



NAT OPS BULLETIN

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Subject: Operations Without an Assigned Fixed Speed in the NAT (OWAFS) Special Emphasis Items (SEI)

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The purpose of North Atlantic Operations Bulletin 2019-001 is to provide background information and guidance material to support the use of the aircraft's Flight Management Computer's (FMC) ability to apply flexible speeds in the NAT as permitted under ICAO Annex 2. The implementation of operations without an assigned speed (OWAFS), will enhance operator fuel and time efficiencies and reduce greenhouse gas (GHG) emissions. State AIPs, ANSP Flight Data Processing Systems (FDPS), AIDCs and operator and flight crew education should be updated accordingly to facilitate OWAFS.

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NAT OPERATIONS BULLETIN – Operations Without an Assigned Fixed Speed

1. INTRODUCTION

1.1. The requirement to issue an assigned fixed Mach to all flights has been removed from NAT SUPPs (ICAO Doc7030), however, due to the technical design of the ACARS Clearance (CLX) message and NAT Air Navigation Service Providers (ANSP) application of longitudinal separation using the Mach number technique, nearly all oceanic clearances issued to turbojet aircraft in the NAT Region include an assigned Mach. If any variation to the assigned Mach is desired, flight crews must request such changes from ATC.

1.2. Aircraft manufacturers, however, recommend a variable cruise Mach operation for maximum efficiency. Thus, the assumption that most flights would prefer to operate in the NAT region without a fixed Mach speed.

1.3. AIS publications of the NAT ATS Provider States should be consulted to determine the extent of current implementation of OWAFS in each of the NAT OCAs. Operational procedures to be used are specified in this Bulletin. These procedures are intended to facilitate the uniform application of Standards and Recommended Practices contained in:

- Annex 2 — Rules of the Air,
- Annex 10 — Aeronautical Telecommunications and
- Annex 11 — Air Traffic Services,
- The provisions in the Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444) and, when applicable, the Regional Supplementary Procedures (Doc 7030).

This Bulletin may be updated, as necessary, as progress is made toward improved OWAFS procedures in the NAT.

1.4. Operator attention is directed to Attachment A which provides a “quick reference” for OWAFS. It is intended to be used as a job aid for operators developing pilot training material.

1.5. The following is an explanation of the terms “should”, “must” and “shall” as used in this bulletin.

- a) *“Should” is used to indicate a recommended practice or policy that is considered as desirable for the safety of operations.*
- b) *“Shall” and “must” are used to indicate a practice or policy that is considered as necessary for the safety of operations.*

2. OPERATIONS WITHOUT AN ASSIGNED FIXED SPEED OVERVIEW

2.1. All aircraft, regardless of FANS equipage, will be eligible for the application of OWAFS in both ATS surveillance and non-surveillance airspace.

2.2. Current ACARS / Voice oceanic clearance procedures will be retained.

2.3. Oceanic clearance procedures will remain unchanged. A fixed Mach will continue to be part of the oceanic clearance.

2.4. ANSPs will strive to remove a speed restriction when operationally feasible.

- 2.5. There will be two modes of operation regarding speed:
- a) Clearance with an assigned speed
 - b) No speed assignment—provisions of ICAO Annex 2 (paragraph 3.6.2.2 apply)
- 2.6. ATC will apply “speed control” as needed in accordance with guidance in ICAO Doc 4444.
- 2.7. The terms Cost Index or ECON should not normally be used in communications between ATC and aircraft with respect to the authorization for or use of OWAFS.
- 2.8. Implementation of OWAFS will, where possible, make use of existing CPDLC message sets and/or standard voice phraseology.
- 2.9. The following common phraseology, between ATC and flight crew, will be implemented across the NAT:
- a) To clear aircraft on a fixed speed:
 - 1) Voice: MAINTAIN MACH (number)
 - 2) CPDLC: SPDU-4/UM106: MAINTAIN (speed)
 - 3) ACARS data link oceanic clearance: Assigned Mach speed is required in oceanic CLX messages
 - b) To remove the speed restriction:
 - 1) Voice: RESUME NORMAL SPEED
 - 2) CPDLC: SPDU-13/UM116: RESUME NORMAL SPEED
 - c) Response to a pilot inquiry:
 - 1) Voice: NO [ATC] SPEED RESTRICTIONS
 - 2) CPDLC SPDU-14/UM169 (free text): NO SPEED RESTRICTION
- 2.10. If aircraft has been cleared on a fixed Mach speed;
- a) Flight crews will not need to request OWAFS, ATC will offer a variable Mach when possible.
 - b) Flight crew abides by ICAO Annex 2 (paragraph 3.6.2.2 b) *Deviation from ATC assigned Mach number/indicated airspeed: the appropriate air traffic services unit shall be informed immediately.*
- 2.11. If the aircraft then receives RESUME NORMAL SPEED (via CPDLC or Voice), the flight crew no longer needs to comply with a previously issued Mach. However, the flight crew shall advise ATC if, as the result of the RESUME NORMAL SPEED message, they intend to adjust their speed by plus or minus Mach 0.02 or more from their last assigned speed.
- 2.12. OWAFS will be offered to aircraft whenever the opportunity exists.
- 2.13. OWAFS will be managed by each NAT ANSP in a manner dictated by required separation standards and safety of operations.

