



Painting by Don Connelly

Incident Over Sumas.

WESTERN AIR COMMAND AND THE JAPANESE BALLOON CAMPAIGN

by Major Mathias Joost

Introduction

The Second World War witnessed the creation and implementation of many unusual weapons by both sides. The Japanese balloon campaign of December 1944 to April 1945, launched against the western part of North America, continues to hold fascination for many people. Yet, the official Canadian military reaction to the balloons has not been studied. The characteristics of balloons and the American response to these threats have been covered in a number of US publications,¹ while Canadian publications have merely focused upon either the number of balloons shot down or the nature of their construction.²

It is perhaps at the operational level that the Royal Canadian Air Force (RCAF) response to the threat is most interesting. Caught between tactical requirements, coordinating operations with the other services on the west coast, and responding to the orders of Air Force Headquarters (AFHQ), Western Air Command (WAC) reacted overall in an effective manner, albeit sometimes in a highly original fashion.³

Major Joost is the War Diaries Officer for the Directorate of History and Heritage at National Defence Headquarters in Ottawa.



The chandelier, as the underslung carriage was known, from the balloon forced down near Coal Harbour was recovered intact. The picture shows the overall size of the sandbags and equipment carried by the balloon. It also includes the small battery target at which RCAF pilots were instructed to shoot to bring down a balloon intact.

the directives and requirements of AFHQ, but to the needs of the regional Joint Service Committee (JSC), the committee composed of representatives of the three services on the west coast and mandated to coordinate matters of common concern.

Of all the concerns, that of the WAC's relationship with the other Pacific-based forces is perhaps the most important. The Command could not operate in isolation, thereby ensuring that its actions would have an impact on the other services on the west coast. Therefore, how WAC reacted to the balloon threat from its earliest period is of great interest.

Early Innings

Western Air Command was the first of the RCAF commands to become aware that Japanese balloons were incurring upon the airspace over the western part of North America, and, subsequently, to prepare a countering defence plan. At a staff meeting on 11 January 1945, the balloon issue was tabled for the first time, but with no specific insight as to the nature of the threat or if counter-measures were required.⁵ However, this did not mean that WAC was inactive or disinterested. In fact, it was prepared to detect and recover balloons without support from the other services. Air Vice-Marshal F.V. Heakes, the Air Officer Commanding (AOC) Western Air Command, had already started coordinating information and actions with comparable American authorities, and had appointed a "special balloon investigator" to gather information and carry out the liaison function. At the same time, one aircraft at each base was ordered to be maintained on stand-by "to investigate" further sightings.⁶ AFHQ supported this position, and in an effort to recover balloons intact for further study and analysis, sent a message on 20 January indicating that the recovery of intact balloons was "extremely desirable."⁷ In a directive of 23 January, AFHQ indicated that information about the balloons was to be circulated among the respective western RCAF headquarters. Western Air Command was also to pass copies of all reports to the appropriate US authorities.⁸

This Command had numerous concerns with respect to the balloons, including the gathering of intelligence about them, since understanding the nature of the threat could better enable development of effective countering actions. It was initially believed that they had been designed to start forest fires, or that they posed a biological hazard threat, designed to either threaten humans or livestock.⁴

Secondly, there was the issue of detecting and reporting the balloons, and then managing the response. Related to this were questions as to whether civilian pilots should be informed, and how could WAC ensure the accuracy both of balloon reports received and then of reports sent to higher headquarters. Thirdly, WAC's actions had to conform, not only to

The Command was allowed to act relatively independently, as the overall perception of the threat was low. On 19 January, Air Vice-Marshal Heakes's evaluation was that the balloons were of "no immediate significance," except possibly for their psychological value or for reconnaissance. He further speculated as to whether the balloons had been designed to create forest fires and suggested submarines were releasing them.⁹

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Western Air Command also advised its subordinate units of the balloon presence at an early date. In a message of 11 January, stations and units had been so advised and were ordered to inform WAC of any sightings. The message also noted the need for secrecy and reiterated the great interest in obtaining *intact* balloons.¹⁰ Thus, at a time when WAC was prepared to manage the balloon threat on its own, only its limited number of active units were involved in the defence against them. No evidence was found that WAC was coordinating the detection, reporting and recovery of balloons with other west coast armed services.

