



# A Day in Aviation

**2022 Research Report** 



The Centre of Excellence for Black Student Achievement 2022 *A Day in Aviation* Program Partnership with the Black Aviation Professionals Network **TITLE:** The Centre of Excellence for Black Student Achievement A Day in Aviation Program: Partnership with the Black Aviation Professionals Network.

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### Introduction

The *A Day in Aviation* program was an initiative developed in partnership between the Centre of Excellence for Black Student Achievement and the Black Aviation Professionals Network (BAPN) to nurture Black students' interest in the aviation industry. Recognizing the underrepresentation of Black people in this career field, the program is designed to engage Black students<sup>1</sup> to explore aviation as an academic and career pathway. For its part, the Centre of Excellence is committed to supporting initiatives such as these at the pipeline level to improve the experiences and outcomes for Black students and provide support. One of its key mandates is to "identify barriers to success and access appropriate resources (e.g., scholarships, networking, mentoring)" (Toronto District School Board [TDSB], n.d., paragraph 5).

The purpose of this report is to describe the results from the evaluation of the *A Day in Aviation* program, held in April, 2022. To set the context, an overview is provided of the literature on the aviation industry, the issues and challenges faced, some suggested strategies for addressing them, and supporting and nurturing Black talent in aviation. These strategies include increased recruitment and enrolment to attract Black talent in aviation, mentorship and role modelling, networking, and supporting Black aviation students and professionals already working in the industry. We then discuss ways that organizations and the educational sector have promoted the aviation career pathway. Finally, we describe the Specialist High Skills Major (SHSM) Program in Ontario, the SHSM pathway in Aviation and Aerospace, and research that has been conducted on the SHSM program in relation to Black students.

### Centre of Excellence for Black Student Achievement and BAPN Partnership

In April of 2022, a partnership was developed between the Centre of Excellence and BAPN, as a crucial step to nurture Black students' understanding of careers and pathways to Aviation and Aerospace. One of the goals of the partnership was to provide learning experiences and mentorship for students who have an interest in aviation and are already enrolled in the SHSM-Aviation and Aerospace (Woodley, 2021). The Centre of Excellence-BAPN partnership produced the *A Day in Aviation* program, an outreach initiative for Black-identified students from Grades 7 to 11 (CEBSA, 2022b).

<sup>&</sup>lt;sup>1</sup> The term Black refers to individuals, peoples or communities of Black /African descent living in Canada. This may include, but are not limited to individuals or peoples from the Black diaspora with varying geographical, historical, cultural, national, ethnic, religious, and ancestral origins and influences(e.g. African, African -Canadian, Afro-Caribbean, Afro Latin, Afro indigenous, Afro-Eurpoeans)

The *A Day in Aviation* program seeks to engage Black-identifying students to explore aviation as an academic and career pathway. Students have an opportunity to connect with Black aviation professionals who engage with students to explore roles and complexities within the aviation industry.

The *A Day in Aviation* program consisted of a one-hour information session where students were introduced to the Aviation and Aerospace SHSM, including the requirements for graduation and the advantages of participating in the program. As part of the program, there were also three two-hour sessions (See Figure 1). The first session involved a panel discussion of unconventional areas in aviation. The second session provided an opportunity for students to interact with Aircraft Maintenance and Engineers. In the third session, students could interact with Black pilots and engage in a discussion about the work involved in being a Dispatcher and Air Traffic Controller and "the art of directing the highway in the skies" (CEBSA, 2022a).



### Figure 1 – A Day in Aviation Program

#### **Overview of the Aviation and Aerospace Industry**

The aviation and aerospace industry has been described as White male-dominated (Molloy, 2019; Sulton, 2008). The workforce has been plagued by a history of discrimination where White males are more likely to be pilots and have senior management roles (National Research Council, 1997). Due to the exclusion of traditionally underrepresented groups in the workforce, it has been recognized that there is a need to increase the diversity of the aviation industry. It has been argued that individuals from underrepresented groups have untapped potential and need to be hired for management and executive roles (National Research Council, 1997). Owing to these realities, there is a need to nurture Black talent from an early age.

There is a significant labour shortage in the airline industry (Prather, 2019). It is estimated that about 62.7 million jobs are required to support the industry (Air Transport Action Group, 2016) and it is predicted that 763,000 pilots will be needed by 2039 (Aircraft Owners & Pilots Association n.d.). Since the trends in the aviation and aerospace industry are worldwide, the overall pattern in Canada is similar. In 2018 there were 154,000 workers in the aviation and aerospace industry. In order to keep up with the growth and demand for workers, the industry needs to hire 55,000 new workers by 2025 (Canadian Council for Aviation and Aerospace, 2018). Although aviation careers across the whole industry are in demand, there is not a trained pool of workers ready to assume these positions (McClure, 2019). A workforce shortage in the aviation industry is projected after the retirement of the baby boom generation (McClure, 2019; Prather, 2019).

