

Attracting New Air Traffic Controllers

Presented by PLC

SUMMARY

Since many ANSPs are dealing with staffing shortages, it is important to create and have a recruitment strategy to attract new applicants for the job as an air traffic controller. However, recruiting new applicants can prove challenging. This paper will look into these challenges and possible ways to overcome them and provide ideas for a recruitment strategy.

1. INTRODUCTION

- 1.1. Recruiting individuals for a career in the air traffic control industry, particularly as air traffic controllers, can prove challenging. This paper will look to understand what these challenges are and the possible ways to overcome them.
- 1.2. Since many Air Navigation Service Providers (ANSPs) are dealing with staffing shortages, staffing-related delays and termination of air traffic control services, it is even more important to create and have a recruitment strategy to attract new people for a job as an air traffic controller.

2. DISCUSSION**Causes of staffing shortages**

- 2.1. To address staffing challenges, it is important to recognise that they are usually not caused by a single factor. Just like the Swiss Cheese Model, which illustrates how multiple contributing factors can align, this analogy emphasizes the importance of analysing various elements to develop an effective recruitment strategy. Regarding staffing shortages, factors such as recruitment constraints, training challenges, and applicants' perceptions all play a role. The following section of this paper will discuss these constraints individually.

Recruitment constraints

Age limit

- 2.2. During the 63rd IFATCA annual conference in Singapore, IFATCA policy regarding age limit for recruitment was discussed in WP 154, Review of the IFATCA Training (TRNG) Policy. It was concluded that existing policy on the age of the applicant was unnecessary and therefore was proposed to be removed, and eventually this proposal was adopted by conference.
- 2.3. It was discussed that it is hard to determine general age limits for applicants, except for the fact that the International Civil Aviation Organisation (ICAO), and the European Aviation Safety Agency (EASA) require specific minimum age limits for the holders of an air traffic controller or student controller licence. It was also discussed that a maximum age for an applicant could be seen as discriminatory and was not based on scientific evidence. Additionally, setting a maximum age limit will exclude applicants outside of these age brackets who could also be successful. Regardless, many ANSPs still use a maximum age requirement, though the age bracket varies from one place to another.
- 2.4. Age limits for applicants could serve two purposes: to narrow down the number of applications to target a specific group or to increase the profit or benefit that an air traffic controller provides to the ANSP over their career. Below, three factors are explained in a bit more detail.

Success rate

- 2.5. Based on historical data from their selection and recruitment process, an ANSP could set a specific age bracket in which the success rate of applicants was highest. This could help narrow the target group and reduce the number of applicants who, based on these data, have a lower chance of success. Reasons for this could be to reduce the costs of executing these selection tests or because the ANSP has enough applicants and can afford the luxury to select only the applicants with a higher success rate.

Duration and cost of training

- 2.6. The duration and cost of training air traffic controllers might be factors in determining age limits for applicants. Since training can be expensive and demanding, ANSPs tend to recruit a group of applicants that are expected to have the highest chance of success. Typically, these applicants are between the ages of 18 and 30 to 35 years, based on data provided by ANSPs in the IFATCA Information Handbook. This age group may possibly have a higher rate of success during training and have more years ahead to contribute to the ANSP before retirement, making it easier to compensate for the costs of their training.

Retirement age

- 2.7. The retirement age is another factor that ANSPs may consider when setting age limits for applicants. Younger applicants have a longer career span before

reaching retirement age, allowing them to contribute more to the ANSP over time compared to older applicants. Setting a maximum age limit may help ensure that the applicants contribute for a sufficient period before retirement.

- 2.8. In times of high staffing shortages, it may be beneficial for an ANSP to review its age limits and consider expanding the age bracket to allow more applicants to pass through the selection process. Although the success rate may change in terms of the ratio between the number of applicants and those who succeed, this could result in a higher absolute number of successful applicants who can begin their training as air traffic controllers. Another solution could be to establish a specific selection process for applicants outside the defined age bracket or from other countries. This process could, for example, accommodate qualified air traffic controllers willing to relocate, taking into account regulations and language requirements for those wishing to apply from abroad, all while maintaining the same requirements regardless of age.

