BAT Fact Sheet – Phase 1 – Heathrow/Northolt/City & Biggin Arrivals

Following recent safety events related to level busts in the London TMA where incorrect Barometric Pressure Setting has been a contributory factor, NATS will be implementing a **B**arometric Pressure Setting **A**dvisory **T**ool with effect from 25 November. This note is intended to provide background on the tool and changes to procedures and supplements NOTAM information.

What is BAT?

- BAT = Barometric Pressure Setting (BPS) Advisory Tool.
- It is a tool to identify significant QNH setting errors made during the approach phase of flight.
- BAT is based on downlinked Mode-S BPS data.

Why is the tool being introduced?

- NATS is taking advantage of Mode S Downlinked data already provided by aircraft and is being proactive in safety.
- Analysis shows the issue of incorrect selection is becoming more frequent.

What does it do?

- BAT provides an advisory warning on the radar to ATC at London Terminal Control when a large difference (6mb or more) is detected between the down-linked BPS and the London QNH. The tool only supports aircraft below the Transition Altitude.

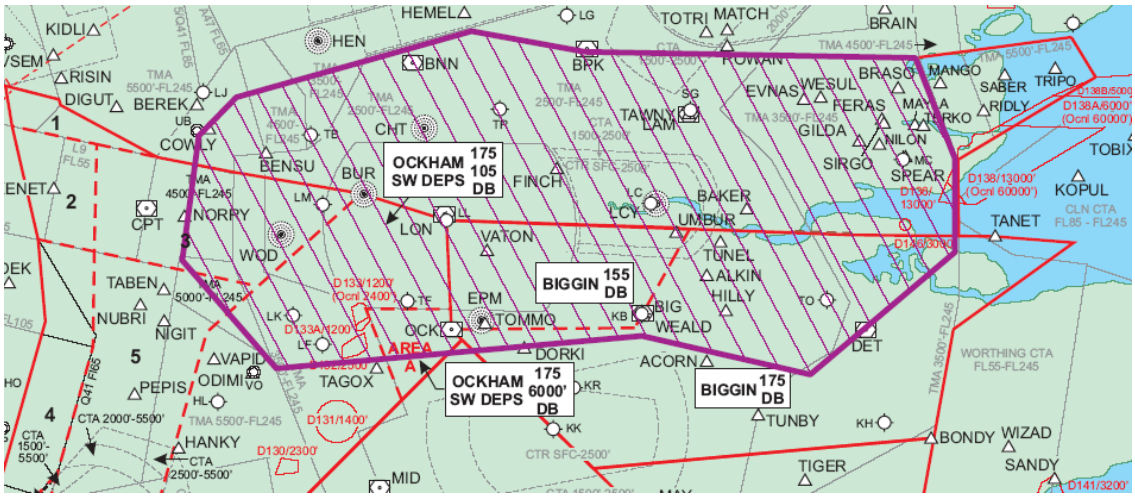
What does it not do?

- Alert for aircraft on departure apart from positioning flights that stay below the Transition Altitude. This is due to issues with the data provided by certain airframes manufactured by Airbus Industrie and Fokker Aircraft, which downlink the last selected QNH rather than standard pressure while operating above the Transition Altitude.
- Alert above the transition altitude (e.g. aircraft entering a terminal hold).
- Support aircraft that do not provide <u>both</u> Mode S SFL and Mode S BPS (approximately 80% of aircraft in the London TMA provide both types of data).

How does it work?

- A route filter is applied such that only arrivals to specific airports are eligible. For phase one these filters are for Heathrow, Northolt, London City & Biggin Hill airports.
- The Mode-S Selected Altitude (SFL) and the current level (Mode-C) are compared to ensure that the arrival aircraft intends to remain below the Transition Altitude.
- Mode-S BPS is downlinked from aircraft. The BPS must be 6mb or more from the London QNH and the SFL data must be available
- Other criteria are applied to give flight crews the maximum amount of time to change altimeter settings without unduly risking a level bust (aka level deviation)

Where does it work?



What does it look like to ATC?

- The BAT advisory comprises of a two tone yellow pulse of the level field. The BAT advisory is not acknowledged and does not appear anywhere else on the radar screen. If an STCA alert occurs, it will take precedence over the BAT advisory although the BPS value continues to be displayed in the Mode-S Data window. In the following diagram the Mode-A code is displayed on line one and is usually converted to the aircraft callsign on the controller's radar display. Line two contains the current level, the destination code and the selected altitude. The BPS Advisory is shown on the target with the equivalent Mode-A code of 7735, remember that the level field will pulse yellow on the ATC display. The Mode S data Window shows the actual BPS being down-linked.

