

**Education and Performance in Aviation: Realising and Sustaining Benefits**

Presented by AIRLINES ASSOCIATION OF SOUTHERN AFRICA (AASA)



**AIRLINES ASSOCIATION OF SOUTHERN AFRICA**

**Position Paper prepared for : Hermes Air Transport Organization**

**“EDUCATION AND PERFORMANCE IN AVIATION: REALIZING AND SUSTAINING BENEFITS – THE SOUTHERN AFRICAN PERSPECTIVE”**

“Global passenger traffic will double by the year 2035”. This widely quoted statement is accepted by the majority of aviation experts, airlines, aircraft manufacturers and service providers and is based on an annual passenger growth rate of 4.4%. In Africa, the anticipated growth is 5.6% per annum and this will lead to a doubling of passenger traffic in Africa by 2031. A further significant observation is that according to the United Nations Department of Economic and Social Affairs “2017 World Population Prospectus” report, Africa is the fastest growing continent in terms of population and will add the equivalent of the present population of China, to Africa, in 33 years.

African Aviation does face a number of additional challenges. These include its failure to fully reform market access, either through the Yamoussoukro Decision (YD), or the new Single African Air Transport Market (SAATM), (although this is currently receiving focused attention through action plans by the African Union (AU), the African Civil Aviation Commission (AFCAC) and many other industry organizations), high US Dollar driven operating costs (including fuel), taxes, charges, the need to embrace climate change initiatives and reduced carbon emissions, fast moving technological developments, and maintaining constant focus on the highest standards in safety and security of aviation operations.

If African Aviation was to address its many challenges in terms of sustainability and profitability and respond to the demand for an enhanced integrated network with the introduction of more airline operations serving more destinations for its growing population, the above forecasted African growth rate of 5.6% per annum could and should be higher. Africa must be able to improve its 3% market share of global air passenger traffic, given that it occupies 20% of the world’s land mass and (an increasing) 15% of the world’s population.

These current projections for 2035 bring with it a significant increase in the demand for Commercial jet aircraft expected to add 40000 new aircraft worldwide with 1160 new aircraft destined for Africa. In addition, 635000 pilots will be required worldwide, 23000 of them for Africa, and 622000 technicians will be required worldwide, with 25000 of them for Africa. Whilst much focus is placed on the demand for pilots, aviation engineers and technicians, further skills shortages are being identified in the positions of executive leadership and management, revenue and yield management, e-commerce, distribution and systems management, scheduling, analysts and ground operation personnel.

There are several factors leading to these shortages and an increased demand for aviation professionals. These include retirement of the current generation – the aviation industry is dominated by a generation of individuals over the age of 40 to 45. In addition, a disturbing trend for aviation enthusiasts is that the aviation profession is not attractive to many potential candidates with other industries competing for their skills. There is also insufficient training capacity to meet demand and aviation needs to be responsive to evolving learning styles. High costs of training, for example for pilots, including high cost cadet pilot schools, raises affordability concerns and accessibility to training both from an individual and airline company perspective. Within Africa, there are concerns about the lack of harmonization of training in aviation disciplines between States. Finally, with the demands noted above, the growth of the industry is outpacing the ability to supply aviation professionals.

Whilst needing to address its challenges and considering these requirements in Africa and indeed Southern Africa, the question to be asked is how the aviation industry responds to these demands and prepares itself to be able to compete in the global aviation market?

Our region is complex. Economic and demographic factors, legacy issues, government policies on matters such as education, trade & industry, economic empowerment, transformation and labour relations, socio-political imperatives and of course, moral obligations, all have to be addressed. These factors either represent a massive additional burden on our industry, or a golden opportunity to positively and proactively shape our industry's future. However, it is noted that aviation is not the only industry facing a human capital development challenge nor is our region the only region facing these challenges.

