Japanese Balloon-Bomb attack on North American - 1944-1945

As a sixteen year-old Air Cadet, in High School in Moose Jaw, Saskatchewan in 1944/45, I had the unique experience of watching RCAF Hawker 'Hurricane' fighter aircraft clawing their way up into the clear blue skies above that small prairie city, to intercept, and attempt to shoot down Japanese bomb-carrying aircraft.

Air Cadet Canada
Cap Badge - 1945

Hawker 'Hurricane' F.Mk.XII - 1945

That is a rather astounding claim, and may sound very much like a considerable distortion of the truth, but it is in fact absolutely true. I must admit, however, while the basic premise is factual, the use of the phrase *'bomb-carrying aircraft'* does require some explanation.

Several times during that late winter and early spring of 1945, my Air Cadet friends and I watched a Hawker 'Hurricane' fighter aircraft take-off from the Moose Jaw airport, and leave feathery tracings of high-altitude contrails as it circled slowly upwards into clear skies. The contrails showing the path of the 'Hurricane' as it laboriously climbed to intercept a Japanese, hydrogen filled, ***paper balloon*** that carried incendiary and high-explosive bombs slung beneath below.

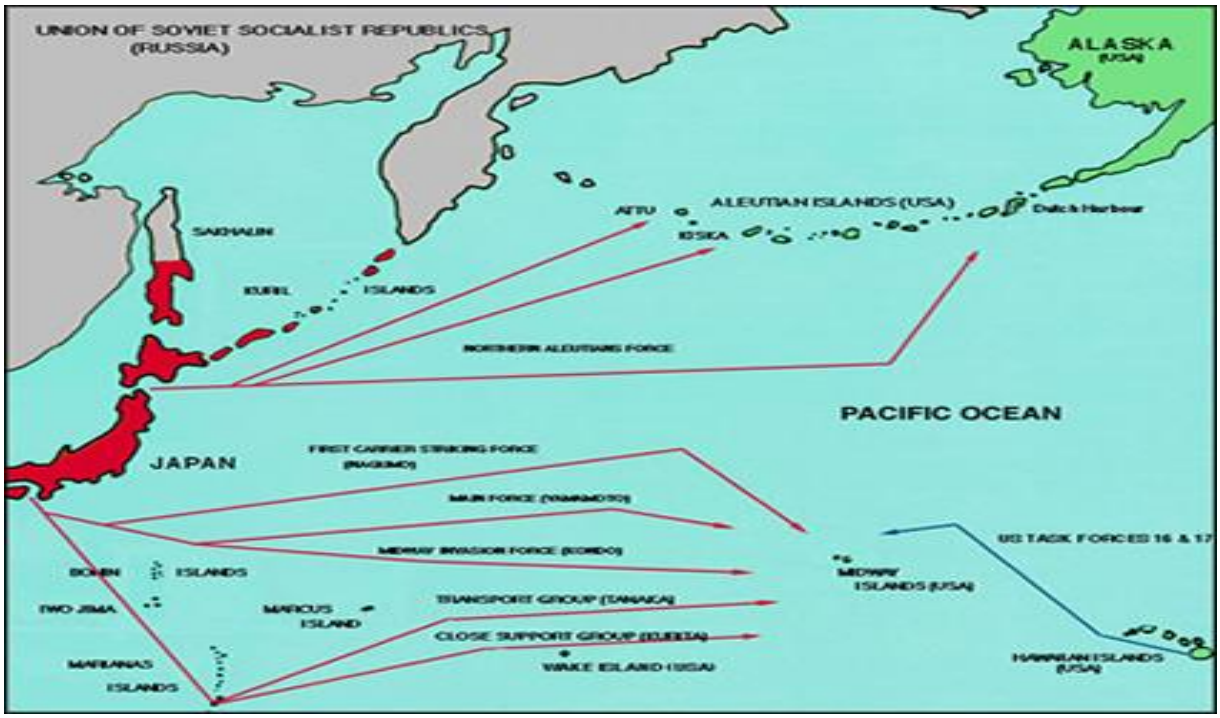
In mid November of 1944, military authorities in both Canada and the United States were alarmed to learn that large balloons, carrying a number of incendiary and high-explosive devices, were landing in various locations in the Canadian western provinces and in northwestern United States. There were no initial reports of casualties, and the purpose of the balloon offensive was initially not clearly understood.

Curtiss P-40E 'Kittyhawk' – RCAF Sqdn. No. 133, and Japanese Paper Balloon – over British Columbia – 1945.

North American B-25 - airborne from USS Hornet.

The Japanese had been greatly surprised by the Colonel James Doolittle led, carrier launched B-25 bombing raid on Tokyo on April 18, 1942. The Japanese people had been told that the December 7th, 1941 attack on Pearl Harbor had been a great victory, and that the USA would soon ask for a peace treaty with Japan. The Doolittle raid was not only a great morale booster for the American people, but a very bad shock for the people of Japan. The Japanese High Command was determined to find a way to retaliate against the USA mainland.

The only way that the Japanese military could carry out significant, direct attacks on the USA mainland, was to eliminate or greatly weaken the American Navy Aircraft Carrier fleet. The American Carriers had not been damaged or destroyed during the attack on Pearl Harbor, on December 7th, 1941 – because they had been at sea.



The Japanese believed that a decisive victory over the U.S.A. Aircraft Carrier fleet would force the Americans to capitulate, and leave Japan free to expand its influence throughout all of Southeast Asia and the Pacific.

The Japanese Navy planned a powerful, multi- pronged - aircraft carrier attack on the American Island of Midway, and a simultaneous diversionary attack on several islands in the Aleutians of Alaska. The Battle of Midway began on June 3rd, and continued through June 7th, 1942.

Douglas SBD-3 aircraft over the burning aircraft carrier `Hiryu``.

The result was a decisive defeat for the Japanese Navy. Four Japanese Aircraft Carriers were destroyed, for the loss of only one American Carrier – the 'Yorktown'. The *Battle of Midway* was a major 'turning-point' in the War.

Inadvertently, the U.S. Naval-Army Air Force Raid on Tokyo led to the ultimate defeat of the Japanese Empire. The Japanese Navy was unable to recover from the losses in ships and men for the rest of the War. Although the War with Japan dragged on for three years more, there were no further direct Japanese threats to the U.S.A. Mainland.

The Japanese army invaded and occupied the Alaska islands of Kiska and Attu in June of 1942. In the next few months the Japanese Army launched a number of low-level, hydrogen filled balloons carrying incendiary bombs; directed towards the forests of British Columbia, Washington and Oregon. The Latitude of the island of Attu is approximately the same as that of Kitimat, BC, and the Japanese reasoned that the low-level northwest winds would carry the incendiaries down the west coast of North America. That threat disappeared in 1943 when the Japanese were forced to withdraw from the Aleutians. But the possibility of incendiary attacks on North American forests remained a tempting target for the Japanese Military.

During the Japanese Occupation of the Aleutian Islands, one RCAF Squadron, flying Curtiss P-40E 'Kittyhawk' aircraft was attached to the U.S.Army Air Force, and based at Elmendorf Field, Alaska – and assisted in driving the Japanese out of U.S.A. Territory.

S/L K. Boomer, DFC of No. 111 RCAF Squadron was credited with the destruction of a Mitsubishi A6M-2N 'Rufe' seaplane in June, 1942. The only Japanese aircraft destroyed by an RCAF aircraft and pilot during the Second World War.

S/L Boomer was posted to Europe in April, 1944 with No.418 Squadron, RCAF – flying De Havilland Mosquito aircraft. He was KIA on October 22, 1944.

