



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

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Who Did the Stations Need... and Who Did They Get?

The program is an adventure on the northern frontier beyond the continent. Arctic assignments can justly be rated among the toughest Government positions anywhere in the world today.

US Department of Commerce and US Weather Bureau,
“Assignment: Arctic” (1961)¹

In the 9 May 1948 issue of the *Los Angeles Times*, reporter Magruder Dobie posed a simple and timeless question to married American women: “What would you do if your husband came home tonight and announced he had signed up for a year of lonely duty in an Arctic weather station near the North Pole?” Thanks to the Joint Arctic Weather Stations, this scenario was not as far-fetched as some readers might have expected. Mrs. John Ciganek, “an attractive Brunette” in Arlington, Virginia, had already lost her husband to northern service:

Naturally, she couldn’t understand why he wanted to go. He had a steady, well-paying job as [a] radio operator at the Washington National Airport, a few minutes’ drive from their new home. Why in the world give up all the pleasures and comforts of home to hibernate in the Arctic with seven or eight strangers for an entire year? No week ends [*sic*],

holidays or vacations; mail once a month; movies, a rare treat; the nearest doctor hundreds of miles away. Continuous night lasts for four months, and sometimes the temperature drops to 40 below.

Her husband, “a cheerful, articulate, 37-year-old ex-Navy submariner,” pointed to the positive aspects of service. “The food is good. You can save money,” he explained. “Besides, I’ve always been restless. I get tired of one place.” Dobie could accept that sentiment — but few people went “to the extreme of joining the Eskimos.”² Little did the reporter know that some Americans were actually stationed beyond the northernmost Inuit settlement at that time.

Seeking more answers, the journalist visited the US Weather Bureau offices and learned that there was no shortage of volunteers. Most had not been North, but a sample of their responses to the basic question of “Why do you want to go to the Arctic?” was revealing:

1. An ex-Marine, still suffering from malaria contracted on Guadalcanal: “I’ve knocked around for better or worse most of my life, but always with some definite purpose in mind: to better myself and the human race. This job seems to offer both opportunities.”
2. Delivery truck driver: “I want to feel my work is important, that I’m doing something that’s worth all my effort and time.”
3. Merchant Marine cook: “Since I was a kid, I’ve liked solitude. I can take companionship or leave it alone.”
4. Coal miner: “My financial status is not so good, as there have been nothing but strikes since my Army discharge. If accepted for this duty, I can get cash for my 1940 car.”
5. Sales clerk: “I want adventure; not the exciting adventure you see in the movies, but the bleak, desolate kind that can only be realized by the achievement of important tasks.”

Dobie believed that the sales clerk's motivation captured the purest motivation to volunteer. "The trouble with my set-up; there's not enough of 'me' in it," the man complained to the US Weather Bureau. "I eat breakfast at the drugstore, let the streetcar operator get me to work. At night I sit back and let the radio comedians try to make me laugh, or pay to be amused at the movies. I can look back on almost any day without finding one event that really made me feel I was at all important." He acknowledged that the Arctic would be tough, and he welcomed the challenge.³

What skillsets and personality traits did the stations actually need to operate effectively? A training orientation package from 1960 (with nearly identical wording to a 1946 version) noted that:

It is not essential for personnel to have had previous Polar experience. Insofar as possible, each station complement will include one or two men with experience adequate for the security of camps, Arctic training of other personnel, and general supervision of Arctic activities. A knowledge of cold climate conditions, or at least of the conditions of rugged camp life, is desirable and preference will be given to such applications when all other qualifications are equal.⁴

This chapter delves into what motivated individuals to volunteer to work in the Arctic for one to two years at a time with little southern contact. It explores the networks and initiatives that the DoT and USWB used to recruit volunteers, and their varied successes at securing sufficient personnel. It also explains the division of work at the stations, the training for each position, and why many JAWS personnel received little instruction prior to departing for the High Arctic. As science ethnographers suggest (and subsequent chapters of this book demonstrate), the backgrounds of JAWS personnel shaped the collection of scientific data, the development of station cultures, and the maintenance of sovereignty at the stations.⁵

Incentives, Positions, and Recruitment

The motivations to go North described by Dobie in his *Los Angeles Times* article contrast starkly with those detailed and analyzed by scholars seeking to understand why university-trained scientists visited the Arctic to

perform research during the early Cold War. While Arctic explorers in the interwar period continued to be attracted by the region's ruggedness and adventure, field scientists who worked in the circumpolar North after the Second World War attempted to use aviation and other technologies to literally and figuratively rise above their environments and systematically survey landscapes in much the same manner as other scientists did in laboratories to control variables that would otherwise compromise their results.⁶ Traversing space also became a geopolitical act, charged with sovereignty implications.⁷ Field scientists thus cultivated "anti-hero" images, describing "adventures as misadventures" that were the result of "incompetence."⁸

JAWS personnel did not self-identify as scientists, in the sense that they did not interpret the data that they collected using scientific methods to generalize, theorize, or otherwise advance knowledge. The stations' weather observers were meteorological technicians ("met techs") who were trained at government-run schools, rather than universities, over months rather than years. Moreover, the other positions at the remote stations were largely filled by tradespeople. Lacking academic careers to advance in southern environments, most JAWS recruits went North seeking wealth and adventure. Such motivations were not new to the Arctic, of course, and were staples of the fur trade and gold rush eras.⁹ The JAWS network was one of the few places on earth where individuals could still feel like "pioneers," and a USWB briefing on the program described the stations as an "adventure on the northern frontier beyond the continent."¹⁰ Don Shanks, for example, had been interested in exploration and particularly Arctic exploration since his teenage years, and when he completed high school he wanted to go to the far north. Writing from Fredericton, New Brunswick he contacted the Hudson's Bay Company in Winnipeg, Manitoba and asked if Arctic postings were available. The HBC did not have any openings, but the company suggested Shanks contact the federal government. He did, and he subsequently arrived at Isachsen in April 1962.¹¹