Despite the worldwide labour shortage in the aviation industry and the need for workers, Black individuals continue to face discrimination as they pursue careers in the industry. A recent U.S. study examining the representation of Black individuals in different aviation occupations over a 10-year period from 2009 to 2018 found that there was a higher percentage of Black individuals in Aviation Mechanic and Service Technician roles and a lower percentage of individuals employed as Aircraft Pilots and Flight Engineers when compared to White individuals (Stevenson et al., 2020). Discrimination has been cited as an obstacle to Black representation in the aviation industry: "The lack of interest in aviation careers by Blacks has not been the issue; societal obstacles, historical ignorance of the Black aviation experience, and an industry that traditionally closed most doors to professional aviation careers for minorities have been the culprits" (Harl & Roberts, 2011, p. 11). According to Morrison (2021), there is a need for radical change to address system inequality and the normalization of whiteness and to understand the experiences of minoritized individuals in the industry. Further, there is a need to address issues of access:

"The challenge that aviation faces, like most other industries, is to move past the acknowledgement of the need for a more diverse and inclusive workforce, into actions that lessen the barriers, and create, not just opportunities, but access" (Morrison, 2021, para. 3).

## Strategies for Recruiting, Mentoring, and Supporting Black Talent in the Aviation and Aerospace Industry

Based on a review of the literature, this section describes potential strategies for recruiting, mentoring and supporting Black Talent. Promoting racial diversity in the aviation and aerospace industry increases representation while developing and

strengthening the pipeline of future leaders to come. More importantly, it ensures that its workforce is big enough to handle future demand.

Increased Recruitment and Enrolment to Attract Black Talent in the Aviation and Aerospace Industry. Strategies are needed to increase Black talent in the aviation industry. Evidence indicates that Black students are steered by teachers and guidance counsellors into trades-based occupations, athletics, and the arts (Hedge, 2007; Johnson, 2022; McKenty, 2022). In regards to gender, Black girls are discouraged by their families, school counselors, and college recruiters from pursuing a career in aviation (Sulton, 2008). Furthermore, there is a limited enrollment of racialized students and girls into Science, Technical, Engineering, Mathematics (STEM) fields (Prather, 2019) and professional pilot degree programs in the U.S. (Ison et al., 2016). In fact, Black women are less likely to choose aerospace engineering as a program of study and are less likely to graduate from it than their male counterparts (Orr et al., 2015). It has been recommended that there be an outreach model targeting youth to recruit them into the aviation industry (Lutte, 2018). It is also proposed that special recruitment efforts are needed in colleges and universities to encourage racialized groups to enter the aviation field (Hedge, 2007).

*Mentorship and Role Modelling.* Evidence points to the importance of mentorship and role modelling to attract Black talent in the aviation industry. There is a lack of role models in the aviation industry which affects the perception of aviation as an attainable career option for individuals from underrepresented groups (Bowean, 2015; Stevenson et al., 2020). Black children do not see aviation as a possible career path because they do not see pilots who look like them. As Stephen L. Davis, founder of Tuskegee Next, said: "When you don't see black pilots, you don't think you can do it" (Bowean, 2015, paragraph 8). According to Harl and Roberts (2011), "the Black aviation role model is not always available for Black children" (p. 16).

Mentorship and role modelling help to develop and reinforce a young Black person's interest in pursuing a career in aviation (Molloy, 2019). It is evident that having a mentor and role model from an early age encourages Black women to pursue a career in the aviation industry (Morrison, 2020). Furthermore, mentorship increases the self-efficacy of underrepresented students in STEM education programs (MacPhee et al., 2013; Molloy, 2019) and the success and persistence of Black women pursuing degrees in STEM (Dickens et al., 2021). Mentorship has become an important part of the career development of African-American Air Traffic Controllers (Walcott, 2018) and thus contributed to the success of Black professionals in the aviation industry (Harl & Roberts, 2011; Morrison, 2020).

**Networking.** Networking is also an important strategy to support Black talent. It has been identified as an important skill which Black aviation professionals need to develop for career success (Harl & Roberts, 2011) and to make themselves "marketable" (Johnson, 2022). However, it has been noted that Black individuals are less likely to be hired as pilots due to a lack of networking opportunities and connections when compared to White families who are more likely to have someone in

their family who was a pilot (Johnson, 2022). According to research, Black women pilots perceive that a lack of networking opportunities impeded their success in flight-training (Sulton, 2008).

Supporting Black Aviation Students and Professionals Working in the Industry. The importance of support systems for underrepresented aviation students has been well documented in research (Molloy, 2019). Molloy's (2019) study reported that Black students were surprised to learn that they were a minority in the aviation program, which may have resulted in feelings of isolation. Black and other underrepresented students were motivated to perform well to show that they were competent pilots and to be a good representative of their group. Black male students bonded with each other and preferred to have peer relationships with other Black students for mutual support. A key factor in the success of students was the support they received from family, friends, peers, faculty, and staff in the program. This support was "the key element that acts to nurture and promote positive motivation to succeed" (Molloy, 2019, p. 308).

