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Heralds of Doom

Résumé :

Du début de la Guerre froide jusqu'au milieu des années 1960, le gouvernement et les agences gouvernementales ont acheté et installé des sirènes pour prévenir des raids aériens à travers le pays dans le cadre du programme devant préparer le Canada à la guerre nucléaire. Les sirènes transformèrent les lieux du quotidien en rappels souvent malvenus de la menace constante de la guerre nucléaire. Le réseau des sirènes fut démantelé à la fin de la Guerre froide, mais cependant, ces cinq dernières années, la « redécouverte » des sirènes a suscité des débats pour savoir s'il fallait les restaurer et leur conférer une nouvelle fonction commémorative, ou les éliminer car elles représentaient un héritage de l'absurdité des plans de survie nucléaire. Cette étude, qui recourt à des sources d'archives disponibles depuis peu, présente l'histoire matérielle et l'impact culturel des sirènes anti-raids aériens au Canada.

Abstract

From the early Cold War until the mid-1960s, government and military agencies moved to purchase and install air raid sirens across the country, as part of a program to prepare Canada for nuclear war. The sirens transformed everyday public sites into often unwelcome reminders of the ever-present threat of nuclear war. The siren network was dismantled at the end of the Cold War, yet, in the past five years, “rediscovery” of sirens has generated debate over whether to restore and repurpose the alarms for commemorative display or to discard them as a legacy of the absurdity of nuclear survival plans. This study, using recently released archival sources, presents the material history and cultural impact of the Canadian air raid siren.

During the Cold War, the spectre of nuclear war hung over North America. The fear of annihilation prompted the Canadian government, in cooperation with the United States, to develop a civil defence program with the aim of saving lives and infrastructure. The civil defence effort cost millions of dollars and enlisted hundreds of thousands of volunteers, especially at its height in the late 1950s and early 1960s during superpower confrontations over Berlin and Cuba. For Canadians, if the Cold War had turned hot, the war on the home front would have become a fight for basic survival, as cities would have been incinerated or blanketed with radioactive ash.

Fortunately, the world survived the Cold War, yet few reminders of the program or of the nuclear threat to North America remain.

In dozens of communities across Canada, however, in public parks, on municipal buildings, or atop telephone poles lie key artifacts of this period—the air raid sirens. Mounted by government and military officials between 1951 and 1963, the air raid sirens were meant to provide warning of nuclear attack, hopefully securing enough time to evacuate cities or prompt families to head to their fallout shelters. The siren installations, along with survival exercises broadcast over radio and television, brought nuclear war into everyday life.



Fig. 1
Students in a Kitchener-Waterloo school practise a “duck-and-cover” drill in the hallway, 1951.
Kitchener-Waterloo Record Photographic Negative Collection,
University of Waterloo Library.

In the process, the sirens provoked fear, criticism, and protest.

As the Cold War entered a long period of détente, the sirens remained silent, largely forgotten by the public, but maintained and kept in quiet readiness by the military. With the fall of the Soviet Union in 1991, the Canadian government decommissioned the sirens. To save costs, many of the sirens were disconnected but left in place to rust as silent sentinels, to be rediscovered in the process of urban renewal and, in some cases, repurposed into sites of commemoration. This paper explores the origins and impact of the air raid siren network in Canada.¹

The first air raid sirens in Canada went up during the Second World War. The government, fearing attacks by long-range German bombers or ship-launched aircraft, implemented a limited Air Raid Precautions (ARP) program in major population centres and on the east and west coasts (Durflinger 2006: 13). The sirens appear to have

been installed mainly in target areas beginning in 1941, and eventually reached as far inland as the locks at Sault Ste. Marie, Ontario. The National Research Council and ARP agencies tested a variety of sirens, from small roof or pole-mounted klaxons to 2-1/2 ton giants (*Montreal Gazette*, 1943). At the end of the war, the government ordered the sirens removed. The devices were likely sold as scrap or as war surplus, over the objections of some local officials (LAC R112, vol. 32464, file 5423-S50, Siren Installations – Sault Ste. Marie, December 19, 1950).

The Canadian government reconsidered its decision to dismantle the ARP organization in the early postwar years, when the West’s wartime alliance with the Soviet Union unravelled. By 1948, the government’s Defence Research Board had concluded that a future war involving Canada would be accompanied by Soviet attacks on the North American continent. Their report persuaded the Cabinet Defence Committee to appoint a federal civil defence coordinator, who would work with the military and government agencies to develop survival strategies (LAC RG 24, vol. 5256, file 22-7-1, Civil Defence Organization, April 22, 1948).

The first civil defence (CD) coordinator, retired Major-General F. F. Worthington, was appointed by defence minister Brooke Claxton in October 1948. Worthington, a veteran of both world wars and an advocate for civil preparedness, set about planning for nuclear war, consulting with provincial ministers and his counterparts in the United States and the United Kingdom (Worthington 1961: 226-34). Worthington’s organization, Civil Defence Canada, identified an urgent need for an early warning system, especially after the Soviet Union detonated its first atomic bomb in 1949. Cabinet members reviewing Worthington’s plans in March 1950 decided that an early warning system was desirable as long as it did not involve more than “looking around until such time as war might come” (DHH F. F. Worthington Papers, March 9, 1950). In the cabinet discussion, ministers remarked on the general public’s anxiety about nuclear war and expressed their concerns about civil defence preparations, especially warning systems, provoking undue public alarm.

