of altimeter settings; consideration must be given to aligning certain system checks with high TA level. Robust training, education and safety management regimes would need to be in place to coincide with the implementation of new operations. It is likely that the level bust risk could be reduced with a higher TA as cockpit workload is significantly reduced above 10 000 ft. It is likely that a higher percentage of professional IFR-rated aircrews will be operating in the vicinity of a higher TA in accordance with robust SOPs and a rigorous oversight regime.
11	Losses of separation due to altitude changes.	A potential increase in the number of altimeter adjustments required could result in errors by aircrews and controllers.	It is likely that for some operations there may be an increase in the number of altimeter setting changes required and thus the potential for more altimeter setting errors to occur and possibly an increase in losses of separation. Again, it is appreciated that the change to a high TA introduces or extends this risk to some operations where the risk does not currently exist. However, this must be considered against a reduced risk arising from the need for aircrews to only make smaller adjustments in altimeter settings, leading to more opportunities to detect incorrect settings rather than under the current infrequent and potentially large changes between different altimeter settings. Consideration must be given to what may constitute a loss of separation in mitigation terms in any new operational model to be identified in the second consultation. Extensive meteorological analysis has been undertaken to understand average pressure values in

			<p>the UK in order that there is a sound basis for any new pressure setting arrangements.</p> <p>Work undertaken into 'level busts' has shown that there would be a significant aircrew safety benefit in having the change from altitude to FL and <i>vice versa</i> occur at a higher level where there is a reduced flight deck workload compared with that at the current lower TA.</p> <p>Small QNH Variations will routinely fall within the tolerance values already permitted for vertical reference using barometric altimeters and altimeter system error.</p>
12	Safety Assessment.	Conduct a safety assessment in order to inform the final outcome.	<p>The second consultation will, in addition to focusing on the concept of operations, outline the high level safety principles that have been applied by the TAPT and justification that the revised policy and procedures will directly reduce the safety risk, and/or contribute to the development of a fundamentally safer system, or at the very least maintain current levels of safety whilst delivering benefits in other areas.</p>
13	Which QNH would be applicable?	Under certain conditions it cannot be assured that two aircraft will be using the same QNH, therefore vertical separation (1 000 ft) between two adjacent altitudes could be compromised.	<p>This situation exists today both inside and outside CAS. It is acknowledged that the problem is currently mitigated to an extent by the low TA. It occurs with: adjacent aerodromes within the TMA; use of Aerodrome QNH/QFE v Altimeter Setting Region (ASR) pressure values; flying adjacent to the boundary of ASRs. Outside CAS a higher TA would result in a decrease in the number of aircraft operating at the interface of 'local' QNH and the Standard pressure setting which can often be in the range of 10-15 hPa. The question of applicability of QNH forms a key aspect of the Concept of Operations (CONOPS) which will be outlined in the second consultation.</p>
14	Use Actual QNHs.	The RPS system currently in use is predicated on forecast QNH.	<p>The RPS system has been successfully employed for many years. The continued use of forecast QNHs is one of the prime considerations for the ongoing review of RPS system; no decision has yet been made.</p> <p>The use of forecast QNHs is not widely employed outside of the UK and although familiar to UK aircrews, it may not be as readily understood by some visiting crews. The CAA Meteorological Authority consider that for the vast majority of the UK, actual QNH values are easily available and consideration should be given to a revision of extant ASR systems.</p>

			<p>Comment received during consultation is that aircrews responsible for their terrain clearance want to know exact altitudes and there is no requirement for an artificially low forecast QNH. Forecast QNHs may be of benefit, for example in influencing airborne decision making such as route selection, however uncertainty in the use of forecast QNHs whilst flying in the vicinity of an aerodrome creates a potential for an associated safety issue due to loss of vertical separation. Removal or reduction in the use of forecast QNHs has the potential to reduce the number of pressure setting changes for aircraft on approach to an aerodrome: local flying may be undertaken on aerodrome QNH or in some cases aircraft descending from above the TA could change direct from FL to Aerodrome QNH without the requirement to select regional pressure setting. Actual QNH values are more widely available than forecast QNH on ATIS. The future utilisation of ASRs is considered as one of the vital components of the CONOPS for a harmonised TA.</p>
15	QNH availability to aircraft outside CAS.	Outside CAS, non-RT and aircraft not in receipt of an RT service may not have appropriate QNH value.	<p>CONOPS development would have to take the availability of actual QNHs, forecast actual QNHs and revision/removal of ASR system into consideration. While there is a widely distributed number of aerodromes available on a 24/7 basis providing QNHs, a review on the availability of QNH information is being undertaken.</p>
16	Aircrews forgetting to change QNH.	Aircrews may forget to change to the appropriate QNH during transit or on crossing any potential QNH boundary.	<p>The risk that aircrews fail to set the correct altimeter value currently exists and will not change regardless of the TA. It is acknowledged that a higher TA introduces or extends this risk to some operations where the risk does not currently exist. CONOPS will define procedures (both inside and outside CAS), but aircrews changing from one potential QNH Sector are likely to be under the control of an ATS provider – controllers are likely to confirm any Sector QNH value on first contact.</p> <p>Other than in those cases where an extremely steep pressure gradient exists, the relative incremental QNH change is likely to be relatively small. As Serial 8, robust training, education and safety management regimes would need to be in place to coincide with the implementation of new operations.</p>
17	Neighbour State	At the boundary with Neighbour	Robust neighbour state interface arrangements are essential to success of

