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Major Anonymous

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**SECURITY WOES IN A FIFTH-GENERATION WORLD:
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Major Anonymous

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SECURITY WOES IN A FIFTH-GENERATION WORLD: CAF SECURITY CLEARANCE PROCESS IS UNFIT FOR PURPOSE

AIM

1. The capacity of our security clearance processing system is unable to meet current demands and this problem will deteriorate if action is not taken. The additional demand for TS/SCI clearance as we adopt fifth-generation capabilities, particularly for pilots, will not be met in a timely manner without intervention at the institutional level. This paper will explore the extent of the problem and suggest further areas for study. The paper recommends replacing the current processing tool (WebSCPS with an alternative processing system for the Canadian Armed Forces (CAF).

INTRODUCTION

2. The CAF will adopt new technologies to support the acquisition of fifth-generation fighters in the coming years¹. The decision to procure 88 F-35 fighters² necessitates a significant investment in infrastructure and information security to support the capabilities offered by this new platform³. The requirement to upgrade our existing infrastructure is understood and accounted for in the projected delivery schedule of the new capability⁴. What is less certain is the security clearance requirement for those involved in developing and validating the new fifth-generation ecosystem, from technicians to pilots. The current system in place for processing security clearances for CAF personnel is unable to meet current demands and is incapable of increasing production for reasons that will follow.

3. The paper is informed by primary accounts of Unit Security Supervisors (USS) involved with the CAF security clearance process and is bolstered by a literature review of relevant academic sources, regulations and doctrine. Statistics on the scale of the problem, in terms of proportion of serving members with expired security clearances who fill critical roles, will not be provided due to the classification level of this paper. Descriptions of the deficiencies of our current Web-based Security Clearance Processing System software (WebSCPS) border on the technical but must be described in detail to fully capture the extent of the problem and provide context for the paper's recommendation.

¹ Canada. Department of National Defence, 'Royal Canadian Air Force Strategy', 2023,

<https://www.canada.ca/content/dam/rcaf-arc/documents/reports-publications/royal-canadian-air-force-strategy.pdf>.

² National Defence, 'Announcement Regarding the F-35 Acquisition', Government of Canada, National Defence, 9 January 2023, <https://www.canada.ca/en/department-national-defence/news/2023/01/announcement-regarding-the-f-35-acquisition.html>.

³ William Richardson, 'Leveraging Capability: A Study of the Interoperability of Fourth- and Fifth-Generation NATO Fighter Aircraft', *Journal of Military and Strategic Studies* 19, no. 4 (2019): 126–47.

⁴ Canada. Department of National Defence, 'Royal Canadian Air Force Strategy'.

DISCUSSION

4. Physical and digital infrastructure in place to support the current generation of fighter aircraft in the Royal Canadian Air Force (RCAF) is inadequate for the level of physical, operational and information security required for fifth generation technology⁵. Significant upgrades are planned to account for the step-change in Force Protection (FP) that will be required⁶. CAF Joint Protection Doctrine specifies that “FP at the strategic level considers the protection of the nation’s military resources and the civilian infrastructure needed to support military operations.”⁷ The publication goes on to explain that at the strategic level, “protective security also includes personnel security measures such as screening, granting clearances, awareness programs and supervision.”⁸

5. Personnel are the chief enabler for the creation, testing, and validation of new infrastructure and digital environments required to support a fifth-generation capability. Support trades that are critical to maintain fighter operations along with aircrew currently in the training system will require Top Secret (TS) security clearances. F-35 pilots require TS/SCI (Top Secret/Sensitive Compartmented Information) in accordance with terms set by other Joint Strike Fighter (JSF) participating nations, chiefly the United States⁹.

6. The problem that follows may at first appear to reside in part at the tactical level and may therefore be dismissed as inconsequential from an institutional perspective. Further eroding the necessary willpower to address the problem is that in a perceived crisis only high-profile issues generate traction; mundane issues of a technical nature seldom receive the attention they require. In truth, the consequences of ignoring this issue will be felt at the highest level and risks causing multiple no-fail programs to grind to a halt.

