SID TRUNCATION REQUEST ACP-2021-091 SUBMISSION DATE: 25/02/22

Existing SID: CPT 1A/1H, CLN 1A/1H, EKNIV 1A/1H

Proposed SID: HEN 1A/1H, ODUKU 1A/1H, SOQQA 1A/1H

SID Truncation Sponsor Details:

	En-Route ANSP	Airport ANSP	Airport Authority
Unit	NATS Swanwick	NATS London City	London City Airport Ltd
Name	[redacted]	[redacted]	[redacted]
Contact details Phone: E mail:	[redacted]	[redacted]	[redacted]

1. Stage 1 Statement of Need

1.1 For completeness and ease of reference, insert details of DAP1916

NATS Operational Service Enhancement Project (OSEP), EGLC SID Truncations.

NATS OSEP will deliver small scale changes across UK airspace between now and 2027. The OSEP changes will deliver benefits through enabled fuel/CO2 savings, reduced routing inefficiency, safety improvements and alleviating capacity hotspots.

Current Situation
The extant EGLC (CLN 1A/1H, CPT 1A/1H & EKNIV 1A/1H) SIDs have long level-capped sections where the flight profile is unnecessarily restricted, and do not correspond to the typical flight trajectories of aircraft using the SIDs. This can result in unnecessary additional fuel being carried by some operators.

Cause
The extant SIDs are legacy routes, which are not reflective of the actual flight profiles on these departures.

Issue to be addressed
Remove the long level-capped sections of the departure procedure so that the flight planned profile is more reflective of the actual flight profile. This will enable some operators to reduce fuel uplift on the in-scope departures which are consistently well above SID altitude by the time they reach the end of the current SIDs. The truncated portions of the SIDs will be replaced by extending/creating ATS routes back to the most suitable point.

There will be no change to flight trajectories over the ground.

Associated factors relevant to the issue:
Environmental SID truncation will enable a reduction of CO2 emissions.
Economic SID truncation will enable a reduction in fuel burn, hence saving aircraft operators money.
Safety Radio fail procedures will be reviewed to ensure they remain safe.

Note: Only the EGLC RNAV STARs mentioned above are in-scope of this ACP. The conventional STARs are currently being examined for benefit through truncation, and will be addressed separately.

1.2 Date of Assessment Meeting/Teleconference/E mail Confirmation that proposal may be submitted

Assessment Meeting- 8th February 2022

1.3 **Design Principles.** The SID Truncation Design Principles are listed below.

Design Principle	Description
Safety	
DP1 Safety	Safety is always the number one priority.
Policy	
DP2 Airspace Modernisation Strategy	Must accord with the CAA's published Airspace Modernisation Strategy (CAP1711) and any current or future plans associated with it.
Environmental	
DP3 No change to lateral flight paths	None of the proposed changes to definitions of SIDs would result in a change to lateral flight paths, or in the degree of dispersal.
DP4 No lowering of vertical flight paths	None of the proposed changes to definitions of SIDs would result in flight paths being lower at a given point along the SID. If the proposed change results in flight paths being higher, this is acceptable.
DP5 No increase in noise impact on the ground.	Noise impact to those on the ground: SID truncation will not alter lateral profiles of aircraft using the SID, hence there will be no change to noise impact to people on the ground. If the proposed change results in flight paths being higher, and hence the noise impact is reduced, this is acceptable.
DP6 No detriment in visual impact	SID Truncation will not cause detriment to visual impact resulting from aircraft being lower. If the proposed change results in flight paths being higher, and hence the visual impact is reduced, this is acceptable.
DP7 Reduction of CO_2 emissions	Reduction of CO_2 emissions will be prioritised. The objective of the SID truncation is to ensure that the flight-plan route enables a lower required fuel uplift (due to improved flight-plan profile). For some operators this can result in a net reduction in per-flight CO_2 emissions.
Airspace use	
DP8 No change to CAS	SID truncations will require no change to extant controlled airspace.
Technical	
DP9 RCF appropriate	Ensure that the radio communications failure (RCF) procedures are appropriate.
DP10 Simplify routes where possible	Avoid creation of additional link routes which are very close to existing routes.
DP11 Minimise technical complexity	Avoid creating situations where flight-planning may become more complex, or where engineering requirements become more complex, as a result of this proposal.
Economic	
DP12 Cost benefit	The proposed change must pass a NATS cost benefit analysis.

2. Stage 2

2.1 **Options Appraisal.** The options proposed and options discounted (where applicable) are detailed below. This section describes the options for the truncated SIDs themselves, and the options for onward connectivity from the truncation points to rejoin the ATS route network. One option for SID truncation, and one option for onward connectivity is required per SID pair, in any combination.

CPT (HEN)

Options proposed and why:

SID options

0. Do nothing
1. Using the CAA SID Truncation Policy, truncate SIDs at HEN.
2. Withdraw CPT SIDs and utilise existing BPK SID.
3. Using the CAA SID Truncation Policy, truncate closer to the airport than BPK.
4. Using the CAA SID Truncation Policy, truncate at new fix between BPK & HEN.

Options discounted and why:

SID options:

0. Do nothing- Would not deliver a reduction in CO_2 emissions (DP7)
2. Withdraw CPT SIDs and utilise existing BPK SID – There is an operational need to differentiate between northbound and westbound departures by SID. The technical requirement in order to progress this option is incompatible with DP11.
3. Truncate closer to the airport than BPK –Truncation prior to BPK would require termination at different points for RWY09 and RWY27, introducing flight-planning and technical complexities, contrary to DP11.
   Also, the existing CPT 1A SID includes a 200kt speed constraint until BPK. Truncation prior to BPK would not retain this element, therefore any such truncation would not ensure an identical profile is followed.
4. Truncate at new fix, between BPK & HEN – Any new point defined for truncation along this track would require Approved Procedure Design Organisation (APDO) input, contrary to DP12.

Options Progressed

SID options

1. Using the CAA SID Truncation Policy, truncate SIDs at HEN. This option offers significant reduction in CO_2 emissions, (DP7), whilst minimizing technical complexities (DP11) and remaining a cost-effective option (DP12).

Note: It is recognized that HEN refers to an NDB which may be decommissioned at an (as yet) unspecified date. Depending upon other IFPs, that currently refer to HEN, this waypoint name may revert to a 5LNC in due course. It is acknowledged that this would likely require a Level 0 ACP to amend at that stage.

CLN (ODUKU)

Options proposed and why:

SID options

0. Do nothing
1. Using the CAA SID Truncation Policy, truncate SIDs at first common waypoint LCE05, co-located with existing waypoint ODUKU.

Options discounted and why:

SID options:

0. Do nothing- Would not deliver a reduction in CO_2 emissions (DP7)

Options Progressed

SID options

1. Using the CAA SID Truncation Policy, truncate SIDs at LCE05, co-located with existing waypoint ODUKU, as this option offers significant reduction in CO_2 emissions, (DP7). To ensure adherence to DP3, aircraft utilising these SIDs will be required to flight-plan M84 CLN to ensure current lateral track is maintained.

EKNIV (SOQQA)

Options proposed and why:

SID options

0. Do nothing
1. Using the CAA SID Truncation Policy, truncate SIDs at first common waypoint LCE06.
2. Using the CAA SID Truncation Policy, truncate SIDs at existing waypoint SODVU.

