SLIGHTLY STEEPER APPROACHES

CAP1616 STEP 3D – CATEGORISATION OF RESPONSES

May 2021

Heathrow

1. SLIGHTLY STEEPER APPROACHES

Between 5th March – 2nd April 2021 Heathrow consulted on the permanent adoption of Slightly Steeper Approaches (SSA) for some of the aircraft arriving at the airport.

As part of Stage 3A of the Airspace Change Process, three key documents were prepared for the consultation and can be viewed on the Civil Aviation Authority (CAA) Airspace Change Portal here. These included detailed analysis of SSA in the Full Options Appraisal, a detailed Consultation Document, and a 2 page quick read and easy to understand overview. For more information regarding the SSA ACP, we would recommend reading these documents.

Following the CAA's Stage 3B Gateway, Heathrow then commenced Stage 3C and consulted with stakeholders asking the question:

Do you support the permanent adoption of slightly steeper approaches at Heathrow airport?

The consultation was held online and a total of **134 responses** were received. After analysis, the admissible total number of responses was consolidated to **132**, as there were two cases of duplicate responses received from the same person.

2. CAP1616 STAGE 3D

We are now at Stage 3D of the Airspace Change Process where Heathrow is required to carry out a fair, transparent and comprehensive review and categorisation of consultation responses.

Heathrow must review responses and categorise them into those that present information that may lead to a change in the design and those that could not, including those raising issues which are outside of our control (such as government policy). If we determine that a consultation response does not impact the final design, we must set out clearly why we believe that to be the case.

This document forms Heathrow's submission for CAP1616 Stage 3D Categorisation of responses. Overall, we have followed the 'We asked, you said, we did' approach throughout the tables shown in the following pages.

This document has been sent to the CAA for approval of our categorisation as well as being uploaded to the Airspace Change Portal. At Stage 4A, Heathrow will then provide a Consultation Response document with an analysis of the overall consultation and any design changes in light of responses.

3. CATEGORISATION

Unique ID	Do you support the permanent adoption of SSA?	Consultee response – (Q7) Why do you not support the permanent adoption of SSA?	Consultee response (Q8) - Do you have any further feedback about this airspace change proposal?	Categorisation	Heathrow response - We asked, you said, we did
636603791	Yes		Technology is changing and planes are becoming quieter. To reduce noise further in line with this proposal can only be a good thing.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
33229896	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
603128606	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
636353027	Yes		The higher the better!	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
894504844	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
844762772	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
453123390	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
931575868	Yes		This would reduce noise to households living under the flight path	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
787738259	Yes		Lower noise and pollution levels would be beneficial to residents of Richmond	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
241797557	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
110831246	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
485070256	Yes		Would also like to see further work done on 3.5 and 3,5+ approach	Does not impact proposal	No new information has been provided which would change the final design. Approaches steeper than 3.2º were considered earlier in the process and discounted due to technical constraints.
1058967657	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
1063711143	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
800280823	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
947787747	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
294727200	Yes		As long as this doesn't disturb the quiet hours of rest from 12pm to 6 am and increasing the numbers of landings.	Does not impact proposal	No new information has been provided which would change the final design. The permanent adoption of SSA will not have any impact on Heathrow's operating hours or the number of arrivals and departures at Heathrow.
440980461	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
366180295	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
12090990	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
47988764	Yes		As a resident living near to Heathrow and directly under the approach to Runway 27R, I support the permanent introduction of steeper approaches to reduce the noise footprint.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
587242447	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
551450436	Yes		why are you only moving to 3.2 degrees - why not 3.5 degrees as used in other airports	Does not impact proposal	No new information has been provided which would change the final design. Approaches steeper than 3.2º were considered earlier in the process and discounted due to technical constraints.
298133055	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
74733107	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.

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964004650	Yes		None	Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
280538762	Yes		No	Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
566105459	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
325945876	Yes		Anything to reduce the aircraft noise over residential areas is an improvement.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
773929215	Yes		Anything that reduces the noise levels for those living under the flight path is to be welcomed	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
1056164053	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
404984661	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
45897270	Yes		This small change shall have a positive impact on my and neighbouring communities, I see no reason to ignore this impact or the benefit outlined. Given the positive impact of the reduction during the past 12 months, I think the communities under the flightpath shall be much more aware and vocal as the frequency of flights returns - this would be a good first step to addressing their concerns.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
435599919	Yes		I would like steeper angles eg 4% considered as soon a s possible. I also wish night flights to be banned from 11pm to 6am.	Does not impact proposal	No new information has been provided which would change the final design. Approaches steeper than 3.2º were considered earlier in the process and discounted due to technical constraints. Night time flights are outside of the scope of this ACP.
1059127193	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
507440203	Yes		Here's hoping for more significant improvements in the future	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
1003529129	Yes		With less flights currently, landings should not be allowed before 6am	Does not impact proposal	No new information has been provided which would change the final design. Operating hours are outside of the scope of this ACP.
455052919	Yes		I've lived under the flight path for one year. Plane noise is already disruptive enough. Heathrow should not be considering preventing a practice which lessens noise.	Does not impact proposal	No new information has been provided which would change the final design. Heathrow supports the adoption of SSA however is required to follow the CAA's CAP1616 process and therefore reverting to 3.0º RNAV approaches needs to be evaluated in line with these requirements.
780182820	Yes		I love below the flight path and I can not emphasize enough how much this impacts my daily life. I'm under constant anxiety that I won't have a good enough night's sleep which stills over affecting my personal life and work. any change that would minimize the noise is highly welcomed.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
147788579	Yes		Whilst the intentions of the slightly steeper approach is a positive one we are unclear from the documentation of whether the outcome is firstly tangible and secondly applicable to our village. From reviewing your documentation and assessing its impact on our village, Stanwell Moor, we have come to the following responses below. Stanwell Moor is geographically adjacent to the airport and directly impacted by planes taking off and landing over the village. If you stand in the North part of the village you are underneath the planes with the level of noise making it impossible to have a conversation. Where I live in the western part of the village with the planes just north of my home when larger planes are taking off and landing it is not possible to have a conversation in the garden. Pre-COVID planes were flying over the village on the schedule every 45 seconds. Any improvement from this project has to be considered within this context.	Does not impact proposal	The consultation materials do not refer to making specific locations perceptibly 'quieter' and we recognise that the overall benefit of SSA is very small. Heathrow acknowledges that SSA is a small step in reducing our noise footprint. We have outlined these points within the documents. As SSA are already in operation and there are no overall perceptible impacts in permanently adopting SSA, on this occasion we have not provided detailed location specific noise information such as a postcode tool. The feedback is supportive of the proposal and no new information has been provided which would change the final design.

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			1. From your documentation the modelled reduction appears to be less than one decibel. The benefit from this benefit is hard to define. 2. Despite the headline that our life will be 'quieter', in the full report it states that the change at ground level is "imperceptible" and therefore we do not have confidence that the headline is gives a considered and objective position of the outcome of this project. This raises two important issues: a) is there any benefit to residents? B) is there any benefit to our village as it is geographically adjacent to the airport. Our assessment of the information is that whilst the action is a positive one the outcome does not deliver any tangible gain. 3, As the planes are effectively about to land and just taking off when they fly over Stanwell Moor village we question whether this change makes any difference to our quality of lives. At this low altitude we see nothing in the full report that suggests any perceived gain you are looking for would apply at all to our geographical location. In conclusion whilst we support any project that solely seeks to improve quality of our lives, we do not agree with your headline for the report that this particular project will lead to quieter lives for residents. We do not believe it will deliver any positive gain at all for our village. Stanwell Moor Residents Association		
625759833	No	There is no mention in the full document about the effect of temperature on RNAV approaches. Cold temperatures could reduce the glide path angle below 3 degrees. Additionally, older aircraft systems means the workload is increased flying these approaches whilst maintaining accurate speed control. The correct way to implement this is to change the ILS glide slope angle to 3.2 degrees and cannot be supported until this is the case.		Does not impact proposal	We considered the impact of temperature on RNAV approaches as part of the trial preparation prior to the promulgation of SSA. The published procedures have a required minimum temperature to ensure that a safe approach angle is maintained. The impact of temperature of RNAV approaches was assessed in both trials, for more information please see the trial reports here and here, and page 20 of the consultation document. We also considered as part of the trials and the ACP, the benefits and impacts of changing the ILS glide slope angle and this was discounted as an option at Stage 2. Workload has been considered throughout the process and was monitored and reported on as part of the trials. The ILS will continue to be available for the majority of aircraft arriving at Heathrow. Feedback does not support the proposal; however no new information has been provided which would change the final design.
633397278	Yes		As a pilot based out of heathrow the only consideration is approaches with tail winds above 1000'. The steeper approaches may result in an increased number of missed approaches due to be speed unstable. For example, 160kts to 4 miles I would start reducing around 4.3 miles to be speed stable at 1000' above the ground. With a steeper approach I was reducing speed at 4.5 miles latest to allow the energy to bleed off. With a tailwind this could be as early as 5 miles. Has the increased use of speed brake or even early gear selection been considered on noise and with early gear deployment, fuel burn?	Does not impact proposal	During the trials, aircraft performance was monitored and there were no increases in missed approaches. SSA is an elective procedure. ATC did however report that there was a reduction in the number of requests to opt for SSA when there was a tailwind. The standard 3.0º ILS approach will continue to be available should SSA be permanently adopted. The data gathered during the trials also showed that for medium aircraft the landing gear was deployed at the same distance from the runway, but the aircraft was higher. For larger aircraft, the trials showed the landing gear was deployed slightly closer to the runway and the aircraft was at a similar height to the standard approaches.