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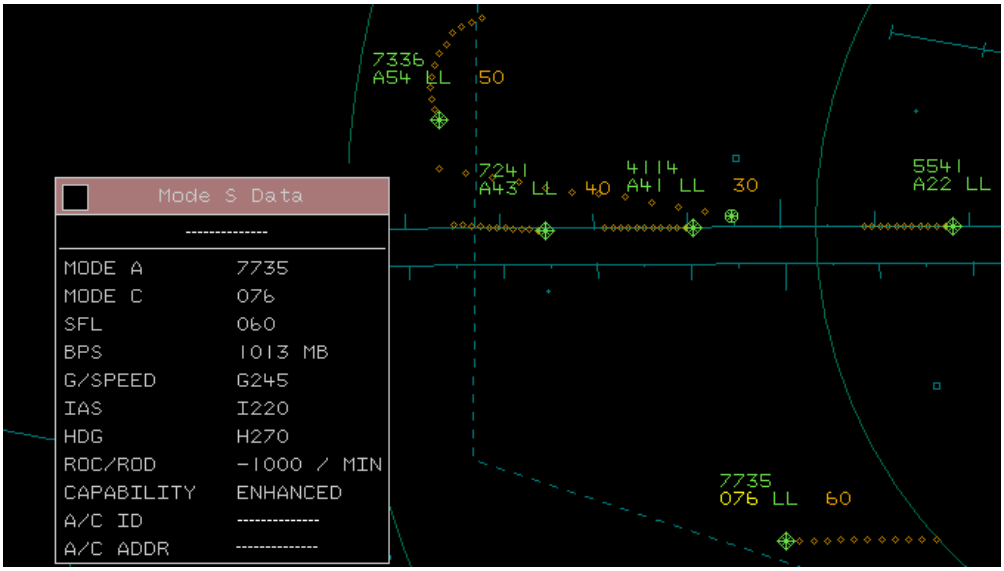

Is there any new phraseology?

- Where controllers choose to query the discrepancy, the phraseology to be used is:
  "(Callsign), Check Altimeter Setting, QNH xxx" - where xxx is the local QNH being utilised

What are the responsibilities for use of the tool?

- **Flight crews are requested to perform an altimeter setting check according to their Company Standard Operating Procedures (SOP) if they are instructed to check their altimeter setting.**
- The response to a BAT Advisory is not a mandatory task for ATC, although it is encouraged for early identification of possible level busts.
- The use of BAT is not a substitute for R/T read-back, which remains a mandatory task.
- Where a BAT advisory indicates a variation with the QNH provided by ATC, controllers will not state the incorrect QNH value.

How often is the warning expected to be triggered?

Destination Airfield	Average Number of Alerts per Day	Maximum Number of Alerts per Day
EGLL	3	7
EGLC	0.5	3
EGWU	0.04	1
EGKB	0.01	1
Data taken from October to December 2008 and February to March 2009 when the QNH was greater than 5mb from 1013mb		

Are there any specific issues I need to be aware of?

- BPS data is provided by very few Boeing B777 aircraft. A fix is being discussed with operators.
- If the BAT advisory persists after aircrew are challenged, ATC are not expected to repeat the challenge. However, ATC will monitor the situation.
- If STCA alerts, the BAT advisory is removed. If STCA is acknowledged or terminates, the BAT advisory will immediately resume.
- BAT supports positioning flights below Transition Altitude provided the flight remains inside the check area and the correct destination code is displayed.
- When given descent clearance from a flight level to an altitude, some operators may change to QNH immediately, while others will wait until the aircraft passes through the transition layer. BAT will tolerate both procedures.
- Operators have the option of using QFE when below the transition altitude. However, analysis of traffic recordings indicates that QFE is rarely used.

When is it being introduced?

- 25th November 10 - BAT will be active for arrivals to Heathrow, Northolt, London City & Biggin Hill airports.
- 10th March 11 - BAT will be active for arrivals to Stansted, Luton and Cambridge.
- Late Spring 11 - BAT will be active for arrivals to Gatwick and Redhill.