Education requirement

- 2.9. Two types of requirements are found in most of the ANSPs. The first requires applicants to complete high school or obtain a general degree from university. The second requires applicants to complete a self-financed air traffic control course or obtain an air traffic control related degree from university.
- 2.10. The latter could deter lots of potential candidates from applying due to the high opportunity costs involved, including tuition fees and the time required to complete the education requirement. While this method shifts the basic training costs to applicants, unless the applicants are very determined to become an air traffic controller, it could be difficult to persuade the general public to join air traffic control, thus narrowing the number of applicants. Becoming an air traffic controller is not easy and there is a certain degree of uncertainty during training whether a trainee will be able to cope with all the competencies necessary for a job as an air traffic controller. Potential applicants might hesitate to start training if they have to pay the training costs themselves.
- 2.11. One of the solutions can be to provide loans or scholarships to potential candidates, to possibly increase the number of applicants, which has been done at some ANSPs. Alternatively, some ANSPs cover the training costs but require trainees that finish the training and become fully qualified controllers to work for a certain number of years as an air traffic controller at the ANSP to 'pay back' the costs and effort that was put into training them.

Number of openings

- 2.12. The number of openings for the selection process may depend on the ANSP's available funds, which might not be sufficient to meet the actual demand of the required air traffic controllers. This can lead to a shortage of trained applicants and eventually result in a shortage of air traffic controllers. Especially during periods where the number of retirements are high, a gap can develop between the amount of air traffic controllers versus the amount of air traffic controllers

that are needed to fill the rosters. Both short-term, but especially long-term staff planning is very important to increase the number of openings in case that a retirement wave is expected at an ANSP in the upcoming years, as it usually takes a few years of training to become a fully qualified air traffic controller. Long-term prediction and expectations of staffing numbers should be monitored closely and being acted on far in advance. This also applies for an expected change of demand, for example when air traffic capacity or complexity is expected to increase or other factors that might need a change in staffing.

- 2.13. In some cases, training capacity also limits the number of available openings. Constraints could be, for example, simulator availability, On–The-Job Training (OJT) position limitations, or a shortage of instructors, either in initial training or during OJT. In some situations, it becomes a vicious circle: an ANSP experiencing staffing shortages may have fewer instructors available, reducing the number of new air traffic controllers being trained. These new controllers are needed to fill rosters but could also become instructors in the future. However, if too few are trained, the instructor shortage persists, further limiting training capacity. A situation that might keep on going for a long time and result in staffing shortages in the future.
- 2.14. Where simulator capacity is limited, determine whether the capacity can be increased. This could be achieved by expanding existing or building new simulators or implementing a more efficient simulator scheduling system. Where the available number of instructors are limited, several solutions could be considered. ANSPs could review their project portfolio and prioritise training over less critical projects, allocating more resources to instructor availability. Even if this is for a certain period of time, it can be helpful to try to catch up with the necessary amount of new controllers. Reducing the capacity of the airport or sector to free up resources and reallocate staff to instructor shifts could also be a solution. Or invest in training the instructors to increase their knowledge and skills that could result in a higher quality and output of the training they provide.
- 2.15. Examples written above, such as more efficient simulator scheduling or reallocating staff should not come at the expense of training quality, overburdening instructors or negatively affecting operational air traffic controllers as this could result in reduced output of successfully trained candidates and thus a lower long-term success rate, or compromise the safety of air traffic.

Recruitment tests passing rate

- 2.16. As air traffic control duties are highly demanding and safety-focused, the recruitment testing of air traffic control applicants is extensive. In some ANSPs, the prolonged staff shortage problem is due to the number of applicants successfully passing the test being less than the number of openings.

- 2.17. It is suggested that ANSPs review their recruitment tests from time to time to ensure that the difficulty level and/or syllabus align with the requirements nowadays. However, one should be very careful in changing the requirements, as they are set with a reason, and should only be adjusted after thorough consideration. The selection process is designed to assess fundamental mental skills, and lowering the requirements may lead to more applicants passing the selection phase. However, this does not necessarily translate into higher success rates during training, since these candidates may encounter difficulties during a later stage of their training. This may end up in an investment in candidates that were possibly not suitable for the job as air traffic controller from the beginning and thus shouldn't have been selected and allowed to start their training.

