From: U.S. Military Attache, Ottawa, Canada
To: War Department
DTG: 042055Z 4 April 1945

From Thomas to WDQSI.

Frequency of recoveries of balloons in Canada increases. At Strathmore 35 miles east of Calgary Alberta a balloon was recovered on 28 March. On next day one was found 12 miles southeast of Medicine Hat Alberta. Also on 29 March balloon recovered at Fort Ware 125 degrees 38 minutes west 57 degrees 25 minutes north. On 2 April Balloon recovered at Baril Lake at 111 degrees 42 minutes west 58 degrees 45 minutes north. On 1 April balloon recovered at Yorkton 110 miles northeast of Regina Sask. On same date one found at Iluna 70 miles northeast of Regina. This latter one covered by snow and apparently was there for some time.

End

ACTION: G-2

INFORMATION: CGAEP-GGSR: ASF; OPD: G-4; Adm. King; Col. Park; MDD; OS/N (Dr Bowler)

CM-IN-3740 (4 Apr 45) DTG 042055Z
Japanese Balloons -

• Detection
• Destruction

Reproduction and dissemination of excerpts by higher headquarters is authorized; however, the material herein does not constitute War Department authority for changes in established doctrine and procedures, responsibility for which must be assumed by competent authority within the theaters.
The possibility that the increasingly frequent Japanese free-balloon landings may develop into a large-scale strategic attack has led the War Department to initiate a study of all possible methods and equipment for combating this potential threat. Bulletins such as this will be issued from time to time to disseminate information on the development of defensive measures.

Based upon an analysis of normal weather maps for 20,000 ft. and 30,000 ft. above sea level, a recent report (No. 917) by the Weather Division of AAF Headquarters states that the normal trajectories of balloons released in the free air flow over Tokyo and set for the 20,000 ft. level will intersect the western coastline of the United States roughly between Roseburg, Oregon, and Seattle, Washington, in all months except August, September, and October. Still excepting the same three months, trajectories of balloons set for 30,000 feet will intersect the coastline roughly between San Francisco, California, and Seattle, Washington. The report points out, however, that the trajectory for any one day is likely to vary greatly from the normal. The 20,000 ft. and 30,000 ft. trajectory maps for each month of the year show that in all months except July and August, the winds are favorable at those altitudes for directing the balloons to our western coast regardless of the location of the launching in Japan.

A discussion of current studies of possible defensive measures is presented below for the information of interested commanders.

I - DETECTION

Radar Detection and Technique

Based on experiments conducted to date, radar in the 200-mc frequency is dependable to a range of 24 miles in detecting the metal parts of the balloon.

In tests to determine radar detection ranges of the balloon less the metal parts, an SCR-584 (3,000 mc frequency) tracked a helium-filled repaired Japanese paper balloon having only a small metal valve attachment to a range of 33,000 yards. An SCR-585 (3,000-mc) tracked the same balloon to a range of 24,000 yards. Several other radar sets with various frequencies were tested, but the results were not so good. The Joint Army-Navy Testing Agencies concluded that the S band equipment will give the greatest range of detection of the paper balloon (less metal parts) and that the maximum expected range in this band is about 40% of the maximum range on a medium bomber.

Further tests to determine the most effective radar and radar detection technique including airborne radar are being continued and will be reported.

Visual Detection and Identification

From the Ground

Experience has indicated that scanning in space with high-powered optical instruments is impracticable; scanning with the unaided eye is generally more effective in locating objects in space than scanning with binoculars and telescopes, which are useful only when something has been detected and magnification for identification is needed.

Based on the look-out experience of aircraft warning systems and of Naval and land-based AA batteries, the visual detection of a Japanese balloon at 30,000 feet is highly improbable - and yet the naked eye offers the best hope of visual detection of balloons in space. The limit of resolution of the eye is about one minute of arc. The balloon at 30,000 feet would intersect about three minutes of arc. It is questionable as to whether the balloons at 30,000 feet could be detected from the ground even if they remained stationary and their general position in the sky were known to
the ground observer. However, as the balloons begin their descent the possibility of visual detection increases rapidly.

