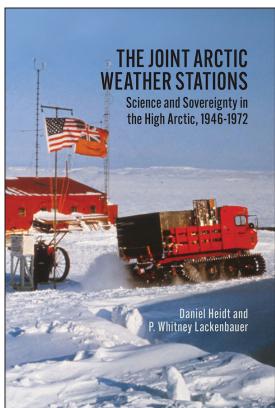




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THE JOINT ARCTIC WEATHER STATIONS: SCIENCE AND SOVEREIGNTY IN THE HIGH ARCTIC, 1946-1972

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Conclusions

Some 25 years ago, meteorologists of Canada and the United States completed plans to explore the mysteries of climate in the Canadian Arctic. Ever since then, the joint Arctic weather stations project has continued to furnish a shining example of international co-operation for the advancement of science and the welfare of mankind. Through an ideal sharing of planning, personnel, equipment and expenses, Canada and the United States have since maintained a permanent network of weather stations in the Canadian High Arctic.... The weather data collected continuously by these stations have increased greatly our knowledge of the circulation of the earth's atmosphere and thus helped extend the period of reliability for weather forecasts. This knowledge is of special importance to Canada, the United States, and the North Atlantic, where weather is dominated to a large extent by Arctic air-masses.

Meteorological Branch of the Ministry of Transport, "Joint Arctic Weather Stations: Twenty-Five Years" (1970)¹

From 1947–72, the Joint Arctic Weather Stations program played a transformational role in Canada's High Arctic, serving as a "source" of weather information that fed transnational scientific networks in the south and co-producing spaces and places that became familiar and useful to Canadians and Americans. "Though the physical environment remains

essentially the same,” geographer William C. Wonders observed in 1978, “knowledge of the area in many fields has been immensely expanded and man’s presence has been felt everywhere” owing to these “anchor points” in the Arctic Archipelago.² While historians typically limit their discussions of JAWS to early debates about Canadian sovereignty and American Cold War imperialism in the immediate postwar period,³ studying meteorological, scientific, political, sociological, and logistical dimensions of the program through its entire lifecycle reveals a richer, and revisionist, picture. Inspired by recent scholarship that brings into dialogue science, environmental history, and geopolitical narratives to reimagine the Cold War Arctic,⁴ this book encourages us to reconsider established narratives and widen our aperture consistent with the broad “environmental turn” in the historiography.⁵ Blending political, diplomatic, social, cultural, technological, and scientific history, we have documented how people who worked at the stations experienced JAWS and sought to “attach faces and names to ‘the state,’ to render a picture of its agents that is … textured and empathetic.”⁶ Considered in the context of scholarship that exposes how environmental science serves larger imperial projects,⁷ the JAWS story also analyzes how the investment of North American state resources in the co-production of Arctic knowledge also created built environments and symbolic spaces that represented spatial occupation and control.⁸ “So intertwined were Canada’s Arctic weather stations and national sovereignty issues that other nations watched carefully,” observe leading historians of Arctic science. In 1947, “halfway around the world, a classified briefing on this issue was handed to the foreign minister of Australia, another former British colony, underscoring its importance for international diplomacy.”⁹

JAWS and Cold War Imperialism, Sovereignty, and Militarization

“Before 1947, the Polar region, in the ‘attic’ of the North American continent, was a gap in the weather-picture,” journalist Ritchie Calder noted. “Then the Americans took the initiative,” with Charles Hubbard conceiving his “plan for a half-circle of weather-stations.”¹⁰ Although a superficial reading might suggest that JAWS represents a straightforward extension of Cold War military imperialism, given the involvement of the American (and later Canadian) militaries in constructing and resupplying the

isolated weather stations, a careful examination reveals how the stations were conceived and operated as civilian installations and that this imagining aligned with decades of civilian leadership of meteorological services in Canada and the United States. In the case of JAWS, Hubbard and his American and Canadian weather bureau colleagues used the military and the emerging Cold War in the 1940s as a means to a civilian end. Militaries certainly benefitted from these “islands of modernity” in the vast Arctic Archipelago and, at Resolute and Alert, Canada subsequently built air force and signals intelligence collection stations alongside the weather stations. Defence officials and personnel, however, never controlled or dominated the weather stations themselves. Indeed, as Donald Cleghorn discovered at Resolute in 1947, military-style discipline did not mesh with the fundamentally civilian cultures at JAWS. Accordingly, simply subordinating the program to the broader military-industrial-academic complex that emerged during the Cold War, however much the navy and air force shouldered the cost of implementing the JAWS program in its first decade, is distorting.

While the United States factors prominently in the historiography on Canada in the Cold War era, Canada factors remarkably little in American historiography on this period. Whether one frames the bilateral relationship as that of a subordinate “partner to behemoth,” as an expression of “ambivalent allies,” or as a bond between “premier partners,”¹¹ analysis must account for the asymmetry between a burgeoning superpower with global interests and influence, and that of a neighbouring “middle power” seeking to preserve its sovereignty and make “functional” contributions to the international order. When dealing with the US, Canadian diplomats had to walk a fine line when deciding how far to push the boundaries of international law and test American patience in their efforts to affirm Canada’s sovereignty. For the most part, Canadian decision-makers weighed the costs and benefits of a forceful assertion of sovereignty and landed on the side of caution.

The JAWS story highlights several key elements of the Canadian government’s Cold War Arctic strategy. Early negotiations reflected how officials in Ottawa worried that Canada’s sovereignty in the Arctic was, to use Hume Wrong’s apt phrase, “unchallenged, but not unchallengeable.”¹² After delays, Ottawa secured an informal arrangement that planned for a

Canadian to be in charge at each station, for an equal ratio of Canadians to Americans at each station, and for an “equal” funding contribution, thus ensuring “at least a large measure of basic control” over the program. Nevertheless, “the Joint Arctic Weather Stations were clearly the product of American rather than Canadian initiative and were established mainly by Americans, using American ships, planes, equipment, and supplies,” historian Gordon W. Smith noted. Canada’s dependence on the US for early air and maritime resupply made the network appear to be “largely an American operation.”¹³

Researching beyond the US-dominated planning and construction phases to encompass the operational stages of Arctic programs where the Canadian state was an increasingly “equal” partner produces a different narrative. There is no evidence to support portrayals of diabolical American motivations and ambitions to challenge or undermine Canadian sovereignty in the High Arctic, and rare cases of bilateral friction reflected low-level indiscretions and poor communications on both sides that were quickly overcome.¹⁴ In short, existing research emphasizing conflict over the JAWS program misses the most significant outcome: both sides learned lessons and devised workable solutions. Bilateral cooperation allowed Canada to professionalize its approach to Arctic operations and encouraged, in due course, investments in its own capacity, successfully enacting what historian John Woitkowitz describes as “a policy of firm and patient gradualism.”¹⁵ Ultimately, Canadian policy-makers balanced sovereignty interests with North American and broader geopolitical interests, and an underlying spirit of mutual respect with their American counterparts proved them right. Officials from both countries managed to steer a prudent and practical course that succeeded in furthering science and enhancing security, without compromising Canadian sovereignty.