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			I would however point out Frankfurt have 3.2 degree approaches but don't have the same intensity of landings especially on 25R.		No new information has been provided which would change the final design.
1021422248	Yes		As a pilot based at LHR, who flies these approaches, they are simple to fly and don't affect the energy or stability of the aircraft. I'm also a resident under the 27L & R approach path and anything that can be done to reduce noise is hugely beneficial to the local residents.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
909920643	Yes		I have flown the trial approach and it works well. 1 point to make is that speed control issued by ATC can lead to pilots putting the gear down earlier than otherwise needed which will then cause more noise not less when compared to a conventional 3 degrees approach. So slow the aircraft to 160 Kts. Before commencing the final decent.	Does not impact proposal	The data gathered during the trials showed that for medium aircraft the landing gear was deployed at the same distance from the runway, but the aircraft was higher. For larger aircraft, the trials showed the landing gear was deployed slightly closer to the runway and the aircraft was at a similar height to the standard approaches. Speed adherence on final approach was slightly better when comparing SSA to ILS. The feedback is supportive of the proposal and no new information has been provided which would change the final design.
153242371	No	Steeper approaches will increase the noise levels at Heathrow. Instead of being able to fly with the gear retracted until 4.3 miles from Heathrow they will be required to fly with the landing gear down from a much greater distance making more noise. As a consequence the noise levels coming from the engines will not be reduced.	Steeper approaches will increase the noise levels at Heathrow. Instead of being able to fly with the gear retracted until 4.3 miles from Heathrow they will be required to fly with the landing gear down from a much greater distance making more noise. As a consequence the noise levels coming from the engines will not be reduced.	Does not impact proposal	The data gathered during the trials showed that for medium aircraft the landing gear was deployed at the same distance from the runway, but the aircraft was higher. For larger aircraft, the trials showed the landing gear was deployed slightly closer to the runway and the aircraft was at a similar height to the standard approaches. Owing to the trials and SSA already being in operation, actual noise measurements have been taken which show an average decrease of 0.5dBA SEL recorded at the noise monitoring sites when aircraft operate SSA. Feedback does not support the proposal however no new information has been provided which would change the final design.
192552127	No	The Slightly steeper approach is significantly higher workload when combined with late gear and flap selection for noise reduction area footprint and required Air Traffic Control approach speed control. Every pilot i know has to make full use of Autopilot because one hand is required for Speedbrake use to fly the SSA and one hand for controls, therefore no hand on thrust levers precluding the ability yo press TOGA for a missed approach. It also precludes flying manual approaches safely. With such few flight approaches available to pilots to manually fly with the significant reduction in flying during the covid travel restrictions pilots manual flying competency will be eroded further and so be, i predict,a safety issue leading to reduction in safety on approaches into Heathrow.		Does not impact proposal	Heathrow have received no negative reports from pilots operating SSA since they were introduced in 2015. However, the trials did note that ATC and Pilot workload is slightly higher with RNAV approaches compared to ILS approaches. SSA are elective, not mandatory and ILS will continue to be available for pilots wishing to fly a 3.0° approach into Heathrow. Feedback does not support the proposal however no new information has been provided which would change the final design.
287274244	No	Safety. 3deg approaches are the standard, worldwide. This is the type of operation for which airliners are designed. Increasing the approach angle, even by 0.2, adds more energy to the approach, is more likely to result in unstable approaches (less safe), and means that prompt go-arounds (discontinued approaches) will take longer, due to increased engine spool up time, and could potentially be less safe.	This airspace change proposal is fussing around the edges. Effective action is needed to improve air/noise quality - action such as banning airlines that fly older, less efficient aircraft; providing commercial incentives for road hauliers connecting and supplying Heathrow (cargo and logistics) to use more modern, efficient, non-diesel transport; repairing roads, taxiways and other structures so more efficient, smoother and less polluting transport can be attained; incentivising clean rail and public transport options that meaningfully connect to population areas (not just London), including bringing down the astronomical prices.	Does not impact proposal	As part of the trials held in 2015-2017, aircraft performance and safety were monitored. Throughout the trials, and to date, no Safety reports have been filed regarding SSA, and the ILS will continue to be available for pilots wishing to fly a 3.0° approach into Heathrow. The trials also demonstrated that there were no increase in go-arounds as a result of SSA. The feedback regarding noise, air quality and ground transport movements is outside of the scope of this ACP. Feedback does not support the proposal however no new information has been provided which would change the final design.
856580627	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.

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1056718624	Yes		No	Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
286602151	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
450349007	No	The required reduction in aircraft noise can be achieved in other ways. Steeper approaches also makes managing aircraft energy more difficult. It frequently leads to pilots deploying speedbrakes or landing gear earlier and makes Go Around manoeuvres more likely due to 'stable approach criteria' requirements of the operators being breached. This is likely to increase noise but closer to the airport than the area that benefits from reduced noise. This is robbing peter to pay paul and an analysis of aircraft configuration, likelihood of Go Around would be required to show an overall benefit to the Greater London area.	The proposal attempts to reduce aircraft engine noise but the aerodynamic noise associated with high lift devices, speedbrakes and landing gear is also worthy of consideration. It is likely that use of these devices will be required further out (ie over central London but not in areas that are likely to benefit from steeper approach noise reductions) in order to achieve flight conditions that permit a steeper approach. Typically, reductions from 180kts to 160kts require speedbrake use and this occurs too close to the field to be done with idle thrust. Put simply, better controlling would reduce aircraft noise to a significant area of the population without changing the approaches as currently published.	Does not impact proposal	During the trials, speed adherence, landing gear deployment and overall aircraft performance were monitored, in conjunction with noise monitors deployed under the final approach. The data gathered during the trials showed that for medium aircraft the landing gear was deployed at the same distance from the runway, but the aircraft was higher. For larger aircraft, the trials showed the landing gear was deployed slightly closer to the runway and the aircraft was at a similar height to the standard approaches. The trials also demonstrated that there were no increase in go-arounds as a result of SSA. Data gathered from the noise monitors showed an average decrease of 0.5dBA SEL recorded at the noise monitoring sites when aircraft operate SSA. Feedback does not support the proposal however no new information has been provided which would change the final design.
677905151	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
733264334	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
292491043	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
165892926	Yes		A wise change that causes minimal impact for passengers but provides huge benefits to millions in the ground.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
436028643	Yes		Do everything possible to keep noise and air pollution down!	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
215865112	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
907983521	Yes		Anything which helps with noise pollution is a step in the right direction.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
916910343	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
879874205	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
963723344	No	Aircraft noise pollution is bad enough now, please do not make it any more unbearable	Living under the LHR flight path i do not want any more noise pollution	Does not impact proposal	Does not impact the proposal as no new information has been provided which would change the final design. Respondent has selected that they do not support SSA however written feedback suggests they do.
88020154	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
176975535	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
566273920	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
35128595	Yes		Quieter approaches hopefully	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
778648967	Yes		Any reduction in noise is good and should be supported.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
299970012	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.

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369198974	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
474310451	Yes		You don't need a third runway...	Does not impact proposal	Does not impact the proposal. Supportive, but no further comment regarding SSA provided. The third runway is out of scope of this Airspace Change.
551262787	Yes		Less noise better	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
567915392	Yes		Anything that would reduce plane noise and maintain safety is very welcome!!!	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
948334702	Yes		Modern technology allows steeper approach with safety. This change is long overdue. It should be made permanent.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
415731113	Yes		A small step with arrivals perhaps, in reducing noise and I'm wondering about vibrations although both are perhaps worse with departures for those of us in the flight path. Ultimately it seems Heathrow needs to deal with what apparently are operational difficulties for air traffic control in managing more than the 0.6% currently using SSA.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. Comments regarding the current and future usage of SSA are noted. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain. As part of the wider UK Airspace Modernisation airspace change required by 2030, the application of SSA will be considered within the context of investigating the feasibility of increasing the angle of descent for the ILS.
276394133	Yes		As we live in Windsor under the northern runway flight path, Any slight reduction in noise will be very welcome.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
923810178	Yes		Operating modern airliners on steeper approach slopes means using less power by approximately five percent, which is the noisiest end on the scale. I am concerned though, that as more accurate navigation technology has now arrived, that "Parallel"approaches will be planned, ie the use of two runways in unison, thus negating any noise benefit, and in fact increasing it so, by doubling the footprint to using both feet!	Does not impact proposal	Owing to the trials and SSA already being in operation, actual noise measurements have been taken which show an average decrease of 0.5dBA SEL recorded at the noise monitoring sites when aircraft operate SSA. Independent parallel approaches are not within scope of this ACP. No new information has been provided which would change the final design.
713322234	Yes	This would minimise the noise disruption in the areas surrounding Heathrow.	Please plant more trees on the streets in the areas surrounding Heathrow: if people cannot see the planes, they are less likely to notice the noise they make.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. The planting of trees is outside of the scope of this ACP.
510952236	No	Steeper approach could = faster approach and if anything goes wrong, a faster fall to ground. Anyway, people who live "under the flight path" must have known they were moving into a property under the flight path and, until the pandemic, over the years it has been obvious that air traffic was increasing. If they don't like the "noise", which is getting less and less with technology, then they should move away.		Does not impact proposal	Prior to the trials taking place, the slightly steeper approach procedures were designed to international standards by an Approved Procedure Designer and approved to be safely operated by the Civil Aviation Authority. During the trials, speed adherence, aircraft performance and safety were monitored and no safety reports were filed. Feedback does not support the proposal however no new information has been provided which would change the final design.
15006738	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
520782881	Yes		I think it will reduce the noise for those who reside a few miles away from the east and west of off runways.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
480912643	Yes		I hope both the takeoff & landing paths can be steeper still soon to further reduce their noise footprint.	Does not impact proposal	Approaches steeper than 3.2° were considered earlier in the process and discounted due to technical constraints. Steeper departure profiles are outside of the scope of this ACP.

