International Civil Aviation Organization
Regional Aviation Safety Group - Pan America (RASG-PA)

WORKING PAPER

RASG-PA ESC/38 — WP/09
19/05/23

Thirty-Eighth Regional Aviation Safety Group — Pan America Executive Steering Committee Meeting
(ESC/38)
Lima, Peru, 24 to 25 May 2023

Agenda Item 2: Safety management process within RASG-PA

PILOT PROJECT FOR IMPROVING LANGUAGE PROFICIENCY IN THE AIR TRAFFIC SERVICES OF LATIN AMERICA AND THE CARIBBEAN

(Presented by the Secretariat

SUMMARY

Aviation English proficiency has been identified as a critical area that could affect safety. In several accidents and serious incidents, the lack of clear communication between controllers and pilots has been identified as contributing to safety events.

The data shows that in the Latin American and the Caribbean region, the gap in meeting the minimum language proficiency requirements is still wide; Likewise, the voluntary reports of several air operators point to serious problems in aeronautical communications in several of the region's airports.

Implementing an instruction process to improve the proficiency of the aviation English language in air traffic services is one of the most important measures to reduce the risks related to the lack of language proficiency in communications.

This working paper proposes the implementation of a pilot project to improve the language proficiency of air traffic controllers in Latin America and the Caribbean, supported by RASGPA and the States, seeking to implement a strategy to enhance language proficiency, effective in terms of costs, taking advantage of the economy of scale and in the outcomes to be developed by a specialized institution.

Action	• Included in section 4 of this working paper
Strategic Objective	• Safety
References:	• Annex 1 • Assembly resolution A32-16 • PA RAST 57 Report

1. Introduction

1.1. Since 1998, language proficiency in aeronautical communication has been identified as a critical area that could affect the safety of aviation worldwide. The ICAO Assembly took note of several accidents and incidents where the language proficiency of pilots and air traffic controllers were causal or

contributory factors and formulated Assembly Resolution A32-16 in which the ICAO Council was urged to direct the Air Navigation Commission to consider, with a high level of priority, the matter of English language proficiency and to complete the task of strengthening the relevant provisions of Annexes 1 and 10, with a view to obligating Contracting States to take steps to ensure that air traffic control personnel and flight crews involved in flight operations in airspace where the use of the English language is required were proficient in conducting and comprehending radiotelephony communications in the English language.

1.2. Considering the above, the secretariat presented at PARAST 22 the proposal for the development of a project to support the States of Latin America and the Caribbean to address the lack of language proficiency of air traffic services personnel as a measure to reduce the risk of safety events from communications errors, mainly in those airports or airspaces with significant levels of traffic, and multi-languages communications. In the project's initial presentation, license data related to the air traffic control English proficiency levels were included (see Table I), showing the gap in the number of controllers with the minimum required level.

States	Air Traffic controllers level 4	% air traffic controllers in level 4	Air traffic controllers below level 4	% of air traffic controllers below level 4
Argentina	73	7.14%	911	89.19%
Bolivia	4	4.71%	59	69.41%
Chile	222	43.79%	0	0
Colombia	290	31.32%	601	64.90%
Panamá	62	31.63%	0	24.49%
Paraguay	17	41.46%	0	0
Peru	56	30.11%	2	1.08%
Uruguay	27	28.72%	0	14.89%
Venezuela	49	22.90%	29	13.55%

Table I * License data at 2021

1.3. Following up on the presentation at PARAST, the proposal was submitted for analysis to the RASGPA ESC. One of the observations made at the initial presentation was about the data that would reinforce the need to develop a strategy to improve language proficiency in air traffic services in the Pan American region.

1.4. Following up on the presentation of the project to PARAST and the ESC, the secretariat included data related to communication errors between crews and air traffic services due to the need for more language proficiency.

1.5. Aviation communication errors, mainly those related to the use of English, usually are not reported due to the lack of reporting culture and adequate means for reporting and treating the events; however, some voluntary reporting databases have collected a significant number of events that are related to communication failures from the use of English in aviation.