Options discounted and why:

SID options:

0. Do nothing- Would not deliver a reduction in CO_2 emissions (DP7).
2. Whilst this option does offer a reduction in CO_2 emissions (DP7), a greater benefit is achieved through Option 1. Therefore, this option has been discounted.

Options Progressed

SID options

1. Using the CAA SID Truncation Policy, truncate SIDs at LCE06, as this offers the greatest reduction in CO_2 emissions (DP7), whilst minimizing technical complexity (DP11). The terminal waypoint LCE06 will be assigned a 5LNC SOQQA (name subject to approval).

Connectivity Options (common to the in-scope SIDs)

Options Proposed:

a) Extend existing ATS routes
b) Newly designated ATS routes
c) No change to existing ATS routes, use flight-plannable DCTs to establish connectivity to the ATS route network

Options discounted and why:

c) No change to existing ATS routes, use flight-plannable DCTs instead. Flight-plannable DCTs are less transparent as they are not published in the AIP, and would not appear on the associated SID chart. This would increase technical complexity and therefore not meet DP11.

Options Progressed:

Suitable connectivity between the SID end point and the ATS route network can be achieved through either extending existing ATS routes (Option a) or creating newly designated ATS routes (Option b). However, the preferred option is to extend existing ATS routes as this limits the creation of additional link routes (DP10) and avoids increased flight-planning/engineering complexities (DP11). When there is not a suitable existing ATS route available to be extended, a new ATS route will be introduced.

3. Stage 3

3.1 Consultation and Sponsor Confirmation Statement

<table>
<tr><td colspan="2">This proposal has been submitted following consultation with the aerodrome authority. As sponsor/co-sponsor we confirm that that there is no change to track over the ground, no change to vertical profiles, no change to NPRs and no effect on adjacent SIDs.</td></tr>
<tr><td>NATS NERL
Name [redacted]</td><td>Aerodrome
Name [redacted]
(Approval by email, relevant text extract below)</td></tr>
<tr><td colspan="2">‘Approved by the airport.’</td></tr>
</table>

4. Stage 4

4.1 SID Truncation Change Submission Details

Requirements	Details To Be Submitted by Sponsor		
New SID Designator (To be Co-ordinated with SARG)	HEN 1A (RWY27) HEN 1H (RWY09)	ODUKU 1A (RWY27) ODUKU 1H (RWY09)	SOQQA 1A (RWY27) SOQQA 1H (RWY09)
New 5LNC(s) (if applicable)	n/a	n/a	SOQQA (requested by ICARD)
Truncation Position	HEN	LCE05 (ODUKU)	LCE06
Co-ordinates of Truncation Position	514535.07N 0004725.05W	513531.78N 0001715.47E	513623.75N 0002328.43E
Revised Track / Distance to Truncation Position	No change in track of SID to truncation point **See proposed SID chart amendment in Appendix 2.**		
Navaid coverage (to ensure position is definable)	Not applicable, some existing waypoints are being renamed.		
Safety Assessment Details			
Confirmation interacting ATS Routes/SIDs not affected.	NATS ATC experts have assessed the adjacent ATS routes and SIDs and none are affected.		
RCF Implications: **(1) Describe impacts of proposed change on extant RCF procedures (confirmation that they have been examined and remain fit for purpose, or** **(2) If revised RCF procedures are required, state why, and provide the proposed details with the draft AIP amendment.**	CPT (HEN) RCF procedure remains as current. CLN (ODUKU) Amended to reference ranges from TOVGU as next compulsory waypoint after ODUKU. (see draft chart at Appendix 2) EKNIV (SOQQA) RCF procedure remains as current, aside from a name change (reference to LCE06 updated to SOQQA).		
Airspace Containment confirmation	The proposed truncations maintain existing controlled airspace containment.		
Adaptation and AIRAC implementation confirmation – provide confirmation that changes have been co-ordinated with the aerodrome for the date proposed.	The target implementation date of AIRAC 09-2022 (8th Sept 2022) has been coordinated with London City Airport. AIS Submission Deadline: 10th June 2022		
AIP amendments			
Confirmation there is no impact to NPRs.	No impact		
Name change to NPR tables in Aerodrome AD 2.21	N/A		

SID chart amendments	
Revisions to chart	**See Appendix 2**
Any other amendments to SID Chart (include PDF copy of chart showing changes required)	**See Appendix 2**

4.2. **ATS Route Details**

Submit details for New ATS Route in AIP Format.
(See Appendix 1)

CPT (HEN) 1A/1H
The truncated portion of these SIDs will be replaced by new ATS route N27 (designator to be confirmed), routing HEN – CPT. The tracks flown will be co-incident with that of the disestablished portion of the SID. Refer to Aerodata spreadsheet for full details.

CLN (ODUKU) 1A/1H
The truncated portion of these SIDs will be replaced by joining the existing ATS Route M84 at the truncation point ODUKU. M84 was previously extended to enable this truncation in December 2018. The truncation was unable to take place at that time due to EFPS build limitations however the ATS route connectivity remained to enable the future truncation which is being requested in this proposal.

EKNIV (SOQQA) 1A/1H
The truncated portion of these SIDs will be replaced by extending the existing ATS Route M87 to route LCE06 (SOQQA) – SODVU – EKNIV – UMTUM. The tracks flown will be co-incident with that of the disestablished portion of the SID.

5. Options Appraisal

Options:
The SID options and connectivity options can be combined as follows:

CPT (HEN):
SID *Option 1 with*
ATS route connectivity Option b)

CLN (ODUKU)
SID *Option 1 with*
ATS route connectivity Option a)

EKNIV (SOQQA)
SID *Option 1 with*
ATS route connectivity Option a)

These SID truncations are justified on the basis of fuel saving and associated reduction in CO_2 emissions that may be achieved by some operators.

Currently for flight-planning purposes the portions of the SIDs proposed to be truncated are flight-planned to be flown at 3,000ft. However, aircraft are climbed to higher levels subject to the traffic scenario at the time. Some Aircraft Operators calculate the fuel required based on the SID level constraints, for which there is a significant fuel weight benefit as a result of the level constraint terminating sooner. Other Operators calculate the fuel required based on previous experience of what is flown in practice, and as a result there is no fuel weight benefit. (zero weight benefit).

Truncation of these SIDs reduces the 3000ft level part of the flight and better reflects what is typically operated today. This results in fuel calculations that are more representative of the flight profile and therefore offers an opportunity for fuel savings for those operators who currently flight-plan for the full SID. Hence after the SID has been truncated the aircraft will be able to fly carrying less ‘excess’ fuel. The reduction of an aircraft’s weight also results in less fuel required to get to a destination; to carry more weight (fuel) the aircraft will burn more fuel.

The main advantage of SID Truncations is the removal of excessively conservative assumptions from operator’s fuel planning systems. There are some factors which cannot be determined because each aircraft’s operator and planning system acts differently, and each type/route may also be considered differently. This means that the fuel weight reduction of any truncation could be zero or it could be significant.

The overall effect will be positive and will fall within the range as described in Table E2 below, and no flights will be penalised as a result of the change.