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					No new information has been provided which would change the final design.
701734015	Yes		As long as there are no adverse effects in terms of safety this must be a benefit to all.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
389843702	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
230006596	No	Heathrow is regarded by all pilots around the world as the most standard, most professional airport operation in the world. 3degrees is standard and the uk should use this wherever possible (at least on final approach) An RNP (AR) approach could be designed to give a more direct path for aircraft, flying them away from noise sensitive areas, then still maintaining 3degrees for last few nm.	Aircraft are getting quieter over time naturally with advances in technology. This is enough.	Does not impact proposal	The ILS will continue to be available for pilots wishing to fly a standard 3.0^{o} approach into Heathrow. Changes to lateral flight paths are outside the scope of this ACP. Feedback does not support the proposal however no new information has been provided which would change the final design.
150948351	Yes		as long as Heathrow airport kept alive i support all	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
1013818688	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
1023455323	Yes		Yes. The noise of the aircraft over our home in Kew is so loud, especially in the early hours of the morning and has such a negative affect on our health, well-being and lives we are considering moving even though we love the area so much and have been here for years. We regularly wake up die to the planes at just before 5am and then cannot get back to sleep. It is really awful and depressing even though we are outside the zone that qualifies for any help from Heathrow to reduce noise. Anything that can be done to reduce the noise footprint would be good.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
893256049	Yes		Sounds a jolly good idea	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
1036352961	Yes		Would help me sleep better as it would be less noisy	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
60136439	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
850459649	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
511750739	Yes		This seems a very small incremental step but at least in a positive direction	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
687908283	Yes		Environmental protection, air and sound pollution, stress. I am disturbed at 430am every morning by overflying aircraft. Kew Gardens which is probably one of the top research centres and most beautiful botanical gardens in the world is damaged by this further enhancement.	Does not impact proposal	The feedback provided is not directly related to SSA. No new information has been provided which would change the final design.
443928716	Yes		Any noise reduction is most welcome	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
178837852	Yes		More efficient for airlines and aircraft are higher for longer reducing noise impact on the ground in over populated west and south London. All instrument rating pilots now require PBN privileges so there is minimal impact on pilots electing this type of approach, especially if there is PBN/S1 LPV capability which functionally the same to flying an ILS approach. Consideration should be considered regarding expected RAIM outages and if ILS will be automatically used as a backup during outages which could impact capacity at Heathrow.	Does not impact proposal	SSA is an elective procedure. The ILS will continue to be available for arrivals into Heathrow and therefore there will be resilience in the event of a RAIM outage. The feedback is supportive of the proposal and no new information has been provided which would change the final design.

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531149306	Yes		I support the adoption of SSA. Noises from landing planes have caused issues of stress and mental health issues. While we love the area with live in, plane noise is the number one factor why we are actively looking to move to another area away from the flight path.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
740334295	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
431706060	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
314394750	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
560756393	Yes		Any reduction in aircraft noise would be a blessing to local residents	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
624769494	Yes		Please press ahead with the 3rd runway as soon as possible. We need urgent airport expansion at Heathrow	Does not impact proposal	Does not impact the proposal. Supportive, but no further comment regarding SSA provided. The third runway is out of scope of this Airspace Change.
23433842	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
697160424	Yes		This is a start but doesn't go anywhere near far enough. There needs to be more action on reducing the noise pollution, including in outlying towns like Maidenhead where noise has become much worse in recent years, particularly where planes are leaving the Hertfordshire stack and coming in. Night arrivals should be banned, but until we no longer have to put up with frequently disturbed sleep, SsA should be compulsory between 10pm and 6am	Does not impact proposal	Comments regarding the future usage of SSA are noted. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain. Further changes suggested regarding noise are outside of the scope of this ACP. The feedback is supportive of the proposal and no new information has been provided which would change the final design.
380629083	Yes		Stacking should take place at a higher height and over a wider area with a final steeper approach.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. Aircraft stacking is outside of the scope of this ACP.
64523382	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
25873678	No	Much higher workload for controllers & pilots. No procedure (Airbus 320) to intercept from above if a descent clearance missed or blocked. As the flight guidance system can only intercept vertical guidance if within 150ft of platform altitude, pilots will end up flying a level segment before the descent point to ensure capture - therefore significantly increasing noise footprint in the area just ahead of the descent point. It's a NON precision approach which is inherently less safe than an ILS approach (mis-set QNH or improperly selected vertical guidance in the case that managed vertical profile not captured). ILS has procedure to safely intercept from above. ILS localiser and flight director guidance very useful in strong crosswinds - if RNP approach becomes the default then as well as limiting its use to required visibility and cloud base, there should also be a crosswind limitation, above which ILS to be available. More difficult to become speed stable on a steeper approach, likely also to lead to more noisy missed approaches.	A lot of the noise around LHR is due to aircraft running out of continuous descent and flying level segments on base leg or earlier. As outlined above the need to be within 150 ft of the platform altitude to intercept the vertical guidance for an RNP approach may lead to more aircraft flying a noisy level segment in the area before the descent point to ensure vertical capture.	Does not impact proposal	Heathrow had RNP approaches in operation before the 3.2º trial commenced in 2015 and the Initial Fix for the approaches remains in the same place for SSA compared to Heathrow's 3.0˚ RNP Approaches. The ILS will continue to be available for pilots wishing to fly a 3.0º approach into Heathrow. This airspace change does not propose to make SSA compulsory for all aircraft. As part of the trials held in 2015-2017, workload, speed adherence, aircraft performance and safety were monitored. Throughout the trials, and to date, no Safety reports have been filed regarding SSA, and trials also demonstrated that there were no increase in go-arounds as a result of SSA. Owing to the trials and SSA already being in operation, actual noise measurements have been taken which show an average decrease of 0.5dBA SEL recorded at noise monitoring sites when aircraft operate SSA. Feedback does not support the proposal however no new information has been provided which would change the final design.
55210810	Yes		Aircraft are not generally making a 3º rate of descent. You need to look at this as your statement that aircraft are currently making a 3º rate of descent is incorrect. A look at the Heathrow xPlane app will	Does not impact proposal	Following receipt of this response, we have carried out our own analysis using xPlane using a postcode 8 nautical miles (nm) from runway 27L touchdown zone. We have found that aircraft were

