

UMLAT ULTIB SIDs PIR - Stakeholder Evidence

1. Email exchange with CAA: guidance requested after onward routeing issue

From: [REDACTED]
Sent: 19 February 2020 15:23
To: [REDACTED]
Cc: [REDACTED]
Subject: FW: NOVMA/IMVUR Onward routeing issue - Guidance requested

H [REDACTED]

Thank you for your query re EGLL NOVMA/IMVUR SIDs and further to our telephone conversation this afternoon, the issue you raise is one of the consequence of truncation to non-common points which is now potentially causing issues when a runway change occurs. As we discussed, with the SID change not only should the new ATC clearance contain the new SID but also the onward routing or at least the first fix/WP. Putting the responsibility onto the pilots to have read a note is not a robust way to deal with the issue.

We also discussed previously whether a route brief could be provided to operators to explain the interactions of SIDs with the SRD when runway changes occur etc, has anything like this been explored? But again, this would not mean ATC should not be re-clearing the new route.

As requested on the UMLAT/ULTIB SIDs, evidence of when the NOVMA/IMVUR issue has caused problems and which operators were involved will need to be provided to the CAA. We need to be able to quantify the extent of the issue.

Let us know when you have more information to share with us.

Kind regards

[REDACTED]

[REDACTED]
Airspace Regulator (IFP)
Airspace Regulation
Civil Aviation Authority

From: [REDACTED]
Sent: 30 January 2020 11:49
To: [REDACTED]
Cc: [REDACTED]
[REDACTED]
Subject: NOVMA/IMVUR Onward routeing issue - Guidance requested

H [REDACTED]

I hope you're well.

Following on from the meeting at Swanwick recently I would very much like your guidance and assistance with the on going NOVMA/IMVUR issue.

As you know NOVMA/IMVUR came in on the same AIRAC as UMLAT/ULTIB. At the time UMLAT/ULTIB caused issues but over time and by making the onward routeing more explicit on the State version of the chart it has largely settled down. However the NOVMA/IMVUR continues to be cause for concern resulting in some incident in 2019. At the time it was identified the CAA would not allow us to make the similar changes to NOVMA/IMVUR as we did for UMLAT/ULTIB but the situation is now more concerning and so we would like to offer two potential solutions which we think may assist flight crews in correcting the DISCO brought about by the runway change:

1) Add the routeing(s) in the box next to the procedure

| | | |
|----------|-----------------------|--|
| NOVMA 1X | Procedure description | Via L620 SAM Via L620 NIBDA N14 KENET |
| IMVUR 1Z | Procedure description | Via N63 SAM Via N63 VOUGA N14 KENET |

that the CFSPs will add this information to their versions of the charts that they provide to their customers. That said, it does seem to have helped with UMLAT/ULTIB (along with the Jeppesen arrows)

2) Add the routeings into the Notes on the Charts along the lines as follows:

- Flight crews issued with an IMVUR SID but with a flight plan via NOVMA shall route as follows after IMVUR: IMVUR SAM (for traffic via SAM); IMVUR VOUGA KENET (for traffic via KENET)
- Flight crews issued with a NOVMA SID but with a flight plan via IMVUR shall route as follows after NOVMA: NOVMA – SAM (for traffic via SAM); NOVMA – NIBDA – KENET (for traffic via KENET)

Our preference is Option 2 as Notes seem to be published on the Charts by the CFSPs regardless of the requests of their customers and wouldn't lead to any up-numbering of the procedure which in itself could trigger systems changes within ANSPs systems.

I know you have said that you don't like Notes that effectively add to a procedure ie a level or track and on that I, personally, am in agreement with you but in this case that is not being proposed – just simply the next waypoint(s) such that the crew can 'correct' the DISCO created by the change of runway ends.

Depending on your view this is something we would like to initiate asap ideally via NOTAM so that we can assess it's benefits (or not) prior to this summer which, with Euro 2020, is likely to be the busiest ever.

Your thoughts and what adherence (if any) to CAP1616 is required would be much appreciated.

Cheers





Swanwick Development ATCO

2. Email exchange with Virgin Atlantic Airways

From: [REDACTED]
Sent: 20 August 2019 11:11
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: TC Issues With EGKK IMVUR/NOMVA SIDs

Hi [REDACTED], sorry for the delay in coming back to you.

I'm attaching some thoughts on transitions that I provided to [REDACTED] a few weeks ago. I'm certainly happy to provide any guidance I can on this piece of work.

I have also answered some of your questions in green below.