In short, the JAWS experience suggests that the bilateral Arctic relationship during the Cold War was more healthy and reciprocally beneficial than many scholars acknowledge. Even though Canadian officials voiced periodic concerns about a perceived American *threat* to sovereignty, scholars should not simply accept the validity of these worries. When the US proved accommodating, Canadian officials weighed *risks* and eventually decided upon courses of action that effectively balanced needs, constraints, and opportunity costs. By 1959, US Weather Bureau

Polar Operations Division Head J. Glenn Dyer could boast that “we have enjoyed a most unusual relationship with our Canadian colleagues in this venture, which is perhaps not duplicated anywhere else in the world. Since 1947 we have jointly operated with Canada on a basis of complete understanding, cooperation and exchange of plans and views, this without any difficulties ever having arisen. We believe this is a very unusual record for such a far-flung international-type activity.”¹⁶ This sense of camaraderie and admiration was mirrored on both sides of the border. “The joint participation at the Joint Arctic Weather Stations, far from being a threat to Canadian sovereignty, on the contrary strengthens Canadian sovereignty, inasmuch as the United States recognizes Canadian laws and are meticulous to observe the regulations governing the Northwest Territories,” Canadian controller Andrew Thomson also observed in 1959. “In effect, therefore, the presence of American staffs working along with Canadian staffs serves to strengthen and establish very firmly Canadian sovereignty.”¹⁷ Historians know better than to take self-congratulatory official statements at face value. In the case of JAWS, however, the preponderance of available evidence supports the positive depiction.

The JAWS case also cautions historians about overgeneralizing American Cold War Arctic imperialism. For example, historian Matthias Heymann observes that “for both Canada and Denmark (overseeing Greenland), the weather station ‘problem’ illuminated the evolving postwar relationship between these smaller states and the USA, a superpower.”¹⁸ Juxtaposing the planning, construction, and operational phases of Thule with JAWS reveals that US desires to control and dominate strategic space were uneven across the Circumpolar North. Social scientists have documented extensive Danish and Inuit resistance to American imperialism in Greenland. Danish authorities recognized the scientific importance of the Thule weather station and insisted that it be jointly operated, but struggled to recruit half of the station’s complement. By 1951, the two countries signed a defence agreement recognizing Danish sovereignty over Greenland in return for “nearly unlimited authority to overfly Greenland’s territory,” but limited the foreign power’s ground presence to a few defence areas — including Thule.¹⁹ The US immediately mounted Operation Blue Jay, the secret construction at Thule of its largest overseas airbase which ultimately boasted a 10,000 x 200-foot runway, six



FIGURE 10-1. Thule base on 1 October 1953. Shelagh Grant Collection.

hangars for heavy bombers, defensive missiles and interceptor aircraft, nuclear weapons, and mid-air refuelling fleets to support Strategic Air Command's bombers during the 1950s and 1960s.²⁰

The Thule military facility also eclipsed the joint Danish-American civilian weather stations, which closed in 1952 when the Americans began conducting their own meteorological observations from facilities inside the base.²¹ Thule Air Force Base also became a hub for a host of other military initiatives including an American Ballistic Missile Early Warning System (BMEWS) site, as well as one of the Cold War's most extreme environmental experiments: Camp Century. Testing the feasibility of a US Army proposal to drill hundreds of kilometres of railway tunnels into Greenland's glaciers and reposition hundreds of intercontinental ballistic missiles to preserve the American atomic retaliatory capability, the Americans told Danish authorities that it was a "purely scientific research facility." The Americans began building this installation without obtaining

Danish approval and also ignored Denmark's official stance against nuclear activities in Greenland, claiming that the camp's nuclear reactor was an attempt to resolve energy requirements at isolated locations.²² In short, the weather station at Thule served as a beachhead for American Cold War military imperialism that ultimately expanded over much of Greenland.²³

None of the joint weather stations in the Canadian Arctic underwent similar transformations, attesting to Canada's pragmatic investment of resources and the respectful relationship that Canadian and American officials carefully cultivated around negotiating tables and at the stations themselves. The US Weather Bureau originally proposed to build and operate stations in Canada's High Arctic without contributions from the host country, yet American officials expressed no reservations when the Canadian Department of Transport instead decided to recruit and train its own met techs to contribute half of the upper air labour required at each station. By contrast, the Americans operated with little Danish oversight for decades in a "don't ask, don't tell" relationship with Copenhagen about Thule until 1968. The Canadian government was much more attentive. Ottawa initially held up the establishment of the High Arctic stations for over a year, resolving its sovereignty concerns before proceeding with the project. In the 1950s, US officials proposed expanding JAWS airstrips and facilities so that they could be used as forward operating bases for Strategic Air Command mid-air refuelling aircraft or as emergency landing strips for its bombers, but Ottawa gently rebuffed these overtures to limit the American military's presence on the Arctic Archipelago. There was no Thule-like takeover of JAWS, and "no local population had to give way to American rule" as happened at Thule. It also seems a poor example of the sweeping conclusion that the US used Arctic science as "a soft way to gain power and control without the use of force" and achieve "consensual hegemony."²⁴

Nonetheless, bilateral cooperation was imperfect. US personnel occasionally either ignored or accidentally overlooked Canadian laws or regulations during the construction and early operational phases, but most indiscretions occurred while new norms were being forged. When Canadian officials expressed their displeasure to their counterparts at the US Weather Bureau and State Department, the Americans promptly and collegially addressed their concerns and subsequently conformed to

Canadian requirements. “The Canadian Government was typically much more concerned about the observance of formalities and the requirements of protocol in connection with the weather stations” than their American counterparts, Smith observed. Canadian officials would remind Washington that the US “should therefore pay due heed to Canada’s role as host country and ultimate decision-maker about what was done within Canadian territory,” and the Americans respectfully obliged. “Apart from occasional instances of oversight or misunderstanding, … the United States typically manifested complete willingness to meet Canada’s wishes regarding formalities connected with the weather stations, even in trifling matters such as the collection of a few samples of snow.”²⁵

Mutual attentiveness to each country’s needs and anxieties yielded a robust and congenial binational partnership. For the next quarter of a century, both JAWS partner countries shared administrative burdens, provided half of each station’s personnel, and shared financial costs. Over time, as Canadian capacity grew, the Royal Canadian Air Force, Royal Canadian Navy, and eventually civilian contractors assumed responsibility for resupplying the stations. Towards the end of the program, Canada covered more than half of the project’s overall costs. When the US withdrew from the program in the early 1970s, austerity considerations, not sovereignty or high politics, drove the decision. The JAWS case study invites historians to make conceptual space for projects that generated official concerns at the onset, but that ultimately proved to be successful binational endeavours that confirmed, and even bolstered, Canadian sovereignty.