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			show that the vast majority of planes are lower than the stated heights. For example Heathrow say that at 8 NM prior to touchdown approaching aircraft will be at least at 2,546' high. A random sample of 7 days from 22nd May 2019 shows that the lowest plane was at 2,077' and of 4,776 aircraft passing over that point in those 7 days just 14 were over 2,546'. The aircraft are not maintaining the height that you say they are!		within the height parameters we would expect at 8nm before touchdown. In addition, the trial reports analysed aircraft height in depth, using Radar data, which confirmed that aircraft are at the heights expected with the 3.0˚ profile. A second postcode was analysed which was 8 statute miles from runway 27L touchdown zone and this data more closely resembled the information provided in this response. Without knowing the postcode and radius used within the xPlane tool by the respondent, it is not possible for us to investigate this feedback further. This feedback is outside of the scope of this ACP as it is in relation to 3.0º approaches and no new information has been provided which would change the final design for this ACP.
568330611	Yes		No	Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
63791357	Yes		Lockdown has been a breathe of fresh air and has made us realise how noisy the landing and take-offs are.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
403669824	Yes		If this proposal reduces noise impact during landing without compromising safety that has to be better. What would be nice would be to alternate the use of the runways so that the same side didn't always get the morning. Share the benefits of equitably so both communities that flank the airport runways get every other morning of relative peace. Please.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. Runway alternation is outside of the scope of this ACP. The direction of arrivals and departures (easterlies or westerlies) is dependent on wind direction, and the runway used (left or right) is dependent on Heathrow's runway alternation programme. More information can be found here.
103586063	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
88390781	Yes		Anything that can attenuate the blight of aircraft noise and pollution is welcomed. The reduction in aircraft traffic over the past 12 months has been life-transforming. Use your clout to push for the rapid development and adoption of quieter and battery-operated planes as soon as possible	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
831550544	Yes		Heathrow consultation on proposals to permanently adopt slight steeper approaches British Airways Response: British Airways welcomes the opportunity to be able to comment on this consultation as part of the Civil Aviation Authority's (CAA) Airspace Change Process. British Airways' aircraft have regularly taken part in the Slightly Steeper Approach (SSA) trials between 2015 and 2017, using RNAV approaches set at 3.2°. Do you support the permanent adoption of Slightly Steeper Approaches at Heathrow Airport? SAA have now been extensively trialled and proved effective operationally, in a wide variety of weather conditions and at different aircraft weights. From these trials we received no negative feedback relating to an increased pilot workload or any safety concerns relating to the descent angle. The only piece of feedback we received was regarding the PAPIs. These are still calibrated to a 3°angle (for the ILS) and hence were mismatched to the approach gradient of 3.2°on the RNAV approach. The trial also took into consideration both winter and summer temperatures, where higher temperatures can create a slightly steeper descent angle than the prescribed 3.2° descent angle. This is due to the nature of RNAV approaches being influenced by temperature and resulting barometric conditions. However, no concerns were	Does not impact proposal	Overall the feedback is supportive of the proposal and no new information has been provided which would change the final design. Altering the ILS or introducing additional ILS equipment at a steeper approach angle was considered as part of the Airspace Change Process. In the Design Principle Evaluations (Stage 2A), the option of changing the ILS did not perform well against the Design principles (DP) agreed with stakeholders at Stage 1B; failing to meet one DP, partially meeting five, and meeting two DPs. The option to increase the approach angle of RNAV approaches met six DPs and partially met the other two, and therefore the ILS option was discounted and the RNAV option continued through the process. Heathrow recognises that SSA presents a small incremental step in reducing the airport's overall noise footprint. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain. As part of the wider UK Airspace Modernisation airspace change required by 2030, the application of SSA will be considered within the context of investigating the feasibility of increasing the angle of descent for the ILS.

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			submitted in relation to this by our operating crew during the hotter months in the trial. As such, British Airways has no evidence to raise safety concerns with the SSA at Heathrow. Instrument Landing System (ILS) v RNAV: The SSA consultation document shows that during 2019, only 0.6% of Heathrow arrivals operated a 3.2° approach. For the uptake to increase, we believe that a "precision approach" (ILS rather than the RNAV approach) calibrated as a 3.2°approach, would offer a far greater uptake in aircraft flying a SSA. The issue that must be highlighted in using the ILS with a 3.2°glideslope is the fact that in low visibility operations or more specifically, when using minima which is less than CAT I minima, not all aircraft types can fly a 3.2° glideslope, as this is beyond the limitations for certain aircraft types. The following table shows the glideslope limitations for category II or III automatic landings for the current British Airways fleet: A320 ceo & A321 ceo -2.5° -3.15° A319, A320 neo & A321 neo -2.5° -3.25° A350 -2.5° -3.5° A380 -2.5° -3.5° B777 -2.5° -3.25° B787 -2.5° -3.25° In addition to these limitations within the British Airways fleet, there are global design criteria which currently limit CAT II/III approaches to a maximum glideslope of 3.0°. To facilitate this, two different ILS procedures could be published and offered, whereby both a 3°glideslope and a 3.2° glideslope would be available. This is the case at Frankfurt Main where runway 07L and 25R offer both a Z (3.0°) and Y (3.2°) ILS approach. Air Traffic Control normally issue a clearance for ILS Y. If landings on the day require CAT II/III minima, ILS Z is issued to these flights. In order to improve compliance of flights flying the SSA, British Airways would recommend a SSA option with a precision approach (ILS) as well as an RNAV approach. In addition, a non-SAA ILS must be offered, for the reasons mentioned above. Noise benefits from SSA: Noise measurements were taken from specific points during the trial and showed on average a noise reduction between c. 0.25dBA and c. 0.5dBA when aircraft were using the SSA compared to the 3°approach path. Minimising the impact of aircraft noise is a priority for both British Airways and Heathrow. As such, British Airways has been at the forefront in efforts to tackle noise. We have adopted an efficient low power/low drag approach technique on our A320 family and are looking at ways in which we can improve this on our wide body aircraft too. This works well on a normal 3°glideslope but any increase in the descent path angle puts pressure on the crew to lower the landing gear at an earlier stage in the approach. This extra airframe noise from the gear could reduce the benefit seen in the SAA approach, especially in slight tail wind conditions or if the		

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			aircraft is lighter. Because of the operational restrictions that a SSA applies to flights, British Airways is conscious that the noise benefits observed in the trial may not materialise in the day to day operation. Conclusion: The analysis and modelling of the noise results show the SSA can provide a small noise benefit to local communities. The magnitude of this benefit is small (c. 0.5dBA) and this is unlikely to be perceptible on the ground. In addition, certain conditions could erode these benefits. Approaches with a descent path gradient of 3.2° may or may not contribute to a reduction in the noise footprint at Heathrow, depending on variables and operational issues on each flight. For the uptake of SSAs to be greater, a standardised 3.2° approach for all Heathrow arrivals (when CAT I weather or better is permitting) would be more benefical. British Airways therefore supports the ACP for Heathrow to maintain the 3.2° RNAV approaches as a permanent feature.		
174055420	Yes		I believe the slightly steeper approach plan isn't any way near ambitious enough. Steeper angles should be investigated. It's disappointing that this process has taken years to move forward.	Does not impact proposal	Approaches steeper than 3.2º were considered earlier in the process and discounted due to technical constraints. Heathrow recognises that SSA presents a small incremental step in reducing the airport's overall noise footprint. As part of the wider UK Airspace Modernisation airspace change required by 2030, the application of SSA will be considered within the context of investigating the feasibility of increasing the angle of descent for the ILS. Since the trials held in 2015-2017 the Civil Aviation Authority (CAA) required Heathrow to follow the CAP1616 Airspace Change Process to implemented permanently which typically takes at least 2 years to complete, even for an ACP as small as this. This ACP was unfortunately delayed due to COVID 19. No new information has been provided which would change the final design.
690682445	Yes		The Heathrow noise in Fulham is not acceptable. Any measures to reduce this are needed. The flight paths are more concentrated and morning flights beginning at 4.30 means that a good night sleep for Fulham residents is unachievable and long-term exposure increases the risk of poor health outcomes.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
628539829	Yes		NATS NERL supports the Airspace Change Proposal. The procedure has had no effect on ATC Operations.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
5178138	Yes		Whilst any change in approach gradient that reduces noise on the ground is welcome, the main barriers to making steeper approaches available to a greater number of aircraft with more noise and pollution reduction benefits, are commercial considerations. There is a lack of willingness to invest in upgrading the ILS beacon system and there are concerns that steeper approaches could reduce the numbers of flights that can land within current targets. There is already a move not to renew the ground infrastructure and to rely more on satellite navigation, though it is clear from the report that satellite guidance is not to be relied on in poor weather and is more intensive in its demands of Air Traffic Control. Given these considerations, how SSAs or even existing 3 degree approaches can be managed safely with a potential near doubling of volumes of aircraft movements (if	Does not impact proposal	This SSA ACP does not change the number of aircraft arriving at Heathrow and there will be no impact on capacity with the levels of uptake observed in the trials and current operations. As acknowledged in the Consultation Document, the uptake of SSA is limited by ATC and pilot workload, alongside other reasons. Wider changes with regards to airspace modernisation and the transition to performance based navigation are outside of the scope of this ACP and the points raised in the feedback would be analysed as part of any future changes. Comments regarding the current and future usage of SSA are noted. As part of the wider UK Airspace Modernisation airspace change required by 2030, the application of SSA will be