Public anxiety was sufficiently acute in some Canadian cities, however, that local councils had

moved to set up municipal civil defence agencies without federal or provincial guidance. To generate public awareness of war preparations, or to encourage volunteers to enlist in first aid or other programs, local CD coordinators carried out simulated air raids using municipal fire sirens, factory steam whistles, and, in some rare cases, air raid sirens purchased in the United States. Federal officials, who were working quietly with the air force to develop a standardized early warning system, regarded these local, often improvised developments with some concern. Local officials such as those in Vancouver were under pressure from the public and newspaper headlines that compared the cautious Canadian progress with the rapidly expanding air raid siren network in Seattle, Washington (LAC RG 29, vol. 709, file 110-9-16, August 8, 1961).

The outbreak of the Korean War in June 1950 prompted a massive acceleration of defence spending and rearmament of the Canadian military in preparation for a third world war. As part of the new funding formula, Civil Defence Canada received funds to issue training aids and important equipment to the provinces for distribution to local CD agencies. In February 1951, Paul Martin, minister of national health and welfare, announced that cities with populations of over thirty thousand would soon receive air raid sirens for installation in a national early warning network, courtesy of the federal government (Burtch 2012: 41).

It was not until late 1951 that the federal government chose the air raid siren models that it would provide to Canadian cities. In the early postwar years, a number of firms in Canada, the United States, and the United Kingdom produced fire warning and air raid sirens (LAC R112, vol. 32464, file 5423-S45, Siren Installations – Saskatoon, August 7, 1952). Civil Defence Canada officials responsible for selecting the siren had a large selection from which to choose, including gasoline-powered or electrically driven models, sirens that could be linked in to telephone networks versus those that could be controlled manually, new models used by American cities across the border, and those that had been proven in the United Kingdom during the Second World War. Shortly after taking on the civil defence portfolio, Paul Martin decided his staff's deliberations were taking too long. He



Fig. 2
A two-horsepower Federal siren, installed on a hydroelectric pole in Welland County, Ontario. Courtesy of Mark Reesor.

directed CD officials to quickly procure sirens for immediate installation (LAC RG 24, vol. 35564, file S-1200-C9, Civil Defence Committees, February 1951).

By September 1951, federal staff had made their selection. The Treasury Board approved the purchase of two hundred sirens manufactured by Canadian Line Materials (CLM), a Scarborough, Ontario firm specializing in electrical transmission equipment. During the Second World War, many of the sirens installed in Canadian cities were produced by CLM, which may have influenced the government's decision to issue the contract (LAC R112, vol. 32464, file 5423-S375, Siren Installations – Sudbury, January 26, 1952). Civil Defence Canada also purchased a stock of Federal Electric sirens based on an American design, but distributed through the Northern Electric Company in Montreal. The barbell-shaped CLM siren was a five-horsepower model. The Federal model, which resembled a pine cone, was rated at two-horsepower. Both models of siren were capable of blaring out two distinct 100-decibel tones, the "Alert" and "Take Cover" signals.

Cities began to receive their sirens in early 1952, after the manufacturers delivered orders to the federal stockpile in Annprior, Ontario. Cities of greatest strategic importance, such as Montreal, Toronto, and Ottawa, received large shipments of sirens first, while smaller centres received their sirens in smaller shipments when available. Rapid installation was necessary to complete Canada's nascent early warning system.

Under the terms of the Canadian government's war preparations, the Royal Canadian Air Force (RCAF) was primarily responsible for detecting and preventing an aerial attack and providing early warning to the government of Canada. CD officials were originally responsible for disseminating warnings to the public. Air raid sirens formed the final link in the warning chain that began with the country's radar system and small network of ground observers in the far north.² This system eventually expanded into a jointly controlled Canadian-U.S. series of radar pickets monitored by both militaries under the North American Air Defence treaty signed in 1958.

As of early 1951, the RCAF agreed to make space available to CD liaison officers in its Air Defence Command (ADC) headquarters in St. Hubert, Quebec. In the event of an attack, the ADC controller would inform the liaison officers, who would in turn disseminate the warning by special telephone link or by teletype to provincial control centres. The provincial CD agencies would then pass the warning down to target areas in the cities under threat. Local authorities would then activate the city's siren network through a central control switch, usually located in a fire hall or police precinct (LAC RG 24, vol. 17967, file 921-100 pt 1, Civil Defence Services – Policy, November 30, 1950). The public would be trained to turn on their radios once the sirens blared their warning in order to receive specific survival instructions.

Rapid installation and central control over the air raid siren networks across the country was therefore essential if the public was to receive sufficient warning to take action that would save lives. Yet, in many major population centres, a controversial debate over responsibility for installing and maintaining the air raid sirens caused most Canadian air raid sirens to gather

dust in storage for years, crippling the public's only warning system.

