

**Committee: Stansted Airport Advisory Panel**

**Agenda Item**

**Date: 23<sup>rd</sup> November 2015**

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**Title: RNP1 (RF) trial at Stansted Airport**

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**Key decision: No**

## **Summary**

1. This report is about a trial undertaken at Stansted Airport which uses modern navigational procedures to improve track keeping of departing aircraft. The airport operator, London Stansted Airport, is now consulting on whether these procedures should be formally adopted via an airspace change proposal which would be submitted to the Civil Aviation Authority (CAA). The report explains what the trial is, what the results are and how the Council should respond as part of the consultation.

## **Recommendation to Cabinet**

2. That taking into account Government policy on noise, the Council should support the airspace change proposal as;
  - i) it would result in fewer people being directly overflown by aircraft, and
  - ii) it would give more certainty about the paths that departing aircraft take.

## **Financial Implications**

3. None.

## **Background Papers**

4. None

## **Impact**

- 5.

Communication/Consultation	The consultation is being undertaken by London Stansted Airport. The consultation runs from 1/9/15 to 27/11/15, and has included community outreach events in Great Dunmow, Bishop's Stortford and Hatfield Heath.
Community Safety	None
Equalities	None

Health and Safety	None
Human Rights/Legal Implications	None
Sustainability	None
Ward-specific impacts	The trial has impacted:  Broad Oak and The Hallingburys Great Dunmow North Great Dunmow South and Barnston Hatfield Heath Takeley Thaxted and The Eastons
Workforce/Workplace	Officer time in preparing this report, including attending one of the community outreach events

## Situation

6. Aircraft departing from Stansted Airport use one of six Noise Preferential Routes (NPRs), which are the lower level initial sections of Standard Instrument Departure (SID) routes before they diverge. There are three NPRs at both ends of the runway, their use depending upon wind direction and then the aircraft's destination. Up to a height of 4,000ft, Government guidance identifies reducing local noise as the key environmental objective of airspace management. Between 4,000 – 7,000ft the key objective is to balance noise and CO<sup>2</sup> emissions, whereas above 7,000ft reducing CO<sup>2</sup> emissions has priority.
7. To reduce local noise, departing aircraft are required to keep to the relevant NPR until they have achieved a minimum height of 4,000ft when they can be vectored onto a more direct heading to their destination by Air Traffic Control. Each NPR is 3km wide (1.5km either side of the SID centreline), and is traditionally flown using ground based navigation techniques. Within each NPR, there will be a spread of departure tracks due to a number of factors influencing the position of an aircraft such as wind speed and direction and the aircraft's flight management system. At the ends of the NPRs, when aircraft are at 4,000ft, there is effectively a swathe of departure tracks taking up the full 3km width of the NPR.

### The RNP1 (RF) trial

8. Following discussion with local community representatives, London Stansted Airport decided to carry out a track keeping trial using modern global positioning system (GPS) navigational techniques (the RNP1 (RF) trial) to enable departing aircraft to fly as close as possible to the SID centreline. This was the first trial of this kind in the UK, the aim being to reduce the number of people being overflowed. Reducing the number of people being overflowed aligns with Government policy in the Aviation Policy Framework (APF):

*“to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise”.*

9. RNP refers to *Required Navigation Performance* which allows an aircraft to accurately fly a specific path between two defined points, an RNP of 1 meaning that a navigation system must be capable of calculating its position to within one nautical mile. RF refers to *Radius to Fix*, which is a radius about a fixed point to enable more accurate track keeping through turns, especially tighter ones.

10. For the trial, one SID was chosen at each end of the runway so that it could proceed irrespective of which runway was in use due to the wind direction. The following two SIDs were chosen:

*Runway 22 Clacton SID:* RNP1 (RF) would reduce overflying of Hatfield Broad Oak and Hatfield Heath as the SID centreline runs between the 2 villages, and would also reduce overflying of Little Hallingbury

*Runway 04 Detling (formerly Dover) SID:* RNP1 (RF) would improve departure track keeping compliance on what has traditionally been the least compliant SID due to the tight 160° southerly turn soon after take-off. This would result in reduced overflying of Little Easton and Great Dunmow.

11. The trial started in May 2013 with easyJet, initially for one month for data gathering and feedback purposes. After that period, other RNP1 (RF) approved operators joined the trial, which remains ongoing for data gathering purposes. However, the CAA will not allow open-ended trials and a decision now needs to be made on whether the RNP1 (RF) procedures should be adopted permanently for the two trialled SIDs, or dropped. London Stansted Airport estimates that 92% of all aircraft will be RNP1 (RF) equipped at the time of adoption, but by 2021 all aircraft will have to be so equipped.

12. London Stansted Airport has submitted the trial results to the CAA for review, and this consultation begins the formal airspace change process. This process will involve the collation and review of all feedback received, and the submission of a consultation feedback report to the CAA. After that, an airspace change proposal will be submitted to the CAA. The CAA will decide whether the airspace change proposal should be approved.

13. The consultation document and a list of frequently asked questions, published by London Stansted Airport, are attached as appendices to this report.

#### Outcome of the trial

14. The headline results of the trial are set out on Pages 8 and 9 of the consultation document. The number of people directly overflown would reduce from 5,000 to 700, the largest reduction being under the Runway 22 Clacton SID. Adherence to the centreline of the SIDs would be greatly improved. On the Clacton SID, 99% of aircraft flying RNP1 (RF) are within a swathe of less than 500m (compared to 3km), whilst on the Detling SID the figure is 99% within a swathe of less than 420m. The trial has also indicated that all types of aircraft and sizes are able to fly the accuracy required by RNP1 (RF).

## Consideration

15. As with all airspace change proposals, there are winners and losers. The 700 people who live under the SID centrelines will experience more overflying, but 4,300 people will experience less or no overflying, and the paths that aircraft take will be more certain. It is the experience of officers that people looking to move to the area and who enquire about the effect of aircraft noise appreciate more certainty over the paths that aircraft take, as it aids their judgement. Taking into account Government policy in the APF, it is considered that the Council should support the airspace change proposal.

## **Risk Analysis**

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Risk	Likelihood	Impact	Mitigating actions
That the Council's views are not taken into account as part of the consultation process.	1. STAAP will make a recommendation to Cabinet, which will then decide how to respond to the consultation.	1. All residents are able to take part in the consultation process and express their views.	The Council responds to the consultation.

1 = Little or no risk or impact

2 = Some risk or impact – action may be necessary.

3 = Significant risk or impact – action required

4 = Near certainty of risk occurring, catastrophic effect or failure of project.