



# ENG 2025 Survey: Shaping the Future of the Materiel Group ENG Community

## National Defence

*Executive Summary*

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This public opinion research report presents the results of an online survey conducted by Quorus Consulting Group on behalf of National Defence. The research entailed a total of 261 online surveys with members of the DND ENG community. The research was conducted between November 26 and December 21, 2020.

Cette publication est aussi disponible en français sous le titre : Sondage dans le cadre de l'initiative ENG 2025 : Façonner l'avenir de la communauté ENG du Groupe des matériels

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Signed:

A handwritten signature in black ink, appearing to read "Rick Nadeau", is centered within a rectangular area with a light gray halftone background.

Rick Nadeau, President  
Quorus Consulting Group Inc.

## Executive Summary

### Background and Research Objectives<sup>1</sup>

The Material Group employs approximately 800 engineers who perform a wide range of roles in Capital Acquisition, In-Service Equipment Management, and Technical Specialties. The Materiel Group Engineering (ENG) community supports the Materiel Group priority of building and sustaining a professional Engineering community workforce. In response to the new Defence Policy: *Strong, Secure, Engaged* (SSE), the ENG Advisory Committee created ENG 2025, with the ultimate goal of reviewing the state of the engineering community in Defence. The aim of the ENG 2025 Initiative is to provide the tools and opportunities that will allow the ENG community to reach its full potential<sup>2</sup>.

ENG 2025 is now interested in attitudes of members of this occupation towards potential new initiatives. The committee is also interested in understanding the perspectives and experiences of diverse groups within the ENG occupation, including employment equity groups (i.e., women, visible minorities, persons with disabilities, Indigenous peoples) and a variety of ENG specializations (i.e., mechanical, electrical, aerospace, marine, etc.).

The findings from this survey will be used by the ADM(Mat) and the ENG 2025 Main Committee to inform changes to the engineering career, including recruitment efforts, training opportunities, mentoring programs, and talent management.

### Methodology

The database of roughly 750 eligible survey candidates were invited to participate through an email survey invitation sent out by the ENG 2025 committee. The committee took measures to ensure maximum response rates, which consisted of a unique link sent to each member of the ENG group via email, followed by two follow-up reminders.

The research resulted in 261 completed surveys, a participation rate of 35%. Given this response rate, the distribution of this survey will not necessarily reflect the distribution of the civilian engineers who work for ADM(Mat).

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<sup>1</sup> Wording for this section was adapted from the Statement of Work issued by DND: Department of National Defence, (2019), *ADM(MATERIEL) ENGINEER (ENG) 2025 SURVEY STATEMENT OF WORK*, pp. 1-2.

<sup>2</sup> (ADM[MAT], 2018). Statement of Work for *ADM(MATERIEL) ENGINEER (ENG) 2025*, Ottawa, ON.

The survey instrument used in the online survey had an average completion time of 20-25 minutes and consisted of both closed and open-ended questions. Data collection for the online survey took place from November 26<sup>th</sup> to December 21<sup>st</sup>, 2020.

Due to the non-probability sampling from a list of ENG community members, a valid margin of error could not be calculated. Results were cross-tabulated based on an analysis plan previously discussed with and approved by the Project Authority and the ENG group point of contact.

## Research Findings

### *1. Peer Support and Mentorship*

#### *Career Support and Coaching*

When asked to provide the informal ways in which their supervisors have provided support to help improve job performance during the past year, nearly 3 in 5 engineers received feedback and support to enhance their experience in their current role (57%) and support to improve their ability to contribute to the team (56%). More than half received support to improve their overall performance (51%) and were guided to relevant training to improve their skills (51%).

In terms of new ways to provide support, nearly 2 in 3 engineers (62%) were extremely or somewhat interested in receiving job performance coaching from their supervisor, and 58% in receiving career development coaching from their supervisor.

#### *Formal Mentorship Resources*

Another way of support explored included formal mentorship resources. Over 6 in 10 (62%) engineers were extremely or somewhat interested in receiving formal mentorship for their career development.

Regarding existing resources, 63% of engineers were aware that there are formal mentorship resources available to assist in career development. Slightly more than 1 in 10 engineers (14%) were aware and have made use of formal mentorship resources available to assist in career development, while 49% were aware but have not made use of formal mentorship resources. The remaining 37% were unaware of these resources.