Scientific Colonies?

A colony is a self-contained, specialized settlement of a culture from somewhere else, a social machine constructed in a new landscape, the function of which is to render that landscape both familiar and useful.

Christy Collis and Quentin Stevens²⁶

The JAWS program intended to construct, use, and appropriate Arctic space — and the data generated within it — in the service of science, the attendant states, and broader societal applications of modern meteorology. In these respects, the program proved a resounding success. As planners expected, each station provided a full range of meteorological data for surface and upper air conditions, which were transmitted to the broader world. Forecasting centres throughout North America and Europe used meteorological observations from the High Arctic stations to prepare daily weather charts. The information was “especially useful in Canada and the United States for providing advance warning of severe outbreaks of Arctic air,” one report summarized. “These observations assist materially in the drawing of accurate Northern Hemisphere weather charts which are used by the U.S. Weather Bureau in the preparation of 5-day forecasts.” The long-term record of weather data produced at the stations also contributed to broader meteorological and climatological research, leading to modifications in meteorological concepts and improved forecasting. By 1952, officials noted that the High Arctic weather data revealed the need to revise the mean temperature and pressure charts produced five years earlier.²⁷ JAWS stations not only provided information that filled in what had been a “blank spot on Northern Hemispheric weather maps,”²⁸ they also enabled a wide range of scientific activities that fulfilled Hubbard’s vision to “provide habitations, channels, communications, and transportation which will make it possible for us to penetrate the Arctic for other purposes.”²⁹

While the stations were run by civilian weather bureaus rather than the US or Canadian militaries, the data collected certainly fit the criteria of *strategic* Arctic science: “systematic, long-term, strategic, and largely state funded” research on Arctic environments that served economic, geopolitical, and national security priorities.³⁰ Dramatic newspaper and magazine stories often compared and contrasted the men at the stations with the heroic, expedition-based scientist-explorers who had dominated Arctic science into the interwar period. However, the JAWS network bore more resemblance to Norwegian and Swedish research practices, which emphasized modernism and professionalism over nationalism and heroism,³¹ and to postwar Antarctic stations, than it did to previous Canadian examples. In this respect, although JAWS was a civilian program, it

anticipated and then paralleled dramatic military modernization projects that transformed the North American Arctic in the 1950s, particularly the Distant Early Warning (DEW) Line. In stark contrast to military installations, however, the information generated by JAWS teams was shared widely. “Information is relayed back to Edmonton and, by international code, to every weather service — including the Russians, whose reports from the other side of the world are available in the same way,” Ritchie Calder reported in the mid-1950s. “And so the weather bureaux throughout the world know ‘what’s cooking’ in the Arctic — weather which will be significant in their charts — weeks ahead.”³² Not only did synoptic weather data collected at the stations facilitate more reliable forecasting across North America, JAWS personnel also contributed systematic scientific observations in support of other sustained studies on the Arctic environment. As bases for research, the stations also allowed a wide range of strategic and resource science to extend further into Canada’s Arctic Archipelago, serving both state demands for utilitarian knowledge about the Arctic and growing commercial interest as well.³³

Rather than focusing on the uses of the data produced at or facilitated through the stations, this book provides a thick description of the ideas, cultures, technologies, and practices that JAWS personnel integrated to co-generate knowledge. It also highlights the centrality of logistics and resupply to sustaining viable “islands” or “colonies” of science in isolated polar regions, which preoccupied senior administrative officials in Ottawa and Washington, as well as the men serving at the stations themselves. Logistics and resupply operations were the sinews of Arctic science,³⁴ and both countries invested significant state resources to ensure that people and supplies were available so that these civilian stations could operate year-round. While modern transportation and supply chains made this possible, environmental and seasonal realities also dictated a general annual cycle that governed resupply and, in turn, shaped station life. Even with advanced “envirotechnical systems”³⁵ in place, achieving “environmental immunity”³⁶ was unrealistic, and actors on all scales — from the stations themselves to executive boardrooms in national capitals — needed to amass useful knowledge about the Arctic’s “rhythms, its extremes, and its variations”³⁷ to sustain functional scientific outposts in specific localities.



FIGURE 10-2. The environment posed a constant challenge to JAWS personnel. Here is Lowell Demond about to dig out the door at Mould Bay or Eureka during the 1950s. Lowell Demond Collection.

As this study shows, foregrounding the seasons and the environment need not “relegate human experiences and relationships to the background.”³⁸ Station crews took pride in their ability to conduct scientific measurements in harsh conditions, but always recognized the environment as final arbiter. The broader program, however, could not always afford to be adaptive and participants in it carefully picked their proverbial battles with nature. Collecting synoptic weather observations required strict adherence to rigid and internationally standardized schedules. Unlike resupply flights, postponement of a radiosonde run invalidated the data’s forecasting utility. Personnel had to cope with theodolites and other equipment designed for more temperate locales. Instead of bowing to these constraints, gathering data less often, and diminishing the network’s scientific value, personnel dedicated themselves to developing a local body of

knowledge that included procedures and devices that collectively enabled them to perform the observations on time in extremely harsh conditions. In so doing, JAWS personnel shared common cause with other crews working at weather stations around the world who also needed to develop local practices for taking measurements and “working around” their environment to “get the job done.”³⁹ By exercising flexibility in other parts of station life, the JAWS program and its staff ensured that they possessed the resources and energy to consistently deliver on their primary purpose: the timely collection of meteorological observations.

