



WORKING PAPER

ASSEMBLY — 41ST SESSION

EXECUTIVE COMMITTEE

Agenda Item 26: ICAO Civil Aviation Training and Capacity Building

ICAO CIVIL AVIATION TRAINING AND CAPACITY BUILDING

(Presented by the Council of ICAO)

EXECUTIVE SUMMARY

The Working Paper provides a summary of activities of the ICAO Civil Aviation Training since the 40th Session of the Assembly. It also reports on the achievements of the TRAINAIR PLUS Programme and the Aviation Security Training Centre network, the development of ICAO-recognized training packages, collaborative endeavours, as well other training priorities and projects to support Member States during the next triennium, such as the resource mobilization project for the Civil Aviation Master Planning training course and training support to Implementation Packages. This paper also presents financial information from 2019 to 2021 in Appendix A, the training evaluation process in Appendix B, as well as a Statistical Abstract on all ICAO training activities that were implemented over the 2019-2021 triennium in Appendix C.

Action: The Assembly is invited to:

- a) encourage Member States to support ICAO in the pursuit of training collaborations across all regions;
- b) recommend Member States to benefit from the expanded ICAO training portfolio using the latest technology and applications in various learning formats; and
- c) encourage the Council to actively engage in promoting ICAO training activities to Member States in order to increase regional outreach.

<i>Strategic Objectives:</i>	This working paper relates to all Strategic Objectives and Supporting Implementation Strategies.
<i>Financial implications:</i>	The activities referred to in the attached Assembly working paper will be undertaken subject to the resources available in the 2023-2025 Regular Programme Budget and under the GAT cost-recovery mechanism.
<i>References:</i>	Staff Notice no. 5783 ICAO Civil Aviation Training Policy, dated 25 May 2016 TRAINAIR PLUS Operations Manual (TPOM) (Doc 10052) Competency-based Training Methodology (Doc 9941)

1. INTRODUCTION

1.1 The paper reports on the Global Aviation Training (GAT) activities implemented during the triennium 2019-2021, including, inter alia, achievements of the TRAINAIR PLUS Programme (TPP), the Aviation Security Training Centres (ASTC) Network, the development of ICAO-recognized training packages, collaborative endeavours, as well new training priorities and projects in the next triennium to support Member States. This paper also presents financial information from 2019 to 2021 in Appendix A, the training evaluation process in Appendix B, as well as a Statistical Abstract on all ICAO training activities that were implemented over the 2019-2021 triennium in Appendix C.

1.2 On 26 November 2019, the Secretary General approved the integration of GAT as a Section, under the Technical Cooperation Bureau (TCB), per Staff Notice no. 5783. As part of this integration and per the ICAO *Civil Aviation Training Policy*, which establishes that all ICAO aviation training activities shall be planned, managed and coordinated by GAT to ensure efficient and effective implementation, TCB fellowship activities are being migrated from TCB's Field Operations Section (FOS) to GAT.

1.3 The Air Transport Bureau (ATB) collaborates with GAT to recognize new ASTCs according to specific criteria established by GAT and ATB, and to harmonize strategic and operational aspects regarding the management of the Aviation Security Training Programme.

2. GLOBAL AVIATION TRAINING ACHIEVEMENTS

2.1 TRAINAIR PLUS Programme (TPP) Activities

2.1.1 Due to the outbreak of the COVID-19 pandemic, GAT faced significant operational and financial issues that have been affecting its self-sustainability. Since March 2020, GAT recorded a drop in classroom training demand by approximately 90 per cent, which led to the urgent development and implementation of a comprehensive plan to mitigate the various risks associated to its activities. Such plan was based on the rapid development of a wide range of courses to assist Member States during the pandemic and recovery phase. The main mitigation activities implemented included: the development of online courses on urgent topics, in collaboration with ICAO Bureaus, to support the aviation sector in the post-crisis recovery; the conversion of existing classroom courses into virtual classrooms; the translation of online courses in different ICAO languages based on high demand; the conduct of weekly webinars to the industry to increase awareness on ICAO's COVID-19 mitigation measures; the development of targeted partnerships on urgent post-pandemic recovery topics; and the marketing and promotional strategies for online and virtual courses.