From the Air

It is also true that for visual searching from aircraft the naked eye offers the best hope of detection. The visibility of these balloons would vary greatly according to the background against which they were seen, and in searching for them one might expect to find them any place within two or three thousand feet of 30,000, which means scanning both up and down in a hemisphere forward of the plane. In view of the speed of the search aircraft and the neutral color of these balloons, which would offer little contrast with a sky background, adequate search would involve several observers scanning continuously various sections of the hemisphere forward of the plane. From the ground as well as from the air — except at very close ranges — direct vision would be needed, for these would not be big enough targets to be seen with peripheral vision. An illustration of the difficulty of detecting such small objects in space from an aircraft is the infrequency with which aircraft sight each other.

Infra-red Detection

Investigation has disclosed that infra-red devices would not be effective in detecting the balloons because of inherent technical limitations.

II - DESTRUCTION

Attack by Aircraft

Ammunition

A type of incendiary ammunition under procurement for one Air Force was found by actual test to be the most effective aircraft ammunition for destruction of hydrogen-filled balloons. One hit suffices to destroy the balloon. However, it is effective only up to its tracer limit, which is 500 to 600 yards. Development work is proceeding to achieve an effective tracer range of 1,000 yards. Procurement of this ammunition, known as Cartridge, Headlight, Caliber .50, T1E1, is being increased to provide a strategic reserve.

Caution

Briefing of attacking aircraft should include consideration of appropriate areas for the attack so that destruction of the balloon and consequent dropping of its possibly lethal load will not be accomplished over densely populated or critical areas.

Antiaircraft Weapons

90-mm AA Using VT Fuze

Based upon the quantity and arrangement of the metal in the present Jap balloons, it is estimated that the VT fuze is sensitive enough to function within 15 to 25 feet of the balloon and that 100 to 200 rounds of 90-mm AA with VT fuzes would be required to obtain one effective burst on a balloon at an altitude of 15,000 feet. It is not believed practicable to increase the sensitivity of the 90-mm AA VT fuze due to many factors including the loss of damage effectiveness at greater distances of burst and limitations imposed by the projectile length.

Navy 5”/38 Gun Using VT Fuze

The Navy 5”/38 gun would probably require fewer rounds per effective hit than the 90-mm
AA because the former's projectile is larger and its VT fuze is more sensitive. However, this advantage is offset by its lower fire rate and less accurate fire control.

120-mm AA Gun

The 120-mm AA gun would be more effective than the 90-mm against high-altitude balloons. However, VT fuzes will not be available for this gun until late spring. It is estimated that time-fuzed projectiles would require four times the number of rounds that are needed for an effective hit when VT fuzes are used.

AA Gun Limitations

The wide dispersion of the balloons reported almost precludes the use of antiaircraft guns to cover the front effectively. In addition, falling antiaircraft flak and ground bursts might in some areas cause more damage than the balloon. However, if balloon paths tend to merge into a definite route or routes antiaircraft guns could be set up to cover these routes.

Probable Nature of Defense Against Balloons

Although studies on all possible defensive means are being continued, at the present time it appears that the most practicable interim defensive system would consist primarily of a spotting organization utilizing naval offshore patrols (including air patrols), coastal observation stations at high altitudes, Forest Service patrol planes and lookout stations, and local volunteer spotters in most-threatened inland areas. This system for visual spotting would be complemented by radar coverage of the sea approaches.

In view of the wide dispersion of free balloons, their great altitude throughout the major portion of their flight, and their haphazard landings, the most effective means of attack will probably be strafing aircraft. However, the capabilities of antiaircraft artillery for the attack of balloons within range are being studied.
FROM HAMMOND INFO G-2 WD WASHN, DC.

SEPARATE RECOVERY BARIL LAKE NEAR FT CHIPEWYAN ALBERTA DATE UNKNOWN. C-3.

1. A. DAILY REPORT 1700 GCT 3 APRIL.
   B. BALLOON FOUND STRATHMORE ( 25 MILES EAST OF CALGARY, ALBERTA ) 28 MARCH. RECOVERY TEAM ENROUTE. C-3.