Curtiss P-40E 'Kittyhawk'. No. 111 Sqdn RCAF
Elemendorf Field, Alaska 1942

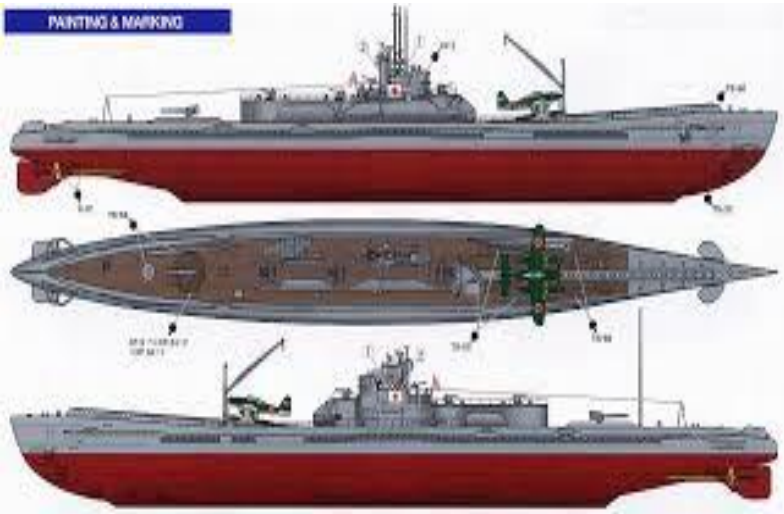
Misubishi A6M2 'Rufe'
– Seaplane fighter

Following the decisive defeat of the Japanese Navy in the Battle of Midway, and the loss of the `*beach head*` in the Aleutian Islands – the Japanese Military sought other means by which damage could be inflicted on the USA mainland. They wanted revenge for the bombing of Tokyo in April, 1942.

The only immediate way of carrying out such retaliatory attacks seemed to be some form of dramatic offensive action. Somehow, *throw some kind of effective weapon a long way up in the air, towards the USA, and hope that it would 'score' on landing..*

A 'Hail Mary' desperation action
(Or perhaps a 'Hail Hirohito plan'..!)

The Japanese Navy then developed a Type 'B' hydrogen filled balloon in 1943, that was capable of carrying incendiary and high explosive anti-personnel bombs – and that could be launched from a submarine loitering off the west coast of the United States or Canada.



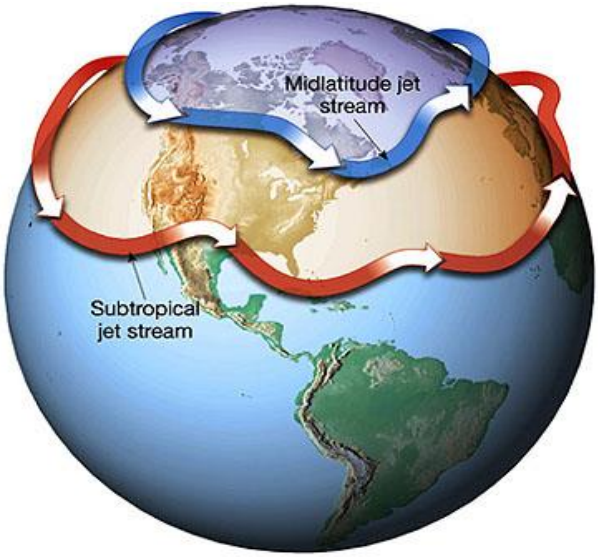
The Type 'B' Navy balloon envelope was of rubberized silk, and consequently quite heavy, thereby limiting the explosive payload carried. The carrying a large number of hydrogen tanks in a submarine severely limited the number of Type 'B' balloons that could be accommodated, and only a few hundred of the 'B' type balloon bombs were launched before the program ended, and the submarines assigned to normal anti-shipping duties.

During the 1930's, a Japanese Meteorologist - *Wasaburo Oishi* - had carried out a study of *fast moving upper winds* from an observatory on Mount Fuji, and using Radio-Sonde Pilot Balloons. He gathered rudimentary data about the existence of the Polar Jet Stream.

Oishi's work went largely unnoticed outside Japan, but the data that he gathered became the basis for the Hydrogen Balloon Attack Programme on Western North America in 1944/1945.

The High-Level, Long-Range Balloon Attack Programme of 1944/45 was conceived by Major General Kusaba of the Imperial Japanese Army, and the implementation of the programme was carried out by the Ninth Army Technical Research Laboratory, beginning in September 1944, under the command of Technical Major Teiji Takada. The name given to the weapon was "Fusen bakudan", translated as *Fire bomb* or *Fire Balloon".*

Mid-latitude and
Sub-tropical polar
Jet Streams



The Japanese have a strong spiritual relationship with the concept of *Kamikaze* = 'Divine Wind' – The origin of the term came from Typhoon storms that destroyed the ships of the Mongol Emperor, Kublai Khan - in his attempts to invade the Japanese Islands in 1274, and again in 1281. The fleets of the Mongol Emperor foundered or were driven back, to the Korean Peninsula by the Typhoon winds. In the raging turmoil of the Sea of Japan; thousands of Mongol and Chinese soldiers were drowned. There has never been an invasion attempt of Japan by sea again.

Woodcut print of the 13th Century 'Kamikaze' – Divine Wind – by Hiroshige

Some Japanese military thought of the 'Jet Stream' winds of 1944/45, as being ***'Divine Winds***' that would carry the 'Fusen Bakudan', balloon fire-bombs to western North America.

The Polar Jet Stream flows from west to east, between Latitude 30 N to 60N, although variations occur, with the Jet Stream dropping to lower latitudes in the summer season, and higher latitude in winter. Polar Jet Stream occurs between 25,000 to 35,000 feet A.S.L., approximately at the 300 mb pressure level. Jet stream width can be from 50 to 100 km wide. Vertical depth varies from 5 to 10 thousand feet.

The research by Wasaburo Oishi in the 1930`s had shown that the Mid-Latitude Jet Stream flowed from west to east across the Japanese Home Islands, across the north Pacific, and down the coasts of British Columbia, Washington State, and Oregon.

The Japanese Military theorized that weapons launched by balloons, into the Jet Stream, might well cause death and significant damage in the United States and Canada on landing in the forests of North America.

Some experiments were carried out with a rubberized-textile balloon envelope, but the great majority of the balloons were constructed with a special paper called **"washi"** - made from a bush called *'Kozo'*, that was related to *the Mulberry tree*. Balloon envelopes were about ten metres in diameter, and waterproofed with green persimmon juice, in the same way that the Japanese had waterproofed paper parasols for centuries past.

The upper sphere of the balloon was made of four-ply paper, while the lower sphere was three-ply. Around the mid-section of the balloon envelope a series of 19 'strong points' were sewn into the envelope fabric to make a 'suspension curtain', and attached to these 'strong points' were shroud lines of about 12 metres in length. The shroud lines joined at their lower end, and supported a four-spoke 'chandelier' aluminum ring, carrying the altitude control devices; ballast bags and bombs. The hydrogen filled balloon envelope was capable of lifting about 450 kilograms at sea level, the payload diminishing with altitude.