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Further, up to this time, the only involvement of joint or higher headquarters in the issue was a JSC directive on 5 January 1945 to the three services indicating that no statements were to be made to the press on this subject. In part, this appears to have been a response to a similar imposition by authorities in the United States.¹¹

However, these uncoordinated orders between the services were soon to become a thing of the past. The increasing number of balloons observed floating

down the coast and the increasing number being recovered soon became cause for concern of a greater potential threat. On 23 January 1945, the JSC directed that a sub-committee be formed to examine the steps necessary for early detection and reporting of the balloons, and for the coordination of efforts with civil authorities, including the RCMP and the American armed services.¹² The secretary was also directed to contact the Premier of British Columbia to provide him with a synopsis of the situation and to seek the cooperation of the provincial government in support of any measures

that might prove necessary.¹³ Western Air Command thus had several developing issues removed from its agenda.

The JSC also became involved in clarifying the roles of each service and the confused chains of command on balloon issues, specifically, coordination with American authorities and the reporting and tabulation of incidents. The orders issued by each of the services often conflicted or duplicated the work of the other services. The JSC therefore suggested to the Combined Chiefs of Staff (CSC)



Some balloons never made it to land. This one was seen being blown along by the wind near Sandspit, Queen Charlotte Islands, on 17 April 1945.

Author's collection PA203240



Kittyhawks of 133 Squadron at Pat Bay.

that a single point of contact be established. In the meantime, the JSC issued a joint directive of its own, mandating a specific chain of command.¹⁴

By this time, events were also moving rapidly in Ottawa. At a meeting of the CSC on 24 January, it was agreed that the RCAF would provide transport to army bomb disposal (BD) personnel, with one team to be located in each prairie province and three in British Columbia. As for actually vanquishing the balloons, this was to be done with the goal of bringing them down intact, “provided they are not felled near populated areas.”¹⁵

The coordinated response was reflected in orders to the services, indicating coordinated meetings to determine local actions.¹⁶ The result was that National Defence Headquarters (NDHQ) established a chain of command for the reporting of sightings and the exchange of information. However, the reporting chain still had to be implemented. In a meeting of representatives from Army Pacific Command (APC) and WAC on 8 February, it was agreed that balloon reports would be passed between the two Commands through a liaison officer (AALO). Pacific Command would also be responsible for providing reports to NDHQ and to the US Liaison Officer.¹⁷ Further, the Army Operations Room would pass information on sightings to WAC operations, which would be responsible for dispatching aircraft and reporting engagement results to the army.¹⁸

While the chain of command and role of the RCAF had been resolved, the precise nature of the threat was still unknown. To ensure that the Japanese learned little about the results of their balloon activities, media and military silence on the matter had been imposed very early in the new year. NDHQ and Command intelligence assessors soon realized that it was impossible to determine in advance where the balloons would land. However, some felt that any publicity could possibly allow the Japanese to

“Unfortunately, no Canadian or American military authority was aware that the Japanese launches had actually ceased by the end of April 1945.”

alter their launch sites and parameters, permitting them to make crude corrections to the intended impact points.¹⁹ The silence was believed to have been one reason that the Japanese launched fewer balloons in the period from late April to early June 1945. But the possibility of renewed attacks was not eliminated.²⁰

The silence and secrecy surrounding the balloon campaign did have one drawback: it made the effort of detecting the balloons more difficult. As the capability of radar to detect the balloons was yet unknown, visual observation

was felt to be necessary. The public could provide the means to report balloons, but only if they were aware of their significance, which they were not. The JSC recommended that the old Aircraft Detection Corps (ADC) be re-activated, in part as a result of the threat of forest fires.²¹ The directive that created the Balloon Sub-Committee also included words that mentioned the ADC as if it were still in existence, indicating that they may have presumed it would be reactivated. The Chief of the Air Staff did not, however, see the same imperative. He advised the Combined Chiefs on 1 February 1945 that he had no intention of reactivating the ADC, but that it would be promptly done if the situation warranted.²²

A Maturing Response

While the RCAF could not use the eyes of its erstwhile ADC, it was hoped that it could use radar to detect the balloons. All three services had radar on the coast, the RCAF for aircraft detection, and the other two services for anti-aircraft fire control. Thus, the JSC formed a Radar Sub-Committee to study the capabilities of radar for tracking the balloons. This committee was responsible for the gathering and dissemination of information on the radar reflectivity of balloons measured against various radar sets, and then issuing instructions to enhance detection. In a report of 31 January 1945 to the JSC, the sub-committee noted that very little information was available at the time on the subject, but it did make recommendations. These included advising all navy, army and air force radar stations of the possibility of tracking the balloons, of watching for anomalous tracks, and of reporting all such tracks to the Army Operations Room and the liaison officer, the AALO.²³