The federal government's insistence on decentralized control and responsibility for civil defence was at the core of the dispute. The model, proposed by F. F. Worthington and adopted by the federal government, called for a "self-help" strategy. This strategy demanded local preparedness within and around target areas, using existing municipal police, fire fighters, and paramedics supplemented by large numbers of civic-minded volunteers who would work to provide shelter to the homeless, rescue those trapped in buildings, and prevent the spread of fires. Such an organization, Worthington reasonably pointed out, would save far more lives more quickly than waiting on the armed forces would. Under the federal model, Worthington's office provided guidance and some limited financial support, but the majority of preparations on the ground depended on provincial and local resources and initiative (Burtch 2012: 37-38).

Most provinces and municipalities lacked the expansive tax base and resources of the federal government. At dominion-provincial CD conferences, they argued that the "self-help" strategy placed an unfair burden on local governments, which could not afford to prepare for natural disasters, let alone nuclear war. Led by Ontario and Quebec, the provinces rejected the federal government's model with the argument that civil defence was an extension of national defence, and therefore a federal responsibility. The Ontario and Quebec governments refused to provide funding to local preparations as a result, and refused to sign on to matching funds agreements with Ottawa. As a consequence, many local CD agencies were starved of resources (Burtch 2012: 53-55).

Installation of the air raid siren network became the most bitterly contested aspect of this dispute between the provinces and the federal government. Civil Defence Canada's publicity arm had hoped that shipping the sirens to target areas would be picked up as positive news that depicted rapid progress, with photographs of siren installations promoting a message of intergovernmental cooperation in civil defence (LAC RG 29, vol. 700, file 110-5-1 pt 2, Civil Defence Publicity, September 1951). Instead, the federal government's largest shipment of sirens,

to Toronto, offered the city and the province a platform on which to attack federal policy. In 1952, Toronto received a shipment of approximately fifty CLM sirens. The city's underfunded Civil Defence Committee examined the sirens, and proclaimed they would not pay for their installation (Scrivener, *Toronto Star*, 2007). The Toronto committee believed that city required at least eighty-one sirens to provide sufficient warning in a busy city and dismissed the thirty-five CLM sirens provided as underpowered (DHH F.F. Worthington Papers, 3 March 1952). The city officials' skepticism was not without merit; the *Toronto Telegram* reported that New York City's first siren test took place in 1951, requiring more than 526 sirens (*Toronto Telegram*, 1951).

Toronto resisted federal pressure to install the sirens for more than four years, as the CLMs sat in unopened crates in a Toronto armoury. The press was impatient for progress on the installation of the sirens, especially after a 1954 national CD exercise where Toronto suffered heavy "casualties" as a consequence of its unpreparedness. In a biting editorial, the *Toronto Telegram* apportioned blame equally between Ottawa, the province and Toronto:

[The exercise] was a gigantic, a frightening farce. Civilian reaction was precisely nil....They were told nothing and they did nothing....Not a single siren uttered a warning. Not because there aren't any sirens. Thirty-one of them are here, in crates. Twenty others were recalled by Ottawa because they were still in crates. Civil Defence in Toronto was shown up yesterday for what it is worth—impotent, useless, hopeless. There was not a single sign of it. Civil Defense was yesterday's worst casualty. It was obliterated. As a consequence the casualty list was increased by 33,000 persons killed unnecessarily....It could have been otherwise. It can only be hoped that the lesson of yesterday has struck home, that it will shake Ottawa and Queen's Park and Toronto out of their deadly complacency. (*Toronto Telegram*, 1954)

It took the disaster of Hurricane Hazel later that year, which killed eighty and rendered more than four thousand families homeless, to reinvigorate emergency planning in Toronto. The disaster eventually led to a 1955 federal-provincial agreement for CD funding. The city and the federal government also compromised. In consultation with Toronto officials, Civil Defence Canada

sought out a larger, louder siren for use in major cities, and agreed to pay the full cost of their siting and installation.

The situation in Toronto, and similar standoffs in major cities such as Ottawa and Montreal, where officials refused to fund air raid siren installations, did obscure limited progress elsewhere (*Ottawa Journal*, 1952). Sirens were slowly but successfully installed in smaller cities across the country, largely the result of local initiative. In Sudbury, Ontario, which eventually received three 105-decibel sirens, city coordinator W. J. G. Carr had extremely limited resources: "With twenty two [sic] towns and villages organized and over six hundred volunteers actually enrolled and allocated to key positions within the civil Defence Plan, I am still operating from an office 8' x 11' and have a girl help me 15 hours a week" (LAC R112, vol. 32464, file 5423-S375, Siren Installations – Sudbury, 26 January 1952). Despite his obvious limitations, Carr did manage to obtain the voluntary cooperation of local industries such as the International Nickel Company, a partnership that saved costs. The company's electrical engineers managed installation of the sirens and linked each to a central control, and the city's first local tests were held in 1953 (LAC R112, vol. 32464, file 5423-S375, Siren Installations – Sudbury, 4 February 1954).

Apart from headlines and editorials, the public's first exposure to Canada's small air raid siren network in the 1950s was the siren test. CD officials carried out these tests following installation and periodically thereafter. Their goals were to test the sound coverage provided by sirens mounted across the city or target area and to educate the public about how to recognize the different warning signals and what actions they should take. These tests often involved hundreds of observers who reported on the audibility of sirens, as well as concerted public relations campaigns to forewarn the public.