Don Ware, who was the OIC (officer in charge) at Mould Bay from 1957–58, best summarized the motivations of many former JAWS personnel when he explained that "it was an adventure that paid well."¹² This fits a longstanding trope: the Canadian North, since the era of the Klondike

Gold Rush, has tended to be “a place to make a killing, not a living,” historians William Morrison and Ken Coates observe.¹³ In the early 1950s, Canadian JAWS personnel were employees of the Department of Transport who received a standard salary, a “Northern Allowance,” as well as overtime pay for fourteen hours of their fifty-four-hour work week and any additional seasonal work.¹⁴ The pay for US personnel was even more generous. In addition to their higher base salaries in 1947, Americans received a \$100 per month bonus for each month served outside the United States, plus an additional \$100 per month “winter-night bonus” from November to February.¹⁵ Room and board at the stations was free or (later) provided at nominal cost, and spending opportunities were almost non-existent, so most positions allowed JAWS personnel to return south with immense “nest eggs” to spend.¹⁶

Since the USWB operated in a country with roughly ten times Canada’s population, and given its responsibility for American continental as well as Arctic and Antarctic stations, the USWB’s separate Polar Operations Projects office actively recruited personnel specifically for polar work. The organization’s 1946 recruitment circular explained that “the development of airplanes, radios, and other modern techniques” made Arctic transportation and living “practical.” Despite these advancements, the circular emphasized that “this program is a pioneer adventure” to “regions practically unknown and unexplored, and all except one will be further north than the habitations even of the Eskimos.” The isolation, dark season, and lack of airfields that could operate year-round for much of the program forced “many hardships” upon station personnel. “For considerable periods,” it warned, “life may be dull and monotonous.” Personnel would work long hours and had to be willing to “give a hand in any work other than that which may be specifically assigned to him as his day-to-day job, including hard physical labour and KP.” As Bob Pearson, who worked as a met tech at Eureka, Alert, and Resolute Bay during the early 1950s later summarized, everyone needed to be a “jack of all trades and master of one.”¹⁷

The circular concluded that “the ability to work hard, to cooperate enthusiastically in the work of the stations, and to keep on for a long period without relief is essential to success in the Arctic Project.”¹⁸ Interested American applicants to the USWB had to disclose, in writing, details about their marital, family, and financial situations. Applicants also had

to get a physical exam and, if selected for a post, they also underwent a second examination at USWB expense. Finally, the applicants had to explain why they wanted to go to the Arctic. This final question, the recruitment guide stressed, was mandatory.¹⁹ Polar experience was not required. Although the 1946 USWB recruitment literature wanted to find men with experience or knowledge of cold climates and “rugged camp life,” it only envisioned allocating “one or two men” with Arctic experience to each station. This limited allotment, the department believed, would adequately cover security requirements, facilitate training of other personnel, and provide experienced oversight of activities.²⁰ None of these American recruitment requirements and descriptions changed during the JAWS program.²¹

Howard Wessbecher’s experience offers a case in point. Born in Brooklyn, New York in 1925, he served in the Pacific theatre during the Second World War, completed a degree in forestry at Montana State University in 1951, and secured a job with the USWB as a meteorological aide that November. After four months of plotting weather maps all day in Washington as data came off the national circuit, he saw a job posting at the office calling for individuals to head to the Arctic as part of the Arctic Operations Project. He filled in the requisite paperwork and was accepted immediately. “If you were warm, they would take you,” he recalled. Although Wessbecher felt unqualified when he flew north the following year, “it was a learn on the job situation and we had a number of people that were obviously not meant for that sort of environment.” Nevertheless, “some survived reasonably well, which I think I did too.”²²

Canada’s DoT used a less direct approach. Its personnel and financial resources were frequently strained, and it consequently struggled to find enough personnel to fill its quota for the remote joint weather stations. JAWS accounted for approximately one-sixth of Canada’s Upper Air Observation stations in 1958, and the Department of Transport preferred to treat a posting to the Arctic as an entrée into a career at more attractive, southern locations.²³ Another recruitment pamphlet from the early 1960s similarly situated Arctic service within a career based at more accessible locales.²⁴ The approach successfully attracted the attention of individuals who might not have otherwise considered working in the region. During the mid-1960s, for example, Bruce Weaver noticed an advertisement



FIGURE 5-1. Lowell Demond at Eureka's RAWIN (radiosonde tracking) station, 1956. Lowell Demond Collection.

calling for applications to the Canadian civil service. After applying, he learned of the need for meteorological technicians and agreed to take the necessary training. At the time, he now admits, “I had no idea what I was getting into.”²⁵ It was during this training (described below) that Weaver, like most other met techs, learned that the majority of new graduates from the Canadian program served for one to two years at an isolated station before moving to more southern posts.

DoT was occasionally able to be more direct when it received applications from men interested in Arctic adventure. Lowell Demond grew up in rural Nova Scotia and wanted to get out of town. He moved to Toronto and tried to save enough money to go to university by working for Canadian Pacific. “One day,” he later recalled, “a newspaper arrived with a supplement. And in the supplement was a picture of an icebreaker.” Demond quickly realized that “there’s a whole area here that I didn’t really investigate” when contemplating his career options. Grabbing his pen, Demond wrote a letter to Minister of Northern Affairs and National

Resources Bob Winters, a fellow Nova Scotian, asking him if there were any opportunities to work in the Arctic. While he did not receive a reply from Winters, he did get a phone call from the Meteorological Division of the Department of Transport in Toronto asking if he would be interested in an interview. After expressing his interest in going to the Arctic, the interviewer offered to pay Demond to train to become a meteorological technician.²⁶

Met techs constituted the largest group of JAWS personnel, with both Canada and the United States sending at least two to each station. These men (no women were assigned to the stations until after the JAWS program ended in 1972) were responsible for carrying out the station's primary purpose: collecting meteorological observations. They conducted the twice-daily upper air observations using radiosonde or rawinsonde flights, plotted the results, and encoded their observations for transmission south. In addition, they conducted some of the surface observations, performed pilot balloon (PIBAL) flights (a smaller and simpler type of balloon observation described in more detail in chapter 6), and trained radio operators to conduct part of the work. At some stations, such as Mould Bay, met techs were also responsible for running seismic observation equipment.