Unforeseen circumstances

- 2.18. Although some of the recruitment constraints written above are more or less subject to decisions made by an ANSP or rules set by a government, sometimes unforeseen circumstances could also be a factor in the challenge to recruit people for the job of air traffic controller. Those circumstances can be local or worldwide events, such as a pandemic, war, or a changing or unexpected economic situation.
- 2.19. COVID-19, for example, caused significant challenges in the recruitment process. During the online conference of The Functional Airspace Block Europe Central (FABEC) on 'recruiting in a changing environment', a presentation was given by Austro Control regarding the recruitment and selection during COVID-19, in which some relevant challenges were presented:
1. Well established communication channels, such as visits to an operations room and recruitment days were not available due to restrictions.
 2. Selection and training process was directly affected by not being able to provide on-the-job training due to lack of traffic, and adapting to the changing environment takes time due to changing restrictions.
 3. Problems of public perception directly affecting motivation to apply for air traffic control training.
- 2.20. Although immediate restrictions are no longer noticeable, a long-term effect of these challenges have almost certainly been a contributing factor that influenced the current staffing shortages. Such circumstances or events highlight the importance of adaptability, resilience and a long-term vision on the recruitment and training of air traffic controllers. Adapting to unforeseen circumstances and global changes is essential to prevent future staffing shortages.

Training challenges

Training success rate

- 2.21. After successfully passing the recruitment phase, a trainee air traffic controller needs to undergo theory lessons, simulator sessions and on-the-job training in order to obtain the licence. However, passing the training phase is not guaranteed and failure rates during training can sometimes be high. A close cooperation between all parties involved at the Approved Training Organisation (ATO) and the ATC unit can be highly beneficial. By sharing information, it is possible to further improve training quality and track trainee progression. Communication is key to understanding the reason behind both failure or success, providing valuable insights to improve or change the training program, enhancing what works and change where needed.
- 2.22. It is suggested that ANSPs review the course structure and investigate the reasons for trainees that are not able to pass, and provide additional investment, such as extra simulator sessions or training, to help those who struggle or need more time to understand the concept. Since everyone is unique, some trainees may need more time than others for various reasons. For example, some trainees are still very young and might need some extra time to adapt to a real working environment, or sometimes a personal private situation requires some adjustments to their training. Therefore, it is suggested that ANSPs have a certain degree of flexibility to be able to adapt to those kinds of situations and allow trainees to perform optimally, to try to increase output of the training and chance of success.
- 2.23. Simplifying air traffic control work by, for example, improving or creating easier procedures, providing better tools and systems or creating a less complex or busy airspace, can also help prevent training issues in the long term by making it easier to train new personnel.

Applicants' perception

No knowledge of the profession

- 2.24. Compared with other professions in the aviation industry, air traffic control is generally speaking less visible to the public. One reason is that air traffic controllers work behind the scenes and out of the public eye. Unlike pilots or flight attendants for example, who interact directly with passengers, air traffic controllers work from towers and radar centres, making their role less apparent to the general public. Another reason might be the lack of advertising for air traffic control compared to these other professions. Companies and organisations that invest more in advertising a certain profession may gain greater public exposure and therefore might become more widely recognised by the general public.

Other professions in the industry appears to be more appealing

- 2.25. Air traffic control is sometimes perceived by the general public as a challenging profession with high stress levels and responsibilities. While this perception may be accurate to some extent, it may not be the best basis for recruiting new candidates and could even discourage potential applicants. Beyond presenting

the profession of air traffic control by an honest and clear image through advertisement and recruitment, there should be enough benefits to compensate for the difficulty, stress and responsibilities of the air traffic control profession. The key to attracting new applicants is to showcase what air traffic control truly is and why it is exciting, rewarding, and a great profession to be part of. In addition to this, there are other factors that might affect an applicant's career choice, such as salary, employee (secondary) benefits, working environment, prestige, career growth opportunities, working hours and schedules. Unless the individual is ambitious and motivated to become an air traffic controller, it is unavoidable that people will compare the workload and the rewards of the job with other career options.