The sub-committee was able to provide a report, on 1 February 1945, indicating that a United States Navy (USN) vessel had been able to detect a balloon at 15 miles range. However, the report provided no information on the type

of radar used.²⁴ Further reports clarified what radar sets could provide what specific coverage and detection capabilities. Depending upon the type of set, contact could be made from between 20 and 85 miles range. Balloon echoes were observed to be the same in general appearance as normal aircraft echoes, “except for a lower signal-to-noise ratio and a lower rate of fluctuation.”²⁵ All these reports were based upon data provided from tests conducted by the United States Army and the USN.

The RCAF also possessed aircraft with airborne radar that could possibly be used to detect the balloons, mainly the Lockheed Venturas, which were used for coastal patrols. However, early estimates suggested that the airborne detection of balloons would be, at best, possible at a maximum range of four miles,²⁶ and at a subsequent WAC meeting, held to share information on the balloons, this was revised downwards to two miles. At this same meeting, a senior member of the command Operational Research Section expressed his doubt about the credibility of reports indicating that balloons had been detected by ground-based and shipborne radars at ranges up to 130 miles.²⁷ Overall, the question of radar detection of the balloons was not clearly resolved, and the specific range capabilities were never defined for any particular radar set. The results obtained, as will be noted later, bear out this lack of clarity.

Along with the issue of detecting the balloons was the question of their recovery. During the early stages of the threat, few were obtained. While recovery of an intact balloon could provide significant intelligence, the problem was an on-board detonator, designed to blow up the balloon once it descended through 20,000 feet. The WAC solution was to develop a plan whereby an aircraft would snag a balloon above this altitude, bring the balloon and hanging apparatus onboard the capturing aircraft and defuse the detonator before descending and returning to base. Consideration had been given to the use of Mosquito, Mitchell and Liberator aircraft for use in the snagging operation, and the engineers arrived at the

opinion that Liberators were best suited.²⁸ Thankfully, the number of balloons and major balloon components being recovered intact rose throughout February, negating the requirement to request volunteers for what would have been a highly interesting mission, to say the least.

The issue of civil-military cooperation was one that WAC did not have to face. By the time the balloons became a serious concern, the JSC decided that it would be the army’s responsibility to brief civil authorities on the balloons and to seek their assistance. Another issue that required resolution was involvement of civilian pilots. On the coast, there were not only Canadian commercial airlines and bush pilots, but also transiting American airliners heading to or returning from Alaska. Pacific



This balloon recovered at Oxford Lake, MB, gives an idea of the size. The shrouds for the chandelier are laid out to the right.

Author's collection PA20330



Mosquito KA103 of 133 Squadron. By the time 133 Squadron had sufficient Mosquitos to catch balloons, the balloon threat was over.

Command, with representatives of WAC in attendance, held a special meeting for civilian airline members in early February 1945. The civilians were advised of the balloon threat and cautioned about the concomitant security requirements.²⁹ While it has not been determined if any civilian pilots revealed the secret of the balloons to the populace at large, they were ultimately credited with reporting several balloon sightings.

Another problem faced by the various defending agencies was that of domestically launched balloons. These balloons included radiosondes for weather forecasting and larger units used for the testing of radar. On the west coast, procedures were put in place by 9 February 1945 to provide coordination of military balloon launches.³⁰ As it materialized, while the military services were now aware of when domestic balloons were being released, this knowledge, for whatever reason, was not made available to civilians or to the Pacific Coast Militia Rangers. It was therefore acknowledged, as early as 21 February 1945, that some of the subsequent sightings were of domestically released balloons.³¹

Adding to the downstream confusion was the fact that the public was eventually advised of the Japanese balloon presence on 23 May 1945.³² It generally reacted by reporting *all* balloon sightings, many of which had been ignored in the past. Unfortunately, no Canadian or American military authority was aware that the Japanese launches had actually ceased by the end of April 1945. Thus, aircraft continued to be scrambled against non-existent Japanese balloons,

which were, in fact, domestic balloons. The most serious incident occurred on 11 June, when a Kittyhawk from 135 Squadron, Patricia Bay, shot down a balloon.³³ To the pilot's embarrassment, the cine cameras revealed not a new type of Japanese balloon, as he had reported, but one used for calibrating radar. The procedure then in place for advising the RCAF of these domestic launches was obviously not foolproof.