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			Heathrow's longer term plans go ahead), combined with a move to greater reliance on satellite technology for approaches and landing, is a source of genuine concern. For meaningful noise reduction, steeper approach angles are needed and a greater number of aircraft need to be able to use them safely. That requires investment in infrastructure, training and manpower that will not be forthcoming.		considered within the context of investigating the feasibility of increasing the angle of descent for the ILS.
280796825	Yes			Does not impact proposal	Does not impact the proposal. Supportive, but no further comment provided.
480334068	Yes		American Airlines does support the permanent adoption of the 3.2 degree Slightly Steeper Approaches (SSA) for RNP approaches to London Heathrow Airport. We estimate no more than a 50 ft/min increase in vertical speed compared to a traditional 3.0 degree approach. It is possible that a pilot could configure the aircraft for approach and landing at a distance further from the runway as the newer slick / efficient airfoil designs (such as the 787) make reducing airspeed more difficult once full landing configuration is achieved. Expect a target airspeed over the Outer Marker at 170 Knots and a Vref speed of 138 Knots depending on weight and winds, etc. However, please note that American Airlines would have concerns if the approach angle was increased greater than 3.2 degrees. The combination of a slightly higher rate of descent, the requirement to follow the CDA guidelines, plus the 160 knot until 4 DME clearance could potentially cause earlier extension of flaps and gear with a corresponding higher thrust setting creating more noise thus negating any perceived green improvements. American Airlines will review any negative impacts on our operations from a RNP Y 3.2 degree SSA and provide additional feedback if applicable.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
629475269	Yes		The reduction of noise and pollution is our prime concern living as close to the airport as we do.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
45901135	Yes		Perhaps it could be incentivised to encourage airlines to use it	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. Comments regarding the current and future usage of SSA are noted. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain.
946720055	Yes		HSPG have consistently encouraged moves to reduce the impact of aircraft noise on local communities and specifically have supported in-principle the testing and retention of Slightly Steeper Approaches (SSA). HSPG support the proposed ACP to make this permanent. However, HSPG call for more ambition. SSA lead to slightly increased height at any given point on the approach and slightly reduced power settings, meaning a small (around 0.5dBA reduction in each noise event. The testing has revealed many aircraft (but not all) do deploy undercarriage later too, further contributing a small reduction in exposure to airflow noise. Revised SOP by airlines could encourage this further. In frequent visitors tend to 'default' to ILS and various restrictions mean SSA cannot be used in all weathers or by all aircraft. Nevertheless, it is disappointing that such a small number of landings are made using SSA (around 0.6%). Heathrow are requested to set out in their Noise Action Plan etc measures (and monitoring) to incentivise far greater up-take by frequent and less frequent visitors, airlines and individual pilots, including standard	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. Comments regarding the current and future usage of SSA are noted. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain. Heathrow recognises that SSA presents a small incremental step in reducing the airport's overall noise footprint. As part of the wider UK Airspace Modernisation airspace change required by 2030, the application of SSA will be considered within the context of investigating the feasibility of increasing the angle of descent for the ILS.

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			operating procedures for use at LHR to delay the deployment of undercarriage where this is made safely possible by through the SSA. This may become easier as PBN is further introduced and increasing replaces 'default' to older systems and ILS. Clearly the recent retirement of older aircraft and reduction in aircraft activity means that there is no good reason why ATC capacity should be a constraint on the ability to service SSAs. Furthermore, this creates a great opportunity for Heathrow to be ambitious to reduce noise impact further and to 'educate' the re-growth in activity at LHR to be made using SSA and favourable SOP as the new 'default' whenever possible. HSPG support further incremental steps to reduce noise that could work in combination with SSA to achieve greater benefits, such as the insetting of runway thresholds (as included in the 3R expansion proposals). If airlines and pilots will not increase uptake in SSA then HAL should consider the introduction of a second set of ILS for steeper than 3degree approaches in suitable conditions. HSPG would welcome modelling to investigate and engagement around the best use of such measures in combination for future changes to approaches and departures. This could include some feed into the specification of the next generation of aircraft design (including new power sources) to explore scope for even quieter approaches and departures at Heathrow.		
464005916	Yes		R.E.: Hounslow Council response to HAL Consultation on Slightly Steeper Approaches Thank you for the opportunity to respond to this consultation. In principle Hounslow Council is supportive of the permanent adoption of Slightly Steeper Approaches at Heathrow Airport, if adopted as part of the wider package of measures to reduce aircraft noise. In our view any reduction in aircraft noise that improves the quality of life and health and wellbeing of communities situated under the flight path is welcomed. However, we note from the consultation that in 2019, only 0.6% of the arrivals at Heathrow used Slightly Steeper Approaches, that demonstrated a minor reduction in noise, which by your admission is difficult to perceive on the ground. For our communities to experience a significant reduction in noise, we are of the view that all aircraft descending into Heathrow should deploy SSA, when it is safe to do so. Therefore, we are keen to understand how Heathrow will encourage and incentivise the airlines to deploy SSA in a safe manner, so that a meaningful noise reduction can be achieved. Communities will find it valuable if Heathrow provides a clear timescale for when they expect airlines to comply with implementing SSA (setting out clear milestones to ensure 100% compliance is achieved) and where required, ensure that the appropriate infrastructure is in place. We would also welcome more information on the noise generated by the landing gear as it is deployed when the aircraft approaches the runway. Communities situated close to the airport have expressed concern that through the use of SSA, whilst the noise in the air reduces (and benefits communities situated further away), the noise of the landing gear increases as it reaches the runway and impacts communities situated close to the airport boundary. Hence there is a fine balance to be struck. Therefore, does the Airspace Change Proposal consider any changes to the landing thresholds (as proposed for the third runway) because we are of	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. Comments regarding the current and future usage of SSA are noted. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain. As part of the wider UK Airspace Modernisation airspace change required by 2030, the application of SSA will be considered within the context of investigating the feasibility of increasing the angle of descent for the ILS. During the trials held in 2015-17 landing gear deployment was monitored. The data gathered during the trials also showed that for medium aircraft the landing gear was deployed at the same distance from the runway, but the aircraft was higher. For larger aircraft, the trials showed the landing gear was deployed slightly closer to the runway and the aircraft was at a similar height to the standard approaches. Any changes to infrastructure, such as displaced thresholds are outside the scope of this ACP. For the purposes of the SSA trials, the noise monitors were deployed at the locations detailed in the Full Options Appraisal. Outside of the trials and the scope of this SSA ACP, noise monitoring can be requested via the Heathrow Community Noise Forum (HCNF) and this is also where noise monitoring data is reported to community groups. Heathrow's Insulation Scheme is outside the scope of this ACP however your feedback has been noted.

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			the view that these need to be reviewed in order to ensure that noise has reduced for all communities through the implementation of SSA. We note from the Full Options Appraisal that during the pilot, the noise monitors were located at Mogden Sewage Works, Mid-Surrey Golf Club and Roehampton Golf Club. We are keen to understand whether any noise monitoring has been undertaken closer to the airport boundary as the aircraft approaches the runway. If it has, can the results be shared with the Council as this will enable us to understand the impacts. The Council request that Heathrow continue to monitor the use of SSA and in particular the noise reduction that the measure is expected to deliver. The results of the monitoring should be reported back to the Council or an equally suitable forum such as the Heathrow Community Noise Forum or the Heathrow Strategic Planning Group. Furthermore, the Council has long campaigned for a ban on night flights between the hours of 11pm and 7am (emergencies excepted). Until this ban is implemented, Heathrow should ensure that all airlines deploy SSA between the hours of 23:00 to 07:00, when it is safe to do so, in order to reduce the noise during the night-time period. We understand that as a result of the Covid19 pandemic, Heathrow have paused the noise insulation schemes that were available to local communities significantly impacted by aircraft noise. We would strongly encourage Heathrow to reinstate these schemes as soon as possible especially since the noise reduction from deploying SSA is minimal. We further ask Heathrow to work with the Council and local communities to review and improve the noise mitigation and insulation measures so that they deliver the noise reduction and improve the local environment for all. We hope you find these comments constructive and useful.		
437679569	Yes		Heathrow ATC (NSL) supports the Airspace Change Proposal. The procedure has had no impact on safety or ATC Operations.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
101230675	Yes		The likehood of unstable approach could increase. I would suggest analyse the way of vectoring (Director Sector), especially regarding to vertical path.	Does not impact proposal	During the trials aircraft performance was monitored and there were no increases in missed approaches. ATC did however report that there was a reduction in the number of requests to operate SSA when there was a tailwind. The standard 3.0º ILS approach will continue to be available should SSA be permanently adopted and SSA will remain an elective procedure. As SSA are already in operation, performance and safety will continue to be monitored. No new information has been provided which would change the final design.
43847399	Yes		Surrey County Council recognises the importance of the airport in supporting employment for Surrey residents, generating investment in the Surrey economy and in attracting major businesses to locate in the county. However, residents that live in local authorities immediately surrounding the airport do suffer from negative impacts resulting from Heathrow's operations, of which noise is a significant issue. We recognise the benefits that this airspace change proposal offers, therefore we support the permanent adoption of SSA as part of Heathrow's Noise Action Plan 2019-2023 to reduce the noise impact on communities surrounding the airport.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. Comments regarding the current and future usage of SSA are noted. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain.

