

WINGS UNSEEN:

Women Navigating the Skies

PSYD10: Community and Applied Social Psychology
University of Toronto Scarborough

Katrina De La Cruz | 2024







Wings Unseen Table of Contents

| FOREWORD01 |
|---------------------------------|
| Letter from Author |
| INTRODUCTION03 |
| Inclusivity Statement |
| Aviation Licencing |
| Power Dynamics of Aviation |
| FACTORS FOR WOMEN IN AVIATION08 |
| Lack of Female Role Models |
| Gender Bias in the Aviation |
| Public's Lack of Acceptance |
| INITIATIVES for WOMEN IN STEM11 |
| Mentoring Program |
| Gender Inclusive Policies |
| RECOMMENDATIONS to DFC13 |
| CONCLUSION15 |
| REFERENCES17 |

tten from the Auth

My interest in pursuing the topic of Women in Aviation is due to my self-identity and connection to the aviation community. As I discuss in an upcoming paragraph, connection to the aviation community is through my sister and her fellow female friends who are student pilots in training. When my sister first announced her decision to pursue a career in the aviation industry, my family and I were all shocked but also thought about how fitting it appeared for her. I've never thought about aviation as a career because of my love for science and research. Due to this position, I stand as an outsider to the aviation community. However, knowing people who are pursuing a career as a pilot provides me with insight into prominent social issues, given the only pilots I know stand on the female side of the social issue of gender. Despite my status as an outsider, my own identity and experiences as a female allow me to empathize with other females on this issue.



Pictured here is Katrina (right) and her sister (left) at her graduating ceremony

I identify as an Asian-Canadian female and thus, my identity can be examined in two aspects, both of which are subject to different stereotypes. First, as females, we are typically seen as subordinate to our male counterparts. Subordination attitudes deeply stem from the gendered roles of typical caregiving. Additionally, since 1908, the roles females could attain within aviation were always restricted to private planes or support jobs, never being able to go beyond that (Women in Aviation and Space History, 2021). In comparison, males were typically seen as breadwinners to provide for the family.

In recent centuries in Canada, there have been several waves of feminism to help break down these societal gender roles. The first wave occurred in the 19th century when women first fought for the right to vote in political elections. This later fueled the ambition of women's involvement in politics, with the formation of separate groups and associations (Strong-Boag, 2016). The second wave of feminism occurred from 1960 to 1983, when women pushed for equality in education and employment, the introduction of birth control pills campaigned to end violence against women (Canadian Encyclopedia, 2016).

Despite these movements, stereotypes have persisted as evidenced by male-dominated industries. One influencing factor stems from childhood, where toys are heavily gender biased - boys like trade toys such as trucks and planes girls prefer dolls (Meghna, Additionally, pop culture has played a large influencing factor in gender stereotypes of aviation. When talking to a non-pilot about the aviation industry, the first thing people will say is, "Oh, like Tom Cruise from Top Gun right?". Alternatively, Monica Barbaro played the character of Phoenix, a pilot in the Top Gun training program who completed the mission alongside Tom Cruise.



Pictured here is Katrina's sister, who was invited to take photos as one of the few females in her graduating class.

The second aspect of my identity as an Asian is that we often do not feel we belong here even if we are born here. As an Asian-Canadian, many perceptions have been imposed on us, such as being a "Yellow Peril" or "Perpetual Foreigner". These perceptions are negative in tone and subject us Asians to racism at an individual and systemic level (Government of Canada). The Perpetual Foreigner stereotype describes how a person of an ethnic minority will always be seen as the "other" in society (Huynh, 2011). This stereotype often invokes the feelings of being denied the identity of a Canadian and often makes it feel like ethnic minorities do not fit the definition of a Canadian. In the aviation field alone in Canada, the total visible minority population is approximately 10% (2,025 out of 18, 605; Statistics Canada). This statistic includes those who identify as a minority who are air pilots, flight engineers and flight instructors.

If you combine these two identities into your whole identity, you face many challenges and most likely identify as part of a marginalized population. Thus, the choice was easy for me because I want future generations to not face these stereotypes as everyone is free to pursue the career they want. In addition, the reason I decided to choose this particular community partner, Durham Flight Centre, is due to my connection. I have a sibling who is currently a student pilot in training. Similar to me, she identifies as a female Asian and is also very proud of our heritage. But, she has not gone through her schooling without her struggles. Being one of the only six females in a class of 70, she understands the significance of perseverance to achieve her dream. At a certain point, you realize that achieving your dream is not simply for yourself only - other people benefit from it, especially as a minority group. As an Asian female, becoming an airline pilot as a Captain or First Officer sets an example for the younger aspiring pilots that you can achieve that status despite the challenges such as being in a male-dominated industry. Therefore, the other aspect which motivated me to investigate with this particular community partner is knowing the struggles female student pilots experience personally.

