



Canadian Risk & Hazards
Network
(Knowledge and Practice)

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HazNet

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BLASTS FROM THE PAST

The events presented in this special edition of HazNet are of great significance in Canada's disaster history. Together, the Halifax Explosion, the Green Hill Park Disaster and the Gentle Bomber story, although told by different authors and covering different decades, illustrate the importance of, and the need for, investigative research. Research helped to unravel the mystery, and in many cases the secrecy, that served to protect the guilty. Research served to unveil the truths and dispel the myths.

These narratives bring out the human elements that were at play, the important role of emerging leaders, the courage, and heroism of so many and the tragedies which impacted many lives. All of these elements are vividly brought to light. These stories illustrate the importance of digging deep into reports, not accepting poorly done or glossed over accounts, and unwinding fact from fiction to discover the causes of what occurred, why it happened and what was done (or not done) in an attempt to lead to a better future.

These stories are based in the past, long before the internet, Google, and electronic data base searches were available. Researchers to day, all too often limit their references to what is easily accessible on line. George Santayana stated, "Those who cannot remember the past, are condemned to repeat it." But to uncover the past, completing the research involves leaving the ease and comfort of on-line searches and heading down to local libraries, checking microfilms, interviewing remaining witnesses, etc. It is hoped that the richness of these accounts will serve as a reminder of the importance of conducting historical research.

In particular, Joe Scanlon's account of the 1917 Halifax Explosion should be read by every emergency management professional and disaster-related researcher. The article is descriptive and includes prescriptive lessons that are very much applicable today.

The cargo vessel, The Green Hill Park, exploded in Vancouver Harbor in March 1945. The blast did indeed provide many opportunities for learning. But it took ruined lives and wide-spread economic disruption to make people pay attention. A subsequent inquiry and new regulations,

(with loopholes of convenience), did little to drive these home. The true cause of the explosion never came out in the inquiry and was only learned 35 years later by a reporter from the Vancouver Sun. Why? Many people in the shipping system would have been implicated.

John Stanton the Lawyer for the Long Shoremen's Union made the point that British Columbia had never experienced anything like this explosion before. Stanton said, "Our imagination of what could have happened cannot in itself, spark real changes of behaviour that improve safety." This speaks to the sad truth that at every Emergency Management Conference I have attended: "someone had to die first" before change took place.

During the height of the Cold War, anxiety ran high not only in the general population but at all levels of government. Russia and the US were rattling their sabres and building atomic weapons at an alarming rate. Bomb shelters proliferated the landscape and the Government of Canada created a National Warning System that incorporating emergency government bomb shelters across Canada. The program was referred to as the Continuity of Government Program and regional shelters were established to house government officials in event of an attack. Canada and the US were equal partners in establishing the North American Air Defense Command (NORAD).

The US Air Force, as part of the Strategic Air Command (SAC), had developed large bombers capable of carrying an atomic bomb and flying nonstop to targets in Russia. In 1950 the largest Bomber of the day was the B-36, affectionately referred to as the "Gentle Giant." Routine flights were carried out to test its operational capability. These flights, originating from the US, were triangulated over Greenland, Alaska and Canada and designed so that they could be effectively altered for targets in Russia.

High security and secrecy were the watch words of the program. Where and when flights would depart and return was classified information, as was information about their payload.

Enter our resident atomic bomber! "When the giant aircraft slammed into a remote glacial cirque in northwestern British Columbia during a late-night blizzard over 60 years ago, it was the first unplanned destruction of an atomic bomb. It created both a mystery and a worry"

Information was scarce and no one was ready to speak. Ottawa had only sketchy information, but pointed out, "The highly classified nature of this incident — would lead one to assume either, that at the time we wanted to keep the degree of SAC operations under wraps, or that this B-36 was equipped with what SAC aircraft were supposed to be equipped with."

A mystery indeed! This is the true story of a harrowing flight, a dedicated and tenacious flight crew, the heroic rescue of the flight crew by fisherman off the coast of BC and

the determination and research of one man to tell the story and uncover the mystery.

CONCLUSIONS

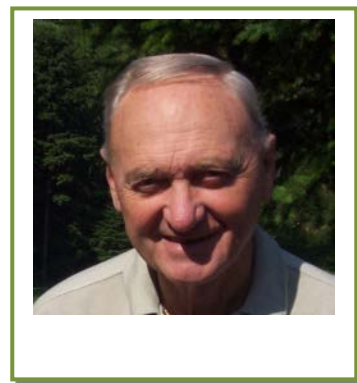
These articles, aside from being of general interest, underscore the importance of investigative research, the documentation of lessons learned and to add to the Canada's history of disasters.

I wish to thank those involved in bringing these events to light: Joe Scanlon for his explosive description of the Halifax disaster and Bert Struik and Anne Kyler for gathering the information on the Green Hill Park explosion and finding the "Gentle Giant" account.

IN MEMORIAM

It is with sadness that we learned of the death of one of the frequent contributors to HazNet, Bill Anderson. Please see the end of this edition for a summary of his life achievements written by Joe Scanlon.

Best wishes for 2014. I hope you enjoy this special edition.



Larry Pearce

THE HALIFAX EXPLOSION

By: *Joe Scanlon*

Professor Emeritus, Director of Emergency Communications Research Unit

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In retrospect, it's easy to see that *Mont Blanc* was a bomb waiting to explode and that the fire started by her collision with *IMO* posed an enormous threat to Halifax and Dartmouth. It was not at all obvious at the time. In fact, to those who saw what happened, the situation appeared innocuous. No one on either ship was killed or injured by the collision and neither ship was in danger of foundering. *IMO* had pulled away from *Mont Blanc* and *Mont Blanc* though on fire was drifting along with the tide. From Halifax, it was clear that *IMO's* bow was damaged but it appeared *Mont Blanc* was unscathed: because *Mont Blanc's* gash was in her starboard side, the side away from Halifax.

However, the most important reason for this lack of reaction was that neither those in nearby ships nor those watching from the shore had any idea of *Mont Blanc's* cargo or the risk it posed to the harbour and to themselves. Spectators including children gathered along the waterfront and at windows in Halifax and Dartmouth to watch *Mont Blanc* burning. They kept watching even when there were small, initial explosions: until the last moment those seemed like a wonderful display of

fireworks. The only warnings to reach anyone came from the crew of *Mont Blanc* and no one understood them or paid attention. Even though the French sailors were running, no one else was. Because no one else was reacting, there was no cause for alarm.

It may seem hard to believe that a collision between two ships should have attracted so little attention but during the 12-month period between October 1917 and September 1918, 103 allied ships sank as a result of a collision with another ship. While a study by the British government suggested two reasons for this -- ships were travelling without lights and ships were in close quarters in convoys -- that same report noted something else: the 300,000 tons of shipping lost during the 12 months studied represented only 50 per cent more tonnage than the 196,674 tons lost during the 12 months before the war started. Collisions, in other words, weren't uncommon in the days before radar and radio communications. In fact, they were so common that the White Star Line ignored the fact that Captain Edward J. Smith caused collisions in both New York and Southampton harbours before making him captain of *Titanic*.

True, a few collisions were spectacular. One was *Titanic* and the iceberg. Another was the *Empress of Ireland*, which sank in 1914 in the Gulf of St. Lawrence with an even larger percentage of passenger lives lost than *Titanic*. She went down only 14 minutes after a collision with the Swedish

coal ship *Storstad*. But most collisions were minor. There were three in the Mersey the same week as *IMO* collided with *Mont Blanc*. There were several involving the Dartmouth ferries a week or two after the explosion. Little is known about any of them for they were unimportant. At first glance, the collision between *IMO* and *Mont Blanc* appeared equally insignificant. Edward McCrossan, a sailor on *Curaca* who watched it happen, was so little interested that he went below for a smoke. The signalman on the Canadian navy depot ship *Niobe* told the first officer, Allan Baddeley, that the incident was a minor one and the Master of Arms on *Niobe* commented, "I'd seen vessels collide before. This one seemed no different." If nothing else had happened, the incident would have faded from memory, much as "fender benders" between automobiles do today.

At first, the only persons really concerned about the collision were *Mont Blanc's* crew: they knew the seriousness of the situation. The collision had broken open the barrels of gasoline and sparks had set the gasoline on fire. The flaming gasoline was flowing into the forward hold where the wet and dry picric acid was stored. Soon the fire was out of control. Because *Mont Blanc's* crew knew their ship's cargo they knew it was only a matter of time before their ship exploded. They could try fighting the fire -- given the speed at which it was progressing, that seemed hopeless. They could open the seacocks, hoping the ship would sink -- that would take too long. They could try to get *Mont Blanc* moving, hoping that forward

motion would force water into the hold. It was too late for any of those options. Their ship was doomed. When the captain gave the order to abandon ship they scrambled into two lifeboats.

After a hasty count, Captain Le Medec thought that his childhood friend, Chief Engineer Antoine Le Gat, was missing. When he realized that Le Gat was already in one lifeboat, he decided that it was a captain's duty to stay with his ship. His crew shouted that that was foolish. Another childhood friend, second officer Jean Glotin, grabbed him by the arm and pulled him into the boat. The crew then rowed towards the Dartmouth shore. The pilot said it was the closest and safest place to go. As they rowed, *Mont Blanc's* crew yelled to others to seek safety. Edward McCrossan again:

Just as the *IMO* backed clear of *Mont Blanc*, I saw the Frenchie's port lifeboat in the water. They were pulling past the stern of their ship and were heading for the other shore. Two men were standing up in the boat shouting. What they were saying, I don't know because I cannot speak French.

When the *Mont Blanc's* crew reached Dartmouth, they lined up as the officers did a quick count to make certain that everybody was safe. Then they started running. Later, the captain and the pilot were criticized for "not taking proper steps to warn the inhabitants...of a probable explosion." The sailors did shout a warning; but it was in French. While language was part of the problem, there were other

reasons why no one reacted to the shouts. Those watching had no knowledge of *Mont Blanc's* cargo, no experience with high explosives, no reason to think the burning ship was dangerous. When no one warned them of any danger, they assumed that all was well.

OTHER REACTIONS

Because almost no one except the crew recognized the danger, the other reactions to the fire were for different reasons. The first reaction was simply one of curiosity. Fires fascinate people and the burning *Mont Blanc* was a spectacular sight. At the Royal Naval College, senior cadets watched from their gunroom. At the Hollis Foundry, workers gathered at a window. Children paused on their way to school. Teen-ager Audley Griffin recalls his reaction when he saw the fire engines. (Because of the war some classes didn't start until 9:15 a.m. or 9:30.)

I thought, 'Oh, the heck with school. I am going to see where the fire is.' I raced down the hill....

Many North Enders watched from home. Because of the cold most stayed inside, looking through their windows, something that would cost some their eyesight, many their lives. Despite the cold, officers at the Wellington Barracks went outside for a better view. A number of soldiers watched until they were late to work. Later, some were told that their injuries weren't fully covered since they weren't officially on duty

when *Mont Blanc* exploded. Employees of Acadian Sugar Refinery climbed to the refinery's roof: they had the best view of all.

Seeing a story developing, Jack Ronayne of the *Halifax Mail* called his office to say he would cover the fire. Constant Upham phoned the fire department from his store. Someone else pulled an alarm box. Hattie Burrill wrote to a friend in Charlottetown:

I remember hearing the Patricia and the rest of the fire department go past the corner & they were flying. I said to myself, "Gee whiz! There must be a big fire near us."

She wasn't the only one to react to the sound of fire engines. John Cranwell, an ensign with the Salvation Army, ran downstairs to see what was happening. Like Hattie Burrill, he saw the Patricia on the way to the fire. The Patricia was the department's pride and joy, a new motor-driven pumper. As it arrived at the docks, flames and smoke were belching out of *Mont Blanc's* hold and shells were exploding like fireworks. Patricia's driver Billy Wells was struck by what he saw. "The ship was almost alongside the dock and the multicoloured flames shooting from her decks presented a beautiful sight."

However, while most persons were merely fascinated, officers on both *Niobe* and *Highflyer* were alarmed at what was happening. That was not because of *Mont Blanc's* cargo – no one had told them what she carried – it was because of *Picton*. They knew that she carried ammunition and they

could see that *Mont Blanc* was drifting toward the dock where she was being unloaded. *Mont Blanc*, herself, did not appear to be a threat but if she set *Picton* on fire that *would* be dangerous. Something had to be done. Even before that, Frank Carew, the foreman supervising *Picton's* unloading sensed the same danger. He told his men to start covering *Picton's* hatches. Later, Carew and his men were praised for staying at their jobs as *Mont Blanc* drifted towards them. They did stay at their jobs but that was not because they thought *Mont Blanc* herself presented a danger. They thought the real danger was fire on *Picton*.

