International Civil Aviation Organization
North American, Central American and Caribbean Office

WORKING PAPER

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Agenda Item 5: **NAM/CAR Regional Safety/Air Navigation Implementation**
5.2 **Safety Implementation Matters**

AERONAUTICAL TRAINING AND *VIRTUALITY* IN TIMES OF COVID-19

(Presented by the Rapporteur and Vice-Rapporteur of the NAM/CAR/CATC/WG)

EXECUTIVE SUMMARY
The purpose of this working paper is to present the efforts made by the different training centres of the NAM/CAR Regions (Members of the NAM/CAR/CATC/WG), to overcome difficulties caused by the COVID-19 pandemic, in order to guarantee the continuity of the training processes aimed at professionals involved in the development of civil aviation and proactively mitigate risks that affect operational safety that could arise due to the interruption of face-to-face training.

Action:	The suggested action is contained under Section 4 of this working paper.
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Security & Facilitation • Economic Development of Air Transport • Environmental Protection
References:	• Doc 9868, Procedures for Air Navigation Services – Training, Third Edition, 2020 • Doc 9941, TRAINAIR PLUS, Training Development Guide — Competency-based Training Methodology, first edition, 2011. • Training development guide competency training methodology - Guide for the development of online courses, first edition, 2019

1.   Introduction

1.1   The need and urgency that the health crisis brought with it to contain the COVID-19 pandemic, produced a strong impact on aeronautical activity, in general, with serious consequences for operators, passengers and activities related to the air transport service. This resulted in the paralysis or significant decrease in activities, forcing governments to close the doors of the different Civil Aviation Training Centres (CATCs) in the world, as a measure to mitigate the effects of the pandemic, thus affecting 100% of professionals involved in the development of Civil Aviation.

1.2   Suddenly, the projections for the development of the activity experienced in previous years were severely affected, for which both the Aeronautical Authorities and ICAO itself intervened by dictating standards, regulations, work schedules and statistics for a better understanding of the problem in order to mitigate the inevitable consequences.

1.3   Simultaneously, the training centres that make up the NAM/CAR Civil Aviation Training Centres Working Group (NAM/CAR/CATC/WG) analysed and implemented mechanisms to enable the adoption of alternative teaching and learning methods in order to maintain the competency attributes of aeronautical personnel, and additionally established biosafety protocols with the intention of gradually rehabilitating face-to-face training.

2.   Background

2.1   The challenge for the training centres during the quarantine period was to maintain the vitality of aeronautical training and promote the development of skills, as well as their maintenance through recurrent training.

2.2   It should be noted that most aeronautical professionals and training centres, in times of pandemic, were not in equal conditions to promote virtual education. The obstacles were multiple, from the low bandwidth in Internet connectivity, the lack of virtual content aligned with the instructional design of the courses, the lack of regulations of the Civil Aviation Authorities, so that the instruction in virtual modality, including a staff of instructors unprepared to face this new normality.

2.3   Until the year 2020, in general terms, aviation training in virtual mode was reserved for isolated experiences that provided innovative teaching and learning strategies in a complementary manner to face-to-face education. This represented an unprecedented challenge, since most of the instructors had to adapt to work in virtual environments and at the same time, they were responsible for teaching their students to manage in that space.

2.4   Most CATCs, during the pandemic period, had three fundamental partners, namely: course preparers, instructors, and *virtuality*, understanding the latter as all the human, technological, and documentary resources necessary to provide instruction in the non-face-to-face mode.

2.5   It was in this context that training centres undertook activities to determine a viable path to overcome the challenges of how to resume teaching and learning in such a radically different environment.

3.   Overview

3.1   The lack of references to similar crises in the past made it difficult to predict what might happen in the immediate future, which led training centres to take advantage of the quarantine period to train a significant number of instructors in the development of instructional skills applicable to virtual learning environments.

3.2   In line with the activities to develop the capacities of the instructors, it was also necessary to analyse in depth the training material of the conventional and standardized courses, in order to determine the feasibility of adapting that didactic content to distance learning.

3.3   The results obtained showed that the courses that required specialized software or equipment to carry out practices in simulated environments applicable to real environments could only be taught in the face-to-face mode.

3.4   However, all those courses that had a broad theoretical component were migrated, implementing various ways to achieve the design, production, and delivery of virtual training programmes.

3.5   The evolution in the offer of face-to-face courses was accompanied by a series of mitigating factors in relation to the pandemic, such as: the maintenance of social distance in classrooms and simulators, the possibility of staggering class shifts, the reduction in the degree of face-to-face interaction between participants and people outside the course, the inclusion of distance classes, administrative control provisions, in addition to the geographical isolation of the host location. Each course began with an awareness talk for the participants, generating a culture of prevention and self-care during their stay at the centre.