Additionally, research points to the need to provide support for Black aviation professionals. A study by Evans (2013) uncovered that Black pilots and flight attendants experienced "emotional labour" from working in a racist work environment. Emotional labour describes the effort required to hide negative feelings and display forced positive emotions in a work environment, which for Black people in the airline industry, is stressful and taxing (Evans, 2013). These findings are also supported by research that found that Black women in the aviation industry felt that they occupied a space "that has traditionally valued whiteness" (Morrison, 2020, p. 30).

### Role of Organizations in Promoting the Aviation and Aerospace Career Pathway

The literature on the aviation and aerospace field points to the important role that community organizations play in supporting the career development of Black youth and professionals in the field. These organizations provide networking and mentorship opportunities (Sulton, 2008), support roles (Foster, 2018), and they increase the awareness of aviation as a possible career pathway among racialized individuals (Hedge, 2007). Several organizations have been developed to promote an interest in aviation and recruit underrepresented groups (National Research Council, 1997).

The four organizations that are profiled in this section include one from Canada, two from the U.S., and one international organization. They represent a diverse cross-section of organizations that are dealing with the underrepresentation of Black people in the aviation and aerospace industry on a national and global level. All of the organizations express an ambitious resolve to promote the career pathways in the aviation and aerospace industry. Words such as "inspire", "enhance", "promote", "stimulate", "encourage" have been used to describe their efforts. The programs and activities provided by these organizations include educational programming for youth, mentorship, networking, scholarships, professional development and education for those working in the industry, and sharing information about employment opportunities.

Black aviation and aerospace organizations have all made a contribution to Black youth in a unique way, as the following highlights illustrate:

**The Black Aviation Professionals Network (BAPN).** One of the goals of BAPN (https://thebapn.ca/) is to engage young Black talent in the aviation industry with Black mentors (McKenty, 2022). Serving youth across Canada, BAPN's focus is to plant the seeds at an early age to boost youth's interest to consider aviation as a career option and to familiarize youth with the various roles and structures within the aviation industry and the job opportunities available. In addition to the *A Day in Aviation* program, BAPN offers a mentorship program for youth, the Marshall Program. The Shooting Stars Academy is planned to be launched in 2023. BAPN also seeks opportunities for people to sponsor aspiring aviation professionals. A unique aspect of one of its programs includes Senior leadership panels, a pilot lunch panel, and in-person and virtual tours.

**Black Pilots of America (BPA).** BPA (https://bpapilots.org) is a U.S. organization that is focused on training Black youth to enter the field of aviation, to stay in school, and to encourage the development of broader employment opportunities for youth in the aviation field. A key and unique initiative they employ is to encourage youth to stay in school by showing films and providing lectures of activities in the aviation field. Scholarships are also available for youth in training and development.

**Organization of Black Aerospace Professionals (OBAP).** With regions across the U.S., one of the goals of OBAP (https://obap.org/) is to increase the representation of racialized professionals in the STEM and aerospace fields. OBAP offers educational programming for youth to create awareness and advance careers in the aerospace field. Each year, OBAP has a program to encourage youth to participate in aerospace careers nation-wide. For example, OBAP has a program called "Aerospace Professionals in School" (APIS) which introduces youth at a very early age to the many opportunities available in aerospace and aviation. Youth can select a virtual or in-house visit to the school and consult with a professional. OBAP awards scholarships for students to pursue aviation-related careers.

### International Black Aerospace Council (IBAC).

IBAC (https://www.blackaerospace.com/) serves as a clearinghouse for the exchange of information to Black professionals in the aerospace field. In their attempt to increase their outreach in the international aerospace community, they coordinate, develop, and communicate activities taking place. They also share information on scholarship and employment opportunities.

### Role of the Educational Sector in Promoting the Aviation Career Pathway

In the literature, it has been stated that: "The 'pipeline' of aviation labor begins in the K-12 educational system" (Prather, 2019, p. 13). This highlights the importance of early outreach and recruitment efforts. In the U.S., several programs, courses, and pathways have been introduced to promote aviation as a career at the elementary,

middle, high school, and college levels. These courses and programs range from curriculum development, school visits, and air shows, to name a few (Prather, 2019). In Canada, there are also efforts being made to promote the aviation and aerospace industry at an early age. For example, in Ontario, there is a ministry-approved program, the Aviation and Aerospace Specialist High Skills Major (SHSM), discussed later in this report.

Moreover, establishing partnerships for the development of aviation career pathways can help students to develop an interest in the aviation and aerospace industry. For example, the British Columbia Ministry of Education has developed an information guide for Grade 11 and 12 students to prepare them for a career in aviation. This initiative is touted as an example of a partnership between high schools, post-secondary institutions, employers, and industry partners (British Columbia Ministry of Education, 2015). Similarly, it was proposed that airport management be provided with information about academic programs to enable them to promote aviation as a career path to local aviation programs (Prather, 2019).