2. Discussion

2.1. This working paper (WP) included data from the NASA ASRS, including reports made by crews of USA operators. Although the events are unidentified, in several of them, due to their description, they are related to airports in Latin America and the Caribbean, including Colombia, Mexico, Panama, and the Dominican Republic.

2.2. As ASRS is a voluntary reporting database, it depends entirely on the voluntary reports made by the crews or other technical personnel, so chances are that many events have yet to be notified.

2.3. A period of five years (2017-2022) was defined as a representative sample for communication error data; however, the ASRS has more than 15 years of data.

2.4. Nearly 50 events related to language communication failures were identified. In most of the events, the crews reported problems communicating with air traffic services due to the use of English. Appendix A of this WP shows some of the reports.

2.5. The data helps identify that language proficiency issues in aeronautical communications are current and, despite the State and service provider efforts, still, the use of language is a latent situation that could contribute to an incident or accident.

3. Development

3.1. A specialized training process focused on the language used in aeronautical communications would help reduce communication errors. The process should be efficient in terms of costs and effective in the outcome. The secretariat has investigated best practices or actions developed by States or service providers to improve the proficiency of air traffic controllers.

3.2. Among the main actions, the strategy implemented by DECEA of Brazil to improve the level of language proficiency of more than 1,000 air traffic controllers stands out. DECEA developed the program with Embry Riddle, designing a specific aviation English course to take air traffic controllers from Level 3 to Level 4.

3.3. Considering the results obtained by Brazil, it is proposed the development of a pilot project to implement a Pan-American strategy for improving language proficiency under an efficient approach in terms of costs, taking advantage of the economy of scale, and effective in the results by being developed by an institution specialized in language teaching.

3.4. The pilot project will be carried out under a shared cost scheme, with the support of RASGPA and the Latin American and Caribbean States. A "two for one" scheme is proposed. The participating States would allocate the funds per person but would be entitled to double the number of participants of their allocation. The pilot project would require an initial budget by RASGPA of US$ 35,000 and the contribution of the States that will participate in it.

3.5. The investment per person is US$3,500 (maximum), and based on the number of participants, this cost can be decreased. The pilot project will be developed with a maximum of 20 participants.

3.6. Online instruction with synchronous and asynchronous sessions addressing relevant aspects of the English language in air traffic services will take place as part of the process. The course would last ten months and would be designed to enable an air traffic controller in level 3 to reach the minimum required on the ICAO evaluation scale. The aviation English course will be developed by an academic institution demonstrating experience and knowledge in implementing aviation English language programs in air traffic controllers in the Latin American or Caribbean region. The selection of the institution will be based on a tender process.

4. Suggested actions

4.1. The meeting is invited to:

a) Take note of the information presented in this working paper;

b) support the Pilot Project for improving language proficiency in Latin America and the Caribbean air traffic services,

c) approve the funds for the development of the pilot project; and

d) promote the participation of States in the project for the improvement of language proficiency in air traffic services in Latin America and the Caribbean.

APPENDIX A

Safety event reports identifying lack of language proficiency in aeronautical communications

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
201706	EHAM Airport	FO	VMC	Tower EHAM	Air Carrier	IFR	After landing and receiving **taxi instructions which were difficult to clearly understand due to the ground controllers accent and rapid speech rate**. We proceeded to taxi according to what we read back to ground control…**. Strong accent and rapid talking rate from controller with fatigue from all nighter on our part. Double question controllers**.
201709	ZZZZ. Airport	FO	VMC	Center ZZZZ	Air Carrier	IFR	**On departure from ZZZZ the controller was talking in a very low tone and his English was not too clear**. He said we were number three aircraft going to the same destination, and same altitude, and climb to FL250. …….
201809	MUVR. Airport	FO	VMC	Center MUFH	Air Carrier	IFR	Departed MUVR on time with initial clearance to climb to FL 200. I was PM (Pilot Monitoring) and FO (First Officer) was flying when we contacted Havana ARTCC during the climb (approximately climbing through

