



NORTH ATLANTIC IMPLEMENTATION MANAGEMENT GROUP

SIXTY-SIXTH MEETING

(Paris, France, 29 April-2 May 2025)

Agenda Item 2: Planning and implementation management issues

2.1 NAT OCR - lessons learnt on large-scale implementation planning

OCR UPDATE FROM CANADA

(Presented by Canada)

SUMMARY

With the implementation of Oceanic Clearance Removal (OCR) procedures in Canada resulting in significant flight crew confusion related to RCL and UM79 messages, and significant ATC workload and VHF frequency congestion, neither of which is subsiding, this paper provides an update on Canada's plans to implement additional mitigations.

1. Introduction

1.1 Canada's OCR implementation was deployed on 03 December 2024, joining Santa Maria and Reykjavik, which deployed on 21 March 2024, and Bodø, which deployed on 04 December 2024.

1.2 Since deployment, Canada has observed significant flight crew confusion related to the misapplication of CPDLC route messages and ARINC 623 RCL messages. This has led to frequency congestion, an increase in pilot errors and ATC workload (NAT POG/19 IP/17 refers).

1.3 Canada's SMS process has effectively mitigated safety incidents as expected per the OCR NAT Region Safety Case (NRSC), yet observed risk elements differ from what was anticipated:

- a) Confusion over the use of UM79, including how it is presented in the avionics of different aircraft types, was not considered a hazard requiring mitigation. Yet, the variance and volume of observed challenges is radically different from airframe to airframe, and operator to operator.
- b) Short-term pilot confusion regarding the use of RCL and the removal of the oceanic clearance was identified as a risk to mitigate, though expected to last approximately 2 months (OCR NRSC refers).

1.4 After 4-months (which included significant industry outreach), a higher volume of confusion and frequency congestion than anticipated has not subsided and is not sustainable as the summer period approaches, which projects to be the busiest on record. Canada is therefore implementing the following mitigations, which are not included in the OCR NRSC or NAT OCR CONOPS.

- a) Advising all eastbound aircraft of their planned oceanic flight level, and
- b) Reverting to voice clearances rather than CPDLC UM79 for required route amendments.

1.5 These additional mitigations are not intended to be long-term but are necessary in the short term to address a very high number of events (**NAT SG/32 SoD** refers), which have moved from historically occurring in the Gander Oceanic Control Area (OCA) to now predominantly occurring within Canadian Domestic Airspace (CDA).

1.6 This paper focuses on the **4-month** post-OCR deployment period of **3 Dec 2024 to 31 March 2025**, which is Canada's *lowest* annual traffic volume period (**Appendix A** refers).

2. Discussion

CPDLC Procedure Changes

2.1 In early May 2025, Canada will begin using voice for NAT route revision clearances beyond the Oceanic Entry Point (OEP).

2.2 Whether the root cause is training, or avionic system interoperability, many flight crews are indicating that:

- a) they understand UM79 messages to mean direct to the clearance limit,
- b) they're not seeing all route elements,
- c) they don't understand why their UM79 clearance contains route elements not in their FPL,
- d) they're receiving fuel warnings with their FMS indicating a turn-around,
- e) they're reluctant to press load on their FMS,
- f) they wish to confirm their route verbally,
- g) they have a route discontinuity leading to incorrect or partial loading of clearance,
- h) they (GA pilots) don't understand LL coordinate formatting.

2.3 Many UM79 clearances are being loaded incorrectly, requiring ATC intervention to prevent lateral route deviations. Additionally, ATC are preventing many preventions through crew-initiated frequency conversations to clarify UM79 route details prior to loading and executing.

2.4 CPDLC is considered a safety enhancement that's superior to voice when functioning as expected. Currently, it's not functioning as expected, as evidenced by safety data (**APPENDIX A** and **NAT SG/32 SoD** refers). Voice is therefore considered a safer short-term measure within the current environment, and Canada supports an IMG developed strategy for re-introducing CPDLC route clearances when stakeholders are ready.

RCL Procedure Changes

2.5 When eastbound aircraft make initial contact with Gander Domestic ATC, ATC now advises the flight crew of what their oceanic flight level will be using the following phraseology, "**AIRCRAFT IDENT, Gander Centre, be advised oceanic entry level is FLXXX. Advise when ready for climb/descent.**"

2.6 OCR procedures indicate that after sending an RCL, flight crews shall simply fly as previously cleared unless instructed differently by ATC. Yet, elements of the former OCL process appear firmly entrenched in many NAT airspace users and observed flight crew actions include:

- a) believing the ‘RCL Received’ message indicates that they were cleared as requested for level and speed,
- b) asking for clearance,
- c) asking what their clearance will be,
- d) asking why their cleared level differs from their RCL level,
- e) asking why their RCL was rejected (after sending it too early or too late).

