Inclusion of the extension of UY53 into the Truncation of the DTY 3N/4P SIDs

ACP-2023-039

Justification

MAG East Midlands Airport

Document Details

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1. Statement of Need.

ACP-2023-039 proposes the truncation (and slight realignment) of the DTY 3N/4P SIDs at East Midlands Airport, to end at extant waypoint SAPCO. The Statement of Need (SoN) to initiate this proposal stated:

> "In order to reduce fuel uplift and consequent fuel burn and CO_2 emissions it proposed to truncate the DTY 3N and 4P SIDs by 23nm at waypoint SAPCO and replace the existing portion of the SID between SAPCO and DTY by extending ATS Route Y53 south from SAPCO to DTY."

The SoN made no reference to the Upper Air Traffic Services (ATS) Route UY53 which is coincident with Y53 north of waypoint NUGRA. UY53 is not published between SAPCO and NUGRA as there is no requirement for the route for southbound traffic and northbound traffic is not accepted west of SAPCO (see Fig.1 below).
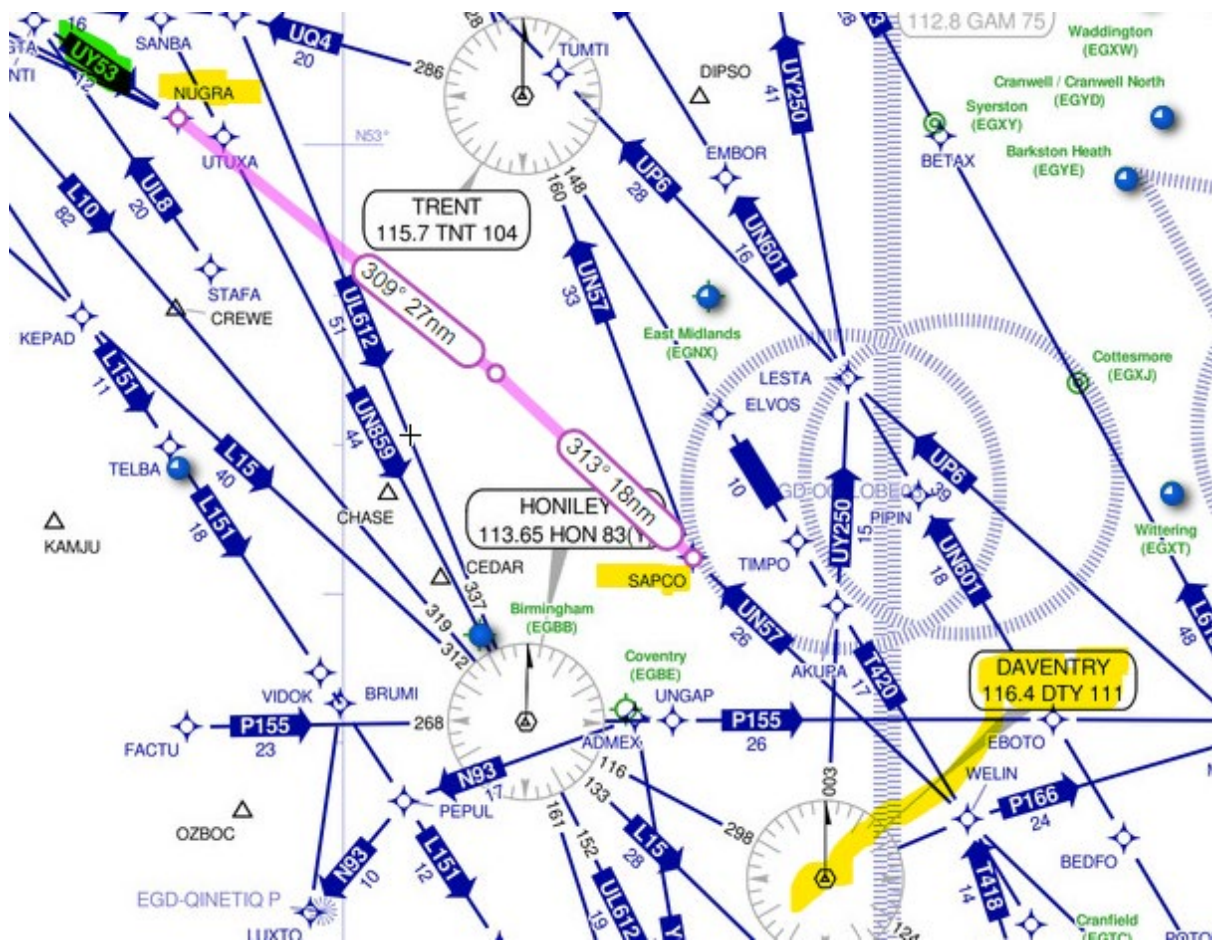

Figure 1: Showing the lack of UY53 southbound or northbound SAPCO - NUGRA and Daventry (DTY) – SAPCO in pink ©www.skyvector.com

The SoN proposed the extension of Y53 between SAPCO and DTY to replace the removed portion of the SID. The Y53 extension would allow southbound traffic from East Midlands Airport to continue to flight plan southbound via Daventry (DTY).