Best regards

[REDACTED]
Senior Officer - Navigation Services
Virgin Atlantic Airways Ltd
Tel: [REDACTED]
virginatlantic.com



most loved travel company

From: [REDACTED]
Sent: 02 August 2019 09:03
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: TC Issues With EGKK IMVUR/NOMVA SIDs

[REDACTED]

Please see my comments below which, as [REDACTED] says, are identical to the UMLAT/ULTIB issue at Heathrow that we discussed in May at the Lead Operator Technical Panel.

Cheers

[REDACTED]

NATS

[REDACTED]
Swanwick Development ATCO

From: [REDACTED]
Sent: 01 August 2019 13:06

To: [REDACTED]
Cc: [REDACTED]
Subject: FW: TC Issues With EGKK IMVUR/NOMVA SIDs

[REDACTED], see below related to the SID truncation issue. I expect you have a view on this.

[REDACTED], I assume you know about the incident reported with a [REDACTED] flight. The issue is, if given radar headings the flight will be taken out of NAV, meaning the FMS will no longer be flying to the constraints.

Regards,
[REDACTED]

NATS PRIVATE



[REDACTED]
International Customer Account Manager
Airlines & Business Aviation

From: [REDACTED]
Sent: 01 August 2019 12:16
To: [REDACTED]
Cc: [REDACTED]
Subject: TC Issues With EGKK IMVUR/NOMVA SIDs

Hi [REDACTED], good to see you yesterday.

As discussed, I would like to share my thoughts on this with you. Like you, yesterday was the first I had heard of this.

It is a similar situation as the UMLAT/ULTIB onward route issues that have been experienced by NATS at EGLL, namely aircraft not following, or asking for clarification of, the onward route at the end of the truncated SID.

In the case of EGLL, I believed that this had only been reported as occurring after a runway direction change. However, ANS seem to be suggesting yesterday that at EGKK this was not always the case, it could be a flight planning problem.

Let's deal with these in turn:

Flight Planning

Firstly, taking a snapshot of filed flights this morning, I can't see a single one that is filed incorrectly.

Charts

UK AIP Page AD2.EGKK-6-13 depicts no onward connection into the airway structure beyond the end of the SIDs and IMVUR and NOVMA respectively. **The SID Chart clearly states the ATS Routes as it always used to prior to its truncation; with UMLAT/ULTIB we have now added the next waypoint – if you think this could help with NOVMA/IMVUR then please advise and we will do what we can but there is no guarantee that the third party coding providers will put this information on the customer versions of the charts - we have found that much to our surprise the vast majority of them don't – leaving flight crews to try and work it out. Yes, I'm in favour of anything that can help but.....**

This is not unusual, as the onward airways are not part of the procedure itself. **Agreed** Particularly for the aforementioned EGLL situation, this point around depiction and requirements has been raised by

██████████ and the lead Operator Group to try and establish a way forward in connection with truncation policy and the unintended consequences. This is ongoing.

On our equivalent chart (Jeppesen), they have depicted onward N63 and L620 respectively to give some situational awareness, but not depicting any specific point along them. *As above, if you feel this would be beneficial we can do this – we tried to do it when we did the ULTIB/UMLAT onward routing* ██████████ *In the case of NOVMA and IMVUR it's a bit more complex as you can go to SAM or KENET from both SIDs but this shouldn't prevent us doing it along the lines of the previously issued NOTAM you mention below.I do also understand ██████████ ██████████ to a degree, as the onward airways are not part of the procedure itself. Hence the need for transitions (in my view)....*

UK SRD

As you may or may not know, the UK SRD publishes routes from origin to UK FIR exit point. Thus, a typical entry for a route to an exit point via IMVUR/NOVMA would read:

EGKK IMVUR N63 SAM N19.....

EGKK NOVMA L620 SAM N19....*Agreed but the SRD doesn't find its way into the flight deck (for good reason being so big!). Yes and nor would we want it to there to be honest.*

The NOTAM that was issued in 2018 to clarify these issues when they first started appearing, did not mention the airways themselves, just points:

(A1827/18 NOTAMN

Q) EGTT/QPDCH/I /NBO/A /000/999/5109N00011W005

A) EGKK B) 1805251341 C) 1808251341

E) AFTER THE SUBMISSION OF A FPL, IN THE EVENT OF A RWY CHANGE AT GATWICK THE REQUIRED ROUTEINGS FOR NOVMA/IMVUR DEPARTURES ARE AS FOLLOWS:

NOVMA 1X: NOVMA - NIBDA - SAM/VOUGA

IMVUR 1Z: IMVUR - VOUGA - SAM/KENET

QUERIES TO UK FLOW MANAGEMENT POSITION

TEL: ██████████

This morning, as you may have seen, Gatwick airport have emailed all FLOPSC members with instructions regarding this issue. This approach is not ideal and provides no official advisory mechanism or longer term solution. *Agreed, we need to come up with a robust solution that has longevity and we are trying to do this.*

System Route Selection

Although our system uses the SRD as a basis for route construction within the UK, many others don't and would just rely on the coding of constraints such as RAD restrictions to prevent unwanted planning behaviour. If there were planning errors (despite not seeing any evidence today), it was my assumption that this would be caused by an operator's system selecting IMVUR DCT NIBDA for example, as there is no published restriction for this.