Over 7 in 10 (73%) respondents who were aware and have used formal mentorship resources say that these resources had a positive impact on their career in the Materiel Group.

Respondents who were aware but had not used formal mentorship resources for their career development cited a lack of available time as the main reason for not using these resources (41%).

In general, 36% had not even considered using formal mentorship resources or felt that they had no need for them.

## ***2. Professional/Career Development***

### ***Career Development Priorities***

Regarding career development priorities, respondents rated a variety of areas in terms of how important they are to their professional/career development in the Materiel Group over the next 12 months. Overall, most of the highest priority items (very high or somewhat of a priority) were related to the honing and development of specific skills, mainly: honing of communications skills (67%), honing leadership skills (62%), developing new technical skills (60%), and honing of technical skills (60%).

Among engineers who indicated that honing communication skills was a priority, the most common mentions included written/technical communications (17%), presentations/briefings (16%), and communications with key personnel (14%).

Among engineers who indicated that honing leadership skills was a priority, the most common skills related to broad elements such as effective management (22%), effective leadership (13%), engagement (9%), and communication (9%).

Among respondents indicating that honing or developing new technical skills was a priority, the most common technical skills mentioned related to broad skills across engineering domains. More than 1 in 10 (12%) were focused on developing project management, and roughly 1 in 10 focused on software/training programs (10%), general technical skills (9%) and systems engineering fundamentals (8%).

### ***Access to Career Development Training***

Respondents were asked to rate the opportunities they have to access a list of available resources and types of training to assist in professional/career development within the Materiel Group.

More than 1 in 2 engineers rated access to resources and training for project management (55%), and Government specific training (52%) as excellent or very good, while the lateral pool also received relatively positive ratings (48%).

### ***Relationship Between Priorities and Access***

To evaluate the extent to which priorities of engineers in the Materiel group are being met, the relationship between the priorities for their career development and the access to resources and

training for this purpose was calculated using the top-two values from the questions addressing these perceptions. The larger the gap between priorities and access to training, the larger the issue for career development.

The areas that showed the largest gaps included honing of communication skills (48 percent-point gap), opportunities for innovation and creative thinking (42 percent-point gap), honing of leadership skills (37 percent-point gap), developing new technical skills (35 percent-point gap), and honing of technical skills (34 percent-point gap).

### ***Lateral Deployment Pool Participation***

Nearly 1 in 2 respondents (45%) reported that they had joined the lateral deployment pool while working in the Materiel Group.

Nearly 9 in 10 participants who joined the lateral deployment pool (87%) described exposure to many other opportunities as the main benefit of having access to the pool. Other benefits identified include the ease and reduced stress of the process compared to the traditional competitive process (67%), and the exposure of their credentials to hiring managers (47%).

There is some degree of satisfaction with the lateral deployment pools since 25% of respondents did not see a need for any changes in the lateral deployment pools over the next 5 years. Another 39% were unsure of how the pools could improve for the future. Among the few suggestions proposed, it was suggested that all assignments, levels and people be listed in the pool (5%), and that potential for growth and assistance with career progression and management be identified in the pool (4%).

### ***Second Language Training***

Nearly 2 in 3 respondents (64%) considered their second official language to be French, while 31% described their second official language to be English.

Nearly 2 in 3 respondents (64%) believe they could benefit from some French-language training when describing their level of comfort using French at work. Nearly 1 in 3 respondents (31%) feel they are comfortable using both English and French at work, and therefore do not require language training at work.

Over a quarter of respondents (27%) described having a second language profile of BBB level or higher. Over 1 in 3 respondents specified that their second language profile is below a BBB level (36%), and an additional 36% are currently without a second language profile.

The most common activity undertaken at work for improving the ability to communicate in their second language was to speak with colleagues in their second language whenever possible (15%). However, nearly half of respondents (49%) specified that they do nothing in particular while at work to improve their ability to communicate in their second language.

Common activities undertaken outside of work to improve second language proficiency included reading (15%), watching video content (e.g. TV, movies, podcasts, etc.) (12%), communicating with family members (12%), and listening to the radio (10%). Nearly half (47%) specified that they do nothing in particular outside of work to improve their ability to communicate in their second language.

### ***Key Leadership Competencies Course Participation***

Nearly one third of engineers (31%) took the Introduction to Treasury Board KLC course offered in a boardroom from September 2019 to February 2020. More than 1 in 10 respondents (13%) have taken the Introduction to Treasury Board KLC course offered online since June 2020, and 8% have taken the Advanced course on Treasury Board Key Leadership Competencies. Over half of respondents (56%) specified that they have not taken any of the KLC courses.