Two met techs almost always undertook the additional duties of OIC and ExO (executive officer). Officers in charge were responsible for the "overall administration of the station, the safety and security of the personnel and station, the scientific programme with transmission of data, the preparation of reports, records and recommendations for improvement of station facilities and the maintenance of morale and discipline on the station."²⁷ Thus, the OIC was responsible if their station sent bad meteorological data south. If someone was injured, the OIC had to see to their care or arrange evacuation. In short, Canadian OICs bore responsibility for overseeing the station's overall well-being, the scientific observations, and the maintenance of Canadian sovereignty at and around their station.²⁸ Resolute's OIC also occasionally went to the satellite stations as DoT's representative to resolve major problems. The OIC was the highest paid Canadian at each station, making up to \$4,200 (CAD) a year in 1952 — but only \$300 of this pay was for assuming these critical additional duties.²⁹

DoT preferred appointing OICs, such as Don Shanks (Isachsen 1962–63, Eureka OIC 1963–64), who had proven their abilities and character for at least a year at other Arctic stations or at isolated subarctic locations like Goose Bay. However, since older met techs were rarely interested in leaving their families, the leadership role fell to younger professionals who were usually in their twenties.³⁰ Thomson explained in a 1956 memorandum that:

it is difficult to make the position of O.I.C. at these remote stations attractive to men of high calibre and the necessary experience. There are serious drawbacks involved in accepting such a position, e.g., delay in setting up a home, or risk of breaking up a home already established, [or] the insecurity in not knowing where the next posting will be on return from isolation (an important consideration if a man has already established a home).³¹

The relative youth of OICs also stemmed from DoT pay scales that only provided the station leaders with modest pay increases. R.W. Rae, who served as Resolute's OIC from December 1947 to September 1949 and subsequently led the Arctic Weather Section of the Canadian DoT Meteorological Division during the program's early development, considered this paltry sum "hardly adequate in view of the responsibility of this position."³² Although DoT pay scales improved, they never matched the American rates, thus limiting the comparative attractiveness of assuming ultimate responsibility for each station. Furthermore, potential Canadian recruits hesitated at the two-year contracts that DoT required until the late 1950s. Two years was "a big bite to take off," American Monte Poindexter later described, and few Americans (who served on one-year contracts) envied their early Canadian counterparts.³³ For all of these reasons, JAWS personnel were often led by OICs who were young, free of familial obligations, and eager for adventure in the Canadian Arctic.

ExOs were the senior Americans at each station. Like most American personnel, they tended to be "about a generation" older than their Canadian counterparts.³⁴ Indeed, many of the Americans were in their second careers, having retired from the military. Like OICs, American ExOs were

usually met techs. According to R.W. Rae's "Five Year Report" on the JAWS program, an ExO was "responsible for the administration and welfare of the US personnel and accountability of US property. He is also responsible for amicable international relationships of his US subordinates with Canadians and Canadian authorities. He supervises the operation and maintenance of mechanical equipment, including radio transmitters and radiosonde equipment. At regular intervals he submits reports and recommendations to the Chief of the Arctic Operations Project of the U.S. Weather Bureau."³⁵ As the senior American representative on Canada's Arctic Archipelago, Resolute's ExO also coordinated the airlift and sealift to the satellite stations and was responsible for overseeing all American personnel in the program.³⁶

Like DoT, the USWB used the past experiences of its personnel to select JAWS ExOs. The pursuit of adventure, coupled with high pay, led most ExOs to volunteer for Arctic service. An ExO in 1953 could make \$7,540 (USD) a year, and many of these men returned home and used the money to pay for a university education, purchase new homes, or start a small business.³⁷ As Bill Pogerman (Eureka ExO 1952) explained to Bill Davidson of *Collier's* magazine, "I'll come out of this with at least \$5,000. It would take me 10 years to save \$5,000 in the States. So it's worth a year's hardship to get enough money to start yourself off in some business."³⁸

Howard Wessbecher worked at the Resolute station as a supply clerk from April 1952 to March 1953, sorting and tracking the supplies for the JAWS network. After completing this tour, he took two weeks leave and visited his parents in Missoula, Montana, before committing to return to the High Arctic as the ExO at Alert for a year. The financial enticements made it highly attractive for American volunteers who:

got fairly decent wages, plus a ... \$200 bonus. We got \$100 bonus for every month you stayed up there and you got an extra \$100 for four months during the dark period. Whereas the poor Canadians, because it was Canadian territory, it was part of their country and they were just assigned to it like Weather Bureau people in the United States are assigned down to Arizona ... [or] Louisiana.... But up there, the Canadians assigned to Resolute Bay, for instance, were totally isolated from their

family and had to put in a year or two or three, whatever was determined. So there was a little bit of bitterness there on the part of the Canadians.³⁹

After Alert, Wessbecher transferred directly to Resolute without any vacation. “At that time it was just too hard to go out and see civilization, the girls and everything else, and then come back to isolation.” He enjoyed his role partnering with the OIC in “a cooperative management which worked out pretty well. ... It wasn’t military so there were none of those hard and fast lines of authority. It was mostly persuasion.”⁴⁰