RAD Measures

On the basis that planning was in error, it might be possible to mitigate this by publishing an Appendix 4 (DCT) restriction between IMVUR – NIBDA, NOVMA – VOUGA. If that is the cause of the error, of course.

FMS Selection

As we both suspect, it is a runway directional change after initial planning that is leading to the issue. From a flight crew perspective, if the Runway/SID changes, it presents a F-PLN discontinuity

from the end of the SID to begin with and with no easily to hand information about onward route continuation, errors occur.

Example:

Original Route: EGKK IMVUR N63 SAM N19

New Route: EGKK NOVMA L620 SAM N19

Crew select NOVMA SID, this presents a discontinuity because original N63 does not originate at NOVMA. Possible outcomes – crew lookup airway that connects NOVMA – SAM and correctly identify then insert L620. Alternatively they could just close the discontinuity and route NOVMA DCT SAM which is undesirable.

Either way, crew could either:

- a. ask for confirmation (as has been happening??)
- b. Continue with correct route having identified L620
- c. Continue with erroneous DCT connection Options (a) and (b) seem to be the most prevalent and we assumed (obviously wrongly) that (b) would be the option taken and this indeed is the one we would like flight crews to take but it is not helped by the CFSPs omitting this vital information from their versions of the state charts. To be fair to Jeppesen they have made an effort by now including information arrows with the designator of the route (airway)

There is no simple solution to this, but frankly I don't see removing the route from use and reverting to conventional SAM SIDs as being a desirable outcome. Understood but at least if the NOVMA was the filed route which, in most cases it would be, but in the event of runway 08R being in use the crew were issued with the SAM/KENET SID by ATC at least this would not create an F- PLN discontinuity as it would connect with the original flight plan (I think I'm right in saying). There still would be a discontinuity because the original route to SAM was NOVMA L620 SAM, but it would certainly be more intuitive to resolve because the 08R SID would be ending at SAM itself, as a common point. The EGLL situation does not present as easily.

If you have any questions, please let me know. Very much appreciate your input [redacted] and thanks for taking the time to engage on this issue. We are discussing the use of Transitions and this may get raised at the next Lead Operator panel (again). Any input you have on this as I assume the UK is not unique in SIDS terminating at differing points dependent on the runway in use will be much appreciated.

Many thanks

[redacted]
Senior Officer - Navigation Services
Virgin Atlantic Airways Ltd

3. Email exchange with the CAA following SID pairing issues

From: [REDACTED]

Sent: 09 August 2019 21:58

To: [REDACTED]

[REDACTED]

Cc: [REDACTED]

Subject: RE: SID Level Restrictions Debate

Thank you [REDACTED] for the invitation to join and to the collective for your input.

In answer to your request [REDACTED] the pairs of SIDs I have had first or second hand experience of are:

- Heathrow UMLAT / ULTIB
- WOBUN / BUZAD (historic but frequently challenged by crews on the delivery position)
- Gatwick truncated IMVUR / NOVMA
- Gatwick SFD / BOGNA

As mentioned, invariably these manifest themselves with a request for an onward routing. However following a recent incident a colleague completed an unscientific assessment of how Gatwick departures behaved without input. A significant minority incorrectly routed from IMVUR to NOVMA (having completed a NOVMA flight plan) instead of routing N63 via VOUGA. Due to the geography of this particular deviation the outcome is somewhat unfortunate as the route tracks towards the KK final approach at what could be a SID level of 4000'.

Kind regards

[REDACTED]



[REDACTED]

Swarwick Development

From: [REDACTED]

Sent: 09 August 2019 16:02

To: [REDACTED]

[REDACTED]

Cc: [REDACTED]

Subject: RE: SID Level Restrictions Debate

All

Thanks you for your time again today.