2. SIGHTINGS 240 MILES NW DUTCH HARBOR 2330 GCT 7 MARCH OBSERVED 20 MINUTES CREW MEMBERS ALLIED MERCHANT VESSEL. HEIGHT 10,000 FEET (C-3) SE DIRECTION TRAVEL.

16......COG

COMINCH.....ONLY
ARMS FILE......
COMWESSEAFRON KEEP ACTION GIVE INFO DIO 12 NAVDIST AND INTELLIGENCE OFFICER WESSEAFRON. COM 8 SENDS INFO TO CONSULFSEAFRON AND DN1.

2 SMALL BOMBS REPORTED 4 MILES SOUTH RISING STAR EAST-LAND COUNTY TEXAS AFTERNOON 23RD MARCH RECOVERED BY ARMY AND IDENTIFIED AS JAPANESE INCENDIARY. LENGTH OVERALL 27 INCHES CASE 15 INCHES TAIL PIECE 11 AND 1/D INCHES DIAMETER CASE 4 INCHES TAIL ASSEMBLY 5 AND 1/2 INCHES. BOMBS NUMBERED 8282 AND 6387. CONSIDERED SAME INCIDENT MY 251940. SEVERAL SECTIONS TREATED PAPER AND PIECES OF SHROUD LINES FOUND 24 MARCH NEAR WOODSON THROCKMORTON COUNTY TEXAS APPROXIMATELY 95 MILES WEST OF DALLAS TEXAS IDENTIFIED JAPANESE AND CONSIDERED SEPARATE INCIDENT.
From: CG, Western Defense Command, Presidio of San Francisco, California
To: War Department

1 April 1945

From Hammond G-2. To G-2 WD Washington, DC.

An investigation being made reported balloon found near Woodson, Texas 24 March. C-3 evaluation.

1. A. Daily report ending 1700GCT 31 March.

B. Balloon reported recovered Lake Athabasca near Ft Chipewyan, Alberta 20 March. B-2.

C. Reported recovered 20 miles from Whitewater (Ft Ware) Peace River District British Columbia 29 March war balloon. B-2.


E. Partially inflated balloon reported Duchesne, Utah 30 March. C-3.

2. A. Additional info Glendo, Wyoming reference report 5 March. Balloon first sighted between 0115 GCT and 0130 GCT 23 Feb descending earthward. Material recovered valve nbr 4895 in white chalk, same nbr stenciled, flash bag igniter container, no powder charge, one candle type
WAR DEPARTMENT
CLASSIFIED MESSAGE CENTER
INCOMING CLASSIFIED MESSAGE

From: CG, Western Defense Command, Presidio of San Francisco, California

Nr: B 0351 1 April 1945

Inconel bomb unexploded.

B. Nixon, Nevada reference 30 March report. Material recovered damaged envelope 38 gores, ballast dropping apparatus damaged, shroud lines, valve number 7948 in white paint, one arming wire, 4 sand bags, aneroids, flash bag ignitor container, no powder charge. Blowout plugs unfired: one position number 23, both positions 25 thru 35, and two center blowout plugs. Sand bag suspended position 32, large T hook attached center position.

C. Balloon first sighted 2125 GCT 22 Feb Kirby, Wyoming. Reports 26 Feb and 27 Mar references. Recovered aneroids battery demolition block shroud lines envelope ballast dropping apparatus valve number 3468 stenciled number 21 chalk.


A. Gowen Field, Idaho 2225 GCT 30 March 10,000 feet traveling eastward. Air search negative. 0-3.
From: CG, Western Defense Command, Presidio of San Francisco, California

Hr: B 0351 1 April 1945

B. 0245GCT 31 March Mountain Home, Idaho, 5,000 feet, air search negative. C-3.

4. Bomb incidents.

A. Glen, Montana reports 21 and 23 March reference. Investigation reveals only one explosion occurred night 18 March and preliminary identification candle type incendiary.