Another role of the siren test was to give civil defence an exciting presence in everyday life. CD organizers hoped to use exercises to persuade the public of their responsibility to support their local preparedness measures. Exercises using sirens, often in tandem with mock air raids carried out by RCAF aircraft, were usually the most heavily publicized. To further build on public interest, the soundings often coincided with civic events

Fig. 3
An advertisement for the ten-horsepower siren glossed over the many technical glitches. The Canadian government eventually sued its supplier of Mobil-Directo for damages. Library and Archives Canada, R112 Vol 31427 File 6001-Sirens/1 pt. 8.



or national holidays, such as the launch of a CD exhibit or the short-lived 1957-1958 National Civil Defence Day (Burtch 2012: 70).

Civil defence planners used siren system tests to provide tangible evidence of progress in emergency planning. Public reaction to the tests, however, raised important questions about the efficacy of the sirens and, by extension, of civil defence as a whole. The Toronto CD committee's disdain for the CLM and Federal sirens was prescient. In test after test, CD officials realized they had too few sirens to provide adequate warning to the public. Subtle changes in wind direction or temperature adversely affected where the sirens could be heard. Buildings and natural obstructions interfered with sound transmission. Electrical malfunctions sometimes meant that the sirens went dead after a few seconds of wailing, had to be started manually, or, in several cases, accidentally sparked fires.

The press, which was often present for siren exercises, noted these shortcomings and ran stories that featured the failings of the siren network, prompting defensive editorials from CD coordinators (LAC R112, vol. 32464, file 5423-S375, Siren Installations – Sudbury, 10 February 1953). In correspondence with the federal CD office, however, local coordinators offered blunt assessments. After blasting the air raid siren to welcome a convoy of federal CD vehicles to Saskatoon, D. J. Fusedale lamented the ineffectiveness of his city's only warning siren:

I had it mounted on the extreme peak of the Police Station where it was entirely unobstructed and five blocks away it could not be heard over normal traffic noise.... I had given so much publicity to the fact that it was going off, and warned people not to be frightened that I'm sure thousands were disappointed and finished by laughing at it. (LAC RG 29, vol 57, file 100-5-13, Civil Defence Convoy, 16 November 1953)

A scientific test of a two-horsepower Federal siren by the University of Saskatoon's Physics Department reinforced the shortcomings of the low-powered models made available to cities. Despite running the siren for hours atop a 30-foot tower, the signal went entirely unnoticed by students and faculty, leading the department to conclude that "scores of them would be required for adequate coverage, and even then it might be necessary to use some system of whistles or bells installed inside large buildings" (LAC R112, vol. 32464, file 5423-S45, Siren Installations – Saskatoon, 9 December 1955).

Even more embarrassing to CD organizers was the failure of sirens during large-scale public exercises, such as Operation Lifesaver in Calgary in 1955. During this exercise, which simulated a crash evacuation of the northeast quadrant of the city, more than forty thousand were expected to leave the city. The actual number who did leave was closer to five thousand. To explain this shortfall, some reporters blamed the sirens, whose signals were either not heard or not understood by the public (*Toronto Star*, 1955). Privately, CD officials bitterly blamed public apathy for not paying attention to their instruction or ignoring air raid siren tests altogether. On the first National Civil Defence Day in October 1957, St. John's CD director Peter Cashin switched on

the sirens as part of an exercise to clear the streets for five minutes. The public carried on with their daily business, ignoring the CD instruction to take cover (LAC RG 29, vol. 646, file 100-5-25, 8 October 1957). Results such as the Lifesaver exercise and the St. John's debacle suggest that most Canadians did not permit atomic anxiety to intrude on their everyday lives if they were aware that an exercise was underway.

By 1959, the public's utter lack of confidence in CD's half-measures and general lack of progress prompted a major re-organization of emergency planning responsibilities in the federal government. Civil Defence Canada was dissolved, replaced with the Emergency Measures Organization, and the Canadian Army was directed to take responsibility for "national survival." Among the military's newfound tasks was to complete the siren work that Civil Defence Canada had started (LAC RG 2, vol. 2233, file 790 H B, 28 May 1959).

Years of budgetary neglect and drift had left the siren network badly behind the times. The network was originally meant to warn a small number of cities of a direct attack with a nuclear weapon delivered by Soviet bombers. By 1954 the government had concluded that the radioactive fallout created by a likely nuclear attack on North America would blanket much of the populated areas of Canada, not just major industrial centres or military targets. A major component of the Canadian army's new tasks was to update the siren network with newer, more powerful sirens and to extend the warning network into many more communities to provide adequate warning of the arrival of fallout. When the army assumed control of public warning from Civil Defence Canada, only 350 sirens had been installed across the country (LAC R112, vol. 31873, file 1284-1, pt.1, Communications – Warning System – Policy, September 15, 1959). From 1960 to 1965, the Canadian Army embarked on a major capital procurement and construction plan, ultimately installing 1,700 sirens across the country, all of which were linked into emergency government bunkers and secure communications hubs. The military named its network the National Survival Attack Warning System, or NSAWS.