CHEERS,

KATRINA DE LA CRUZ

INTRODUCTION

The original purpose of this knowledge mobilization document is to put forward a set of recommendations that the Durham Flight Centre (DFC) can use to recruit more female pilots and to foster a supportive environment for training women who wish to pursue aviation careers. The final goal is to be part of the movement to address the issue of gender equity within the aviation industry. In doing so, I will be exploring (1) factors that either persuade or dissuade women from entering the aviation industry, (2) analyze solutions which have already been implemented to increase women's interest and ability to enter, and finally (3) discussing a set of recommendations to potentially implement to increase female recruitment. This document has been edited to remove the specificity factor geared towards DFC and instead provides general literature review and recommendations created for all flight centres.

Often when we examine the gender makeup of the aviation industry, people may think about addressing the issue of gender equality, such as equal pay. However, the more relevant theme is gender equity. Gender equality is when everyone receives the same opportunities. resources or Alternatively, gender equity is more accommodating to individual circumstances and thus will allocate the necessary resources and opportunities to reach the same outcome everyone as (International Women's Day, 2023). An example of equality is when everyone is asked to pay \$100 to access a textbook for ground school. An example of gender equity occurs when people who experience financial hardships are given access to the textbook for free, ensuring they have the opportunity to access the textbook despite their hardships.

"We are never ever going to fly high unless we both, men and women, are in support of each other."

- Emma Watson

Inclusivity Statement

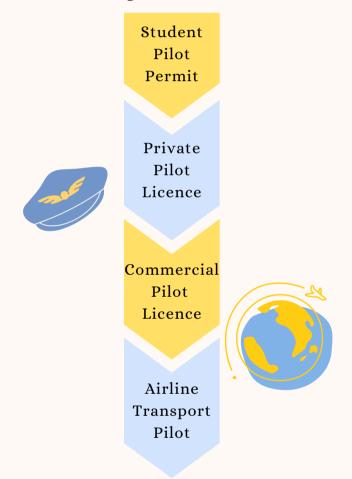


In recent years, gender identity has become a major idea which is integrated into many of our lives. Gender identity describes how a person identifies their gender which may be separate from their biological sex or aligns with their biological sex (Wamsley, 2021). Biological sex is the sex you were assigned at birth given the reproductive characteristics and uses the terms females or males. In comparison, gender identity contains more than the man and women, going beyond to include nonbinary, transgender, and more. Throughout this paper, I will be using the terms **female** and women which for the sake of simplicity, includes all people who identify as a woman.

Aviation Licensing

In Ontario, becoming a pilot involves obtaining four different licences. The first may obtain different ratings - additional licence to obtain is the Student Pilot Permit (SPP) which allows a person to start their flight training as a student. During this stage, students must pass an introductory exam covering the basics of how planes work and the rules and regulations outlined by Transport Canada. Flight training includes flying with a flight instructor and flying solo under their supervision. The second license to work towards is the Private Pilot Licence (PPL). The PPL requirements include completion of ground school instruction, a minimum of 45 hours of flight training in an airplane, clearance with a medical certificate, successful passing of the written examination, and successful passing of the flight test. The next licence is the Commercial Pilot Licence (CPL). The CPL requirements include a minimum of 80 hours of ground school, 200 hours of flight time divided by a minimum of 100 as pilot-in-command, 20 hours of cross-country, 35 hours of dual instruction with a flight instructor, and 30 hours of solo flight time. In the end, once you've obtained your CPL, you can be paid for flying and flying people and cargo. The final licence is the Airline Transport Pilot Licence (ATPL). Once obtained, the pilot may become captain of a multi-crew airplane and pursue a career with airlines. The minimum requirements include successful completion of the previous licences and their respective exams with at least 1500 flight hours (Stefanac, 2024).

Alongside the four major licences, pilots credentials permitting them to fly in certain conditions. For example, the night rating allows the pilot to fly at night (Durham Flight Centre). Flight training for the CPL and Instructor Ratings (rating required to become a Flight Instructor) are vocational while the other licences and ratings are non-vocational.



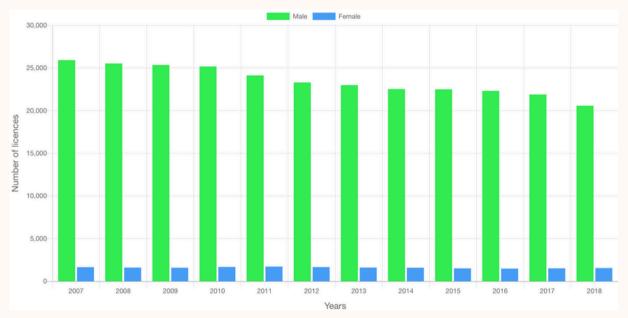
"When women are educated, their countries become stronger and more prosperous."