While the longshoremen set to work, Lieutenant Allan Baddeley on *Niobe* asked the acting boatswain, Albert Mattison, and a volunteer crew to take the steam pinnace and tow *Mont Blanc* away from the docks. (Volunteers were requested because of the danger from *Picton*, not because of a perceived threat from *Mont Blanc*.) On *Highflyer*, Acting Commander T. K. Triggs, the executive officer, and Lt. James Rayward Ruffles launched a whaler on the same mission. *Highflyer* would have sent a larger boat but her steam cutter and sailing pinnace were in Dartmouth with the chief engineer and his crew. Spotting this activity, the captain of *Stella Maris* beached the scows he was towing and came to assist.

One person did react to the real threat. He was Lt. Cdr. J. A. Murray, the Canadian who had joined the Royal Navy Reserve when he came to Halifax from Sydney with Rear

Admiral Chambers. Murray was on the convoy liaison tug, *Hilford*, returning from Bedford Basin when the collision occurred – he had gone to get some kippers for breakfast -- and on his way back he could see the damage to *Mont Blanc*. There was a wedge-shaped cut in her side through which could be seen the barrels of picric acid. However, since neither Murray nor *Hilford's* crew knew what the barrels contained, that didn't seem cause for alarm. In any case, the barrels had not broken open. Their attitude changed when *Mont Blanc's* pilot, Frances Mackey, called across to them and warned them to get away. Unlike the crew's shouts in French which no one understood, Mackey's message was in English and it was crystal clear: *Mont Blanc* was in danger of exploding.

Murray told *Hilford's* captain to head for Pier # 9 where he disembarked and rushed to phone the port convoy office. He called again just after 9 a.m. as *Mont Blanc* drifted into Pier # 6. Murray's call came at a bad time. Since most persons started work at 9 a.m. they were en route to work when the collision occurred. They couldn't be reached at home or at work. Nevertheless, Captain Frederick Pasco, who was still at home, called and asked *W. H. Lee*, *Gopher* and *Musquash* to respond and try and pump water on the fire. By then it was far too late.

Although Murray told the port convoy office about *Mont Blanc's* cargo, no one thought to warn the sailors from *Highflyer* or *Niobe* or the crew of *Stella Maris*. No one told the firefighters, the officers at the Wellington

Barracks or the general public, the spectators including the children who were now lining the waterfront. In fact, the officer who took that call didn't even call Rear Admiral Chambers. About the only ones to learn of the danger were the crew of *Hilford* – who had heard Mackey shouting to Murray -- and a few persons in the North End station where Murray used the phone. Even then, there was little reaction. One of *Hilford's* crew, Joseph Cogan, tried to get his captain to move the tug further away from the *Mont Blanc*. The captain refused. In the station, telegrapher Vincent Coleman started to run for his life. Then, thinking of the danger to others, he returned to his key and started to telegraph a warning to incoming trains. Because that may have cost him his life, he is now featured as a hero in a vignette on Canadian television. As we will see later, his role in what happened has been distorted but it was important to the early response.

By the time the boats from *Niobe* and *Highflyer* reached *Mont Blanc*, her plates were too hot to touch. The sailors could not get a line on board so, driven by the outgoing tide, *Mont Blanc* drifted into Pier # 6 and set the pier on fire. When the tug *Stella Maris* arrived, her crew decided to try again. They, too, were unsuccessful. Seeing that nothing could be done, Acting Commander Triggs decided to transfer to *Stella Maris*. If he could do nothing about *Mont Blanc*, perhaps he should check up on *IMO*. He and the others were still unaware of the danger of *Mont Blanc* exploding. Only Lt.-Cdr. Murray and the crew of *Hilford* had

been informed and they had headed the other direction.

SERIES OF EXPLOSIONS

As the fire grew worse, the scene became more spectacular. The barrels of fuel and the shells piled by *Mont Blanc's* guns started exploding, sending spurts of flame as high as 40 metres. At that point, the captain of the tug *Wasper B* guessed *Mont Blanc's* cargo and headed to the dry-dock to warn those on shore. He was too late:

I heard the Belgian whistle blow and the only thing I remember after, was No. 1 hold of the munitions ship on fire on the starboard side. We made an attempt to turn back towards the offices at the dry-dock but, before reaching there, a shell struck us. We had 80 gallons of gasoline in both tanks, which exploded when (the) shell struck.... I think that I was the only one of the five on board the *Wasper* to escape as the ship was blown up. My son, Harold Prest, who worked at the dry-dock, was killed.

Fred Longland on *Niobe* saw the same thing as he was looking at the fire through a porthole:

The next thing there was a series of minor explosions as the Benzol drums ignited and exploded. By this time the fire had begun to get a serious hold, and a large column of black smoke rose from the deck of the stricken ship. I turned to Jock standing beside me and said, "They'll never get that fire out," and I had hardly spoken the words

when there was a blinding flash, an awful shudder and a bang which made me think it was the end of the world.... There was a momentary stillness then boiler tubes, rivets and jagged steel plates were flying all around us. I saw a large piece hit the foremost funnel of our ship and completely flatten it....

In Dartmouth, Mrs. A. C. Pettipas said she counted nine minor explosions, each three seconds apart, before the main blast. Wondering what was happening; she raised her window and leaned out to call to two women on the street below.

...a blinding sheet of fire shot about a mile into the area and covered the whole sky. Then a violent concussion rent the area.... A great black ball of smoke rose up to about four or five hundred feet and out of this came lurid cardinal-colored flames. It was a magnificent though terrifying sight.... As I leaned out to call I saw a blinding sheet of fire shoot a mile high in the air. It seemed to cover the whole sky.

Mrs. Pettipas was blown across the room but, because her window was open, she was not struck by flying glass.

Others, even those well out to sea, had similar descriptions:

I saw an immense volume of smoke shoot up to a very great height with two red, angry looking flames of fire projecting some distance above its summit. The smoke looked like great balls of black wool but was black in the center. The flames were visible

but less than a second, like a flash of lightning, and could be seen in several places thru the smoke. (The captain of the *Acadien* 24 kilometres out to sea.)

...a great column of white smoke and flames was observed, rising above the sea horizon in the direction of Halifax.... The morning was fine and clear. Smooth sea and no clouds in the sky. The column of flame and smoke hung long enough for its character and sources to be discussed and its bearing taken. A camera was sent for, to photograph it, when the shock of a terrific explosion was heard, and the column of fire turned to dense smoke. It was surmised that munitions ship had been blown up. *Tacoma*, then more than fifty miles from Halifax, heard the explosion so distinctly that she sounded to General Quarters. (The lookout on the US troop ship *Von Steuben*, 35 kilometres from Halifax.)

Audley Griffin, the young man who was en route to school when he saw the fire engines, wasn't sure what he felt.

Suddenly there was this curious sensation.... I slunk into a doorway right beside me and put my arms up over my head and all of a sudden the glass of the doorway collapsed on top of me and the little finger on my left hand was hanging by some skin.

Many who watched the plume rise thought it was beautiful. Rear Admiral Chambers described it as a "most wonderful cauliflower-like plume of white smoke, twisting and twirling, and changing colour in the brilliant sunlight of a perfect Canadian

early winter morning." Although it wasn't evident at the time, Chambers and the others who saw the explosion were describing the arrival of a new age. Years' later, American scientists on the Manhattan Project would recognize that: they studied what happened in Halifax so that they could better grasp the destructive potential of a new weapon called the atomic bomb.

LESSONS FROM THE EXPLOSION

The story of the explosion continues to live not only in the memories of the small but still vibrant group of survivors but also in the stories passed down the generations. Many persons can quote from memory the stories of the explosion their parents and grandparents told them. Although the exhibits about the explosion are not as popular as the ones on *Titanic*, thousands of persons annually visit the Maritime Museum and the Citadel in Halifax as well as the Dartmouth Heritage Museum to recall the events of 1917. At these locations, they can see photos and read about what happened for still another time. In Dartmouth, they can even see one of *Mont Blanc's* two cannons. It was blown about 3.2 kilometres to Albro Lake and passed through a number of hands – for a while it was in front of former Mayor A. C. Johnston's home – until S. C. Oland presented it to the Museum in 1967.

The explosion also lives on in literature. The first and arguably the most significant Canadian historical novel, Hugh MacLennan's *Barometer Rising*, is set

around the explosion, and there are three other novels, one short story and a Joan Payzant's delightful children's book *Who's a Scaredy-Cat?* that use it as a setting. An A & E television special on the explosion draws a reaction every time it runs. There are also a number of significant works of non-fiction including Michael Bird's *The Town That Died* and Janet Kitz's *Shattered City* and new publications keep appearing. Alan Ruffman and Colin Howell had no problem finding enough material to fill *Ground Zero* in 1994. There is also a vignette that is repeated continually on Canadian television telling how Vincent Coleman returned to his telegraph key trying to warn incoming trains.

Many individuals performed remarkably well in the wake of the explosion. There were women like Gladys Harris, who managed to help her four children escape from a wrecked house; Violet Smith, who, though seven months pregnant, found the strength to wrestle open a jammed door; Annie Greenough Chapman, who forgot her own concerns to rescue her infant child; and Gertrude McAuley, who threw herself over her father so he would not be hit on the head by flying debris. There were men like J. J. Spruce, the gunner who suffered severe burns when he rushed into a burning house and rescued a 10-year-old child; Joseph Hinch, who, while on the way to his children, stopped to assist others and even found time to splint the fractured leg of Sister Cecilia Lawrence; Charles Clark, the passenger on the Boston Express who used

effectively his meagre supply of brandy and the little first aid that he knew; Roy Laing, the bank teller who started directing military personnel when it was clear someone had to take a leadership role; William O'Reilly and the unknown warrant officer from *Niobe* who rescued some of those washed overboard by the tidal wave; and Commander John W. Hopkyns, the engineering officer of *Highflyer*, who put his men to work helping others in Dartmouth in what is often called the best tradition of the service.

There were the persons who ignored the warnings of a second explosion to remain on duty or keep assisting others. These included Private J. Eisner, who remained at his post at the Wellington Barracks; Mrs. Albert Sheppard, who kept funnelling medical supplies into the North end when others were fleeing and shamed men into sharing her bravery; Edith Bauld, Ralph Proctor and C. J. Burchell, who all kept driving their cars as ambulances in and out of the North End; and the unknown firefighters who stayed on duty despite the same warnings. There were the volunteers who assisted with the gruesome tasks of amputation and enucleation and just comforting the injured and dying, Marjorie Moir and L. L. Maguire and James Crerar McKeen; Annie McIsaac at Mount St. Vincent, who used her clothing to bandage the wounded; Marylee MacAloney, the student from the Agricultural College who, despite her own illness, helped at the Truro Court House until she was exhausted; and

Dorothy McMurray, who spent the night at Camp Hill, trying to comfort the injured and the dying.

There were also those with skills or in positions of responsibility who lived up to what is expected of such persons, like Avery De Witt, the physician who risked his own health as he carried on for days assisting the injured and dying; Leo Tough, the police officer who, though suffering from tuberculosis, remained on duty day and night at the morgue in the basement of Chebucto School; Henry Colwell, the quiet deputy mayor who put together a remarkable relief organization; and the often abrasive R. T. McIlreith, who, despite his own advancing years, accepted the leadership role thrust upon him. There are all the physicians who attended the injured in their own homes, persons like Captain A. McD. Morton, who not only assisted those who came to his home and later worked at Camp Hill, but even found time to end a grueling day by helping set type at the newspaper so there would be at least some report of what had happened. Perhaps he was trying to find some way of doing something not directly related to the carnage around him.

There are the more obvious heroes, men like Vincent Coleman and James W. Harrison, the Furness-Withy manager who, after using his car to drive injured to hospital, boarded a boat loaded with explosives and persuaded others to assist him getting it towed away from the docks;

as well as Thomas Davis and Robert Stone, the seamen who took the same risks when they boarded *Musquash* and later received the Albert Cross from the King because of the risks that they took. There were the persons who, with remarkable insight, saw that others got assistance that they needed, persons like Claire McIntosh, Lady Superintendent of St. John Ambulance, who conceived and directed the first canvas of the impact area, and the volunteers, mainly women and many of them Salvationists, who worked with her; Colonel Paul Weatherbe, the retired military engineer who designed a medical response system that is still impressive when viewed in the light of all we know today; and Fred Pearson of Massachusetts, who realized there was something wrong with the way relief was being administered and managed to come up with a brilliant idea to make things better.