	interface issues.	States there would be a requirement for a defined transition/buffer area to facilitate climb or descent from FL levels to altitudes or vice versa.	a harmonised high TA. Assessment of the issues and engagement with neighbour states have been underway for some considerable time prior to consultation launch. Here again, it is recognised that there may be a specific level at which the benefits start to be outweighed by the risks and such analysis will play a key part in establishing the preferred final level for a raised TA.
18	Changes to CAS inter-sector standing agreements.	Likely widespread changes to standing agreements at the CAS sector boundaries.	Change in CAS en-route procedures would be subject to rigorous NATS simulation, assessment, training, safety management and implementation programmes.
19	Impact on Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO).	A higher TA would enable the greater and more widespread use of CCOs for departure routes and CDOs for arrival routes.	The establishment of a harmonised higher TA is viewed as a key enabler for future airspace designs that better facilitate improved CCO and CDO. Any future airspace changes would be subject to the Airspace Change Process and associated consultation.
20	CCO and CDO improvement through development of segregated routes.	CCO and CDO improvement though development of segregated routes rather than being restricted by the limitations of the altimeter setting in use at the current low TA.	This is acknowledged and is currently under consideration as part of the development of altimeter setting procedures and the ASR review.
21	Standard altimeter setting as a reminder that QNH is not set.	Air Safety Reports and MORs in the last few years indicate that due to aircrew error QNH has not been set on a number of occasions. The subscale setting of 1013 may act as an obvious reminder that QNH is not set.	Aircrews/operators may have to revise procedures and flight operation checks to ensure robust flight safety measures are maintained as a minimum.
22	Additional costs	Simulator time, charts, AIPs, CAPs, radar displays, manuals, training programmes and	It is acknowledged that there may be additional costs to stakeholders in order to continue to provide services to at least equal the current standard. It is further acknowledged that in some cases the cost may be significant.

		databases would need to be updated. At this stage it is impossible to define requirements given the immaturity of the CONOPS and thus it is also not possible to provide accurate costings.	Costs would have to be met by the bodies affected. In order to gauge the full extent of the financial implications the CAA has invited all impacted parties to provide an estimate of costs that would result from the proposed change – this request will be reiterated during the 2 nd consultation. Publication of the draft CONOPS as part of the 2 nd round of consultation material will aid the supply of information.
23	Cost to public	Costs of some major upgrades, training and simulation would be met by air passengers.	It is considered that the cost to the aviation industry would be managed as per any change. Future benefits will be realised through improvements to the vertical profiles of aircraft arrivals and departures, more efficient use of airspace and safety improvements all of which are of benefit to all airspace users and ultimately the travelling public.
24	Benefactors should pay a proportion of non-benefactor's implementation costs.	Due to such a perceived imbalance in costs, rather than 'costs lie where they fall', a more appropriate approach would be that all parties benefitting from the change should pay a proportion of the implementation costs of those that will accrue costs as a consequence of the new TA.	The CAA is cognisant of the potential cost implications to stakeholders. A better understanding of the overall cost of the change will be known following the 2 nd consultation.
25	Equipment Modification	Modifications would be required to show converted Mode C information on radar displays. Radar cover information displayed in Area Radar would have to be continually updated with reference to the relevant QNH – associated with safety cases. Support Information Systems would need to be modified to display QNH updates. Some	The requirement for equipment modification and associated costs are recognised. In order to better inform the regulatory process the 2 nd consultation will request stakeholders to provide a detailed assessment of the impact of the change to a higher TA will have in terms of equipment modification, system upgrades, training, education and cost.

		<p>systems may not be able to support such a change. Radar maps would require updating. Projects and system development plans are currently underway which do not cater for a change in TA.</p>	
26	Commonality of converted Mode C readout.	Differing display of Mode C at different units prevents commonality of response to perceived/observed conflicts.	<p>A situation which occurs today, particularly with adjacent civilian and/or military Air Traffic Management units in Class G Airspace – different QNH values and or different QFE values and TL may be used. There is the potential to reduce the number of altimeter values by removal of current ASRs, QFEs and TL (at lower levels) to replaced by only QNHs or ‘clutch QNH’. Traffic Information provided by controllers to aircrews may, as a current option, be passed in relation to indicated level of other aircraft. Traffic co-ordination may be applied with due regard to level and associated pressure setting.</p>
27	Implementation timescale	The implementation timescale is demanding given the perceived work to be undertaken.	As highlighted in the consultation document the target implementation date will be confirmed after further evaluation has been completed to determine the full scope of the work required.
28	A unified TA at 18 000 ft for Europe.	A unified TA at 18,000 is the only option for Europe. Anything less than this will be seen as a lack of commitment towards the real modernisation of airspace that will enable growth, safety and greater capacity.	<p>The harmonisation of TA is a Single European Skies (SES) objective. Throughout Europe it is accepted that the harmonisation of the TA and associated procedures brings safety benefit through standardisation of airspace and procedures both within and outside controlled airspace. EUROCONTROL has established the Harmonised European Transition Altitude (HETA) Task Force to coordinate TA implementation proposals in European airspace. EASA’s Advanced Notice of Proposed Amendment (A-NPA) consultation this year recommended: ‘Regulatory action to prescribe common criteria for the determination of TAs at or above 10 000 ft should be the preferred option for harmonisation of TAs in European airspace.’</p>