More than half of respondents who had taken at least one of the Introduction to Treasury Board KLC courses (53%) finished all or most of the Self-Assessment, with 36% completing it entirely.

### ***Key Leadership Competencies Course Feedback***

Two thirds of advanced course participants (66%) felt that the course was very or somewhat useful to prepare them for competitions. The equivalent proportion among those who took the Introduction to Treasury Board KLC course via video conference was 66%, and 59% among those who took the in-person boardroom session (59%).

More than 1 in 2 advanced course participants (52%) felt that the content was useful in their daily work. This figure was 37% among those who took the latest iteration of the Introduction KLC course hosted via video conference and 28% among those who took the Introduction course hosted in an in-person boardroom setting.

Suggestions to improve the KLC courses included posting sets of practice questions in order to prepare for testing (24%), an increased frequency in conducting KLC courses (20%), and that sessions be made available focusing exclusively on the interview scenario (19%).



### ***Training Opportunities for Career Development***

Nearly half of respondents (49%) strongly or moderately agreed that the current training opportunities available through DND fully cover their needs for career development.

### ***3. Post-Grad Education Support***

Over 2 in 5 respondents (43%) have considered completing a Post Graduate degree while working in the Materiel Group. One in two respondents (50%) were extremely or somewhat interested in the prospect of post-grad programs developed through DND targeting highly technical expertise.

Respondents were focused on system-based technologies such as artificial intelligence (49%), autonomous systems (44%) and cyber security (39%). Other popular topics included robotics (32%), 3D printing (26%), wearable devices (21%), and nanotechnologies (20%).

Nearly 3 in 5 respondents would be prepared to accept a full-time, fully-funded scenario for pursuing a post-grad education (57%), and 54% would be open to a part time approach that was fully funded by DND while continuing to work. Nearly 9 in 10 respondents who selected at least one potential funding option (88%) would accept working in the Materiel Group for twice the number of months or years as it took them to complete the program in exchange for funding of a post-grad education while working in the Materiel Group.

### ***4. Promotion Opportunities***

#### ***Staffing Process History***

One third of respondents (34%) have applied once to an ENG-05 / ENG-06 staffing process, while 25% have applied twice, and 11% have applied 3 times. Conversely, nearly 1 in 4 respondents (23%) have never applied to this staffing process.

Among respondents having previously applied to an ENG-05 / ENG-06 staffing process, 46% have passed the staffing process once, 13% have passed twice, and 6% have passed three or more times, while 32% have never passed. Nearly 2 in 3 successful applicants (64%) were promoted or selected for a position once in the Materiel Group, whereas 24% have never been promoted or selected.

#### ***Recent Staffing Process Application***

When preparing for an ENG-05 / ENG-06 staffing process written exam, half of all previous applicants indicated that they spent 10 hours or less, 18% prepared for 10 to 20 hours and 26% indicated preparing for over 20 hours. The average across all respondents was 15 hours.

When preparing for an ENG-05 / ENG-06 staffing process interview, nearly two-thirds prepared for 10 hours or less (64%). The average across all respondents was 10 hours.

Over 3 in 4 previously successful applicants (76%) passed their latest application to the ENG-05 / ENG-06 staffing process. More than 1 in 5 successful applicants attributed their success mainly to their preparations and practice of interviews or sample questions (21%), while 20% attributed their success to their level of experience, and 10% attributed their success to the KLC course and studying the course material.

### ***Staffing Process Feedback***

Respondents were asked to specify their level of satisfaction with different aspects of the ENG staffing process in the Materiel Group. Two in five respondents (40%) were extremely or somewhat satisfied with the information that was sent about staffing processes once the poster was released, 33% with the information sent about staffing processes before the poster was released, 31% with the information that is sent about staffing processes during the entire assessment process and 30% with the fairness of the staffing process in the Materiel Group.

The most common suggestion for information to provide during the staffing process was information that clearly outlines the selection criteria and requirements for the staffing process (11%). Suggestions for additional activities to better prepare for an ENG staffing process written exam and interview included providing examples of questions and practice material to better prepare (12%), and more courses and coaching to generally assist with preparations (11%).