### The Specialist High Skills Major (SHSM) Program

In 2003, the Ontario Ministry of Education launched the Student Success-Learning to 18 Strategy, a large-scale reform which was expanded in 2005 to include the Specialist High Skills Major (SHSM) (Segedin, 2018). The government's goal was to improve high school graduation rates (Government of Ontario, 2006). SHSM is a Ministry-approved program that seeks to provide students with a pathway to sector-specific skills and knowledge, leading to employment or post-secondary study. In SHSM, students have to meet the requirements of the Ontario Secondary School Diploma (Ontario Ministry of Education, 2022). As an alternative path to gaining skilled and meaningful employment, several opportunities are available for students who are interested in the SHSM program.

As part of the SHSM program, students are required to complete the following elements: a series of bundled Grade 11 and Grade 12 credits that vary for each SHSM sector, certification and training, experiential learning and career exploration activities, essential skills and work habits, and learning experiences connected to their post-secondary plans. The SHSM offers programs in 19 sectors such as Agriculture, Arts and Culture, Construction, Energy, Health and Wellness, Music, and Aviation and Aerospace. There are opportunities to pursue aviation through an apprenticeship, college or university route (Ontario Ministry of Education, 2022).

### **Research on SHSM Programs**

There is a paucity of research focused primarily on Black students' experience in the K-12 SHSM programs. Parekh et al. (2016) examined TDSB's program pathways, which included the SHSM programs, by conducting an analysis of program enrolment data from 2011/12. The study draws attention to the pervasive problem of streaming, as the findings indicated that 21.3% of students in the SHSM program self-identified as Black (Parekh et al., 2016). Currently, only a few scholars such as Parekh et al. (2016)

have explored the SHSM program and the issues of inequity in access, opportunity, and outcomes for Black students (see Munroe & Walker, 2022). These researchers' examination of the Toronto District School Board's (TDSB) structures, processes, and outcomes revealed that 53.8% of students who were enrolled in the SHSM programs were also enrolled in the academic stream. Of this total, only 46.2% completed their program and graduated on time while 2.2% received confirmation of enrollment to attend university post-graduation. It has been reported that despite the well-intentioned nature of the SHSM program to increase equitable outcomes in graduation, it inadvertently, "Create[d] a segregated space for already marginalized students' students" (Parekh et al., 2016, p. 75). It is worth noting that there is a lack of information publicly available on the Government of Ontario's website on SHSM programs (Government of Ontario, 2017). The limited information regarding the number of schools with SHSM programs or the demographic characteristics, enrollment, retention, and graduation rates of students participating in these programs underscores the need to expand on existing knowledge about this program.

Regarding outcomes, SHSM programs have demonstrated academic benefits for students with a special education classification. They have also increased students' awareness of different career pathways and developed skills and experience that make them marketable in the workplace (Segedin, 2018). However, when compared to other secondary school programs, it was found that students in SHSM programs in 2011/12 "have a lower rate of graduation after 4 years and a much higher rate of students returning for a fifth year of high school" (Parekh, 2013, p. 71).

#### Methods

A survey design was used to elicit students' feedback on *A Day of Aviation* program. Students were asked to provide feedback on a range of topics including what they gained from the sessions, their interest in registering for the SHSM program, and questions they still had after the program. Students were also asked how they heard about the program and their suggestions for improving it. The survey included both closed-ended and open-ended questions where students could provide their comments. A total of ten (n=10) students completed the survey.

#### Results

#### Students' Demographic Information

In terms of the gender identities of participating students, (n=7) Black students self-identified as male, (n=2) were female and (n=1) self identified as trans. Figure 1 shows the number of participating students by gender identities.





### Students' Grade Level.

Figure 2 shows the number of participating students by grade level. Students from a range of grades from 7-12 attended the aviation program; however, the majority of students who responded to the survey were in Grades 9, 10 and 11 (see Figure 2).



Figure 2. Students' Grade Level

Of the total number of Black students (n=10), (n=7) self-identified as African, (n=2) as Black Canadian, and (n=1) as Afro-Canadian (Figure 3).

Figure 3 . Racial Identity.



Students' Knowledge and Awareness of the Program

Participating students were asked to share how they first heard about the program. Figure 4 below indicates that most of the students (n=5) reported that they received information about the program from their guidance counsellors, followed by teachers who constituted (n=3).



Figure 4. Students' Knowledge and Awareness of the Program

### Students' Motivation to Join the Program and Expectations of the Program

Black students felt motivated to join the Aviation program based on their interest, passion and desire to obtain more knowledge about the industry. When participating students were asked to share what motivated them to enroll in the program, one student noted that "I was hoping to just talk to aviation professionals as it is always fun to talk about aviation". In addition, another student mentioned that they were interested in "learning more about how to become an airline pilot and know that there are many other opportunities and jobs that are in the aviation industry that I probably didn't think about a lot."From the survey responses, it seems that most students had high hopes and expectations about the program. Some of the participants had broad interests ranging from what opportunities there are in the industry to how planes work to more specific questions about how to become a pilot, what jobs they can apply for in the aviation and aerospace industry and which schools they can attend to pursue training in Aerospace and Aviation.