B. Custer, South Dakota reference summaries 13 and 15 March. Investigation negative evaluation P-0 incident closed.

End

ACTION: G-2

INFO: CGAAF, CGGN, ASF, OPD, ADM. KING, COL. PARK, HIL, CS/W (Dr Bowles)

DM-14-447 (1 Apr 45) DTG 01/0025Z g/g

DECLASSIFIED
E. O. 11652, Sec. 3(D) and 5(D) or (E)

OSD letter, May 1, 1973

By DBS Date, MAY 21, 1973

COPY NO. 66

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
NLR 101

By RT, NARA, Date 4/12/94
From: CG, US Army Forces in the Pacific Ocean Areas, Fort Shafter TH.

To: War Department
   CG, Alaskan Department Rear Ft Richardson Alaska
   CG, Western Defense Command Presidio of San Francisco, California

Mr: RJ 58381

For Ingles SP3IG info WDCBI, CG Alaskan Department attn Signal Officer and CG Western Defense Command attn Signal Officer RJ 58381.

Incident on Japanese balloons follows frequency 8460 Kcs, pulse rate 145 cycles per minute, bearing taken at 3007392 from Oahu 292 degrees type two bearing. Signal was very very weak.

grd.

ACTION: G-2

INFO: CGAAF, ASF, OPD, COL. PARK, JEIA, HHD

CM-IN-528 (1 Apr 45) DTG 01/0151Z EJG

DECLASSIFIED
E. O. 11652, Sec. 5(E) and 5(D) or (F)
OSD letter, May 4, 1972
By DBS Date MAY 21 1973

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
NLR 101
By RT, NARA, Date 4/13/94

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN
From: CG, Western Defense Command, Presidio of San Francisco, California

To: War Department

Nr: B 0347 28 March 1945

B 0347. Info G-2 War Dept, Wash, DC.

Forwarding information period ending 1700 GMT 28 March pertaining balloon incidents.

1. Sightings.
   A. 2336 GMT 26 March balloon observed west Point Grey, British Columbia (near Vancouver) air search negative.
   B. 1615 GMT 27 March balloon observed 6,000 feet Goldendale, Washington. Air search negative.
   C. Over San Miguel Islands (west Los Angeles) 1600 GMT balloon observed then 1000 feet. Air search being conducted.

2. Balloons recovered.
   A. Cloverdale, California balloon incident
      23 March Cloverdale and 22 March Guerneville, California reference. Ground search area previously reported findings made with negative results. Comparison indicates pieces envelope from same balloon. Believe first landed 18 March. Records will indicate Cloverdale place recovery.
   B. Portion balloon envelope found 3 miles north Jervis Inlet on British River British Columbia 24 March.

CM-IN-30300 (29 Mar 45)

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN
WAR DEPARTMENT
CLASSIFIED MESSAGE CENTER
INCOMING CLASSIFIED MESSAGE

From: CG, Western Defense Command, Presidio of San Francisco, California

Nr: B 0347  28 March 1945

Further information not available. 0-3.

C. 23 miles south of Lethbridge, Alberta (east of Lethbridge) scene reported recovery. Further details not available. 0-3.

D. Reference balloon sighting Ellsworth, Nebraska reported 18 March. Investigation reveals two farmers observed balloon through binoculars for 25 minutes. Balloon described as round silver-colored with ropes suspended beneath. No undercarriage observed. Balloon last reported burning emitting black smoke. Future reports will indicate balloon down not recovered. 0-2.

3. Additional information pertaining recoveries.

A. Ree Heights, South Dakota 24 March report only pieces shrouds lines parts balloon envelope recovered. 0-1.

B. Blowout plugs number 10 A 11 A 20 A and B 22 A and B 24 A and B through 29 A and B 30 A 31 A and B through 35 A and B unexploded lower ring. Two center blowout plugs unfire H hook inserted. See Reno, Nevada report dated 23 March.

C. Between Rising Star, Texas and Deadmona, Texas approximately 1900 GMT 23 March 2 bomb explosions reported. Tentative identification reveals both bombs 12 by 12 kilogram incendiary type. Each bomb penetrated earth approx five feet upon exploding. Bombs were 50 feet apart and approx 27 miles scene balloon recovery. 0-2 note first

OM-IE-30300 (29 Mar 45)

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN
From: CG, Western Defense Command, Presidio of San Francisco, California

No: B 0347 26 March 1945

Indication that 2, 12 kilogram type bombs have been attached to balloon. B-2.