Radio operators were the JAWS program’s communications professionals. Until the late 1960s, when transmission equipment was increasingly automated and radio operator positions were gradually phased out, these men worked in twelve-hour shifts in or around each station’s operations building. They were responsible for transmitting weather observation data, helping station personnel connect with people in the south, and sending and receiving messages. The operators at the satellite stations could not, and were not, required to maintain continuous watch in the radio room. Instead, they monitored the airwaves at pre-arranged times and whenever aircraft approached for landing. Radio operators at the satellite stations devoted the remainder of their time to surface weather observations and other work around the station. At Alert, these additional duties included communicating local weather conditions to overflying aircraft heading to or from Europe. Resolute’s role as a communications hub meant that its radio operators had to pass along the satellite stations’ observation data to Edmonton and assist with communications during all sealifts and airlifts. Before long, Resolute required two radio operators to be on call night and day. A third chair was available in Resolute’s radio room for dedicated communications with the sealift vessels during the summer.⁴¹

At the beginning of the JAWS program, the United States supplied nearly all of the radio equipment. Consequently, Canada’s Department of Transport considered it important to have American operators at each station.⁴² By late 1952, however, DoT began to aggressively replace American radio operators with Canadian personnel.⁴³ This move fit with the Canadianization agenda discussed at length in chapter 9. During

the mid-1950s, however, this process was briefly jeopardized by DoT's comparatively low wages. In 1956, the Federal Electric Company paid approximately three times a DoT radio operator's wage to its employees on the Distant Early Warning (DEW) Line, thus forcing the Canadian department to increase its pay scale.⁴⁴ Because these competitive wages exceeded its normal rates, DoT subsequently hired radio operators on contract. This precluded JAWS service as a gateway for operators to start permanent careers with DoT, and again emphasized that financial motivations led most personnel to head north.⁴⁵

Cooks were often the most difficult JAWS personnel to recruit. Their responsibilities included providing all of the station's meals, ensuring that dietary requirements were met, recording food consumption, and assisting with the preparation of orders for the resupply.⁴⁶ Finding a cook with this breadth of knowledge who was willing to work six or six and a half days a week for a year at a time in the isolation of the Canadian Archipelago was a serious challenge. In the early years, the DoT northern allowance for cooks was utterly inadequate to attract the necessary talent. According to R.W. Rae, "every other individual on the station receives a northern allowance nearly four times the one that is paid to Canadian cooks."⁴⁷ Although they received a \$300 per year "recruitment allowance" to address some of the shortfall, Canadian cooks were the lowest paid of all JAWS personnel during the 1950s.⁴⁸ Consequently, nearly all station cooks were Americans who could make over \$5,000 a year during the same period.⁴⁹ DoT pay improved by the 1960s, and this attracted some Canadian cooks to the stations,⁵⁰ but after the radio operator positions were "Canadianized" the presence of American cooks helped to maintain an equal number of personnel from each country at each station.

The vast majority of JAWS station mechanics also were Americans owing to the heavy reliance on American equipment. DoT tried to recruit mechanics during the early years, but the department's comparatively low wages again contributed to poor results.⁵¹ The number and type of station mechanics changed over time. Every station had a chief and a general/station mechanic who operated and maintained the station's tractors, forklifts, and gasoline and diesel engines. They were also responsible for maintaining the station's utilities, including fuel, water, trash, and waste disposal.⁵² During the 1950s, airstrip ("strip") mechanics also resided at



FIGURE 5-2. Strip mechanic Hubert L. “Cougar” Dewey preparing a dynamite charge at Mould Bay, 1956. Lowell Demond Collection.

each satellite station during the non-winter months. These groups of two to four men spent most of their time constructing land airstrips and maintaining the earthmovers used for their work.⁵³ Once the airfields were constructed, a smaller number of strip mechanics intermittently visited the stations for shorter periods during the 1960s to maintain the airstrips. Finally,

electronics technicians also maintained each station’s diverse observation and communication equipment. At first, these technicians only worked at the stations for a few hurried days, but by the early- to mid-1960s they occupied permanent positions at each station.⁵⁴ This shift, one American memorandum explained, was caused by the “trend towards automation” of weather observations. The reliable operation of the increasingly capable and complex observation and communication equipment at each station could only be ensured by technicians who “underst[oo]d how the equipment works,” how it responded to “various types of weather conditions,” and who undertook “preventative maintenance.”⁵⁵

Training

Given the professional specializations described above, the isolation of the JAWS network, and the intense self-reliance that resulted, it is surprising how little training the program's personnel received before going north. For most of the station's positions, DoT and the USWB recruited individuals who had already developed the requisite professional skillsets. Radio operator applicants needed to present credentials that were granted by at least one of the countries before they were sent north. Canadian radio operators could earn their Second Class Certificate⁵⁶ at radio schools across the country. Radio operator William (Bill) Stadnyk grew up in Moose Jaw, Saskatchewan and trained for one year at the city's technical school to earn his commercial radio operator certificate. The curriculum included how to send and receive Morse code. They also had to develop competencies in operating and maintaining marine transmitters and receivers, as well as direction finding equipment. Upon receiving his certificate, Stadnyk was hired by DoT in 1962 and sent to Ottawa for training in air/ground and weather observing procedures.⁵⁷

The rules were not always rigid. John Gilbert of Brantford, Ontario had wanted to be a radio operator since his early teens. Two of his uncles worked as stewards aboard ocean liners, and Gilbert wanted to follow their example and gain experience by working as a ship radio operator. He was stuck, however, at the rank of licenced amateur radio operator. When he was eighteen, his mother suggested: "why don't you write to whoever sends radio operators on board ships and see if you can get training." DoT's form letter reply stated that there were no openings, but his mother encouraged him to apply again. This time, John took the train to DoT's regional office in Toronto where he met Dave Ewart and explained that he wanted to be a radio operator. "Flabbergasted," Ewart left to consult with his fellow managers only to return with a question: would Gilbert mind taking a competency test? If the licenced amateur operator could pass the professional test, Ewart promised to let him become a radio operator. To Ewart's surprise, Gilbert passed and, true to his promise, he enrolled John with other new recruits in the surface weather observation course at Malton, Ontario.⁵⁸ In an American example, Bob Pearson passed an eleven-month radio operator training course at Scott Field, Illinois in the summer of



FIGURE 5-3. John Gilbert in Eureka's radio room, winter 1957-58. John Gilbert Collection.