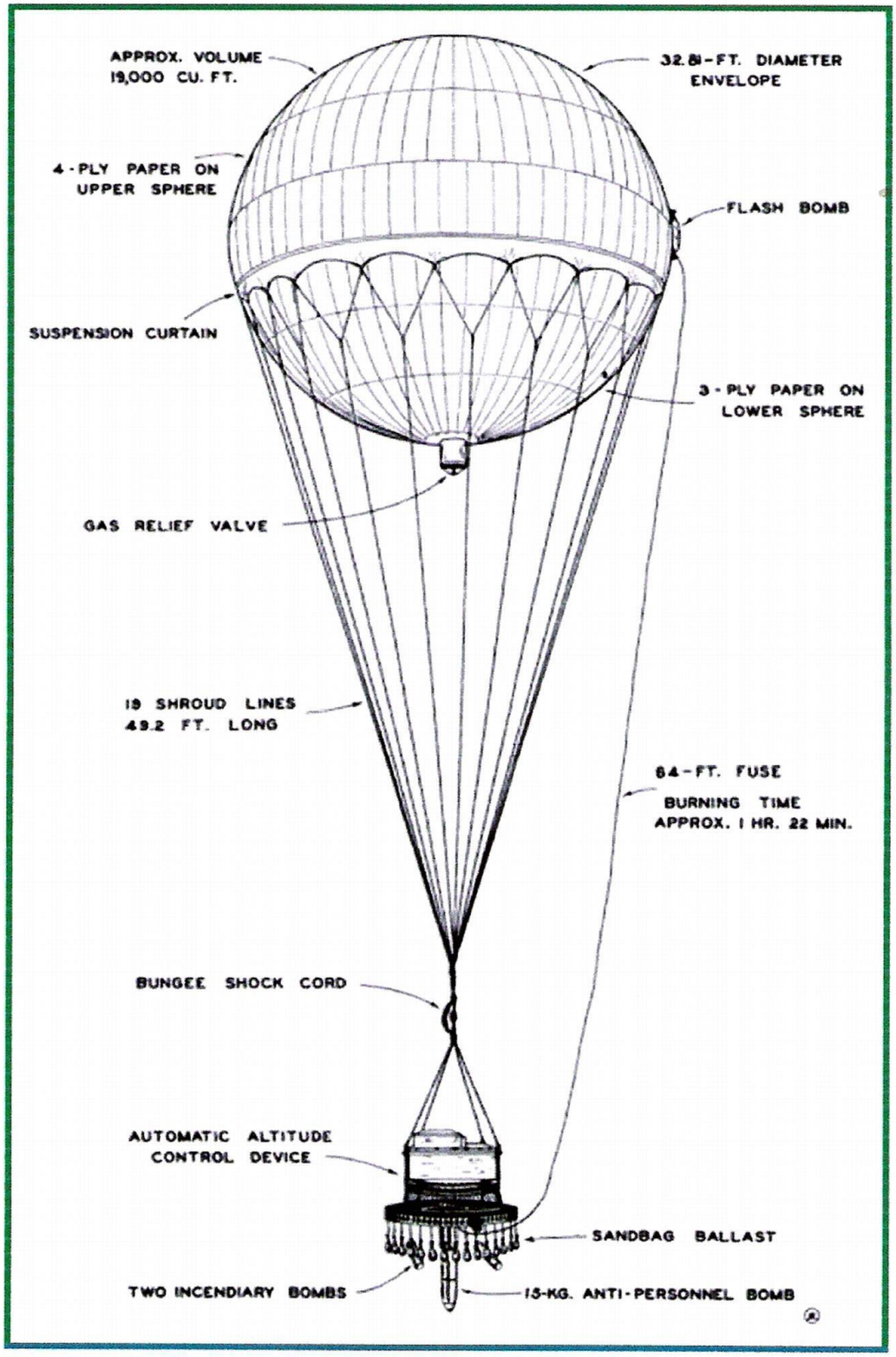
A pressure actuated (Aneroid switch) gas release valve was located at the bottom of the balloon envelope, and a 4 Kg. 'flash bomb' was attached to the middle, outside of the balloon – for eventual destruction of the balloon envelope.

A short 'Bungee' shock cord was attached between the shroud lines and the control device to eliminate turbulence and shocks expected to be encountered in high level, high speed winds.

Assembly took place in many locations in Japan, and the finished Balloon units were brought to one or two centres for hydrogen filling, sand ballast attachments, bomb loading, and

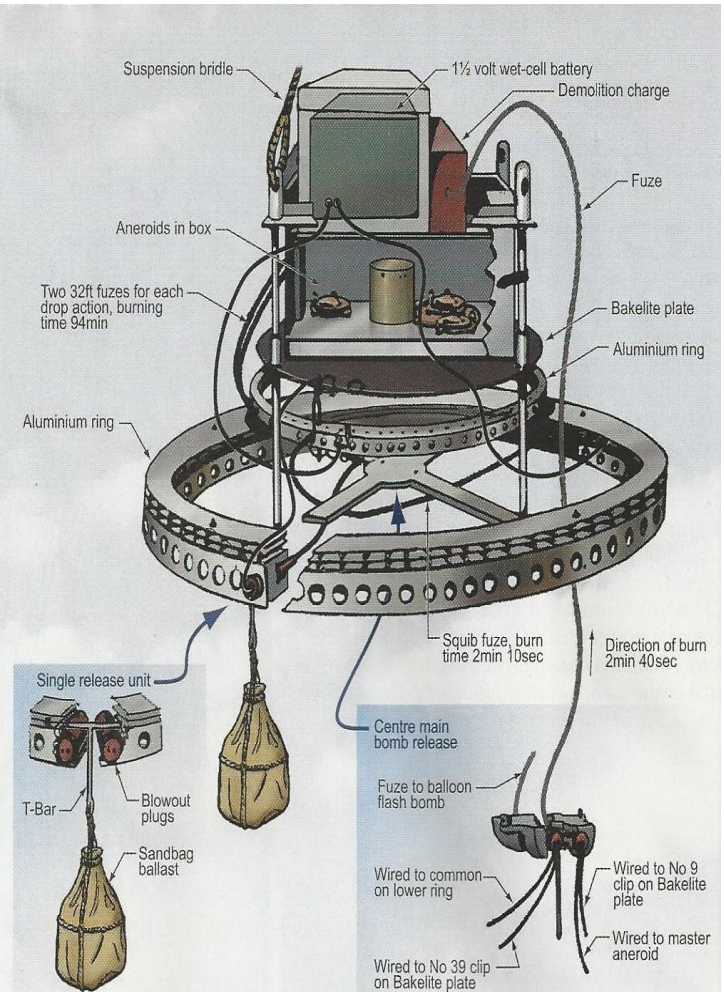
launching. A total of around 10,000 units were perhaps completed, but only about two-thirds of those were launched before the project ended.

Paper balloon and equipment



Fusen Bakudan

Control and support 'Chandelier'



The control devices consisted of several Aneroid barometric controls; a 1.5 Volt wet-battery; and a 4 kg explosive charge (to demolish the entire device). Attached with 'blow-plugs' to the circular 'chandelier' support ring were 24 sand ballast bags of about 3 kg each.; a 15 kilogram anti-personnel fragmentation bomb; and Six incendiary bombs of 5 kg each.

Teen-age Japanese school girls, in many locations all over the Japanese Islands, were enlisted to sew and glue the paper panels in the production of the paper balloons. The glue was made from a tuber– called Konnyaku-Nori a root vegetable that is similar to the potato or south Pacific Taro – and in the conditions of very strict food rationing in Japan at the time, much of the nutritious paste was eaten by hungry workers!

School girls gluing and sewing paper panels, under the watchful eye of a Japanese military officer.

Fire-Bomb Balloon Launch Procedure

During the launch procedure, the paper balloon was tethered to screw anchors in the ground. A series of heavy paper, sand ballast bags were attached to the 'skirt' of the balloon – to hold the balloon suspended during the launch. Each paper ballast bag had a thin paper 'rip band' along the middle of the bag, and when the control devices and bombs had been loaded to the chandelier; and the balloon was filled with hydrogen – each of the tethering ropes was jerked hard to open the 'rip band' and dump the sand.