There were also those who did what anyone would have expected and would have been embarrassed had someone tried to honour them for it, persons like George Graham, the head of the Dominion Atlantic Railway who walked through the debris and the dead to send out the first appeals for assistance; W. A. Duff, the civil engineer who sent out the crucial messages calling for help, who got the rail line working to the South end and who found time, even before that, to drive injured to hospital; Dr. C. C. Ligoure, who ignored the discrimination he had been subject to and treated all those who needed his help; H. D. Nicholas, the

Pullman porter who helped him; and General Thomas Benson, who never let the bureaucracy force him to blame others for the sufferings of his soldiers; and the Prime Minister, Sir Robert Borden, who, though in the middle of a bitter election campaign, cancelled his electioneering to be with the people he had represented in Parliament. There are also the scores of women and men and children whose names will never be known because no one recorded their acts of compassion or bravery or whose names never made it to someone collecting accounts of individual behaviour or someone writing a book about what happened.

Some persons are remembered because stories about them were published at the time or because Archibald MacMechan collected their accounts when he began work on his official history. Other accounts, however, were not recorded except in private memoirs or by word of mouth. They emerged only as a result of the research for this book. This was especially true of those of less prominence. A review of MacMechan's work shows that his collection of anecdotes was somewhat selective:

Even though most of the destruction occurred in the North End, only twenty of his 122 personal narratives came from Northenders. By contrast, he took testimony from fifteen middle-class female volunteers, including nine

Dalhousie students. MacMechan knew little about the North End, its people and its social life, and made no attempt to overcome his ignorance.

The reviewer might have added that MacMechan didn't even go to the North end to see for himself the impact of the explosion.

NOT NECESSARY

Even while admiring those who performed so well in the wake of the explosion – those whose names are well known and those whose stories are recorded for the first time in this book -- it is hard to avoid thinking that what those persons did would not have been necessary if only the Americans had not loaded *Mont Blanc* with such a deadly cargo, if only the British had sent such a ship to a safe anchorage in Sydney instead of Halifax, if only the naval authorities had listened to the harbour master, if only someone had made certain that when *Mont Blanc* entered harbour there was no outgoing traffic, if only Captain Aime LeMedec had been in Halifax before and had known how safe it was close to the Dartmouth shore. While those "ifs" are all legitimate with the benefits of hindsight, it is surely more productive to ask whether our own communities are better prepared today than the authorities and the citizens of Halifax were in 1917. Rather than search for scapegoats, it is also more useful to ask: what does the explosion tell us about the

way communities react to devastating events and what lessons can we learn from the explosion that might make us better prepared today?

It is certainly true that in most western countries, communities are better prepared than Halifax was in 1917. Most communities have reviewed the threats that face them and most communities have emergency plans to deal with those threats and test those plans on a regular basis. In fact, in many places hospitals must test their casualty plans in order to remain licensed. There has also been a vast improvement in warning systems, especially for environmental hazards and those systems are tied into the communities that need the information. The Hurricane Warning Center in Miami, Florida, for example, is linked to emergency operations centres through the hurricane areas. Environment Canada was tied by computer to the Regional Roads department in the Regional Municipality of Ottawa Carleton and kept it fully informed about the incredible series of storms that led to the 1998 ice disaster in Eastern Canada. There are also signs of increasing attention to mitigation, first in the United States, now, with the power of the insurance industry behind it, in Canada. There are still problems, however, when legal requirements are not followed. After Hurricane Andrew it was discovered, for example, that building codes were not being enforced. The same allegations surfaced immediately after the devastating earthquake in Turkey during the summer of 1999.

There are other concerns. For one thing, there is a lack of awareness of the crucial need for public information about the nature of threats and about appropriate response. There have been some impressive achievements: the children's television show, *Sesame Street*, has done some beautiful work on fires and hurricanes. Yet even today, individuals die in destructive incidents because they do not know what to do – yet the choice that is made may determine who lives and who dies. In the Tangshan earthquake in China, where at least a quarter of a million died, the chance of survival went up if persons took immediate protective action, such as diving under a table or bed as soon as they felt the first tremour. Yet in a tornado in the United States, many died because they tried to escape in their vehicles instead of remaining in their homes.

There is also a lack of awareness that disasters may come in different forms. In January 1998, for example, an ice storm caused a buildup as great as 110 centimetres on trees and power lines in Eastern Ontario and parts of the neighbouring US states and left one-fifth of Canadians without power. Although most communities opened shelters, most victims preferred to stay at home, even when the temperature dropped to well less than freezing. Disaster plans that assumed a site-specific incident and that persons in need of help would go to shelters proved inadequate. In Ontario, the response was hampered by the fact that the storm struck just days after a number of municipal

boundary changes. Many community councils had yet to meet yet alone create emergency plans.

The story of Halifax also confirms something the world's leading disaster scholar, E. L. Quarantelli, has been arguing for some years; that is that disasters are not large accidents but something very different and that catastrophes are very different again. Emergency planners still keep planning for emergencies as if they will resemble air crashes, toxic spills and train wrecks. They are still often caught short when there is devastation over a wide area or when emergency services are themselves victims of the incident. They are never fully prepared to deal with thousands of dead. What happened in Halifax was very different from an air crash and very different from a tornado. The explosion not only had an impact on the city; it drastically reduced its response capacity.

Unfortunately, those like Quarantelli who study disaster predict that the future will bring us more severe and different types of emergencies. There are many reasons to think those predictions are accurate. First, there are now more people living and that means there are more people who can be affected by a disaster. Second, more of those people are living in urban areas increasing the chance that when a disaster does occur it will hit a population concentration. Third, we are continually inventing new and dangerous things that can affect our survival. Fourth, events in one country can now affect others far, far

away – Chernobyl is a good example. Fifth, our increased dependence on technology means that we will experience new types of disaster – the 1998 ice storm is one example. Fifth, many disasters – such as volcano eruptions -- occur at long intervals. We have now been living long enough in some areas to increase the chance that we will be exposed to a devastating event. This is especially true for Canada and the United States.

Of course, many of the threats that the future will bring will be so-called natural events – events caused by windstorms including tornadoes and cyclones and by floods and earthquakes, snow emergencies and other types of weather phenomena such as ice storms. Others will be human failures. However, it is becoming increasingly clear that the two are closely linked. For one thing, many so-called natural disasters are the result of human activity: destroy wetlands and you increase the chance of flooding; build homes in a flood plain and you increase the chance to widespread destruction during a flood. For another, there is now research that shows that natural hazards create other types of problems such as toxic spills even though this often goes unnoticed.

Most important, what happened in Halifax in 1917 suggests that it is very difficult to convince governments or individuals that there are threats to their communities – and to get them to do something. It is now known that there are now major earthquake threats, for example, in

Vancouver on Canada's West Coast and along the New Madrid Fault in the US Midwest, yet most persons continue to think of California as the major place at risk in Canada and the United States. When incidents do occur, these always seem to come as a surprise. People in Edmonton, for example, were in disbelief when a tornado ripped apart the East Side of their city and neighbouring Strathcona County in 1987 and people in Eastern Canada were astonished when a series of ice storms caused devastation in 1998 as were people in Calgary when floods rolled through their community. Their reaction was much the same as the reaction in Kobe, Japan and Tangshan, China when earthquakes caused enormous devastation. In both countries, these communities were *not* thought to be high-risk locations. Yet tornadoes are common in the Canadian prairies, ice storms are far from new phenomena in Ontario and devastating earthquakes have often hit Japan and China, though not those precise locations.

On the more positive side, the story of Halifax also shows that no matter how ill prepared people may be for disaster or catastrophe they respond well once something happens. The belief that victims will be dazed and confused, unable to cope is a myth perpetrated by the media – and the media did perpetrate those myths after the explosion -- but they are only myths. The women of the North End, the passengers on the Boston Express, the individual soldiers, the sailors from the various warships in harbour, the Americans

who came to assist, all show that. The way the uninjured survivors looked after others and the way rescue workers stayed on the job despite warnings of a second explosion also shows what scholars have also established – that panic is also a myth. In addition, the explosion did not – as media stories often suggest – turn people into criminals. If there was any looting, it was minimal.

Today, the same sort of positive community response occurs when an incident affects others. That was shown by how quickly small seaport communities around Peggy's Cove, Nova Scotia responded when a Swissair jet crash offshore in September 1998 and how quickly effective links were made between the fishing vessels, the Canadian Navy and the Canadian Coast Guard. Yet, time and time again, the response to major incidents -- no matter how well meaning and how generous – is difficult to control. After the Tangshan earthquake in China, with a quarter of a million dead, one of the major problems was caused by the fact that the Peoples' Liberation Army responded in such large numbers that the soldiers blocked the access roads. Moreover, they arrived without sufficient water and became a strain on the devastated community. They created exactly the same sort of problems that convergence created in Halifax more than half a century earlier.

There is another lesson from Halifax that was not mentioned at the start but must be evident from the story that unfolded.

Disasters and catastrophes do not strike everyone equally. Some persons in society are more vulnerable than others. It was the poor who were the victims in Halifax, not the rich. That is because the place where you live has an enormous impact on your exposure to threats. This lesson, too, is being continually underlined. Recent Japanese research done after the devastating Kobe earthquake has exposed the special problems of those who were hearing or visually impaired. The first had problems hearing the announcements about victim services; the second group had difficulty finding their way around a changed community. In addition – the story of the explosion -- and this is only touched on – shows that disasters and catastrophes generate both losers and winners. That is not and is not meant to be a condemnation of those who gain, but it is a fact. The merchants of Massachusetts, the ones who provided the furniture for the victims, were paid for their products. They were in every sense winners. The families in the North End who lost their homes and quite often their breadwinners were clearly losers.

While there is an outpouring of human kindness in the immediate wake of such events, before long there is increasing pressure for a return to the way things were before an incident. As the chapter on red tape shows, there is also a return to the normal operations of bureaucracy. Everything must be accounted for and/or returned. It would not do to let generosity go undocumented. In his doctoral dissertation, Samuel Henry Prince argued

that catastrophes shake up society and lead to change. He also said the disaster led to a great deal of mixing among the classes. The records do not support such a conclusion. Even at the height of the housing problem few persons in the wealthier parts of the city welcomed the poor into their homes. The poor shared accommodation with each other. The wealthier took in visiting physicians and nurses. It was also not long before those who were least affected wanted to put the explosion behind them: that was why the willingness of the federal government to take over relief was so widely welcomed.

Finally, it must be clear from Halifax that in the wake of human disasters everyone wants to blame someone. In Halifax, the fingers finally pointed to the crew of *Mont Blanc*. It should be evident now that even if *Mont Blanc's* captain, Aime Le Medec, made the navigation errors that led to the collision, neither he nor his officers was in any way responsible for the cargo *Mont Blanc* carried or the way it was loaded. Nor did they have anything to do with the decision to come into Halifax or to anchor in Bedford Basin. Others -- the Americans, the French, the Admiralty and the authorities in Halifax harbour -- made those decisions. They were also a direct result of the war. Given all out war, the risks created by munitions traffic were to some extent understandable as the spillover effects from the bombing of Yugoslavia has shown so clearly – destruction that is now called “collateral damage.” Even if those risks were unavoidable, they could have been

accompanied by a program concerned about public safety in the event of a mishap. It is, of course, important to review events like the explosion and to learn from them. It is of less value to start finger pointing: disasters, like all complex events, never result from a single cause.

During the Second World War, when scientists from the Manhattan Project (builders of the atomic bomb) took a look at what happened in Halifax their interest was in physical destruction, not in individual, group or community response. In retrospect, it might have been more productive if they had looked what happened from a social science viewpoint. For the response in Halifax – and the clear evidence that a civilian population can rebound under the most severe impact – could have helped military planners understand why the bombing of England, the bombing of Germany – even the fire storm in Dresden – would not be successful in destroying the will of a people. Yet it seems that lesson has not been learned. World War II was followed by an incredible bombing campaign against the North Vietnamese, yet the people of Hanoi persevered. And even as this book was being edited, there were nightly reports on the news of NATO warplanes attacking Yugoslavian and Serb forces in Kosovo and continuing reports of the fact that these destructive attacks were not having the impact NATO planners had expected. If anything, they were uniting the people of Yugoslavia against their common foe though eventually they did lead to an

agreement that the Serbian Army and Police would withdraw from Kosovo. Even today, more than 80 years after the 1917 Halifax explosion, there are important lessons to be learned and one of the most important one is that people have incredible resilience.

