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DVOR Rationalisation Removal of En-Route Dependencies – Daventry (DTY) Stage 1 Assessment Meeting

2019

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- Summary of Procedures impacted
- Provisional DTY VOR rationalisation timescales
- Engagement and next steps
- Summary



Statement of Need v1



In order to remove the en-route dependency on the Daventry DVOR (DTY) the STARs and Holds that are dependent on it will be made RNAV5 and designated by their start points along with any STARs currently published on the same page in the UK AIP. Where appropriate STARs will be extended such that the RNAV version incorporates level restrictions appropriate to either ATC and/or Descent Planning purposes. Additionally Y53 will be extended from SAPCO to DTY replace a DCT and Y250 will be extended south from DTY to MID via CPT also to remove DCTs; both routes will have the U designator removed. (submitted

This was replaced on 13 August with a new SoN as per next slide.

Statement of Need v2



In order to facilitate the eventual removal of the Daventry DVOR (DTY) it is proposed to remove the en-route dependency on the facility by RNAVing the STARs and Holds that are dependent on it. Additionally any STARs that appear on the same STAR chart as these procedures will also be RNAV'd and all amended STARs will be designated by their start waypoint. Where appropriate STARs will be dis-established, truncated or extended to take into account Descent Planning levels. This may also result in more than one STAR replacing one current STAR to account for varying Descent Planning levels from more than one direction.

Specifically, the PIGOT 1H will be RNAV'd and become a DTY 1E and the PIGOT 1J will extend back to HEMEL, RNAV'd and become a HEMEL 1E; the PIGOT Hold will be RNAV'd as close to the current conventional Hold using RNAV design criteria however using this criteria will remove the need for waypoint PIGOT and so the Hold will be designated as UPDUK.

The CHASE 1C will be RNAV'd and re-designated as WAL 1B whilst the CHASE 2D will be extended and split into 3RNAV STARs to capture important Descent Planning levels at DOLOP, MALUD, and potentially at MAKUX (subject Ops Room feedback) and be designated DOLOP 1B, MALUD 1B, and MAKUX 1B accordingly. The low level CHASE 3A STAR due to underutilization will be disestablished and the CHASE Hold RNAV'd.

All RNAV'd procedures will be replicated as closely as possible the current Conventional STARs and Holds using RNAV Design Criteria.

The Holds at MAPLE and CEDAR currently shown on the GROVE and CHASE STAR charts will be removed from these charts, remain as Conventional Holds for now and published on a separate page and their RNAVing does form part of this proposal.

This was replaced on 23 October with a new SoN as per next slide, in order to simplify this version.



Current Situation:

Requirement to remove the en-route dependency on DTY DVOR in order for the DVOR to be decommissioned.

Issue:

Aircraft currently fly conventional STARs and Holds which refer to Daventry VOR. There are no ATS route dependencies on DTY VOR. The need is for procedures to be replicated as RNAV as closely as possible to the current Conventional STARs and Holds using RNAV Design Criteria. This includes:

- extend/establish new STAR(s) as appropriate that replicate extant STAR(s)
- remove any STARs no longer required for contingency purposes as a result of establishing RNAV versions of the primary STAR(s)
- review STAR usage to identify continued requirement and remove as appropriate
- replicate Holds as appropriate as RNAV versions as required
- Establish DCTs as appropriate to replace any removed STARs

Action:

Identification of relevant procedures and the impact on relevant stakeholders to be investigated, and changes to be implemented under the CAP1616 Airspace Change Process.

Specific Challenges to this work package: Descent planning levels need to be taken account of to ensure they align with ATC Procedures

Project Background



- NATS currently operates 46 DVORs around the UK (installed 1982-91)
- These are operating beyond their 15-year design life resulting in:
 - High maintenance costs
 - Airport development work being prevented due to safeguarding of DVORs
- RNAV5 mandate for ATS routes all 46 DVORs are no longer necessary to support the en-route ATS route network.
- NATMAC consultation (has already been undertaken)
- Supported by CAA, SARG, UK FAS and UK-Ireland FAB PBN Policy
- Agreement with CAA that over time, reduction from 46 DVORs to 19 (removal from service of 27 DVORs)
- The removal of DVORs requires that any flight procedures which currently refer to the VOR needs to be modified or replaced.
 - Works towards UK FAS and PBN policy
 - Reduces dependence on ground infrastructure without reducing en-route services
- Overall DVOR Rationalisation Programme
 - Reduces NERL annual operating costs by c. £¼m pa when down to 19 DVORs
 - Removes excess duplication of coverage, retains appropriate redundancy

Procedures

Summary of procedures Procedure detail



Summary of Procedures



10 en route procedures published in the UK AIP which reference DTY VOR on their charts, serving Birmingham and East Midlands airports: **3 Holds** and **7 STARs.** These will all be reviewed under the scope of this ACP.