The actual shooting down of balloons, preferably Japanese, was ordered from an early date in the threat. AFHQ sent a message on 20 January 1945 that balloons of Japanese origin had been sighted on the west coast and found on the ground in the prairies, that it was desirable to recover them, and that they could be shot down.³⁴ Further direction was provided on 23 January to the various units and formations as to reporting and shooting down of balloons "if over open country." This guidance also suggested that aircraft be put on readiness "[i]f balloons continue to appear in considerable numbers."

Further instructions on 28 March 1945 from AFHQ did not provide any direct orders on how to bring down balloons, suggesting instead that the method "will obviously depend on the area in which the interception is made. It is not considered desirable to use machine guns over heavily populated areas."³⁵ Hopefully, the latter was a reminder and not a statement based upon an actual incident. Further instructions provided to the Mosquito pilots from 133 Squadron indicated that pilots should attempt to bring down a

"Against these scrambles must be measured the efficacy of the reports."

balloon intact. To achieve this, the pilots were told to destroy the battery (about the size of a “C” cell) that provided power to the self-destruction charge. Failing that, they could puncture the balloon envelope.³⁶ This primary methodology to be employed was certainly high praise for the perceived capabilities of the pilots, or naivety on the part of a staff officer by presuming that the pilots could knock out such a small object on a moving target!

Those who arrived at this questionable juncture of tactical applications also maintained this precision could, of course, be attained through training... After the Aleutian campaign had ceased, the fighter pilots on the west coast had little more to do than train and conduct dawn and dusk patrols. Western Air Command maintained two fighter squadrons of Kittyhawks at Patricia Bay, 133 and 135 Squadrons, with a permanent detachment at Tofino. With the initial sightings of the balloons, the Command ordered one aircraft at each base be maintained on stand-by “to investigate” further sightings.³⁷ This was later upgraded so that one fighter squadron was to be on duty and the other off duty at Patricia Bay. The duty squadron was to have one section (two aircraft) at readiness, two sections at 30 minutes availability and three sections at 60 minutes readiness. The off duty squadron had to have one section at readiness and five sections at 60 minutes availability. At Tofino, one section was to be at readiness and one at 30 minutes notice.³⁸

After 133 Squadron converted to Mosquitos, these aircraft increasingly began to be scrambled for balloon sightings. The superior range and speed of the Mosquitos allowed a greater area to be covered, with the result that by mid-May 1945, Mosquitos were carrying out all the scrambles, and that instead of two Kittyhawks, only one Mosquito was scrambled.³⁹ Even with the increased capability, there were still deficiencies in responding to balloon sightings along the coast – primarily for the scrambled aircraft in actually making contact with them. In June, WAC ordered that 11 Squadron maintain one Liberator on standby to attempt radar contact with a balloon once one had been reported. Canso squadrons and the Operational Training Units were also told to be on the lookout for the balloons while flying.⁴⁰

Mosquitos and Kittyhawks were not the only aircraft to be used in WAC’s attempts to bring down the balloons. WAC deployed a Ventura to Princeton, British Columbia in February, should balloons be sighted in that area.⁴¹ One Catalina from 6 Squadron was also scrambled on 22 March against a sighting near Coal Harbour.⁴² For almost all other sightings, it was the Mosquitos and Kittyhawks of 133 and 135 Squadrons and the Tofino detachment that responded to the threats. In January 1945, as it materialized, there were five scrambles, followed by 18 in February and 37 in March. This was followed by a lull from 29 March to 17 April, with nine scrambles at the end of April and 20 in May.⁴³

Other sightings were not followed up by the dispatch of aircraft due to the nearness of nightfall, weather conditions or the tardiness of a report.

Against these scrambles must be measured the efficacy of the reports. While a large number of confirmed sightings did occur, there were also many false sightings. The most common culprit was the planet Venus. As early as 19 February 1945, it was recognized that Venus was producing false sighting reports. The planet was responsible for 13 aircraft being scrambled on 18 February, and for all three “sightings” on 21 February.⁴⁴ By early March, it was acknowledged that so many sightings could be traced to Venus that all previous reports were re-evaluated and reclassified.⁴⁵ To avoid false reports and the dispatch of aircraft to attack this naughty planet, a report format was created to help explain Venus sightings, where the planet could be expected to appear in the sky on given days and periods.⁴⁶ Ostensibly, this should have eliminated most of these problematic bogus scrambles. However, the report was made available to only military members, while approximately half of all sightings originated from civilians, who did not have the proper information, nor were they made aware of the issue.