JAWS personnel, and particularly the met techs, cultivated a working scientific culture rooted in observation and documentation. The difference in the duration of the transiency of JAWS personnel, relative to the shorter stays of field scientists,⁴⁰ fostered additional adaptations that departing personnel shared with the next generation of incoming staff. While most scholars equate local knowledge in the Canadian Arctic with traditional Indigenous knowledge or Inuit Qaujimajatuqangit generated by peoples who have lived on particular lands and waters since time immemorial, the JAWS stations were built without the benefits of this knowledge, inviting a different question about how personnel succeeded despite their limited Arctic training. In his work on “high modernism,” James C. Scott insists that rational planning and universalist science failed to achieve desired results when planners overlooked the importance of “métis”—the local or “practical knowledge” of place that allowed practitioners to modify procedures in response to unanticipated or changing circumstances.⁴¹ JAWS personnel constructed their own forms of local knowledge that were practical, aligned with international requirements, and based upon their corporeal practices, observations, and interactions with local environments. In this sense, meteorological science conducted at the stations was (as Steven Shapin observes of Western science more generally) “indelibly marked by the local and spatial circumstances of its making,” embodied in the people and instruments that produced it.⁴²

Scholars have shown how innovations in aviation and access to isolated stations such as JAWS influenced the professional and epistemic culture of southern-based government and academic scientists who studied the Arctic during the Cold War. Richard Powell explains how scientists associated with the PCSP hoped to use High Arctic sites to overcome nature’s

wrath and turn the Arctic into a “laboratory” where specific phenomena could be isolated and studied rather than observed — although he recognizes that the Arctic environment prevented this shift.⁴³ Similarly, Steven Bocking emphasizes scientists’ desire to use aviation to overcome nature so that Arctic experiments could conform “to the ideal represented by the laboratory.” This aspiration also failed, but airplanes operating out of support sites such as JAWS “provided an opportunity to bring data out of the north, so that interpretation could be conducted in a controlled, homogenous environment” down south. In so doing, the culture of Arctic science became “more tightly integrated” with its southern counterpart.⁴⁴

But the experiences of university-trained scientists who worked in the region for field seasons consisting of a few weeks or, at most, a few months, were substantively different from those of technicians overwintering in the High Arctic and conducting and recording observations year-round. Instead of attempting to advance their professional reputations by performing “experiments,” JAWS personnel focused on developing reliable procedures to perform synoptic observations over the course of decades. The data that JAWS generated certainly fed scientific analysis and meteorological forecasting in the south, but it was transmitted out daily by the stations for interpretation and application by others. Their modest roles in the larger scientific processes were grounded in the domus that they occupied *in* the Arctic, not as transients collecting scientific data *from* the Arctic.

By analyzing interpersonal relations, leadership, endurance and adaptiveness in harsh environments, and a willingness to innovate and endure hardship, this book identified cultural norms that enabled personnel to conduct synoptic observations on the Arctic Archipelago. While polar “spaces are given meaning in the imagination and represented and contested through discourse,” Christy Collis and Quentin Stevens note, “grasping their complex spatiality requires understanding the concrete materiality which people have produced there, and the ways in which this spatial materiality is interlinked with social processes and meanings.”⁴⁵ While jargony, this observation speaks to the limitations of confining assessments to how people *imagined* space and place. It calls for deeper exploration of how people produced Arctic spaces in physical form, such as buildings and airstrips, as well as how social infrastructure and the

human interactions within these spaces, and with surrounding physical environments, produced distinct Arctic places. In the case of JAWS, the very establishment of these weather stations prompted people to re-imagine the Canadian High Arctic as *useable* space. Weather data made the Arctic more *legible*, to use James C. Scott's idea: station operations made the Arctic more understandable, researchable, even quantifiable for scientists. As support hubs, JAWS made the isolated Queen Elizabeth Islands more accessible to outsiders. Personnel at the stations forged distinct cultures and made the stations into places of work, residence, and leisure. The joint program demonstrated that, with the support of modern logistics, even the remotest islands could become *livable* spaces.

Stations as Spaces and Places of Everyday Scientific Life

Although “most studies of everyday scientific life have been set in the laboratory,” Henrika Kuklick and Robert Kohler observe how practices in the field sciences yield equally rich insights as they “depend on the conditions of specific places, requiring considerable improvisation to cope with local exigencies.”⁴⁶ Given the particular High Arctic spaces that the Joint Arctic Weather Stations inhabited and the places that they produced, social relations and practices were intricately intertwined with environmental conditions, remoteness, and isolation. Both the Canadian and American governments hoped to select candidates whom they believed were the most innovative, cooperative, and capable of enduring prolonged isolation, far from home, without access to their regular social support systems.⁴⁷ Nonetheless, a lot of the men who volunteered to work at the stations had no substantive idea of where they were going, Peter Johnson later observed. “They knew nothing about the history of the area, whether people had been there before or not. They knew nothing of the conditions they were going to encounter, and by and large it didn’t bother them. Their interests were either meteorological, or just having a job.”⁴⁸

Although some personnel arrived at the stations with prior polar experience, JAWS service was often their initial foray into Canada’s Far North. Those who succeeded in their roles learned to embrace a lifestyle of self-direction, steady pace, and quiet that came with station life.⁴⁹ Modern communications and technology could help to smooth the peaks and troughs of activity in the annual cycle, but JAWS personnel accepted

(sometimes begrudgingly, often with simple resignation) that “nature” retained the power to shape their lives. Although the buildings provided refuge from the outside elements, the physical confinement circumscribed patterns of activity and behaviour in and around these scientific enclosures. Today, “there is no way they would send someone to a place like that and say they are going to leave them there for two years,” Lowell Demond stated in an interview.⁵⁰ Oral histories suggest that, whatever the hardships the men endured — or perhaps because of these challenges — many JAWS veterans considered their years at the stations as formative experiences in their lives.

Station-level reports, typically overlooked in studies fixated on national-level sovereignty deliberations, offer deep insight into how isolated stations functioned on the ground. In his elegantly crafted study on Antarctica, Tom Griffiths notes that reports from polar “station leaders over the years are a kind of meditation” on command and group dynamics, on imagining space and privacy, and on a host of other insights into the social life of isolated communities. “Has anyone ever studied them as a genre, as a compendium of practical advice,” he asks, “or are they trapped within the year of their accounting, each as discrete as an air bubble in its annual layer of snow?” If history serves as a “survival manual,” are we missing out on “the rich voice of experience” contained in the stories captured in these reports?⁵¹ We turn to these records not as a genre but as a source of rich insight into how knowledge, cultures, and spaces at isolated locations are generated, perpetuated, and challenged. Interviews with JAWS veterans also encouraged us to move beyond what Griffiths observes as “the limits of faceless, nameless, clinical accounts of deeply personal and cultural matters” in polar psychology studies. To support claims of “objectivity and rationality, … real people are gutted and meaning ebbs away” in these studies, often leaving the reader with “mundane insights of meaningless generality.... History, by contrast, spills over with illuminating, verifiable examples that you can argue with.”⁵²

The men inhabited distinct physical spaces as well as psychological environments — places of the mind. While southern historians fixate on the Arctic’s frigid temperatures and “hostile environment,”⁵³ the reports, diaries, and oral histories of the men who lived at the stations continuously stressed the centrality of isolation.⁵⁴ Archie Asbridge, who worked at

FIGURE 10-3.
Drilling a hole
in the ice outside
Isachsen to collect
water, 1964. Jim
Jung Collection.