4.   The NAM/CAR Civil Aviation Training Centres Working Group (NAM/CAR/CATC/WG)

4.1   Despite all the obstacles and challenges, the NAM/CAR/CATC/WG grew during the pandemic, with the entry of some new members linked to the academic area.

4.2   The inclusion of Universities in the Group has allowed the formation of bilateral alliances with Training Centres of the civil aviation authorities, which potentially means an advance in the offer of aeronautical training. This inclusión has been possible thanks to the Declaration of intent (DoI) for the Regional Collaboration of training among the Civil Aviation Training Centres of the North America (NAM) Central America and Caribbean (CAR) Regions, which has been signed by the following aviation training institutions in the NAM/CAR Regions:

- • Signed in Mexico City, Mexico on 7 June 2017 by:
  - o *Capital Humano Corporación de la Aviación Civil (CACSA)* of Cuba
  - o Civil Aviation Training Institute (CAATI) of Jamaica
  - o *Centro Internacional de Instrucción de Aeropuertos y Servicios Auxiliares, "Ing. Roberto Kobeh González" (CIIASA)* of Mexico
- • Signed in Ottawa, Canada on 31 July 2018 by:
  - o Barbados Civil Aviation Department (CAD)
  - o United States Federal Aviation Administration (FAA)
  - o *Instituto Dominicano de Aviación Civil (IDAC)* of Dominican Republic
  - o Trinidad and Tobago Civil Aviation Authority (TTCAA)
  - o *Corporación Centroamericana de Servicios de Navegación Aérea (COCESNA)*
- • Signed in Querétaro, México on 21 August 2019 by:
  - o *Universidad Aeronáutica en Querétaro (UNAQ)* of Mexico
- • Signed in Querétaro, México on 11 September 2019 by:
  - o *Universidad Nacional Pedro Henríquez Ureña (UNPHU)* of Dominican Republic
- • Signed in Santo Domingo, Dominican Republic on 10 May 2021 by:
  - o *Cuerpo Especializado en Seguridad Aeroportuaria y de la Aviación Civil (CESAC)* of Dominican Republic
- • Signed in Daytona Beach, United States on 27 September 2021 by:
  - o Embry-Riddle Aeronautical University of United States
- • Signed in Tegucigalpa, Honduras on 22 April 2022 by:
  - o *Universidad Nacional Autónoma de Honduras* (UNAH) of Honduras
- • In the third quarter of 2022, a signature has been planned with the following training institution:
  - o *Universidad Autónoma de Centroamérica* (UACA) of Costa Rica

4.3   This reinforces the importance of the commitment and participation of training centres in regional activities, particularly in the meetings of the Working Group, to allow the development of synergistic actions for the benefit of the NAM/CAR Regions.

4.4   On the other hand, it is still perceived that due priority must be assigned to civil aviation training centres, since aeronautical training, more than a requirement to be met, constitutes a true pillar on which aviation systems must be based.

4.5   It is therefore up to the Civil Aviation Authorities to promote the development of their capabilities and, consequently, provide their training centres with adequate resources to fulfil their functions, also providing them with opportunities to develop strategies that allow the sustainable evolution of aviation at the regional level.

5. **Conclusions**

5.1 Aviation training cannot stop during an emergency because it is a fundamental part of maintaining operational safety; as well as, an essential part of recovery in a crisis, since it provides normality, a sense of routine, knowledge and skills necessary for development in the workplace.

5.2 The Directors are urged to provide support to aeronautical training centres to expand the participation of their representatives in future meetings to be held, in order to generate collective awareness and a sense of adaptability to conditions that require it.

6. **Action required**

6.1 The Directors are invited to:

a) support the activities of the civil aviation training centres of their States, providing them with the appropriate resources;

b) support the participation of the representatives of the CATCs in the meetings of the NAM/CAR/CATC/WG, including the next meeting, scheduled for the period from September 6 to 8 in Mexico;

c) support future NAM/CAR/CATC/WG coordination initiatives with the ICAO Global Aviation Training (GAT) Office to:

i. The development of guides to guide the design of conventional courses that can be implemented in the virtual modality;

ii. Design instruction to develop skills in course developers for the development of instructional designs and content production applicable to courses taught in virtual mode; and

iii. Prepare a guide that defines the documentary, regulatory and technical requirements for the implementation of aviation training solutions in virtual mode.

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