1947, worked at the American BW8 station in Greenland while serving with the USAAF, and was twice approached by Hubbard to join the JAWS program. Lacking a Canadian commercial radio licence, Pearson was grandfathered into the Canadian standards. The requirements for other positions, such as cooks and general station mechanics, were even less formal as previous “experience,” instead of certificates, was sought.⁵⁹

Met techs, however, had to undergo formal training in both countries. In Canada, students first had to pass a three-month surface observation course. Initially, this course was based at Malton, but DoT moved the course to Ottawa in 1960. The four-month program taught students how to observe weather conditions — including temperature, wind speed and direction, humidity, and cloud cover — from the ground. They also learned how to plot and encode their results. Top students from the surface course had the option of continuing to the upper air course. From 1953–59, a few students took this course in Edmonton, Alberta, with most attending a school on Toronto Island, Ontario. After 1959, DoT centralized its upper air course in Scarborough, Ontario. In this advanced

four-month course, students learned how to produce hydrogen, conduct radiosonde flights as well as PIBAL flights, and record, check, and encode their observations for transmission. They also had to pass a test on the operation of seismometers, including “basic theory, and the maintenance, changing of charts, photographic development, interpretation and reporting of seismic events” in case seismology knowledge was required at an isolated posting.⁶⁰ The program was demanding, and David Tidbury estimated that about half of all candidates dropped out.⁶¹ Those who passed this second course became upper air met techs with a pay grade two levels above those who just had the surface weather training. Both courses were taught by staffs of senior experienced surface and upper air observers.⁶²

The USWB training program was more decentralized than its Canadian counterpart. Most of its meteorological technicians trained at the upper air station that was closest to their point of recruitment. For this local training method, the USWB distributed standardized workbooks and exercises to aid instruction.⁶³ Ken Moulton, for example, went to the USWB upper air station at the Greensboro, North Carolina airport for three months of training in 1953 after agreeing to serve as Eureka’s next ExO. Moulton was the only trainee. His curriculum focused on surface, pilot balloon, and radiosonde observations. “After a very short time ... I was assigned to a shift and quickly became a member of the team,” he recalled. “By the time I left Greensboro, I had worked periods of time with three different shifts.”⁶⁴

These Canadian and American met tech training regimes had their limitations. The vast majority of JAWS personnel received no formalized instruction about working or surviving in the Arctic. The sole exceptions were USWB met techs who were trained during the 1960s. While the USWB’s 1961 Arctic recruitment booklet contended that “it is not essential for personnel to have had previous Polar experience,” the Bureau recognized that its met techs required some cold weather training.⁶⁵ Accordingly, the USWB’s Polar Operations Project created a small special polar training program in 1961 by constructing its own facility in Sterling, Virginia.⁶⁶ Although the warm Virginian weather bore no resemblance to polar conditions, the trainees who attended the school nevertheless received more cold weather instruction than their Canadian counterparts. The Training Center had examples of the equipment that American met

techs would encounter at Arctic stations, and students learned various skills including hydrogen generation, balloon releases, plotting their data, how to conduct PIBAL flights and radiation observations, as well as how to gather sea ice and snow samples for the American Snow, Ice and Permafrost Research Establishment (SIPRE). Trainees also learned Canadian procedures, equipment, measurements, and forms.

Even with this training, many graduates were ill-prepared for the unique challenges of polar operations. According to Paul Adams, the Polar Operations training program “subsisted on a starvation budget for several years,” and some of its equipment and buildings were barely adequate. Moreover, the four-week program was designed to refresh the skills of polar recruits with previous met tech training, but the Center regularly received raw recruits. In 1964, for example, Adams noted that ten of the sixteen met tech attendees “had no previous radiosonde experience or training.” These individuals received an additional two weeks of preliminary surface and upper air observation training, but this paled in comparison to lengthier USWB and DoT training regimes, and only served as an “indoctrination course.” Consequently, Adams concluded that it would “never be possible to completely train the available personnel in ALL the many things required to be known when arriving at a field station and attempting to immediately pick up the work load [*sic*] from the persons being relieved.”⁶⁷

Aside from extensive fire prevention training, Canadian JAWS recruits did not receive any formal preparation for the Arctic environment.⁶⁸ By the 1960s, however, enterprising trainees had access to an informal source of Arctic education. Some of the Canadian upper air observation instructors at Scarborough were JAWS veterans, and they willingly shared stories and photos of the stations. These insights amounted to little more than a handful of helpful anecdotes, and their “lessons learned” were never part of the course curriculum,⁶⁹ but this did not bother most JAWS recruits. Don Shanks recognizes that expectations are different today, but he had not felt unprepared for the Arctic: “as an ex-boy scout I was looking forward to this, I knew I could take care of myself. I did not think that I was missing that [survival training] at all.”⁷⁰ In his interview, Bill Nemeth (Resolute 1952, Isachsen OIC 1953–54) commented that being raised in northern Alberta was sufficient preparation for JAWS: “I knew what 40

below was, and I knew what a blizzard was, I knew what darkness was.”⁷¹ For these men, working at a JAWS station would be an adventure that built upon lived experience — not something gleaned from lectures or a textbook.