Within months of assuming responsibility, the army created an expanded and prioritized list of air raid siren installations, with installations

moving away from city cores and into neighbouring communities and suburbs. As the municipalities were no longer responsible for installing or maintaining sirens, the military's construction plan was far more expedient. In November 1959, the Army Works Services, an engineering branch of the Canadian Army, was assigned a massive task. The AWS procured sirens, determined the location of the 1,700 sirens to be installed, and negotiated with school boards, churches, hydro-electric companies, and municipal councils for property leases and electrical supply. They also subcontracted with hundreds of local contractors to install the sirens (LAC R112, vol. 31427, file 6001 Sirens/1 Equipment and Stores – Local Public Warning Sirens, January 27, 1960).

New, heavy-duty sirens were added to the Canadian inventory. The army installed its first sirens in Toronto. It had inherited two hundred ten-horsepower sirens from Civil Defence Canada that had been ordered in 1956: the Mobil-Directo sirens, manufactured by the American firm Blersach and Niedermeyer and imported by the General Supply Company of Canada, an Ottawa firm. The Mobil-Directos were chosen to replace or supplement the much-criticized CLM and Federal sirens. Unlike their predecessors, which could be easily missed on telephone poles or rooftops, the Mobil-Directos featured a large, curved horn that arced above its electric motor. The horn concentrated the wail of the engine into a beam of sound while the entire siren rotated on its base, providing "omni-directional" audio coverage.

The extent and urgency of the army's siren installation program accelerated dramatically in 1960 and 1961, as a prolonged standoff between the West and the Soviet Union over access to Berlin led to increased war readiness throughout the North Atlantic Treaty Organization (Maloney 1997:159–62). The army's national survival program received a substantial boost in funding in the summer of 1961, including more than two million dollars (\$15 million in 2012 figures) for new siren procurement to cover thirty additional areas. More than six hundred additional sirens were purchased, many of which were provided by CLM in Scarborough. The CLM factory produced variants of its five-horsepower engine, as well as a much larger ten-horsepower rotating siren. The ten-horsepower CLM would



Fig. 4
Canadian artist Adrian Göllner blended nostalgia and Cold War anxiety for his 2000 "Fission" series of public art posters mounted at Ottawa bus stops. Be Prepared, Adrian Göllner, 2000.

become the most visible and widely used heavy siren in Canada. Resembling a bell turned on its side, its powerful horn rotated much like the Mobil-Directo. This siren was most frequently depicted in emergency measures publicity and instruction manuals, but is perhaps most famous for its use in the 1980 film *Blues Brothers*, where the protagonists strapped a CLM siren to their car for use as an improvised megaphone.

As military engineers went about charting the placement of the expanded siren network, they operated under guidelines to avoid, where possible, siting sirens on privately owned land. This stipulation was included for expedience, because it was much cheaper and easier to place the sirens on lands owned by government or public utilities but also less likely to be subject to debate or costly renegotiation when private property changed hands (LAC R112, vol. 31427, file 6001 Sirens/1 Equipment and Stores – Local

Public Warning Sirens, January 27, 1960). The army's installation guidelines did not entirely avoid controversy, however, as some communities objected vocally to the sirens' becoming part of their suburban landscape.

Most of the initial protests directed at sirens were driven by local community associations in suburbs and were based on fears that a local siren installation would reduce the value of homes in residential neighbourhoods. Freestanding siren towers would have been immediately noticeable in a suburban environment, as each steel or wood tower was approximately forty-five feet in height and crowned with the siren on a metal maintenance platform. In Ottawa, the military's request to install a siren on city property in the midst of the Mooney's Bay suburb led to consultations between the area's city councillor and local homeowners. The community agreed to host the siren, so long as it was moved out of sight of the homes then constructed. In this case, the military responded that such a move would render the siren useless as a warning device and the region would require two or three additional sirens to make up for the change (COA RG20-6-39, 1960). Sirens installed near elementary schools appear to have been particularly controversial, again for their adverse affect on property values, but also out of concern for the children. In October 1961, a military engineer reported that Sarnia's residents were "violently opposed" to an installation near a suburban elementary school. Eventually the residents petitioned the minister of defence, Douglas Harkness, and sought a court injunction to prevent installation. Previous petitions in Sarnia had led the military to move sirens out of sight, but, on this occasion, the community effort was unsuccessful, and the siren was installed as planned (LAC R112, vol. 32464, file 5423-S40, Siren Installations – Sarnia, January 23, 1961).

The military's installation program was largely successful. By late 1961, hundreds of new sirens had been installed across the country. Military engineers were pressured to work quickly so that many sirens would be in place in time for the country's first "national survival" exercise, Operation Tocsin B on November 13, 1961. The exercise, which featured a three-hour live broadcast on radio and television, simulated a Soviet attack on Canada using bomber aircraft

and missiles. Three million people, including Prime Minister John Diefenbaker and his wife, were “killed” in the attack, and millions more were injured or rendered homeless (Burtch 2012: 182–83). To contribute to the realism of the scenario and to test their effectiveness, Canada’s air raid sirens went into operation.