THE GREEN HILL PARK SHIP EXPLOSION OF VANCOUVER HARBOUR: 1945

By: *Bert Struik and Larry Pearce*

Larry heard the thunder, felt the house shake and the windows rattle. When you're an 11 year old boy, it's all an adventure; sort of. He could figure out what happened later. Right now he had to answer the phone. His mother, who worked at the Terminal City club on West Hasting Street, was calling to make sure he was okay. She was scared, because, like the whole city, she heard the massive bang from the waterfront that day. Her son was home alone, in their apartment at the corner of Dunsmuir and Georgia which was near the port.

Many heard and felt the explosion that March 6. Those near the waterfront saw windows blow out of buildings for blocks and blocks from the wharfs. Hundreds of windows were blown out in downtown Vancouver. Whole office blocks had scarcely a pane of glass intact. Everyone was running; running to the blast to see what happened and away from the blast to save their lives. The war against Japan was in its

final stages and a lot of people thought the Japanese had begun to bomb the city.



Green Hill Park during its explosions at Pier B-C Vancouver Port, March 6, 1945. Vancouver Maritime Museum.

The side and mid-deck of the Green Hill Park merchant ship had blown out and it was on fire. It was at berth at the Canadian Pacific docks adjacent to downtown Vancouver. Its cargo was being loaded by longshoremen and the ship tended by crew members. Others nearby worked on other ships and the operation of the wharf. Eight of those people died in the blast and many others were injured.

“The main cargo of the ship was sodium chlorate but a fair amount of general cargo was loaded, too. And known supposedly to only a few people was included some barrels of

liquor. Well, when this was stowed away, a lot of general cargo was stowed in front of it, so it was well hidden. But it's impossible to keep anything like that secret from longshoremen and it wasn't long before a narrow passage was cleared back to where the liquor was stowed.

“One by one, the men would come down into that hold to draw off a drink, or fill a bottle to take home in a lunch box. A considerable amount of the liquor had been spilled out of the barrels onto the deck and that narrow passage was full of fumes.

The last man to do so had already had a few drinks and he couldn't see so well down in there.

“So he struck a match.”¹ Boom!

It is not a good idea to light a match near flammable liquids in a confined space with explosive material nearby. Nor was it a good idea to put all these things together without letting everyone know.

The consequences of that blast taught Canada another lesson. It took ruined lives and a disrupted economy to make us pay attention. The lesson was partly learned through the subsequent inquiry and new regulations (still with loopholes of convenience). The true cause of the

¹ Davis, Chuck, 2012: The History of Metropolitan Vancouver;
http://www.vancouverhistory.ca/archives_greenhill_park.htm

explosion was learned 35 years later. It never came out in the inquiry because it implicated many throughout the shipping system.

John Stanton was a lawyer for the union during the inquiry and shared his story of the events in an article published in *"The Northern Mariner"* (1992). This description of the event relies on his account, documentation by the Maritime Museum, Chuck Davis, the journalist and historian, and articles in the Vancouver Sun and The Vancouver Daily Province from March 7 to 25, 1945. Stanton made the point that British Columbia had never experienced anything like this before. It appears that our imagination about what could happen, cannot in itself, spark real changes of behaviour that improve safety. In the adage of stories from every Emergency Management Conference I have attended: "someone had to die first".

The 7,168 tonnage SS Green Hill Park was built during World War II as part of a Canadian fleet of nearly four hundred merchant vessels. Finished and launched in November 1943, the ship was owned and operated by the Park Steamship Company Limited, itself wholly-owned by the Canadian government. Stanton describes management of the steamship line as an incestuous relationship between those operating the Park Steamship Company, private shipping companies (in this case the Canada Shipping Company), other businesses and running the country. Seaman worked for the Park Company and

longshoremen were employees of the Empire Stevedoring Company. Each of these factors led to acts that increased disaster risk.

The ship's cargo space was divided into six compartments, five for cargo and one for the boilers and engine. Each compartment was divided into a hold approximately 10 m (30') deep and upper level 2.4 m high (8' of the "tween decks"). No. 3 Hold was in the middle of the ship, under the bridge and in front of the engines. It measured 15 metres square. Cargo of the 'tween decks of No. 3 exploded on the right side of the ship, which happened to be opposite the pier. The steel wall (bulkhead) between compartments 3 and 2 was blown out, killing five longshoremen in compartment 2 and a man escaping from compartment 1. Two seamen in the cabin above the explosions were killed. Nineteen other workers were injured, and seven firemen were hospitalized because they breathed ammonia fumes. 100 men were working on the ship at the time it exploded.

The cargo being loaded that February 27, was acquired by the Australian government. Most of the cargo was lumber, newsprint and tin plate. Many other goods were included of which three would have required special attention because they are dangerous: 94 tonnes of sodium chlorate, barrels of over-proof whisky and distress flares. Other cargo included pickles, cloth, sunglasses, lamps, light bulbs, books, radio equipment, and knitting needles.

The sodium chlorate was packed in 1,785 steel drums. It had been transported by rail from Quebec and unloaded at the pier five weeks before being loaded on the ship. Some of the drums had faint stencilled warnings saying: "Sodium chlorate, highly inflammable under certain conditions. See instructions inside". Arthur Willoughby of the CPR had consulted explosives expert D.W. McNab who said that the substance was dangerous and each drum should have had a yellow warning label attached by the manufacturer. The barrels had crossed the country without labels. Rules forbade storage of the sodium chlorate on a pier for more than 48 hours, so it was shipped to freight yards in rural Coquitlam to await loading on the ship a month later. The yellow labels were never added ("not my function").

The whisky was 60 proof and its vapour highly explosive. Whisky caused lapses of good judgement amongst longshoremen as they were apt to look for opportunities to make off with some of the whisky. Leaks in the barrels, whether from poor design or created, released highly inflammable vapour.

In the meantime plans for the loading of the ship were being drawn up by Thomas Heward of the Canada Shipping Company (a private shipping firm), commissioned to manage the Canadian Government's Park Steamship Company Limited. The CEO happened to be the same for both companies. Mr. Heward did not know sodium chlorate was inflammable and

explosive, and it was not in the records. The British government's Ministry of War Transport had recently sent a letter to Canada Shipping Company asking that dangerous cargos be properly handled. Regulations listed in the letter stated:

"Notice to Ship-owners and Ship Masters re Carriage of Dangerous Goods in Ships:

Not more than ten tons of sodium chlorate must be stowed in any one hold;

Sodium chlorate must be stowed away from explosives (such as flares), with the ship's engine-room compartment separating them;

Sodium chlorate must be stowed away from any combustible material."²

Much discussion ensued at the inquiry about how the sodium chlorate, whisky and flares ended up in the same compartment, how basic instructions and knowledge about the dangers of the cargo were ignored, and how the regulations around their storage were not followed. The storage plans had passed through the hands of several responsible officers who knew about the dangers of sodium chlorate and some who did not. Stanton (1992) described the role of each of the key players in the tree of responsibility for the cargo

2 John Stanton, 1991: The Green Hill Park Disaster; The Northern Mariner, p27.

and makes it clear that the cause of the disaster lay with all those men.

Extensive, prying questions at the inquiry about how the cargo could have been ignited ended with the inconclusive judgement that a match ignited whisky fumes, even though the whisky had been packed behind much other cargo. From information shared many years later, it was the right answer.

THE FIRE AND EXPLOSION

As reported at the inquiry, longshoreman George Pottinger, the foreman working with Russell Drummand on No. 3 'tween deck, saw smoke coming from the starboard side of the cargo. Chief officer John Adank also saw the smoke coming from the cargo. He had been outside on the deck to catch some air and rushed back into Hold No. 3. He moved an item of cargo and emptied a fire extinguisher toward the smoke. After two empty fire extinguishers, he played out a hose across the cargo to the smoke and sprayed water. Longshoremen Harry Buckholtz, Russell Drummand and Stanley Harris helped Adank with the hose, which got out of control. It knocked Adank down, who in the now thick smoke found his way to the ladder and climbed out of the hold. As he left he heard a "fierce sizzling sound". He got out of the hold at the first of the explosion. Everyone in Hold 3 eventually got out surviving the blasts. Six longshoremen in Holds 1 and 2 did not.

Before the first explosion, someone called "Everyone off the ship". The longshoremen killed in Holds 1 and 2 were in the bottom of the holds and had to climb up 10 m (30') of vertical ladder to the 'tween decks and then 2.4 m (8') to the main deck through the mast house. One of them, William Lewis from Hold 1, did reach deck level. He was killed by the steel door of the passageway he had to get through to reach the outside. As he reached for the door the second explosion ripped it out of its frame and into Lewis. The passageway was so small, only one door could be open at a time; in this case it was the wrong door at the wrong time. Thomas Johnson and N.K. Weir had been following Lewis up the ladder from Hold 1. They could not get out through the passageway, it now being blocked by the blast that killed Lewis. They retreated to the smoked filled, 'tween decks of Hold 1, and shook hands in resignation. They ended up surviving the next explosions and eventually were able to climb to safety.

In Hold 2, the urgency of the call to get off the ship was not apparent, and some went for their jackets as if on their way to lunch. Nine men survived this hold. Sickavish and McLean crawled under a hanging load of lumber and over cargo to the solitary access ladder. McLean was the last to escape, having his face and hands burned as he got out.

The sound of the exploding cargo attracted many tugboats and the city fire department to the Green Hill Park. Fire engines poured water onto the ship from every possible

direction and firemen rescued those who had jumped or been blown overboard. During the operation, flares continued bursting and shooting into the sky.



Green Hill Park as it is sprayed from fire boats. The Vancouver Sun Newspaper.



Starboard damage of the Green Hill Park as caused by the explosions, March 6, 1945. The Vancouver Sun Newspaper.

Tug operators rushed to clear the area of ships and barges to contain the fire and to move the burning Green Hill Park away from the pier. Douglas Dixon, captain of the tug Charles H. Cates 5, recalled the struggle to tow away a blazing barge of lumber. Other tugs went to work with hoses and hauling away another ship to make it easier

to remove the burning vessel. Nine workers and other crew aboard the Green Hill Park at its stern, the area least affected, assisted the tugs Charles H. Cates 5, Kyuquot and RFM, to fix towlines. Despite the danger, the naval tug Glendevon came alongside several times to rescue men who escaped by sliding down ropes. First Officer Horsfield, Third Officer Stuart S. McKenzie, and crewman Clarence Wallace went back aboard the Green Hill Park to help the tugs get her out of the harbour. They worked on unbearably hot decks.

The tugboat men did what they could, even though more explosions could occur. Cargo in Holds 2 and 3 still blazed fiercely. The plan was to beach the ship on mud flats across the harbour. On the way the vessel turned a complete circle, a consequence of being hauled from the stern. It could not be steered because the wheel house was over the fire. So the plan was changed from beaching the ship. Instead it would be taken out into English Bay (the outer harbour) and scuttled. That didn't work.

The tugs got it to Calamity Point in the First Narrows, where the ship turned again and beached on the gravel. Eventually it was pulled off and towed into deep water under the Lion's Gate Bridge. After being pulled a distance along the south shore the ship beached on the rocks at Siwash Rock along Stanley Park. Vancouver's fireboat, J.H. Carlisle, had by then arrived and pumped sea water onto fires that still raged. Captain Dixon used his tug to keep the fireboat in place because the pressure from the

nozzles pushed the fireboat away from the ship.

Horsfield, McKenzie and Wallace were taken off by a police boat a couple of hours later. Firefighting continued for three days. Locating the bodies trapped on the ship could only be done the next day. Once safe, the ship was towed back to the harbour. The Green Hill Park was sold for 9% of its original cost, repaired in 1946 and later sailed from Vancouver as the *S.S. Phaex II* under new ownership. In 1967, she was sold as the *Lagos Michigan*, to Formosan ship breakers for scrap.