E. 33 miles SW Gillette, Wyo, scene of recovery previously reported incident near Gilbert, Wyo, 27 Mar. Evidence indicates material in area considerable time due weather beaten and grass stained condition. B-2. Recovered 1/3 balloon envelope.

End

ACTION: G-2

INFO: CQGAAP, CGGN, ASP, OPD, Adm. King, Col. Park, NDD, OS/M (Dr. Bowles)

CM-IN-30300 (29 Mar 45) DCG 28/22222 3:16

DECLASSIFIED
E. O. 11652, Sec. 3(D) and 5(D) or (E)

By DBS Date MAY 21 1973

COPY NO. 66

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4

NLR 101

By RT, NARA, Date 4/24/44
RELATIVE TO MATTER PRESENTED COMMFAFRON AND CORGEN WDC SECRET 8900/15 THE FOLLOWING IS DIRECTED:

(A) CINCPOA FORMULATE PLAN FOR DETECTION AND INTERCEPTION POSSIBLE JAP CARRIER FORCE.

(B) COMMFAFRON IS TASK FORCE COMMANDER PACIFIC FLEET FOR THIS.

(C) PLAN SHOULD INCLUDE THE ESTABLISHMENT OF A MID PACIFIC PATROL BETWEEN THE HAWAIIAN ISLANDS AND THE ALEUTIAN ISLANDS USING SURFACE AND AIR FORCES AVAILABLE IN THE HAWAIIAN AND NCPAR AREAS.

(D) PLAN NOT TO BECOME EFFECTIVE UNTIL DIRECTED BY COMINCH AND CINCPOA. IT IS NOT EXPECTED SUCH INSTRUCTION WILL BE ISSUED UNLESS INTELLIGENCE INDICATES SUCH ACTION OR MAJOR UNITS OF JAP FLEET ARE UNLOCATED UNDER SUSPICIOUS CIRCUMSTANCES.

PARA. COMMFAFRON FURNISH CINCPOA BY AIR COURIER COPIES JOINT WESSEAFRON-WDC-4TH AIR FORCE PLAN PROMULGATED WESSEAFRON SERIAL 88469 OF 10 MARCH. THIS PLAN HAS NOT BEEN APPROVED BY MAR OR NAVY DEPARTMENTS BUT INDICATES PLANNING REGARDING THIS MATTER WHICH HAS ALREADY BEEN DONE.
# T P SECRET DISPATCH

<table>
<thead>
<tr>
<th>DRAFTER</th>
<th>EXT.</th>
<th>ADDRESSEES</th>
<th>PRECEDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ASTERISK (*) MAILGRAM ADDRESSEE</td>
<td>PRIORITY</td>
</tr>
<tr>
<td>FROM</td>
<td></td>
<td></td>
<td>ROUTINE</td>
</tr>
<tr>
<td>RELEASED BY</td>
<td></td>
<td></td>
<td>DEFERRED</td>
</tr>
<tr>
<td>DATE</td>
<td></td>
<td></td>
<td>BASEGRAM</td>
</tr>
<tr>
<td>TOR CODEROOM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DECODED BY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARAPHRASED BY</td>
<td>CHECKED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routed BY</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unless otherwise indicated this dispatch will be transmitted with deferred precedence and as administrative.

PAGE 2 OF 2  171343  NLR 417334

Originator fill in DATE AND TIME GROUP  (Use G. C. T.)

UN OUTFITTING DISPATCHES PLEASE LEAVE ABOUT ONE INCH CLEAR SPACE BEFORE BEGINNING TEXT

COMINCH: COPIES #1 TO #8 INCL.

DELIVERED TO ARMY VIA SCR SCRAMBLER FOR COGS U S. ARMY, COMSEF WAR DEPT, OPD. TO AUDIO 171725. SCR #59.

DECLASSIFIED E. O. 12356, Sec. 3.3 or Sec. 3.4 NLR 101 By RT, NARA, Date 4/3/44
FROM HAMMOND G-2 WESTERN DEFENSE COMMAND, PRESIDIO OF SAN FRANCISCO, CALIF. TO G-2 WAR DEPT WASHN DC.