Table E2			
Group	**Impact**	**Level of Analysis**	**Evidence**
Communities	Noise impact on health and quality of life	Qualitative	The SID truncation will not change the trajectories of flights. Therefore, there will be no change in impact.
Communities	Air quality	Qualitative	The changes are above 1,000ft, and will not change the trajectories of flights. Therefore, there will be no change in impact.
Wider society	Greenhouse gas impact.	Quantify	This SID truncation does not change the flight trajectory of aircraft. For some flight-planning systems, it does reduce the amount of fuel required to be uplifted. Hence depending on the flight-planning system being used the change can either have zero benefit or a small reduction in fuel uplift and associated CO_2 emissions. The proposed truncations could reduce CO_2 emissions by between: • 0 and 60kg per flight for proposed CLN truncation. • 0 and 40kg per flight for proposed CPT truncation. • 0 and 31kg per flight for proposed EKNIV truncation.
Wider society	Capacity/ resilience	Qualitative	The SID truncation will not change the capacity/resilience. Therefore, there will be no change in impact.
General Aviation	Access	Qualitative	The SID truncation will not change GA access. Therefore, there will be no change in impact.
General Aviation/ commercial airlines	Economic impact from increased effective capacity	Qualitative	The SID truncation will not change the economic impact from increased effective capacity. Therefore, there will be no change in impact.
General Aviation/ commercial airlines	Fuel burn	Monetise and quantify	SID truncations remove excessively conservative assumptions from the fuel planning system. This may provide a fuel uplift planning benefit. Reducing an aircraft's weight means less fuel is needed to get to the destination. To carry more fuel (weight) the aircraft must burn more fuel. Typically, an aircraft burns c.4.5% of its fuel per hour to carry the weight of that same fuel. There are dependencies which we cannot accurately determine because each aircraft's operator and planning system acts differently, and each type/route may also be considered differently. The uplift benefit (weight reduction) of any individual truncation may be zero, or it may be significant. Zero weight benefit - Operators whose flight-planning system calculates fuel uplift based on previous experience of how the SID is flown in practice and based on historic data. For these operators SID truncation will give no benefit in reduced fuel uplift. Significant weight benefit - Operators whose flight-planning system calculates fuel uplift based on the most conservative fuel plan, based on the rigorous worst-case assumption that the SID is flown to its lowest possible design-altitude and to its full design-length before climb is issued to a more economical level. An example of a "significant weight benefit" for a London City Airport departure could be a twin-engine small jet, using the truncated CLN/CPT/EKNIV SID, on a 2-hour short-haul flight. Should such a flight follow a conservative fuel plan assumption as described above, a SID truncation of 35.6nm/22.7nm/18.1nm respectively (the proposed truncation distances) could reduce the fuel uplifted to the aircraft by c.210kg/130kg/110kg, meaning the aircraft is 0.2t/0.1t/0.1t lighter. Over the course of a 2-hour flight, this lighter aircraft means c.19kg/12kg/10kg less fuel would be burnt (and saving c.60kg/40kg/31kg of CO2 from being emitted as a consequence). The monetized projected fuel burn savings are in a range between zero and c.£12/£7/£6 (npv) per flight. This was based on the IATA jet fuel price of 845.6USD/tonne converted to 621.8GBP/tonne (Feb 22nd, 2022, 1.36$/£) multiplied by the fuel saved.
Commercial airlines	Training cost	Qualitative	No associated training costs
Commercial airlines	Other costs	Qualitative	There are no other costs known which would be incurred by commercial aviation.
Airport/ ANSP	Infrastructure costs	Monetise and quantify	No infrastructure costs which would be incurred by the Airport or ANSP.
Airport/ ANSP	Operational costs	Qualitative	This proposal would not lead to a change in operational costs.
Airport/ ANSP	Deployment costs	Monetise and quantify	Training Costs: negligible – notification via SI Delivery of change under AIRAC process: c.£5k NPV

Appendix 1: ENR AIP amendments

EGLC SID Truncations – AIP Changes

GEN 2.5

HEN – Update purpose to AE

ENR 3.3

Add new ATS route N27 and amend ATS route N27 as per Aerodata.

ENR 4.1

Include entry for HEN NDB as per EGLC AD 2.19 section.

ENR 4.4

Add SOQQA as per Aerodata spreadsheet.

Add SODVU as per current published coordinates on EGLC EKNIV 1A/1H SIDs.

Amend Remarks / Usage as per below

SOQQA	Add EGLC SIDs
EKNIV	Delete EGLC SIDs
ODUKU	Add EGLC SIDs

AD 2 EGLC

AD 2.22

Para 2c Note 1

Amend 'RNAV 1 Departures via EKNIV' to 'RNAV 1 Departures via SOQQA'

AD 2.24

AD 2.EGLC-6-4 Update EKNIV 1A/1H to SOQQA 1A/1H as per attached marked up chart.

AD 2.EGLC-6-5 Update CPT 1A to HEN 1A as per attached marked up chart.

AD 2.EGLC-6-6 Update CPT 1H to HEN 1H as per attached marked up chart.

AD 2.EGLC-6-7 Update CLN 1A/1H to ODUKU 1A/1H as per attached marked up chart.

AD 2.EGLC-6-8 Update EKNIV 1A/1H coding tables as per attached SOQQA 1A/1H coding tables.

AD 2.EGLC-6-9 Update CPT 1A coding table as per attached HEN 1A coding tables.

AD 2.EGLC-6-10 Update CPT 1H coding table as per attached HEN 1H coding tables.

AD 2.EGLC-6-11 Update CLN 1A/1H coding table as per attached ODUKU 1A/1H coding tables.

AD 2 EGKB

AD 2.22

Para 2 Table Standard Departure Routes – Via ATS Route Network

Amend Route column for Compton 2 departure to DET – N601 - BPK – HEN – N27 – CPT

AD 2 EGMC

AD 2.22

Para 1 b(iv) Table

No change to table required as ATS routes are not referenced.