The public reaction to the Tocsin B exercise was swift and furious. To many Canadians, the exercise was their first exposure to Canada’s CD plans, and they were angered at the government’s questionable decision to classify an exercise in which three million were reported killed “a success.” The exercise took place amid the major war scare over Berlin, an enormous Soviet thermonuclear test, and the rise of a vocal disarmament movement in Canada that regarded nuclear war preparations as a cruel hoax. Though much anger was directed at the government for providing blast bunkers for politicians and civil servants, the sirens were also subjected to substantial criticism. Some observers were disappointed when they could not hear the sirens from within their homes, such as a *Vancouver Sun* reporter, who wryly remarked, “If a genuine attack should come, which is most unlikely, these sirens could toot their fool heads off without penetrating the consciousness of this household” (Weir, *Vancouver Sun*, 1961). Those who could hear the sirens, such as Stephen and Mary Leskard in Vancouver, also wrote to the prime minister or other officials to express their outrage:

We are one of those families who died this morning.... Through you we wish to thank the Government and all others concerned with National Defense for sparing us the unpleasantness of dying unwarned. The sirens were quite loud. With our children we looked for the shelters, since we are not in the income bracket entitling us to one of our own, but there were none. (LAC John Diefenbaker Fonds, MG 26 M, vol. 48, file 140, Civil Defence, May 5, 1961)

To many who responded to the Tocsin B exercise, air raid sirens, just as fallout shelters and other manifestations of emergency preparedness, were symbolic of the futility of the very concept of survival in an era of nuclear war (Burtch 2012: 195–99). As the Leskards pointed out, the sirens were useless if the government could not provide the public with the means to survive the attack



Fig. 5
The restored
Victoria Park siren,
commemorated as a Cold
War relic. Courtesy of
Stevie Wilson.

sirens warned against. Many editorialists, too, pointed out that even if the sirens were completely audible, in the age of the intercontinental ballistic missile, the public would have only 15 minutes after a missile launch to make their preparations. The sirens would sound too late to do any good (Knowles, *Saskatoon Star Phoenix*, 1961).³

In fact, the obsolescence of the siren system was a good deal worse than the public knew. When the military launched its attack warning system, of which the sirens were a key part, they did so on the specific understanding that the entire undertaking was in response to the threat from manned bomber aircraft (LAC R112, vol. 31873, file 1284-1, pt.1, Communications – Warning System – Policy, July 31, 1959). The military’s intelligence suggested that the ballistic missile threat would not be sufficiently advanced until the late 1960s, so planners operated on the assumption of having three hours from detection of an air offensive to warn the public. Even this generous window was tight to have any effect, as fan-outs from NORAD HQ to local commands took ninety minutes or longer (DHH Hitsman 1962: 43). Prime Minister Diefenbaker’s insistence that he or a deputy had to first approve any public alerts created a source of further delay in transmitting warnings to the public. The military installed red phones in the prime minister’s residence, the East Block of Parliament Hill, and a number of other senior officials’ residences to cover this demand.

Yet even if the warnings were successfully transmitted to the municipal level, where the siren circuits were still controlled, technical and

environmental problems plagued the warning devices. The most serious problem facing the siren system was how to ensure 24-hour, all-season coverage even in Canada's taxing winter conditions. On multiple occasions, Edmonton's entire air raid siren network was frozen solid following blizzards or freezing rain, as was Ottawa's. The military proposed a number of solutions, from specially engineered covers to disposable plastic wrap, but the problem was so acute that all testing was suspended in winter months (LAC R112 vol 32465, file 5423-2, Siren Installations – AWS Procedures, June 12, 1963). The Mobil-Directo sirens caused sufficient technical problems that the government sued the General Supply Company of Ottawa for hundreds of thousands of dollars in damages.

By 1962, air raid sirens had been present in many cities across Canada for the better part of a decade. They were infrequently the subject of criticism, occasional protest, but on the whole they were ignored, their grim purpose kept out of mind. Their penetration of Canadian domestic life can, however, be gauged, particularly upon examination of those rare occasions where sirens sounded accidentally, without benefit of fore-warning by civic officials or exercise organizers armed with reassuring scripts. In many of the accidental soundings that have been documented, a clear pattern of behaviour governed by fear and panic can be seen. In 1954, a fire in Winnipeg set off the city's air raid sirens late at night. The wail prompted thousands of frightened residents to rush to the phones, which jammed switchboards reserved for emergency workers. CD workers had told the public during exercises that if they heard the sirens they should switch on their radio, an instruction that was forgotten in the flare of panic. To avoid similar panics during the Cuban Missile Crisis in 1962, several city councils passed ordinances to forbid emergency vehicles from using their sirens because the councillors feared the signals would be mistaken for an attack warning (Burtch 2012: 89, 209). In September 1964, when a hunter's shotgun blast damaged a transmission line between the Diefenbunker and Ottawa, all thirty-nine of the city's sirens went off at once and blared for a half hour. During the bedlam, the public ran to their vehicles, clogging the highways in an effort to flee the city (CP, *Windsor Star*, 1964).

In each of these scenarios, the meaning that CD and military officials had attached to the sirens was lost in the panic. The public did not view the sirens' wail as a prompting to turn on their radio for instructions; they reacted instinctively. They sought reassurance from their local police, or, in the Ottawa example, took to the streets to save themselves. In these unexpected accidents, the sirens were interpreted as heralds of doom. As one of the Emergency Measures Organization's senior directors explained in 1966, "People are simply not so frightened of the H-Bomb now.... You learn to live with danger and become a little more tolerant of it" (*Regina Leader-Post*, September 15, 1966). All Canadians lived under the shadow of the bomb. In the incidents described above, for a few moments, the sirens brought that residual fear of annihilation into terrifying proximity with the everyday.