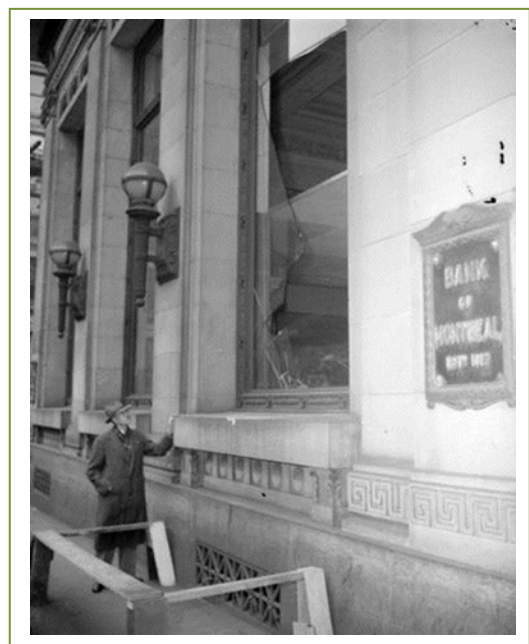
The explosion damaged the CPR pier B-C and several nearby buildings, particularly parts of the CPR train station. Their blasts blew out windows and light bulbs of buildings along the Vancouver streets and avenues near the pier. People rushing to the windows of businesses along those roads were hurt as subsequent blasts blew the windows onto them. Little appears to have been reported about the damage to the pier, buildings and the rail yards. Cargo shot into the air by the blasts was scattered through parts of Stanley Park and the nearby streets. Sunglasses, pickles, rolls of newsprint, flares; all were reported to have been blasted into the sky. Damage from this falling debris was not reported. Apparently an undamaged table cloth from the ships dining room landed on the Shell Gas barge with no effect.

In total it was estimated the day after the explosions that damage caused would

amount to \$20,000,000 of repairs (2013 Canadian dollars). Repairs for the boat were most of that cost (\$13,500,000 in 2013 dollars). Estimates for replacing the windows were \$350,000 (2013 dollars).



Damage along Pier B-C, CPR docks of the Port of Vancouver, March 7, 1945. Vancouver City Archives.



Windows blown out of the Bank of Montreal Building on Granville Street, Vancouver, BC.

The half-inch thick glass was not available in town for replacement. Vancouver City Archives.

THE HAZARD

Rules and protocols were in place at the time to ensure safe shipping of dangerous goods and loading them as ship's cargo.

The drums of sodium chlorate were not labeled explosive by the manufacturer, as required. Arthur Willoughby of the CP Rail, the shipper, asked explosives expert D.W. McNab about sodium chlorate and learned it was dangerous and each drum should have had a yellow warning label. Willoughby had the barrels stored away from habitations and did not affix the required yellow labels.

Thomas Heward, superintendent of cargo (supercargo) of Canada Shipping, created the loading plans for the SS Green Hill Park from the cargo list. He was meant to ensure that incompatible cargoes were stowed apart and that the cargo would have the ship well-balanced. His plans were approved by Alexander Gait, marine superintendent and Heward's direct supervisor. In turn the plans were given to and assumed to be approved by the ship's First Officer, Alan Horsfield.

Canada Shipping's manager, Kenneth Montgomery, had several key roles; make sure the cargo was safe and that it was loaded quickly to minimize expenses and maximize profit. Montgomery knew that sodium chlorate was explosive, and had

read the recent letter from the British Ministry of War Transport requesting safe stowage of sodium chlorate. He put that letter on the desk of his marine superintendent, Alexander Gait.

Gait had instructed Heward that the sodium chlorate must be stowed in the 'tween decks, though not why, which was for easier access in case of a fire. The 'tween decks of Hold 3 was used with the flares and the whisky and the 'tween decks of Holds 4 and 5 were empty. Heward did not know the sodium chlorate was dangerous, and that CPR had stored it at Coquitlam for that reason. Heward left copies of his plan for Captain John Wright and First Officer Alan Horsfield, with no verbal summary or follow-up.

First Officer Horsfield had authority to overrule Heward's plan. He visited Hold No. 3 during loading but did not know that dangerous cargo was being loaded, apparently trusting Heward's plan, rather than having read it.

Carl R. Bissett worked for the federal government as Vancouver's Port Warden, responsible for checking the seaworthiness of certain ships before allowing them to go to sea. He was a retired sea captain. He had two jobs, the other as private marine surveyor. As Port Warden, Bissett had no authority at all to issue certificates of seaworthiness for ships with cargoes like the Green Hill Park. Yet for nineteen years he had done so, and insisted at the inquiry

that the Green Hill Park cargo, as stored, was safe.

TRIGGERS

The hazard was created by decisions and non-decisions about the storage of the dangerous cargo aboard the SS Green Hill Park; the trigger for the disaster, as concluded by the inquiry, was:

“a lighted match carelessly dropped by a longshoreman into spilled whisky”³

That conclusion, reached by interpretation derived from evidence about the ship and by inference that longshoremen stole liquor if they could. The person meant to guard the whisky, did not. The complete system of people meant to ensure that whisky was not shared or sold from cargos, did not accomplish that job. Stanton concluded that since everyone profited from such pilfering, that, in essence, everyone let it happen.

The commission concluded a passageway was made to gain access to the whisky. Hot water bottles found in a jacket and lunch pails that were soldered to hold liquid were taken as clues that they were designed to transport stolen whisky.

“Early in 1980 a ninety-one-year-old longshoreman told Vancouver newsman Chuck Davis what he learned from another longshoreman back in 1957 when both were in

hospital. The other man, called Joe, did not expect to live. He told his friend that a narrow passage had indeed been cleared back to the liquor.

One by one men took a drink or filled a bottle. Whisky was spilled. One man, already tipsy, could not see well and struck a match. Joe had kept his own counsel for twelve years. His friend guarded it for another twenty-three.”⁴

ANALYSIS

Stanton concluded the inquiry was unable to fully define the problem and to recommend encompassing solutions because certain personal relationships and actions were protected. Political relationships were protected from exposure by how the inquiry was established. Relationships in petty crime were never fully shared, and mistakes and bad decisions were in part covered up.

It is difficult to learn lessons from a disaster when all the information is not available. Disasters themselves are often caused when information is not available or is ignored. Both appear to have been at play here.

The event was caused by risky behaviour, in part illegal. The risky behaviour included ignoring the potential consequences of bad

3 John Stanton, 1992: The Green Hill Park Disaster; The Northern Mariner, p. 33

4 John Stanton, 1992: The Green Hill Park Disaster; The Northern Mariner, p. 33-34

decisions about handling and storing the cargo, and not reviewing the decisions. The illegal behaviour that triggered the event was hidden as much as possible. Each of these situations in turn were symptoms of the cause: a trait to be self-serving and inconsiderate, augmented by a lack of intelligent imagination.

This trait, which we manage with rules and protocols during regular operations, appears to disappear during times of direct adversity. Professional and volunteer responders, even those who apparently proved selfish and inconsiderate during daily operations, act selflessly, bravely and with determination to save their fellow citizens during a disaster. They end up saving their fellows from their bad decisions and indecision.

One protocol which may still be considered, and which would be universally useful in managing results of our traits would be some form of reconciliation for perpetrators of disasters who fully shared how they contributed to a disaster. Inquiries and legal proceedings with the aim of assigning blame and punishment create barriers to the release of the truth about the causes of disasters. Set the scene that truth can be spoken. Whether it was the person who:

- lit the match,
- stole the whiskey,
- bought the whiskey,
- made cargo plans without knowledge of material properties, rules or consideration,

- assumed cargo plans were done well and did not check as required,
- approved plans without authority or due care,
- cut corners to make more money,
- had so much wealth and power that the government needed you and your colleagues on their side, even if you condoned high-risk activity,
- designed ships without sufficient escape hatches or warning systems,
- did not inspect harbour management decisions and the decision processes,
- or other,

they should understand they are one part of a complex web of activity and decisions, that as a whole sets the stage for triggering a disaster; or not.

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THE GENTLE GIANT: OUR RESIDENT ATOMIC BOMBER

By: **Jim Roddick**

Emeritus Scientist, Geological Survey of Canada

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When the giant aircraft slammed into a remote glacial cirque in northwestern British Columbia during a late-night blizzard fifty-three years ago, it was the first unplanned destruction of an atomic bomb. It created both a mystery and a worry, but I knew nothing about the incident when, six years later, we first came across the twisted aluminum wreckage.

In the summer of 1956, one of my Geological Survey of Canada field teams reported finding some aircraft parts during a routine ridge-traverse. Even though it was late July, most of the wreckage was encased in glacier ice and covered by snow. I began checking it for possibly significant serial numbers. A fragment of aluminum cowling was jutting out from the snow. The words

on it were wholly unexpected, Engine No. 6! This was definitely not some bush plane which I was expecting; it was a very big aircraft. Although a geologist, I was also a pilot and had some knowledge of the aircraft of the day. I was pretty sure I knew what it was. Lettering on a blister cover soon confirmed my suspicions:

SPEC. NO. 98-26751-H MODEL B36B
CONSOLID. VULTEE AIRCRAFT CORP.
DATE OF MANUFACTURE - 5/28/49
AIRFORCE - U.S. ARMY

No doubt now. I was looking at the remains of a B-36 Peacemaker, the largest bomber, in sheer physical size, ever put into service.

At the edge of the crash scene, lay an undamaged canister of incendiary grenades, and another, full of dynamite sticks with a parachute still attached. Clearly, someone had found the aircraft before us. Furthermore, they had further destruction in mind.

I made a few entries in my Survey notebook:

The wreck is located at El. 5500, Long 128°34', Lat. 56°05'. The aircraft was apparently on a westerly course when it struck within 100 feet or so of the ridge top. The fragments now visible are lower down the slope, probably thrown back by the explosion, or carried downhill by subsequent snow slides. The wreckage is concentrated in about a 1/4 mile circular area, the upper part of which is covered by deep snow. The exposed wreckage shows very little linearity, except for a slight

elongation down slope. Most of the pieces are very small, the largest being the three propeller blades, several panel fragments from wing or fuselage, and a tail fragment.

There is considerable emergency gear, such as, canned goods, clothing, etc., also armaments (incendiary grenades and 20 mm cannon shells). Although clothing is quite common, there is no indication of bodies. One fragment of a duffel bag has a name attached to it, H.L. Barry Capt. AO-808341.

Later, from our base camp radio, we made contact with the RCAF base in Whitehorse, Yukon. The officer who answered was polite, but distinctly restrained, about what we considered to be our exciting find. In fact, he clearly did not enjoy the conversation. He heard us out with minimal comment. At the end he conceded that they already knew about the wreckage, but would say nothing more, and concluded the conversation with a terse, "Thank you. Bye".

That was our first encounter with the military secrecy which shrouded this wreckage for decades. How had it got here? Was it carrying an atomic bomb? At the time we didn't even know when the plane had crashed, except that it was sometime between its construction in 1948, and our discovery of the wreckage.

By pure happenstance, and before our field season ended in September, we learned the exact date of the crash. Our party was then based at a shut-down gold mine north

of Stewart, B.C., and we found, in the shack we were occupying, a 1951 adventure magazine. The cover story was about the harrowing experience of a B-36 crew off the B.C. coast in February, 1950.

The story was heavy on anecdotes and skimpy on facts, but the name of the pilot was Harold Barry. Clearly, it was our plane. The essence of the magazine story was that during a flight south along the B.C. coast, the aircraft had engine problems, and the 17-man crew had to bail out. Twelve were rescued, five disappeared, and the plane crashed into Queen Charlotte Sound. We knew it had not.

Armed with the date of the crash, I later went to the archives of old newspapers in the Vancouver Public Library. There I found that the incident had been headline news during the Valentine week of 1950. In fact, the articles were much more informative than the magazine story. Interviews with the survivors, however, left no doubt that they believed the plane had crashed into the sea. There was no speculation about the possible presence of an atomic bomb. How and when the crash site was first discovered still remained a mystery to me.

ABOUT THE B-36

The B-36 can be traced back to the Battle of Britain in 1940, when it seemed that Britain might fall to a German invasion, leaving the USA with no bases outside of the western hemisphere. An aircraft was

required which from bases in North America could reach targets in Europe **and return**. In April 1941, Boeing and Consolidated Aircraft Corporation were invited to design a bomber which could carry a 10,000-pound load to a target 5000 miles away and return. Also it must be able to cruise at about 300 mph at 25,000 feet. Easy today, but a remote possibility then, only 14 years after Lindbergh's first crossing of the Atlantic.

A preliminary design by Consolidated Aircraft (later the name became Consolidated Vultee, and eventually Convair) was accepted. After many delays and threats of cancellation, the first B-36 emerged, but it was now 1946, and the war had ended.