AD 2 EGTO

AD 2.22

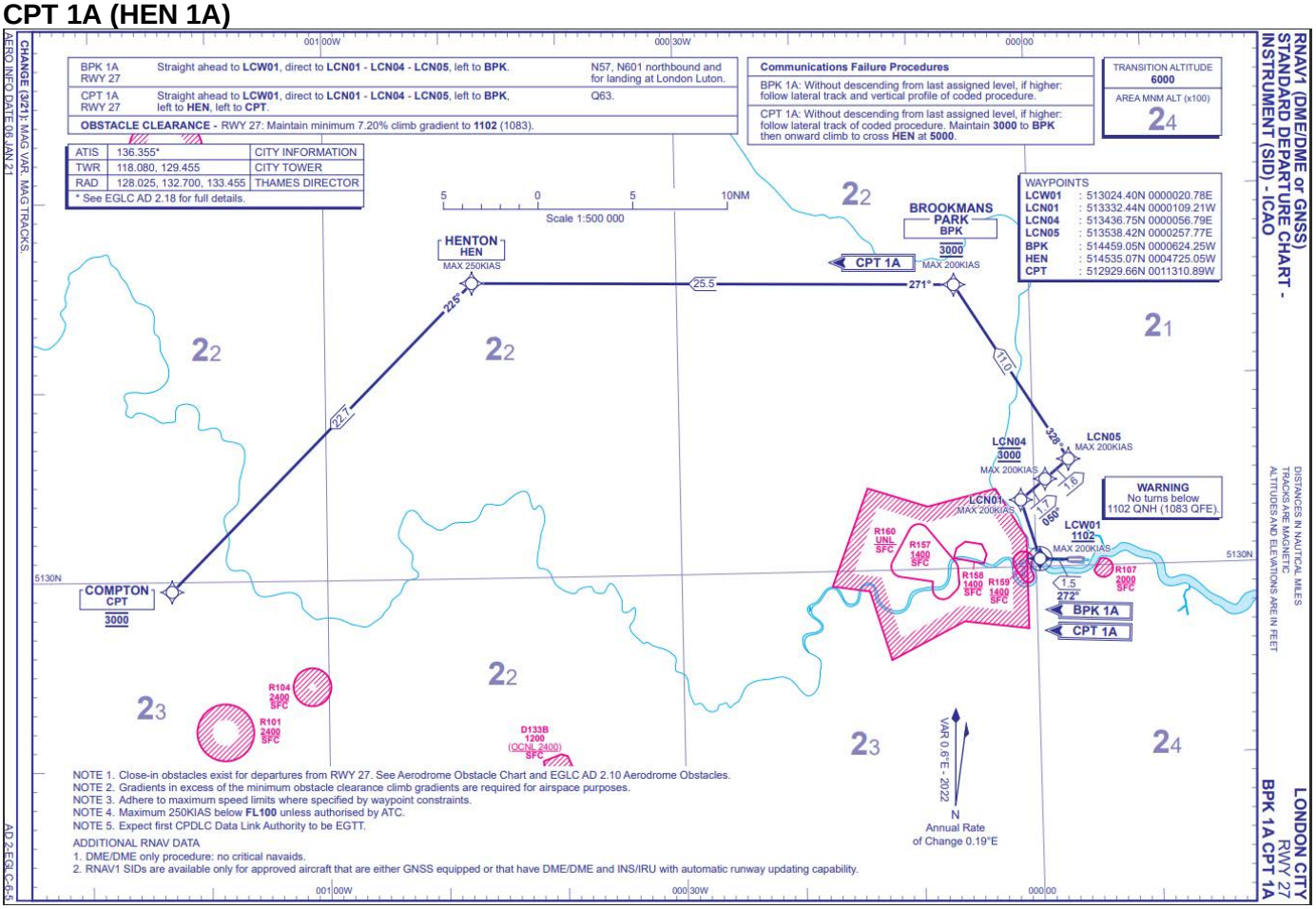
Para 1 Table

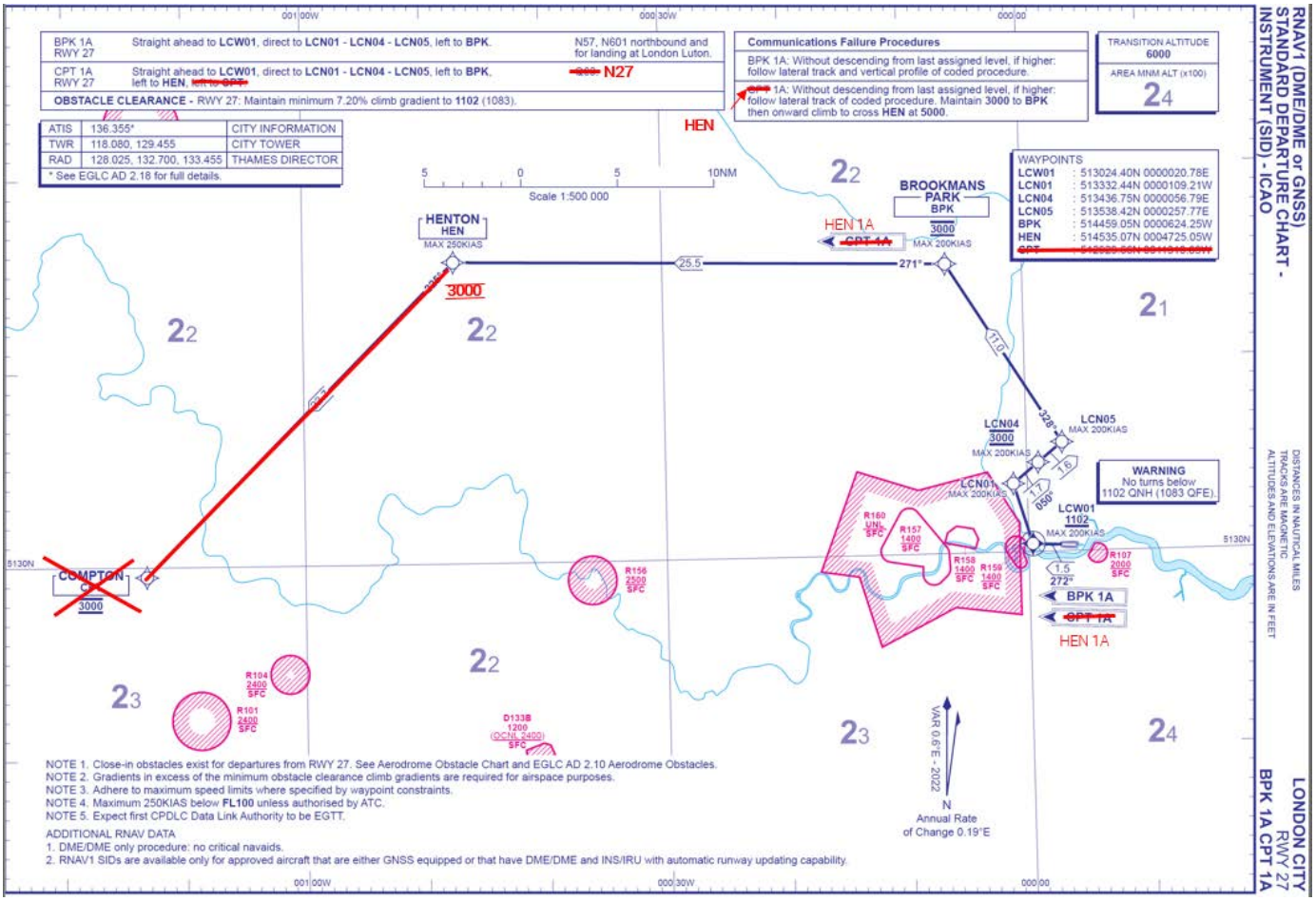
Amend Route and Altitude column for Compton 3 departure to:

BPK – HEN – N27 – CPT
Cross 20 DME BPK above 3000 FT climbing to 4000 FT.