It is acknowledged that our industry is facing a skills development crisis and needs to find solutions to meet the increasing demand and challenges mentioned. From a country and industry perspective, we need to start at the beginning – at school. In several States, including South Africa, whilst strides are being made to make basic education accessible to all children, it is noted in the South African National Development Plan (NDP) 2030 that “the legacy of low quality education in historically disadvantaged parts of the school system still persists”. High dropout rates by the end of primary school add to the number of potentially talented people who will be unable to study and pursue careers in aviation – or other sectors – which place a premium on the STEM subjects of Science, Technology Engineering and Mathematics. However, aviation does not only require people with STEM subjects. People with skills in the arts, communication, customer relations, marketing, sales and operating environment are critical to the aviation business. People with all these backgrounds can also be further trained by the aviation organization to obtain specialist skills or gain experience under supervision in areas where shortages have been identified as noted above.

Initiatives are in place in certain States and regions to create an awareness and enthusiasm of aviation amongst young people. In addition, systems need to be put in place to identify and track the development of those with an interest to pursue a career in whichever field of aviation. An example of such an initiative is Wonders of Aviation in South Africa, supported by many aviation organizations which exposes the magic of flight to communities not previously exposed to aviation. A further initiative includes outreach programs to young girls and women through for example Women in Aviation, which focuses on the critical need of attracting more women into leadership and the varied careers in aviation.

Once through primary and secondary school education, the next challenge is to ensure capacity for tertiary education and training in Universities or Technical Colleges. There are some universities

and colleges offering streams for aviation in, for example, Aeronautical Engineering as part of a Mechanical Engineering degree, Honours in Transport Economics, and MBA's. However, tertiary institutions in Africa do not have extensive specialist aviation degrees or diplomas. Consequently, students are required to consider attending universities elsewhere, such as in USA, UK, Canada or Europe at considerable cost. This has prompted ICAO, IATA and several Aviation Academies and Institutions to develop and offer accredited aviation courses.

ICAO has established the Next Generation of Aviation Professionals (NGAP) outreach to ensure sufficient qualified and competent aviation professionals are available to operate, manage and assure the future of the international air transport industry. In addition, the African Aviation Training Organization (AATO) was established in 2013 through ICAO to promote cooperation among its members in Africa through collaboration of Aviation Training Organizations (ATO's). Its aim is to be a link between training organizations, airlines, maintenance organizations, airports, air navigation service providers and the regulators across borders and build capacity for training across Africa. IATA through the its Airline Training Fund (IATF) and other training courses, is a provider of airline specific training to its members.

Once trained, the next step is to retain skills in Africa and to effectively transfer skills to the new generation of aviation professionals. Airline executives and African aviation authorities are concerned about the exodus of skilled aviation professionals from Africa to so called greener or "sandier" pastures. With the high growth and development of aviation in the Middle East, Gulf and Asia, there is a demand for highly trained professionals and the attraction of good hard currency packages is hard to resist.

In the USA, who also has an ageing population of aviation professionals, (nearly 50% of pilots and commercial employees are over 50 years and 49 years old respectively), the need to source younger pilots and people with commercial skills is becoming critical. Even in the USA, affordability to train the young professionals is a challenge. The USA is also experiencing a decline in the attractiveness of aviation as a profession given the competition from other industries for skills.

Affordability and the high cost of aviation training is a barrier to entry into the industry. Airlines in Africa operate at an aggregated loss and those that are profitable are on slender margins. As a result, what funds are available also have to cover items such as fleet replacement in addition to operating costs. Depending on the airline, pilots account for between 8% to 10% of total airline headcount. Pilot training and development costs are high – estimated at over US\$100000 to take a pilot from initial training to a full Airline Transport Pilots Licence qualification. Carriers also require funds to provide statutory and general training for the other 90% of their staff and therefore funding for pilot development is limited. Funding solutions need to be established and identified for pilots through Government, public and private initiatives. Sight must also not be lost of the rest of the employees who need to be trained and have recurrent training to perform their functions.

