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Addition of an Intelligence Operator on CH-148 Helicopter Air Detachments

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Addition of an Intelligence Operator on CH-148 Helicopter Air Detachments

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Addition of an Intelligence Operator on CH-148 Helicopter Air Detachments

AIM

1. The aim of this service paper is to inform the Commander of Canadian Joint Operations Command (CJOC) that the majority of the data collected by sensors on the CH148 Cyclone while deployed is lost. The loss of data could be prevented with the permanent addition of a non-flying member on the Detachment (Det). Currently, there is not a member with enough spare time in their crew day to conduct flying operations and process all of the post flight data. This is not only a loss of valuable intelligence to the ship on which that Cyclone is embarked. Loss of electromagnetic, acoustic and imagery data could have much larger repercussions to the CAF as well as Canada's allies. As a true example of Royal Canadian Air Force decentralized execution¹, embarked Cyclone Detachments need a dedicated Intelligence Operator who is under the Tactical Command (TACOM) of the Detachment Commander.

INTRODUCTION

2. The mandate of an anti-submarine warfare (ASW) Helicopter Air Detachment (HELAIRODET) is to be ready to operate a 12 hour flight deck cycle and accomplish any of the missions and tasks directed by the Captain of the ship. This means that the Det should be able to conduct flying operations for 12 hours per day. If it does, then the aircraft and crews should be ready to fly again 12 hours later after completion of the maintenance and crew rest cycle. Considering that those 12 hours do not include pre and post flight briefings, the crew day is always longer. According to the RCAF Flight Operations Manual, this surge is not sustainable for more than two 16-hour days since exceeding 42 hours in a rolling consecutive 3 day period is a flight safety incident.² In 12 hours of flight operations, the helicopter can fly three flights of 3.3 hours each between two crews. Following every mission, the amount of time required to download the data onto the ship's server is at least an hour. Processing the data can take multiple hours depending on the volume of data downloaded. Members of both crews are required to launch and recover the helicopter so everyone's crew day starts at the same time. With these operational considerations in mind, there are not enough hours in a day for aircrew to complete their post mission tasks.

3. Over the 10 deployments since the first Cyclone embarked on Op *Reassurance* Roto 9 in 2018, the aircrew solved a number of time-consuming pre- and post-flight problems but the most important enabler was the inclusion of an extra, non-flying member on the detachment as the mission support member (MSM). Inclusion of the extra member sustained on the subsequent nine deployments but their inclusion is always contested by the Navy. It is not a permanent

¹ National Defence Government of Canada, 'Mission Command and the RCAF: Considerations for the Employment of Air Power in Joint Operations', 4 December 2014, <http://www.rcf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/c2-article-4-mission-command-and-the-rcaf.page>.

² Department of National Defence, 'Royal Canadian Air Force Flight Operations Manual' (Published under the Authority of The Commander 1 Canadian Air Division, 2021). 2.3.3 – PART 3 – CREW FLYING TIME / DUTY / REST/NON-WORKING DAYS.

position and it is always filled by an untrained Sensor Operator (SENSO) or Air Combat Systems Officer (ACSO) who is waiting for operational training. They are useful for downloading information but they are not useful as people trained to process it. Embarked CH-148 HELAIRDETS require a member whose specialty is Processing Exploitation and Dissemination (PED) of sensor data and intelligence gathered in flight.

DISCUSSION

4. Onboard accommodations or “Bunk space” on Canadian Ships is often the factor that prevents any additional people on a deployment. In this case, the position is already filled by the MSM so addition of the Det Int Op should only need to be formalized. The Air Int Op would replace the MSM position, taking on those duties in addition to the normal duties required of an Int Op such as delivering threat briefings and providing intelligence products to the crews.

5. The addition of a permanent Air Department member on a ship is not just an RCAF or CJOC decision, it must be endorsed by the Royal Canadian Navy (RCN). Since there is usually not any extra bunk space on a ship, the RCN will want to fill all available beds with the most useful people. An argument against embarking an Air Int Op from the RCN point of view would be that the ship has its own intelligence cell and should be able to provide any Air Intelligence required by the det. The ship’s Intelligence Officer is a member of the ship’s company who is trained to monitor threats to the ship and send intelligence gathered by the ship back to Canada. These activities occupy all their time. They are not responsive to the HELAIRDET Commander and do not provide any services or briefings to the Det. They also generally do not monitor air threats unless warnings come from external sources like the task group (TG) through messages. This is alarming because some benign or far off threats to the ship may be very lethal threats to an aircraft flying far ahead of it. In order to keep the Det apprised of all potential threats a member who is tied into the Int cell in Shearwater and the Combined Air Operations Centre (CAOC) in Winnipeg is an essential member of the team for routine operations. This is even more important when the information gathered by the helicopter is not necessarily useful to the ship but may be useful to future Air Dets or other RCAF assets in the same Area of Operations.