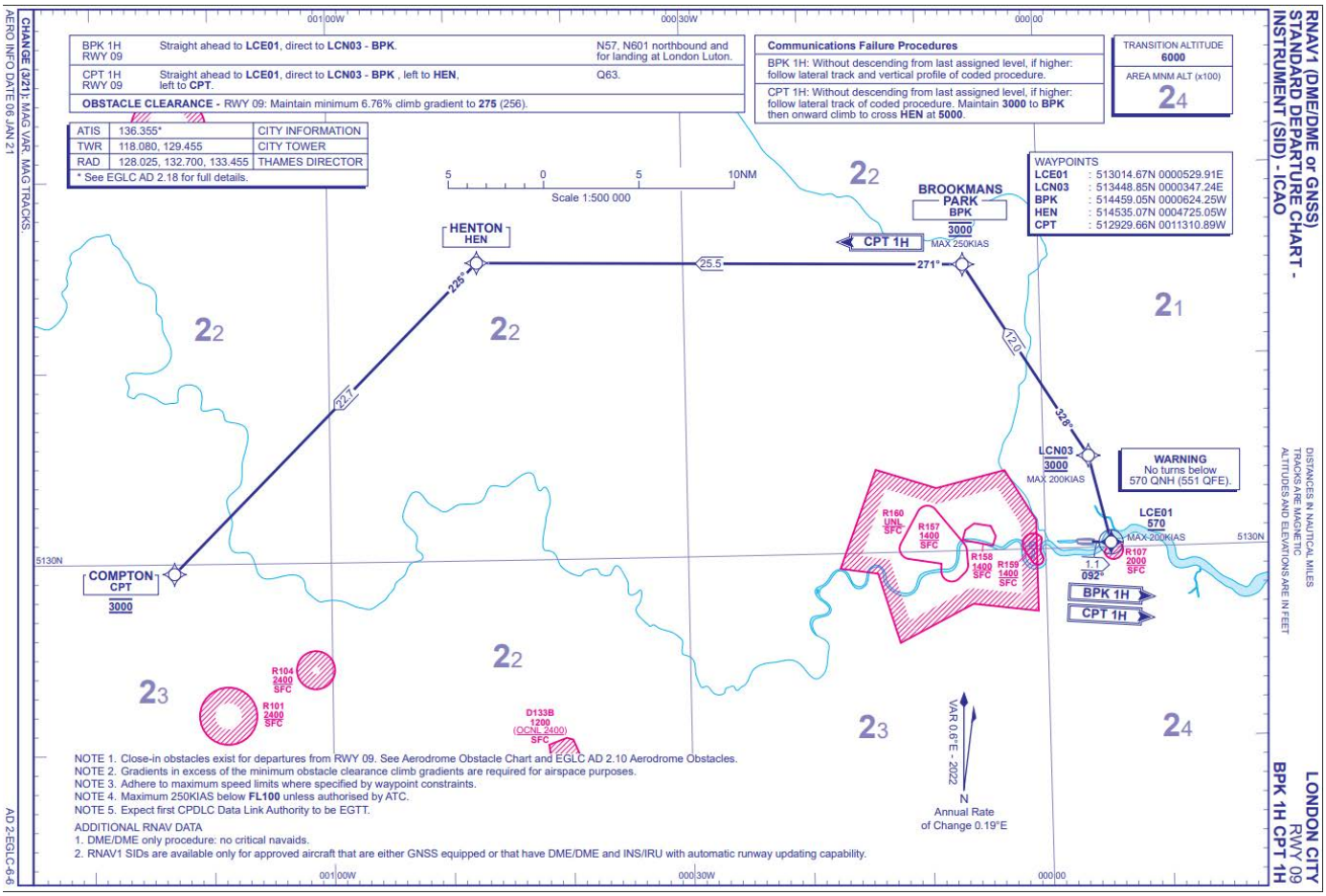
Appendix 2: SID Plates (original, followed by amended for comparison)

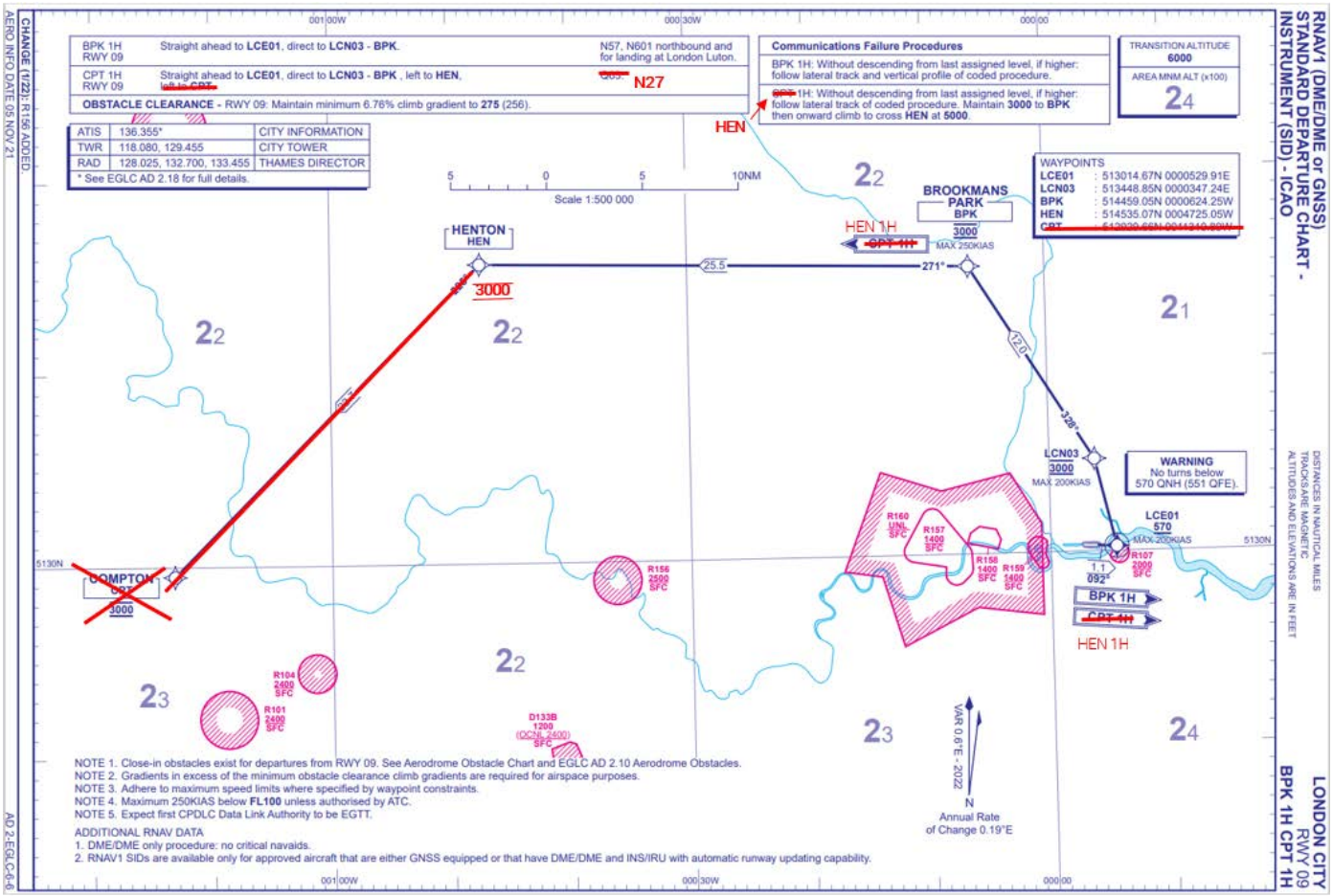
CPT 1A (HEN 1A)





CPT 1H (HEN 1H)