2.1.2 Since 2019, GAT has conducted over 90 assessments, initial and reassessments, of training organizations to first validate their acceptance as TPP Members, and then to maintain the validity of their membership. Currently an average of 30 training organizations is assessed each year to analyse and determine the capability of TPP Members to develop and deliver ICAO-harmonized training packages.

2.1.3 The implementation of competency-based training courses supports human resources capacity-building of Member States in all ICAO Strategic Objectives. ICAO Bureaus and Regional Offices, TPP Members, the industry, and academic institutions have been working with GAT to develop courses or have existing ones reviewed and recognized by ICAO. Since 2019, 22 ICAO Training Packages (ITPs) were developed, 13 ITPs were translated, and 32 ITPs were transitioned from classroom to virtual classroom deliveries. In addition, 18 Member-ITPs (M-ITPs) and 57 Standardized Training Packages (STPs) were developed by TPP Members and recognized by ICAO; and 25 Partnership Training

Packages (PTPs) were accepted by ICAO. There are currently 8 ITPs, 5 M-ITPs, 6 PTPs, and 39 STPs under development.

2.1.4 As of 31 December 2021, TPP has implemented training activities in 55 ICAO Member States, and the TPP network is composed of 93 Members and 20 Partners. There are currently 36 members of the ASTC Network operating in all 7 ICAO regions, with 1 new ICAO-endorsed ASTC having joined the Network in the triennium 2019-2021. Of the 36 current members, 15 are also members of the TPP Network.

2.1.5 The ICAO Course Catalogue is composed of over 300 courses. Since 2019, 1344 ICAO-recognized courses have been delivered globally with an estimated 29,225 trainees in attendance. A total of 195 instructors, 33 Instructional Systems Design (ISD) validators, and 5 assessors are qualified and available on the TPEMS roster. The current ICAO online training portfolio comprises 38 courses and around 12,878 trainees have completed ICAO online courses.

2.1.6 GAT promotes digital transformation and innovation in training with the focus on more accessible, innovative and environment-friendly training. The TRAINAIR PLUS Electronic Management System (TPEMS) is the main platform for GAT to manage its training activities. TPEMS version 2.0 was launched in January 2021 with enhanced interface and efficiency; meanwhile, new functions were incorporated in the system, such as the post-training evaluation process, course review process, alignment with the new TPP framework, streamlined operational processes, and the Aviation Training and Education Directory (ATED). In addition, GAT hosts ICAO online courses on a robust Learning Management System (LMS). The interactive online courses were designed with modern authoring tools and applications to build and further develop aviation professional's competencies.

2.1.7 Aviation security training is managed by the Implementation Support and Development Section - Security (ISD-SEC) in ATB. ISD-SEC manages the development and maintenance of 6 aviation security training courses and 8 aviation security workshops. In order to provide aviation security training to all Member States aligned with the ICAO Global Aviation Security Plan (GASeP), ISD-SEC manages the ICAO ASTC Network. In 2020 and 2021 combined, despite the restrictions due to the COVID-19 pandemic, ISD-SEC managed the delivery of 19 aviation security courses, 25 aviation security workshops, and 3 ICAO aviation security instructor certification sessions. The COVID-19 General Guidance for ICAO-sponsored AVSEC Classroom Training Events was developed to provide ASTCs with global guidance for safely conducting classroom-training activities, in accordance with their national health requirements. There were a total of 47 ICAO-sponsored aviation security training events conducted through the ASTC Network, including 23 virtual-class and 24 in-person AVSEC training activities, with 576 AVSEC specialists from a total of 92 Member States having benefitted from such training. Additionally, Facilitation and Traveller Identification Programme (TRIP) training is provided by ATB in collaboration with GAT.

2.1.8 To encourage accessibility to ICAO training, GAT has implemented pricing initiatives to encourage personnel from civil aviation regulatory bodies to benefit from ICAO's portfolio of courses. Preferential pricing was provided for course fees for trainees from civil aviation Regulatory bodies versus those from non-Regulatory bodies, as well as pricing incentives for trainees from Least Developing Countries (LDCs) and female aviation professionals, as part of ICAO's Gender Equality initiative.

2.1.9 In 2019, GAT completed its first resource mobilization training project for senior and middle managers of civil aviation authorities. Funded by China's South-South Cooperation Assistance Fund (SSCAF) for USD 2 million. The course awarded 865 participants from 124 States and 6 regional organizations with full scholarships to attend 38 training sessions held globally and is now being deployed as an ITP in all ICAO languages.