- Michelle Ohama

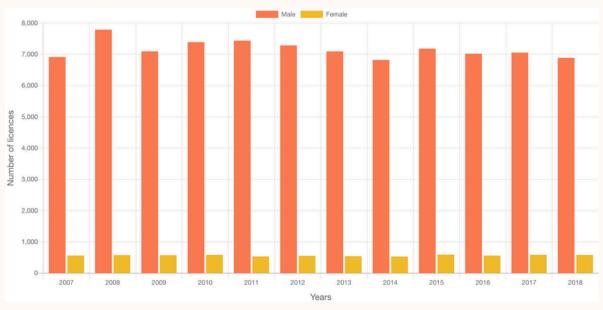


Power Dynamics of Aviation

Across institutions, there exists power dynamics between everyone. In the aviation industry, there may be different power dynamics such as ageism (Gerhardt, 2022) and gender. The most significant to our discussion is the power dynamic of gender between males and females in aviation. In the last 15 years, many people have emphasized and announced the surge of females present in the aviation industry. Broadly speaking, the aviation industry includes the domains of piloting, aircraft maintenance and air traffic control. Despite what appears to be an increase in female presence, the broader picture shows stagnant numbers - they are not moving (CGadmin, 2024). That is not to say there are no female student pilots, but their presence continues to be far less than males, broadening the gender gap even more.

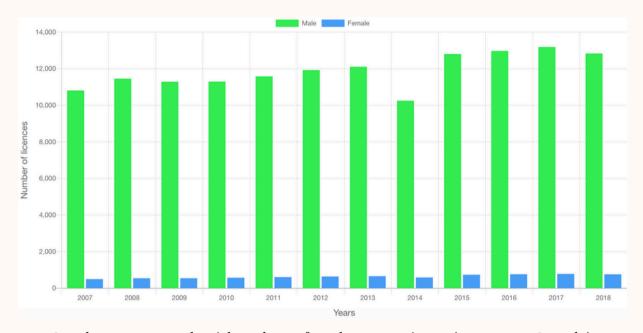


Graph 1. PPL graph with male-to-female comparisons (Transport Canada).



Graph 2. CPL graph with male-to-female comparisons (Transport Canada).

According to a set of graphs created by Transport Canada, they measured how many males and females obtained the three licences - PPL, CPL, ATPL - from the years 2007 to 2018. Graph 1 shows in 2007, there were 25,913 males and a steady decline to 20,573 in 2018. In comparison, there were 1,668 females with PPLs in 2007 and a steady trend hovering around 1500-1600 until 2018 when there were only 1,559 females with PPLs (Transport Canada). For the CPL and ATPL, the gap is very similar in differences between males and females.



Graph 3. ATPL graph with male-to-female comparisons (Transport Canada).

At DFC alone, the stats remain alarming with a glimmer of hope. In the last two years of their 539 students, there were 62 females - making up 11% of their student population. In the most recent months of students - those who have been actively flying in the last 90 days - 12% are female active students - 38 out of 303 (Thomson, 2024).

To many of us women, we fear how low these statistics are across one booming field. To better understand why women are underrepresented in aviation, I will examine the factors that might persuade or dissuade women from entering aviation.



Amelia Earhart

One of the most well-known aviators who paved the way for aspiring females. She was the first woman to fly across the Atlantic and survived the journey to tell the story. She was a trailblazer as both a female and aviator, setting new records and collecting medals throughout her flying career. Unfortunately in 1937, she disappeared in her attempt to be the first woman to fly around the world (Amelia Earhart, n.d.).

FACTORS FOR WOMEN IN AVIATION

In this section, I discuss three factors that might persuade or dissuade women from pursuing aviation careers: the lack of female role models, gender bias in the aviation industry, and the general public's lack of acceptance of female pilots. These factors are can be seen as a motivating force to join aviation (i.e., factor of persuasion) or could be seen as a barrier which prevents interest and motivation (i.e., factor of dissuasion). It is important to examine these factors because if we can understand factors which persuade females, we can determine what solutions are working and how we can continue or improve on those solutions. Likewise, if we understand what dissuades females, this allows us to get to possibly one of the root causes of gender equity.

Lack of Female Role Models

The first factor of dissuasion females encounter is the lack of female role models. A role model is someone we often admire and who embodies inspiration for who we strive to be in life. This can often be due to the things our role model has accomplished and is thus a motivating force as to why we choose to pursue a certain career path (Reva, 2022). Across numerous industries, you'll often meet people who'll say, "I never would have gotten where I am today if it wasn't for my role model and mentor". That's because role models often become our mentors, providing us with guidance and support as we work towards our dreams (Reva, 2022). However, it often feels difficult for females to connect and find other female role models in the aviation field. As previously stated, the number of females in the industry has remained stagnant over the years. With a small population of females in a large industry, the lack of role models could be attributed to how the current pool has been facing its struggles to overcome barriers. Additionally, female student pilots typically encounter only males from the beginning of their training - as their flight instructor, the duty manager at the flight centre, etc. When aspiring female pilots feel disconnected from role models in a field where there is little female representation, this acts as a preventative barrier and increases the stereotype that aviation remains unfriendly to females (Marintseva, 2022).

Judy Cameron

Judy Cameron is known the first female pilot for Air Canada. Through her dedication and perseverance (despite being the only female in her graduating class for aviation), she achieved this status in 1978. Following her career with Air Canada, Judy became the first female captain of a Boeing 767 and again of a Boeing 777 (Canadian 99s, n.d.).



