

Mitigating LHD Risk Associated with Transfer of Communication Before Transfer of Control

Kingston FIR experience and regional safety considerations

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Why This Matters

Two occurrences. One recurring mechanism.

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Both occurrences involved aircraft arriving into the Kingston FIR.

In each case, the aircraft had already established communication with Kingston ACC while still within the Habana FIR.

A descent instruction was issued before responsibility for control had transferred.

The resulting descent created conflict with overflying traffic in Habana-controlled airspace.

Both events had **significant safety implications.**

KEY TAKEAWAY

Recurrence of the same event mechanism indicates a **systemic vulnerability** that warrants more than an individual corrective response.

The Core Safety Principle

Transfer of Communication ≠ Transfer of Control

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Transfer of Communication

- Aircraft changes frequency and establishes contact with the receiving ATS unit.
- This may occur before the transfer-of-control point.
- It allows for coordination, information exchange and workload management.

Transfer of Control

- Responsibility transfers at the agreed boundary, point, or time.
- Until then, the transferring ATS unit retains control responsibility.
- The receiving unit should not alter the aircraft's clearance unless authorized or coordinated.



CORE STATEMENT

An aircraft being on the frequency of an ATC unit **does not, by itself,** mean that responsibility for control of the aircraft has transferred to that unit.

Two Occurrences, the Same Operational Pattern

Different flights. Same sequence. Same risk.

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Occurrence 1
Arrival into Kingston FIR

1. Arrival established communication with Kingston ACC.
2. Aircraft remained within the Habana FIR.
3. Trainee Area Controller issued descent before transfer of control.
4. Conflict developed with overflying traffic.

Occurrence 2
Arrival into Kingston FIR

1. Substantially the same sequence occurred again.
2. Communication had transferred while the aircraft was still within the Habana FIR.
3. Control responsibility had not transferred.
4. Descent was issued prematurely, leading to conflict with overflying traffic.



COMMON FAILURE MODE:
Premature control action during the communication-before-control transition.

KEY TAKEAWAY
The recurrence of the same event mechanism indicates a **systemic vulnerability** that warrants more than an individual corrective response.

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From Early Communication Transfer to LHD Exposure

Two occurrences. The same operational pattern.

Understanding the sequence helps us identify where to intervene and reduce the risk.



1 Communication transferred to Kingston ACC



Arrival established communication with Kingston ACC.

2 Aircraft remains under Habana control responsibility



Aircraft remained within the Habana FIR.

3 Descent issued by Kingston ACC



Descent instruction issued by Kingston ACC before transfer of control.

4 Conflict develops with overflying traffic



Conflict developed with overflying traffic.

5 LHD / increased collision-risk exposure



Resulted in a Large Height Deviation (LHD) and increased collision-risk exposure.

KEY TAKEAWAY

The hazard is predictable, repeatable, and therefore suitable for **layered prevention.**

LHD RISK AT FIR BOUNDARIES: EARLY COMMUNICATION TRANSFER AND PREMATURE CONTROL ACTION

Distinguishing Transfer of Communication from Transfer of Control

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THREATS

- Complex FIR environment near boundary
- Traffic crossing / overflying near boundary
- Workload, distractions and time pressure
- Human factors (assumptions, routine, expectation bias)

PREVENTIVE BARRIERS

Prevent the event

TRAINING & COMPETENCE

- Clear distinction: comms vs control
- Boundary & transfer awareness
- Scenario-based training

SUPERVISION / OJTI

- Active monitoring of trainee
- Challenge & intervention
- Trainee verbalization / confirmation of control status

COORDINATION & PROCEDURES

- Clear LOAs and local procedures
- Separate points for comms and control transfers
- Approval required for clearances before transfer (if applicable)

SITUATIONAL AWARENESS (SYSTEM)

- Boundary / transfer-point indicators
- Transfer-status / control-responsibility indication
- Distinct symbology for not-yet-under-control aircraft (where available)

HAZARDOUS EVENT

PREMATURE CONTROL ACTION

Descent / level change issued by receiving unit before transfer of control has occurred

RECOVERY / MITIGATION BARRIERS

Reduce consequences if event occurs

INSTRUCTOR / SUPERVISOR INTERVENTION

- Detect and stop unsafe instruction
- Provide timely guidance

SYSTEM ALERTS (where available)

- Conflict alerts
- STCA / MSAW
- Flight data validation

COORDINATION RECOVERY

- Re-coordinate with Havana ACC
- Confirm control status
- Correct level instructions

PILOT RESPONSE

- Readback / query unclear instruction
- Adhere to last clearance
- TCAS RA (if issued)

CONSEQUENCES

- Vertical conflict with overflying aircraft
- Large Height Deviation (LHD)
- Increased risk of mid-air collision in RVSM airspace (high severity)
- Operational disruption and safety degradation