It is surprising that OICs, given their duty to protect Canadian sovereignty at and around their stations, received little more than an instructional memo or oral reminder in advance of leading their binational team. Melvin Hagglund, for example, counselled OICs and ExOs during an inspection tour in 1955 to accept “the importance of mutual discussions and agreement on various projects before decisions which might be controversial are made.”⁷² C.G. Goodbrand and Pat McTaggart-Cowan, from DoT, also noted in 1963 that “co-ordination with the Executive Officer in all phases of the operation of the Joint Station is very necessary, as harmony depends entirely upon intelligent co-operation of the Officers concerned.” Towards this end, Goodbrand instructed OICs and ExOs to share all official correspondence so that they did not end up pursuing conflicting agendas.⁷³

Instead of extensive training, DoT relied on OICs’ previous Arctic experiences to provide them with the requisite leadership skills. John Melvin, who had previously worked at Port Harrison (Inukjuak) for two years and Fort Smith for one year as a met tech, became OIC of Eureka from 1951–52. When asked decades later if he had received any training for his additional duties as OIC, he replied that “they took me for what I’d already done.”⁷⁴ Former Eureka OIC Don Shanks (1962–64) quipped that “anyone who had spent 2 years in the Arctic was automatically qualified” for the position.⁷⁵ According to Andrew Thomson, DoT preferred to select:

those who have been on similar stations for a year or more and have showed more than ordinary ability. These men have the advantage of being familiarized with the particular problems involved and have their specialized rawinsonde technique well in hand and consequently can give more time to other phases of station administration.⁷⁶

It became standard practice for outgoing OICs to remain at the stations for approximately one week after their replacements arrived to furnish

briefing papers, tour the station, and familiarize their replacements with station routines. This practice seemed inadequate to some planners, and Thomson unsuccessfully recommended in 1956 that OICs receive “some formal training” preceding their service.⁷⁷

American ExOs, who were responsible for overseeing American personnel and equipment at each station, received slightly more instruction than their Canadian counterparts. Extensive archival research and oral interviews failed to uncover any direct evidence of the USWB training its ExOs on how to navigate the program’s delicate power structure during the 1940s and 1950s. It appears that the USWB simply instructed its leaders to recognize that they were running a station on foreign soil and gave them wide latitude to navigate local and national concerns. Limited evidence from a similar USWB program with Denmark in Greenland, where the joint weather station was much less integrated and a Danish official was the ExO, confirms this practice. When informing Edward E. Goodale of his assignment to be the officer in charge of the USWB weather station at Thule in 1946, Francis W. Reichelderfer emphasized the “importance of maintaining harmonious relationships with the Danish residents and local population.” The Chief of the Weather Bureau also instructed the recruit to consult his “manual of instructions” for additional information on USWB policies.⁷⁸ JAWS ExOs likely received similarly brief and vague written instructions that left them free to work with the Canadians however they thought best.

The USWB acknowledged that it needed to expand its instruction to ExOs by the 1960s. A 1963 briefing advised a new ExO to tolerate “occasional incursions into what you consider your areas of responsibility, and, being human, you are likely to reciprocate, however innocently.” The USWB considered the ExO and OIC to have “equal status,” but also recognized that “for practical purposes, [the OIC] is in charge of the station” and encouraged deference. Neither official, it warned, should make an important decision without first consulting his counterpart. If the OIC left the station, “even briefly,” another Canadian (rather than the ExO) would temporarily assume the OIC’s duties. Should a disagreement arise that the OIC and ExO could not resolve themselves, they were to request a decision from the central offices of the USWB and DoT. If an immediate decision was necessary, the memo instructed ExOs to accept the OIC’s preference

until “the South” responded. Command conflicts, however, were extremely rare, and the briefing concluded that “in all probability you will find the OIC just another guy trying to get his job done to the best of his ability.”⁷⁹ Ultimately, the briefing still encouraged ExOs to rely on their personal judgement when working in Canada.

Sovereignty Concerns

Internal American training briefs, however, could not assuage all sovereignty concerns in Canadian government and media circles. Throughout the JAWS program, the United States maintained strong personnel, equipment, and supply footprints at each of the isolated stations over which Ottawa could only exert influence with great effort. Editorialists such as the *Ottawa Citizen’s* Peter Inglis warned that “some Canadians feel that the Americans are inclined to be proprietary about Canada’s Arctic. This may be the result of a misunderstanding of the lead which the United States took in getting the weather stations established in the first place and of the natural impatience of the American character.”⁸⁰ Reporter Michael Barkway of the *Financial Post* was more direct. “As a token of Canadian sovereignty,” he told his readers, “the senior Canadian officer at each post was nominally in command. But Canadian control was more titular than real: because we were not the people doing the work.”⁸¹

Despite the successful Canadian-American relationship forged by DoT and USWB personnel at the stations, some Canadian officials continued to worry about their country’s ability to control operations at these binational installations. The relative youth of Canadian OICs compared to their American ExOs, in addition to their lack of experience and ambiguous command over American personnel, led several prominent Canadian bureaucrats to worry that overbearing American ExOs might dominate the joint stations. In 1952, Bob Phillips complained that the DoT suffered “continual difficulties” recruiting OICs and had to make twenty-one- or twenty-two-year-old men the “senior Canadian official in thousands of square miles of Canadian territory.” In addition to their age, he worried that the unusual command structure of the JAWS program, which “on paper ... is a good means of protecting Canadian sovereignty with a minimum expenditure of manpower,” was, in practice, vulnerable to abuse.⁸² He explained that:

there were separate channels to Toronto and to Washington for the officer in charge and for the executive officer. The officer in charge does not, in practice, have complete control over the U.S. members of his staff since they can naturally have recourse to the executive officer.... The most serious objection to the present system of command is that, as one O.I.C. puts it, too much depends on personalities. If the Canadian O.I.C. is unable to agree with the U.S. Executive Officer, there may be a station divided against itself. If the O.I.C. for a moment loses his personal initiative or the respect of every member of the detachment, the real control of the station can pass on to the executive officer. The possibilities for playing off the O.I.C. and the executive officer — even if unconsciously done — are obvious. This is not the situation in a normal military detachment where the second-in-command is clearly subordinate. The U.S. executive officer may, on some occasions, be more experienced, more senior in his service and older than the Canadian O.I.C., and he always receives a much higher salary.⁸³

Phillips and R.W. Rae were willing to let the system prove itself because they believed that the “careful selection of staff and good luck” would allow the system to function effectively.⁸⁴ Concerns persisted nonetheless. After nearly a decade of operations, Andrew Thomson still worried in 1956 that the young Canadian OICs might lose control at the stations because they held the same bureaucratic rank as other Canadian personnel, earned less money than the Canadian radio operators or American personnel, and consequently held “a position which does not command sufficient respect.”⁸⁵ Present-day polar social scientists also warn against placing young, comparatively inexperienced individuals into leadership positions at isolated stations.⁸⁶

Who had the “Right Stuff”?