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			Furthermore, Surrey County Council in principle would support additional measures that demonstrably reduce the overall number of people experiencing significant noise impacts, where no other adverse environmental impacts emerge as a result of the change. This will be important going forward given the unlikely perceptible noise saving that communities would experience on the ground as a result of the permanent adoption of SSA for arrivals at Heathrow. With regards to this airspace change proposal, we would encourage Heathrow to be more ambitious by incentivising a greater number of aircraft to use SSA on arrival to Heathrow, especially during the current period of reduced operations due to COVID where air traffic control workload is reduced in order to change the behaviours of individual flight crew. There is also an opportunity for the airport to establish SSA as the default arrival procedure for more aircraft before flight numbers slowly return towards pre-pandemic levels. Finally, we would like to reiterate the need for ongoing dialogue with local communities and their representatives concerning airspace change proposals and any other development of the airport.		As part of the wider UK Airspace Modernisation airspace change required by 2030, the application of SSA will be considered within the context of investigating the feasibility of increasing the angle of descent for the ILS. Heathrow will continue to engage with local communities and representatives with regards to any Airspace Change Proposals or future developments.
548896611	No	The consultation admits that there will be no perceived benefit for anyone overflown and no theoretical benefit either for communities close in such as ours in Richings Park. The document is very technical and is not understand able by lay people such as ourselves. It should use metrics that are understandable by lay consultees and explain exactly what the proposals mean for those of us living close the the airport. The consultation seems to imply that some communities might perceive some noise benefits but is not clear where this impact would be felt and the extent of this.	As lay people we find this whole consultation confusing and would expect that as a community close to the airport the impact on us would be clearly explained so that we can give an informed response.	Does not impact proposal	Feedback does not support the proposal however no new information has been provided which would change the final design. Feedback regarding the technical nature of some of the information is noted. We recognise that some of the documentation required by CAP1616 is technical in nature. We endeavoured to provide community facing documents, such as the 2 page summary which outlined our proposals in non-technical language, alongside the main CAP1616 requirements. We also provided an email and telephone helpline and updated our FAQs throughout the consultation process. The technical metrics provided in our Consultation material are based on the CAP1616 requirements and, as SSA are already in operation and the changes are considered imperceptible, on this occasion we have not provided detailed location specific noise information such as a postcode tool as no impacts were identified. Thank you for your feedback around this, we will ensure that this is noted and taken into consideration for future Airspace Change Proposals and submissions.
284551996	Yes		This is a minimal change to procedures for which a lot of work has been undertaken. Whilst the benefits to the environmental noise impact will be minimal then they will be real. More radical solutions to foster more significant reduction in noise pollution would soon come up against genuine technical constraints, not least the speed control inbound to LHR on steeper approach paths. Consequently this would appear to be a fair compromise.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design.
754635591	Yes		The consultation states the number of planes that will fly on the 3.2-degree angle is very small. The full appraisal seems to indicate it will actually only be 0.6% of aircraft arrivals (or 1400 aircraft a year/4 aircraft per day) that can achieve this, potentially rising to a 2% maximum (or 4,680 per year/ 13 per day). The average reduction in noise of 0.51dB is welcome and it is important that Heathrow are acting on this issue. However, this particular practice seems to be merely tinkering at the edges of what is possible to use operational practice to genuinely reduce noise.	Does not impact proposal	Comments regarding the current and future usage of SSA are noted. Heathrow will continue to monitor the use of SSA, and consider ways, where possible, to incentivise the usage of SSA to maximise the benefits whilst maintaining a safe operation. However, it should be noted that the current ATC limitations, as described in the Stage 3 material, on the number of aircraft able to perform SSA will remain.

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			The consultation document states that the noise reduction resulting from introducing Option B2 is so small that it may not be noticeable on the ground. Further, the consultation does not propose any enforcement mechanism for ensuring that aircraft that are capable of the 3.2-degree angle of descent are actually following that operational practice. Will there be any penalties for airlines that breach this practice and thus cause unnecessary noise over local communities? The consultation also does not state how many people will benefit from this reduction in noise, nor does it state the number and type of aircraft that will actually be able to adhere to this operational practice. Will this information be made available? Finally, given future changes to the fleet, has an assessment been undertaken on how many arrivals aircraft could be utilising the proposed Option B2 in a) 2030 b) 2040 and c) 2050?		The webTAG analysis in Appendix A shows how SSA changes the number of people within LEQ contours and shows an overall net benefit, albeit the changes are very small. Our assessments were undertaken as per CAP1616 with a 10-year forecast, which considered fleet changes. Within Appendix A we have provided a table which outlines the Fleet Mix percentages that were used throughout the noise assessments for the Slight Steeper Approaches Full Options Appraisal (FOA): No new information has been provided which would change the final design.
244816912	Yes		I am puzzled by the WebTAG analysis that shows considerable numbers of people will suffer adverse impacts from the change. 12,408 households will experience increased daytime noise 1,008 households will suffer increased night time noise. I found this difficult to reconcile with the statements that planes would be higher at all points along the approach path than the conventional ILS approach. Why should anyone suffer more noise and disturbance from the change. ? I sought more information from the airspace change sponsor as to the locations of areas which were expected to experience a worsening and for the supporting WebTAG table which might indicate how severe the effect might be. Eventually, towards the end of the consultation period, I received the reply : "Thank you for your email and question in response to Heathrow's Consultation on Slightly Steeper Approaches (SSA) Airspace Change Proposal (ACP), apologies for the delay in responding to you, however we wanted to provide a thorough response to your questions. Our Operations team have provided the below response. With regards to the difference contours, CAP1616a (the Environmental Technical Annex) states that these contours are "particularly applicable where the degree of redistribution of noise impact may be large", and "Change sponsors may use difference contours if it is considered that redistribution of noise impact is a potentially important issue" (para 1.35). We had not undertaken difference contour assessment for our SSA analysis, given the small benefits that SSA provides. Para 1.32 of CAP1616a also notes that differences are to be shown in bands beginning with +/- 1-2dB, but we do not see changes of this magnitude with SSA. However, in response to your query we have undertaken the analysis and the results are attached. Following the trials and throughout the SSA ACP process we have reported on the small but quantifiable reduction to Heathrow's	Does not impact proposal	When populating the webTAG workbook, Heathrow is required to input noise metric data into the 'User Input' tab of the workbook. Within this tab, there are no entries of zero households. Beyond the information input into 'User Input' tab, the other workbook tabs show calculations that are based on the formulae provided by the government as part of the webTAG workbook. Heathrow does not have any input or control into what is shown within these tabs. Any outcomes shown as zero are therefore as a result of the workbook's calculations and the governments formulae. The feedback is supportive of the proposal and no new information has been provided which would change the final design.

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			noise footprint that SSA enables. In the trials we found an average 0.5dB SEL reduction between 3.2˚ SSA and 3.0˚ ILS arrivals. This is an average from readings taken from Heathrow noise monitors as single sound events. The WebTAG analysis uses LAeq average 92 day noise levels, rather than SEL single sound events. The CAA's airspace change process requires WebTAG analysis methods to be used for the evaluation of quantified noise benefits and disbenefits. The small changes in the noise environment from SSA, in conjunction with the very small percentage of aircraft flying SSA, mean that the average noise effects when expressed in average LAeq over 92 days are very small indeed. In general, changes of less than 1dB may be considered negligible. The difference contour image attached shows any changes of at least 0.1dB LAeq within the 51dB 'Lowest Observed Adverse Effect Level' (LOAEL), when comparing a model in which all arrivals fly a 3.0˚ approach angle to a scenario where 0.6% of those are flying a 3.2˚ approach angle. Providing these difference contours in our consultation material would have resulted in additional content providing no further information, as demonstrated in the image. In the attached, we have provided a noise difference contour showing changes within the 51 dB contour. This is the lowest of the daytime noise contours required by the CAA as part of reporting noise under the CAP1616 process and represents the Government's threshold for the LOAEL. WebTAG is not designed for such small changes and only deals in 1dB bands increment. Therefore, if the change in noise within the model is, for example, just 0.06dB (i.e. imperceptible, and therefore of no impact to an individual), it has been rounded to 0.1dB for WebTAG analysis in the workbook which is enough for a household in a 50.9dB band to move from the 50-51dB band into the 51dB-52dB band. This is categorised as an increase within the WebTAG workbook. The same is true for decreases in noise. For aviation, WebTAGs main objective is to evaluate airspace changes where flight paths may change and/or where there are options for distributing noise. Other Government WebTAG assessments are also designed in this manner. For infrastructure such as new or realigned roads and railways, WebTAG assessments are used to establish the relative benefits of different route options. The WebTAG analysis for SSA shows that there are many smaller beneficial movements of houses into lower bands than there are movements into higher bands, hence the net benefit of £27,632,143. I hope this is helpful, however if you have a further questions, please don't hesitate to ask." The accompanying difference contours showed no particular identifiable areas where a difference could be observed. I suppose this supports the comment that the noise effects "expressed in average LAeq over 92 days are very small indeed". After a further enquiry for the matrix showing the without scheme/with scheme numbers of households experiencing noise changes I was sent a document that confirmed the changes were limited to increases/decreases of less than 1dB but that they occurred over a wide range of noise levels. The document had		