### Students' Understanding and Interest in the Aerospace and Aviation Specialist High Skills Major (SHSM) Program.

Aerospace and aviation is one of the sector-specific areas of the Specialist High Skills Major (SHSM) program. However, the literature shows that Black students are underrepresented in the aviation and aerospace industry (Evans, 2013; Molloy, 2019). When participating students of the Aviation program were asked to share their understanding of the Aerospace and Aviation Specialist High Skills Major (SHSM) program, almost all of them (n=9) reported that the program helped them to deepen their understanding of the Aerospace and Aviation Specialist High Skills Major (SHSM) program.

Figure 5. Students' Understanding of the Aerospace and Aviation Specialist High Skills Major (SHSM) program.



Moreover, more than a half of the students (n=6) indicated that they were either "very likely" or "likely" to register for the Aerospace and Aviation SHSM program, (n=2) were "very unlikely" or "unlikely" to register, and (n=2) of participating students were "not sure."

*Figure 6. Interest to Register in the Aerospace and Aviation Specialist High Skills Major (SHSM) program.* 

### Students' Future Career Aspirations in the Aviation Sector

Recognizing the underrepresentation of Black people in the Aviation career field, the *A Day in Aviation* program was designed to engage Black-identifying students within the TDSB to explore aviation as an academic and career pathway. The findings revealed that participating Black students had positive experiences, became more knowledgeable about the different career pathways in the aviation sector and directly benefited from their interactions with Black aviation professionals. Through the program, Black students gained first-hand learning experiences, career guidance and mentorship from the Black Aviation Professional Network (BAPN) which has deepened their knowledge of the aviation and aerospace industry and inspired most of them to apply for



the Aerospace and Aviation SHSM program. According to these students, having the opportunity to meet with Black professionals was very beneficial in either deciding on a career in aviation or making an informed decision to enrol in the Aerospace and Aviation SHSM program. The findings reveal that most of the participating students felt that the aviation program encouraged them to make an informed decision on deciding on a career in aerospace and aviation. Of the 10 students who responded to the survey, a majority (n=9) of them "strongly agreed" or "agreed" that the Black Aviation Professional Network (BAPN) sessions helped them make an informed decision in deciding on a career in aviation, and only (n=1) student was neutral. None of the participating students "strongly disagreed" or "disagreed" with the statement.

Moreover, when students were asked whether the BAPN sessions helped them make an informed decision to apply for the Aerospace and Aviation SHSM program, most of them (n=9) students "strongly agreed" or "agreed" and only one (n=1) student chose "neutral." Moreso, in response to the question about whether the *A Day in Aviation* program has helped students in deciding about a career in aviation, (n=8) students "strongly agreed" or "agreed" and (n=2) "strongly disagreed" or "disagreed" with the statement.

Finally, the findings highlight that all the students (n=10) who responded to the survey responded that they have become very knowledgeable about the aviation industry because of their participation in the BAPN sessions. In the open-ended responses, students shared that the program enabled them to learn about the different career steps involved in becoming a pilot. Most students were also interested in learning more about how the Aerospace and Aviation SHSM program works, the structure and hierarchy of a typical commercial airline from the perspective of a manager or the CEO, the hiring process and other programs delivered by the BAPN and how they can become part of the BAPN programs and mentorship opportunities. Also, for most students, listening to the stories and experiences of Black professionals in the Aerospace and Aviation sector assisted them in their decisions regarding the aviation industry. One grade 7 student participant narrated that

*"I learned there are a lot of jobs in just Aviation alone and that the job market is very broad and has a bit of everything for everyone."* 

Overall, all participating students "strongly agreed" that they enjoyed the opportunity to meet with Black Aviation professionals and learn from their experiences. For instance, in the open-ended questions, a Grade 10 student participant shared that, *"I really enjoyed it and it made me have a new view on the aviation industry."* 

### Black Student's Engagement with Aerospace and Aviation Program

For many Black students, having opportunities and connections to academic and career opportunities and other professional services foster a sense of belonging and community. Extra-curricular programs that are developed to address racial and economic disparities affecting Black youth have long-term impacts on their capacity development and aspirations (Bennet, 2016; Toscher, 2020).

Through the *A Day in Aviation* program, participating Black students attended three main sessions that were designed towards helping them build an understanding of different career pathways in the aviation industry. The first session consisted of a panel discussion centred on the *Unconventional Approach and the Business of Aviation*. During this session, Black Aviation professionals and TDSB senior management shared insights about commerce in the aviation industry and how important their role is to shape the aviation business and flow of airlines. The second session, dubbed *Aircraft Maintenance and Engineers (AME) in Me*, provided opportunities for Black students to interact with aircraft AMEs in various different aspects of their training and career. The final session, *Limitless Heights*, was a Pep-talk styled session focusing on the 'ins and outs' of being a Black pilot in Canada. Black students interacted with pilots from across the industry. Some of the discussions focused on the art of directing the highway in the skies (Dispatchers and Air Traffic Controllers).

The section below provides findings based on how students engaged in these three sessions.