2.1.10 As a result of the first project, the SSCAF contributed USD 1.62 million to support the recovery of Developing States from the COVID-19 pandemic by developing and delivering a Civil Aviation Master Planning (CAMP) training course. This ITP will enable relevant State personnel to develop and update a Civil Aviation Master Plan. It will be offered to 500 State nominees through 20 global sessions in all ICAO languages starting June 2022 following the validation delivery scheduled in April 2022. The CAMP project will run until February 2023.

2.2 **Partnerships with Academic Institutions and International Organizations**

2.2.1 Training partnerships with tertiary education providers, international organizations, and industry companies are pursued to the extent they address the evolving needs of the Member States, and ensure continued relevance, accessibility, and optimum training solutions in a competitive pricing model. Thanks to partnerships GAT has been able to introduce more training programmes for the Member States across all regions taking advantage of their development capacities and expertise. Collaborations with Academic Institutions in particular contribute to the attraction, training, and retention of current and future aviation professionals. Since 2019, GAT has established 13 additional collaborations that encompass 34 PTPs spanning from online courses, academic certificates, professional designations, academic and professional Master's degrees, and academic Diplomas in English, French, Spanish and Russian. One of the latest achievements in partnership with Airport Council International (ACI) is the expansion of the TPP scope by awarding a dual ICAO-ACI recognition process for training organizations that are either the training arms of airports or deliver aerodromes training.

2.3 **Gender Equality Initiative**

2.3.1 In March 2021, GAT launched an initiative to empower prospective and current female professionals by offering them a discount of 50% on select ICAO online courses and virtual sessions. The aim of this initiative was to help women further develop their technical skills, and potentially contribute to advancing their educational and career pursuits in aviation. In addition, GAT received support of this initiative through resource mobilization efforts to optimize outreach and female engagement. In May 2021, the United States generously funded training on select ICAO online courses and select virtual sessions for women aviation professionals in all 46 LDCs. Overall, over 525 female trainees from 83 States have benefitted from GAT's Gender Equality Initiative, thereby representing approximately 43% of ICAO Member States. This initiative runs until 31 December 2021.

2.4 **Implementation Packages (iPacks)**

2.4.1 GAT has contributed to the development of Implementation Packages (iPacks) in 2020 and has since developed the training components, which have been incorporated in the following iPacks. These training components are comprised on virtual and online courses, and were integrated in 10 iPacks, in topics such as: Aviation Safety Risk Management related to COVID-19 for CAAs; Aerodrome Restart; Strengthening National Air Transport Facilitation Committees for the Restart and the Resilience of Civil Aviation; Establishing a Public Health Corridor; COVID-19 Aviation Security Quality Control Oversight; Establishing a Regulatory Framework for Unmanned Aircraft Systems (UAS); Preparing for USOAP CMA Activities; and Preparing a National Aviation Safety Plan.

3. **ICAO TRAINING ACTIVITIES FOR THE NEXT TRIENNIUM**

3.1 TPP membership is expected to reach around 120 by 2024. Consequently, GAT is expected to conduct an average of 36 assessments of training organizations yearly, which includes reassessments and new assessments. A new TPP Framework entered into force in 2021. With this new Framework, TPP Members can reduce their membership cost by having the possibility of delivering any

ITP within the growing library of available courses, in various formats (i.e., face-to-face, virtual classroom, etc.).

3.2 Twelve new courses are developed annually by ICAO while 20 new courses are expected to be developed yearly by TPP Members. An average of 10 000 trainees annually are expected to successfully complete ICAO training in various learning formats in the triennium.

3.3 Under the Working Arrangements between GAT and ATB for the Harmonization of the ICAO Aviation Security Training Programme, the coordination of the ASTC Network remains under the purview of ISD-SEC. According to the aforementioned working arrangements, any new applicants to the ASTC Network must remain an active TPP Member, as it was the case for the new ASTC recognition of a training centre in Bogota, Colombia (*Centro de Estudios Aeronáuticos – CEA*, February 2022). ISD-SEC will continue conducting AVSEC-specific assessments following a training centre's recognition as a TPP Member. In addition, the Secretariat recognizes the need to continue updating existing training to align with the current iteration of Annex 17 – Security, the security related SARPs of Annex 9 – Facilitation, and the ICAO Aviation Security Manual (Doc 8973 – Restricted), and to develop new aviation security and facilitation training that addresses gaps in the current portfolio as well as new and emerging threats. Going forward, the Secretariat will continue to provide at least one ICAO-sponsored training event annually at each of the ASTCs.