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			entries of zero households for all the diagonal entries where there was no change between with and without schemes. This surely cannot be correct.		
333061159	Yes		Lack of noise monitors at 6miles in Windsor, where aircraft increase noise to stabilise approach when extending landing gear/flaps.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. The feedback regarding the position of noise monitors is outside the scope of the ACP.
451455175	Yes		Lack of noise meters in Windsor at 6miles, where aircraft are landing continuously for 18.5 hours without alteration of runways, as occurs in the opposite direction. At 6 miles aircraft deploy landing gear and increase power to stabilise their approach in accordance with SOP from manufacturers, engine owners, or airlines. It is at the discretion of the aircraft commander to commit to a 3.5 glides operation approach subject to safety and weather conditions. Little reduction in noise is audible, with super heavy or heavy aircraft.	Does not impact proposal	The feedback is supportive of the proposal and no new information has been provided which would change the final design. The feedback regarding the position of noise monitors is outside the scope of the ACP. 3.5º approaches are not available at Heathrow.
532300067	No	Richmond Heathrow Campaign (RHC) recommends the SSA airspace change process be withdrawn for two or more years while progress is made on Airspace Modernisation and then re-evaluated under the new circumstances. Given the small projected RNAV usage of 0.6% of arrival aircraft through to the year 2031 and the small marginal average noise benefit of 0.51 dBA (SEL) from each aircraft using RNAV, the acknowledged noise impact on the ground is very marginal. There would be no meaningful loss to the community from deferral of the SSA and the following issues could be better addressed before proceeding with the CAP 1616 Airspace Change. 1. The SSA Full Options Appraisal (FOA) has not anticipated changes that may occur with Airspace Modernisation such as curved arrival paths joining the final straight approach at different points possibly much nearer the airport than today. The impact on SSA could be significant and vice versa. Likewise, the introduction of Performance Based Navigation (PBN) into the arrivals system and its impact on SSA and vice versa appears not to be part of the FOA. 2. Heathrow's Noise Action Plan seeks a number of operating measures to reduce noise, such as deferring the lowering of landing gear, which SSA may impact negatively. The SSA appraisal appears not to have examined this and other planned measures. 3. There is a specific Continuous Descent Approach (CDA) profile for Heathrow, as defined in the Arrivals Code of Practice, which is a 3 degree descent from 6,000ft to the joining point with the Final Approach. The aircraft are vectored as they leave the holding stacks at 7,000 ft so as to produce a steady stream of arrivals with similar speed along the final approach. The redesign of arrivals using queue management and removal of holding stacks will have implications for the final descent and its steepness. The FOA appears not to have examined the impact of SSA on the emerging redesign and vice versa. 4. The Airport's AIP (Aeronautical Information Publication) states that the minimum height at which aircraft can join the ILS during the day (between 6am and 11pm) is 2,500ft which is approximately 7.5 nautical miles (around 8.5 miles) from Heathrow. At night (between 11pm and 6am) an aircraft must be no lower than 3,000ft which is approximately 10 nautical miles (around 11.5 miles) from Heathrow. SSA will reduce the minimum distance from the airport but the FOA makes no mention of this and the consequences. 5. Heathrow's independent parallel approach (IPA) proposals,		Does not impact proposal	SSA is already in operation at Heathrow and does not prohibit any plans for Airspace Modernisation. (1) (3) (5) Changes to lateral flight paths are outside of the scope of this ACP. Any future changes to flight paths would be considered in their own standalone ACP and any procedures developed would replace the Slightly Steeper approaches operated today. SSA does not facilitate the introduction of independent parallel approaches. (2) During the trials landing gear deployment and overall aircraft performance were monitored in conjunction with noise monitors deployed under the final approach. The data gathered during the trials showed that for medium aircraft the landing gear was deployed at the same distance from the runway, but the aircraft was higher. For larger aircraft, the trials showed the landing gear was deployed slightly closer to the runway and the aircraft was at a similar height to the standard approaches. Data gathered from the noise monitors showed an average decrease of 0.5dBA SEL recorded at noise monitoring sites when aircraft operate SSA. (4) The place at which arrivals join final approach are not impacted by this ACP. This is detailed in the trial reports. The Initial Fixes for the 3.0˚ and 3.2˚ RNAV approaches are identical. (6) Night flight bans are outside of the scope of this ACP. (7) Altering the ILS or introducing additional ILS equipment at a steeper approach angle was considered as part of the Airspace Change Process. In the Design Principle Evaluations (Stage 2A), the option of changing the ILS did not perform well against the Design principles (DP) agreed with stakeholders at Stage 1B; failing to meet one DP, partially meeting five, and meeting two DPs. The option to increase the approach angle of RNAV approaches met six DPs and partially met the other two, and therefore the ILS option was discounted and the RNAV option continued to Stage 3 of the process. There are global design criteria which currently limit CAT II/III approaches to a maximum glideslope of 3.0°. Heathrow recognises that SSA presents a small incremental step in reducing the airport's overall noise footprint. As part of the wider UK Airspace Modernisation airspace change required by 2030, the

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		where aircraft land on both runways in parallel, could be impacted by SSA or vice versa and this has not been considered by the FOA. 6. RHC and others in the recent CAA consultation on night flights seek a ban on night flights. According to the SSA webTAG evaluation, 40% of the £27 million (60 year NPV) benefit from SSA is due to a reduction in sleep disturbance. This could be better achieved by a night flight ban, which is not considered by the FOA. 7. Furthermore, we question the exclusion of the option of using the ground based instrument landing system (ILS) at steeper angles. Yes, the ILS is expensive and may be old and in need of replacement, but there will need to be an ILS for bad weather and insurance against RNAV system failure. Why can the ILS not be upgraded as and when it is renewed. We understand that the ILS is favoured by pilots, as evidenced by the small uptake of RNAV, and perhaps Air Traffic Control, and it is still widely in use on final approaches at airports around the world. The FOA refers to the two SSA trials where the impact of SSA on some of the above variables was assessed but the point here is that the variables have not been examined as decision variables taking into account the effect of SSA. Importantly, safety is paramount and it has not been demonstrated how safety would be impacted in the scenarios referred to above. RHC's comments above on flight path design and operating procedures should not be regarded as supporting or rejecting any of the measures discussed. Other deficiencies in the FOA include the following: 1. The FOA says fleet change and population growth have been taken into account. They can have a significant impact on the results but these key components of the assessment are not detailed in the FOA for consideration by consultees. 2. The proposal is presented as SSA in which 3 degree and 3.2 degree descents are compared as the 'do-nothing' and 'do-something' options. However, as we understand the proposal, pilots have the option as whether or not to use RNAV descents and the choice of RNAV angle (within limits). Furthermore, the angles achieved by RNAV are not precise, as was demonstrated by the trials. In the trials some arrivals used ILS as the 'do-nothing' procedure and others used RNAV. It was not always clear whether an impact from the trials was due to RNAV compared to ILS or a difference in angle of descent. It is not clear whether the claimed benefit of SSA is at least in part the result of using RNAV instead of ILS. 3. The number of people negatively impacted, as shown by Appendix A of the FOA, is of concern. The webTAG shows 12,408 people experience an increase in noise in the daytime and 1,008 in the night time on account of SSA. Also, the trials in 2015 and 2017 showed the noise reduction, although averaging 0.51dBA, varied around this average depending on location and this is borne out by the number of people affected as shown in Appendix A. The people one might wish in fairness to receive the greatest benefit from noise mitigation are those where existing noise levels are the highest but seemingly they benefit the least from SSA, presumably because the height difference is less near the airport. RHC raised this issue of sharing of benefit in response to Trial 1 and Heathrow			application of SSA will be considered within the context of investigating the feasibility of increasing the angle of descent for the ILS. With regards to the second list of points: (1) Within the FOA, we explained that to facilitate the noise assessment, population and household data was obtained from CACI[1]. All population counts for 2019 are based on the CACI 2019 population and household data. Data for the forecast year of 2031 is based on the CACI forecast populations and households in 2031. This methodology conforms with the CAA's requirements for calculating noise exposure as outlined in CAP1616 and the webTAG workbook. Within Appendix A we have provided a table which outlines the Fleet Mix percentages that were used throughout the noise assessments for the Slight Steeper Approaches Full Options Appraisal (FOA). (2) Currently 3.0º RNAV and 3.2º RNAV approaches are published alongside the conventional ILS approaches, however the 3.0º RNAV approaches are not allocated by ATC. During the trials and to date, pilots can elect to either fly the 3.2º RNAV approach or a standard 3.0º conventional approach. The small benefits associated with this SSA ACP are a result of the increased approach angle, not the RNAV element. RNAV approach angles are impacted by temperature and the published procedures have a required minimum temperature to ensure that a safe approach angle is maintained. (3) and (4) Following the trials and throughout the SSA ACP process we have reported on the small but quantifiable reduction to Heathrow's noise footprint that SSA enables. In the trials we found an average 0.5dB SEL reduction between 3.2˚ SSA and 3.0˚ ILS arrivals. This is an average from readings taken from Heathrow noise monitors as single sound events. The WebTAG analysis uses LAeq average 92 day noise levels, rather than SEL single sound events. The CAA's airspace change process requires WebTAG analysis methods to be used for the evaluation of quantified noise benefits and disbenefits. The small changes in the noise environment from SSA, in conjunction with the very small percentage of aircraft flying SSA, mean that the average noise effects when expressed in average LAeq over 92 days are very small indeed. In general, changes of less than 1dB may be considered negligible. WebTAG is not designed for such small changes and only deals in 1dB bands increment. Therefore, if the change in noise within the model is, for example, just 0.06dB (i.e. imperceptible, and therefore of no impact to an individual), it has been rounded to 0.1dB for WebTAG analysis in the workbook which is enough for a household in a 50.9dB band to move from the 50-51dB band into the 51dB-52dB band. This is categorised as an increase within the WebTAG workbook. The same is true for decreases in noise. For aviation, WebTAGs main objective is to evaluate airspace changes where flight paths may change and/or where there are options for distributing noise. Other Government WebTAG assessments are