Items discussed :

- [REDACTED] indicated that there were no definitive minutes from the SPA, outcome of which resulted in hard level stops on LTMA SIDs and subsequent rollout on majority of SIDs
- Feedback indicates any further work to undo this would require significant Safety Assurance, however, this would lead to an overlap with airspace systemisation developments which are amending SIDs and therefore may prove futile and may not solve all circumstances
- Hard stop altitudes will continue to be applied to all stop altitudes as a standard is this referenced to a CAA policy ? Or is this guidance only? If this was not applied to new SIDs [REDACTED] [REDACTED] ?
- [REDACTED] suggested that certain truncations could include specific RTF instructions annotated on the chart. This would be moving away from a standard and not always picked up by external agencies and may cause additional confusion
- Truncation policy should be reviewed on a case by case basis but additional rigour should now be undertaken when proceeding based on latest known information regarding unintended consequences especially with non common points
- Is a PIR required as part of the SID Truncation Policy ?
- If this is a wider ATM issue, confirmation required as who is responsible for resolution ? [REDACTED] [REDACTED] or is this ultimately the responsibility of the sponsor ? The recent Lead Operator Tech Comm also the proposed ICAO draft SID/STAR Transitions document as a discussion point and possible means of achieving overall guidance , however, Is there still a need for a combined industry workshop to provide definitive guidance (via RNDSG?). This would provide clarity for the development of designs for both FASI N & S
- [REDACTED] would provide via email additional examples of possible problems with current non common points on SIDs
- [REDACTED] suggested that this item would be added to the agenda at the next Manchester FLOPSC (Sept) , as to whether operators have experienced any concerns on the airport truncations email group with updates

Hopefully these capture the discussion points and overall thoughts . Please add any additional comments.

Regards

[REDACTED]
NATS

[REDACTED]

Manager Systemised Airspace Development
Prestwick Centre

From [REDACTED]
Sent: 26 July 2019 13:16
To: [REDACTED]

Cc: [REDACTED]
[REDACTED]

Subject: RE: SID Level Restrictions Debate

H [REDACTED]

Thank you for your time as well and for the email. I have added some corrections and clarifications.

Kind regards

[REDACTED]

[REDACTED]
Airspace Regulator (IFP)
Airspace Regulation
Civil Aviation Authority

From: [REDACTED]

Sent: 26 July 2019 12:42

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: SID Level Restrictions Debate

[REDACTED]

Thanks for your time today.

Items discussed :

- NATS SPA meeting held in c2014, which included recommendations to reduce level busts within LTMA . Output may hold information which is relevant to the SID hard stop levels and other underlying issues. However, details still unknown [REDACTED] to undertake further investigation SPA minutes /AAIB report ??
- A CAA requirement was made to include SID end levels & hard stop for all RNAV SIDs, one standard applied across the UK based on the standard applied on the first RNAV SID introduced in the UK.
- SPA output made relevant changes to the main LTMA airfields ([REDACTED]) but this has now evolved across majority of airport conventional SIDs. Although application is not always consistent
- Some SIDs may not be up to date with the 5 year reviews for majority of SIDs and therefore some information on charts may be out of date. ~~has appeared without full checks & balances.~~ As the SIDs belong to airfields this is in their remit to undertake
- Further understanding of the EGLL UMLAT/ULTIB required . Have her been issues with other SID truncations ? [REDACTED] to feedback

From: [REDACTED]
Sent: 24 July 2019 12:08
To: [REDACTED]
Cc: [REDACTED]
Subject: SID Level Restrictions Debate

Hi [REDACTED]

We touched upon the SID level restrictions again at the Lead Operator Tech Group last week. I'm aware that this was an action from the main LOCP, however, I've also done some background investigation work and mentioned the issue to [REDACTED] brief last month.

The SPA did look at SIDs in 2013 on the back of level busts within the LTMA. Apparently following [REDACTED] a proposal was then made to ensure all London SIDs are displayed with the altitude at the end of the SIDs and I believe this is where the 'not above restriction bar' was also applied. It now appears that this has been universally adopted and hence the challenge from airlines about alternative options to aid overall fuel planning/saving i.e. introduction of SID truncations.

Incidentally the AD 2.EGGD-6-2 BADIM1X/WOTAN 1Z does not have SID altitudes at the end of the SID but does include directions to HON. Another variation of what was discussed last week.?

Do you have any further information to add the above from AAIB?
What in your view is the process to remove these if at all possible?
Is this a combined workshop with appropriate stakeholders (NATS/IAA /airlines) including Safety representation to understand ?
Could these be looked at on an airport by airport basis?

Looking forward to hearing from you

Best Regards

[REDACTED]



[REDACTED]

Manager Systemised Airspace Development
Prestwick Centre

4. Email exchange with Swanwick Investigations: validity of NOTAMs

From: [REDACTED]
Sent: 04 July 2019 08:28
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: UMLAT/ULTIB NOTAM expiry

Thanks [REDACTED]

Once the investigation is complete, if this is one of the recommendations, then I think it would be wise for NATS Safety to take it [REDACTED] [REDACTED] [REDACTED] as the SID is an IFP and therefore should be subject to IFP Regulation design criteria etc ie what would be the track of the dotted line, what would it be based on, what would be the Mag Var applied to it etc etc

I still think the best way is for NATS and/or AOs to request the/their CFSPs to add these 'Information' Arrows/Lines to their versions of the SID Charts.