8 procedures have a dependency on DTY VOR; 2 procedures have a depiction of DTY VOR on AIP charts but do not rely on it.

Ref	Airport	Туре	Procedure	DTY VOR
1	Birmingham	Hold	CHASE Hold	No Dependency
2	Birmingham	STAR	CHASE 1C STAR	Dependent
3	Birmingham	STAR	CHASE 2D STAR	Dependent
4	Birmingham	STAR	CHASE 3A STAR	No Dependency
5	Birmingham	STAR	OLIVE 3A STAR	Dependent
6	East Midlands	Hold	PIGOT Hold	Dependent
7	East Midlands	STAR	PIGOT 1H STAR	Dependent
8	East Midlands	STAR	PIGOT 1J STAR	Dependent
9	Luton/Stansted	STAR	LOREL 1K STAR	Dependent
10	En route	Hold	DAVENTRY Hold	Dependent

Table 1 provides a summary of all affected procedures

Procedure Detail: Holds and STARs referencing DTY VOR

DTY VOR Dependent Procedures: Birmingham HOLD

1) CHASE Hold – this procedure is not dependent on DTY DVOR, however the waypoint CHASE is currently defined by reference to DTY DVOR.

2019 1700 SFC WAL 114.10^p (Ch 88X) N 532331N 0030804W Annual Rate (\cdot) 55 of Change 0.15°E MIRL RINOR WHITEGATE-D314 2900 SFC WHI 368.5 WAL RIZS 531106N 0023723W AMPIT **2**1 **2**9 **3**1 531139N 0031133W Ø R311 ∆,_{12,} 29 D304 3500 SFC 8 WHI ODR 144 TRENT -CHASE 20 TNT 115.70° (Ch 104X) 530314N 0014012W 968 (\cdot) 6 530 CHASE CH BEE 3P 20 ⊘_{D211} 2400 **3**8 **2**8 HON R330 2_{0} CHASE IC. CREWE 524907N 0021827W DTY R312.6/o58.2 TNT R239.9/o27.1 - CHASE WARNING DT 135 523648N 0015502W Do not proceed beyond CHASE without HON R329 8/p18 (ATC clearance 17 DTY R312.6/p39.4 17 **2**5 CEDAR WARNING 523107N 0014912W I-BIR 326.7°/p4.0 For Minimum Descent Rate requirements See ENR 1.1 para 3.2 SLP 🖾 COVENTRY -HON D25 CT 363.5 HOLDING SPEEDS 522439N 0012421W HOLDING Maximum holding speed at CHASE up to MNM 5000ft and including FL140 is 210KIAS. Above BIRMINGHAM FL140 standard ICAO holding speeds BHX 406 523 apply. BIRMINGHAM 522716N 0014509W I-BM/I-BIR 110.10° (Ch 38X) DESCENT PLANNING 522714N 0014508W When determining top of descent point pilots should anticipate possible descent 354 522336N 0014051W to the levels shown in the table below and possible clearance to FL90 level by I-BM 146.6°/p3.8 CHASE. Pilots unable to comply must notify ATC as soon as possible ACTUAL DESCENT CLEARANCE WILL BE AS DIRECTED BY ATC. DAVENTRY -- HONILEY DTY 116.40° **2**4 **2**8 **3**4 HON 113.65^b (Ch 111X) (Ch 83Y) -.. -... 521049N 0010650W 522124N 0013949W 600 D213 435

WALLASEY

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References to DTY on chart highlighted

DTY VOR Dependent Procedures: Birmingham STARs

2) CHASE 1C STAR – this procedure is dependent on DTY VOR.