RNAV1 (DME/DME or GNSS) STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO
LONDON CITY
RWY 09
BPK 1H CPT 1H
CHANGE (3/21): MAG VAR, MAG TRACKS.
AERO INFO DATE 06 JAN 21
AD 2-EGLC-6-6
BPK 1H RWY 09 Straight ahead to LCE01, direct to LCN03 - BPK. N57, N601 northbound and for landing at London Luton.
CPT 1H RWY 09 Straight ahead to LCE01, direct to LCN03 - BPK , left to HEN, left to CPT. Q63.
OBSTACLE CLEARANCE - RWY 09: Maintain minimum 6.76% climb gradient to 275 (256).
ATIS 136.355* CITY INFORMATION
TWR 118.080, 129.455 CITY TOWER
RAD 128.025, 132.700, 133.455 THAMES DIRECTOR
* See EGLC AD 2.18 for full details.
Communications Failure Procedures
BPK 1H: Without descending from last assigned level, if higher: follow lateral track and vertical profile of coded procedure.
CPT 1H: Without descending from last assigned level, if higher: follow lateral track of coded procedure. Maintain 3000 to BPK then onward climb to cross HEN at 5000.
TRANSITION ALTITUDE 6000
AREA MNM ALT (x100) 24
WAYPOINTS
LCE01 : 513014.67N 0000529.91E
LCN03 : 513448.85N 0000347.24E
BPK : 514459.05N 0000624.25W
HEN : 514535.07N 0004725.05W
CPT : 512929.66N 0011310.89W
Scale 1:500 000
HENTON HEN
BROOKMANS PARK BPK 3000
CPT 1H MAX 250KIAS
COMPTON CPT 3000
LCN03 3000 MAX 200KIAS
LCE01 570 MAX 200KIAS
WARNING No turns below 570 QNH (551 QFE).
R160 UNL SFC
R157 1400 SFC
R158 1400 SFC
R159 1400 SFC
R107 2000 SFC
R104 2400 SFC
R101 2400 SFC
D133B 1200 (OCNL 2400) SFC
BPK 1H
CPT 1H
VAR 0.6°E - 2022
Annual Rate of Change 0.19°E
DISTANCES IN NAUTICAL MILES
TRACKS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET
NOTE 1. Close-in obstacles exist for departures from RWY 09. See Aerodrome Obstacle Chart and EGLC AD 2.10 Aerodrome Obstacles.
NOTE 2. Gradients in excess of the minimum obstacle clearance climb gradients are required for airspace purposes.
NOTE 3. Adhere to maximum speed limits where specified by waypoint constraints.
NOTE 4. Maximum 250KIAS below FL100 unless authorised by ATC.
NOTE 5. Expect first CPDLC Data Link Authority to be EGTT.
ADDITIONAL RNAV DATA
1. DME/DME only procedure: no critical navaids.
2. RNAV1 SIDs are available only for approved aircraft that are either GNSS equipped or that have DME/DME and INS/IRU with automatic runway updating capability.