"The most difficult thing is the decision to act. The rest is merely tenacity. The fears are paper tigers. You can do anything you decide to do. You can act to change and control your life and the procedure. The process is its own reward." -Amelia Earhart

"The most common way people give up their power is by thinking they don't have any." - Alice Walker



Gender Bias in the Aviation Industry

The second factor of dissuasion would be the gender bias in the aviation industry. As an umbrella term, gender bias can be defined in terms of cultural sexism, gender discrimination, and stereotypes - which all play a significant role in the low female representation. But they all come from the same cause: the male dominance present across the industry whether it's apparent or not (Marintseva, 2022). Cultural sexism is defined as the regularity and ordinariness of sexism daily (Savigny, 2017). Gender discrimination, synonymous with sexism, is defined by the unfair and unequal treatment experienced based on their gender identity (Soken-Huberty, n.d.). A stereotype often describes false and unfair beliefs about people or things.

In one research article, Hoppe outlines the long historical stereotype that aviation is a "white man's industry", which displays prominent discrimination (2011). Thus, as a female joining such an industry, there are many discriminatory experiences which occur daily. But often times, this discrimination towards females comes from aviation's cultural sexism - where it appears almost to be normal for these kinds of things to happen. For example, within the industry, females often have to face harassment, patronizing jokes, and silent judgment from male peers. In interviews with female pilots, many females described how they could feel distrust from senior colleagues, dealing with the constant comment about starting a family and performing certain tasks "like a man". In one interview, a pilot described the nature of training as a female in a maledominated profession, "During the trainings, I felt distrust from captains. A male FO sitting next to me had to make just one successful landing, whereas I was required to make five." FO means first officer (Marintseva, 2022). Yet these experiences are deemed normal in the aviation culture, which is part of the problem. Although we are outsiders to aviation, the public has a role in criticizing the apparent displays of cultural sexism. This leads to the third factor, where the public's opinion leaves a significant impact on pilots.

Public's Lack of Acceptance of Female Pilots

The third factor of dissuasion is the general public's lack of acceptance of female pilots. This unfounded construct appears to be the caused by the overt biases present within the aviation industry which often favours white male pilots (Ragbir, 2021). Despite this favoured population, which has become the stereotype of aviation, studies have compared and reviewed performances between male and female pilots.

One study did an in-depth analysis of accident records dating back from 1972 to 1981. With each record, the researchers accounted for each of the following at the time of the accident: the pilot's certification, age, total flight time, flight time in type of aircraft, phase of operation, category of flying, degree of injury, specific cause factors, and cause factor miscellaneous acts/condition. Interestingly, across all the accidents, 42, 597 males and 1,004 females were involved in accidents - that means of all the incidents, 97.69% of the personnel involved were male, while only 2.3% female personnel was involved - and yet being a pilot remains a male-dominated profession. The results dispute the unfounded construct that females cannot fly across all the data analyzed. The study has displayed that females are safer pilots compared to males, with males causing more fatalities and having greater accident rates (Vail, 1986).

what's the greatest lesson a woman should learn? / that since day one. she's already had everything / she needs within herself, it's the world that / convinced her she did not. -Rupi Kaur





"Each time a woman stands up for herself, without knowing it possibly, without claiming it, she stands up for all women." -Maya Angelou

Studies have shown that people believe males' skills and abilities as pilots are superior to females, often doubting a female pilot's training ability. However, researchers have found that pilot errors are not gender specific, displaying how deep-rooted the prejudices against women in aviation go (Marintseva, 2022).

INITIATIVES FOR **WOMEN IN STEM**

Mentoring Programs

When analyzing previous initiatives that strived to combat the issue of low female representation in aviation, I will use literature looking at women in STEM initiatives. The first initiative is understanding the impact of female role-model interventions. In a study by González-Pérez and colleagues in 2020, they investigated how a female role-model-based intervention could influence preferences for **STEM**. The design of the study had female volunteers who were in STEM careers come and talk to young girls in schools about their careers. Questionnaires were given before the session and after to gauge how the girls felt about four major concepts (phrases in brackets were example items used in the actual study):

- their level of enjoyment for math (i.e., I like math, I enjoy doing math exercises),
- their perceived importance of mathematics mathematical skills increase (i.e., opportunities),
- · the gender differences and stereotypes of math (i.e., boys do better in math than girls),
- expectations (i.e., I am talented at math),
- and their STEM choices (I am considering (maths, physics, engineering or computing) as a career for the future).

The researchers found after these rolemodel sessions a significant decline in the effect of gender-role stereotypes. Additionally, the study found that encouragement to pursue a career in STEM is strongly driven by their exposure to an actual female role models who discussed their professional and personal experiences in their career (González-Pérez, 2020).



"Leadership is a series of behaviors rather than a role for heroes."

- Margaret Wheatley







AERO FOUNDATION

One such organization that helps to foster connections with female role models in the aviation industry is the Northern Lights Aero Foundation (NLAF). NLAF strives to attract and inspire women to pursue and succeed in aviation and aerospace careers. Their initiatives include mentorship opportunities, scholarships, and outreach at various events. One event they are well known for is their annual NLAF Awards Gala to celebrate the achievements of women in aviation and aerospace.