Mission Support Duties

6. *Mission Planning and Analysis System (MPAS)*. The Mission system is equipped with tools designed for planning and analysis. MPAS can be loaded with a huge amount of mission and flight information. Weapons load, mission waypoints, threats and frequencies are just some of the details that need to be programmed manually before flight onto an aircraft hard drive. After the hard drive is programmed in the briefing room it is carried into the helicopter and loaded onto the mission system. The Int Op would not be responsible for the entirety of mission planning, but they would be responsible for adding intelligence, threats and enemy units to the plan in addition to briefing it to the crew. Currently, this work is done as well as possible by the senior ACSO which is not ideal. If the senior ACSO is not the Det Commander, they are likely the Deputy Det Commander or Operations Officer bogged down by the responsibilities of those positions. The Int Op would help in this preparation because it is an Int function that is being completed by someone who should be preparing to fly. Post flight, the Int Op will receive the

hard drive full of data that corresponds to every minute of flight and begin its download onto the ship's system immediately. The crew that just finished flying will be able to direct him to the times when important events happened which will focus the effort but the In Op will be responsible for PED of the data from that point on.

7. *Acoustic Data Analysis.* A subset of the data saved on the MPAS is acoustic data. In order to conduct anti-submarine warfare (ASW), the Cyclone tracks subsurface contacts through underwater acoustic sensors. It is capable of processing active and passive sonobuoys but its most powerful "wet" sensor is the Helicopter Long Range active Sonar (HELTRAS). It is a sonar transducer that is "dipped" into the water on a cable from the helicopter while it hovers overhead. These acoustic sensors provide a significant amount of data for processing post flight. As a comparison, a Block 4 Aurora Det deploys with a minimum of two mission support personnel just to process its acoustic data and the aurora does not have a HELTRAS. So much data is collected that Cyclone Dets will soon receive an acoustic analysis system comparable to the Aurora community but without any extra people to employ it. Acoustic data will need to be processed through this new system after it is downloaded to the ship MPAS which will require even more time that the flying members do not have to spare. Following flight, the Int Op would be responsible for the primary PED of this data.

8. *Mission Reconstruction.* Mission reconstruction is an important part of North American Treaty Organization (NATO) exercises that involving Naval surface and subsurface units. It is an opportunity for Allied Nations to collect and compare data for use in tactics and equipment verification and development. Raw data is taken from participating units and collated by the NATO reconstruction cell into animated presentations that are distributed to participating units. It not only gives participants verification of their data but aids fleets in tactical development (TACDEV). For embarked CH148 Cyclone Dets, preparation for reconstruction efforts often takes more than two hours. Due to the deck cycle and employment of the aircraft airborne, crews are not afforded extra time to complete reconstruction efforts at the end of the flying day. They are not able to consistently submit their data to NATO without exceeding crew day or reducing the flying schedule which is not desirable during high tempo training exercises. As a leader in NATO Task Groups with an aircraft that flies significantly more helicopter hours than any other coalition nation, Cyclone crews should better contribute to mission reconstruction. The embarked Int Op would be able to prepare and submit the required info. They would also be able to debrief the results to the crews.

9. **Training**

HEALAIRDET Int Op's will require training in MPAS and passive acoustics as described in this service paper. The MPAS course is taught at 12 Wing (12W) and designed to mirror the processes conducted for normal operations at the wing. Int Ops posted to 12W could be loaded on the MPAS course very soon after arriving in their position and augment the shore-based operations cycle. Since the initial PED process ashore is identical to the one conducted embarked, it would ease the transition to embarked operations for Int Ops. Det Int Ops would also need to complete the six-week Basic Passive Acoustics Course (BPAC) at Canadian Forces Base Halifax before being able to integrate properly with the Det SENSOS. The future embarked

acoustic processing system will also require some training that will be determined once that system arrives at the wing.

10. **Innovation**

Embedding and Int Op in an embarked HELAIRDET and employing them with the duties of the MSM in addition to their traditional Intelligence duties will make a much more efficient and professional air detachment; however, in the interest of building multi-domain awareness the Int Op could also be the link to Space based Imagery Intelligence (IMINT) which could greatly reduce the amount of time required for Recognize Maritime Picture (RMP) missions.

11. RMP missions comprise most of the missions flown by a ship's organic helicopter. The simplest description of this mission is to fly ahead of the ship or task group looking for vessels of interest and investigating them Using RADAR and Electro-Optic Infra-Red (EO/IR). Sometimes these flights could be as simple as monitoring if a vessel of interest has left port or its anchor position and they comprise hundreds of flight hours during a 6 month deployment. Often, very little data is gathered during these flights. Using IMINT of the area of operations, MSA sorties could be reduced which would be a large fuel savings for the ship. Saving fuel is not just a cost benefit. When deployed, finding aviation fuel is a very persistent logistical problem to be solved. The aviation fuel on a ship can be completely used up in as few as 5 days during a surge in operations. Considering that NATO task groups insist on ships maintaining at least 50% aviation fuel reserves, it can last even less time. Reducing unnecessary flying should be a priority in the future and IMINT from space could be one way to reduce it.