Determining who was best suited for maintaining a stable and diplomatically acceptable culture at the stations proved complicated. While working as Isachsen’s ExO from 1952–53, Paul Goree struggled with difficult personnel and told his southern superiors that “many of our problems of

personnel relations could be prevented by a more careful screening of applicants for Arctic positions. Particular attention should be given to personality. True, experience is important too, however, there is ample time for learning and doing the work here but a person must already know how to live with others before coming north.⁸⁷ Given the minimum one-year tours, the isolation of the stations, and the extreme environmental conditions, the USWB and DoT were both keenly aware of the need to screen applicants carefully. Past polar experts evaluated candidates according to three broad criteria: skillsets, emotional stability, and social compatibility.⁸⁸ Skillsets were the easiest criteria to recognize and screen, but were not necessarily the most important qualifications for living and thriving at the stations — as Donald Cleghorn’s experience at Resolute demonstrated.

Discerning the specific mix of personality traits that constituted the “right stuff” was more of an art than a science. The field of polar psychology, as it is now called, did not exist until after the International Geophysical Year (IGY, 1957–58), and research that would lead to formal psychological testing remained at an embryonic stage.⁸⁹ In the late 1940s, insights from the “heroic” explorer age still provided guidance into managing what R.E. Strange and W.J. Klein later dubbed “winter-over syndrome,” including depression, hostility, sleep disturbance, and impaired cognition.⁹⁰ Accordingly, JAWS program directors in Washington and Ottawa initially considered men with extensive polar backgrounds to be the most qualified “experts” for screening potential JAWS personnel. Drawing on personal experiences and observations from past polar expeditions, they selected individuals who could cope with these symptoms and who possessed the “ability to live together in confined spaces and to tolerate or to modify minor idiosyncrasies.”⁹¹ Charles Hubbard’s screening criteria, his widow Harriet later explained, embodied elements of the heroic tradition:

Charlie’s theory was that at least half the people who want to go to the Arctic are crazy, and of the other half only a very few are qualified, especially in skill and personality. He also thought that a man should learn his trade in the States, where he could have the benefit of thorough training and experience, and that he could much more easily acquire the Arctic angle on life through being in the Arctic than he could skills

— for instance, in repairing Diesel engines. He always wanted one experienced arctic man on each station, but for the rest he wanted skill and personality.⁹²

Methods to determine the right personality traits remained impressionistic. For instance, when Chicago's John Trinko volunteered to work at the Thule weather station in 1946 (and subsequently worked at Eureka from 1947–48), the famous explorer Sir Hubert Wilkins interviewed him. At first, Wilkins tried to talk Trinko out of volunteering by emphasizing the many hardships of northern life, including the lack of mail, and pressed for details of Trinko's past. When Trinko remained unswayed, Wilkins confessed his strategy: "We do not want a man who is running away from a divorce or romance or suchlike, [who] would sit there and brood by himself — we need someone who has an outgoing personality, who will be part of the group and exchange stories with the others."⁹³ Similarly, both DoT and USWB staff relied heavily on experience (rather than social science) to develop selection criteria,⁹⁴ and these interview methodologies remained unchallenged for over a decade. In 1956, for example, when a doctor performed a physical and psychological evaluation of prospective radio technician John Gilbert, he used a short set of the questions that resembled the explorers' lists.⁹⁵

The persistence of these traditional and impressionistic screening systems into the late 1950s must be understood within a circumpolar context. Only in 1955, after an American became paranoid and had to be sedated at a base on the Antarctic mainland, did concerted state-sponsored polar psychology research begin in earnest. During the IGY from 1957–58, when twelve countries established more than forty Antarctic stations (and populated them with thousands of military personnel, scientists, and technicians), psychologists began to systematically study polar isolation and confinement. Within a few years, these studies documented the physical and psychological stresses experienced by wintering-over personnel, and tried to predict the suitability of new candidates for polar service by comparing variables such as age, education, occupational status, and extraversion. In subsequent decades, psychologists, psychiatrists, anthropologists, and physicians from various countries honed their ability to predict an

individual's emotional stability and social compatibility through ongoing testing and research.⁹⁶

These advancements, however, did not substantially influence JAWS personnel selection processes. While American volunteers overwintering in Antarctica underwent mandatory screening during and after the IGY,⁹⁷ individuals bound for the Canadian Arctic did not undergo similar scrutiny for several reasons. First, the USWB only contributed some of the personnel who worked in the Antarctic, and the screening may have been mandated by another department or organizing body that was not involved in the JAWS program. The USWB also distinguished between the Antarctic and High Arctic environments. At the South Pole, intense winter storms still preclude landings for all but the most extreme emergencies, thus isolating stations for nearly half of the year. Aircraft, however, could airdrop supplies to the Joint Arctic Weather Stations year-round and, even during the 1950s, could land at the stations during the spring and fall months (see chapter 7). Indeed, Eric Gunderson of the US Navy Medical Neuropsychiatric Research Unit contended that the Antarctic fundamentally differed from the Arctic because it lacked “indigenous populations ... [as well as] industrial or commercial enterprise, and has much more severe environmental conditions ... [that produced] different types of psychological and behavioural problems.”⁹⁸