### Students' Engagement with the Unconventional Approach and the Business of Aviation Session

Figure 7 shows that all the participating Black students who attended the *Unconventional Approach and the Business of Aviation* discussion indicated that they had opportunities to interact with Black aviation professionals, understood the information provided by the session and found the session very informative. The findings showed that most of the students (*n*=7) reported "a great deal" regarding how informative the session was, (n=2) responded the session was "quite a bit" informative and (n=1) did not attend the session. Also, a little over half of the participants (n=7) reported they had "a great deal of understanding of the information provided by the facilitators, (n=2) responded they had "quite a bit" understanding of the information that were presented during the session and (n=1) responded thay did not attend the session. Finally, most of the students (n=7) reported that they had a "great deal" of opportunities to interact with Black Aviation professionals, (n=2) responded they had a quite a bit of opportunities to interact with Black Aviation professionals and (n=1) responded they did not attend the during the session and (n=2) responded they had a sponded they had a quite a bit of opportunities to interact with Black Aviation professionals and (n=1) responded they did not attend they did not attend they had a purchase they did not attend they had a sponded they did not attend they had a quite a bit of opportunities to interact with Black Aviation professionals and (n=1) responded they did not attend they did not attend they did not attend they had a quite a bit of opportunities to interact with Black Aviation professionals and (n=1) responded they did not attend t

*Figure 7. Students' Engagement with the Unconventional Approach and the Business of Aviation Session* 



### Students' Engagement with the Aircraft Maintenance and Engineers (AME) in Me Session

The findings revealed that most Black students who attended the *AME in Me Session* had a very positive learning experience and support. *Figure* 7 indicates that most of the students (n=7) reported "a great deal" regarding how informative the session was, (n=2) responded the session was "quite a bit" informative and (n=1) did not attend the session. Also, a little over half of the participants (n=6) reported they had "a great deal of understanding of the information provided by the facilitators, (n=3) responded they had "quite a bit" understanding of the information that were presented during the session and (n=1) responded that did not attend the session. Finally, majority of the students (n=8) reported that they had a "great deal" of opportunities to interact with Black Aviation professionals, (n=1) responded they had a quite a bit of opportunities to interact with Black Aviation professionals and (n=1) responded they did not attend the AME in Me session.

Figure 8. Students' Engagement with the Aircraft Maintenance and Engineers (AME) in Me Session



### Students' Engagement with the Limitless Heights Session

The findings revealed that overall, participating Black students who were involved in the Limitless Heights session found the learning experience to be very positive, engaging and enriching. *Figure 8* indicates that most of the students (n=8) felt that "a great deal" of the session was informative, while (n=1) of the students selected "quite a bit." Also, (n=1) of the students did not attend the session. Furthermore, in terms of the level of understanding of the content and information that were shared by facilitators, (n=8) reported that they had "a great deal" of understanding and (n=1) indicated they had "quite a bit" of understanding of the information shared. Also, (n=1) of the students did not attend the Limitless Heights session. Finally, all the students who were part of the Limitless Heights session reported that they had "a great deal" and "quite a bit" of opportunities to interact with Black aviation professionals.

Figure 9. Students' Engagement with the Limitless Heights Session



#### **Discussion and Conclusion**

Held in February 2022, the *A Day in Aviation* program was a resounding success in reaching its goal to engage Black students to explore aviation as an academic and career pathway. The Centre of Excellence's partnership with the Black Aviation Professional Network (BAPN) appeared to be the right one for students whose responses reflected their positive feedback on the initiative. When Black students were asked for their feedback about the program, a majority stated that it helped to deepen their understanding about the Aerospace and Aviation Specialist High Skills Major (SHSM) program. Moreover, most of the students indicated their likelihood of registering in the program. However, according to the results of the broader literature review on the subject, the issue of representation of Black people in aviation is a pressing issue which has to be addressed, as well as the streaming of Black students into non-academic programs.

The responses of students who attended the *A Day in Aviation* program were overwhelmingly positive and appeared to have influenced their career decision-making and bolstered their interest in the SHSM program. Specific benefits which they claim to have derived were being able to make an informed decision on a career in aviation and being more knowledgeable about the aviation industry. They also indicated an interest in understanding how the Aviation and Aerospace SHSM works, as well as learning about the hiring process and other programs delivered by the Black Aviation Professional Network (BAPN), and how they can become part of the BAPN program and mentorship opportunities, among other areas.

The role of the educational system and community organizations, such as the Black Aviation Professional Network (BAPN), in promoting the interest in the Aviation and Aerospace academic and career pathway among Black students is critical and cannot be understated. For many Black students, getting the right career guidance and mentorship support in underrepresented fields such as the aviation and aerospace industry is very beneficial in enabling them to decide on a career in the industry and pursue related courses. It is worth highlighting that exposing students to different roles and career options may also inform the curricula transformation needed in K-12 education to develop Black learners' engagement in STEM programs and to help prepare them to address societal demands and challenges in the aviation and aerospace industry. These findings underscore the need for schools and community organizations to offer equitable access to learning opportunities to meet Black students' needs and produce promising outcomes in Aviation and Aerospace careers.