Yet the contracts were extended, mainly as a make-work project to counter a predicted flood into the labor market by returning soldiers. The plane escaped cancellation in 1948, thanks to the Berlin blockade (although it was never used in that airlift operation). It escaped again when the Korean War began in 1950, but never saw action there. Numerous subsequent cancellation plans were deflected by the continuing demands of the Cold War.

The B-36 was a monster aircraft, with a 230-foot wingspan and six engines in pusher configuration. Each engine was an 8200-pound, 28-cylinder, Pratt & Whitney R-4360, air-cooled radial, driving three 9-foot propeller blades.

Originally, that engine had been designed for tractor operation. When reversed, as it was in the B-36, its enormous carburetors with their 22-inch-diameter throats, were up front, riding shotgun, so to speak, in usually frigid air. Carburetor ice was a perpetual problem and a major factor in our crash.

To the pilots who flew it, the B-36 was a flexible giant capable of absorbing horrendous damage, and yet returning the crews safely to base, commonly with two or more engines shut down. Test pilot, Beryl Erickson, who in 1946 flew the first B-36, stated in 1995 that, "I knew from the beginning that the structure was too light weight. But no one listened. Everything broke, but Convair kept improving the plane."

It may have been light weight for its size, but it was still very heavy. The first B-36 had only two main wheels. The tires were almost 10 feet in diameter and contained 700-pound inner tubes, which were almost impossible to balance. More troublesome, only three runways in the country could handle the load. That landing gear was later replaced with 4-wheel bogies which spread the load.

Against a slight crosswind, the huge, 40-foot-high rudder could not be humanly moved on the ground, and there were no booster controls. In flight, however, only finger-tip pressure was required, as small tabs on the control surfaces harnessed the energy of the airflow.

Surprisingly, the maneuverability of the B-36 at high altitude (eventually, above 40,000 feet) was actually better than that of the fighters of the day.

Because of the enormous lifting capacity of its huge wings, the B-36 could make tight turns which the thin-winged fighters could not emulate without mushing out or stalling. The B-36, in its time, was best at everything: altitude, load, high-level maneuverability, fighting capability, endurance and range. Everything, that is, except speed and simplicity of maintenance.

To the ground crews, it was the most complex and incontinent aircraft ever built. It continually leaked prodigious amounts of oil. Each engine was supplied with 250 gallons of oil, yet on long flights some engines had to be shut down because of lack of oil. After touchdown, when the propellers were reversed, oil was blown over the wings, and mechanics found them almost impossible to walk on.

B-36s were flown in the northern part of the continent to prove them operational in extreme cold and over vast distances, fundamental requirements for striking targets in the former USSR. Ironically, the B-36 was first tested for cold in Florida, where a large, heavily insulated hangar existed, and could be brought down to -72°F. Later northern bases were set up at Fairbanks, Labrador, Maine, and Greenland, where blowing snow and ice fogs presented more realistic conditions.

To the US Navy, the B-36 program always was that “God-damned aluminum overcast” which decimated President Truman’s military budget, and trashed the Navy’s plans for modern aircraft carriers.

Between 1946 and 1954, 383 B-36s were produced. Russia produced 6,000 MIG-15 fighters to go against them. In the lifetime of B-36s, 32 were destroyed in various mishaps; 22 of those were crashes from the air. In all, 136 crewmen died in B-36 crashes, but unlike the much smaller B-29, which killed about two million people during World War II, the B-36 was a gentle giant and purposely killed no one.

In 1955 Paramount released the movie “Strategic Air Command” starring Jimmy Stewart and June Allyson. The film contains some of the most dramatic shots ever made featuring an aircraft, in this case B-36H 5734, the actual star of the movie. At a function before the premiere, Stewart remarked that, “We weren’t sure we could use this title ‘Strategic Air Command’. We were afraid Louella Parsons couldn’t pronounce it.” He went on to say that, someone suggested reducing the title to “SAC,” but he pointed out that that would have resulted in marquee signs, such as, “See Stewart and Allyson in SAC”.

The B-36 was the **Big Stick** of the Strategic Air Command between 1948 and 1958, before being superseded by the smaller all-jet B-52. Gen. Goldworthy said it well, “Technology passed the honest B-36 by,

and left it outperformed, but never outclassed.”

A NIGHT TO REMEMBER

Documents of the Eighth Air Force, now declassified, detail most of what actually happened to our plane, B-36B AF2075, during a routine flight that, for the crew, became a nightmare.

After a long flight from Fort Worth, Texas, the aircraft had arrived at Eielson AFB near Fairbanks before noon on February 13th, 1950. The temperature was -40°F. and the plane remained on the ground for servicing for about three hours. The engines were kept running, for if they had been allowed to cool, the oil would have become solid. The replacement crew had been flown into Fairbanks a few days earlier.

Capt. H.L. Barry’s flight plan stated that they intended to leave Eielson and fly direct to Anchorage at 12,000 feet. From there they were to head for Cape Flattery (at the entrance to Juan de Fuca Strait) along radio beam Amber 1 at 14,000 feet. After reaching Cape Flattery, which they never did, they were to climb to 40,000 feet and fly direct to Ft. Peck, Montana, then south to the Gulf of California. From there, they were to turn to the Pacific coast and fly north, testing the California coastal defenses, and ‘bomb’ San Francisco. They were then to return home to Carswell AFB, in Fort Worth.

By 2:27 PM, Alaska Time (4:27 PM PST), the temperature had risen somewhat, to -

27°F. The B-36 made a noisy, heavy-load takeoff. Capt. Barry said, at the post-accident inquiry, that he had had to use full nose-up elevator-trim, plus maximum stick pull-back, to lift the 329,570 pounds off the runway at 140 mph. Seven hours later they were off the coast of British Columbia, fighting a strong headwind. Periodically, hail pounded against the aircraft. The temperature outside was -17°F. Ominously, the propellers began to surge erratically. The automatic pitch controls did not appear to be working. Barry realized that icing conditions were being encountered and began to climb, but with difficulty.

They were able to climb to about 14,500 feet at the normal climb rate of 155 mph. Ernest Cox, the flight engineer, noted unusual readings, an increase in fuel flow, but a decrease in torque. For the first time, he applied carburetor pre-heat, but found that it had been disconnected! According to an unnamed mechanic, “Why not? It didn’t work anyway,” Normally, “carb-heat” was used only at startup, because it actually decreased engine power, unless ice was actually present in the carburetor. The aircraft struggled up to 15,000 feet. Then no further climb was possible, and Barry leveled the aircraft.



Figure 1: XB-36 with B-29 parked close for size comparison. The B-29s killed about two million (mainly civilians) during World War II bombing of Germany and Japan. The ‘gentle giants’ never saw battle, and bombed no one, although 133 aircrew died in 22 mishaps. (photo credit: Consolidated Vultee)

Suddenly Dick Thrasher, the left-side rear gunner, could see a 4-foot flame coming out from No. 1 engine. He reported it to the pilots, who, from the front compartment, had no view of the engines. They immediately shut it down and feathered the propeller to reduce drag. Climb-power was reduced to cruise-power on the remaining five engines.

Soon after, Thrasher reported another fire, this time in engine No. 2. It too, was immediately feathered. With two engines shut down, the aircraft began losing altitude. More bad news came only a couple minutes later; engine No. 5 was reported on fire by Elbert Pollard, the right-side rear gunner. Barry shut it down and feathered the prop.

Having no choice now, he applied emergency power to the remaining three engines, but the torque pressure did not increase. Airspeed dropped to a

dangerously low 135 mph. The weight of the aircraft was now down to about 270,000 pounds, yet it was losing altitude at a rate of 100 feet per minute.

At 11:45 p.m. (PST) Vancouver Air Traffic Control received a message that a B-36 on the north coast was encountering severe icing and had engine trouble; they were letting down over water, 194 miles northwest of Vancouver Island.

The plane continued to sink. At about 5500 feet Barry decided that he could not save the aircraft and began bail-out procedures. He swung the B-36 to the northeast on a bearing perpendicular to the coast. The crew members began checking their parachutes and putting on their Mae West life preservers. Ray Whitfield, one of the co-pilots, checked those in the front compartment to confirm that their Mae West straps were placed under, not over, the parachute straps.

Those, 80 feet back, in the rear compartment were similarly instructed by Sgt. Martin Stephens. He was rushing them and some, including Dick Thrasher, found it, “too difficult to get the damned Mae West straps under,” so he just put them over everything.

Meanwhile up front, Lt. Paul Gerhart, the radar operator, reported that they were over land, then over water, then land again, more water, and more land. They were passing over small islands. When they reached the much larger Princess Royal Island, Barry turned the aircraft southward,

and issued the bail-out command. The aircraft was then flying slightly east of south, against a strong head wind of about 55 knots. He set the automatic pilot for a gentle clockwise curve which he estimated would ditch the plane somewhere in Queen Charlotte Sound. The time was five minutes past midnight on a truly 'dark and stormy night', St. Valentine's Day, February 14, 1950.

Seventeen jumped. Not all survived. Subsequent investigation showed that the order of bail-out was crucial for survival. According to Barry's testimony, the entire crew bailed out within about 10 seconds. Our recent conversations with one of the few survivors still alive, Dick Thrasher, indicate, however, that it did not happen that quickly.

The first to jump from the front compartment were the navigator, Capt. **Bill Phillips** and the bombardier, Lt. **Holiel Ascol**. The first to jump from the rear compartment were S/Sgts **Neil Straley** and **Elbert Pollard**, both gunners. None of those first four were ever seen again. The wind apparently carried them north into the raging waters of Whale Channel just off the northwest coast of Princess Royal Island. The remaining three in the rear compartment left in the following order: gunner S/Sgt. **Dick Thrasher**; gunner Sgt. **Martin Stephens**; and observer Lt. **Ray Darrah**. Those three survived.

Capt. Barry stated that the remaining ten crewmen in the front compartment

jumped in the following order: Flt. engineer, Lt. **Ernest Cox**; radio operator, S/Sgt. **Jim Ford**; radar mechanic, Cpl. **Richard Schuler**; another radio operator, Sgt. **Vitale Trippodi**; engineer, Lt. **Charles Pooler**; passenger, Lt. Col. **Daniel MacDonald**; navigator, Lt. **Paul Gerhart**; co-pilot, Lt. **Ray Whitfield**; co-pilot, Capt. **Ted Schreier**; and that he, Capt. **Harold Barry**, was the last to jump. Curiously, **Schreier** was never found.

IN THE NEWSPAPERS

On Tuesday evening, February 14, 1950, the front page headline of The Vancouver Daily Province broke the news.

Storm Hides Fate of B-36, 17 Men.
Flaming Bomber Down Off B.C. Coast

The article featured a photograph of the aircraft with the caption,

A MIGHTY B-36 BOMBER, greatest global- bombing weapon of the U.S. is feared down at sea off the B.C. coast with 17 persons.

The Vancouver Sun, came out with similar headlines and speculative accounts.

Forty Canadian and American air-sea rescue craft fought today through gale winds and rain off the north tip of Vancouver Island in a massive search for a lost B-36 bomber and its crew of 17.

The giant plane, with one engine ablaze and another acting badly,

splashed into the sea at about 3:30 am today while winging southward along the B.C. coast from Alaska bound for Texas. [.....] Gales up to 40 miles an hour envelope the search scene in Queen Charlotte Sound. [.....] Survivors, if any, would be clinging to life rafts, drenched by charging seas, and their chances for survival are uncertain. But a huge two-nation search force was speeding to the scene. Thirty-four planes, including seven Vancouver-based RCAF craft and 10 B-29

Superfortresses are covering the area from the air.

The next day the 72-foot fish packer, Cape Perry, was heading northwest towards the herring grounds in Queen Charlotte Sound. Capt. Vance King, having heard over his radio about the search for the B-36 crew, diverted his course to a path nearer Princess Royal Island. A few minutes past noon he saw some smoke rising from the shore. He dispatched a small rowboat and found two survivors, and a short distance away, a third man. Just as the boat was turning to leave the area, another wisp of smoke was seen on the shore.

In the words of Captain King, "We discovered seven guys, huddled around a fire, and another hanging from a tree. I felt pretty good about getting those guys out. We had a bottle of rum and a bottle of scotch aboard and gave them some drinks. Then we gave them some ham and eggs

and put them to bed aboard our boat. I never saw a braver bunch of men. I know I wouldn't bail out of any ship, let alone in a gale, at midnight."