The first award always presented at the gala is the Elsie MacGill Award. Elsie MacGill was a significant woman who helped pave the way for many young aviators and females in STEM. She was the first Canadian female to have a degree in electrical engineering, the first in North America to have an advanced degree in aeronautics, and the first woman to be an aircraft designer. Some of her works and designs were crucial during World War II and for flying in cold weather conditions. Despite all these achievements at a young age, she was never able to obtain her pilot's certificate to fly. Through this gala, many young aviators feel honoured to attend and have the chance to network with decorated females in the field (Northern Lights Aero Foundation, n.d.).

Gender Inclusive Policies

Another initiative seen across companies and institutions is the implementation of researchers of this review suggested changing gender-inclusive policies through diversity training and anti-bias training. Diversity training aims to educate and inform individuals inclusive environment by changing the work about the values, beliefs and attitudes to support diversity-related changes. The efficacy of such training was examined and yielded somewhat promising results. Overall, there were positive reactions to such diversity training which showed moderate changes in conform to the masculine default norms. Such attitudes, beliefs and behavioural intentions. However, these changes would dissipate over time, especially when it was deemed mandatory training which elicited more negative reactions. However, another implicit bias training study found an effective way to change people's gender-based attitudes, beliefs and behavioural intentions. This training involved participation via online training. However, despite these STEM and overall less efficacy. Overall, efforts changes, it did not increase the likelihood of to widen gender-inclusivity practices should people promoting or mentoring women in their think about what they can do at the individual organization (Schmader, 2023).

After reviewing these initiatives, the gears from organization-wide to individual targets. They suggested fostering a genderculture, through policies, norms and perceptions, which encourage the constraints on women's ability to feel included. For example, one change to make environments more inclusive is to stop making women as, instead of always asking a male colleague to complete a certain task because he is a male, considering asking a female colleague who is just as capable. Studies have shown that both girls and women are just as capable to excel in math and science. However, on an individual level, women feel less confident in their abilities, which may lead to less interest in level to boost interest and confidence in women (Schmader, 2023).





RECOMMENDATIONS

Recommendations come from how to combat the three major factors of dissuasion previously discussed. To make up for the lack of female role models or connections in the industry, a brochure and pamphlet would come in handy. The information should include different female aviation organizations and their information so students can refer to their websites and potentially join the organization. Doing so, allows aspiring female student pilots to have a glimpse at the community of females within the industry. Despite being simple, the brochure has the potential to represent breaking down the gender barriers in aviation.

Additionally, hosting monthly female coffee talks could help foster a mentoring environment. This idea can extend to both genders but would provide immense comfort to female students. The idea of a coffee talk is to have a casual conversation with others. In this case, female coffee talks will allow female students to talk to other females in the industry - such as instructors, and administrative staff, or invite guest speakers from organizations. Coffee talks are a great initiative to foster a mentoring environment and allow students to network with other people. To effectively implement these initiatives, advertising and marketing are significant. This can be done social media through your accounts, newsletter email subscription that announces coffee talk meetings and placing posters on advertisement boards in the area.







The second factor of dissuasion is the stereotypes present in the industry. One of the stereotypes is that it's a male-dominated industry, that's a fact that can change. To combat this, I recommend having a wall to display DFC's current instructors. The wall does not have to hold their photos, simply their name, their pronouns, and contact information. By displaying instructors, students can see and feel the presence of female instructors. This will provide more confidence and comfort to potential students who are still weary of joining the industry due to the stereotype of it being male-dominated.

The third factor of dissussion is the lack of acceptance female pilots receive from male peers and male passengers. Thus, to combat this issue, it's best to **highlight student training** early on. To combat this factor, organizations and flight centres can use their social media platforms. Every month or in clusters, aim to create posts (with consent, of course) about students who've recently achieved a milestone in their training. For example, let's say in October two students had their first solo flights and five students completed their night rating. Then, the flight centre or organization can create an October highlight post showcasing the achievements of these students. By student achievement. highlighting aviation organizations can showcase how every student undergoes the same rigorous training to become a pilot. This allows the public to understand that judgment between male and female pilots should dissolve since they all undergo the same training from the beginning of their journey. Additionally, consistent social media activity can aid in promoting the flight centre. If aspiring pilots can see how organizations celebrates their students, this can be an encouraging factor for them to visit flight centres and learn more about an aviation career pathway.

"It is completely understandable that we do not know what it is like to live with a different color skin or gender or different physical abilities or any of the myriad of differences that exist among humans. So there's no need to feel bad about what we don't know. The point is to educate ourselves, to take an active role in correcting our blind spots."

- Ash Beckham

My fourth recommendation is not integrated with factors of dissuasion previously discussed but addresses the concern of personal connections to the aviation industry. The previous recommendations assume that people are already aware of the aviation. However, an important goal of flight centres is how they can reach the population of people unaware of the opportunities in the aviation industry. Often, many people who enter aviation have a personal connection, they know someone who was a pilot or engineer and thus, plays a role in persuading them to enter the industry. Therefore, flight centres would need to do some hands-on marketing to reach the people who do not harbour personal connections. I two initiatives: **field** recommend trips career/school fairs. By conducting field trips for elementary and high school students, they'd be able to gain insight into the flight centre's operations while on site and the various careers in aviation.