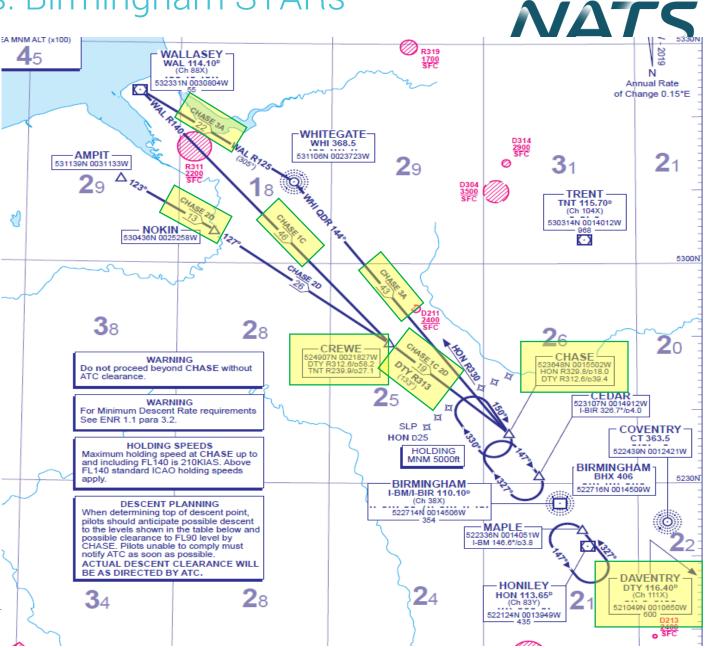
It has a route connectivity via L975 and L10 of: WAL – CREWE – CHASE

3) CHASE 2D STAR- this procedure is dependent on DTY VOR. This STAR currently has varying Descent Planning Levels so may have to be extended back to ensure these are captured on the RNAV version It has a route connectivity via (U)Y124, (U)L975, Q37, L15 and Q38 of: AMPIT - NOKIN - CREWE - CHASE

4) CHASE 3A STAR – this procedure is not dependent on DTY VOR but on Whitegate NDB (WHI). This STAR is restricted for use by traffic FL70 and below and is under utilised.

It has a route connectivity via L975, L10 of: WAL – WHI - CHASE

References to DTY on chart highlighted



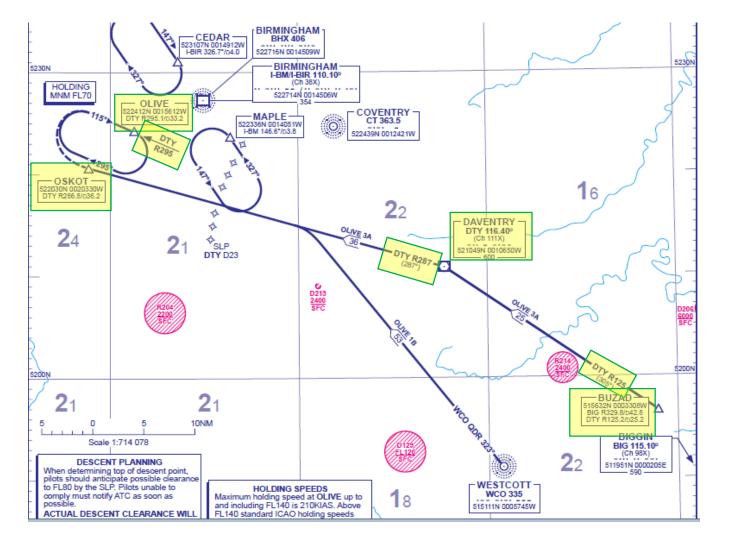
DTY VOR Dependent Procedures: Birmingham STARs



5) OLIVE 3A STAR – this procedure is dependent on DTY DVOR. It has a route connectivity via L10, Q3, L610 and T420 of: BUZAD – DTY – OSKOT – OLIVE

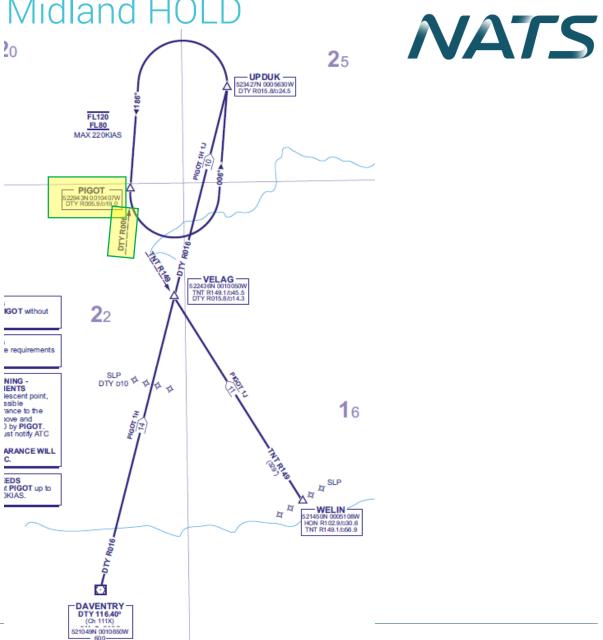
OLIVE 1B STAR – this procedure is dependent on DTY DVOR. It will be removed under the WCO/BNN DVOR ACP and is included here for information only as it is shown on the current chart.