- 2.26. In addition to comparing the benefits with the efforts, every generation also has its own needs and priorities when it comes to choosing a profession. An example of this is the work-life balance. Air traffic control usually comes with working on shifts and working at irregular hours, which can have some downsides such as disrupted sleep patterns and being away from family during public holidays. But it also has positive sides, such as the benefit of having relatively much free time between shifts, having flexibility in what time of the day you prefer to work, and being free while other people work, which potentially allows a better work-life balance than a 9 to 5 job. Some generations might prefer and value this flexibility and these kinds of positive factors can be used in recruiting people. Where rational benefits, such as salary and job security, are important for some, emotional benefits such as values, purposes, identity and culture are important for others. Adapting a recruitment strategy on a certain generation requires research on what is important for the targeted age group, and a possible adaptation of the ANSP in terms of company values and purpose, rational benefits and work-life balance flexibility. This might also be necessary to remain an attractive employer for future generations and for the (future) retention of employees. Focusing on both the rational and emotional aspects during recruitment could be an effective part of a strategy to adapt new air traffic controllers.

Examples and ideas for recruitment strategies

- 2.27. The most important thing in recruitment and selection all comes down to how many people are applying and what the quality of the applicants is. The recruitment constraints written in this paper are all contributing factors on how many people are allowed and able to apply for the selection process of an air traffic controller. If these numbers are insufficient, the recruitment strategy should be changed to one that looks for alternative ways to reach a broader audience, which might result in a higher number of potential applicants.
- 2.28. Creating an effective recruitment strategy is not easy, as each ANSP finds itself in a unique situation. A factor contributing to this is that the use of (social) media is different in every country. Where Instagram, for example, is popular in a certain country, this does not mean recruiting on this medium will be effective in another country where TikTok might be a more popular social media

platform. Therefore, local varieties that are applicable in the country the ANSP is hiring should be kept in mind. Another factor could be the age group that is being targeted. For one generation, a way of communication could be effective which might not be effective for another age generation. It is useful to research what kind of media is being used most often by the age group that an ANSP is targeting with their recruitment strategy. Besides that, the type of content that is shown on these media is very important and should be adapted to the type of media that is being used and what age group is being targeted.

- 2.29. Since there is no “one-size-fits-all” solution for an effective recruitment strategy, it might be helpful to provide examples and ideas from around the world to gain inspiration and new ideas to improve or expand recruitment to a new level. In the following paragraphs, many different kinds of recruitment ideas are presented, which are worth considering when changing a recruitment strategy or as an addition to an already existing strategy.

Social media

- 2.30. Given the widespread use and accessibility of social media today, it can be considered a valuable component of recruitment strategies. There are many different social media platforms, with various ways of showing and presenting content. An idea could be to contact an advertising agency with knowledge of recruitment and/or (social) media and use their knowledge to determine what is the most effective way to reach the targeted audience.
- 2.31. Many examples of the use of social media by ANSPs can be seen all over the world and easily be found on the internet or on different platforms.

Official website

- 2.32. Most ANSPs have an official webpage where information can be found, sometimes with a (small) section focused on recruitment. There are also ANSPs that have a specific webpage created specifically for recruitment purposes. Interesting examples can be seen on various websites, such as interviews with air traffic controllers and other personnel, personal stories about working as an air traffic controller, videos about the ANSP and the work of an air traffic controller, etc. Creating a well built and good-looking website with information about recruitment, selection, training, benefits, careers, etc. can be useful to refer to when recruiting people and make it easier and lower the threshold to apply. All these kinds of content could be contributing factors to inspire and motivate readers to consider the job as an air traffic controller.

Magazines and newspapers

- 2.33. Magazines and newspapers are another way to raise awareness about the job as an air traffic controller. Usually considered as traditional media, this type of media offers the advantage of providing a more extensive or in-depth story about air traffic control or, for example, an extensive interview with an air traffic controller and the duties and benefits that come along. This is sometimes more

challenging on social media where the time people keep watching or reading posts or stories is much shorter and the freedom to provide information in one post is limited.

Recruitment platforms

- 2.34. A way to raise awareness could be putting career vacancies on recruitment platforms such as LinkedIn or Indeed. Advantages of using these platforms is that there is an opportunity to provide a vacancy with all the details, requirements and benefits, and also the possibility to use the network of these platforms to reach a group of people that are looking for a new job or being open to new opportunities, but not specifically looking for a job as an air traffic controller. Therefore, a new audience could be found using these platforms.