#### Recommendations

It has been documented that the K-12 educational system can provide the starting point for introducing programs that support students in selecting careers and pathways in the Aviation industry (Prather, 2019). Research also highlights the need for early outreach, programs, and recruitment efforts for students from Indigenous,

racialized, and intersectional identity backgrounds (Prather, 2019). Although in Canada there are efforts being made to promote the aviation and aerospace industry at an early age, these programs are often not accessible to most Black youth (Molloy, 2019). The following recommendations are offered to address the underrepresentation of Black students in these programs and the barriers to accessing these programs.

Identity Development	<ul> <li>The literature indicates the importance of Black children seeing Aviation and Aerospace as a possible academic and career pathway when they can identify with the images of professionals in the industry who look like them.</li> <li>Educators need to be aware of the identity development of Black students in the educators' areas of specialization including STEM fields.</li> <li>Educators also need to understand the importance of racial representation for Black students.</li> <li>Educators need to inspire, engage, and instill in Black students an interest in the aviation and aerospace industry and STEM from an early age.</li> </ul>
Mentorship through Community Engagement	<ul> <li>Mentorship and role modelling are critical to attract and nurture Black talent in the aviation and aerospace industry.</li> <li>More frequent engagement and mentorship opportunities need to be provided by establishing contacts with relevant organizations such as the Black Aviation Professional Network (BAPN). There should be a closer interaction between academic programming and mentorship opportunities.</li> </ul>
Access to Academic and Career Pathways and Post-Secondary Programs	<ul> <li>Career guidance is an important strategy to support Black students to pursue the aviation and aerospace academic and career pathway. Guidance professionals need to be aware of the impact they have on the career pathways of Black students and how they may inadvertently discourage them from pursuing academic programs.</li> <li>There is also a need for professional learning in anti-racism and anti-oppression (TDSB, 2019) to increase Black students' high school graduation rates and Black students' entry into post-secondary programs.</li> <li>Parent engagement is necessary to inform parents/caregivers of decisions that impact their</li> </ul>

child's education and provide knowledge about how to access a range of educational programs
IDSB, 2019).

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### **Executive Summary**

2023 A Day in Aviation Program



Centre of Excellence for Black Student Achievement



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Centre of **Excellence** for **Black Student** Achievement



### Introduction

The Centre of Excellence for Black Student Achievement was established in 2021 with a key mandate to provide support to Black students, identify barriers to their success, and access appropriate resources through scholarships, networking and mentoring<sup>1</sup>. Building on the success and partnership with the Black Aviation Professionals Network (BAPN) in 2022, the Centre of Excellence hosted its second iteration of the *A Day in Aviation* program. It was designed to engage Black students in Grades 10 through 12 at the Toronto District School Board (TDSB) to explore aviation as a career and academic pathway. The 2023 *A Day in Aviation* took place on February 15, with Air Canada as the major sponsor. This free, in-person event took place at two Air Canada facilities, the Air Canada System Operations Control Centre in Brampton and the Air Canada Hangar in Mississauga<sup>2</sup>.

This executive summary highlights key themes from the 2023 *A Day in Aviation* survey completed by students after the program. These themes include: students' overall experience, learning outcomes, and impact on career plans and aspirations. Recommendations are suggested for the Centre of Excellence of Black Student Achievement, guidance counsellors, and other school staff.

### Method

Student feedback on *A Day of Aviation* was collected through an online survey designed to evaluate student engagement and consisted of both closed- and open-ended questions. Students were asked about their experience, what they gained from the program, their favourite activity, the helpfulness of the activities for their learning, and their likelihood of pursuing a career in aviation. There were also questions about student demographics, the presence of a role model in aviation, and courses taken in the Aviation and Aerospace Specialist High Skills Major (SHSM) program, among other questions. Students were issued the survey through email communication.

<sup>&</sup>lt;sup>1</sup> TDSB (2022). Centre for Excellence for Black Student Achievement. https://www.tdsb.on.ca/CEBSA/About-Us

<sup>&</sup>lt;sup>2</sup> The 2022 *Day in Aviation* program was delivered virtually with three two-hour sessions. Full report will be available on the Centre of Excellence and the Research and Development website.





### Results

Thirty-six students (36) were registered for *A Day in Aviation* and 29 participated in the program. Of the 29 students who attended the event, 18 completed the survey, resulting in a completion rate of 62%.

### **Participant Profile**

Over half of the students completing the survey were in Grade 12 (56%) and less than one-quarter were in Grade 10 (22%) and Grade 11 (22%). All students identified as Black. There were more male-identifying students than females (56% versus 39%, respectively). Most students (83%) identified as heterosexual. Nearly three-quarters of students (72%) indicated that they did not have a role model in an aviation career and no students reported having a parent, caregiver or family member who worked in aviation.

Students heard about the event through a range of sources. Figure 1 shows a visual summary of the information sources.