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							FL080) Havana instructed us to climb to FL 200 and I visually confirmed the correct altitude was still set in the altitude window. I then diverted my attention to WSI on the iPad and didn't notice the FO dial 22,000 in the altitude window as he thought he heard ATC clear us to FL 220. ….. **Contributing factors to this event were language difficulties,** expectation bias and failure to follow SOPs regarding pointing to a new altitude set in the window and verbally confirming with the other pilot. ….
201810	MUFH. ARTCC	FO	VMC	Center MUFH	Air Carrier	IFR	At FL360 over Cuba flying northbound, my FO (First Officer) was leaving the cockpit on a restroom break before our planned descent when Havana Center began issuing instructions 'for spacing.' I understood a left turn to heading 330 which was approximately a 50 degree west course change. **I asked the Controller four times to repeat the rest of the clearance. He was extremely difficult to understand,** and I thought he was either

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							telling me about traffic at FL350 (which might explain the hard spacing turn), or maybe he was telling me to descend to FL350, descent rate to keep them apart. That's what I think he tried to do in retrospect. **In the moment, even deciphering his English was a huge challenge (and I'm semi-fluent in Spanish).** It is my experience that aircraft …..
201812	MPTO. Airport	FO	VMC	Tower MPTO	Air Carrier	IFR	Sitting number one for takeoff while holding short of Rwy 03R in MPTO, we believed we heard in very broken English 'line up and wait 03R, be ready for an immediate'. I saw Aircraft Y approaching and thought it will be tight but doable. I responded to ATC with 'Line up and wait 03R, and we'll be ready'. **Practically all the ATC communications were in Spanish, except for our clearance. This makes it very difficult to have situational awareness. We heard an ATC transmission while we were taking the runway in Spanish**

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							that included '[our company callsign]' and had intensity in his voice (I can only assume this was the Aircraft Y pilot asking what the heck was going on with [our company callsign] taking the runway). Then ATC said something that seemed like a takeoff clearance. At this time the Captain was straightening the aircraft onto the runway centerline. I asked ATC 'say again.' There was no immediate response so the Captain keyed the mic and said 'confirm cleared for takeoff.' We both heard 'affirmative.' We proceeded with the takeoff roll. I was flying pilot and the Captain was non flying pilot. While we were on the takeoff roll **we heard in Spanish 'Aircraft Y... [unintelligible]...** Going around.' Once we got in the air around 800 ft AGL, ATC told us that our instruction was to 'line up and wait after landing traffic and be ready for immediate.' 'affirmative' after the Captain asked to 'confirm cleared for

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							takeoff'? I believe the majority of the transmissions in Spanish played a large role in this event due to not giving us complete situational awareness. **Also the controller's English was very poor and they spoke fast making it difficult to understand.** I personally feel that ATC made a mistake and was trying to put the blame on us after their bad decision to issue us a takeoff clearance.
201902	CYUL. Airport	PQ	VMC	TRACON CYUL	Air Carrier	IFR	On final approach, aircraft started a violent uncommanded right roll. The autopilot disengaged and we got an 'autopilot fail' caution message. …. Wake turbulence from a B777 7 miles ahead. Regained manual control and stayed high of glide slope to avoided further wake encounters. ATC should have warned us we were following a heavy. **Also ATC and the other aircraft were conversing in French so we were not even aware of a heavy on freq. All aircraft and ATC conversing in one language would have**

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							reduced the possibility of this happening.
201905	ZZZZ. Airport	FO	VMC	Tower ZZZZ	Air Carrier	IFR	We did a windshear escape procedure due to windshear for Runway XXR in ZZZZ. Safest course of action was to proceed to our designated alternate ZZZZ1. Notified Dispatch that we were diverting to ZZZZ1. …. **We elected to go to ZZZZ1 as our workload, language barrier**, and most important our fuel state, was the safest course of action to take. As we approached the ZZZZ1 airport, controllers notified us that the airport was closed, and could not take us. We were unsure as to the reason why the airport was closed to us (maybe ramp space was at maximum capacity). They stated the only way we can land was to [advise ATC]. Our fuel state did not allow for another alternate. We were left with no other viable option. So I [advised ATC]. Air Traffic Control made no effort to bring us in in a timely manner. We had no clear