I know the IFP Regulator believe that SIDs from all runway ends should end at a common point and whilst this is ideal from a safety/ATC perspective I doubt very much whether it would meet the environmental objectives of airports and perhaps other sections of the CAA/DfT.

[REDACTED]



[REDACTED]
Swanwick Development ATCO

From: [REDACTED]
Sent: 04 July 2019 08:16
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: UMLAT/ULTIB NOTAM expiry

Good morning [REDACTED]

One of the issues with the recent [REDACTED] was that Gatwick departures had filed via NOVMA but given an IMVUR departure. This is a replica of the Heathrow issue. Whilst I agree completely that this text box is required on all similar SIDs, I wonder if consideration should be given to amending the SID charts entirely to include similar dashed lines to that which Jeppesen use. I appreciate that [REDACTED] to this previously, however this may well end up forming some kind of formal recommendation from this investigation. If [REDACTED] after that and there is a more serious incident as a result, we can at least say that we have formally recommended this. I'd appreciate your thoughts. I'm back at Swanwick next week and will come to find you and [REDACTED] to discuss how we progress this, if at all.

Thanks,

[Redacted]

[Redacted]
ATS Investigator

From: [Redacted]
Sent: 04 July 2019 08:11
To: [Redacted]
Cc: [Redacted]
Subject: UMLAT/ULTIB NOTAM expiry

[Redacted]

Just to confirm that the NOTAM advising the onward ATS Route and next waypoint on the UMLAT/ULTIB SIDs would have now long expired and I confirm this information is now included in the State AIP as follows:

| | | |
|---------------------|--|--------------------|
| UMLAT 1F RWY 27R | Climb straight ahead to be established on BUR NDB QDM 298° by LON D4. At LON D7 turn right onto BUR NDB QDR 356° (MID VOR R357), crossing LON D8 at or above 3000, then continue to cross LON D 10 at or above 4000 and cross UMLAT at 6000. | Via T418 to WOBUN. |
| UMLAT 1G RWY 27L | Climb straight ahead to be established on BUR NDB QDM 298° by LON D3. At LON D7 turn right onto BUR NDB QDR 356° (MID VOR R357), crossing LON D8 at or above 3000, then continue to cross LON D 10 at or above 4000 and cross UMLAT at 6000. | |
| ULTIB 1J RWY 09R | Climb straight ahead to LON D2, then turn left onto track 050° to intercept LON VOR R071, cross LON D10 at or above 3000 and turn left onto BIG VOR R330, cross BIG D20 at or above 5000 and cross ULTIB at 6000. | Via T420 to BUZAD. |
| ULTIB 1K RWY 09L | Climb straight ahead to LON D1.5, then turn left onto track 050° to intercept LON VOR R071, cross LON D10 at or above 3000 and turn left onto BIG VOR R330, cross BIG D20 at or above 5000 and cross ULTIB at 6000. | |

Whether this is being transposed by all CFSPs is another matter we know Jeppesen charts include it as well as their information arrows.

Personally I think it would be wise to adopt this for all SID pairings that end at different waypoints depending on the runway in use this will however require adherence to CAP1616 but it is something the company believes should be done I'm happy to initiate that process countrywide.

Please advise.

[Redacted]

[Redacted]
Swanwick Development ATCO

5. Email exchange with Swanwick Investigations: onward routing details on the pairs of SIDs

From: [REDACTED]
Sent: 02 July 2019 06:59
To: [REDACTED]
Cc: [REDACTED]
[REDACTED]
[REDACTED]
Subject: RE: UMLAT/ULTIB Update

Thanks [REDACTED]

The SIDs always (but always) advise the onward ATS Route on the state chart but unless specifically requested by the customer this information is not transferred to the customer versions of the charts. Following UMLAT/ULTRIB the CAA allowed us to add T418 WOBUN and T420 BUZAD (as opposed to just T418/T420. They wouldn't allow us to do the same with NOVMA/IMVUR SIDs even though we tried ie L620 NOVMA and N63 IMVUR.

We can certainly ask for that to be added to these SIDs again and, going forward will advocate that it goes on the state chart but as stated above there is no guarantee unless specifically requested this information will get transposed to the customer version of the charts. Additionally flight crews tend not to use ATS routes and tend to focus on waypoints which may be the reason the route information is being transposed – adding an onward routing to include the next waypoint may help but we would also have to request/insist it is transposed to customer versions of the chart – if indeed we can insist what goes on someone else's version of the chart.