Later in the day a ground party from the Canadian destroyer, Cayuga, found and rescued S/Sgt. Vitale Trippodi. He was the eleventh man to be found, and the first with substantial injury (ankle broken).

It was not until Thursday morning, February 16th, that the twelfth man, Lt. Charles Pooler was found and brought aboard the Cayuga. The 10 survivors picked up previously by the Cape Perry were flown to Port Hardy at the north end of Vancouver Island (where a, now historic, photograph of the survivors was taken). The two aboard the Cayuga were picked up by an USAF Canso and flown directly to hospital at McChord AFB near Tacoma, Washington.

American security watchdogs had become alarmed about the situation. Col. Knight in Washington, D.C., ordered the US Coast Guard to inform all involved with the search, "Handle this with care. Pass (the survivors) on without interrogation. Again, handle this with care. No leaks."

The papers of February 16 1950 were full of photographs and stories related by the rescued airmen:

S/Sgt. Dick Thrasher, 28, gunner

I knew we had heavy icing conditions. I was in the aft compartment sweating it out. First

thing I knew the pilot said we couldn't hold our altitude any longer. He said we were over Princess Royal Island, and to go ahead and bail out.

Two men went ahead of me and then I jumped. I landed in a big tree in the dark. I could not get loose from my parachute, so I cut myself free with a knife.

I spent the rest of the night in my one-man life raft. I was all by myself. The raft kept me dry. Next morning I was cold, so I climbed the tree to try to get my chute. I wanted to wrap myself in it.

When I got to the top of the tree, I began yelling for all I was worth. The navigator and radio operator answered. We found another gunner. Then we found another officer. We were weak and decided to build a tent out of our parachutes and a life raft.

After a lot of trouble, we finally got a little fire going. We were lucky. We had our lighters and some lighter fluid, but everything on the ground was wet. We had a hard time keeping the fire going through the second night.

When morning came, we decided to try to walk. On the way we found two sets of tracks and followed them to the coast and found Capt. Harold Barry, our pilot, and another man.

We tramped an "SOS" in the snow and just started to build a fire when we heard a motor. At first it sounded like a plane, then we decided it was a boat.

Captain Barry and I walked down to the shore and began shooting flares. It was a Canadian fishing boat. I think this was about 2:30 p.m. Wednesday.

The Canadians really treated us fine. Aboard the boat were three others of our crew members. I was really happy to see that boat, for I fully expected to spend another night in the snow.

Capt. Harold Barry, 30, pilot (as told to International News Service)

I'm not sure just what happened. We were flying at about 5000 feet. We began losing airspeed and altitude and I was pretty sure we were icing up. (It was evident during this interview that he was under orders to convey as few B-36 facts as possible, and to talk only about "human interest" items, such as, the horrifying parachute jump and the ordeal on the ground.)

I asked our radar man to find the nearest land, and I put the ship over what I hoped was it. I ordered the crew to bail out, and away they went. I was last out. (This conflicts with a 1998 statement by Whitfield, as we shall see).

The ship was on automatic pilot and somehow it turned in the air and came back over us. There were three engines burning and I could follow the ship's progress as I went down in my chute. But I don't know where she crashed.

I landed in a little pond with a thin ice crust on it. I got pretty wet and so did my chute. It didn't do me much good for warmth during the rest of the night.

I tried to build a fire but couldn't. I was pretty hungry and when I saw a ground squirrel, I fired at him twice with my .45 and missed both times. But my shots attracted Lt. Whitfield, my navigator. (Probably a misquote; Whitfield and Schreier were co-pilots). He blew his whistle and we walked toward one another.

That afternoon Whitfield and I spent two hours freeing Sgt. Vitale Trippodi, one of the ship's radio men, from a tree where he had hung head down for almost 12 hours. Trippodi was in pretty bad shape. When we got him out of the tree, we just didn't have the strength to move him down to the beach.

Whitfield and I struck for the beach. During Tuesday we found seven other men (it was actually Wednesday, and the number found, only five, but seven in total).

We spent all that night trying to keep warm and looking for something to eat. Wednesday morning, Whitfield built a fire, and we threw a lot of wood on it. That was the smoke the fishing boat saw.

Lt. Ray Whitfield, 25, copilot

I had it easy. I never thought it could be so simple. I didn't even get scratched. In the morning I saw there were sharp stumps and trees all around me, but I had missed them all. I curled up on a dry ledge under my parachute. I didn't try to strike a match because I wanted to save them. We were all as lucky as the day is long. It was nothing short of a miracle.

Sgt. Vitale Trippodi, 23, radio operator

I was hanging there in that tree, head down with a foot caught in a 'chute strap. I had lost my right strap on the jump. When I first landed in the tree, I tried to shake myself loose. I then fell headfirst. That's when my foot caught. If I hadn't lost that right strap, I would have had something to grab, and never would have got hung up.

When my pilot (Harold Barry) and my co-pilot (Ray Whitfield) pulled me down Tuesday, and left me lying there, I felt like I was dead. When they left me, I wanted to go too. I

was afraid they would get lost and nobody ever would find me.

I laid there I don't know how long. Those Canadians who picked me up were the swellest people I ever met. The first thing they did was to give me morphine to kill the pain in my foot. Then I drank all their cocoa. (Trippodi had a number of injuries, but recovered without permanent damage).

Although the search continued during the following days, none of the missing men were found.



Ten of the twelve survivors at Port Hardy, B.C., as they appeared in the February 16th, 1950 edition of The Vancouver Sun. Absent in hospital were Sgt. Vitale Trippodi, radio op., and Lt. Charles Pooler, engineer. Missing and never found were: Capt. Bill Phillips, navigator; Lt. Holiel Ascol, bombardier; S/Sgt Neil Straley, gunner; S/Sgt. Elbert Pollard, gunner; and Capt. Ted Schreier, co-pilot.

FIRST DISCOVERY OF THE WRECKAGE

The B-36 wreckage was first found, not by us, as we had realized in 1956, but by the pilot of an RCAF Lancaster bomber in 1953, while searching for the missing plane of a wealthy oil man, Ellis Hall. He had been on a fishing trip in southeast Alaska and was returning to the US via Bellingham, Washington. Despite a \$30,000 reward and free gas for all private search aircraft, the Hall plane was never found, but on September 2nd, a wreckage was spotted near Mount Kologet, about sixty miles east of Stewart, B.C. It was identified the next day as the missing B-36.

The area was, and still is, very remote. Several attempts to reach the wreckage, using packhorses, were made in the fall of 1953, but they were unsuccessful. In early August, 1954, the USAF arrived at Smithers airport in the Bulkley valley, about one hundred miles SSE of the crash site. There, they commandeered the hangar of Skyway Air, a small charter outfit. Strong objections by both Skyway Air and the BC Forest Service were overruled by the Canadian military. In such matters the military, on both sides of the border, considered secrecy paramount, and diplomacy secondary. Curiously though, when the American demolition crew were actually flown (by helicopter) to the crash site, a Smithers lineman for the BC Telephone Co., Hunter Simpson, accompanied them. He

happened to be a personal friend of one of the Americans.

Unfortunately for history, the crew blew up any large pieces of wreckage they could reach, and recovered sensitive materials, such as, radar equipment, bomb sights and tail gunner electronics. The glacier and snow, however hid many parts, and they did not destroy it all.

Surprisingly, the crash site, having been found, was then essentially lost again. Part of the reason was described by Dirk Septer in an article about the incident in a 1993 edition of B.C. Aviator.

“Most of the people involved in reaching the wreckage are unable or unwilling to give much information. Captain Bailey, the only person who took part in both the 1953 and 1954 trips, died around 1956 in a plane crash while flying a T-33. Both the local men who accompanied the US service men are dead now. Pioneer and well known guide, Jack Lee, who accompanied the first packhorse mission, died in February 1986. Hunter Simpson, who watched the demolition of the wreckage, died in the mid-1970s.”

The location is a very remote, nondescript mountain ridge far from any settlement. The co-ordinates of the wreckage site recorded in both RCAF and USAF files were in agreement, but wrong. They were close, but not sufficiently accurate to allow one to fly directly there. The only accurate location-data were in my old 1956 GSC notebook. It was also plotted as a station

number on one of the RCAF air photographs we were using during that field season.

FORTY-FIVE YEARS AFTER THE CRASH

The question of whether an atomic bomb existed in the wreckage persisted. The USAF maintained that no bomb was there, but suspicions remained. Doug Craig, a retired consultant in Whitehorse, revived interest in the crash site in 1995. Craig had been the junior assistant who accompanied Bob Baragar, my party's senior assistant, on the traverse team who came across the wreckage in 1956. His concerns were environmental. After all, the possibility that an atomic bomb lay festering in lands claimed by the Nisga'a Indians seemed to require some sort of action.

Doug conducted a search for USAF and RCAF documents that had been declassified from TOP SECRET, and were now available under Freedom of Information acts. He obtained a 24-page excerpt from a volume entitled HISTORY of the Eighth Air Force: 1 January - 30 June 1950, and a seven- page accident report, which contained a short narrative of the incident. The most gripping item appeared in documents provided by the very helpful, Historical Records Agency of the U.S. Air Force, at Maxwell AFB in Alabama. It was the loading manifest for the flight from Eielson AFB. It identified an 11,000-pound bomb in the forward bomb bay.

In Ottawa, the historian at National Defense Headquarters, Steve Harris, said he, unfortunately, had only sketchy information, but pointed out, “The highly classified nature of this incident — would lead one to assume either, that at the time we wanted to keep the degree of SAC operations under wraps, or that this B-36 was equipped with what SAC aircraft were supposed to be equipped with.”

CANADIAN MILITARY VISIT OF 1997

Doug Craig’s concerns aroused the interest of the manager of the Yukon Division of Environment Canada, Doug Davidge, and he, in turn, raised the interest of the Department of National Defense in Ottawa. In August 1997, DND decided to provide personnel and a Bell 412 Griffon helicopter from Cold Lake, Alberta, for an examination of the site. Both Craig and Davidge accompanied the Air Force crew on this operation, the first, as far as we know, purely Canadian investigation of the scene (not counting our own). I was unable at the time to accept the invitation to join the group, but provided them the correct coordinates of the crash site.

The team measured alpha, beta and gamma radiation over a close-grid pattern covering the crash area. In their view, the most dangerous item at the site was a pail of weathered sticks of dynamite left by the 1954 demolition crew.

I RETURN TO THE CRASH SITE IN 1998

For the first time since 1956, I revisited the crash site in the summer of 1998. That visit was organized by Scott Deaver, a B-36 enthusiast from Connecticut with an amazing store of knowledge about B-36s. He was already in Terrace, about 110 miles south of the crash site, when I arrived in late July.

That evening we drove out to the airport to meet the incoming Dick Thrasher, whose last entrance into Canada had been by parachute from the B-36. The affable former rear gunner, then 78, had flown from his Texas home to Terrace that day, but his baggage hadn’t. In the terminal Thrasher commented, “Again, I land in Canada, and I have nothing but what I’m wearing.”

The next day we drove to Stewart, a small but historic settlement at the head of Portland Canal, on the border with southeast Alaska. It is much closer than Terrace to the crash site, and also to a helicopter base. On the following day, we were joined by Doug Craig, and the four of us flew out to the crash scene under clear skies. It was dramatically different from 1956. The glacier was entirely gone, and the cirque was practically free of snow.

We rummaged through the now fully exposed wreckage. Only one, large, intact piece of fuselage was present. It happened to contain the very hatch, through which

Dick Thrasher had exited from the left side of the rear compartment. It was very small. Dick reminisced about that fatal February night in 1950. He thinks, now, that the Mae West straps may have saved his life, because it delayed his pulling of the ripcord. Otherwise, he probably would have drifted into the water, as did Straley and Pollard, who jumped just before him.

He told us that in exiting the plane, jumping technique was important. Straley, the first to jump, followed official procedures and rolled out in a tight crouch. His pack (which included the parachute and one-man life raft) got hooked on the rim of the small hatch. Stephens kicked him loose. Pollard, who went next, had previously bailed out of a disabled aircraft, over Germany during World War II, and had become a POW. He knew what he was doing and ignored the rules; he simply dove out head first. In Dick's words, "I should have got the message, but I didn't, and went out in a tight crouch, like the book said, and I got hooked. Stephens kicked me free. He saved my life. Later, Stephens blamed himself for the deaths of Straley and Pollard, but it wasn't his fault. It really bothered him — if he hadn't been in such a hurry to get them out, they might have survived. After a while, he wouldn't talk about it anymore."