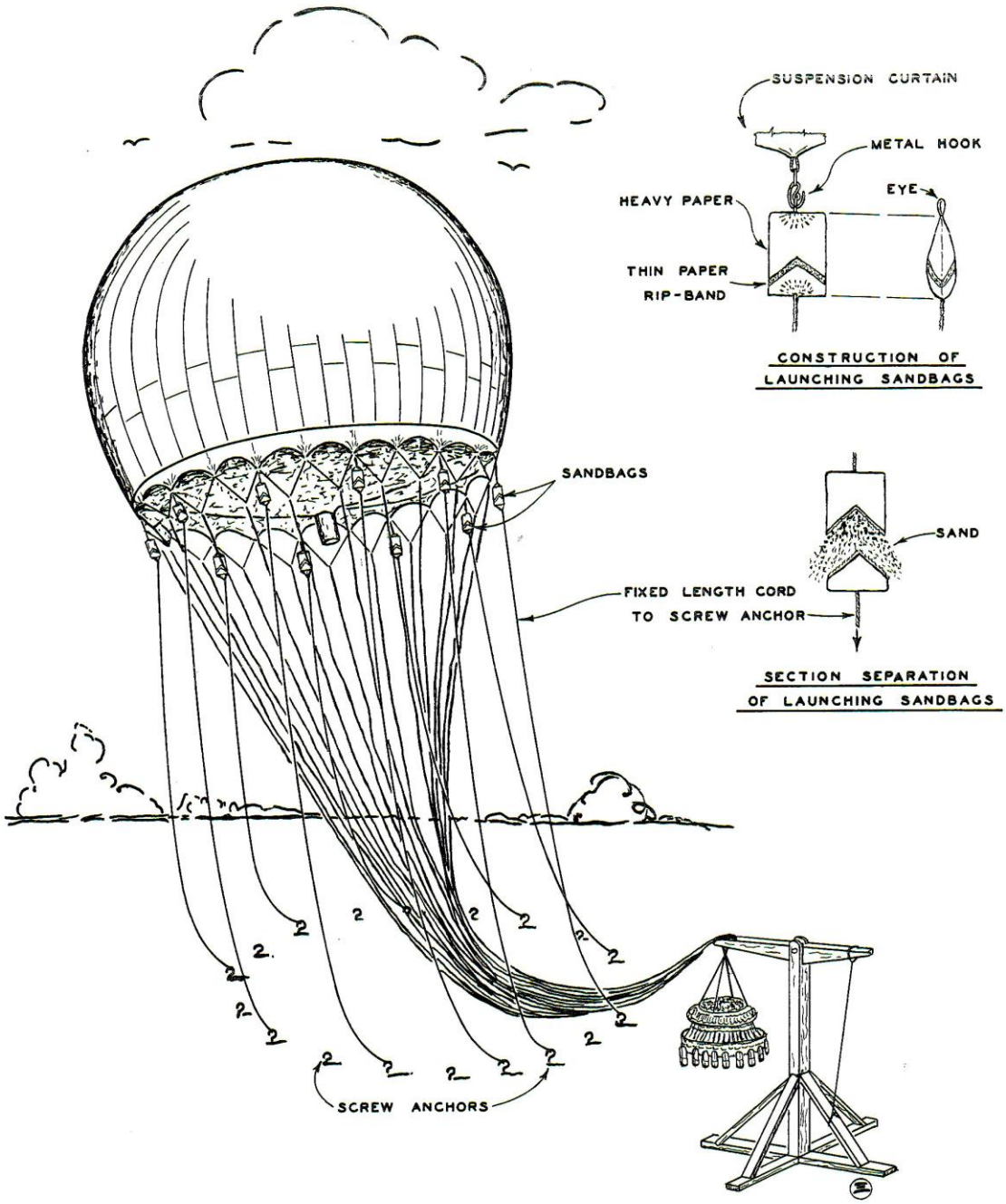


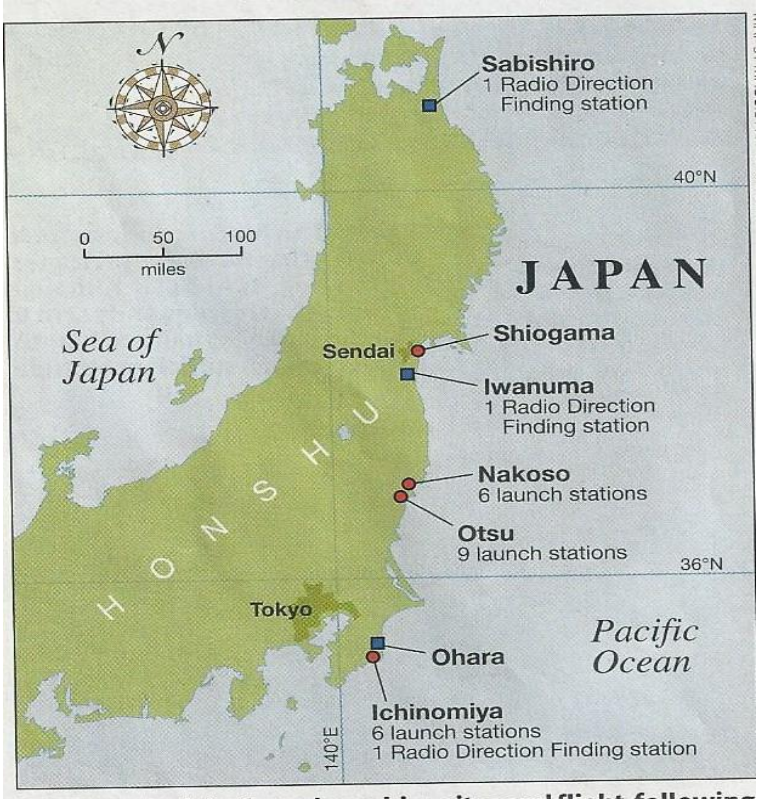
Figure 82. Method used for launching bombing balloons in winds above two and one-half miles per hour.

Some Japanese gave the balloon-bomb the nickname "*Fugu"*. The *'Fugu'* is a blow-fish, much prized in Japanese Sashimi raw fish. Some internal organs of the 'Fugu' contain a poison that can paralyze the nervous system, and If not properly prepared the results can be fatal.

The concept of *danger,* and the puff shape of the balloon, led to '*Fugu'* being a popular but unofficial name. The Japanese term for the balloons was 'Fusen Bakudan' – Fire Bomb.

The launch programme began on November 3, 1944, and balloons began landing in California USA on November 6th, 1944 – a three day trip. Over the winter of 1944-1945, and on into the spring of 6,000 balloons were launched across the North Pacific Ocean.

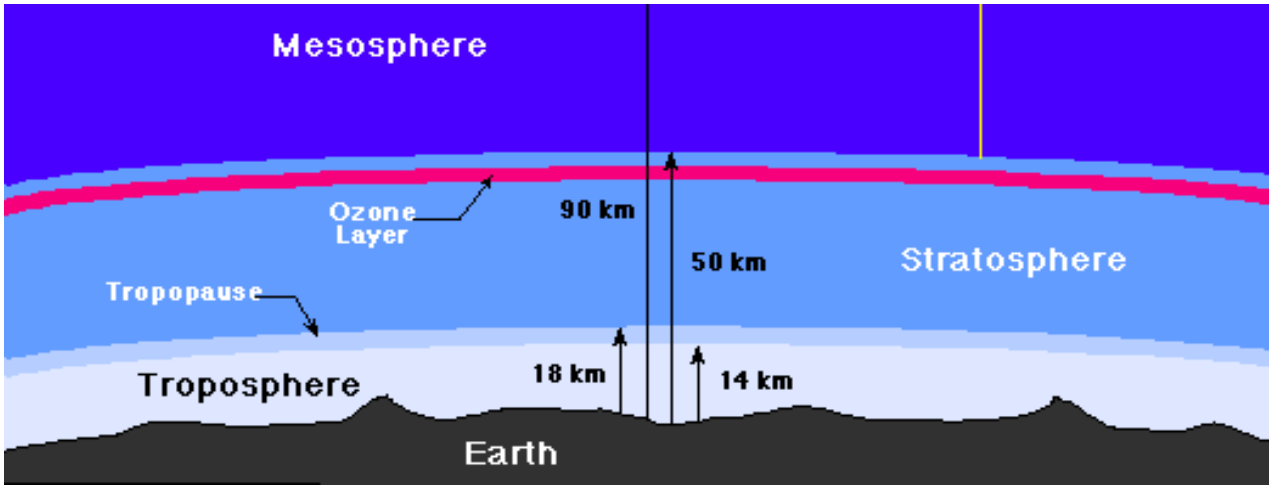
The balloons were released to rise into the Polar "jet-stream" that flowed from west to east across the north Pacific at altitudes of 30 to 38 thousand feet, (roughly the 300 millibar pressure level) and at speeds usually well over 100 mph. The science of "jet-stream" location was primitive in the mid-1940's, but Japanese scientists correctly calculated that upper winds would carry the balloons roughly over British Columbia and Northwest USA; where on-board barometers and timing devices would release the bombs.