3. OWAFS OPERATIONAL SCENARIO

3.1. Pre-Oceanic Entry:

- a) Airline operator files a flight plan for flight number AB 123 with a NAT crossing speed of M.81.
- b) Between 90 and 60 minutes prior to the oceanic entry point (OEP), AB 123 requests an oceanic clearance with a speed of M.81.
- c) ATC issues oceanic clearance for AB 123 that includes an assigned speed of M.81.

3.2. Established in Oceanic Airspace:

- a) ATC controlling AB 123 assesses the traffic situation with other aircraft.
- b) If the required minimum is sufficiently ensured:
 - 1) For CPLDC equipped aircraft an uplink message SPDU-13/UM116 RESUME NORMAL SPEED will be sent
 - 2) For aircraft without CPDLC capability, a voice message RESUME NORMAL SPEED will be sent;
- c) The flight crew no longer needs to comply with a previously issued Mach. However, the flight crew shall advise ATC if, as the result of the RESUME NORMAL SPEED message, they intend to adjust their speed by plus or minus Mach 0.02 or more from their last assigned speed. In this case, with a previously assigned speed of .81, they must inform ATC if the flight either slows to M.79 or less or speeds up to M.83 or more.
- d) ATC monitors AB 123's progress, and its separation from other aircraft, in accordance with normal operating procedures.
- e) ATC coordinates with the receiving ANSP in accordance with inter-unit agreements.
- f) Upon arrival at the new OCA boundary, AB 123 continues to operate without assigned speed.
- g) As a result of a change in the tactical situation, and OWAFS can no longer be offered, AB123 receives a CPDLC uplink SPDU-4 (UM106) MAINTAIN (speed - in this case M.81), or the equivalent clearance by voice, signifying a cessation of OWAFS due to conflicts.
- h) Following resolution of conflicts, ATC again applies the procedures described before, allowing the flight crew to resume normal speed.

4. SUMMARY

- 4.1. Appropriate flight crew education will be required to ensure a thorough understanding of OWAFS policies and procedures especially in regard to responses to standard voice or CPDLC messages relating to speed assignments.

5. CONTINGENCY PROCEDURES

- 5.1. Advise ATC immediately of any data link issues that might affect FANS (CPDLC/ADS-C) data link operations or any situation, like weather conditions, that require a more significant speed change.

6. WEBSITES

The ICAO EUR/NAT Office Website is at: www.icao.int/eurnat. Click on **EUR & NAT Documents** >> **NAT Documents** to obtain NAT Operations and NAT Region Update Bulletins and related project planning documents.

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**ATTACHMENT A – SUMMARY OF OPERATIONS WITHOUT AN ASSIGNED FIXED SPEED  
SPECIAL INTEREST ITEMS CONTAINED IN THIS NAT OPS BULLETIN**

SPECIAL EMPHASIS ITEMS FOR OWAFS PROCEDURES. **The Special Emphasis Items (SEI) listed below should be part of the flight crew education** required to ensure a thorough understanding of OWAFS policies and procedures especially in regard to responses to standard voice or CPDLC messages relating to speed assignments.

**Flight Crew**

- Should ensure a FANS (CPDLC/ADS-C) connection with the appropriate oceanic control area.
- Can request RESUME NORMAL SPEED via CPDLC (if not offered);
- Should insert the appropriate current flight plan “cost index” (ECON) into the FMS. This should typically be within +/- .01 Mach of the assigned Mach;
- Must inform ATC if as a result of the RESUME NORMAL SPEED uplink and subsequent insertion of cost index (ECON) the speed varies plus or minus Mach 0.02 or more from the assigned Mach via CPDLC or voice; and
- ATC will assign a fixed Mach if variable Mach can no longer be supported

**CPDLC Uplink Messages in support of OWAFS**

| CPDLC UPLINK OR VOICE | MESSAGE MEANING                                                                                                         | REASON ATC WOULD UPLINK                                                                       | CREW ACTION                                                                                                                  |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| RESUME NORMAL SPEED   | Instruction to resume a normal speed. The aircraft no longer needs to comply with a previously issued speed restriction | Allows for the use of cost index to produce a variable Mach. Fixed Mach is no longer required | Insert the appropriate cost index into the FMC that should typically produce a Mach within +/- .01 Mach of the assigned Mach |
| MAINTAIN [speed]      | Instruction to maintain the specified speed                                                                             | An assigned speed is required for traffic separation                                          | Insert the assigned Mach into the FMC and comply with the instruction                                                        |

**Contingency Procedures**

- Advise ATC immediately of any data link issues that might affect FANS (CPDLC/ADS-C) data link operations or any situation, like weather conditions, that require a more significant speed change.

-END-