As the intense East-West confrontations of the early Cold War ebbed, particularly with the peaceful resolution of the Cuban Missile Crisis and the signature of the 1964 Partial Test Ban Treaty, the pace of military planning for national survival slowed. The improved state of international relations, paired with a slowing economy and government austerity measures, spelled the beginning of the end for Canada's air raid sirens. In 1968, the federal cabinet cut funding for emergency measures. One of the key savings was found by cutting communication links with hundreds of sirens across the country and relying instead on the emergency radio broadcast system to transmit an alert. In their discussion of the cuts, the cabinet concluded that severing communication links was a temporary measure that could be reversed "in a matter of hours or a few days" if an attack seemed likely (LAC RG 2 Series A-5-a, vol. 6338, Cabinet Conclusions, January 10, 1968). As a result, inactive sirens remained in place in communities, but were no longer connected to provincial and municipal networks.

By the early 1980s, many of the sirens had been dormant for more than a decade. Unless the sirens were readily visible in the city, most Canadians had either forgotten about the extent of the network or had grown up without any exposure to the devices. Every year, a handful of military technicians would venture forth to service and test the sirens by spinning up their

rotors, but they were otherwise silent (Bartley, *Windsor Star*, 1980). The siren network briefly entered the news in 1980. Prompted by public anxiety about international stability following the Soviet invasion of Afghanistan, emergency planners publicly speculated about reactivating the sirens, but took no action. Canadian officials also briefly explored updating the air raid warning system as part of discussions with the United States about changes to continental air defence equipment, but the focus of both countries' militaries was on monitoring stations in the far north, not klaxons in the south (Douglas, *Ottawa Citizen*, 1980).

The end of the Cold War in 1991 brought to a close the long nuclear standoff between the East and the West. The atmosphere of international cooperation that followed did not bring about a lasting world peace, as some had hoped. While dirty civil wars erupted on the periphery of Cold War empires, the risk of nuclear war had apparently vanished. With it vanished the need to maintain the siren network. The sound of the sirens had also lost their menace; after an accidental two-hour blast of the sirens in Kitchener-Waterloo, Ontario, residents complained to the city but did not panic: "Why do we need air raid sirens in 1994?" some asked incredulously (*Kitchener-Waterloo Record*, September 29, 1994). The federal government agreed and, in April 1994, as part of a new round of cuts to defence, ordered more than 1,500 sirens disconnected or scrapped. Those sirens that could be easily removed were sold for scrap, while costlier installations were left to rust in place, thrown out when buildings were re-roofed or taken down as part of urban renewal (Scrivener, *Toronto Star*, 2007).

The government's decision to decommission the air raid siren network in the 1990s caused many of the sirens to disappear into scrapyards and private collections. Very few have survived. Those sirens that have survived have done so either because they escaped notice, or were purposefully preserved by local, regional, or national museum initiatives. In the process of their transition, the air raid sirens have acquired new uses and cultural meaning, linked to heritage activities and nostalgia for a "Cold War culture." The last time the air raid sirens were sounded in Ottawa, for example, was as part of the city's

celebrations of the 50th anniversary of the end of the Second World War in 1995. In these celebrations, the sirens were used to signify victory over adversity rather than the beginning of a nuclear war, though a few letter-writers to the newspapers said the sirens evoked the dark days of the Cold War. After the 50th anniversary of V-E day, city of Ottawa staff, with the consent of the armed forces, transferred the city's downtown sirens to the Canadian War Museum (CWM 19950013-001).

Some sirens that have been "discovered" through urban renewal or heritage projects have also been conserved and repurposed for community heritage. A siren tower on the property of Bellwood Centres for Community Living in Toronto was preserved in 2007 as part of a major renovation. The executive director of the Bellwood was pleased to keep the siren as a landmark and historic piece because of her own personal memory of participating in air raid exercises. The project architect, David Warne, wanted the siren included in plans for a discovery walk as a piece of "urban archaeology," and a "romanticized idea of the industrial era" (Scrivener, *Toronto Star*, 2007). In Toronto's case, Warne's observation was relevant, as Canadian Line Materials in Scarborough produced half of the overall siren network before the company was absorbed by a larger firm. The Bellwood siren is part of the industrial history of Toronto.

Not all heritage initiatives passed without incident. In 2010, a city crew in North Vancouver removed a rusting ten-horsepower Mobil-Directo siren from its perch in Victoria Park, where the army had first installed it in 1960. Many residents of an apartment building overlooking the park were relieved to see it go. Linda Heese's apartment looked out on the park, and she always wanted to see the siren removed. The siren sat across the park from one of North Vancouver's war memorials. Heese, and others in her building, believed the siren represented a time of fear, paranoia, and suspicion, and clashed with the cenotaph, which she associated with loss and hope for the future. She later read with dismay that the city had only taken down the siren temporarily with the intent to refurbish it and attach a commemorative plaque to the siren tower. With more than sixty local residents, she organized a petition to request North Vancouver's

Fig. 6

The restored
Victoria Park siren,
commemorated as a Cold
War relic. Courtesy of
Stevie Wilson.



city council moving the siren elsewhere (personal communication, March 30, 2012).