7. Triaging the many problems facing the CAF at present is no easy task. Unacceptable delays in the security clearance process are confounded by other factors including personnel shortages and one may be inclined to believe that reconstitution must be addressed before tackling technical issues of this nature. While additional personnel in USS roles would be beneficial, it will not solve the root cause of delays in security clearance processing. The WebSCPS software itself is intrinsically flawed and must be replaced if we hope to meet timelines for the acquisition of fifth-generation capability. Since it is a pan-forces tool, it seems its replacement cannot happen at or below the L1 level.

8. Perhaps a greater concern is that even without the introduction of additional security requirements pertaining to the fifth-generation eco-system, we are still at risk of failure on multiple high-profile tasks due to a growing issue with currently expired security clearances of key personnel. Common assumptions on how the CAF has arrived at this point include the

⁵ William Richardson, ‘Leveraging Capability: A Study of the Interoperability of Fourth- and Fifth-Generation NATO Fighter Aircraft’.

⁶ Canada. Department of National Defence, ‘Royal Canadian Air Force Strategy’.

⁷ Canada. Dept. of National Defence, ‘CF Joint Force Protection Doctrine (English)’, B-GJ-005-314/FP-000 (Ottawa: Dept. of National Defence, 2006), 1–8.

⁸ Ibid.

⁹ Technology Transformation Services, ‘Top Secret / Sensitive Compartmented Information (TS/SCI) Clearance’, US Government, TTS Handbook, accessed 19 February 2023, <https://handbook.tts.gsa.gov/about-us/tts-history/>.

misperception that individuals have been remiss in managing their own clearance renewal process; that key personnel can be fast-tracked through the process with sufficient pressure on their respective USS; that the timeline for renewal or initial issue is reliably managed by organizational custodians of the process such as the RCMP or CSIS; that there are individuals who may be held accountable for unreasonable delays; and more. Unfortunately, if any of these have been positively experienced, it has only been by coincidence. The key limiting factor in the security clearance process is a cumbersome and obsolete piece of software that all CAF USS must use to submit every clearance request.

9. It should be noted that it is commonplace to assign the USS and deputy roles as secondary duties to personnel whose specialization lies elsewhere due to personnel shortages across the CAF. A lack of fluency in the software is unavoidable in this context, especially when combined with the nominal posting cycle and typical operational tempo. This should not be interpreted as a slight on the capability of those filling these positions.

10. The author of this paper was first alerted to the scale and potential consequences of this problem in 2021/22 while working for the Aerospace Engineering Test Establishment (AETE) for the RCAF. A highly technical unit whose Flight Test Engineers (FTEs) and Qualified Test Pilots (QTPs) are among the highest performers in the RCAF. The staffing levels of the unit (as elsewhere) necessitated that QTPs and FTEs filled dual roles as D/USS of the Ottawa Detachment (while the USS at 4 Wing Cold Lake was also filling the role as a secondary duty).

11. It was noted that many key personnel within the unit whose expertise cannot be readily generated without lengthy and expensive selection and training (on the order of years) no longer possessed valid security clearances. Only a small handful had valid TS clearances to execute the highest profile air Test and Evaluation (T&E) projects on key programs. Only one CAF evaluator possessed a valid TS/SCI whose posting was extended to allow a critical project to continue according to timelines.

12. This is a significant problem as the Flight Test Authority (FTA) regulates “all Developmental Test and Evaluation (DT&E), Engineering Test and Evaluation (ET&E) flight test related operations and facilities, flight test procedures, flight test standards, test crew training, qualification and licensing.”¹⁰ Critical projects include the Hornet Extension Program (HEP & HEP2); Manned Airborne Intelligence, Surveillance, and Reconnaissance (MAISR); and the Future Fighter Capability Program (FFCP). Problems over staffing the FFCP with a fighter qualified QTP who could obtain a TS/SCI were concerning. Furthermore, mature builds for the HEP2 program in 2023 (involving advanced testing of the upgraded radar capability) also require TS/SCI.¹¹

13. Evaluators responsible for executing Engineering Test and Evaluation (ET&E) for which only AETE is authorized were unable to renew security clearances to continue other no-fail projects. These projects include critical CP140 Aurora Block IV and CH148 Cyclone projects for which all relevant documentation are classified as Controlled Goods (CG) at a minimum. During

¹⁰ Canada. Department of National Defence, ‘Canadian Armed Forces Flight Test Orders’ (Ottawa: Department of National Defence, 2020).