Isachsen and Resolute in the late 1950s, likened the experience at the satellite stations to “submarine syndrome,” with long periods of interaction limited to a small group of people in a confined space.⁵⁵ Most found ways to endure, and even thrive, in their remote scientific enclaves. Journalist Ritchie Calder found, when visiting the stations in the mid-1950s, “a surprisingly well-adjusted group of men. Perhaps it is not surprising. Men do not choose such a life unless it temperamentally attracts them.” When asked why they chose this life, most gave a “frank and unromantic” reason: “the money is good.” The stations gave them a chance to “live hard and save hard,” building up their bank accounts to get married, buy houses, or finish university.⁵⁶ Driven by the challenge of conducting synoptic observations under extreme conditions, most proved to be dedicated and

innovative investigators and fulfilled their roles with pride and a sense of professionalism. “Nobody ever really loves the Arctic,” journalist Peter Inglis claimed in a 1952 story on the JAWS network, “but some of the old-timers become used to it to the point of grudging affection and say they feel out of place anywhere else.”⁵⁷ As a Canadian Meteorological Branch summary observed, “the High Arctic provides its own compensations, evidently, for many [JAWS personnel] have volunteered for additional tours of duty.”⁵⁸ Sometimes, these compensations were not enough. This book reveals occasions when isolation and confinement threatened to disrupt the stability of local cultures. Station crews resolved the resulting friction by supporting each other, and the rare occasions when these efforts failed reminded everyone to vigilantly contribute to the cultures that helped to make the stations possible.

Rather than distilling personal stories into datapoints (as do many studies that impose too much uniformity on field science and other activities in the North American Arctic),⁵⁹ this book is filled with anecdotes offering first-hand insights into how the men understood and remembered their experiences. In contrast with the questionnaire-based research that drives much of polar psychology,⁶⁰ we wanted to learn from their personal observations, their methods, their joys, and their frustrations as they articulated them in oral histories and station diaries. Resonant with the findings of Aspa Sarris and Neil Kirby in their survey of Antarctic stations, most JAWS personnel depicted their stations as “open, friendly, and participatory environments with constructive norms and behaviors, generally consistent with research that suggests that the Antarctic experience may be beneficial on people’s health and well-being rather than necessarily detrimental to psychological health.”⁶¹ Furthermore, the diverse evidence that we uncovered while researching this book confirms that “democratic” leadership, where leaders consulted with station staff before important decisions and undertook their share of station tasks, proved much more effective than dictatorial styles.⁶² With rare exception, the theoretically concurrent powers of the OIC and ExO worked well in practice. Despite initial concerns, Canadian personnel maintained, and American personnel respected, Canadian sovereignty under the JAWS command structure. Ultimately, however, the success of each station at any given time came down to each individual’s willingness to live and work side-by-side

everyday with a small group of peers. “I wonder sometimes myself what sort of personality I exuded that allowed me to get through all of that and live with those people,” Bob Plaseski pondered during an interview.⁶³

The conspicuous absence of Indigenous voices from this book differentiates it from most recent scholarship on the Canadian Arctic in the twentieth century. Despite occasional visits from Inuit passing by the satellite stations and the presence of an Inuit settlement near the weather station at Resolute, limited cross-cultural interaction meant that the stations did not fit the typical mold of “northern contact zones … characterized by asymmetric power relations.”⁶⁴ On the one hand, this irregular contact reflected prevailing power relations in that Canadian officials decided not to adopt recommendations to populate the weather stations with full-time Inuit employees. Instead, both the seasonal work that Inuit performed during major air- and sealift operations at Resolute, as well as restricted contact between JAWS personnel and Qausuitturmuit, reflected wider power asymmetries between the state and the community. Furthermore, geographical and cultural distances meant that Inuit living in the small community at Grise Fiord on the Bache Peninsula did not visit Eureka with regularity, and the lack of Inuit settlements proximate to the other satellite stations precluded interactions there. It was telling that news stories during the 1950s described the extreme isolation of Alert as “too far north for the Eskimos.”⁶⁵

Such descriptions also mark the distinction between the movement-based patterns of Inuit (exemplified in Inughuit hunters from Greenland who frequented Ellesmere Island to hunt polar bears and musk-ox) and the fixed or “motionless” nature of the JAWS facilities.⁶⁶ Although archeological evidence near various JAWS sites revealed previous Thule and Inuit occupancy of the High Arctic, the absence of any *permanent* or *static* Indigenous presence in the region by the time Canadian and American officials mounted their air and sea voyages to select locations and establish the stations invoked the Western idea of *terra nullius*: that it was “nobody’s land” and thus available for occupation. This overlooked other forms of Indigenous use and occupancy. For example, historian Lyle Dick, in his masterful study of Ellesmere Island in the age of contact, reveals how Inughuit guides acquired direct experience in the High Arctic while enabling American and Danish expeditions to Ellesmere and Axel

Heiberg Islands in the late nineteenth and early twentieth centuries, and then while patrolling as special constables with the RCMP in the inter-war period. While the Mounties embarked on these periodic trips “across dangerous or unproductive terrain” to demonstrate Canadian sovereignty, Dick observed, Inughuit “pragmatic modes of thought told them it made sense only if it enabled them to hunt game or to learn more about the resources and opportunities for future utilization.”⁶⁷ What Canadian officials later deemed Inughuit “illegal” hunting of polar bear and muskox in the Arctic Archipelago (in contravention of the NWT Game Ordinance) practically applied to knowledge and experience in the persistent *movement* that animated Inuit life in Inuit Nunaat (their transnational homeland). As a Greenlandic hunter asked Samwillie Eliasialuk, an Inuk relocated to Ellesmere Island in 1953, “why do you carry so much dog food when animals are plentiful over here?”⁶⁸

Such logic would have been lost on most JAWS personnel for whom the Arctic land was not a source of sustenance. Their food and supplies were flown or shipped in, and their encounters with wildlife and forays into surrounding landscapes were fundamentally different than relationships that Inuit have in their homeland. JAWS personnel generally limited themselves to *observing* wildlife, not harvesting it. (Indeed, regulations prohibited them from hunting.) Connections with the south, not resources from and in the North, sustained the station personnel — materially, emotionally, and ideationally. Given these distinct worldviews and practices, it is unsurprising that the JAWS stations, as non-Indigenous scientific outposts, seemed to exist largely apart from the relationships that animate Inuit conceptualizations of Inuit Nunangat: their Canadian homeland. Accordingly, the program has left little imprint on Inuit history, even though the stations sit on lands now part of the Nunavut and Inuvialuit Land Claim Settlement Areas.⁶⁹