2.7 Prior to implementing OCR, Canada occasionally observed eastbound vertical deviations within Gander High Domestic airspace prior to oceanic entry resulting from flight crews misunderstanding the phraseology “*FROM [OEP] MAINTAIN FLXX.*” Reliance on OCR’s automation and only delivering flight levels when required was therefore considered a key OCR benefit. RCL procedure changes noted in the above section 2.5 are therefore not considered a sustainable long-term solution, as it doesn’t eliminate the risk associated with the former process. However, the risk is considered significantly lower than continuing with OCR RCL procedures that result in the noted crew actions, which have lessened since implementing the change.

Safety Assessment

2.8 Since OCR deployment, Canada has mitigated challenges through a variety of means, such as significant customer and industry outreach, flow management, and software changes (**NAT POG/19 IP/17** refers).

2.9 Additional safety efforts include:

- a) Performing ongoing “high-volume” post-implementation monitoring and reporting,
- b) Conducted post-implementation Hazard Identification and Risk Assessment (HIRA),
- c) Conducted RCL Removal HIRA,
- d) Received ACA cockpit demonstrations on RCL and UM79 interactions,
- e) Proposed development of a NAT regional CONOPS for the removal of the ARINC 623 RCL from OCR procedures (**NAT POG/19 WP/14** refers),
- f) Reported observed UM79 issues to the NAT TIG (**NAT TIG/19 IP/10** refers),
- g) Conducted Change Safety Assessment (CSA) on the suspension of the issuance of UM79 route clearances.

Action Plan

2.10 Following internal safety assessments, Canada has taken the following actions:

- a) Developed a communication package that includes a UM79 suspension trigger NOTAM directing operators to an upcoming AIP Supplement,
- b) Conducted UM79 suspension consultation with multiple operators,

- c) Requested a virtual NAT SPG Chairs meeting to inform intentions of introducing mitigations not included in the OCR NRSC or NAT OCR CONOPS,
- d) Reported updated OCR monitoring data to NAT IMG/66.

2.11 Canada plans to take the following actions:

- a) Communicate via a NOTAM and AIP Supplement that in early May 2025 (date TBD), Canada will no longer use UM79 for oceanic re-routes beyond the OEP. It will be replaced by voice clearances. Flights that don't require a re-route will not be impacted,
- b) Report updated OCR monitoring data to NAT SOG/32,
- c) Re-introduce CPDLC UM79 route amendment clearances as a trial in the fall of 2025, or early winter 2026. This will be communicated well in advance of the trial start date, and the results of this trial will help determine the feasibility of permanent implementation.

2.12 Canada supports a NAT IMG planning strategy to develop long-term solutions for OCR issues not operating as expected, to improve the current environment, as well as to prepare for future automation driven initiatives, such as TBO.

3. Action by the Meeting

3.1 The meeting is invited to:

- a) note the information provided, and
- b) provide direction as deemed necessary.

The following appendices are provided with this working paper:

APPENDIX A UM79 and RCL Data

APPENDIX B Canada's Post-Implementation Monitoring Data

APPENDIX A — UM79 AND RCL DATA

1. Overview

- 1.1 This paper is reporting on the **4-month** period of **3 Dec 2024 to 31 March 2025**, which represents Canada’s seasonably low traffic volume period.
- 1.2 During this period, **69,375 eastbound flights** were serviced, and **130** OCR related events were reported.
- 1.3 The volume of safety events has increased significantly as compared to pre-OCR.

2. Prevented Lateral Deviations

- 2.1 Historic number of lateral “Prevention” events pre-OCR:

PERIOD	DURATION	DESCRIPTION	PREVENTIONS
1 Jan 2019 - 3 Dec 2024	6-years	NAT SG events in Gander’s OCA	88
1 Jul 2023 - 30 Jun 2024	1-year	NAT SG/30 & SG/31 in Gander’s OCA	22
1 Jan - 30 Jun 2024	6-months	NAT SG/31 events in Gander’s OCA	15
1 Jul to 30 Nov 2024	5 months	NAT SG/32 events in Gander’s OCA	17

- 2.2 Number of lateral “Prevention” events post-OCR:

PERIOD	DURATION	DESCRIPTION	PREVENTIONS
3 Dec 2024 - 31 Mar 2025	4-months	Gander’s NAT SG/32 & SG/33 events	115
Dec 2024	1-month	Gander’s NAT SG/32 events	21
Mar 2025	1-month	Gander’s NAT SG/33 events	54
29 - 31 Mar 2025	3-days	Gander’s NAT SG/33 events	15