¹¹ AETE 2021-001 HEP2 Project Folder, Lead Project Officer, Project Control Office, AETE.

the investigation of the extent of this problem, it was noted that all individuals had completed their renewal applications on time, and with requisite attention to detail. USS and D/USS were diligently working to ensure applications were processed quickly. Yet the problem persisted to the point that CG waivers were sought from the relevant authorities to continue high profile projects at risk. A course of action not available for projects requiring TS/SCI.

14. It is necessary to incorporate a significant level of detail to fully appreciate the seriousness of our current predicament and the likely second order strategic effects of the failure to meet timelines on multiple RCAF projects on every fleet. Listed below are a small selection of problems faced by USS across the CAF as a consequence of the inadequate tools with which they are provided—chiefly, the problems caused by WebSCPS.

Table 1 – Pitfalls of WebSCPS

Factors	Pitfalls	Examples
Data errors	No forgiveness for data errors	<ul style="list-style-type: none"> • A letter in the street number field will cause a Quality Control (QC) failure and return of the file months later during the QC review; • Signatures on a clearance request must be voided before being returned to member for amendments. It is assumed the USS has read the manual and knows this. If not done, there is no feedback and no progress on the file; • TBS 330-23, TBS 330-60, TBS 330-47 forms must be signed through WebSCPS, printed to PDF, then re-attached by USS as PDF. USS must remember to do this step correctly or clearance request will not progress; • There are dozens more examples. If the USS omits a minor detail, there is often no feedback for several weeks /months until the USS realizes the file hasn't moved or is returned for resubmission.
Backlogs	Massive backlog of files in the processing phase	<ul style="list-style-type: none"> • Due to massive backlogs, files can sit for months or years before the USS is notified that there is an error that must be corrected. The file loses priority, and the entire process begins again. • The backlogs themselves end up causing the system to fail: Files get returned if the employment history is not complete to the present date due to the file waiting over 12 months for QC. The file gets returned to be updated and the process begins again.

		<ul style="list-style-type: none"> Files older than one year have been wiped on occasion because they were expired; On occasion, files input prior to a system upgrade were lost requiring a restarted process.
Authority	No accountability of those involved in the process beyond the unit level	<ul style="list-style-type: none"> USS have minimal ability to push/prioritize files for processing once file leaves unit, nor the ability to follow-up on a file; USS reports show a lack of responsiveness from division level USSO to inquiries in many cases.
Roles	USS role too broad for a secondary duty	<ul style="list-style-type: none"> Responsibilities include WebSCPS data input for clearances, SCI requests, liaison within CFINTCOM, pass control, physical security (e.g. CSNI rooms), security of assets, NSOD advisor, incident investigations and more.
Training	Lack of training available for USS	<ul style="list-style-type: none"> There is only the WebSCPS user guide for reference; Little or no awareness of the various traps in the program; No mentorship available from Division level USS.
User-friendliness	WebSCPS is not intuitive	<ul style="list-style-type: none"> There are often duplicates of a mbr's file and no way to tell which version is correct

Source: Email thread, multiple authors, ADM(Mat), "Systemic Issues with USS Duty and WebSCPS", 2 May 2022.

15. The peculiar nature of a process whose QC exceeds a twelve-month processing cycle to cancel applications based on invalidating its own timeline should suffice as a reason to reject it and move towards a better solution. Combined with the other non-trivial issues and a complete lack of accountability of external staff, it should be clear that the situation faced by key personnel on high profile air test and evaluation projects for which the RCAF and CAF depend, is not unique. The wider-CAF is facing the same issues and an audit of the total proportion of members whose clearance has not been completed or has expired will show a troubling situation for which we are in no position to ameliorate without intervention at the institutional level.

16. The CAF doctrine for supporting operations is clear on the utility of leveraging a Whole of Government (WoG) approach to achieve the required level of administrative and logistical aid for formations or individuals and explicitly defines "foresight" as "the ability to predict and manage critical support constraints to the force commander's freedom of action."¹² The CAF

¹² Canada. Department of National Defence, 'Canadian Forces Joint Publication 4-0: Support' (Ottawa: Department of National Defence, 2016), 1-3.

ought to bear this in mind while seeking an alternative to WebSCPS immediately and implementing pan-forces without delay. Timelines for efficient TS clearances are lengthy even when all contributors are firing in unison as external agencies are involved at various points. Therefore, even after implementing a gold standard solution, the CAF will need to plan for thousands of members whose files have stagnated with no movement for years, to be processed while simultaneously meeting the required timelines for integrating new clearance requests. This timeline will also be measured in years. Given our intention to grow the forces to fill empty billets, while onboarding a new fifth-generation capability and moving into a more contentious information environment, we cannot afford to ignore this issue or assume we can return to it in the years to come. Left unchecked, we will be at a serious risk of being unable to accommodate the required security infrastructure to meet the projected delivery timelines of our new capabilities.

