



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

**INSPECTOR TRAINING DEVELOPMENT FOR EFFECTIVE MANAGEMENT AND
ENHANCING AVIATION COMPETENCIES FOR THE FUTURE**

(Presented by Indonesia)

EXECUTIVE SUMMARY

The aviation landscape will increasingly be more complex with the introduction of new technologies, business of new technologies, business models and non-traditional entrants. As States evolve their safety management approach beyond the traditional compliance-based to a more outcome based one, aviation safety inspectors will also need to enhance their competencies to adapt to such changes.

In line with the International Civil Aviation Organization's (ICAO) initiative on the Next Generation of Aviation Professionals (NGAP), accord priority to human capital development to provide sufficient qualified and competent aviation professionals to support the State's growing needs, including where appropriate:

- a) establish access to quality training; and
- b) encourage sharing of resources bilaterally and/or multi-laterally as well as with industry partners.

The Beijing Ministerial Declaration encouraged under the commitment on human resources development to establish access to quality training and sharing of resources bilaterally and/or multi-laterally as well as with industry partners, which is a leap forward taken at governmental level to collaborate to meet capacity constraints.

ICAO's Global Aviation Training Office (GAT) aims to lead human resources development strategies established by Member States and the aviation community to ensure they have access to a sufficient number of qualified and competent personnel to operate, manage and maintain current and future air transport system at prescribed international Standards in safety, security, air transport environment and aviation law domains.

<i>Strategic Objectives:</i>	This information paper relates to Strategic Objectives
<i>Financial implications:</i>	None
<i>References:</i>	None

INTRODUCTION

1.1 The aviation industry supports 65.5 million jobs around the world. Some of these people work within the industry itself and other jobs are provided by the economic activity that air travel supports. The following section outlines where these jobs are created. The world's airlines carry over four billion passengers a year and nearly 62 million tonnes of freight. Providing these services generates 10.2 million direct jobs within the air transport industry and contributes \$704.4 billion to global gross domestic products (GDP).

1.2 Asia Pacific (APAC) with 7.5 per cent is still leading in terms of traffic growth. Market forecast is in need for 42,730 new airplanes by 2037 – valued at ~\$6.3 trillion out of which 17,000 aircraft for APAC region alone and a forecast for \$610 billion investment in airports by 2030 in APAC. The growth in the next 20 years is likely to pose many challenges for States. Air transport is forecast to support 97.8 million jobs by 2036. Several aircraft manufacturers, including Airbus, Boeing, Bombardier and Embraer, estimate the future demand for air transport in the form of revenue passenger kilometres. The most recent estimates suggest that demand for air transport will increase by an average of 4.3 per cent per annum over the next 20 years. That implies that demand for air travel will increase by a factor of 2.3 over the period. If this growth path is achieved, then in 2036 the air transport industry will contribute:

- a) 15.5 million direct jobs and \$1.5 trillion of GDP to the world economy;
- b) including indirect and induced contributions, 46.4 million jobs and \$3.8 trillion in GDP; and
- c) once the impacts of global tourism are taken into account, a total of 97.8 million jobs and \$5.7 trillion in GDP.

1.3 A State's aviation regulator has a vital role to play in implementing an effective national and organizational safety management framework despite out proportioned growth. To help create the right organisational safety culture the Civil Aviation Authorities (CAAs) should define the requisite workforce capability and right aviation skills or knowledge as a part of capacity building for the State. The challenges arise from exponential growth potential and investments, huge infrastructural requirements, complex operational risks/emerging risks (risk-based operations related regulations), increased complexity of regulatory decision making, increased expectations of performance from the public, more centralized government, adaptation with rapidly changing and evolving technologies and automation, implementation of a State Safety Programme (SSP), National Aviation Safety Plan (NASP), and Safety Management System (SMS) in a new environment, etc. Skilled manpower in both regulator and service provider is the major factor to cope with such changes and growth.

1.4 Building the necessary safety oversight capabilities relating to the Universal Safety Oversight Audit Programme (USOAP) critical element CE-4 “qualified personnel” is of utmost important to effectively implement the current and future ICAO Standards and Recommended Practices (SARPs). Building the training programme with a roadmap, and training plans for each technical personnel are important. Competency-based training methodology could also be incorporated in the overall training objectives to complement the traditional training, so as to provide targeted skills training in addition to the transfer of knowledge.

1.5 The main function of human resources management (HRM) is the continuous enhancement of human resources management policies, rules and procedures of the Organization to

support a results-oriented culture and to meet the changing needs of the Organization through the attraction, retention and motivation of a competent and diverse workforce.