To make effective use of the field trips, they should be organized in a way that achieves the following goals:

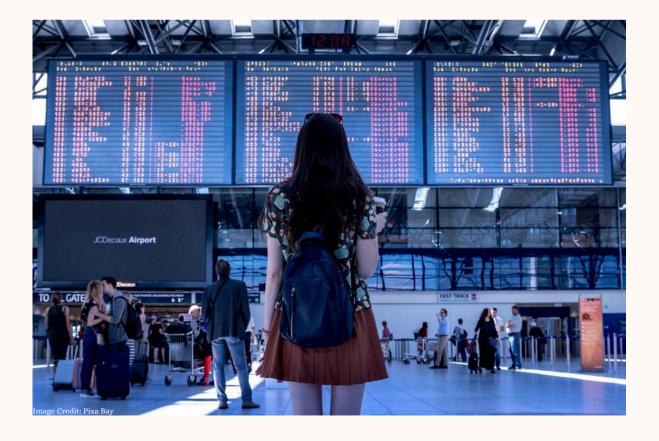
- 1. Exposure to education pathways of a pilot
- 2. Insight from current or past student pilots
- 3. Host a Q&A session with current students or instructors
- 4. Exposure to the airport operations and logistics (visiting the hangar, viewing different plane models, possible introduction flights, etc.)

During the field trips, the brochures previously suggested could be handed out to provide students with a document to commemorate their visit. DFC could make two types of brochures available to distribute, (1) a brochure highlighting DFC including their rates, schooling options offered and a brief outline of the pathway to becoming a pilot and (2) a brochure as previously mentioned outlining different women in aviation organizations to target female prospective students.

In addition to field trips, flight centres and organizations should consider attendance at career/school fairs. In my personal experience during high school, there is the annual university/college fair that occurs at the Metro Convention Centre in Downtown. DFC could look into attending such fairs which would give them wide exposure to their target audience of students who are beginning to looking into what careers to pursue. This is one example of a fair I am aware of that happens annually. Flight centres could look into asking universities if they host career fairs to secure a table. To my knowledge, our university (UTSC), often hosts career fairs where students can meet and network with professionals from various fields. The events DFC provide the opportunity to hand out brochures and talk to students in a casual setting about becoming a pilot.

My final recommendation is to relaunch past initiatives, such as Girls Take Flight Day and open houses. Considering DFC's long list of past initiatives that were unfortunately discontinued during the pandemic, relaunching them will allow DFC to bring back exposure to the public and make flight training appear less intimidating to some. Additionally, these initiatives will allow aspiring students to have a sense of the aviation community and how welcoming the flight centre can be. By being open to the public on certain days - via open houses - this provides a more accessible option to people who are not sure if they can simply walk in or not.

In conclusion, these recommendations provide a foundation of thought in putting forth initiatives targeted at female recruitment. Each recommendation was created by analyzing dissuading factors that research has found. With effective planning and analysis, I believe flight centres can somehow implement these recommendations to continue building its reputation and become a leader in encouraging women in aviation.



Conclusion

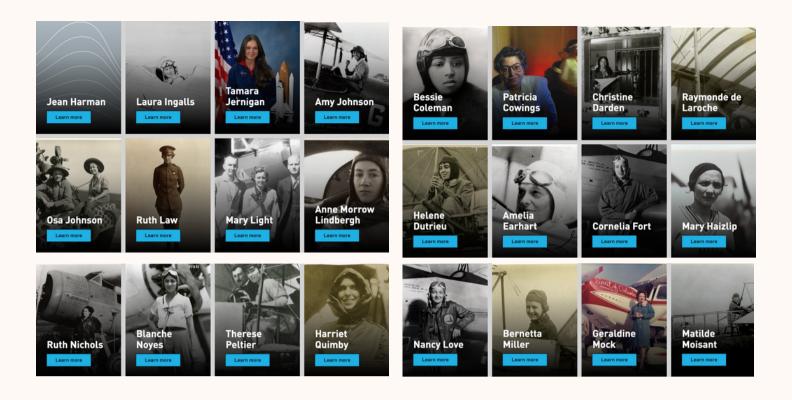
To understand gender-inclusive policies, changes, and significance means to understand why the topic of women in STEM and women in aviation is important. Such changes can foster a comfortable and welcoming environment which encourages success for women as it does for men. While writing this paper, I started to create my vision of what can be done to change attitudes and behaviours towards women in STEM. I've found that being aware of your own bias and actions while taking proactive steps to dismantle bias and reduce actions (which encourage gender stereotypes), needs to start early. I believe this is something that kids should be taught at a young age and more exposure to successful female role models is needed. Durham Flight Centre's initiatives are truly inspiring and represent their value in opening the field to more females. Similar to everything, improvements can be made, especially at the individual level. I believe that Durham Flight Centre's proactiveness in investigating this issue will allow it to become a leader in supporting female aviators. As this knowledge mobilization document comes to a conclusion, I end with three inspiring quotes which reminded me of the whole goal of this project. With this document, I am grateful and honoured to have contributed to paving the way for women navigating the skies.