Drama and movie

- 2.35. Movies or dramas can be a way to raise the publicity of air traffic control. Some examples are the 1999 movie 'Pushing Tin' about air traffic controllers and the 2012 Japanese drama 'Tokyo Airport: Air Traffic Controller'. Movies and dramas are not always a good representation of reality, which could create misunderstanding about the content of the job and whether it is something to consider as a career. But, seen by many people, this kind of entertainment might be a way of making people that weren't yet aware about the existence of the job as an air traffic controller and possibly generate interest in applying for the job. Therefore, it can be an effective way of reaching a new audience. However, there is also another side of the coin, where drama or movies can negatively impact the audience, for example by showing a mistake resulting in a collision. Therefore, it should be carefully considered and have been well thought out what the impact of such a movie will be and whether it is something that should be used as a part of a recruitment strategy.

TV shows and programmes

- 2.36. Educational programmes, documentaries, reality shows and interviews with air traffic controllers broadcast on television can provide more practical information to the public. Although searching online is very convenient nowadays, there is way too much information and one cannot easily judge whether information is true or not. Content created through licensed television broadcasters can give the public a better understanding of what air traffic control is and how it plays an important role in the aviation industry.

School visits

- 2.37. In order to study the desired major in university or continue their career in a certain industry, some students choose the subjects in high school accordingly. Therefore, it is better to introduce students about air traffic control in an early stage so that they know about this possible choice as their future career. Visiting schools and holding career talks or sharing sessions can help students understand more about air traffic control and allow them to ask questions on

site. However, these can, depending on the size of the country, be time-consuming and involve a high cost as there are lots of schools located around the country. One could also consider being present at opportunities provided by primary schools, such as parents talking about their job in their children's class. Although this might not have a direct result, it might increase the knowledge of the fact that air traffic controllers exist and that it might be an interesting career when they've grown up. It can be seen as a long-term commitment that may eventually lead to a steady stream of applicants in the future.

Career fairs

- 2.38. Setting booths at career fairs not only can increase exposure to job seekers who are interested in working in the aviation industry, it can also attract attention from unexpected audiences. For example, Dutch air traffic control joined a game fair and introduced the job through games. They collected data of cognitive skills from a selection round to become an air traffic controller and compared this data with cognitive skills of a gamer. They found that the cognitive skills necessary for this selection round were similar to a strategy gamer and therefore were present at a game fair where they created exposure to this target group. Some career fair visitors might not be looking for a specific job such as air traffic controller, however they have a chance to get in touch with air traffic control and might circulate this among family and friends. Setting a booth at a university, or more specifically related to aviation, air shows, airport open days and aviation related conventions could also be considered as a way to reach a new audience.

ATC Centre open day and simulator sessions

- 2.39. Open day allows the general public to visit the control centre and tower and get a chance to look at the daily air traffic control operation. Apart from guided tours during the open day, simulator sessions can also be organised and allow the public to try to be a temporary air traffic controller. These hands-on experiences might raise the interests of certain individuals in applying for the job. Another example could be to organise something like an 'information evening/day', where a presentation could be given (by an air traffic controller) about the job, the ANSP and the training and selection process. This might give some further insights and is a good opportunity for visitors to ask specific or more detailed questions and get a feeling of the ANSP they end up working when they finish their training.

Loans and scholarships on ATC course

- 2.40. The tuition fee for an ATC course can be a financial burden to some students. Suitable loans or even scholarships with monthly allowances can provide financial backing and increase the incentives for students to apply for the course and the job.

Games

- 2.41. Games or simulation games can attract people who do not like to read or watch any educational material, and it also provides a partially simulated operation to people who want to know more about air traffic controllers' duties. For example, a famous Japanese video game 'Air Traffic Controller' simulates mostly tower operation, apart from issuing pre-departure, pushback, taxi, take-off and landing clearances, players can even choose to delay the landing aircraft in approach sector. This gives much valuable information to players on the sectorization of airspace and purposes of air traffic control.

Aviation Programme for women and ethnic minorities

- 2.42. In 2021, The National Air Traffic Services (NATS) partnered with Fantasy Wings, a local organisation aiming to give black, Asian and ethnic minorities and women a platform to join the aviation industry. The programme offers talks about air traffic management and on-site work experience day.
- 2.43. Similar career programmes can be established targeting people from under-represented backgrounds where they have the opportunities to meet experts from the industry and get the resources and advice for interview preparation and develop their career path in the future.