3.4 Following the Council's endorsement of GAT's efforts to enhance gender equality and inclusiveness through flexible pricing and subsidized training, GAT will continue developing new training initiatives throughout the triennium to narrow gender imbalance in aviation, in line with ICAO's Gender Equality Programme and the United Nations Sustainable Development Goal (UNSDG) 5.

3.5 In addition, GAT has resumed the organization of physical events in 2022 as governments ease restrictions on international travel and will continue to do so in the next triennium with the ICAO *Global Implementation Support Symposium* (GISS), which merges ICAO's *World Aviation Forum*, *Global Aviation Cooperation Symposium* and *Global Aviation Training and TRAINAIR PLUS Symposium*. The aim of this event is to highlight ICAO's latest digital tools, key initiatives, and collaborative endeavours to support aviation recovery, innovation, resilience, sustainable development and operational solutions beyond the COVID-19 pandemic, and to support the realization of the UNSDG set in the UN 2030 Agenda and ICAO's *No Country Left Behind* (NCLB) initiative.

3.6 GAT has partnered with the Civil Aviation Authority of Singapore (CAAS) to develop and deliver the ICAO-Singapore Directors-General of Civil Aviation (DGCAs) Programme on Aviation Resilience, to provide Directors General and other decision-making managers within Civil Aviation Authorities with the competencies to drive the recovery of global aviation from the impacts of COVID-19, consistent with guidelines developed by ICAO Council Aviation Recovery Task Force, and the main outcomes of the 2021 ICAO High-Level Conference on COVID-19. The Programme was launched in Singapore in May 2022 with two more sessions scheduled in 2022.

4. CONCLUSION

4.1 During this triennium, GAT will focus its operations on the achievement of the following strategic objectives to meet the evolving training needs of the aviation sector: increased productivity, leveraging technology, competitive pricing, consistency in quality, customer orientation, and expansion of partnerships (C-WP/15088 refers).

APPENDIX A

**GAT ACTUAL FINANCIAL INFORMATION
2019-2021**

	2019			2020			2021		
	Revenue	Expense	Surplus	Revenue	Expense	Surplus	Revenue	Expense	Surplus
Training Design & Development	1,880	1,234	646	1,384	934	449	1,793	1,129	664
TRAINAIR PLUS Programme	4,012	3,969	43	3,984	3,977	7	4,044	4,625	(580)
GAT Results	5,892	5,203	689	5,368	4,911	457	5,838	5,754	84

(IN THOUSANDS OF CANADIAN DOLLARS)

APPENDIX B

EVALUATION REPORT 2019 -2021

Overview

In 2018, the automated training evaluation process through the TRAINAIR PLUS Electronic Management System (TPEMS) was launched for the course delivery evaluation of all ICAO Training Packages (ITPs). Participant lists, grades, evaluation questionnaires, and instructors' remarks are integrated with the process. This automation greatly reduces the workload of instructors for course delivery and enhances the validity and reliability of training evaluation. In addition, all ITPs are gradually undergoing an effectiveness analysis following the implementation of the Post-training Evaluation (PTE) methodology.

Scope of ICAO training evaluation

The Global Aviation Training Section (GAT) has implemented the Kirkpatrick Training Evaluation Model, which identifies three specific levels of training evaluation, to objectively analyse the impact of training effectiveness.

- **Level 1 – Reaction:** measure the trainees' reactions to the delivered training by giving their opinion related to the course structure and test; training activities; training material; and training environment.

Fails to meet expectations	Below Expectations	Meets Expectations	Exceeds Expectations
Below 60%	60% - 79.99%	80% - 90%	Above 90%

- **Level 2 – Learning:** measure the degree to which trainees acquired the intended competencies.

Fails to meet expectations	Below Expectations	Meets Expectations	Exceeds Expectations
Below 60%	60% - 79.99%	80% - 90%	Above 90%

- **Level 3 – Behaviour:** measure the impact of training on job performance. The ICAO PTE model uses a Weighed Impact Index (WIN Index), which generates a quantitative value that measures the impact of training on the trainees' work performance. ICAO's TRAINAIR PLUS Programme (TPP) has defined the UNACCEPTABLE and ACCEPTABLE impact ranges for WIN Index applicable to all courses. This model represents the expected achievement and a model for results comparison to make conclusions on the success or failure of the evaluated courses as follows.