"If this is something that you really want to do, if you believe in it ... simply keep forging forward because success will come."

- Cassandra Sanford

"Here's to strong women. May we know them. May we be them. May we raise them."

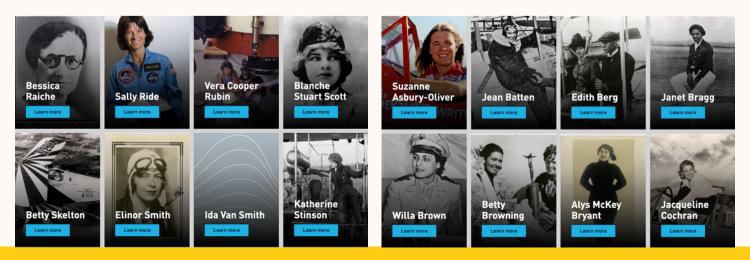
- Unknown



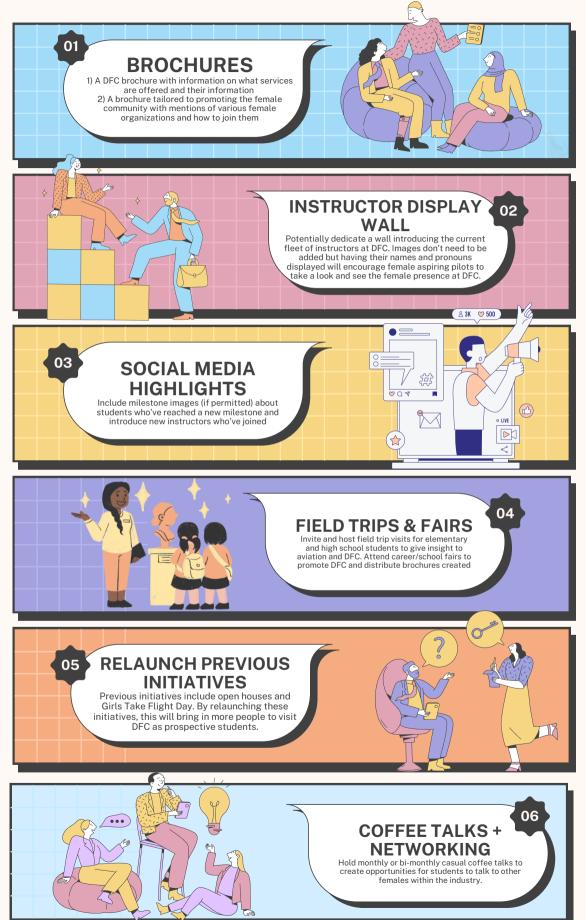
Women in Aviation and Space History

Image Credit: National Air and Space Museum, Smithosonian

"Don't be intimidated by what you don't know. That can be your greatest strength and ensure that you do things differently from everyone else." - Sara Blakely



DURHAM FLIGHT CENTRE FEMALE RECRUITMENT STRATEGIES



References

Amelia Earhart . Amelia Earhart Website, https://www.ameliaearhart.com/biography/

- Canadian 99s. (n.d.). Canadian Aviatrixes. https://canadian99s.com/judy-cameron_canadian-aviatrix/
- Canadian Encyclopedia. (2016). Women's Movements in Canada: 1960-85. The Canadian Encyclopedia. https://www.thecanadianencvclopedia.ca/en/article/womens-movements-in-canada-19608
- Cameron, J. (n. d.). Addressing Gender Disparity Among Airline Pilots. Pacific Flying Club. https://www.pacificflving.com/gender-disparity-among-airline-pilots/#:~:text=Despite%2 0a%20steadv%20increase%20in.of%20pilots%20worldwide%20are%20women.
- CGadmin. (2024). Aviation's Gender Gap. Aviation Personnel International. https://www.apiaviation.com/aviation-gender-gap/#:~:text=The%20aviation%20industry %20continues%20to.at%20Embrv%2DRiddle%20Aeronautical%20University
- Durham Flight Centre. (n. d.). Our School. Durham Flight Centre. https://durhamflightcentre.com/
- Enterprise Aviation Group. (n.d.). About Us. https://www.enterpriseaviationgroup.com/about/
- Gerhardt, M. (2022). Why is there a pilot shortage? Start with ageism. NBC News. https://www.nbcnews.com/think/opinion/pilot-shortage-start-ageism-rcna34831
- Google. (n.d.-a). [Google Maps direction to drive from Durham Flight Centre to Billy Bishop Airport]. Retrieved September 30, 2024, from https://maps.app.goo.gl/kxAMCNdium1YmuoE9
- Google. (n.d.-b). [Google Maps direction to drive from Durham Flight Centre to Toronto Pearson International Airport]. Retrieved September 30, 2024, from https://maps.app.goo.gl/pOihZLRZAtFgoWYz9
- González-Pérez, S., Mateos de Cabo, R., Sáinz, M. (2020). Girls in STEM: Is It a Female Role-Model Thing? . Frontiers Psychology. 11 . https://doi.org/10.3389/fpsyg.2020.02204
- Government of Canada. (2024). May is Asian Heritage Month. Government of Canada. https://www.canada.ca/en/canadian-heritage/campaigns/asian-heritage-month/anti-asian-r acism.html