When signing up for *A Day in Aviation*, there were many things students hoped to learn. They wanted to gain information about the aviation industry (72%), talk to aviation professionals (61%), learn how to pursue a career in the industry (56%), learn about how to





become a pilot (22%), and other reasons (11%), such as becoming motivated to pursue one's journey to be a pilot.

### Black Students' Engagement with Aviation and Aerospace Courses

In terms of courses related to the Aviation and Aerospace SHSM program, few students indicated that they had taken these courses. However, some students stated that they were planning to take these courses. Survey comments revealed a lack of information about SHSM-related courses being offered, with one student adding that their school did not offer most of the courses.

*"I have taken [course] and the [course] however, since I found out about the other courses just recently, I'm not able to take them since I'm in Grade 12."* 

### **Overall Experience of the Event**

The majority of students (89%) described their overall experience at *A Day of Aviation* as "extremely" or "very" enjoyable. In open-ended comments on the survey, students summed up their experience using words such as "fun", "enjoyable", "awesome", "cool", "great", "exciting", and "memorable." Nearly two-thirds of the students (67%) said the Aircraft Hangar Tour was their "favourite part" of the day. When asked to rate different opportunities provided at the event, most students said they had "a great deal" or "quite a bit" of opportunity to meet Black aviation professionals (94%), interact with different aviation professionals (89%).

*"Mind shattering. I learned so much amazing stuff and met so much cool people, I'm so happy."* 

"A fun experience where people who look like me share their stories of aviation..."

"I've known for a while now that I want to become a pilot. My experience served as a motivation booster to keep pushing in my last year of high school to reach my goal. The trip allowed me to picture myself in the aviation industry also at the same time as talking to some familiar faces from UPN and BAPN."

### **Learning Outcomes**

In regards to their learning, the vast majority of students (94%) said they had an opportunity to learn about different roles and careers in the aviation industry. When asked to rate the helpfulness of the day's activities for their learning, most students rated the activities as being "extremely" or "very" helpful. Figure 2 provides a visual summary of the results.





Figure 2. Helpfulness of A Day in Aviation Program Activities for Students' Learning (Percentage Rated as "Extremely" or "Very" Helpful)



Based on students' comments, the program was described as "informative", "educational", and "full of learning."

*"I really liked learning about all the various jobs and components aviation entails, as my knowledge on aviation was pretty much only pilots and flight attendants. As I have never been on a plane before, looking at parts of planes and being able to enter the Boeing 777 was a fantastic experience for myself."* 

"Got to talk with some professionals to have an idea of what courses to choose when you wanna work in the aviation field. It helps you to gain little knowledge about aviation and the other jobs within the industry."

### **Career Plans and Aspirations**

When asked to share what they gained from *A Day in Aviation*, two-thirds of students (67%) said the program helped them to think about their future career, 56% said it made them want to learn more about aviation as a possible career, and 44% said it gave them





greater clarity about what they want to do in the future. Further, 61% said the aviation professionals inspired them. In terms of their career plans, 44% of students reported that they were "extremely" or "very" likely to consider a career in aviation, while 28% were "somewhat likely." Figure 3 shows the results.



Figure 3. Students' Likelihood of Considering a Career in Aviation After Participating in A Day in Aviation

It is clear that the event motivated and inspired students to pursue their career goals, as illustrated by the following quotes:

*"It is a great opportunity to confirm that your dream is totally possible."* 

"I've known for a while now that I want to become a pilot. My experience served as a motivation booster to keep pushing in my last year of high school to reach my goal. The trip allowed me to picture myself in the aviation industry."



Centre of **Excellence** for **Black Student** Achievement



### Conclusion

In summary, *A Day in Aviation* was a major success, and it is evident that students were highly engaged in the program and had an amazing, enjoyable, and educational experience. The program sparked students' interest in aviation, with over 40% indicating an interest in pursuing an aviation career. However, many students with an interest in aviation did not have a grounding in aerospace and aviation-related SHSM courses and most did not have a role model in an aviation career. These findings suggest opportunities for the Centre of Excellence to continue to support Black students in the field of aviation

"A Day in Aviation was an educational and exciting event that I would recommend to anyone interested in aviation or aviation technology."

### Recommendations

The following are some suggested recommendations for the Centre of Excellence for Black Student Achievement to develop and build on student programs relating to the aviation and aerospace industry.

- Provide ongoing information sessions about the Aviation and Aerospace SHSM program in a timely manner for students who are graduating from middle school and those starting high school.
- Share information about the Aviation and Aerospace SHSM program by utilizing the main sources and channels that students get information from, such as school email, newsletters, social media (Centre of Excellence's Instagram and Twitter platforms), Graduation Coaches, Guidance Counsellors, and other school staff.
- Provide information sessions to parents/caregivers of Black students on the Aviation and Aerospace SHSM program.
- Provide ongoing mentorship opportunities for Black students interested in pursuing an aviation career.
- To inspire an interest in the aviation industry from an early age, partner with the Black Aviation Professionals Network to introduce an aviation program for students in middle school.