Venus continued to be threatened by aerial attacks. Both the army and the RCAF started disseminating reports as of 1 June 1945, indicating the position of Venus on each particular day.⁴⁷ This did not eliminate the problem. The period 1-7 July witnessed 20 balloon incidents with 15 scrambles. Venus was chased six times, fortunately being above the operational ceiling of the Mosquitoes sent to bring it down...⁴⁸ By this time, even the pilots were realizing they were on wild goose chases, and frustration was evidently increasing. Accordingly, the diarist of 133 Squadron noted for 2 July:

Three scrambles today, two of them chasing planets again. Surely someone at control should know sufficient astro navigation to plot the visible planets in the day time and not scramble 40,000’ ceiling Mosquitos thousands of light-years up.⁴⁹

There are no indications that WAC refused to scramble aircraft against suspect sightings, and thus, the reason for the frustration of the pilots involved becomes clear.

Qualified Success

In total, the RCAF brought down three balloons. Two were shot down by P-40 Kittyhawks of 133 Squadron, on 21 February and 10 March, the first by Sumas Mountain near Chilliwack, British Columbia, and the second near Galiano Island.⁵⁰ A Canso of 6 Squadron forced an already low-flying balloon into the woods near Rupert Inlet, six miles from Coal Harbour, on 12 March.⁵¹ These remain the only official and documented cases of RCAF aircraft bringing down

Japanese balloons. If there were any further cases of balloons having been brought down, these would surely have been noted in the Operational Record Books (ORBs) of the squadrons, as well as the ORBs and weekly operational summaries of the Commands. A review of these documents for Western Air Command and its squadrons indicates that these were the only documented incidents. As the balloons were the only actual Japanese threat that the RCAF faced on the west coast after 1943, it would, indeed, have been highly irregular for the squadrons or commands not to have duly noted such an incident.⁵²

Two other incidents have been noted in literature suggesting that balloons were shot down over Canadian territory. An incident off Kunghit Island, near the Queen Charlotte Islands, indicated that a balloon was shot down, presumably by the RCAF.⁵³ Further, a balloon incident on 13 March 1945 near Port Hardy was initially reported as actually being *two* balloons, with an RCAF aircraft shooting *one* down.⁵⁴ In both cases, those initial reports proved to be false. Pacific Command was eventually questioned about both incidents, since official United States records provided the initial data. The Command subsequently reported that the Kunghit Island incident was actually a case of an American merchant vessel spotting a balloon on the ocean and firing upon it. That of the two balloons near Port Hardy was, in effect, one balloon sighted by two separate aircraft.⁵⁵ Contrary to what was noted earlier, it was not shot down.

Another report in Pacific Command files indicates that a balloon was reportedly shot down near Strathmore, Alberta, on 21 March 1945. There is no indication of this in any report of RCAF activities, nor in any operational record book. The only indication of aircraft involvement in balloon landings in this area is found in army files. Army reports indicate that information was obtained that an aircraft had shot down a balloon on 21 March in this region. However, the source has not been attributed.⁵⁶

Conclusions

Overall, Western Air Command prepared for the Japanese threat in an effective manner. At first, even before sufficient information was available to understand the threat, WAC maintained aircraft on alert in case the need arose to bring them down. Provision for gathering information from intact, downed balloons was also made. These activities were fundamentally conducted without direction from higher command.

“Venus continued to be threatened by aerial attacks.”

As the nature of the balloons became better known, resources were reallocated and attempts made to better detect and counter the threat. While some efforts were successful, factors beyond the control of WAC limited the success rate of aircraft interceptions.

Factors such as darkness, weather, the altitude of the balloon and the timeliness of the reporting doubtlessly reduced the chances for Western Air Command to conduct successful intercepts. Radar’s ability to detect a balloon was also dubious and limited. Perhaps the greatest problem was one over which WAC had no realistic control. The problem of false reporting, particularly of the planet Venus, is one that any formation of the time would have faced with uncertainty – to not scramble an aircraft against a suspected sighting of Venus could have let an actual balloon slip through the defences. To the frustration of the fighter pilots, WAC had to scramble them against all sightings with a potential for a successful interception.