[1] CACI Ltd. | Marketing, Technology & Data Specialists

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		responded that it would be addressed but we do not think it has been resolved. 4. Noise metrics: SEL is numerically equivalent to the total sound energy, whereas Leq is proportional to the average sound power. The FOA uses both metrics and it is not clear how the FOA conclusions have been reached. For example, it is said the noise impact of 0.51dB SEL from SSA may be difficult to perceive on the ground and yet there is a £27million noise benefit. For the reasons given here, RHC recommends Heathrow withdraw its application to the CAA for an Airspace Change (CAP 1616) for SSA for two or more years after which the SSA can be re-considered under the circumstances and in particular clearer proposals for airspace modernisation.			also designed in this manner. For infrastructure such as new or realigned roads and railways, WebTAG assessments are used to establish the relative benefits of different route options. The WebTAG analysis for SSA shows that there are many smaller beneficial movements of houses into lower bands than there are movements into higher bands, hence the net benefit of £27,632,143. Feedback does not support the proposal however no new information has been provided which would change the final design. Heathrow does not accept the justification proposed by the respondent to withdraw this ACP.
664058522	No	The consultation admits that there will be no perceived benefit for anyone overflown and no theoretical benefit either for communities close in. Even the very small noise benefits claimed are on close examination expressed as SEL units rather than using a metric that is understandable by lay consultees. It will not be realised by most that typically SEL units are 10dB less than those used in real world situations when seeking to describe a single noise event by virtue of its maximum sound (LAmax) - thus on a individual noise event basis it will be impossible for the average human ear to detect any real world benefits from a SSA approach. However the consultation leaves consultees with the impression that some noise benefits might be perceived at some locations - this is wholly wrong. Further an accompanying webtag assessment for option B2 claims a net benefit of £27,632.143. LAANC members ask how can this be when there is no perceptible noise improvement for anyone. It is axiomatic that the claimed disbenefit for removal of the Option B2 is also theoretical only. Of even more concern is that admission that SSA's will result in 12,408 people experiencing an increase in noise during the day with 1,008 extra at night. The consultatio claims that there are no adverse environmental effects attached to SSA - LAANC is sure that those people who suffer the increases in noise will not agree. Again without data on future fleet mix it is impossible for consultees to see how the claimed Webtag benefits can be sustained as the 2017 trials showed that most of the Heathrow (long haul) did not fly SSAs.	Appendix A comprises numerous contours and charts which are very difficult for the lay person to navigate. The relevance of producing charts and tables for 100% use of SSA in 2031 is particularly confusing as the consultation indicates that for 2019 only 0.6% of all arrivals used SSA even though the CAA had authorised its continued use. The reson for publishing a 2019 contour set for "all arrivals" using SSA is unlcear as not aircraft could in any event have used SSA in 2019. No breakdown of future fleet mix is given for the 2031 scenarios either for baseline or with SSA - either option B2 or all aircraft operating SSA. These contours are dated January 2021 and the input assumptions should have been made available as part of this consultation. It is unclear what the purpose was of providing contour sets for 100% SSA arrivals when the main consultation document admits that it is not expected that every aircraft will be able to use SSAs. The LAeq data tables appear to show for 16hr summer day that at the current LOAEL (51dB) some10,000 people will be removed from the outer contour by the use Option B2. LAANC questions the fairness of this as again the proposals will offer no perceptible benefit to any overflown communities. It is also unclear why with full use of SSAs numbers affected at the LOAEL increase again (to 1061061). Overall LAANC believes this proposal is premature, offers no perceptible benefits (A night time ban would offer far more) and should be withdrawn and form part of the overall options for future airspace modernisation.	Does not impact proposal	SSA is already in operation at Heathrow and does not prohibit any plans for Airspace Modernisation. Following the trials and throughout the SSA ACP process we have reported on the small but quantifiable reduction to Heathrow's noise footprint that SSA enables. In the trials we found an average 0.5dB SEL reduction between 3.2° SSA and 3.0° ILS arrivals. This is an average from readings taken from Heathrow noise monitors as single sound events. Heathrow acknowledges that SSA is a small step in reducing our noise footprint which we have outlined within the documents. CAP1616, the CAA's process for undertaking an Airspace Change, requires sponsors to present the following noise contours and data tables which were provided in Appendix A: • LAeq 16 hour • LAeq 8 hour • N60 • N65 As outlined on page 12 of the Full Options Appraisal, the 100% contours and data tables were provided due to the small percentage of aircraft that operate 3 SSA (0.6% in 2019), and knowing the outcome of the trials in 2015-2017, the results of the noise calculations were expected to be difficult to distinguish on a standard noise contour as requested by the CAP1616 process. It was then noted in the FOA that the 100% contours are only available to visually demonstrate the benefits of SSA in the results; at present it is not operationally feasible for 100% of arrivals to operate 3.2° RNAV SSA. The CAA's airspace change process also requires WebTAG analysis methods to be used for the evaluation of quantified noise benefits and disbenefits. The WebTAG analysis uses LAeq average 92 day noise levels, rather than SEL single sound events. The small changes in the noise environment from SSA, in conjunction with the very small percentage of aircraft flying SSA, mean that the average noise effects when expressed in average LAeq over 92 days are very small indeed. In general, changes of less than 1dB may be considered negligible. WebTAG is not designed for such small changes and only deals in 1dB bands increment. Therefore, if the change in noise within the model is, for example, just 0.06dB (i.e. imperceptible, and therefore of no impact to an individual), it has been rounded to 0.1dB for WebTAG analysis in the workbook which is enough for a

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					household in a 50.9dB band to move from the 50-51dB band into the 51dB-52dB band. This is categorised as an increase within the WebTAG workbook. The same is true for decreases in noise. For aviation, WebTAGs main objective is to evaluate airspace changes where flight paths may change and/or where there are options for distributing noise. Other Government WebTAG assessments are also designed in this manner. For infrastructure such as new or realigned roads and railways, WebTAG assessments are used to establish the relative benefits of different route options. The WebTAG analysis for SSA shows that there are many smaller beneficial movements of houses into lower bands than there are movements into higher bands, hence the net benefit of £27,632,143. Within Appendix A we have provided a table which outlines the Fleet Mix percentages that were used throughout the noise assessments for the Slight Steeper Approaches Full Options Appraisal (FOA). Feedback does not support the proposal however no new information has been provided which would change the final design. Heathrow does not accept the justification proposed by the respondent to withdraw this ACP.
449223876	Yes		The MOD are happy to support the permanent adoption of slightly steeper approaches at Heathrow, as it is assessed that it does not detrimentally impact MOD operations. We have no further feedback at this time and we are happy for redacted responses to be published.	Does not impact the proposal.	The feedback is supportive of the proposal and no new information has been provided which would change the final design.

APPENDIX A: FLEET MIX INFORMATION

The below table outlines the Fleet Mix percentages that were used throughout the noise assessments for the Slight Steeper Approaches Full Options Appraisal (FOA):

Aircraft (IATA Code)	Aircraft (ICAO Code)	2019 Movements %	2031 Movements %
77W	7773ER	4.5	5.3
321	A321-232	13.4	4.2
333	A330-343	1.3	1.5
772	777200	4	0
788	7878R	3.6	6.6
789	7879	4.4	10.7
763	767300	0.2	0
7M8	737MAX8	0.5	1
319	A319-131	21.8	2.2
320	A320-211	17.1	9.4
32A	A320-232	12.6	0
738	737800	1.1	0.3
E90	E190	0.5	0
32B	A321	0.5	0.4
359	A350-941	0.7	2
388	A380-841	2	0
744	747400	2.7	0
DH4	Dash -8	1.2	0
332	A330-200	1.2	0.4
773	7773ER	0.4	1.9
74N	7478	0.1	0
74Y	747400	0.2	0
346	A340-600	0.6	0
76W	767300	1	0
32Q	A321neo	0.8	0
75W	757200	0.2	0
752	757200	0.2	0
77X	777200	0.1	0

Aircraft (IATA Code)	Aircraft (ICAO Code)	2019 Movements %	2031 Movements %
73H	737800	0.8	0
73J	737900	0.1	0
73W	737700	0.5	0
CS1	737700	0.2	0
CS3	CS300	0.5	0
339	A330neo-900	0.2	0.5
32S	A320-211	0.3	0
351	A350-1000	0.1	7.8
ABY	A300-600	0.3	0
318	A318-100	0.1	0
320N	A320neo	0	31.2
321N	A321neo	0	7.6
781	78710	0	0.6
32H	A320 (s)	0	3.2
319N	A319neo	0	0.4
E95	EMB195	0	1
7M9	737MAX8	0	0.3
74H	7478	0	0.1
7M7	737MAX8	0	1
779	777X-900	0	0.4
	Total	100	100