29	Imminent EU-wide harmonisation unlikely.	EU-wide harmonisation is unlikely in the near future and if it does occur, it is unlikely to be at 18 000 ft.	The UK is committed to implement a common higher TA and will ensure that appropriate interface procedures are in place with neighbouring States regardless of whether they change at the same time or not. However, every effort will continue to be made to address the interface issues and if at all possible to align both the chosen level and the implementation date.
30	Alternative Options	<p>6 000 ft due to the nature of some specific operations outside CAS. As an interim level until higher TA can be implemented across Europe.</p> <p>10 000 ft could present fewer cross-sector and cross-state interface issues. Fewer aircraft with 10 000 ft as a preferred cruising level. Upper level of LARS provision (consideration for requirement to convert Mode C to an altitude for Area Control Centres). Climbing through FL100 is currently used to check various aircraft systems; such as seat belt signs, fuel pumps and Standby Altimeter set to 1013hPa; 10 000 ft would be an easy aide memoire to change to standard setting.</p>	<p>A harmonised TA of 6 000 ft may support some operations both as a short and long-term measure. However, for other operations it is currently the problem rather than the solution. In line with the details outlined in the consultation document the new higher TA is predicated on delivering overall benefits for the UK. The costs of a 2-stage approach are likely to be very high.</p> <p>European Aviation Safety Agency (EASA) has initiated consultation on a European Harmonised TA. EASA preliminary impact assess makes a recommendation that: 'Regulatory action to prescribe common criteria for the determination of TAs above 10 000 ft should be the preferred option for harmonisation of TAs in European airspace.'</p> <p>Consideration could be given to aligning certain system checks with the Harmonised High TA level. It is acknowledged that there exists for some pilots certain altitudes/levels that trigger an auto response; 10 000 ft is one of these and whilst not in itself a reason for a TA of 10,000 ft it would mitigate against forgetting to reset altimeters at a TA of 10 000 ft.</p> <p>Higher transition altitudes are operated perfectly satisfactorily in other parts of the world in high density airspace and SOPs are developed accordingly.</p>
31	Steep pressure gradients.	Steep pressure gradients in some areas will result in pressure gradients of 20+ hPa per 100 nm resulting in frequent QNH changes.	<p>Meteorological assessment indicated that pressures gradients of such magnitude are infrequent - 0.06% which equates to approximately once in a 5 year period. Nonetheless, the influence of pressure gradients is a key aspect of the development of the CONOPS for a harmonised high TA and will subsequently form part of the second consultation.</p> <p>In considering suitable mitigation for the safety issues associated with steep</p>

			<p>pressure gradients, it is recognised that as such meteorological events are rare, controllers, in particular, will need to be familiar with associated operating procedures. Suitable meteorological forecasts are being considered to ensure controllers are aware of the potential for extreme low pressure events.</p> <p>Procedures exist today when extremely low pressures occur and it is highly likely that extreme situations would require similar arrangements in future.</p>
32	Legislative action required to cater for a higher TA.	For example IFR flights operating in Class G airspace may require additional guidance on flight planning requirements. Specific FLs referred to in Air Navigation Order and other Aeronautical Publications may no longer exist with higher TA.	It is acknowledged that legislative action may be necessary as a consequence of the implementation of a new TA.
33	Contrary to PANS-OPS	PANS-OPS Part VI Para 1.1.2.1.3 states: 'The height above the aerodrome of the transition altitude shall be as low as possible but normally not less than 900 m (3000 ft)'.	Level changes will occur as a feature of the routine ATM environment regardless of the chosen TA. PANS-OPS provides guidance. There is well documented national and European agreement on a harmonised high TA which should lead to a change in this statement in PANS-OPS. ICAO is currently reviewing this provision.
34	Environmental impact of additional level changes.	Level changes may result in additional fuel burn.	Potential improvement to the use of CCOs and CDOs could realise environmental benefits of less fuel burn, less CO2 emissions, and less noise to help mitigate any additional fuel burn en-route.
35	Amendment to Military Radar Corridors and Air-to-Air Refuelling (AAR) Areas	Where appropriate, the levels of Radar Corridors and AAR Areas would be redefined as altitudes or levels that would not have undue operational impact and would always be available regardless of the pressure setting being used.	There is MOD representation within the TAPT and Steering and Oversight groups. Any redesign would be cognisant of the operational impact on corridors and refuelling areas.