Happy to progress as requested and discuss further if need be.

[REDACTED]



[REDACTED]
Swanwick Development ATCO

From: [REDACTED]
Sent: 02 July 2019 06:51
To: [REDACTED]
Cc: [REDACTED]
[REDACTED]
[REDACTED]
Subject: Re: UMLAT/ULTIB Update Good

morning everyone,

Cc: [REDACTED]

[REDACTED]
Subject: RE: UMLAT/ULTIB Update

[REDACTED]

I echo [REDACTED] position that MAXIT/MODMI is the only Regulator approved solution for the Farnborough ACP. While steepening the existing SID would achieve the air traffic solution, this would not be in compliance with their approval. I would concur with [REDACTED] opinion that very few departures *could not* comply with a steeper gradient, indeed it is quite possible that all *could*. Counterintuitively, having just rerun the analytics metrics, a higher number of existing departures are not currently meeting the raised profiles than previously observed. I have very little doubt that this is largely due to de-rated departures as I believe two of them were A320 series depts to Paris, with a splattering of similar types destined for the Mediterranean.

Given the relative position of MAXIT / MODMI, the severity of an UMLAT/ULTIB confusion would not be replicated, as the deviation would occur away from the inbound descent flow. The only potential latent risks being an lateral deviation affecting the climb of KK departure in the vicinity, or a theoretical catch up if the lead of a pair deviates ahead of an aircraft with minimum time separation (120ish seconds).

The challenge for Farnborough is that while they need a higher assured gradient in order to simply define a protected RMA, they are unable to force aircraft to file this route as it would result in a thrust setting change to some aircraft that was not consulted upon. Therefore, the only way to *encourage* operators to utilise the MAXIT / MODMI option is through targeted comms and delivering an enabled fuel saving to said operators courtesy of the truncation.

However the other incentive for Heathrow is to highlight that this is concept is an intrinsic element of [REDACTED], so perhaps it's more in their interests than they currently appreciate to help find a permanent solution.

[REDACTED] I would be very interested to understand the outcome of the investigation if at all possible please, as obviously if there are parallels we should work to mitigate them from the outset.

All the best.

[REDACTED]

From: [REDACTED]

Sent: 01 July 2019 19:37

To: [REDACTED]

[REDACTED]

Cc: [REDACTED]

Subject: Re: UMLAT/ULTIB Update

H [REDACTED]

Yes MAXIT/MODMI is the only solution to the Farnborough issue in the time frame. Another solution would be to steepen the MID SIDs but a) this never consulted on b) was never included in the ACP and c) would require traffic that couldn't make the new climb gradient (virtually zero IMHO) to be given a NSD and coordinate with Farnborough.

If the [REDACTED] then we can perhaps look to amend the proposal but if not then MAXIT/MODMI is the option. Given the relative positions of the waypoints the chance of an aircraft making that run without it being questioned by the flight crew is extremely unlikely and even it did the the subsequent turn would put it virtually back on its original track.

[REDACTED], any thoughts?

[REDACTED]

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From: [REDACTED]
Sent: Monday, July 1, 2019 6:38:59 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: UMLAT/ULTIB Update

[REDACTED] and [REDACTED]

Thanks for your feedback, we need to be very careful before doing any more SID truncations. I have copied in [REDACTED] and [REDACTED], as [REDACTED] states below the plan at the moment it to do MAXIT/MODMI which is required to compliment the Farnborough ACP. We have also been under pressure from the 10% Programme to truncate DET for enabled fuel benefit. However I am not convinced the problem can be mitigated and DET could introduce more problems to ops.

Is MAXIT/MODMI the only solution to the MID climb profile?

Thanks

[REDACTED]

[REDACTED]

Head of Operational Development (Airspace)
Swarwick Development

From: [REDACTED]
Sent: 01 July 2019 12:51
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: UMLAT/ULTIB Update

Hi [REDACTED]

I'll be writing up the investigation. Preliminary investigation has shown that aircraft not knowing where to route after IMVUR was a significant factor in the overload. In the RAT scheme, this is currently

scored very highly too, although the investigation is in very early stages. We haven't interviewed the controllers involved yet, although we hope this to take place this week.

There were two other losses of deconfliction minima where an aircraft didn't follow the IMVUR SID, remaining at 3000ft until IMVUR. At this stage I don't believe that issue to be related to the SID itself.

Sorry this is a little vague, but as I say the investigation is in a very early stage.