RNAV1 (DME/DME or GNSS) STANDARD DEPARTURE CHART - INSTRUMENT (SID) - ICAO
LONDON CITY
RWY 09
BPK 1H CPT 1H
CHANGE (1/22): R156 ADDED.
AERO INFO DATE 05 NOV 21
AD 2-EGLC-6-6
BPK 1H RWY 09 Straight ahead to LCE01, direct to LCN03 - BPK. N57, N601 northbound and for landing at London Luton.
CPT 1H RWY 09 Straight ahead to LCE01, direct to LCN03 - BPK , left to HEN, left to CPT. Q63. N27
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HEN
TRANSITION ALTITUDE 6000
AREA MNM ALT (x100) 24
WAYPOINTS
LCE01 : 513014.67N 0000529.91E
LCN03 : 513448.85N 0000347.24E
BPK : 514459.05N 0000624.25W
HEN : 514535.07N 0004725.05W
Scale 1:500 000
HENTON HEN
BROOKMANS PARK BPK 3000
HEN 1H
CPT 1H MAX 250KIAS
3000
COMPTON CPT 3000
LCN03 3000 MAX 200KIAS
LCE01 570 MAX 200KIAS
WARNING No turns below 570 QNH (551 QFE).
R160 UNL SFC
R157 1400 SFC
R158 1400 SFC
R159 1400 SFC
R107 2000 SFC
R156 2500 SFC
R104 2400 SFC
R101 2400 SFC
D133B 1200 (OCNL 2400) SFC
BPK 1H
CPT 1H
HEN 1H
VAR 0.6°E - 2022
Annual Rate of Change 0.19°E
DISTANCES IN NAUTICAL MILES
TRACKS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET
NOTE 1. Close-in obstacles exist for departures from RWY 09. See Aerodrome Obstacle Chart and EGLC AD 2.10 Aerodrome Obstacles.
NOTE 2. Gradients in excess of the minimum obstacle clearance climb gradients are required for airspace purposes.
NOTE 3. Adhere to maximum speed limits where specified by waypoint constraints.
NOTE 4. Maximum 250KIAS below FL100 unless authorised by ATC.
NOTE 5. Expect first CPDLC Data Link Authority to be EGTT.
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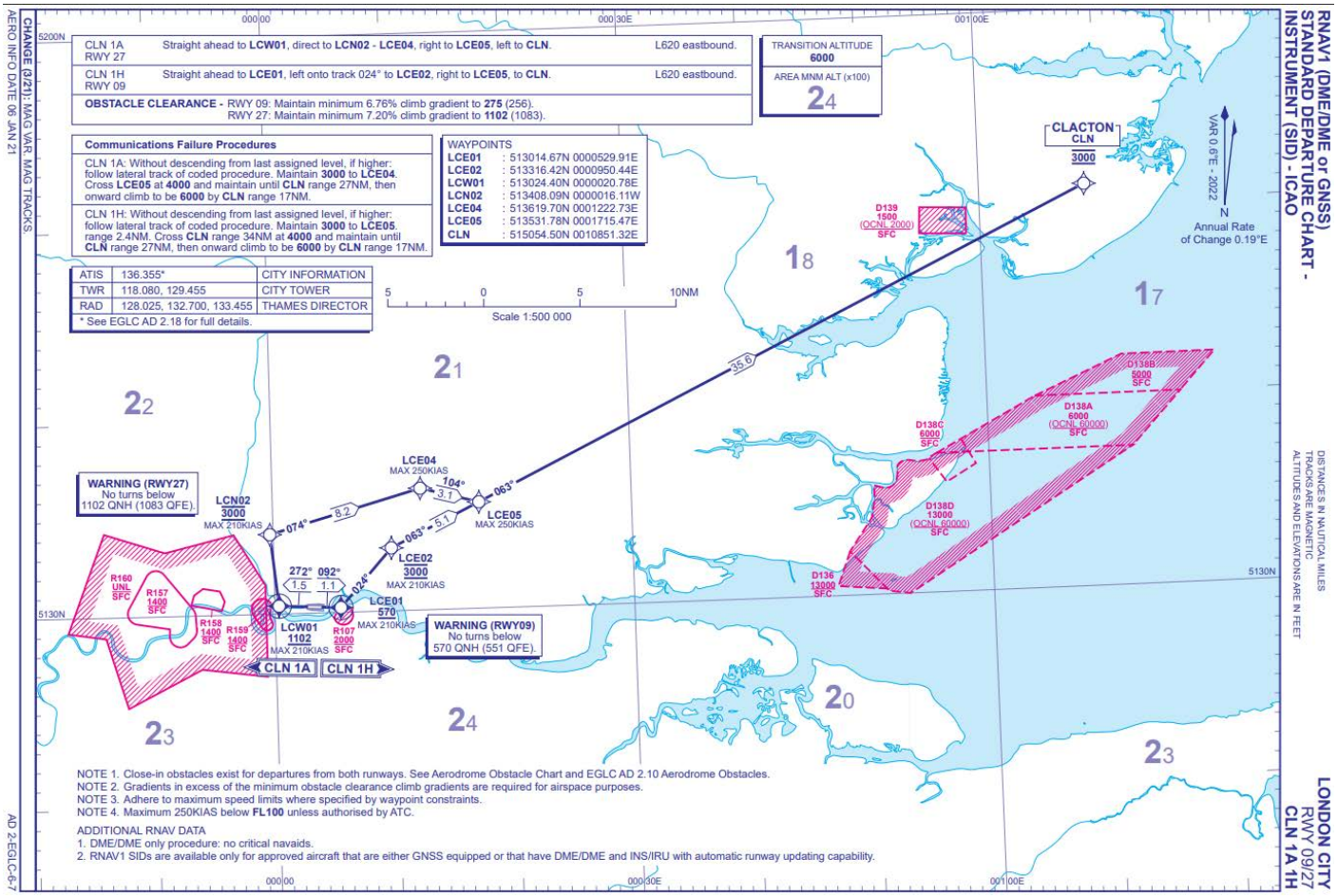
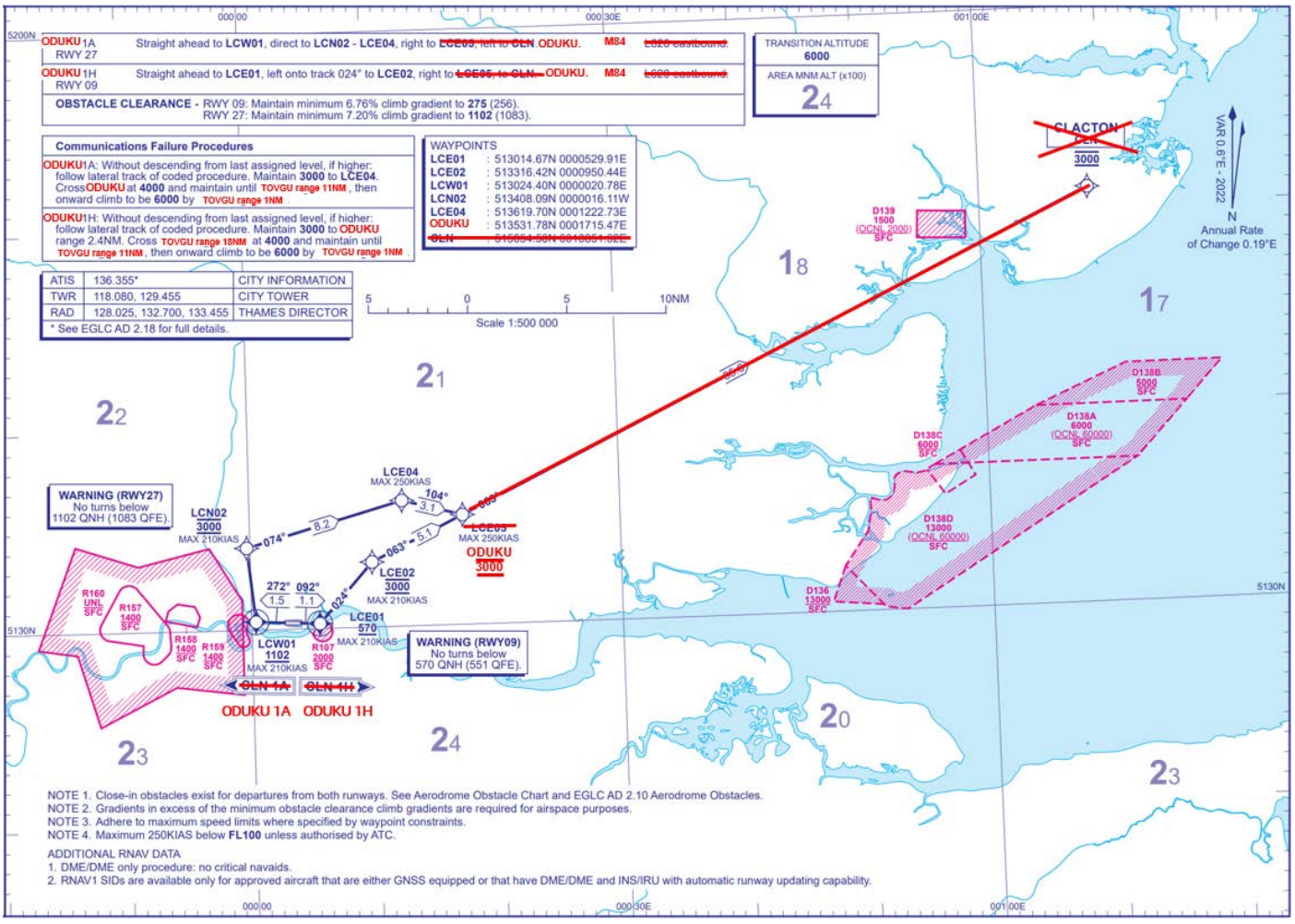
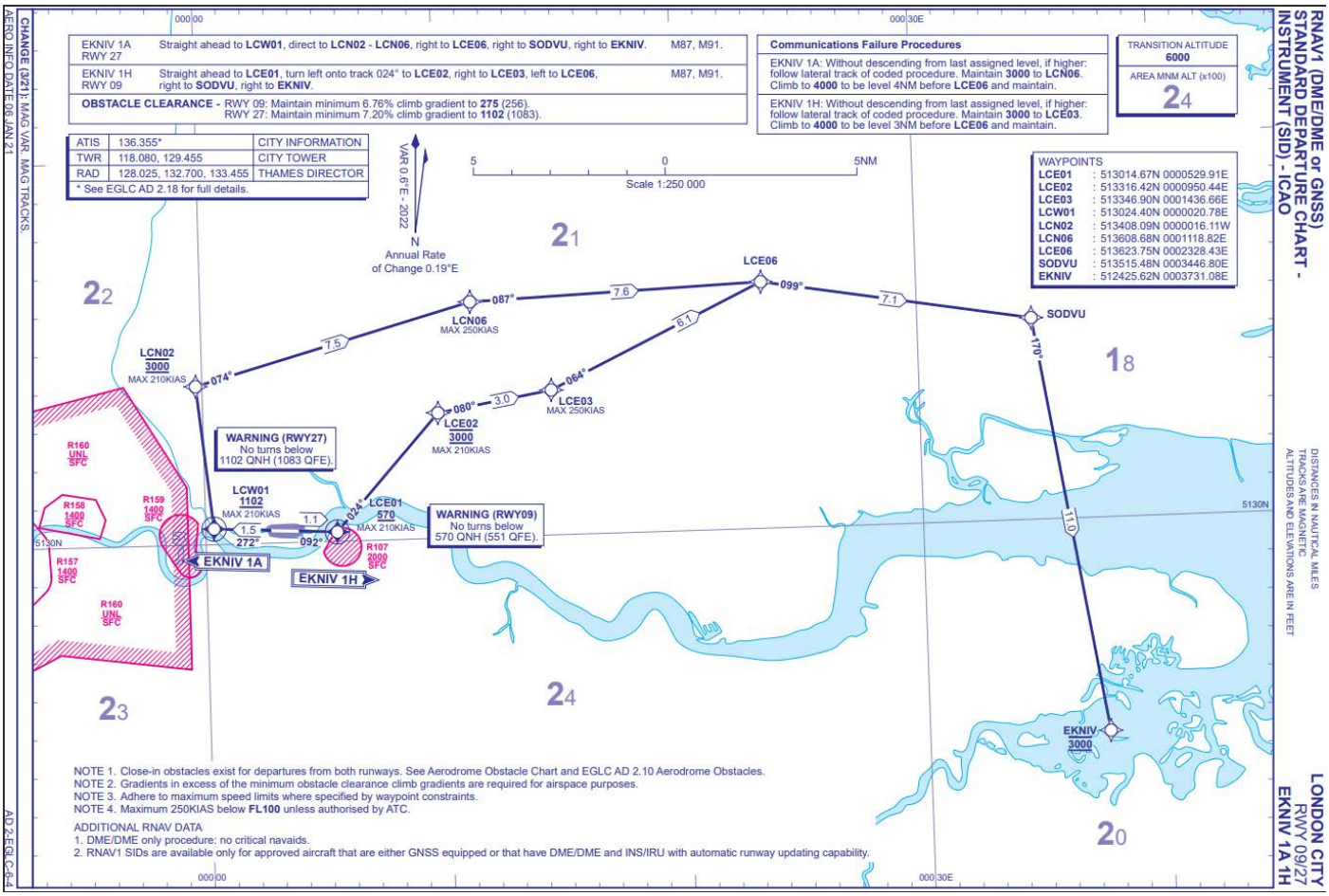
1. DME/DME only procedure: no critical navaids.
2. RNAV1 SIDs are available only for approved aircraft that are either GNSS equipped or that have DME/DME and INS/IRU with automatic runway updating capability.