IMPACT RANGES					
UNACCEPTABLE IMPACT RANGE			ACCEPTABLE IMPACT RANGE		
	Very Low impact values	Low impact values	Minimum acceptable impact values	High impact values	Optimal impact values
Win Index	0 – 2.49	2.5 – 2.99	3.0 – 3.49	3.5 – 3.99	4.0 – 5.0
%	0% - 49.8%	50% - 59.8%	60% - 69.8%	70% - 79.8%	80% - 100%

Summary of Level 1 & 2 Evaluations

2019

Evaluation of classroom and virtual courses by ICAO Regions:

Level	Unit	ICAO Regions							Course Type	
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM	Classroom	Virtual
Level 1: Reaction	%	90.34	89.43	90.57	88.08	85.07	88.80	94.47	89.28	N/A
Level 2: Learning	%	90.76	91.06	90.32	89.65	88.02	87.64	95.07	90.10	N/A

Evaluation of instructors teaching in the classroom and virtual courses by ICAO regions:

Category	Unit	ICAO Regions							Classroom	Virtual
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM		
Instructor Evaluation	%	93.3	94.74	95.31	93.77	94.32	93.46	96.26	94.06	N/A

2020

Evaluation of classroom and virtual courses by ICAO Regions:

Level	Unit	ICAO Regions							Course Type	
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM	Classroom	Virtual
Level 1: Reaction	%	89.96	90.57	90.35	92.78	90.15	90.14	89.97	90.87	90.55
Level 2: Learning	%	88.78	89.91	89.77	92.51	88.50	87.04	95.07	90.20	90.28

Evaluation of instructors teaching in the classroom and virtual courses by ICAO regions:

Category	Unit	ICAO Regions							Classroom	Virtual
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM		
Instructor Evaluation	%	93.3	94.24	94.62	97.42	94.3	93.46	95.86	94.96	94.74

2021

Evaluation of classroom and virtual courses by ICAO Regions:

Level	Unit	ICAO Regions							Course Type	
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM	Classroom	Virtual
Level 1: Reaction	%	89.74	90.47	92.54	92.10	88.57	89.47	94.22	91.55	90.32
Level 2: Learning	%	88.81	89.56	93.88	91.44	89.22	89.52	95.46	92.54	89.23

Evaluation of instructors teaching in the classroom and virtual courses by ICAO regions:

B-3

Category	Unit	ICAO Regions							Classroom	Virtual
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM		
Instructor Evaluation	%	92.65	94.34	94.92	95.48	93.80	93.84	96.14	94.96	93.91

Summary of Level 3 Evaluation

2019

Evaluation of classroom and virtual courses by ICAO Regions:

Level	Unit	ICAO Regions							Classroom	Virtual
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM		
Level 3: Post-training Evaluation	WIN	4.16	4.06	4.4	4.06	4.1	4.29	4.19	4.24	N/A
	%	84.8	81.2	88.0	81.2	82.0	85.8	83.80	84.8	N/A
			Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact

2020

Evaluation of classroom and virtual courses by ICAO Regions:

Level	Unit	ICAO Regions							Classroom	Virtual
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM		
Level 3: Post-training Evaluation	WIN	4.04	3.94	4.41	4.08	4.32	4.32	4.42	4.16	4.18
	%	80.08	78.8	88.2	81.6	87.2	86.4	88.40	83.20	83.6
			Optimal Impact	High Impact	Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact

2021

Evaluation of classroom and virtual courses by ICAO Regions:

Level	Unit	ICAO Regions							Classroom	Virtual
		APAC	NACC	WACAF	EUR/NAT	MID	ESAF	SAM		
Level 3: Post-training Evaluation	WIN	4.27	4.22	4.47	4.27	3.97	4.39	4.38	4.33	4.23
	%	85.4	84.4	89.4	85.4	79.4	87.8	87.6	86.6	84.6
			Optimal Impact	Optimal Impact	Optimal Impact	Optimal Impact	High Impact	Optimal Impact	Optimal Impact	Optimal Impact

APPENDIX C
STATISTICAL ABSTRACT

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