ESCALATION PATHWAY (if barriers fail)

Aircraft on Kingston frequency while still in Havana FIR (under Havana control) → Trainee perceives aircraft as available for Kingston control → Descent / level change issued before transfer of control point / condition → Aircraft descends into level of overflying traffic in Havana airspace → Vertical conflict / LHD occurs (serious exposure to collision)

LEGEND

- Preventive Barrier — Stops the event from occurring
- Recovery / Mitigation Barrier — Reduces consequences if event occurs
- Hazardous Event — Undesired event that may lead to LHD
- Threat / Consequence — Potential causes or outcomes

KEY SAFETY MESSAGE

An aircraft being on the frequency of an ATC unit does not, by itself, mean that responsibility for control of the aircraft has transferred to that unit.

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Corrective Action: Kingston–Habana LOA Revision

Turning the Hazard into a Defined Transfer Arrangement

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1 What Changed

For recurring southbound arrivals, the revised LOA established predetermined routing and crossing-level conditions while Habana ACC retains control responsibility.

MKJP — Norman Manley

- Via A/UA301, L/UL347 or L/UL599
- Cross EMABU, VIKRO or DAVOL at **FL310**
- Unless otherwise coordinated

MKBS — Ian Fleming

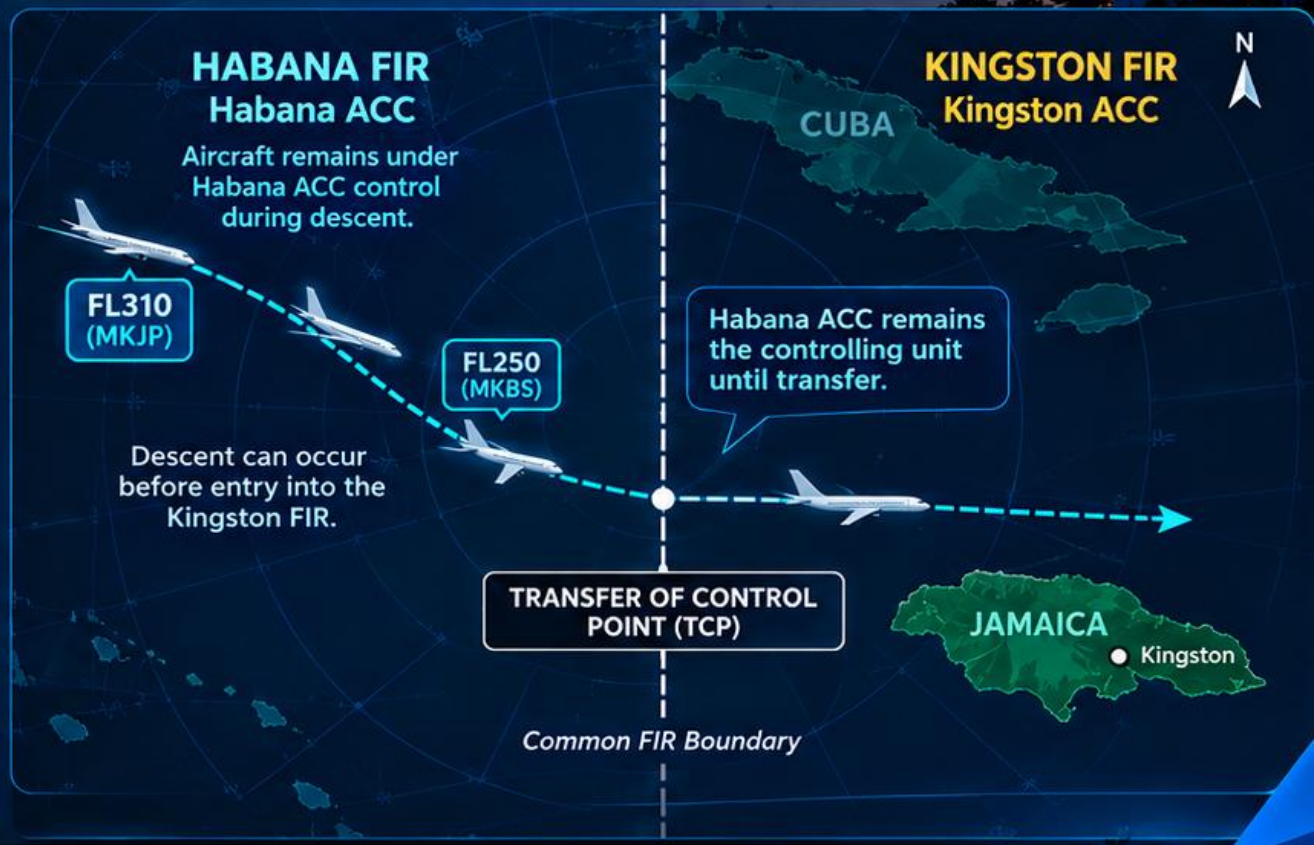
- Via A/UA301 or L/UL347
- Cross EMABU or DAVOL at **FL250**
- Unless otherwise coordinated

2 Why This Matters

- Descent can occur before entry into the Kingston FIR.
- Habana ACC remains the controlling unit until transfer.
- The concept extends an arrangement already used for MKJS.