- 2.3 In addition to the noted post-OCR lateral “Prevention” events, ATC has conducted **hundreds** of conversations with flight crews prior to crews loading the UM79, likely mitigating a significant volume of flights that would have turned into “Prevention” events.
- 2.4 A closer look at the following **3-day sample period** indicates that most lateral events include UM79 as a root causal factor:
- a) During the final 3-days of 3 Dec 2024 to 31 Mar 2025, **15** prevented lateral deviations were observed with the following issues:

1.	Incorrect loading of UM79	9.	Missed 20W route element
2.	Didn't load route change	10.	Incorrect routing
3.	Partial load (missed OXP)	11.	Partial load of UM79 clearance
4.	Confused by re-route	12.	Interpreted UM79 as direct OXP
5.	Partial load (missed OXP)	13.	Possible flight planning issue
6.	Potential FDP cause	14.	Possible flight planning issue
7.	Partial load of UM79	15.	Loaded UM79 incorrectly
8.	Partial load of UM79		

2.5 Each of these **15** events required ATC intervention to prevent a lateral route deviation. This is in addition to assisting significant volumes of other crews with questions and requests before they load UM79s.

2.6 A closer look at a separate sample **3-day period** (21-23 Mar 2025) indicates the percentage of UM79 route amendments that led to voice contacts:

DATE	# of UM79 Route Changes	# that resulted in voice contact	%
21 March	27	22	81%
22 March	28	23	82%
23 March	34	26	76%

3. RCL

3.1 Since implementing defensive phraseology tactics of advising crews of their planned ocean altitude on initial contact with Gander High Domestic, the primary persisting RCL related issue is requests for an oceanic clearance. A **1-day sample period** (15 March 2025) indicates **96** requests for oceanic clearance.

3.2 During the **2-month** post-OCR period of **1 Feb to 31 March 2025**, Canada has additionally recorded:

- a) **65** RCL-related events resulting in voice contact, such as RCLs rejected when submitted too early/late, crews expecting more than the RCL response message, and crews requesting verbal confirmation.
- b) **25** oceanic entry level confusion events resulting in voice contact, mostly where crews believed their RCL level request to be their cleared oceanic level, though also including such things as multiple occurrences of airframes unable to climb to their max level.
- c) **193** additional flights that contacted ATC by voice with oceanic clearance related questions.

APPENDIX B — CANADA'S POST-IMPLEMENTATION MONITORING DATA

3.3 During the **2-month** post-OCR period of **3 Dec 2024 to 31 Jan 2025**:

PERIOD	# of Events
ID:1 – Longitudinal Impact (Hazard 4)	3
ID:2 – Lateral Impact (Hazard 1)	34
ID:3 – Vertical Impact (Hazard 2 & 2a)	2
ID:4 – Coordination Impact (Various Hazards)	0

- a) In addition to the **2** vertical deviations, ATC potentially prevented **128** other vertical events as follows:
 - i. **60** events where, upon check-in with Gander High Domestic, the pilot indicated that they were ready for and expecting their climb as per their RCL.
 - ii. **68** events where the pilot did not explicitly state that they were ready for their climb, though demonstrated confusion and asked questions about whether the RCL level was their cleared oceanic level.
- b) **5** of the **34** lateral events contained an actual deviation. **29** were prevented.

3.4 During the **2-month** post-OCR period of **1 Feb to 31 March 2025**:

PERIOD	# of Events
ID:1 – Longitudinal Impact (Hazard 4)	0
ID:2 – Lateral Impact (Hazard 1)	89
ID:3 – Vertical Impact (Hazard 2 & 2a)	2
ID:4 – Coordination Impact (Various Hazards)	0

- a) In addition to the **2** vertical deviations, flight crews continue to demonstrate confusion in relation to their submitted RCL (**Appendix A 3.1** refers).
- b) **3** of the **89** lateral events contained an actual deviation. **86** were prevented.
- c) In addition to the above noted events, many false positive reports have also been recorded due to, for example, unexpected data contained within CPDLC DM40 messages, as well as message delivery and receipt being impacted by connection issues.

3.5 During the **4-month** post-OCR period of **3 Dec 2024 to 31 Mar 2025**:

PERIOD	# of Events
ID:1 – Longitudinal Impact (Hazard 4)	3
ID:2 – Lateral Impact (Hazard 1)	123
ID:3 – Vertical Impact (Hazard 2 & 2a)	4
ID:4 – Coordination Impact (Various Hazards)	0

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