[REDACTED]

[REDACTED]
ATS Investigator

From: [REDACTED]
Sent: 01 July 2019 11:46
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: UMLAT/ULTIB Update

Thanks [REDACTED]

Ok I am meeting with HAL next week to get their endorsement for the MAXIT/MODMI versions of the MID SID required to support the Farnborough change and the DET SID Truncations. They are wanting assurances that we will not be re-creating UMLAT/ULTIB (as do we). The relative positions was going to be an argument but if you're saying that NOVMA/IMVUR is causing an issue then I guess this could re-occur for MAXIT/MODMI and the DET truncations?

When do you expect to hear about the investigation?

Cheers

[REDACTED]

[REDACTED]

Swanwick Development ATCO

From: [REDACTED]
[REDACTED]
To: [REDACTED]
[REDACTED]
Cc: [REDACTED]
Subject: Re: UMLAT/ULTIB Update

Not Heathrow but IMVUR/NOVMA...

The investigation is not complete yet, however it looks at this stage like the IMVUR confusion may have been a significant factor in a serious Overload recently. There were CAS excursions as a result.

Let's wait for the investigation, but it would be worth taking a closer at. It may be a critical piece of evidence.

██████████
Safety Manager - London Terminal Control
NATS

From: ██████████
Sent: Monday, July 1, 2019 11:25:05 AM
To: ████████████████████
Cc: ██████████
Subject: UMLAT/ULTIB Update

Hi Guys

Can you provide any update on Reports on the ULTIB/UMLAT issue over the last 3-4 months? Have there been any reports of pilot confusion and/or wrong routeings and/or DISCOs since the NOTAM was issued and Jeppesen added the Information Arrows to their versions of the state charts?

Cheers

██████████

██████████

Swanwick Development ATCO

5a. Relevant Section of the Minutes of Lead Operator Technical Group meetings 30th October 2018

3) Incorrect Route selection after SID on RNAV - IN PROGRESS

██████████ presented

NATS has been implementing SID Truncations for circa 6 years. The issue described here is citing Heathrow as an example but the issue manifests itself wider than just Heathrow. Previously, this issue has been masked due tactical controller intervention and the full SID rarely flown. The UMLAT / ULTIB SIDs have become an issue at Heathrow with crews not understanding what route to follow post UMLAT or ULTIB following a runway change. The problem will be primarily with pilots not familiar with the local airspace, who wouldn't realise they needed to change the Flight Plan as well as the SID - ATS routes are not in the legs page that the pilots use for departures. Pilots will not know the waypoints on the departure routes so it would increase heads-down time if they had to connect the SID to a specific point on an enroute chart.

██████████ reported that the US has been pushing for a common transition point. ██████████ suggested that if WOBUN were taken out, the pilot would connect direct to WELIN (for either route). Either of these solutions would require a full airspace change.

██████████ opined that the best solution may be to reinstate the full SIDs but without the altitude constraint at WELIN. This was raised at FEP 18 months ago and a paper produced, however, the CAA currently requires the last point on the SID to have an altitude constraint to cope with radio failure conditions. Reinstatement of WOBUN and BUZAD with the altitude constraint would cause 20,000 tonnes of enabled fuel savings to be lost.

██████████ commented that this does raise issues for future designs as a number of solutions have been developed without common SID end points.

██████████ commented that a reference track could be added to the departure chart (as opposed to a procedural track) from the end of the SID to the common waypoint, e.g. WELIN, with no altitude constraint.

██████████ observed that a shorter-term solution is required for when the NOTAM expires in December.

██████████ stated that NOTAM information does not get published on the charts because they are temporary; however, there are instances where States put such things in the AIP for clarity of onwards routings.

The UK State chart the shows the routing UMLAT/ULTIB is in the AIP, but this is in the enroute chart rather than the departure chart. ██████████ suggested that, in the short term, an AIP SUP could be issued to allow the routing to be reflected on the departure charts. However, this may still take until AIRAC cycle 1903 (Feb-19) to implement.

Jeppesen Attention All Users Page (AAUP) is used in US to resolve similar issues; this is similar to an AIC.

██████████ observed that there are a lot of places where this is a problem and the solution is to include the routing in the ATC Clearance. However, ██████████ highlighted the concern that this would be a large change for the Tower because would no longer be able to use DCL until an EFPS change could be implemented.

Outcomes:

1. Short Term: NATS Swanwick and Heathrow Tower to discuss a solution via ATC clearance/instruction.
2. Longer Term: NATS to work with the CAA on a solution, such as indicating onward waypoints applicable to each SID instead of route on the SID chart via AIP SUP, adding a reference track to the departure chart, or reinstating the SIDs with/without an altitude constraint on WELIN.