3 Additional Safeguard

No altitude/flight-level change within five minutes' flying time of the common boundary without prior approval from the receiving ACC.



KEY TAKEAWAY

A recurring tactical requirement was converted into a **predetermined coordination arrangement.**

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From Procedural Knowledge to Demonstrated Competence

Knowledge of procedures must be demonstrated in practice to ensure safe and consistent application.

ICAO Guidance

ICAO Doc 10056

Manual on Air Traffic Controller Competency-based Training and Assessment

"Competence is the consistent application of knowledge, skills and attitudes to the standard required for safe and efficient operations."



Scenario-Based Assessment

Use realistic, operationally relevant scenarios to assess the correct application of procedures, including:

- Timing and coordination of communication and control transfers.
- Adherence to LOA provisions.
- Recognition and management of non-standard situations.
- Decision-making and situational awareness.



Practice builds proficiency. Scenarios build confidence.

Key Competencies

Relevant competencies from Doc 10056 include:

- **Operational Expertise** — Apply procedures accurately and effectively.
- **Situational Awareness** — Detect and understand developing situations.
- **Communication** — Exchange clear, concise and unambiguous information.
- **Teamwork and Coordination** — Work effectively with adjacent units.
- **Problem Solving and Decision-Making** — Manage unexpected situations and maintain safety.

Role of the OJTI

On-the-Job Training Instructors play a critical role by:

- Providing structured, scenario-based training opportunities.
- Observing and assessing the practical application of procedures.
- Reinforcing correct behaviours and addressing gaps.
- Building confidence for real-time operations.



Competence in practice keeps our skies safe.

KEY MESSAGE

Procedures save lives when they are **understood**, **practised** and **demonstrated** in **real operational situations.**

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What Should the Region Consider?

Building on the Kingston FIR experience, there are several opportunities to further enhance safety across the region.

1 Competency-Based Training and Assessment

- Strengthen CBTA for transfer of control and handover scenarios.
- Use realistic, data-driven scenarios including cross-border operations.



Train for real-world complexity.

2 Strengthen OJTI Safeguards

- Reinforce OJTI oversight for sector handovers.
- Use targeted scenarios to assess practical application and decision-making in live and simulated environments.



Supervised experience builds safer decisions.

3 Review and Update LOAs

- Encourage periodic review of LOAs, particularly at FIR interfaces.
- Consider explicit provisions to address communication transfer, control transfer and level restrictions.



Clear agreements reduce risk.

4 Review Similar FIR Interfaces

- Share lessons learned and review procedures at other FIR boundaries with similar operational characterristics.
- Identify and address potential vulnerabilities before they result in incidents.



Common challenges call for a regional view.

5 Support with Technology and HMI

- Explore HMI enhancements to better indicate control status and handover cues.
- Consider alerts or prompts to reduce the risk of premature clearances.



Design can help prevent human error.

6 Use LHD Data Proactively

- Analyse LHD events and precursors across the region to identify trends.
- Share safety information through regional platforms to support continuous learning and improvement.



Data drives better decisions.

KEY MESSAGE

A safer region is achieved through **shared learning, proactive action** and **continuous improvement.**

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Action Requested from the Meeting

We invite the meeting to consider the following actions to further mitigate LHD risk associated with transfer of communication before transfer of control.

1 Note

Note the Kingston FIR experience and the safety implications of early communication transfer.

A shared understanding strengthens regional safety.

2 Recognize

Recognize the value of targeted mitigations through LOA revisions, training and operational safeguards.

Practical solutions make a difference.

3 Reaffirm

Reaffirm the principle that transfer of communication does not mean transfer of control.

A consistent message across the region saves lives.

4 Review

Review if similar risks exist at other FIR interfaces and consider updates to procedures, training and oversight.

Proactive reviews help prevent future events.

5 Share

Share experiences, lessons learned and best practices through regional forums such as CADENA/CANSO.

Together, we build a safer and more resilient region.

ON FREQUENCY ≠ UNDER CONTROL

Clear procedures. Shared understanding. Safer skies.



THANK YOU

Your continued collaboration and support are essential to enhancing safety across our region.

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