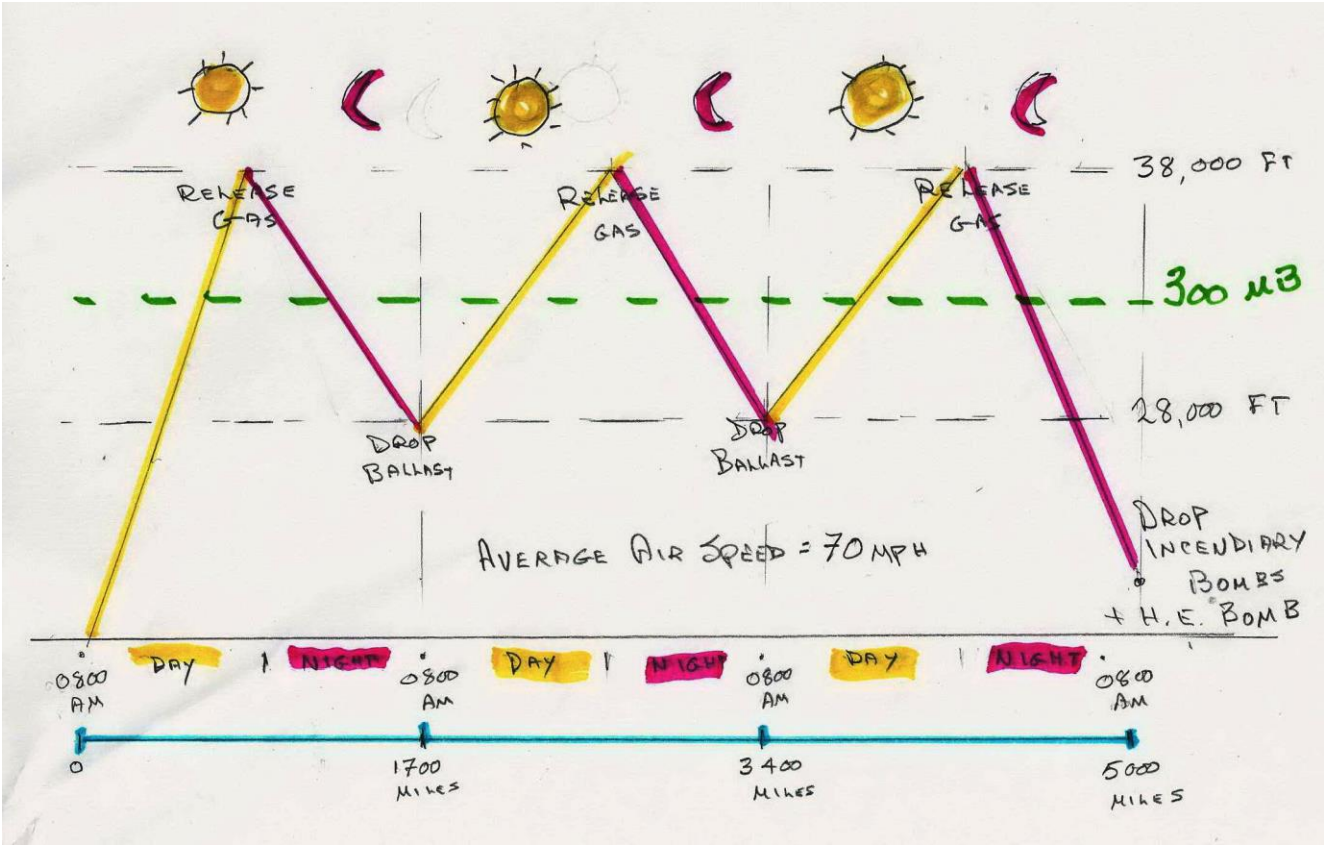
ABOVE Japan's balloon-launching sites and flight-following stations. The latter were radio direction-finding installations set up by the 5th Army Technical Research Institute.

The existence of high altitude "jet-stream" winds was known, but the variation in direction, the speed, and the height of the winds was still largely a mystery, and so it was anticipated that a great many of the balloons would fall into the Ocean.

The mid-latitude Jet Streams occur in the area of the Earth's Atmosphere, called the Tropopause. Near the 300 mb pressure level – that is generally located at altitudes between 30,000 and 35,000 feet A.S.L.



The '**Flight Plan'** for the balloons was based on a three-day transit time, flying at altitudes between 28,000 and 38,000 feet; at an average speed of around 70 mph. The theory was that during hours of daylight, the hydrogen in the balloon would warm and the balloon would rise. Before topping 38,000 feet, barometric devices would release small amounts of hydrogen from the balloon envelope, and the balloon would stabilize. After dark, the hydrogen would cool and the balloon would sink.



Before dropping to the 28,000 foot level, barometric devices would initiate an electric current to ignite 'blow-plugs', and release pairs of sand filled ballast bags. Two from each side of the aluminum suspension ring so as to maintain a level attitude of the payload package –

- and the balloon would maintain altitude until the next daylight/darkness sequence, when the process was repeated. The last ballast to be dropped was the incendiary and anti-personnel bombs. After those had been dropped, onboard explosive devices were ignited to destroy both the control gondola and the balloon envelope.

Japanese military scientists estimated that 10 to 20 percent of the balloon bombs would reach North America, and records show that around 350 were sighted, or are known to have landed on the North American continent. However, some Japanese scientists now believe that perhaps as many as one thousand (or more) balloons may have successfully completed the ocean crossing.

That estimate is based on the design and operation of the balloon control devices. Devices that were expected to destroy both the control chandelier – and the balloon envelope itself, after all ordinances had been dropped. That design feature has perhaps ensured that no trace has been found of a great many of the weapons that had made the trip across the Pacific. Many Balloons may have completed the 'mission' and dropped all incendiary and high explosive bombs in the mountains and forests of Canada and the Western U.S., and then blew up all traces of the balloon and controls.

The wet weather conditions that prevailed over the forested areas of western North America during the winter of 1944/45, would no doubt have prevented any major conflagration caused by many successful incendiary drops. There are no major statistical variations of a greater numbers of forest fire incidents in British Columbia and the Western American States, for that winter of 1944/45.

However, there was one design feature of the Fire-Balloon control devices that may have caused the premature destruction of a great many of the Balloons. It's 'Achilles Heel'.

The release of ballast bags, and ultimately the bombs – was done by means of 'blow-plugs' around the 'wheel' of the aluminum 'chandelier'. Aneroid barometric devices were programmed to send a current from the wet-cell battery on the control unit, that ignited fuses to activate the appropriate 'blow-plugs'.