Roadshow and summer internship

- 2.44. Unlike school visits and career fairs targeting certain categories of people, setting up roadshows in popular locations can reach more people who probably don't know anything about air traffic control.
- 2.45. Summer internships can also be considered to allow students to experience the work of air traffic controllers by plugging in and listening to live traffic. Apart from this, they can, for example, also help working in the office doing some paperwork. This could give them a better understanding on the operation of the ANSP or even get a brief idea on the aviation industry.

Podcasts and audio stories

- 2.46. Lots of audio streaming services, such as Spotify or Apple Music, are available nowadays and offer a great opportunity to offer podcasts or stories to listen to. This can be a useful way to provide information about air traffic control and the job as an air traffic controller. A podcast focused on information for example. But it also provides freedom to be more creative, such as storytelling or an audio book. Another possibility is to interview people working at an ANSP, such as an air traffic controller, somebody working at a technical division, somebody working in an office creating procedures, and lots more. One could consider hiring a famous or well-known presenter or radio or television personality to do this. This does not only provide the opportunity for an ANSP to promote the air traffic control job but can be useful as well for different kinds of jobs and vacancies within the organisation.

Word-of-mouth advertising

- 2.47. Last but not least in the list of recruiting ideas, one should not forget word-of-mouth advertising. Telling people, you know or speaking about the job as an air traffic controller can be an effective way of recruiting new applicants. It is a very accessible way for potential applicants to ask any questions about the job.
- 2.48. A good example of promoting this recruitment method can be seen at ANSPs, such as the German ANSP Deutsche Flugsicherung (DFS), which introduced a so-called 'finder's fee.' If you refer someone you know to apply, and they become fully licensed and certified, you receive a referral fee. This kind of initiative might encourage air traffic controllers to refer friends or other people they know to the job and enthusiasm and convince people of their generation to consider air traffic control as their career path.
- 2.49. As an air traffic controller, being passionate about the job can inspire people to consider it as a career path and spark their interest in aviation.

Introducing the work of air traffic control on the IFATCA website

- 2.50. Although it is not necessarily IFATCA's responsibility to promote recruitment of air traffic controllers, it would be helpful if a section introducing air traffic controllers were created on the IFATCA website.
- 2.51. The section should include the definition of air traffic controllers, what an air traffic controller does, what are the advantages and disadvantages of being an air traffic controller, requirements for being an air traffic controller and why it is a great career to consider.

3. CONCLUSION

- 3.1. Recruitment and training constraints should be carefully examined, and where necessary, adjustments should be considered to reduce these limitations without compromising the quality of the recruitment and training of air traffic controllers.
- 3.2. Long-term predictions, expectations and planning of staffing are essential to be able to adapt to future needs. Actions should be taken far in advance, adjusting the recruitment strategy where necessary.
- 3.3. Since there is no "one-size-fits-all" solution for an effective recruitment strategy, because the situation in which an ANSP finds itself in is different from place to place, it might be helpful to look at examples and ideas from around the world to gain inspiration and new ideas to improve or expand recruitment to a new level.
- 3.4. ANSPs should adopt and adjust marketing strategies and the use of media to be suitable for their geographic and demographic needs, keeping local varieties in mind.

- 3.5. A recruitment strategy should highlight both the rational benefits, such as salary, and the emotional benefits, like work-life balance. Adopting this strategy to different generations and clearly communicating the profession's benefits will help overcome perceptions and attract a diverse and new pool of applicants.
- 3.6. Adapting the recruitment strategy to a specific generation requires possible adjustments of the ANSP in terms of company values and purpose, benefits, and work-life balance flexibility. This is also necessary to remain an attractive employer for future generations and for the (future) retention of employees.
- 3.7. Through Member Associations, recruitment examples and ideas can be presented to ANSPs, helping them to develop a recruitment strategy.

4. RECOMMENDATIONS

- 4.1. It is recommended that this paper is accepted as information material.
- 4.2. It is recommended that IFATCA creates a webpage introducing and promoting the work of air traffic controllers.

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