17. Other organizations have bespoke solutions, though many suffer similar problems.¹³ There may be an opportunity to utilize existing alternatives in the civil sector that would adequately serve the mundane purpose of collating relevant personal information for further analysis. Alternatively, the CAF could develop its own software in conjunction with key agencies. If developing its own software, the CAF should collaborate with the other organizations involved and this forum would serve the important secondary purpose of highlighting critical deficiencies to all constituents. The input of the Royal Canadian Mounted Police (RCMP), Canadian Security Intelligence Service (CSIS), and other organizations with a stake in the security clearance process will help shape an improved system that minimizes friction and barriers.

18. Simple clerical software solutions that are currently available could significantly decrease timelines and reduce the burden on the QC process. Address history should be input by the applicant and can be verified automatically using existing technology. Employer history and other basic information need only be captured to the extent necessary for successful verification by third party. A critical requirement of a revised system is the ability for USS to communicate with external agencies to advance files and respond to queries; instead of the current de facto rejection of applications that do not absolutely conform to arbitrary measures without any communication.

19. The revised process must consider the likelihood of unusual cases and be designed to facilitate processing, rather than encourage rejection without accountability. An example of a facilitative process is given by the Technology Transportation Services (TTS) Handbook describing the purpose of their application process: “The information gathered will help PeopleOps determine the best way to support and proceed with the Security Clearance upgrade process.”¹⁴ The Process described in the TTS Handbook outlines a significantly decreased timeline for clearance approvals in the US in conjunction with PeopleOps, as compared with the CAF using WebSCPS. Inherent in their process is engagement between the applicant’s supervisor and the processing staff (PeopleOps) that begins at the draft application stage. Having processing staff involved in drafting the application reduces the likelihood of error and

¹³ Patricia Williams, ‘Federal Task Force Seeks Input on Security Clearance Process’, *Journal of Commerce* 31 (22 April 2009).

¹⁴ Technology Transformation Services, ‘Top Secret / Sensitive Compartmented Information (TS/SCI) Clearance’.

demonstrates a willingness to cooperate on finding the right information to expedite processing. The collaborative process to dutifully capture required information involving the applicant, supervisor and the team involved in processing is a missing element in the current CAF system.

CONCLUSION

20. Though air force T&E was used as an example, the problems described in this paper apply to units across the CAF. The specific examples given are indicative of problems only understood by those unable to fix them. We are already in a position where our most qualified technical experts who are critical to multiple high profile air force projects are unable to advance their own security clearances and neither is the surrounding support structure. Applying the additional constraint for TS/SCI from the United States on those involved with fifth generation technologies should raise concerns among those charged with the responsibility of ensuring delivery timelines are met. Simply put, our security clearance process is irreparably broken, and a priority replacement should be sought immediately. We simply cannot rely on software that belongs in the previous century to act as a gatekeeper for every CAF member if we hope to practice the level of agility that we preach. More dangerously, if we do not take this issue seriously, we risk a catastrophic deterioration in our relations with our Five Eyes (FVEY) partners for whom security clearances are not an afterthought.

RECOMMENDATION

21. Specialized personnel who remain in USS positions for extended durations may alleviate some issues but should not be seen as a single solution. WebSCPS as a program is unfit for purpose and should be replaced with an alternative. Software solutions exist today that can alleviate many of the technical constraints, but the process itself must be designed to be facilitative from the outset. Personnel involved in QC must be available and accountable. Both unit supervisors and external agency personnel must be involved and available for CAF USS communication throughout the process. This is to ensure the relevant information is efficiently captured early to the extent that other agencies can conduct the required background verification without delay. Rejections and resubmissions serve only to saturate an already overwhelmed system and create multi-year long delays in the processing of many, if not most, applications.

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