The wet-cell battery was placed inside a larger metal container on the 'chandelier', and the interior of the contained filled with anti-freeze liquid. One of the properties of the Earth's atmosphere is that temperature decreases as altitude increases. The 'Adiabatic Lapse Rate' of temperature change is roughly 2 degrees Centigrade, for each 1,000 feet of increased altitude. As can be seen from the diagrammed Flight Plan of the Balloon-Bombs on page 10 of this article, the devices would have remained for upwards of 60 or 70 hours at altitudes between 28 and 38 thousand feet. At those altitudes temperatures may have been as low as minus 40 or minus 50 degrees Centigrade.

There is a very high probability that a great number of the planned ballast and bomb release fuses did not ignite because of a dead and frozen wet-cell battery.

The Hydrogen Gas release valve on the bottom of the balloon was activated mechanically by a barometric device at the valve itself, and was not connected electrically or mechanically to the control unit. As a result, at the top of the third ascent of the balloon to around 38,000 feet – gas would be released to stop the ascent and stabilize the device.

As the balloon then descended during hours of darkness, the controls in the ‘chandelier’ would fail to release ballast to stabilize the descent – and the balloon would continue to descend into the ocean – or perhaps into remote mountainous areas of the North American Coast, where many of the weapons may still be lodged unseen.

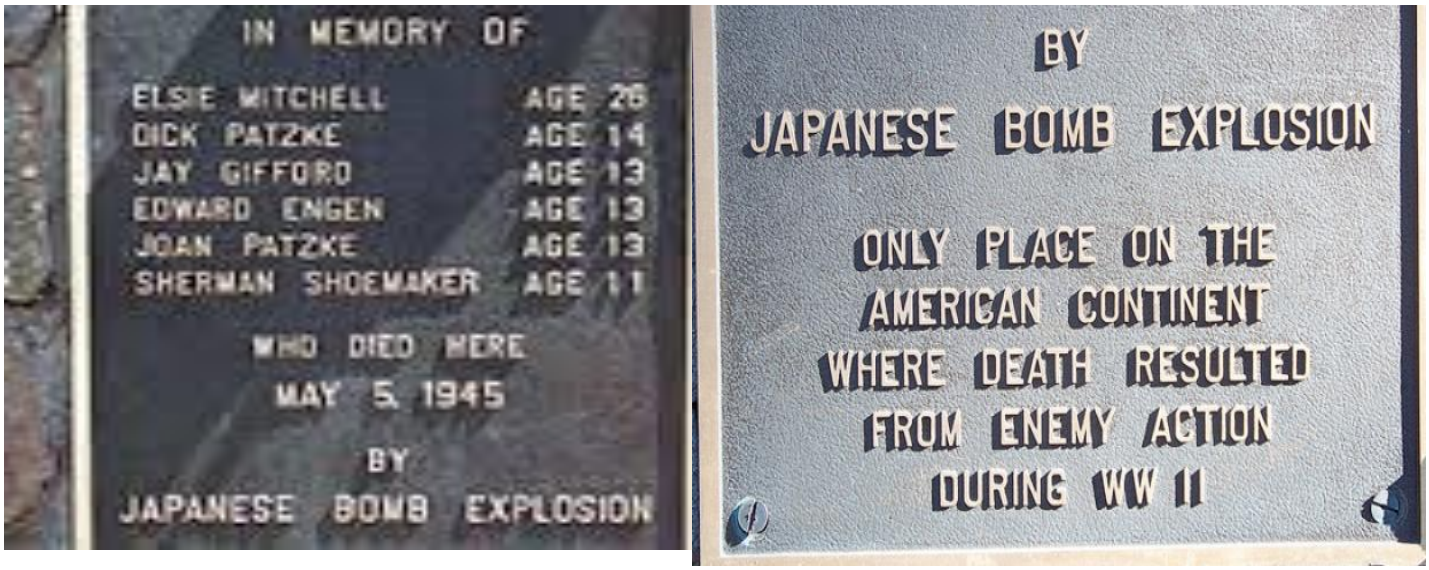
And of course, no ordinance would be released as well.

There were eighty recorded landings in Canada, with fifty seven of those in British Columbia; between November 1944 and June 1945. Several balloon bombs are known to have landed in southern Alberta and one balloon flew as far east as Oxford House, Manitoba, and one landed at Minton, Saskatchewan. Five balloons were shot down by RCAF aircraft.. Most of the 220 other known landings were in Oregon, Washington and California.

Two balloons made it as far as Michigan, USA, landing just a few miles from the large Consolidate B-24 Aviation factory near Detroit. At least one balloon was found in the Hawaiian Islands.

The only known fatalities occurred in Oregon where 6 people were killed when they disturbed a bomb they found while hiking in the forests of that state. However, it is highly likely that many more of the balloons landed in mountainous areas of British Columbia and Northwest USA, and might still pose a threat to anyone that may one day stumble across a device in some remote location.

Memorial to the six people (one adult and five teen-age children) at Bly, Oregon



Elsie Mitchell was the pregnant wife of an Alliance Church Pastor in Bly, Oregon. The Pastor and his wife had taken the five young teen-age children into the hills near that town, for a Sunday afternoon picnic.

While Pastor Mitchell was removing the picnic equipment from the car, his wife and the children explored the woods in the vicinity. They disturbed the High Explosive Bomb of a Japanese Balloon-Bomb, and tragically all six were killed.

However, there were concerns that in addition to being a potential explosive hazard, there might well be a risk that *biological warfare* was involved. As a result, to prevent undue panic among the population, the governments of the United States and Canada imposed a news blackout about the balloon attacks for the duration of the war, in both countries.

Although the Japanese Balloon Bombs were not a great hazard to life and property on the west coast of North America, the Governments of Canada and the United States organized monitoring stations along the coast, and the United States military made a strong effort to locate the launching sites.

Some of the balloon bomb units landed in North America with ballast sand bags still attached, and bombs unexploded. This enabled USA and Canadian authorities to begin the process of determining the launching sites.

At first it was thought that the balloons were being launched by personnel from Japanese submarines, from beaches along the west coast of the North American continent. The Military Geology Unit (MGU) of the U.S. Geological Survey was asked to attempt to determine the origin of the sand that had been recovered from ballast bags.

It was then quickly determined that the sand in the ballast did not originate from any North American beaches, and although it was almost inconceivable that the balloons could have originated in Japan, a high-priority search was put in motion, to see if the sand might have come from a beach somewhere on the Japanese home islands.

During the spring of 1945 U.S.A. military intelligence traced the launch site of the incendiary balloons by identifying the beaches in Japan that were the source of the sand used in the ballast bags. This amazing discovery was possible because of a geological record of sand samples collected by The University of Michigan from world-wide beaches during 1900 to1940. The sand particles in the ballast bags consisted of; minerals of volcanic origin; and mineral exo-skeletons of tiny marine animals.

The samples revealed that this particular type of sand came from a beach along the coast of Chiba Prefecture, near the city of Shiogama, north and west of Tokyo, on the main Japanese island of Honshu.

The U.S. Air Force then conducted several high-altitude B-29 photographic operations along the shore line of Chiba Prefecture, and discovered the existence of a number of recently constructed

buildings- near the city of Sendai, Chiba Prefecture - that were believed to be facilities used to manufacture the Hydrogen gas for the balloons. Several B-29 bombing raids in June of 1945 destroyed the hydrogen producing plants.

Because of the very random and uncertain nature of the Japanese balloon offensive, there were never any significant dangers to military or civilian locations on the North American continent. Obviously, one of the major Japanese objectives in carrying out the Incendiary balloon program was to start as many fires as possible in the forests of western North America, thereby destroying forests and properties, and causing Canadian and American authorities as many problems with forest fires as possible.

However, the months of November 1944 to April 1945 were the wet, cold months on the west coast of North America, and as a result very little damage was done to Canadian or American forests by Japanese balloon incendiaries.