Some aspects of the response to the threat were conducted through the activities of the JSC, which relieved WAC of informing local government officials and civilian pilots. This “jointness” also relieved WAC of the need to conduct several operational roles, such as responding to balloon landings. Jointness thereby allowed WAC to focus its attention on what it could do best.

As for the Japanese, while they did not achieve their goal of setting the forests of western North America ablaze, they did tie up limited RCAF resources that could have been demobilized or been prepared for deployment to the Far East. However, Western Air Command possibly only maintained one fighter squadron beyond normal requirements to honour the balloon threat, while the Cansos and Venturas were nonetheless required for coastal surface surveillance.

In the face of a new and singularly unique threat, Western Air Command created the conditions required to successfully engage the enemy’s weapon. They were prepared to act alone, and then responded well in a joint environment when that eventually arose. That more balloons were not brought down was not the fault of WAC or its pilots, but rather the circumstances related to the detection of the balloons over the large area of responsibility for the Command. The balloon campaign should therefore be considered an overall success.



1. For a description of the balloons and their manufacture, see Cornelius W. Conley, "The Great Japanese Balloon Offensive" in *Air University Review* Vol. 19, No. 2 (Jan/Feb 1968) pp.68-83; Robert C. Mikesch, *Balloon Bomb Attacks on North America, Japan's World War II Assaults* (Fallbrook, CA: Aero Publishers, 1982). A more in-depth examination of the balloons and other Japanese attacks upon continental North America can be found in Bert Webber, *Silent Siege: Japanese Attacks against North America in World War II* (Fairfield, WA: Ye Galleon Press, 1984).
2. Mention of Canadian aspects of the balloon threat can be found in Alistair Reeves, "Japanese Balloon Bombs: The Canadian Perspective" in *Canadian Aviation Historical Society Journal*, Spring 1994, pp.14-19; or Chris Weicht, *Jericho Beach and the West Coast Flying Boat Stations* (1997), pp.181-185. Neither deals with the operational or tactical level of the Canadian response. The most detailed recapitulation of the activities can be found in W.A.B. Douglas, *The Creation of a National Air Force: The official history of the Royal Canadian Air Force, Volume II* (Toronto: University of Toronto Press, 1986), pp. 425-426.
3. The other three RCAF commands that reacted to the balloon threat were: Nos. 1 and 2 Air Commands, which had no operational flying squadrons, and Northwest Air Command, which was a support command for the Northwest Staging Route, also with no operational flying squadrons.
4. An examination of the possible threat, and the civil and military responses is beyond the scope of this article, although they provide an interesting sideline in themselves. The purpose of the Japanese attacks was to start fires, although little recognition appears to have been given to the fact that the December to April period is the wet season on the west coast.
5. Western Air Command Staff Conference No. 22, 11 January 1945, DHH 181.006 (D408).
6. Top Secret message A77, 19 January 1945, from A/V/M Heakes to A/V/M Curtis, AFHQ, DHH 181.003 (D3635).
7. Message A560, 20 Jan, DHH 181.002 (D269).
8. Air Force Headquarters letter to AOC, NWAC, S.15-13-9 (D of I), 23 January 1945, "Japanese Balloons", DHH 181.002 (D269).
9. Top Secret message A77, 19 January 1945, from A/V/M Heakes to A/V/M Curtis, AFHQ, DHH 181.003 (D3635).
10. Secret message A.700, 11 January 1945, from WAC to its units and stations, DHH 181.003 (D2374).
11. PCS 508-1-1-4 FD 156 (JSC), 5 January 1945, "Censorship, Reports of finding of Balloons", DHH 322.019 (D47). The Western Defence Command memo indicated that the media had been asked to withhold any mention of the balloons, or reports of mysterious fires or explosions. See 0007.73 (USALO - Can), 6 January 1945, "Censorship of News Items Relative to finding or Sighting Enemy Balloons", DHH 322.019 (D47).
12. PCS 508-1-1-4 FD 156 (JSC), 23 January 1945, "Possible Enemy Action - Balloons", DHH 322.009 (D661).
13. PCS 508-1-1-4 (JSC), Joint Services Committee - Pacific Coast: Minutes of Meeting No. 61, 23 January 1945, item 156, DHH 322.019 (D47).
14. PCS 508-2-1-23, "Meeting No. 2 of Inter-Services Coordinating Committee on Balloons of Enemy origin", 26 January 1945, DHH 322.009 (D661). A directive from the JSC was issued on 26 January in the absence of receipt of instructions from CSC. See PCS 508-1-1-4 FD 156, Directive, 26 January 1945, DHH 322.009 (D661).
15. See minutes of meeting attached to HQS 6665-6, FD 17 (DMO & P), 27 January 1945, "Balloon Occurrences", DHH 168.009 (D99). The timing of this meeting and sending of some instructions from CSC on coordinated responses and responsibilities suggest that these activities may have been concurrent.