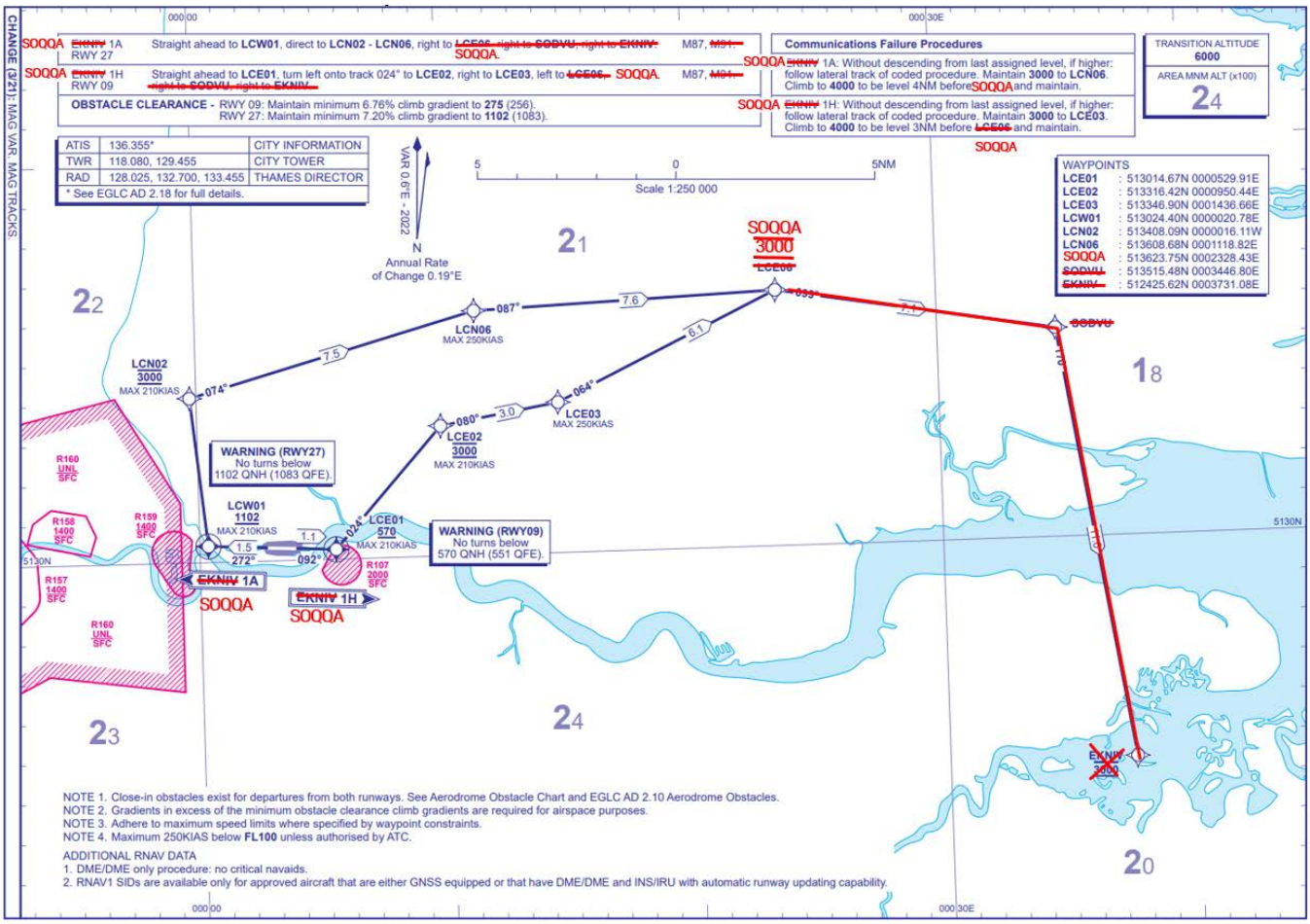
CLN 1A/1H (ODUKU 1A/1H)





EKNIV 1A/1H (SOQQA 1A/1H)





SARG Airspace Regulatory Approval use only.

Serial	Design Check	Design Approved/ Not Approved	Verified By
1a	**SID revised track and distance.**		
1b	**Co-ordinates verified.**		
1c	If errors evident, SID revised track and distance entered below.		
2a	**ATS Route track and distance.**		
2b	**ATS Route terrain clearance assured.**		
2c	If errors evident, ATS Route revised track and distance entered below.		
3	**Navaid infrastructure** (adequate coverage for new termination point).		
4	**RCF procedures.**		
5	**Interacting procedures.**		
6	**Airspace Containment.**		
7	**SID chart – proposed changes.**		
8	**SID chart proof from AIS.**		
9	**Final Options Appraisal.**		
10	**Safety Assessment.**		
11	**NPR Tables – proposed changes (if applicable).**		
12	**SID truncation proposal confirmed as a Level Zero change.**		
13	**DfT advised if changes made to SIDs at designated airports.** **(following approval)**		

Change recommended by:

Name…….....

Date.....

Change referred back to sponsor for the following reason (insert details)

Change approved by:

Name……..... **Appointment**……

Date.....