INCIDENTS REGARDING BALLOONS FOR PERIOD ENDING 1700 GCT FOLLOWS FOR 14 MARCH 1945:

1. BALLOON SIGHTINGS:
   A. AT 2030 GCT ON 12 MARCH A BALLOON WAS SIGHTED BY A FOREST RANGER 5 MILES NORTH OF NEWCASTLE, WYOMING. EVALUATION C-3. THIS BALLOON WAS TRAVELLING AT A EXTREMELY HIGH ALTITUDE IN A NORTHEASTERLY DIRECTION.
   B. FROM 0456 GCT TO 0517 GCT, 13 MARCH, AN AIRPLANE PILOT OBSERVED A FREE BALLOON APPROXIMATELY 50 MILES SOUTH SOUTHWEST OF ATTU, ALASKA. THIS BALLOON WAS TRAVELLING ABOUT 35 TO 40 KNOTS PER HOUR AT AN ALTITUDE OF 17,000 FEET. EVALUATION OF THIS INCIDENT IS B-2.
THE PILOT COULD NOT OVERTAKE THIS BALLOON AND IT WAS LAST OBSERVED AT AN ALTITUDE OF 25,000 FEET ON A SOUTH SOUTHWEST COURSE.

C. AT 2213 GCT, 13 MARCH, FARMERS REPORTED THEY HEARD AN EXPLOSION AND SAW A FLASH IN THE AIR ABOUT 2 MILES SOUTH OF BLAINE, WASHINGTON. BLAINE IS 25 MILES NORTHWEST OF BELLINGHAM. INCIDENT EVALUATED C-3. THE STATE HIGHWAY PATROL AND IMMIGRATION OFFICIALS ARE SEARCHING THE IMMEDIATE AREA, BUT TO DATE HAVE ACHIEVED NEGATIVE RESULTS. OUR NUMBER B 0326.

D. AT 0107 GCT, A WEST BOUND TRANSPACIFIC AIRWAYS PILOT SIGHTED A BALLOON 270 MILES WEST OF MORRO BAY, CALIF. THE PILOT DESCRIBES THE BALLOON AS BEING ABOUT 75 FEET IN DIAMETER WITH A BLACK OBJECT ABOUT 10 FEET IN DIAMETER SUSPENDED BENEATH IT.

A FORWARD WEATHER TRACK HAS BEEN SECURED REGARDING THIS ALLEGED SIGHTING, AND IT IS BELIEVED THE BALLOON WILL REACH THIS COAST ABOUT 2100 GCT 14 MARCH. EVALUATION C-3. ALL AGENCIES HAVE BEEN NOTIFIED OF THE ABOVE FORWARD TRACK.

E. AT 2230 GCT, 13 MARCH, AN OBJECT RESEMBLING A BALLOON WAS ALLEGEDLY SIGHTED IN THE AREA NEAR PORT TOWNSEND, WASHINGTON. IT IS BELIEVED THAT THIS BALLOON PROBABLY LANDED NEAR CHIMACUM, WHICH IS 10 MILES SOUTH OF PORT TOWNSEND, OR IN THE BAY ADJACENT. B-3 IS EVALUATION. FORT WORDEN HAS DISPATCHED A PARTY TO SEARCH THIS AREA.
At 1630 GCT, an object resembling a balloon was sighted on 13 March travelling northeast at a 5,000 feet altitude over Wenatchee, Washington. Later at 1905 GCT, 13 March, this balloon was sighted about 20 miles north of Ephrata, Washington, at an altitude of 10,000 feet. Current belief is that this is the same balloon that was sighted over Ellensburg, Washington. (See this summary of 13 March 1945). Incidents evaluated B-2.

An air search was conducted by Ephrata Army Air Base until 2200 GCT, 13 March, without finding any trace of the balloon.

2. Bomb incidents.

On 13 March a bomb was recovered approximately 100 miles east of Helena, Montana, near Harlowlton. C-3 evaluation. 9th Service Command has dispatched a recovery team to make a complete investigation. Reports to date do not state whether the bomb exploded or remained unexploded, but indicate that it is a 4.5 kilogram type bomb.