The stations left a more delible environmental footprint, both in terms of infrastructure and residual impacts of their operations. Environmental impact “wasn’t even a word in the dictionary” during the JAWS period, Bill Nemeth points out. Instead, he and other men working at the stations saw it as a simple “matter of surviving … When you took a barrel of fuel up there you knew it had to be there otherwise you wouldn’t be there. When the fuel barrel emptied, there was no way of taking it out because

it couldn't be flown out, you stacked them up.”⁷⁰ The stations existed to provide weather data for the economy down south to grow and flourish, and the spirit of environmentalism that animated future discussions about Arctic stewardship had yet to take hold of North Americans. Bob McDonald (OIC Resolute 1958–59) recalled that “we had ... absolutely no interest in environmental impact at all.”⁷¹ When the station at Alert experienced a fuel spill in the mid-1960s, David Oldridge “could see it was causing harm,”⁷² but the deleterious environmental impacts were simply ignored. Station personnel saw the “messy” drum caches as an aesthetic and logistics problem, not as pollution.⁷³ Track-ruts left by “joy rides” across the tundra lasted decades, and John Gilbert remembers many staff commenting about how long this destruction marked the High Arctic landscape.⁷⁴ In the early years, garbage and old tractors were left on the sea ice where they disappeared during the summer melt.⁷⁵ Other materials were left around the stations: Demond estimated that Eureka’s cache of old electrical equipment, plywood boxes, and metal pieces stretched 200–300 feet.⁷⁶ The stations initially disposed of human waste in an environmentally insensitive manner, with latrines emptied into old fuel drums and hauled onto the bay ice until they dropped into the sea or the waste simply “dumped out near the beach and pushed to the bay by tractor.”⁷⁷ Scientific practices also left signatures on the environment. “Every met technician remembers the white blotch on the landscape” that they created “twice a day everyday” when they produced hydrogen for the balloons, Don Shanks described. The resulting sludge “was simply dumped on the ground,” and the inflation sheds were constructed on hills “so that the effluent would flow down and away from the building.”⁷⁸ In retrospect, most JAWS veterans regret that the program had not adopted more progressive environmental stewardship practices, reflecting a mental shift from “colonialism to environmentalism” that marks Arctic imaginaries more generally.⁷⁹ Better environmental practices would come in the “afterlife”⁸⁰ of JAWS as it morphed into the High Arctic Weather Stations (HAWS).

From JAWS to HAWS

In 1971, with the JAWS program slated to end the following year, the Canadian government transferred administrative responsibility for the stations from the Department of Transport to the Atmospheric Environment



FIGURE 10-4. The drum cache at Eureka, 1960. LAC Winn - AES Photos - Box 2 - Unofficial Report of Summer Activities - 1960.

Service (AES) under the newly created Department of the Environment. Owing to astute transition arrangements with the United States, the full onset of the Canadian-run High Arctic Weather Stations (HAWS) program at all of the former JAWS stations in 1972 had no practical impact on data collection, reinforcing how little nationality or “sovereignty” had influenced scientific practices on the ground. Oral histories suggest that “Canadianization” proved more of a whimper than a bang, and personnel turnover at the stations meant that, within a few years, no one remained from the JAWS period. Ron Huibers, who served as a met tech at Isachsen in 1975 and then as OIC of Eureka from 1987–88, recalled that HAWS staff made “very little mention of it, and if you didn’t know it, and you didn’t read some of the old materials on site,” there was little to acknowledge that the stations had been run jointly with the Americans only a few years before.⁸¹ Instead, this “changing of the guard” fostered a HAWS identity based on perceived distinctiveness. “We were the next phase,” explained

Rick Risbey, a met tech and later OIC of Mould Bay between 1974–76 and of Alert from 1977–78.⁸²

The lowering of the last American flag at Resolute in August 1972 brought a distinctive bureaucratic and identity break, but much of life at the High Arctic stations continued as it had since the 1950s. The transition to the HAWS period meant more continuity than change. Canadianization did not stop the sewage pipes from freezing and backing up.⁸³ Canadians who volunteered to serve at the High Arctic stations in the 1970s and 1980s continued to volunteer to go north for the same reasons as their predecessors from the 1950s and 1960s. Personnel were still drawn to the isolated stations by the promise of quick money, and continued to struggle with feelings of isolation. New technologies helped to bridge vast distances between personnel and their families, but also highlighted their physical separation. To succeed, leaders at the stations still needed to display the same qualities as they had since the beginning of JAWS, with authoritarian styles ill-suited to social stability at isolated civilian outposts. People who enrolled in the AES met tech training program knew they were likely bound for a year at an Arctic station. Fresh out of high school and the upper air program at Scarborough, Doug Munson went looking for adventure.⁸⁴ Others, like Risbey, sought out the simplicity of station life. Life was busy, but it was free of “distractions” such as “car payments, television, or girlfriends.”⁸⁵ Others wanted a secure career with the federal government and accepted a Northern posting with the attitude that “everybody has to do their time.”⁸⁶ For most people, however, money remained the main enticement. “In one year” as the OIC at Eureka, Dave Tidbury remembers, “I made enough to pay for the house” that he had down south.⁸⁷ When OICs tried to impose military-type discipline on HAWS personnel, they faced a “mini-revolt” — as happened at Mould Bay in 1976.⁸⁸ Scientists continued to visit the stations, and commercial interests leveraged the stations to undertake extensive surveys of High Arctic resources in the 1970s and 1980s. Government funding continued to dictate the number of operational stations, and budgetary pressures would ultimately determine their fate.

The employment of women at the HAWS brought the most noticeable change in station culture. Throughout the JAWS period, the stations were homosocial masculine spaces manifesting many “manly modern”



FIGURE 10-5. Heather Blain at Isachsen, 1976. Bob McInnes Collection.

characteristics described by historian Christopher Dummitt.⁸⁹ This culture ended when the AES assigned met tech graduates Heather Blain and Cheryl Leyten to Eureka in 1974. The station had been rebuilt recently and senior officials believed that comparatively high visitor traffic would help ensure their safety. The biggest problem that Blain remembers was the lack of a women's washroom, and the OIC's separate facility soon served this purpose. "There were some people that were ... ambivalent about the whole thing," she recalled, "but there wasn't [anyone] ... snarky or anything about it."⁹⁰ When asked about the change two years later, Joe Padehl of Eureka noted that "women improved the atmosphere at the station, because the men didn't let themselves go so much, but tried, out of respect, to maintain the same environment they would in the South."⁹¹ By the 1980s, women worked at most of the stations, breaking the outdated gender barrier once and for all.