16. Secret Army message GSO 975, 30 January 1945 to DOC MD 12, DHH 168.009 (D11).
17. PCS 508-2-1-23 (GO), Memorandum of Conference 8 February 1945, DHH 322.009 (D661).
18. S267-18-1-2 (C. Staff O.), 23 April 1945 "Japanese Balloons", DHH 322.009 (D600) Vol. 5.
19. See undated Briefing Instructions from NWAC to its pilots, "Briefing Instructions Japanese Balloons", signed by G/C V.H. Patriarche, DHH 181.002 (D269).
20. Extract from US War Department reports noted in HQS 9012-560 FD 4 (DMO & P), 14 July 1945, DHH 168.009 (D99). In fact, post-war research indicates that the last balloons were launched before the end of April 1945.
21. PCS 508-1-1-4 FD 156 (JSC), 23 January 1945, "Possible Enemy Action - Balloons", DHH 322.009 (D661). The ADC was formed in May 1940 and ordered disbanded by the CAS in November 1944. Douglas, *The Creation of a National Air Force*, pp.380, 398.
22. CSC 201, 3 February 1945, "Defence of Canada: balloon incidents [SIC]", DHH 322.019 (D47). Douglas notes that there were 23000 observers on strength at the time of disbandment. *Ibid.*
23. S232-9-1 (RO2), 31 January, 1945, "Japanese Paper Balloons", DHH 322.099 (D661).
24. S232-9-1 (RO2), 1 February, 1945, "Japanese Paper Balloons", DHH 322.019 (D47).
25. See for example, Appendix D to HQS 9012-560 (Research), 30 April 1945, "Japanese Balloon Incidents, Summary No. 9 - Covering the period 8-21 April 1945", DHH 74/715; or S.15, 14 June 1945, "Japanese Free Balloons", DHH 181.009 (D3021).
26. S232-9-1 (RO2), 31 January 1945, "Japanese Paper Balloons", DHH 322.099 (D661).
27. S267-18-1-2, "Conference held at Western Air Command, 3 May 1945", DHH 181.002 (D269).
28. Western Air Command Staff Conference No. 24, 25 January 1945, DHH 181.006 (D408). The records of subsequent meetings are not held in the file, thus no record was found indicating why the plan was not carried out. One reason may be that the number of balloons recovered after 25 January required no in-flight capture for intact balloons. There are no indications that any pilot was ever asked to volunteer for this highly interesting and dangerous task.
29. WAC letter to AFHQ, S267-18-1-2 (C.Staff O.), 23 April 1945, "Japanese Balloons", DHH 322.009 (D660) Vol. 5.
30. FS/2-4-1-1 Vol. 2, 9 February 1945, "Procedure for Reporting Balloons Released for Testing Radar", DHH 322.009 (D660) Vol. 2.
31. MD 13, Alberta message 904, 21 February 45, DHH 168.009 (D11).
32. The silence over the balloons was ordered broken in May as a result of a tragic accident in Oregon, in which five children and one adult were killed when they handled an anti-personnel bomb on a downed balloon.
33. "Report on Supposed Jap Balloon Incident off San Juan Island, 11 June 1945", DHH 322.009 (D662) and No. 135 Squadron Daily Diary, DHH Microfilm Roll 16.
34. Message attached to Northwest Air Command letter, (C Staff O), 22 January 1945, "Balloons Believed to be of Japanese Origin", DHH 181.002 (D269).
35. Letter from AFHQ to NWAC signed by A/V/M W.A. Curtis, S15-13-10 (D/Ops.), 28 March 1945, "Instructions in Respect to Japanese Balloons", DHH 181.002 (D269). An identical letter was sent to WAC. See DHH 322.002 (D660) Vol. 5.
36. "Procedure to be followed by Mosquito Aircraft in dealing with Japanese Balloons", DHH 322.009 (D660) Vol.2.
37. Top Secret message A77, 19 January 1945, from A/V/M Heakes to A/V/M Curtis, AFHQ, DHH 181.003 (D3635).
38. S204-18-1 (ASO. 3), 9 February 1945, "Fighter Operations Instructions - Patricia Bay Sector and Tofino Sub-Sector", Western Air Command, DHH Microfilm Roll 16.
39. See the No. 133 Squadron Daily Diary, DHH Microfilm Roll 110.
40. S267-18-1-2, 4 June 1945, Western Air Command Operation Instruction No. 2, DHH 181.003 (D2368).
41. PCS 508-2-1-23 (GO), 12 February 1945, "Japanese Balloons", DHH 322.009 (D660) Vol. 2.
42. Western Air Command Weekly Intelligence report (for the period 18 March to 24 March 1945), DHH Microfilm Roll 16.
43. Statistics compiled from "Western Air Command Weekly Intelligence Reports"; DHH microfilm roll 16.
44. PCS 508-2-1-23 (GO), 19 February "Summary of Balloon Incidents, 18 February 1945", PCS 508-2-1-23 (GO), 21 February 1945, "Summary of Balloon Incidents, 20 February 1945", DHH 322.009 (D663), Vol 1; and "Western Air Command Weekly Intelligence Report No. 164 (for the period 17 February to 23 February 1945)"; DHH microfilm roll 16.
45. See HQS 9012-560 (Research), 6 March 1945, "Japanese Balloon Incidents, Summary No. 4 - 3 March 1945", DHH 168.009 (D12).
46. See HQS 9012-560 FD 2 (DMO & P), 14 March 1945, DHH 168.009 (D99).
47. S267-18-1-2, 1 June 1945, "Planet Venus", DHH 322.009 (D660) Vol. 6.
48. See S.267-18-1-2 (SOI), Weekly Report on Balloon Incidents, Western Air Command, 17 June to 23 June 1945 and 1 July to 7 July 1945, DHH 181.003 (D2374)
49. No. 133 Squadron Operational Record Book, 2 July 1945, DHH microfilm roll 109.