5b. Relevant Section of the Minutes of Lead Operator Technical Group meetings 20th May 2019

6) Incorrect Route selection after SID on RNAV - IN PROGRESS

██████████ presented

The issue tends to be generated when a runway change occurs around an hour or less prior to departure; the SID is changed but the onward routeing is not. The ULTIB and UMLAT SIDS were truncated back from WELIN to deliver fuel benefits by avoiding low stop altitudes far out.

██████████ reported that the issue also occurred on the KUXEM SID at Manchester and flight crews tended to figure it out and manually update the routeing. The issue may be prevalent at other locations but masked by the commonplace tactical interventions.

This topic was raised via WebEx in November. A NOTAM was released as a temporary fix and Jeppesen have added a 'Reference Track' on their chart to show where the aircraft should be going after the end of the ULTIB SID.

Lufthansa Systems and NavBlue would be willing to investigate adding Reference Tracks on their charts as well but this is not their preferred option as it is not standardised.

SID 'Not Above' restrictions - ██████████ & ██████████ presented

The reason SID truncation is being used to avoid low stop altitudes is because 'At' or 'At or Below' altitude constraints are required on the last waypoint of the SIDs. These are thought to be required in the case of Radio Failure but, due to the rarity of such events now, the airlines questioned whether this is still relevant.

In the US, they use 'Top Altitudes' on SIDs.

Using the NORBO example, ██████████ asked whether it would be acceptable to retain the 6,000ft stop altitude at an intermediate point (ELBAN) but remove it from the procedure end (NORBO); this would limit climb to a stop altitude of 6,000ft in case of a Radio Failure but not inhibit planning for climbs before the end of the SID.

██████████ clarified that the need for stop altitudes on SIDs came from a recommendation by the AAIB and agreed it would be worth revisiting the reasons behind it to avoid creating any unintended consequences.

5c. Relevant Section of the Minutes of Lead Operator Technical Group meetings 3rd December 2019

3) En-route Transitions - IN PROGRESS*

This topic was raised with the Tech Group via a WebEx meeting back in July; ██████████ at Eurocontrol was drafting a paper for ICAO to provide improved clarity around Transitions, what they are and what they do. At that meeting, it was proposed that the Technical Group focus on bridging the gap between this purist definition and the ways in which individual airspace projects are trying to use Transitions.

Subsequently, the coding houses were engaged to provide best practice real-world examples. Then these were tested by NATS ATC to see whether and how these concepts could be brought into UK airspace. A summary of these stages is included in the slide pack.

████████ stated that the ATC idea of using multiple runway transitions to provide noise respite for local communities is not possible; from one runway you can only have one runway transition for a SID. For a STAR, multiple Approach Transitions could be used to provide noise respite but this would lead to a naming convention issue where the same STAR is connected to the same runway multiple times.

Any SID or STAR must have a Common Route portion, even if only a single waypoint; if there is no common route, there must be multiple SIDs or multiple STARs accordingly.

NATS is still looking for a solution to the issue with SID Truncations, e.g. UMLAT / ULTIB out of LHR, where, on some occasions after a runway change, the pilot flies an incorrect onward route after the SID. The most efficient solution using Transitions would be to have two separate SIDs (as today): one to UMLAT, one to ULTIB, and extend past these points using En-route Transitions to continue the SID until the first common waypoint, e.g. WELIN.

████████ pointed out that this would take us full circle, i.e. back to what the SIDs were before with a 6,000ft level cap at WELIN. However, the proposal is to implement with a hard level cap 6,000ft at UMLAT/ULTIB then no further level constraints on the En-route Transition. This may be full circle, but it gives the optimum proposed solution for how Transitions would be used in this example. UMLAT/ULTIB is only one example of many

The requirement for a hard altitude constraint at the end fix/waypoint of every London SID came about to prevent altitude busts, following initial raising of the topic at the NATS & airlines Safety Partnership Agreement (SPA). The CAA has recently advised NATS that the SPA would need to revisit the original work and safety rationales for any changes to this policy. Therefore, the next logical step would be to raise the Tech Group proposal back to the SPA for their consideration.

████████ noted that the UK has used the term 'Transition' in current implementations, but we are not really using them in the way that it is defined by ARINC (or TERPS in the US). Within the ICAO working group there is a realisation that they need to involve ATC, as it has to work with that community. The coding is already defined within A424, but the ATC side is less well defined.

████████ & ██████████ think that the work undertaken by the Tech Group has helped to bridge that gap and so achieved what it set out to do. It was highlighted that there is a need to get this information out to the wider IFP design community. ██████████ & ██████████ will consider how best to communicate this wider.

There was also a suggestion to talk with NavCanada around their experience with transitions.

* Agreement to close topic subject to completion of actions raised.