Technological progress also helped to improve communications connecting the High Arctic Weather Stations to the outside world, further reducing their isolation. With the general simplification of radio

communications from point-to-point network Morse code to single side-band and the radio teletype, the satellite stations gradually substituted radio operators for additional met techs in the late 1960s who had trained in teletype duties.⁹² Station personnel continued to use phone patches until each station received a satellite phone connection.⁹³ Project Hurricane established a satellite receiving capability at Eureka and a microwave network linking Eureka to Alert in the early 1980s,⁹⁴ and when Mould Bay finally secured a satellite phone in April 1985 the station reported “an endless queue of people wanting to use it.”⁹⁵

JAWS personnel typically considered themselves “pioneers” throughout the 1950s and even into the 1960s. Station diaries from the HAWS period confirm improved access to amenities, the introduction of year-round landings, and improved communication technologies, but personnel at the stations still considered themselves to be “living on the edge.” “For those who went seriously North, you were into a completely different world from the one you grew up in,” Risbey recalled. “The weather was far more extreme than anything you had experienced before; the sun didn’t necessarily rise and set every day; your circle of familiar faces had disappeared, replaced by a few grizzled and unusual individuals who held your life in their hands, and virtually everything you saw, or experienced, was new.” Nevertheless, station personnel during the JAWS era “had things a hell of a lot tougher than we did,” Risbey stressed. “They were surviving on semi-annual mail drops and food drops. They were putting up with living conditions that were far tougher than what we had [available]. We had life pretty soft.”⁹⁶

This comparison was relative, of course. Storms continued to hamper medevac flights, and even monthly fresh produce and mail flights⁹⁷ did not eradicate the strains of isolation. By the mid-1970s, AES realized that full-year postings “took a toll on the human psyche” and limited them significantly over the next decade.⁹⁸ The constant rotation of station personnel kept the work environment fresh, but also reduced station efficiency. “Morale for the most part was not really high, not really low, we just kind of ran on a business type basis,” Risbey described. “You had a job to do, you got the job done.”⁹⁹ Like his JAWS predecessors, OIC Bob McInnes observed that “if people were busy, they were happy.”¹⁰⁰ In 1983, AES project officer D.J. Kahler reminded his superiors that HAWS personnel



FIGURE 10-6. Bob McInnes at Isachsen, 1976. Bob McInnes Collection.

exhibited “the same symptoms of isolation found throughout the arctic,” including boredom, alcoholism, moodiness, introversion, and even “dramatic releases of pent-up emotions through violent acts directed towards the employer or co-workers.”¹⁰¹ None of these symptoms would have surprised the men who had served during the JAWS era. David Tidbury read and studied the station logs that they had left, noting how “you could just appreciate … the guys that went before you. And they were all sort of like heroes.”¹⁰²

Isolated stations “that continue to operate and grow … are continuously built, changed and rebuilt, ruined and restored, and thus they are always also remains of the past, archives and traces, rather than sites at the cusp of scientific progress, moving ahead to futures of discovery,” Wenzel Geissler and Ann Kelly observe.¹⁰³ Just as the satellite stations and the hub at Resolute had evolved differently, the post-JAWS history of each station was unique — a testament to the complex spatiality of the network and the localized forms taken by scientific colonialism.¹⁰⁴ There was no single experience, no single site that epitomized the rest. While the Canadian



FIGURE 10-7. The Resolute weather station, 2016. Whitney Lackenbauer Collection.

government decided that some stations warranted renewal or expansion, others were abandoned and left to decay, their utility slipping from present to past, their material remnants left frozen in time and space.

Resolute, which boasted the largest station and the only JAWS site around which a permanent civilian community had grown, continued to develop as Canada's High Arctic hub. What began as a fledgling weather station, built because the preferred location had proven inaccessible in the summer of 1947, had expanded into a major regional airbase, an Inuit community, as well as a scientific, communication, and exploration hub. Transient scientists arrived in greater numbers during the HAWS period, propelled by the permanent establishment of the main Polar Continental Shelf Project (PCSP) building near the airfield in the 1960s and an oil exploration boom in the Queen Elizabeth Islands during the 1970s and early 1980s. The PCSP facilities and built-up industrial area at South Camp meant that the weather station played no role in housing visitors. While the weather station remained at its longstanding location near the airport, the community's permanent population moved to a new townsite about



FIGURE 10-8. Whitney Lackenbauer releasing a balloon at the Resolute weather station, 2016. Whitney Lackenbauer Collection.

three kilometres away on the eastern shore of Resolute Bay in the mid-1970s to accommodate better municipal services. “On a map, it appeared isolated as one of Canada’s most northerly communities, but in reality it was well connected through its airport and its popularity with the scientific community,” the Qikiqtani Truth Commission later reported.¹⁰⁵ Although the RCAF had turned over the airbase to the Department of Transport in 1964, the military expanded its presence (beyond the local Canadian Ranger patrol) when it opened the Canadian Armed Forces Arctic Training Centre (CAFATC) in 2013. The civilian weather station remains a distinct entity, operated by Environment and Climate Change Canada. Its personnel (including local Qausuitturmiut), now living off-site, still conduct daily weather observations and launch balloons as their predecessors have since 1947.

As the civilian station closest to the North Pole, Eureka also developed into a significant (albeit smaller) hub for High Arctic science. Its accommodation buildings were expanded to host visiting scientists from a wide variety of disciplines, as well as those working at the Polar Environment Atmospheric Research Laboratory (PEARL). The station also served as a jumping-off point for adventurers who arrived at the station each summer intent on reaching the North Pole. Former OIC David Tidbury recalled that “the coming and going of all of these visitors” made Eureka “a happening place.... We were more a hotel than a weather station” at times.¹⁰⁶ Reporter Katherine Harding observed that it was “no resort,” however, with a “heavy meat-locker-style door” serving as the main entrance to the staff barracks and “the cluster of snow-encrusted buildings teems with computers and high-tech meteorological gadgets.”¹⁰⁷ Environment and Climate Change Canada continues to staff a meteorological station at the site,¹⁰⁸ where curious, resident wolves still greet visitors just as they have since the original crew landed to build the station in 1947.