Improved collaboration and partnership between Government and Industry needs to be explored and developed to ensure that the most optimal solution is found to train all aviation professionals required to serve the industry. With the exception of anticipated requirements for aircraft, pilots, and aviation engineers and technicians, (as provided primarily by the aircraft manufacturers through their outlooks), it is not clear whether the industry has fully assessed the potential shortage of other aviation professionals. It is important to confirm the skills shortage numbers as presented for pilots, aviation engineers and technicians and to assess the numbers of other expected shortages. We must avoid a scenario where new professionals are trained but are unable

to obtain jobs in the industry. The use of state facilities or infrastructure not currently used optimally, as well as a coordinated program between the public and private sector needs to be developed. Incorporation into programs run by ICAO and IATA as mentioned above, together with other regional initiatives should also be considered.

Besides stemming the exodus of young blood, we also have to ensure there is a pipeline of talent ready to take over from those people leaving the industry through retirement over the coming years. This will require the structured and coordinated transfer of skills to the new generation of aviation professionals. As the older airline professionals move out of the industry, and the new young professionals move into more senior positions, it is necessary for a structured mentorship program to be put in place to support the transfer of skills - particularly in those critical and scarce skills areas identified above.

The world is changing at a rapid pace and so are employee needs especially as the younger generation of millennials come into the work space, bringing with them a refreshing new perspective on their ideal working environment and career. However, whilst leaders are adapting to new organizational models, Human Resources are struggling to keep up with technological developments.

The rapidly advancing technology in aviation is challenging every branch or sector of the aviation industry. Entrepreneurs, inventors, and industry specialists are constantly looking for improved, better, automated systems and methods to improve their product offerings and enhance operating efficiencies and effectiveness. With these new products and developments come the need to develop product specifications and the standards and recommended practices for incorporation into States' civil aviation regulations and technical standards for introduction into the main stream use in the aviation industry. This includes development of enhanced air traffic management systems together with communication, navigation and surveillance innovation, remote pilot aircraft systems (RPAS), next generation aircraft, new passenger facilitation processes, enhanced self-service options, biometrics, digitization, robotics, artificial intelligence, blockchain and big data processes. This is the era of continuous disruptive innovation, with the traditional industry not knowing what could come next.

New advanced training courses will need to be developed and accredited for implementation. Human resource specialists need to effectively reinvent themselves to be able to cope with the new specialist training requirements, including combination of training with or without instructors, e-learning, and training methods which may not at this stage even have been devised. With the possible need to redeploy certain employees due to new technology making existing positions redundant, the need to be ready to re-train these employees for appointment to different positions or new portfolios is important.

An even greater challenge arises for the safety regulators which provide oversight on all aviation operations. With the increasing rate of technological development, are they able to keep pace with the new developments, and fully understand the capabilities of the new technology and formulate standards, recommended practices, regulations and standards to ensure continued safety and reliability of aviation operations? This would largely depend on the calibre of person employed by them to work in this field. Ideally, regulators should employ people who have had experience in the field of technological development, or who have the capacity to quickly study and understand the new concepts being proposed. The question of regulation or self-regulation and the extent to which one or the other is acceptable, requires discussion. At the same time, it is important that these new initiatives are assessed as quickly as possible to enable them to be

considered by the users or operators and for the entrepreneur to be in a position to market and sell his / her new product.

Automation and technological development are moving at a rapid pace and improved productivity, efficiency and performance is a priority. Skills shortages have been identified and must be quantified and confirmed as far as is possible. Education and training systems to develop a new breed of aviation professionals to perform existing and new job functions will become a priority to equip them to serve their organization with excellence. This is not a task to be left for the Human Resource department but must also receive the attention and support of the top executives and senior management of the organization. An aviation organizations' success will significantly depend on the effectiveness of the leadership of the organization and the quality of the team supporting the leadership to implement the organization's strategy and sustainably achieve their business goals.

Chris Zweigenthal  
Chief Executive  
Airlines Association of Southern Africa

\*\*\*\*\*