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							instructions as to sequence for landing. ATC made no effort to give us a clearance. Again, **based on the fact [that] we had to [advise ATC], the communication difficulties (language barrier), [and] aircraft fuel state, I felt the safest course of action was to [advise ATC] for fuel, as to the uncertainty and doubt of vectoring and** landing sequence. At the time of the fuel declaration, we had about 45 minutes of fuel onboard. We landed with about 7,400 pounds and a Low Fuel Quantity alert on the right wing.We landed safely and taxied to a remote stand.
201907	MPTO. Airport	FO	VMC	Tower MPTO	Air Carrier	IFR	I checked in with Tower on the ILS 03R. They said 'Continue 03R'. **I had trouble understanding the Controller** and said 'Understand cleared to land 3R?' They said 'Negative, continue for 3R'. I acknowledged the 'continue.' **There was a lot of communications in two different languages and the English was challenging to**

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							understand. Approaching 1000 feet we were fully configured…
202002	ZZZZ. Airport	FO	VMC	Tower ZZZZ	Air Carrier	IFR	On approach to ZZZZ Runway X received a GPWS 'Too Low Flaps' alert. Executed successful go around. A combination of factors all taking place in a relatively short time span created a distraction that resulted in omission of necessary procedures allowing proper configuration of aircraft for landing. **ATC interruptions for requested position reports along the approach, heavy accent from foreign language requiring repetitive communications increasing workload, steep descent due to terrain separation** requiring intercepting the glide path from above and extending the landing gear earlier than normal to increase drag resulting in a disruption of normal flows. …
202201	VABF. ARTCC	FO	IMC	Center VABF	Air Carrier	IFR	On arrival we were assigned 3,000 feet. 4 crew members heard the same instructions. ATC delayed our turn from downwind to base to final. I

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							configured accordingly in anticipation of a short approach. At some point, we received a terrain warning. I immediately turned right and climbed as I deemed appropriate, ATC never assigned a heading and simply advised us that we should be at 3,800 feet. We kept asking for a heading and approach clearance at that point. He seemed a bit confused and I believe he forgot about us and never monitored our position on final. We had a stable final approach and landing. I called the tower to address the approach controllers clearance and they said it was normal and it was not an issue, of course this is what's I heard; **a lack of communication and a different English dialect may have been a distinct factor in this event.**

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
202212	ZZZZ.ARTCC	FO	VMC	Center ZZZZ	Air Carrier	IFR	I was the pilot monitoring (PM). pilot flying (PF) was the Captain. Received an ANTI ICE LEAK ENG R EICAS Message displayed climbing through approximately 10,500 ft. … discussed possible scenarios to be warry. **ZZZZ ATC has a very difficult time understanding requests past basic communication. We discussed this as part of our threat forward briefing. Unlike some airports, there is no way for pilots to talk** directly to the firefighters checking the airplane other than hand signals. At ZZZZ, the only way to communicate with the firefighters is through the Tower Controller. Depth of English can sometimes be unpredictable. **Controllers switch between English and Spanish and their accent is very unusual**. ….
202212	SKED. ARTCC	FO	VMC	Center SKED	Air Carrier	IFR	The following event occurred on approach to landing in Bogota Colombia. Prior to beginning the descent, the captain and I had briefed the ISVAT3E arrival into Bogota. We were

Date	Locale Reference	State Reference	Flight Conditions	ATC / Advisory	Aircraft Operator	Flight Plan	Narrative
							expecting an approach of some kind to runway 13 left…….Multiple factors caused this temporary loss of SA (Situational Awareness). I have less than 100 hours in the airplane. I have never operated an airplane into South America. The STAR and approach plates are over-crowded with waypoints, restrictions for altitudes and speeds, and terrain markings. An approach change near top of descent combined with an immediate need for left deviations resulted in high task saturation and high aircraft altitude at night in unfamiliar airspace. **There is an ATC language barrier, soft-spoken controllers with accents. Our manuals include notes that this region of the world, ATC may clear you to an unsafe altitude and the flight crew is responsible for verifying terrain clearance** - ….

— END —