Budgetary constraints eventually prompted AES to close the separate weather station buildings at Alert and move meteorological operations into the Canadian Forces Station. Operating a small station with full amenities for less than ten people seemed redundant with a military installation with more than one hundred personnel located only a few miles away. When rumours of assimilating the civilian weather station into the military station reached Alert in 1976, HAWS personnel openly



FIGURE 10-9. Eureka, Nunavut, in 1998. [ceedub13](#), Wikipedia Commons.

opposed the move. OIC Dave Tidbury noted that the new barracks at CFS Alert had “been built with the idea of the men being a) military and b) they are posted here on a six-month basis with a home base down south.” By contrast, HAWS personnel, like their JAWS predecessors, cultivated a more “homey” atmosphere that was not permissible at a Canadian Forces facility.¹⁰⁹ “The military are expected to have their rooms clean, however our ideas on clean and theirs may differ greatly,” OIC Rick Risbey noted two years later.¹¹⁰ Risbey later recalled how HAWS personnel visiting CFS Alert were “a bit of a novelty” because they were civilians subject to different rules. “Having hair down to the middle of your back made you sort of stand out in a crowd of guys who drove around with brush cuts and beards.”¹¹¹ HAWS personnel also considered their military neighbours to be more transient. “We have an identity,” Risbey concluded in a sharp memorandum appealing for the continuation of the status quo in 1978. “We are somebody. After the move, this is lost. It is our home, and

someone is going to destroy it to save money. Is it worth it?”¹¹² AES regional headquarters in Winnipeg decided that the cost savings were too attractive to resist, however, but it offered a modest compromise. Currently serving Alert HAWS staff finished their tours under the existing living arrangements, and all new personnel began their tours living at the military base. As OIC, Risbey was the last person to leave the standalone weather station in August 1978.¹¹³ Thereafter, AES became a “tenant” at Alert¹¹⁴ and Risbey’s replacement, Brent Broughton, soon reported that the consolidation was a success.¹¹⁵

Even more drastic changes followed at the network’s westernmost stations. By the turn of the new millennium, Isachsen and Mould Bay had returned to being uninhabited places. The AES decided to close Isachsen because of the immense costs of resupplying the station from the air, and because it was the least used by outside departments or scientists.¹¹⁶ The station suspended its upper air observations by mid-June 1978, and personnel spent the rest of their tours cannibalizing the station’s equipment for the remaining stations.¹¹⁷ Mould Bay, for example, received its sister station’s dump truck, two refrigerators, three ladders, and its movie projector.¹¹⁸ Isachsen officially closed on 19 September 1978 and an automated surface observation station began a more limited and inexpensive observation schedule.¹¹⁹ The wind, the snow, and the ice soon reclaimed the station, literally freezing the infrastructure in time. Books and magazines still adorn shelves inside the buildings, with trucks and bulldozers parked in garages as relics too expensive to fly south. The endless wind, which once chilled the spines of JAWS personnel, has now filled the long-vacated buildings which sit silent, the daily sound of human voices now but a distant memory.

Even with Alert’s consolidation and Isachsen’s closure, the HAWS program still cost AES \$3.5 million annually out of a total \$80 million budget to run Canada’s entire weather station network.¹²⁰ This placed High Arctic operations under close scrutiny. Eureka and Resolute benefited by sharing resources with neighbouring government departments, but there were no partners to leverage when it came to revamping the Mould Bay station. After scaling back original construction plans, AES built a new two-storey “Ops” building at Mould Bay that contained the kitchen, communications equipment, lounge, and bedrooms in 1985.¹²¹ By 1990,



FIGURE 10-10. Isachsen in 2007, abandoned to the elements. Whitney Lackenbauer Collection.

however, the station's buildings were sinking into the permafrost, and its personnel seemed to operate in another era, preparing for aircraft landings by lining the runway with fireboxes and using a truck's lights to illuminate the far end. Exorbitant fuel costs, however, ultimately dictated the isolated station's fate. According to Mike Balshaw, AES Regional Director at the time, Mould Bay's "operating cost was so significant that it always stuck out like a sore thumb when it came to looking at the costs of the weather observing programs in Canada.... So when it came to closures you could close Mould Bay and save twenty stations down south."¹²² AES had hoped to keep the station open until a viable upper air automated station could be constructed, but budgetary considerations proved to be insurmountable and AES closed Mould Bay in 1997 to save an estimated \$1.5 million annually.¹²³ Unlike Isachsen, however, Mould Bay was "mothballed" with expectations that it could be reopened if the Canadian government wished to do so¹²⁴ — although conversations with scientists and government officials who have visited the site in the last decade suggest that the decrepit buildings are now beyond repair.

The closures of Isachsen and Mould Bay had scientific consequences. “Technologies like satellites and so on are not directly comparable with the standard technology for measuring upper atmosphere and surface conditions,” Balshaw notes. These orbiting observation points can only measure the “temperature of a layer” of atmosphere, and their vertical resolution is quite “coarse” when compared to the data gathered by upper air balloons. Satellite data aid forecasting, but Atlantic and Western Europe benefitted from the rigorously precise observations provided by Mould Bay’s extreme northwestern location. The dissimilarity of satellite and radiosonde data, moreover, limits scientists’ ability to combine the information and derive longer-term climactic observations. “A lot of countries,” Balshaw concludes,

define their international presence by their meteorological observations. African countries ... get a lot of international financial support ... to have meteorological observation programs because ... weather is global.... Canada may not have made some of the financial contributions to other aspects of the global survey system, but we always stood quite proudly in the international forum because we provide the high arctic observations between 60 and the north pole to the best of our ability and at considerable expense to the whole national program. From time to time that was gratefully acknowledged by other nations.¹²⁵

Ken Pluto, the former Regional Director of the AES Central Region of Environment Canada, agrees “there is something missing” that would improve forecasts, though he concedes that the costs required to operate stations like Mould Bay might not justify these empirical gains.¹²⁶

While making continuous contributions to weather forecasting, the JAWS and HAWS datasets are still being used to glean new insights. Climate change disproportionately impacts the polar regions, resulting in larger temperature swings that are melting ice, destroying wildlife habitats, and threatening Indigenous lifeways. Thanks to the JAWS network, “we have benchmarks to check global warming because of the measurements taken during this period,” Bob Plaseski, who served at Resolute and Alert from

1967–69, explains.¹²⁷ Each station ultimately produced between thirty years and three-quarters of a century of continuous surface and upper air observations that met, and continue to meet, international standards. One recent scientific study acknowledges that “the Eureka radiosonde dataset has informed weather research for over 50 years,”¹²⁸ and the JAWS/HAWS network also gathered comparable ice observations for shorter periods. Armed with these comprehensive datasets, scientists are analyzing long-term trends in temperature, precipitation, ice, and other environmental phenomena in Canada’s High Arctic that are helping global researchers to better understand the effects of climate change.¹²⁹ Robust scientific modelling can help to better anticipate future changes in the region, based upon a reliable dataset grounded in synoptic observations that extend back to the late 1940s. To this we owe credit not just to the visionaries such as Charles Hubbard, Francis Reichelderfer, and Andrew Thomson who initiated the JAWS program, but to the men like Monte Poindexter, Lowell Demond, and John Gilbert who actually gathered the data and produced distinctive scientific and social places at remote weather stations “on the edge of the world.”