Dick, himself, almost didn't make it. After his chute popped open he made just one swing to the left and another to the right; then he was in the trees. It was dark, but he could feel a big branch with his foot.

He did not know how far above the ground he was and thought he had better stay put. When his eyes got use to the dark, he discovered that the "big branch" was a root. He was actually on the ground.

At dawn he had climbed the tree to retrieve his parachute for warmth, and also had started shouting. He got a reply, "I recognized Jim Ford's (the radio operator) voice when he replied. He couldn't have been more than a ¼ mile away. I made my way toward him, heading for small clearings that looked like easier going, but they were actually slush ponds. At a larger slush pond, I inflated my life raft which I was packing with me. Then I sat in it but couldn't make it move. I abandoned the life raft there. I went back to going over and under deadfall logs, and finally joined Ford. Paul Gerhart, the radar operator was also there. We were a couple of miles from the shore. We found some tracks and followed them to the shore, where we joined Barry and others."

Dick felt a bit guilty about the Trippodi incident. "Barry and Whitfield found Vitale Trippodi, who had hung from a tree all night, and got him to level ground, but they could not carry him out. Tripoddi wasn't happy about being left alone, and wanted one of them to stay with him. But Barry and Whitfield followed their training instructions which were 'to never go off alone', the reason being, that if only one went for help, and he broke a leg or something, so they both went. I've always wished I had tried to get back up to him."

Probably the greatest moment of our day at the crash site was when Scott Deaver pulled a pipe framework out from under a slab of talus. It enclosed an 8-inch steel cylinder about a foot long. Scott immediately identified it: **the container for a plutonium core!** This meant that there had been an atomic bomb aboard. Or did it? The container was heavy (perhaps, 90 pounds), but we were able to get it across the coarse talus to the helicopter- landing spot.

Before we left the crash scene, Dick Thrasher scratched on one of the larger fragments, **NRTS**. We asked him what that meant. With a big smile, he explained that during routine flights, when the B-36s landed at various air force bases, the flight crew would report any malfunctioning equipment. The list was often long, and the maintenance crew at the base would fix what they could, but some required special equipment or technicians not available at that particular station. On those still defective components, they would place stickers bearing the letters, **NRTS**. It meant “**Not Repairable at This Station**”.



*With a smile Dick Thrasher writes the letters, **NRTS**, that were customarily placed on components which could not be fixed at the base where the B-36 had landed. They meant ‘Not Repairable (at) This Station’.* (photo credit: Scott Deaver)

About 6 PM the helicopter returned and flew us out, with the ‘plutonium-core’ container. We were a bit worried that the helicopter pilot would question us about our odd-looking freight, but he was in a hurry and wasn’t curious. Scott had a carpenter in Stewart build a box for the apparatus. Then we drove it back to Terrace. It rode in the back seat with Dick, because it was too large for the trunk.

We were even more worried about flying the box to Vancouver, and about getting it across the US-Canada border. Again, however, there was a lack of interest in “a piece of plane wreckage, destined for a museum,” which it was.

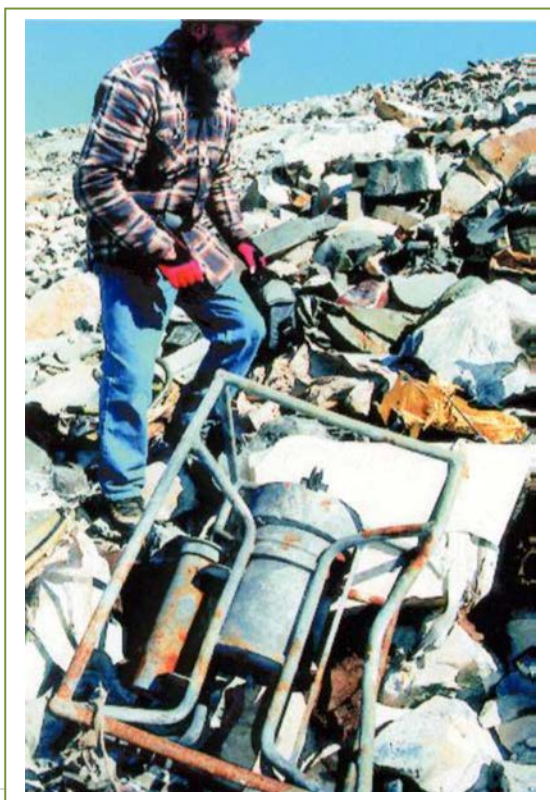


Dick Thrasher, 78, beside the actual hatch from which he jumped on the stormy night of February 14, 1950. (photo credit: Scott Deaver)

EPILOGUE

The disappearance of the first four men to jump can be accounted for fairly easily. They bailed out into a 60-mile-per-hour headwind and were almost certainly blown back into the water. That does not, however, explain the disappearance of Capt. Ted Schreier. He was listed as being the second-to-last to leave the aircraft.

In his report on the incident, Harold Barry stated that he (Barry) was the last to bail out. In which case, Schreier should have landed somewhere near Gerhart, Whitfield, and Barry. It is possible that his chute never opened and he disappeared in the hilly forest or in one of the small lakes of northwest Princess Royal Island. Perhaps, however, **Schreier**, not **Barry**, was the last to bail out. Whitfield's recent recollections support this view.



Doug Craig and the 'Holy Grail'. This canister was normally attached to the forward bomb-bay wall, and was designed to contain the spherical plutonium core which, when inserted into the Mark IV 'Fat Man' atomic bomb, made it operational.(photo credit: Scott Deaver)

Whitfield was interviewed by Don Pyeatt, who maintains a B-36 website, on July 31st, 1998, which, coincidentally, was the evening before we revisited the site. Referring to the moments just before he bailed out, he said, "I pointed out to the other copilot, Capt. Schreier, that he had his floatation vest on over his parachute. At this time he, Barry and I were the last ones on the plane. Capt. Schreier was hurriedly removing his vest when Barry ordered me out. Barry exited after me. I never saw Schreier jump, and he is one of the missing men". No one knows if he did or did not jump except Barry, and he is now deceased.

The possibility that Schreier never jumped had been suggested much earlier, and gave rise to an old rumor that a skeleton had been found in the wreckage, but as Dirk Septer noted in his 1993 article, Broken Arrow, the rumor seems to be unfounded. It would not make sense anyway. Had Schreier, an experienced pilot, decided to stay with the plane (which, in hindsight, would probably have saved his life), he certainly would not have flown almost due north, but would have tried to reach Vancouver. More likely, it took him a minute or so to readjust his May West

straps so that they would not interfere with his parachute. By the time he did bail out, the aircraft, under automatic pilot, was flying back towards the water. He may not even have known that Barry had set the automatic pilot to do just that.

Another mystery concerns the aircraft itself. How did it reach a cirque more than 200 miles north of the bailout area? Postulation that the aircraft had flown a huge arc far over the Pacific Ocean before crashing in the cirque still persist, but any pilot who had read Capt. Barry's account, quoted by the International News Service (in Vancouver Daily Province, February 16, 1950), would have concluded the obvious. He had stated that, "The ship was on automatic pilot and somehow it turned in the air and came back over us."

That was a very important statement. The subsequent inquiry recorded that he had set the automatic pilot for a clockwise curve which he thought would lead it to crash in Queen Charlotte Sound. It is clear, however, that his setting caused it to fly in circles. The circle size was not large, as he had seen the plane pass back over him before he landed. The overriding factor was the gale blowing northward about, 55 knots per hour (about a mile per minute). It acted like a river carrying the busy plane for about three and a half hours. That estimate is derived from the duration of its radio carrier signal, created by Jim Ford when he had screwed down the operating key before jumping. The continuous carrier was picked up and monitored by a

number of stations, including the tower at Vancouver airport. The signal was monitored until at least 3:05 AM. The distance of 212 miles between the bailout point and the crash site is consistent with the wind strength and direction that night.

The wreckage lies at 5500 feet elevation, perhaps, a thousand feet higher than the bailout altitude. The automatic pilot, like a human pilot, could not control the elevation of the plane while the engines were behaving erratically. Lessening of the fuel load, possible de-icing (due to probably drier conditions inland), and the fact that Barry had left the engines at full throttle, probably caused the plane to climb. In fact, it must have climbed in order to clear the intervening terrain, much of which is considerably higher than 5500 feet.

In April, 1951, just fourteen months after his harrowing BC experience, Dick Thrasher was again in the rear compartment of a B-36, piloted, as before, by Harold Barry. Ernest Cox, the flight engineer, was also there. They were flying at 20,000 feet over Oklahoma on a training flight, where they assumed the role of an enemy bomber. Four F-51 fighter planes were practicing "nose passes," diving from high above the B-36. Two swooped by, very close. Then the wing tip of the next fighter sliced directly through Barry's cockpit. Dick said the plane immediately went into a steep dive. There was fierce shaking and the aircraft began breaking up. The nose section broke away first. Then a strong

fishtail motion began throwing the crew around the rear compartment.

Five crewmen were there, but only Dick went out the hatch. Before the others could follow, the tail section broke off, and they were simply thrown out. One gunner, unfortunately, disliked wearing his chute during these long and mostly boring flights. He was in the habit of just hanging it on the wall beside his position, and was reaching for it when Dick left. Evidently, he didn't get it on before being thrown out. For those whose parachutes opened, the ride down was scary because of all the debris swirling about them. Dick landed hard on an Oklahoma field, but was okay. He was one of only four who survived, all from the rear compartment. The three other survivors remarked about how slickly Dick had dumped the pressure, opened the hatch, and cleanly exited. He had done it all before, and it showed. Harold Barry, Ernest Cox and 10 others died.

DND's 1997 examination for radiation at the crash site had yielded nothing significantly above background levels. They concluded that neither the bomb, **nor the plutonium core** had made it to this cirque. But they had not found the core container; we had.

It is now known that the 11,000-lb bomb in the forward bomb bay was, indeed, an atomic bomb, more precisely, a Mark IV, **Fat Man**, only slightly modified from that dropped on Nagasaki in 1945. But, Dick Thrasher confirmed that it had never

reached the cirque. While they were still over Queen Charlotte Sound, before Barry had turned the plane towards land, the bomb was dropped, but **without its plutonium core**. The core was supposed to be kept stored in a container that was normally kept bolted to the bomb bay wall. For a nuclear attack, which had to be authorized by the President, the core would be transferred to the center of the bomb. The bomb did, however, contain an uranium shell and a set of conventional explosives to compress it onto the core. Without the core, the bomb simply blew apart when it reached the preset elevation of 1000 metres (about 3000 feet). It did and Dick saw the clouds light up. The uranium fragments, now scattered on the floor of Queen Charlotte Sound, are mildly radioactive, but pose no threat. They do, however, comprise the first **Broken Arrow**, USAF code for an unplanned destruction of an atomic bomb.

After returning to his home in Connecticut, Scott opened the core container. He reported it to be gleaming and pristine inside, but **empty**. This confirmed what the Air Force had always maintained, but few believed. The B-36s **did** carry atomic bombs on their practice missions, but the plutonium cores were stored in Fort Worth, entirely under the control of the Atomic Energy Commission, not the military. **Our** plane carried no plutonium core.

In Memoriam – William Anderson

William Anderson one of the prominent and admired US disaster scholars died suddenly on December 29 when holidaying in Hawaii.

Bill was one of the early Ph.D.'s from Ohio State University when the Disaster Research Center was located there. His doctoral dissertation was on the 1964 Alaska earthquake and his later work included a study of floods in Ohio which led him to identify the concept of a "disaster subculture". He was one of the first to write about the role of the military in disaster and in 1970 published one of the first social science studies of tsunami warnings. He also co-authored -- with Russell Dynes -- a study of the 30th of May movement in Curacao.

After teaching at Kent State and Arizona state where one of his students was Ron Perry, another distinguished scholar in our field, Bill moved to the National Science Foundation where he was responsible for 26 years of funding US disaster research.

From June 1999 to June 2001, he served as senior advisor in the Disaster Management Facility in the Infrastructure Division at the World Bank while on leave from the NSF.

In 2010 Bill was awarded the Charles Fritz award by the International Research Committee on Disasters for a lifetime contribution to Sociology of Disaster.

Bill was known for the quite supportive way he dealt with scholars at all levels and he was respected, admired and loved by his colleagues.

Bill's body was cremated in Hawaii and his ashes were returned to Maryland. There will be a service of remembrance on March 22. The location has not been announced as yet.