2. DISCUSSION

2.1 The State civil aviation system must be properly organized and staffed with qualified personnel capable of accomplishing the required wide range of technical duties involved in safety oversight. Inspector responsibilities are a vital importance because they must perform a critical job function for aviation safety and meet State ICAO obligation. The satisfactory execution of the various functions of the CAA inspector depends to a large extent on the qualifications, experience, competence and dedication of individual inspectors.

2.2 Indonesia currently has a very large airspace (2,219,629 Km²) consisting of two flight information regions (FIRs) in which there are more than 9,880 flight traffic movements per day and those movements are controlled by ± 350 air traffic services (ATS) units (AFIS, TWR, APP, ACC and FIC) and also supported by a dozen communications, navigation, and surveillance (CNS) facilities. The number of aircraft registered in Indonesia is ± 1,500 airplanes (63 airline air operator certificate (AOC) holders and 18 pilot schools). The planes operate on 270 flight routes both nationally and internationally and spread across 114 cities per day. Approved Maintenance Organizations (AMOs) in Indonesia currently number 60 AMOs. The airports provided for these flight activities are 299 airports (29 international and 270 domestic). In addition, there is one registered water aerodrome and 284 registered heliports (185 helidecks, 29 elevated heliports, surface level heliport 70). Airport security is currently equipped with 552 X-ray equipment, 412 WTMD, 620 HHMD, eight body inspection machines, five liquid detectors, 56 explosive detectors and two PIDS. In addition, these airports are also equipped with 373 fire-fighting facilities.

2.3 That condition certainly requires a considerable amount of human resources in carrying out the oversight function to ensure the aviation safety and security. In determining the number of human resources, it must be calculated in advance the workload analysis which includes working position, job task and duty time limitation. one of the main factors that need to be considered in this case is how we can design a job task so that all work can be done effectively. therefore, we propose a breakthrough, it is necessary to have mutual recognition between countries in designing a job task so that these jobs are not done repeatedly, so that it can reduce the number of human resources needed.

2.4 The Directorate General of Civil Aviation (DGCA) Indonesia has an inspector development concept to recruit inspectors from industry professionals (this process requires at least three months) or to recruit from Government officer (this process requires at least five years if with no experiences), because DGCA inspectors should compare favourably with the personnel they will inspect. Then the inspector will be given training with Inspector Training System (ITS) concept. (ITS consists of a programme guide, on-the-job (OJT) guide, formal course standard, job tasks analysis and training record software. The ITS process requires at least one to two years depending of number of job tasks, because DGCA inspector must complete both formal course training and OJT training for each job task before given the authority to accomplish that job tasks without supervision.

2.5 DGCA Indonesia also have a policy to develop a highly skilled and qualified workforce through a comprehensive training programme (all employee fully trained in essential job functions) from new hire to retirement to fulfil DGCA mission, State ICAO requirements, gain industry compliance and safeguard the travelling public. DGCA also develop seven roles and responsibility in the ITS to manage these training programmes, consisting of: Director General, Director, Training Manager, OJT Program

Manager, OJT Instructor, Inspector and Training Administrator. All seven roles must work together to successfully implement the policies of the ITS.

2.6 An important responsibility for a CAA, which has functions to develop regulation, certification of aviation industry organization, conduct inspection or oversight and take corrective action. ITS can be defined as a concept for development of the competent and qualified inspector, and CAA inspectors should compare favourably with the personnel they will inspect. The result of such training is better job performance and greater respect from those who are inspected and supervised by the CAA.

2.7 Mutual recognition to develop effective job task also can be defined as a good policy for solving problems in meeting the needs of inspectors. The development of mutual recognition will also create good harmony collaboration with all Member States.

2.8 Developing the next generation of aviation professionals is nothing short of crucial to the sustainable future of global air transport operations. The terrific growth that is forecasted for international civil aviation offers opportunities to each of our 193 Member States and calls for capacity building in all of them. In terms of human resources specifically, this capacity building challenge is twofold: firstly, civil aviation is growing phenomenally, and we must ensure this global expansion of air services is facilitated and well-managed. This is especially critical to the prosperity of many of the world's emerging economies. Secondly, aviation has not been spared the demographic challenges, which are impacting many industrial sectors, especially those in need of highly skilled and technologically proficient recruits. The answer to these challenges lies with ensuring that the barriers to entry for new civil aviation and aerospace professionals are minimalized as much as possible, and that sufficient training and other opportunities are available as needed.

2.9 Each Member State must ensure that enough qualified and competent aviation professionals are available to operate, manage and maintain the future international air transport system. This is critical as a large contingent of the current generation of aviation professionals will retire, access to affordable training and education is increasingly problematic, and aviation competes with other industry sectors for highly skilled professionals.

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