The matter came to a vote at city council, where Heese encountered opposition from another citizen, R. G. Scott who, with representatives of the Canadian Legion, argued to keep the siren as planned. For Scott and others, preserving and interpreting the siren was important for local and national history. As he told a newspaper, "We should keep this thing, not all history is pretty or beautiful.... I want to tell my son and future generations the fear we lived under" (Alldritt, *North Shore News*, 2010). Ultimately the North Vancouver city council sided with Scott, and the restored siren was later put in place. The plaque, paid for by private donation, briefly explains the reasons for the siren's installation and its later deactivation, and justifies its continued presence: "It now stands, silently alerting us to be mindful of the past so that we can work together for a peaceful future" (Wilson, *Scout Magazine*, 2012).

Over the course of its lifespan, and largely due to local initiative, the North Vancouver siren was transformed from a symbol of imminent nuclear war, to a rusting eyesore to a commemorative landmark. Most of Canada's sirens, however, have not been subjected to this transformative process,

and have either been scrapped or forgotten. With their destruction is lost a significant if largely unregarded chapter in the history of Canada's Cold War home front. Their importance is related to their production and intended use. At its height, in the 1960s, the air raid siren network brought the threat of nuclear war into hundreds of communities. It represented the only readily visible, and, during testing, audible link between those communities and an early warning system that eventually spanned the far reaches of the North, and was linked to military commands and the centre of power in Ottawa. The sirens are also representative of a chapter in Canadian industrial history, as the Canadian Line Materials sirens produced in Scarborough, Ontario, were the most widely installed. The Canadian sirens formed a part of the vast amount of materiel procured at substantial cost by the military as part of a largely invisible effort to fight the Cold War at home.

The wider cultural impact of the sirens' installation and testing appears to have varied depending on local conditions. In many communities, the sirens remained silent for more than a generation, and their ominous significance may have passed unnoticed by all but a few who knew where they were located. Where sirens sounded accidentally, especially during times of great international tension, the sirens provoked moments of instinctual flight response from a public that largely ignored the threat of nuclear war as an everyday survival mechanism. When sirens sounded too frequently, whether by accident or through scheduled tests, they lost their impact in the affected community, becoming in the process a source of irritation rather than fear.

The sirens, and the early warning network to which they were linked, were part of a technological solution to a problem created by another piece of technology—the nuclear bomb and its projected impact in a future war. The government argued that with sufficient warning, some Canadians, but not all, would survive the nuclear storm. The rapid pace of the arms race, however, rapidly rendered the sirens, and their accompanying CD instruction, obsolete. The sirens could not be sounded swiftly enough to be of much use in a war fought with intercontinental ballistic missiles. Well before the era of the ICBM, failed siren tests led the press and a vocal minority of Canadians to rail at the futility of preparations. To many,

sirens, and the strategies they supported, such as fallout shelters, presented a delusional vision of security in a fundamentally insecure world. The government itself largely abandoned the sirens five years after emplacing them. Given their history, it is not surprising that the repurposing of sirens as commemorative objects has proven

occasionally controversial. Yet it is worth noting that while the air raid sirens have mostly been consigned to scrap or to rust or transferred to the domain of historians and museums, the nuclear arsenals the sirens were meant to warn against remain in silent readiness.

Notes

1. Note on citations: this paper is derived primarily from archival sources housed at Library and Archives Canada. In-text citations of archival documents list the record group, accessions, volumes, and the file name, number, and original date of authorship. The references list the name and location of the record groups, as well as any information not included in the in-text citations.
2. At that point, American-Canadian cooperation on the early warning network had not been implemented. Rather, there was a mix of local Canadian radar assets, RCMP outposts, and volunteer ground observers trained to report movement of four-engine aircraft in the north (LAC RG 24, vol, 19767, file 921-100, A/M Curtis to G/C, Air Defence Group, St. Hubert, September 25, 1950).
3. Most of the Canadian opposition to sirens, and to CD measures as a whole, were expressed in writing to civic officials. Street demonstrations did occur, but mainly in support of the broader aim of disarmament. Disarmament activists pointed to the easily perceived ineffectiveness of CD as evidence that the program was a hoax, but CD measures themselves did not provoke direct action. In the United States, because the siren system was far more extensive (New York City's system of working sirens alone was equal to a third of Canada's entire inventory), exercises more frequent, and the decision in some areas to make participation in civil defence exercises mandatory, dissent that would otherwise have remained private turned public. In New York City's OPAL series of exercises, from 1955 to 1961, the number of anti-war protesters increased each year. The police fined and arrested some of the protesters, which drew greater media attention. However, it appears that most Americans, such as the baseball fans who crowded the stadium on the day of New York's shelter test, were as prepared as Canadians to ignore the wail of the sirens as an inconvenience of Cold War life. The United States was more aware of the public's seeming indifference to preparedness measures—a Federal Civil Defence Administration study concluded early on that only 8 per cent of people in a target area would try to escape the bomb, even with sufficient warning (Davis 2007: 51-57; McEnaney 2000: 52).

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