It seemed quite surprising that the Japanese military would carry out a technically ambitious and costly balloon attack programme during the period of the year when wet weather prevailed on the North American west coast. However, even though the science of upper air movements – in particular the 'Jet Streams', was in it's infancy in 1944 – Japanese scientists were aware that it was only during the months of November through May that the very high-speed west-to-east winds passed over the Japanese Home Islands, across the Pacific Ocean, and across North America along latitudes between 45 deg., and 50 deg. North – British Columbia, Washington and Oregon – the primary target areas.

As a result of the news blackout in North America, the Japanese Military had no information about the effectiveness of the Balloon Bomb attack. The program required the dedication of a considerable amount of scarce metals – especially aluminum. In May of 1945 the Japanese Military decided that the Balloon program was not effective, and it was cancelled.

Although the objectives of the ambitious and expensive Balloon Bomb attacks were not at first clearly understood; there is no doubt that there was a strong desire on the part of the Japanese High Command for a visible retaliation to the April 1942 bombing of Tokyo. The Military had hoped that the bombs would cause extensive and disruptive fires in the forests of the USA northwest – and in Canada. Although the bombs carried very small explosive bombs, there was some expectation by the Japanese that death or injury to Americans and Canadians might also occur. And of course, perhaps as the underlying motive – Japan had expected that the Balloon Bombs would cause a degree of fear and even panic among the people of the USA and Canada.

In late 1944 both the United States Army Air Corps and the Royal Canadian Air Force acted quickly to assign special high-altitude fighter aircraft units in strategic locations, to intercept and destroy the potentially lethal Japanese balloon bombs. The RCAF established interceptor units at various bases in British Columbia, Alberta, and Saskatchewan - using Hawker 'Hurricane' Mk XII, and de Havilland 'Mosquito' Mk. VI fighter aircraft.

During the winter of 1944-1945 RCAF Hawker 'Hurricane' Mk. XII, single-engine fighter aircraft, along with a few pilots and support staff and equipment, were based at the former British Commonwealth Air Training Plan airport at Moose Jaw, Saskatchewan. Training activities at the former BCATP base, No. 32 SFTS (RAF) had closed on October 17th, 1944.

The Air Cadet movement in Canada continued unabated in 1944 and early 1945, and to our delight, cadets of No. 40 Air Cadet Squadron (Moose Jaw) were allowed on the base to watch the operations of the 'Hurricane' fighter aircraft.

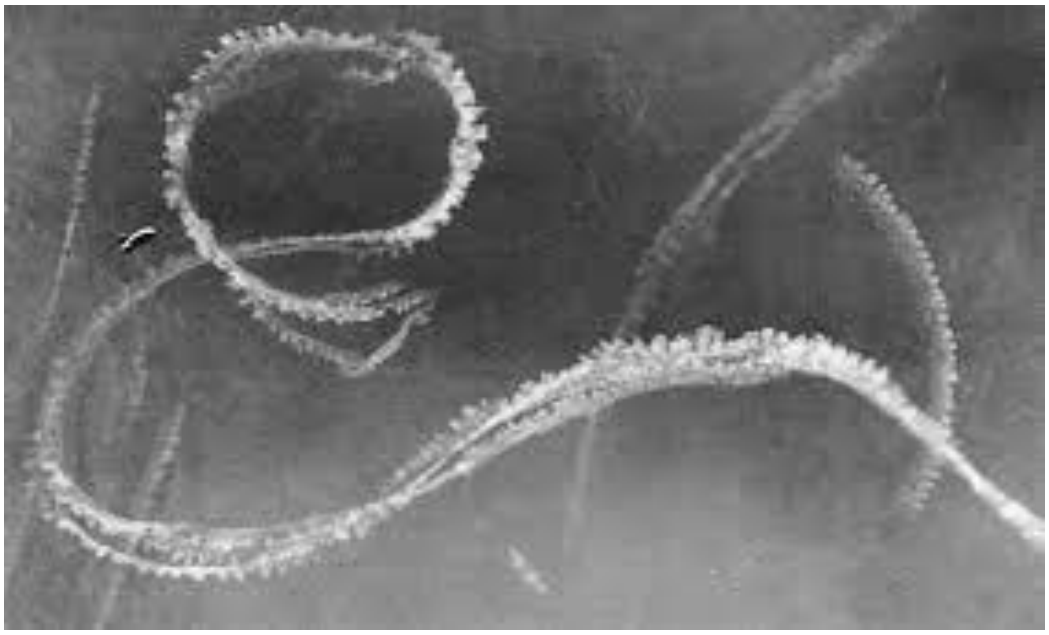
RCAF No. 133 Squadron had been formed at Lethbridge, AB in June of 1942; and RCAF No. 135 Squadron had been formed at No. BGS, Mossbank, SK, also in June of 1942, were both based at Patricia Bay, BC during the period August 1944 to September 1945. Four Aircraft from each Squadron were alternately based, every four weeks, at Tofino, BC for the express purpose of intercepting the Japanese Balloon bombs.

As these were the only two Operational RCAF fighter units located in western Canada during the winter of 1944/45, the aircraft based at Moose Jaw, SK are believed to be from one of those two RCAF Squadrons.

All unnecessary weight was removed from the 'Hurricane' aircraft, including armour plate, propeller nose spinner, radio equipment, and all but two wing-mounted machine guns. It was necessary to make the aircraft as light as possible so that the 'Hurricane' could climb to altitudes well over 25,000 feet to intercept Japanese incendiary-bomb balloons.

I do not know how many flights occurred during the spring of 1945 when the 'Hurricanes' were dispatched on an operational mission, but I was witness on four instances that saw the 'Hurricanes' struggling slowly and valiantly on their very high altitude mission. Unfortunately, on none of those occasions did we observe that a Japanese balloon bomb was destroyed.

There was little public awareness of the Japanese balloon intercept programme locally in Moose Jaw – or in Saskatchewan in general. However, many people were often puzzled about the unusual display of high-altitude contrails that appeared over Moose Jaw, on a number of clear days during the spring of 1945. In the days before jet aircraft, high altitude aircraft contrails were quite rare over the Canadian Prairies.



Sergeant Wallace Cameron – R.C.A.S.C. Canada - (centre) NCO-IC –
Army Recruiting Office; Moose Jaw, SK

Lieutenant Gordon Cameron –
Army Cadets Canada. – (left)

Flight Sergeant William Cameron –
No. 40 Sqdn. Air Cadets Canada – (right)
Moose Jaw, SK – April 1945

So, while it is technically correct that I saw RCAF fighter aircraft attempting to intercept Japanese bomb-carrying aircraft over Moose Jaw, Saskatchewan, seventy years ago in 1945; it must be said that the Japanese aircraft were lighter-than-air, un-manned balloons.

That was an unusual and exciting experience for me and my Air Cadet friends in early 1945, and perhaps my statement in the first paragraph of this article was a bit more dramatic than the reality of the events.!