- Hoppe, E. (2016). *Ethical issues in aviation*. Routledge. https://books-scholarsportal-info.myaccess.library.utoronto.ca/uri/ebooks/ebooks4/taylorandfrancis4/2018-06-07/1/9781317141525
- Huynh, Q.L., Devos, T., Smalaez, L. (2011). *Perpetual Foreigner in One's Own Land: Potential Implications for Identity and Psychological Adjustment*. Journal of Social and Clinical Psychology. *30*(2), 133-162. https://doi.org/10.1521/jscp.2011.30.2.133
- International Women's Day. (2023). Equality versus Equity: What's the difference as we #EmbraceEquity for IWD 2023 and beyond?. International Women's Day Missions. https://www.internationalwomensday.com/Missions/18707/Equality-versus-Equity-What-s-the-difference-as-we-EmbraceEquity-for-IWD-2023-and-beyond
- Marintseva, K., Mahanecs, A., Pandey, M., Wilson, N. (2022). Factors influencing low female representation in pilot training recruitment . 115 , 141-151. https://doi-org.myaccess.library.utoronto.ca/10.1016/j.tranpol.2021.11.010
- Meghna, M. (2024). Where are the female pilots and executives? The airline industry reckons with a broad gender gap. Skift Take.
 - https://skift.com/2024/06/09/where-are-the-women-the-airline-industry-reckons-with-a-b-road-gender-gap/
- Northern Lights Aero Foundation. (n.d.). *About The Foundation*. Northern Lights Aero Foundation. https://northernlightsaerofoundation.com/learn-about-nlaf/nlaf/
- Paramount Business Jets. (2024). Women in Aviation and The Pursuit of Gender Equality within the Industry. Paramount Business Jets.

 https://www.paramountbusinessjets.com/blog/women-aviation-and-pursuit-gender-equality-within-industry
- Ragbir, N.K., Rice, S., Winter, S.R., Baugh, B.S., Milner, M.N., Gupta M.B., Valecha, D.O., Candelaria-Oquendo, K., Capps, J., Neal, J.G. (2021). *An examination of consumer bias against female and minority commercial pilots*. Technology in Society. *64*, 101492. https://doi.org/10.1016/j.techsoc.2020.101492
- Reva University. (2022). *5reasons you need a role model*.

 https://www.reva.edu.in/blog/5-reasons-you-need-a-role-model#:~:text=They%20can%2
 https://www.reva.edu.in/blog/5-reasons-you-need-a-role-model#:~:text=They%20can%2
 <a href="https://openstan.edu.in/blog/5-reasons-you-need-a-role-model#:~:text=They%20can%2
 <a href="htt

xt=A%20role%20model%20is%20proof.the%20best%20version%20of%20ourselves.

- Savigny, H. (2017). *Cultural Sexism is Ordinary: Writing and Re-Writing Women in Academia*. Wiley. 24(6): 643-655. https://doi-org.mvaccess.library.utoronto.ca/10.1111/gwao.12190
- Schmader, T. (2023). *Gender Inclusion and Fit in STEM*. Annual Review of Psychology. *74*: 219-243. https://doi.org/10.1146/annurev-psych-032720-043052
- Statistics Canada. (2024). Visible minority by occupation, highest level of education and generation status: Canada, provinces and territories. Statistics Canada. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810033001
- Stefanac, R. (2024). *How to Become a Pilot in Canada* . Course Compare. https://www.coursecompare.ca/how-to-become-a-pilot-in-canada/
- Strong-Boag, V. (2016). *Early Women's Movements in Canada: 1867-1960*. The Canadian Encyclopedia.

 https://www.thecanadianencyclopedia.ca/en/article/early-womens-movements-in-canada
 - Soken-Huberty, E. (n.d.). *What is Gender Discrimination?*. Human Rights Careers. https://www.humanrightscareers.com/issues/what-is-gender-discrimination/
- Thomson, R. (2024). *Statistics of Females at Durham Flight Centre* . Durham Flight Centre email correspondence.
- Transport Canada. (2024). Comparison of Private Pilot Licences Aeroplane, Commercial Pilot Licences Aeroplane, Airline Transport Pilot Licences Aeroplane and Recreational Pilot Permits Aeroplane In Force. Transport Canada.

 https://tc.canada.ca/en/aviation/licensing-pilots-personnel/aviation-personnel-licensing-statistics
- Vail, GJ & Ekman LG. (1986). *Pilot-error accidents: male vs female* . Applied Ergonomics. *17*(4): 297-303. https://doi.org/10.1016/0003-6870(86)90133-X
- Wamsley, L. (2021). *AGuide To Gender Identity Terms* . NPR. https://www.npr.org/2021/06/02/996319297/gender-identity-pronouns-expression-guide-lgbtq
- Women in Aviation and Space History . 2021. National Air and Space Museum. https://airandspace.si.edu/whats-on/exhibitions/women-aviation-and-space-history