In engagement with NATS En-route Ltd (NERL) (to obtain their support for ACP-2023-39) they advised there are a number of Flight Plannable Directs (DCTs) in place between DTY and SAPCO for specific traffic/city pairings FL245 and below. They suggested it would be preferrable for the extended Y53 to be published bi-directional such that the DCTs could be replaced by Y53. In subsequent engagement) and preparation of the draft AIP Changes) NERL advised they have northbound DCTs above FL245 and that these too could be replaced by publishing UY53 between DTY and SAPCO.

2. What is a DCT?

What is a DCT? A DCT is a Flight Plannable Direct; it allows operators to flight plan and fly between two points that are not connected by an ATS Route. The vast majority of the UK is covered in ATS Routes (formerly known as airways) but, with onset of Performance Base Navigation (PBN) these routes are now described literally by lines and have a navigation accuracy assigned to them.

Whilst DCTs are published in the UK RAD Appendix 4 and used daily by aircraft operators they are not published on any chart in the UK AIP. The usage of DCTs is strictly managed by the UK Route Availability Document UK (RAD) and Standard Route Document (SRD). DCTs are administered by the UK and Ireland Route Management Team within NATS (supported by IFPS in Harem, Belgium). They are often published where there is either low demand between waypoints or where an aerodrome is outside the controlled airspace containing the UK ATS Route structure (eg Exeter, Norwich etc).

The routeing between DTY and SAPCO northbound is strictly for traffic originating from UK airports in the Hampshire/Dorset area of the UK wishing to go north to Northern England, Dublin, Northern Ireland, Scotland or Scandinavia. The routeing negates the need for thee aircraft to pass to the south and east of London and the need to join the primary northbound flow further south. Establishing the DCTs allows flight planning for a more direct route west of London and so join the northbound flow in the Leicestershire/Derbyshire area. Whilst this does add to the complexity of the airspace the numbers of aircraft are low enough to make this manageable

Below is an extract from the UK SRD (which is updated monthly) and shows the required routeing between aerodromes/points through UK airspace for which Adaptation in Flight Data Processing at the Area Control Centres has been established. This particular extract shows the DCTs published for traffic northbound between DTY and SAPCO originating Boscombe Down, Bournemouth, Southampton and Thruxton to the north. There are many others published too from aerodromes such as Farnborough but the number of aircraft using them is relatively small (albeit increasing through natural growth).

1) EGDM   MC 105 DCT CPT DCT WCO DCT DTY DCT SAPCO N57 TNT ELVOS1M EGCC

2) EGHH   255 660 DCT SAM Q41 SILVA UM605 DTY DCT SAPCO UN57 POL UN601 ABEVI UN590 LORTA <FRA> ADODO

3) EGHH   105 195 DCT SAM Q41 SILVA M605 DTY DCT SAPCO N57 TNT Q4 WAL L10 PENIL L28 LELDO M145 BAGSO

4) EGHH   245 660 DCT SAM Q41 SILVA UM605 DTY DCT SAPCO UN57 TNT UL28 LELDO M145 BAGSO

5) EGHI   255 660 DCT PEPIS Q41 SILVA UM605 DTY DCT SAPCO UN57 POL UN601 TLA <FRA> ADODO

6) EGHO   105 195 DCT CPT M183 SILVA M605 DTY DCT SAPCO N57 TNT Q4 WAL L10 PENIL L70 BAGSO

In the first example the Lower Limit is the first available Flight Level that the base of Controlled Airspace (CAS) can support. In this portion of the DTY Control Area (CTA) the base of CAS is published as FL75 making the first usable level FL80 (northbound level). For the purposes of the truncation of the DTY 3N/4P SIDs the Lower Limit needs to be FL85 as the SIDs go to FL90. We support NERL publishing the Lower Limit to reflect and replicate the availability of traffic to flight plan at FL80 between DTY and SAPCO as they do today albeit there is very little traffic at FL80.

3. Drivers to change.

To make the routeing visible on charts, support information and even radar video maps (if required) NERL have requested that UY53 FL245-FL460 is also published in the AIP. It would commence at DTY and route via SAPCO where a Route Break will be published resuming at NUGRA (high level traffic is not permitted to route northbound between SAPCO and NUGRA for complexity issues). Y53 from SAPCO via PEDIG to NUGRA is already published (FL245 and below).

Replacing all the DCTs published between DTY and SAPCO with Y53/UY53 (as appropriate) will not alter the usage or availability of the route and the restrictions that currently apply to these DCTs. If this ACP is approved and implemented these restrictions will then apply to the extended segments of Y53/UY53. From the above examples the UK SRD will then look like:

1) EGDM   MC 105 DCT CPT DCT WCO DCT DTY Y53 SAPCO N57 TNT ELVOS1M EGCC.