As the polar explorers initially involved in selection processes aged and their availability declined, DoT increasingly relied on medical doctors or departmental personnel to assess the suitability of prospective candidates for service at High Arctic stations. The screening process itself, however, appears to have remained impressionistic and unstandardized. Moreover, approved personnel received no formal instruction on how to prepare for the isolation that they were about to endure.⁹⁹ At least one prominent Canadian became concerned about the persistence of these traditional screening methods. In 1960, J.S. Willis (the General Superintendent of Northern Health Services at Indian and Northern Health Services, Department of National Health and Welfare), who was familiar with some of the initial IGY polar psychology studies, repeatedly called for the implementation of academically-proven screening processes for Canadian Arctic service in an article for Canada's *Medical Services Journal*. “One would expect that some agency would long since have

worked out criteria by which to judge prospective northern personnel and would have devised tests or special interviewing techniques to weed out those likely to prove unfit,” he complained. “Little of this kind of thing appears to have been done.” The interview methods employed in Canada did not ask “scientific questions” or provide “ways of measuring the suitability of the applicant.” Consequently, the process “remained very much an art rather than a science.”¹⁰⁰

Willis contended that modernity represented an obstacle and offered a solution to the successful operation of Arctic stations. Adopting a romanticized notion of Inuit life, he commented:

One might well ask why the Eskimo, living a native way of life without many comforts or much variety of entertainment, spending a large portion of his time engaged in activities designed simply to keep him alive, lives such a serene and happy life? Is it not because his life is a simple one, because he has never invented for himself a rat-race, because he has not put too much emphasis on time and space relationships, because he is resigned to the hazards of his existence and if sickness, hunger, or mortality come, can accept them? This is the compass of his imagination.

The “average” Canadian “is not an Eskimo,” Willis continued. “Whether or not he likes it, he is running on his treadmill and is seeking greater heights of bliss.” Willis acknowledged that there were many Canadians “who have been able to avoid the treadmill or see it as an evil machine, who have developed inner resources against the pressures of modern life” and who “actually begin to feel ill at ease in the south.” The challenge was to develop screening techniques to “ensure that square southern pegs are not squeezed into round northern holes.”¹⁰¹

The Canadian state was aware of this research but did not act upon it in the years immediately following Willis’s lobbying.¹⁰² “The laws of supply and demand have usually determined that a man willing to go to the north was going to go to the north anyway, whether or not he was wholly fit, because nobody else was available,” Willis lamented.¹⁰³ DoT was chronically short of suitable JAWS personnel, and these recruitment challenges

left little incentive to dispense with screening methods rooted in the traditions of the heroic era of polar exploration.

Getting There

After volunteers applied to their country's respective recruitment programs, passed their physicals, and completed any required training in southern locales, the JAWS recruits were ready to head north to their new places of work. Most new personnel travelled to the weather stations in March or early April with the spring resupply airlift to relieve overwintering predecessors. In the early years, most spent days crossing Canada and the United States by train to reach the airlift rally point at Churchill, Manitoba. By the early 1960s the departure hub shifted west to CFB Namao in Alberta.¹⁰⁴ From these staging points, JAWS recruits boarded military transport aircraft and flew north. These flights sometimes provided an early taste of the realities of Arctic life. When John Gilbert flew north on the spring airlift, he spent two days in the Churchill mess hall waiting for the thermometer to rise above -50°C (-58°F) — the lowest temperature at which the aircraft could safely operate. After anxious waiting, the pilot entered the building and told Gilbert that the temperature had risen to -49°C (-56°F). They departed five minutes later.¹⁰⁵ When a window of opportunity opened, there was no time to waste.

JAWS personnel generally rode with the cargo on military transport aircraft. The trip was uncomfortable, but most expected to encounter such ruggedness during their Arctic tour and forgot their discomfort when they peered out the window. R.A.J. (Bob) Phillips, who visited Resolute in 1952, captured the fascination that many newcomers expressed as the vast northern landscapes passed below them:

There need be no monotony in Arctic flight. The steady roar of the engines is so overpowering that all other sounds are excluded and the noise itself is like silence. The form is bold in the infinitely gentle curves losing themselves on a far horizon, or in the jagged rock thrusts of a barren hilltop, or in the blue scratches of cracking ice. The colour is subtle. There are no sharp contrasts, only an endless blending of gently varying pastel shades on a luminous canvas. There are no jarring



FIGURE 5-4. Personnel sitting among the cargo while in transit during 1953. Note that several of the travellers are wearing suits. Bill Nemeth Collection.

blotches, only a sense of untouched cleanliness. Though it stretches ceaselessly the picture changes constantly. It is like watching the flames in a slowly burning fire. Although the substance changes little, the forms are infinitely varied. The fascination is the same.¹⁰⁶

After flying for several hours, the satellite stations came into view and a passenger's sense of expanse shifted to one of isolation. When Lowell

Demond arrived over Mould Bay in 1956, his pilot circled the station a few times to allow his passenger to survey his new home. Demond noted that “there were around 12 or 13 buildings ... and he [the pilot] said ‘that’s what she looks like. I can’t imagine why anyone wants to spend a year in a place like this. I like tall buildings, tall trees, and tall women, and there’s none of those down there...’ He was right.”¹⁰⁷

Gilbert had a similar reaction upon his arrival at Eureka in April 1956. After spending one month at Resolute, he was sent to Eureka to relieve an evacuated radio operator. Upon arriving at the station where he would spend most of the next two years, he saw “about eight buildings that were almost completely snowed under.” He recalled his initial impression: “someone must have been playing a practical joke on us.”¹⁰⁸ But it was no joke. This small constellation of buildings on Canada’s northernmost island would be his home for the next twenty months, serving as a hub to gather local scientific data that would bolster knowledge of the High Arctic and global environmental systems.