50. While some texts on the balloons, such as Weicht, give credit to Maxwell as having shot down the balloon on 21 February, the ORB indicates that Maxwell and his wingman, F/O Brodeur, each conducted three attacks. Further, a Pacific Command report indicates that Brodeur was partly responsible. (See FS/2-4-1-1 Vol. 2, 28 February 1945, "Shooting down of Balloon, 21 February 1945", DHH 322.009 (D660) Vol 2). Credit should therefore be apportioned equally.
51. Douglas, *The Creation of a National Air Force*. 426.
52. Webber also describes a balloon incident on Vedder Mountain, near Chilliwack, BC, on 20 April. He even provides an eyewitness account that includes a call to No. 2 "Operations" Training Unit and an attack by a Mosquito aircraft. The only Mosquito aircraft on the west coast at the time were with No. 133 Squadron; they did fly in the Fraser valley that day, while an attack would have been recorded in the squadron ORB. The balloon is noted in the WAC ORB as having been discovered by the BC Provincial Police on the morning of 20 April and as having come down overnight. See Western Air Command ORB Daily Diary, 20 April 1945, and Weekly Intelligence Report for the week of 14 April to 20 April 1945. The description by Webber's witness is very similar to that of the report of Lt M.P. Larsen, RCE of No. 2 Bomb Disposal Squad, for the balloon shot down on 21 February.
- See Letter from No. 11 E.S.&W. Coy, RCE, 11-6, 24 February 1945, "Report on Japanese Balloon Incident, Vedder Mountain Area Report", DHH 322.009 (D662).
53. Mikes and Webber note this as incident number 102.
54. Mikes and Webber note this as incident number 109.
55. See HQS 8872-2 Vol. 2 (DMO&P), 14 April 1945, and PCS 508-2-1-23-2 (GO), 17 April 1945, "Japanese Balloons", DHH 322.009 (D660) Vol. 4.
56. Message 498, 3 April 1945, from CO MD 13, and PCS 508-2-1-23-2 (GO), 5 April 1945, "Summary of Balloon Incidents, 5 April 1945", DHH 322.009 (D663) Vol. 1.



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