In terms of the collective staffing process approaches, 65% of respondents ranked promotions done on a continuous basis as the most appealing approach, followed by processes running every 2 years (26%), and renewing every 5 years (8%).

### ***Staffing Process Improvements***

Nearly 1 in 3 respondents (30%) applied for the latest ENG-05 staffing process. Suggestions to improve the MMSE 840 exercise as part of the ENG-05 staffing process included providing feedback after completing the test to be able to learn from their mistakes (59%), and providing guidance on how to prepare for the test (48%).

In terms of general improvements to the written exam, nearly 1 in 10 applicants to the latest ENG-05 staffing process suggested improving the availability and knowledge of what to study (8%). Another 8% suggested a focus on identifying as many qualified candidates as possible rather than focusing on eliminating candidates.

When asked to suggest improvements to the interview, the most common comment was that the Key Leadership Competencies should be used but not overshadow individual experience and communication skills.

The most common suggestion to improve the methods used to assess candidates for future staffing processes is that job performance and experience be the priority when evaluating candidates, not exams and tests, as previously used (15%).

### ***Joining ADM(Mat) as a Civilian ENG***

One in five respondents (20%) joined ADM(Mat) as a civilian ENG within the past 2 years. Among the onboarding themes explored in this research with this group, training (90%), career development (87%), personal development (85%), and ENG staffing processes (83%) were deemed the most important.

## ***5. Equity, Diversity and Inclusion***

### ***General Career Barriers***

Engineers were asked to describe any barriers they may have faced or experienced when it comes to pursuing their career path in the Materiel Group. Overall, 44% believe they have faced a type of barrier, mainly a language profile barrier to their desired career path (16%), being a civilian with a lack of military experience (12%), a woman (4%), or other (11%).

### ***Identity Career Barriers***

More than 2 in 5 respondents (41%) self-identified as belonging to at least one employment equity (EE) group. More specifically, nearly 1 in 4 respondents (24%) self-identified as a member of a visible minority group, 16% self-identified as women, 3% as a person with a disability, 1% as an Indigenous person, and 3% as an EE group but refused to identify which one.

Engineers who experienced barriers in the workplace and are a member of at least one EE group were asked to describe which barriers, if any, they have experienced based on their identity. Nearly one in ten (9%) believe their gender was a barrier, 7% believe they faced language-related barriers, 4% believe being a civilian without military background was a barrier, 4% identified general discrimination for promotions, and 11% provided other examples. However, the majority did not experience a barrier or preferred not to answer (30% respectively).

When asked to suggest what programs should be instituted to help people overcome barriers experienced because of how they self-identify, the majority were not certain what could be done

(59%). Themes for programs that should be instituted include changes in the leadership culture to assist those at a lower level, and encouragement to overcome barriers through training.

### *Armchair Discussions*

Nearly 1 in 5 respondents (17%) specified that they participated in the armchair discussions related to employment equity. Some of the more common suggestions for topics they would like to see covered in future armchair discussions were career management or development (4%), as well as second language requirements at DND (3%).

### *Training for Needs of Employment Equity Groups*

Roughly one-quarter of respondents suggested a training topic they believe would help individuals in the Materiel Group at large better understand the needs of certain groups who tend to face barriers because of how they self-identify. Training topics were focused on increasing the level of knowledge for different cultures and the barriers they experience in the workplace, as well as improving self-awareness and reducing cultural biases.

## **6. Community Management Feedback**

Respondents were asked to provide their feedback on the role of the ENG Champion and on the purpose of the ENG Advisory Committee. Based on a brief description, 56% believe their purpose and role to be meaningful, 52% believe they are clear to them, 50% agree they are focused on the right things (50%), and 49% agree they are headed in the right direction.

Overall, more than 3 in 5 respondents (62%) rated each of the ENG 2025 working groups as extremely relevant or relevant to achieving ENG 2025's vision. The most relevant working groups were:

- Career Progression and Development (75%)
- ENG Competency Development (74%)
- Lateral Progression Programs and Processes (72%).

When suggesting additional working groups to meet ENG 2025's vision, common themes included focusing on technical or qualifications training to assist with career development, while others were interested in non-technical skills to improve communication and leadership.

In terms of the yearly ENG Forums, the Fall Community Forum was considered it to be extremely important or important by 54% of respondents and the Spring Technical Forum by 49%.

Respondents were asked to specify their preferred way to receive information from the ENG community. Over 3 in 5 respondents (62%) preferred receiving information via e-mail.

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