12. In addition to not crafting their Intelligence products to aviation, the ship's Intelligence team does not monitor intelligence or consult maps for operations that fly over land. Flying ashore or inserting troops in a contested environment is not currently a mission of the Maritime Helicopter (MH) community but aircrew are trained in land survival, evasion, resistance and escape. It could become an MH mission if there is greater integration between the Navy and SOF. Or the Navy and the Army. In this eventuality the det Int Op would likely be better trained to prepare the crews than the ship's Int O.

CONCLUSION

13. It would be a cliché to identify the Cyclone as the best sensor on a Canadian Ship if it were not true. Its sensors and the data they produce make it a truly positive contributor to NATO TG's. It can extend the ships sensors hundreds of miles above water and detect subsurface contacts as well as any Navy in the world. To realize the potential of the sensor data, Air Dets need an additional non-flying member responsible for its PED.

14. With the introduction of new RCN warships, automation will be leveraged to significantly reduce crew size. The ships are also not equipped with the bunk space to accommodate as many sailors as the Halifax Class Frigates. For these reasons, the addition of a twenty second Air Det. member will face resistance from the RCN when considering future operations. This resistance is misplaced and likely comes from an understanding of much simpler

helicopter operations that the Sea King conducted and not the complicated, data heavy missions conducted by the Cyclone.

15. It took a few years of flying the Cyclone for its RCAF operators to understand how much different the new platform is from the legacy one. There is very little if any similarity between Cyclone operations and those of the legacy platform. The aircraft will also not be at full operational capability until December 2022³ and its potential is not even close to fully realized. As the mission system continues to improve, greater integration between the Combat Department and the Air Department aboard ships is essential if the data is to be exploited properly. The key to that integration is a non-flying member whose responsibility is the data and intelligence. This additional person will not replace the important contributions of the crews or the specialized analysis of the operators, but it will allow those specialists to carry out the flying duties that they are on ship to do. Without the additional person, crews will continue to be unable to conduct primary PED of the data and intelligence and fly a 12-hour deck cycle. There is not enough time in the day to do both and not exceed the crew day or crew rest limitations as written in RCAF flying orders. No all data may be relevant to the ship's mission, but the Air Int Op will ensure that all data and intelligence is preserved so that it can be sent back to Canada for further PED.

RECOMMENDATIONS

16. Recommend Inclusion of one Intelligence Operator on each embarked CH148 HELAIRDET who is under the TACOM of the DETCO and responsible for Pre-flight Intelligence duties as well as PED of data and intelligence gathered in flight.

17. Recommend that Intelligence Operators posted to 12 Wing complete the Basic passive acoustics (BPAC) course.

³ National Defence, 'CH-148 Cyclone Procurement Project', education and awareness, 13 March 2013, 148, <https://www.canada.ca/en/department-national-defence/services/procurement/ch-148-cyclone.html>.

BIBLIOGRAPHY

- Defence, National. 'CH-148 Cyclone Procurement Project'. Education and awareness, 13 March 2013. <https://www.canada.ca/en/department-national-defence/services/procurement/ch-148-cyclone.html>.
- Department of National Defence. 'Royal Canadian Air Force Flight Operations Manual'. Published under the Authority of The Commander 1 Canadian Air Division, 2021.
- Government of Canada, National Defence. 'Mission Command and the RCAF: Considerations for the Employment of Air Power in Joint Operations', 4 December 2014. <http://www.rcaf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/c2-article-4-mission-command-and-the-rcaf.page>.
- Barnes, Lieutenant-Colonel Pux. 'Air Doctrine Note 14/01, RCAF Air Task Force Commander: Considerations for the Employment of Air Power in Joint Operations', 2014, 17. http://www.rcaf-arc.forces.gc.ca/assets/AIRFORCE_Internet/docs/en/cf-aerospace-warfare-centre/c2-article-5-the-rcaf-air-task-force.pdf
- Department of National Defense. 'Draft Pan-Domain Force Employment Concept: Prevailing in an Uncertain World.' Canadian Joint Operations Command, 2020.
- Harris, Albert. 'Preparing for Multi-domain Warfare: Lessons from Space/Cyber Operations.' *Air & Space Power Journal* 32, no. 3 (2019): 45–61. https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-32_Issue-3/V-Harris.pdf
- Department of National Defence. 'Strong, Secure, Engaged: Defense Policy.' Canada, Ottawa: DND 2017. <http://dgpaapp.forces.gc.ca/en/canada-defence-policy/docs/canada-defence-policy-report.pdf>
- Government of Canada, National Defense. 'Command or Control? Considerations for the Employment of Air Power in Joint Operations | Royal Canadian Air Force', 4 December 2014. <http://www.rcaf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/c2-article-1-command-or-control.page>.