References to DTY on chart highlighted



DTY VOR Dependent Procedures: East Midland HOLD

6) PIGOT HOLD– this procedure is dependent on DTY VOR



References to DTY on chart highlighted

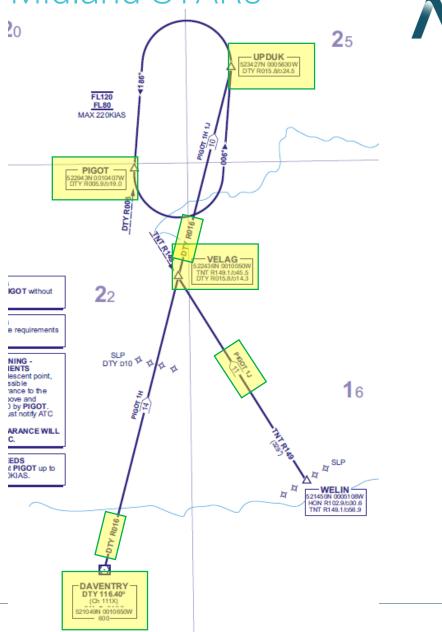
DTY VOR Dependent Procedures: East Midland STARs

7) PIGOT 1H STAR – this procedure is dependent on DTY VOR

It has a route connectivity via L10, M605, Q41, L9 of: DTY VOR – VELAG – UPDUK – PIGOT

8) **PIGOT 1J STAR** – this procedure is dependent on DTY VOR

It has a route connectivity via L608-N57, T420 of: WELIN – VELAG – UPDUK – PIGOT



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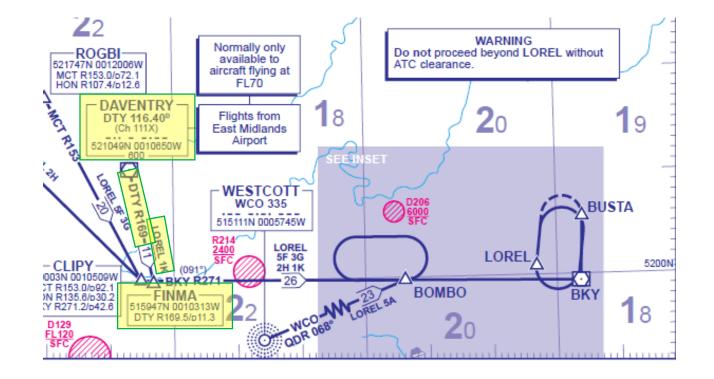
References to DTY on chart highlighted

DTY VOR Dependent Procedures: Luton/Stansted STAR

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9) LOREL 1K STAR – this procedure is dependent on DTY VOR and serves both EGGW and EGSS

It has a route connectivity via M605 of: DTY VOR – FINMA – BKY – LOREL



References to DTY on chart highlighted

DTY VOR Dependent Procedures: En Route HOLD

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10) DAVENTRY HOLD- this procedure is dependent on DTY VOR as per ENR3.6-1

Provisional DTY VOR rationalisation timescales



These dates were proposed at the Assessment Meeting

Stage	Date	Doc Deadline
Assessment meeting	24/10/19	
Stage 1 – Define	29/11/19	15/11/19
Stage 2 – Develop	20/12/19	06/12/19
Stage 3 – Consult	20/12/19	06/12/19
Stage 4 – Update and Submit	17/01/20	
Stage 5 – Decide	15/05/20	
Stage 6 – Implement	AIRAC 10 (10/09/20)	

Confirmed DTY VOR rationalisation timescales



These dates were agreed after the Assessment Meeting

Stage	Date	Doc Deadline
Assessment meeting	24/10/19	
Stage 1 – Define	29/11/19	15/11/19
Stage 2 – Develop	31/01/20	17/01/20
Stage 3 – Consult	31/01/20	17/01/20
Stage 4 – Update and Submit	17/02/20	
Stage 5 – Decide	01/06/20	
Stage 6 – Implement	AIRAC 10 (10/09/20)	

Engagement and next steps



• Engagement planned with: Airport operators which have STARs affected by the removal of the en-route

dependency on DTY, along with affected airline operators and ATC.

- No other consultation is planned
- Plan of work is submission for a CAP1616 Stage 1 Gateway Assessment on 29th November 2019; the

document deadline for this gateway is 15th November 2019.





- Expectation of a Level 2C Change
- Minimal operational impact and proposed changes which will take current usage into consideration
- Improves compliance with Eurocontrol/ICAO/CAA guidance

Questions?