2) EGHH   255 660 DCT SAM Q41 SILVA UM605 DTY UY53 SAPCO UN57 POL UN601 ABEVI UN590 LORTA <FRA> ADODO.

3) EGHH   105 195 DCT SAM Q41 SILVA M605 DTY Y53 SAPCO N57 TNT Q4 WAL L10 PENIL L28 LELDO M145 BAGSO.

4) EGHH   245 660 DCT SAM Q41 SILVA UM605 DTY UY53 SAPCO UN57 TNT UL28 LELDO M145 BAGSO.

5) EGHI   255 660 DCT PEPIS Q41 SILVA UM605 DTY UY53 SAPCO UN57 POL UN601 TLA <FRA> ADODO.

6) EGHO   105 195 DCT CPT M183 SILVA M605 DTY Y53 SAPCO N57 TNT Q4 WAL L10 PENIL L70 BAGSO.

Whilst these examples show just six DCTs there are hundreds published from the dozen or so aerodromes in the south to numerous airports and UK exits points in the north at all the various flight levels. Whilst publishing the routeings with Y53/UY53 instead of DCTs will not reduce the size of the UK SRD it will considerably reduce the size and workload of administering and checking RAD Appendix 4.

The extension of Y53 is aligned with the requirements of the CAA SID Truncation Policy (SARG Policy 111: Standard Instrument Departure Truncation Policy). The extension of UY53 provides an opportunity to remove numerous DCTs from RAD Appendix 4 and makes no difference to the main objective of this ACP-2023-39. As Change sponsors we support anything that will make the available routeings in the UK more visible to aircraft operators -albeit they are rigorously controlled by the RAD/SRD.

Figure 2 below shows (in pink) the extended routeing of Y53 between SAPCO and DTY. If approved this change will allow traffic departing East Midlands Airport and northbound traffic (from specified airports) to utilise this new segment of the route linking M605 with N57.

Figure 2: Showing the proposed extension of Y53 to allow southbound traffic from East Midlands Airport to route via DTY and limited northbound traffic to route DTY – SAPCO between route M605 and N57 ©www.skyvector.com

Similarly, Figure 3, below shows (in pink) the proposed extension of UY53 between DTY and SAPCO (with a Route Break between SAPCO and NUGRA) that will, if approved, allow specified northbound traffic to utilise this new segment of the route linking UM605 with UN57.

Figure 3: Showing the proposed extension of UY53 (with a Route Break between SAPCO and NUGRA) to allow limited northbound traffic to route DTY – SAPCO between route UM605 and UN57 ©www.skyvector.com

4. Conclusion

In conclusion it is now proposed that both Y53 and UY53 will be published between DTY and SAPCO. Publication will not change the lateral track or vertical profile of any traffic flight planning between the two points or departing East Midlands Airport via DTY at any altitude above or below 7,000ft.

Glossary

ATS	Air Traffic Services.
CAS	Controlled Airspace is airspace within which an air traffic control service is provided.
Change sponsor	An organisation that proposes, or sponsors, a change to the airspace design in accordance with the CAA's airspace change process.
CTA	Control Area
DCT	Flight Plannable Direct – flight planning tool enabling flight planning between two points not joined by an ATS Route.
DTY	Daventry DVOR (Fix/Waypoint)
FL	FL means 'Flight Level' and uses the standard international pressure (1013.2 hPa) to express altitude in hundreds of feet. For example, FL90 equates to 9,000ft calculated according to the 'constant' pressure altitude, rather than local pressure (QNH).
IFPS	Integrated initial flight plan processing system. Based at Eurocontrol, Harem, Belgium a department specifically dealing with rationalising the reception, initial processing and distribution of flight plan data related to IFR flight within the ICAO EUR Region
M605	Published ATS Route includes DTY as waypoint
NERL	NATS En Route Ltd - the part of NATS that delivers en route air traffic control.
NUGRA	Waypoint on Y53 and UY53
N57	Published ATS Route includes SAPCO as waypoint
PBN	Performance Based Navigation
RAD	Route Availability Document – a flight-planning document, which integrates Air Traffic Flow and Capacity Management (ATFCM) requirements, geographically and vertically, following an appropriate collaborative decision-making process between ATC and operational stakeholders.
SAPCO	Waypoint on Y53 and UY53
SoN	In a Statement of Need the Airspace Change Sponsor expresses what airspace issue or opportunity they are seeking to address.
SRD	Standard Route Document – provides an extensive list of route segments that are recommended to connect an airport pair.
UM605	Published Upper ATS Route includes DTY as waypoint
UN57	Published Upper ATS Route includes SAPCO as waypoint
UN57	Published Upper ATS Route currently ending at waypoint NUGRA
UY53	Published ATS Route includes SAPCO as waypoint
Y53	Controlled Airspace is airspace within which an air traffic control service is provided.