Bill
William J. Cameron
Okotoks, AB
October 15th, 2017 - (revised)

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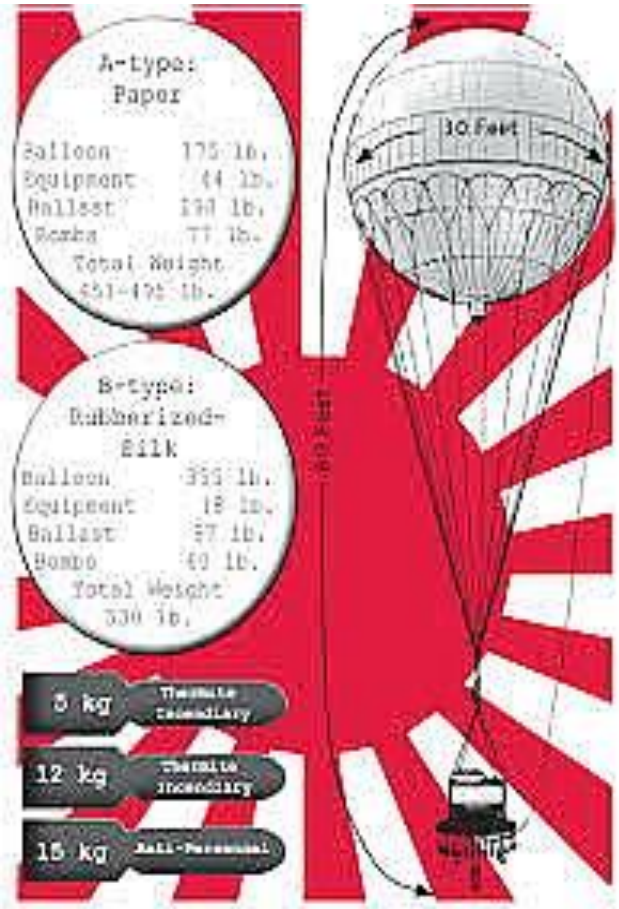
**Japan's World War II Balloon Bomb Attacks on North America:- Robert Mikesh*
**The Legion Magazine (Canada) August, 2009.*
(This article tells of the Hurricane Mk.XII aircraft being based at various former BCATP Air fields in Alberta and Saskatchewan – including Moose Jaw, SK, and Calgary, AB)

(This article was published in the Canadian Aviation Hall of Fame Newsletter
- The Flyer – Volume 28, No. 3 Summer 2009, and Volume 28, No. 4 Fall 2009).

(Published in 'The Aeroplane' magazine –'Hidden History' – February 2010.)

Japanese Type A and B Fire Balloons



NEWSPAPER ARTICLES – POSTWAR

(Courtesy Bruce Gowans)

August 20, 1945

Edmonton Journal
EDMONTON, ALBERTA, MONDAY, AUGUST 20, 1945

No Trace of Jap Balloons If Scheme Had Worked

If the bomb-carrying Jap balloons that threatened this country had worked perfectly, there would have been no clue to their operation. But enough of them, due to faulty construction, came to earth in a semi-damaged condition and enabled Army technicians to find out exactly how they worked.

This was the revelation to civilian visitors at the Canadian Army Jap balloon display this week-end at the R.C.A.F. station, held in connection with Lancaster Day.

In charge of Lieut. Day, R.C.E., remnants of seven recovered balloons were closely examined by hundreds of curious people Saturday and Sunday.

As explained by Lieut. Day, the operation of the airborne balloons was centred around four aneroid barometers and a protected wet cell battery that supplied the necessary charge.

Hydrogen-filled and festooned with incendiary bombs and one heavy charge, the balloons were gauged to drift from Japan to this continent in eight to 10 days. Slowly escaping gas was to let them down to 25,000 feet over North America, at which time one set of barometers automatically completed a circuit and a bomb was detached from the aluminum ring.

The same action released a weight from the balloon and it climbed above the 25,000 level for a distance, eventually dropping to repeat the bomb carrying performance.

When all the smaller bombs had been released and the balloon sank to a lower altitude, a second set of barometers completed another circuit which released the single large demolition bomb. At the same time, fuses were lit that set off a heavy explosive charge attached right to the ring and fuse mechanism. This was intended to utterly destroy the remainder of the chandelier in the air.

Simultaneously, a lighting charge was started up the connecting ropes to the hydrogen in the paper balloon and when the fire reached the balloon it would explode without a trace.

It was quite an idea and highly ingenious. But it didn't work.

October 2, 1945

Balloons Ignored So Japs Gave Up

TOKYO.—Japan's expensive V-1 weapons—bomb-laden paper balloons — intended as retaliation against Allied raids on Tokyo, were abandoned because neither the Japanese nor the people of the North American continent seemed to pay any attention to them.

This explanation was given Tuesday in an interview by the staff officers technical section, Japanese headquarters.

Nine thousand balloons were launched from three sites near Tokyo before the experiment was abandoned April 20, 1945.

It took more than two years to complete experimentation, before the first balloon was launched, and cost more than 9,000,000 yen (more than $2,000,000 at pre-war exchange) to manufacture the strange weapon — but officers said they heard of only one landing on the North American continent, in Wyoming.

(Actually, quite a number of the balloons were reported found in the United States and Canada, but at the request of Allied censorship publicity was withheld.)

Intending to "create confusion" by starting forest fires and frightening civilians, the officers said they had no expectation of causing any military damage because the bombs were too small. The balloons carried weapons weighing 30 pounds or less and they were uncontrolled.

Newspaper story - 2007

(courtesy Bruce Gowans)

The day the Japanese bombed Flin Flon

him glaring from under his bushy eyebrows in a way calculated to chill young hearts.

Beside those two, in all his majesty stood the Sergeant; polished leather leggings gleaming, holstered pistol tied to a white "idiot mitten" lanyard around his neck. He wore his "mountie" hat and from under its large brim he surveyed us as an executioner might have surveyed the condemned. Beside the sergeant stood one of the local business men but not in his usual wool suit but kitted out in the uniform of a major in the reserves. His brass buttons gleamed, his medallioned hat was jammed low on his brow and he was tapping his thigh with a leather covered stick.

The major had that parade ground ability to talk in capital letters so that his words seemed to slap you right in the face. A ship? We wracked our brains for anything we might have done that had anything to do with ships, and squirmed lower in the hard folding chairs. There was more like that, much more and by the time he finished not a few sniffles could be heard as we contemplated the pictures he drew of loved ones sinking helplessly in the cold waters of the North Atlantic or gasping their last on the hot African sands.

The sergeant spoke next. Glaring out from under the brim of his hat with his icy cold blue eyes he described to us, chapter and verse, just what it meant to be in illegal possession of goods critical to the war effort. There was no escaping the fact that this godlike panel of judges

past me. I am going to hold this box out to you as you pass and I want each and every scrap, every tiny scrap of that oiled paper to be deposited in this box at once. If you have any of this material at home, or anywhere else tell the Sergeant now. Arrangements will be made for him to accompany you to wherever that scrap of oiled paper might be, and you are to hand it over to him immediately." We were just starting to get to our feet when he added "Wait, there is one more thing. I cannot say enough to impress upon you how serious this matter is but I must have your solemn promise that you will not discuss this matter with anyone, or even among yourselves.

Years later I found that some of my classmates could not remember this event at all, not only had they

The paper balloon envelope of a Fusen Bakudan that landed near Flin Flon, MB in April, 1945 – was torn into shreds by school children. Authorities (RCAF and RCMP) came to the schools involved, and demanded that the children return every scrap of the balloon paper. A dramatic and traumatic experience for many of the young children…

Remains of High Explosive bomb and Control "Chandelier'
Japanese Balloon-Bomb – found near Lumbey, BC – October 2014

Post Script:

The United States Military Geological Service identified two locations on the east coast of the main Japanese Island of Honshu, as being the launch sites for the Fire Balloons. That identification was based on the sand samples found in several ballast bags of Balloons that had landed in North America.

Those two sites were::

- Ichinomiya - about 60 km west of Tokyo
- Shiogama - about 200 km north of Tokyo.

ABOVE Japan's balloon-launching sites and flight-following stations. The latter were radio direction-finding installations set up by the 5th Army Technical Research Institute.

Post-war discoveries revealed that there were two other launch sites, at Nakoso and Otsu, both about half way between those two noted above.

Balloons launched from Nakoso and Otsu were both provided with ballast bags filled with the same sand as at the launch site at Ichinomiya.

Cartoon from a Texas newspaper - August, 1945

DIVINE WIND

神風

KAMI KAZE

William J. Cameron
Okotoks, AB – Canada
October 15th, 2017