3. Balloons recovered on a ranch near Farmington, Washington, which is 35 miles north of Moscow, Idaho. Evaluated B-2. An army guard and a recovery party have been dispatched by northwestern sector WDC to take charge of the investigation.

8. A farmer near Vale, Oregon, (near Idaho state border, northwest of Boise), found a balloon 10 March. Parts recovered included pieces of balloon envelope and shroud lines. B-2 evaluation.
INASMUCH AS THIS FARMER HEARD A LOUD EXPLOSION DURING THE MONTH OF JANUARY, IT IS THE BELIEF OF THIS HQS THAT THE BALLOON EXPLODED AT THAT TIME, BUT THAT THE PARTS WERE NOT LOCATED UNTIL THE LATER DATE, NORTHWESTERN SECTOR WDC HAS DISPATCHED A RECOVERY TEAM TO MAKE A COMPLETE INVESTIGATION.

C. DURING THE AFTERNOON OF 13 MARCH AN OBJECT RESEMBLING A BALLOON LANDED 20 MILES NORTHWEST OF PENDLETON, OREGON, AT ECHO OREGON. AN ARMY GUARD WAS SENT TO GUARD THE AREA AND A RECOVERY PARTY FROM NORTHWEST SECTOR WDC IS ENROUTE TO MAKE A COMPLETE INVESTIGATION. B-2 IS EVALUATION.

D. AN ARMED GUARD WAS DISPATCHED TO THE AREA NEAR PAINE FIELD TO GUARD THE BALLOON WHICH LANDED THERE SOMETIME IN THE AFTERNOON OF 13 MARCH. PAINE FIELD IS LOCATED NEAR EVERETT, WASHINGTON. EVALUATION B-2. A RECOVERY TEAM FROM NORTHWEST SECTOR WDC, IS ENROUTE FOR THE INVESTIGATION.

E. LOCAL POLICE OFFICIALS ARE GUARDING THE BALLOON WHICH LANDED 5 1/2 MILES SOUTH OF BENCHLAND, MONTANA, ON THE AFTERNOON OF 13 MARCH. EVALUATED B-2. GORE FIELD ARMY AIR BASE HAS DISPATCHED A RECOVERY TEAM TO MAKE COMPLETE INVESTIGATION OF INCIDENT. BENCHLAND, MONTANA, IS 30 MILES WEST OF LEWISTOWN, MONTANA.

F. 13 MARCH IS THE DATE THAN AN EXPLOSION WAS HEARD ABOUT 10 MILES NORTHWEST OF AMERICAN FALLS, IDAHO. COMPLETE INVESTIGATION WILL BE MADE BY RECOVERY TEAM FROM 9TH SERVICE COMMAND.

CG WDC PRESIDIO, SANFRAN 1500012 6370 E 4 Of 5 Pages

CONFIDENTIAL

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4 NLR 01
By RT, NARA, Date 4/13/94
NOW ENROUTE TO THE SCENE OF THE EXPLOSION. INCIDENT EVALUATED B-2. AFTER THE EXPLOSION PARTS OF THE BALLOON WERE SEEN DRIFTING EARTHWARD. HOWEVER, PARTS OF THE SHROUD LINES WERE THE ONLY ITEMS RECOVERED TO DATE AND THE REST OF THE BALLOON IS PRESUMED TO HAVE DESTROYED ITSELF BY THE EXPLOSION.

END
To: Officer in Charge
   Technical Air Intelligence Center
   U.S. Naval Air Station
   Anacostia, D.C.

Subj: Balloon, Japanese Paper, from Sevastopol, California - CEE No. 22208

Refs: (a) NRE ltr S-EF37(455-WAT)S-455-8/15 of 15 Jan 1945 to TAIC
      (b) NRE ltr S-EF37(455-WAT)S-455-9/15 of 20 Jan 1945 to TAIC

1. The subject material was examined at the Naval Air Station, Anacostia on 21 February 1945 by representatives of this Laboratory and was found to consist of the valve and portions of the envelope and rubber shock absorber from a Japanese paper balloon of the type described in reference (a). Other remains from the same balloon were examined at this Laboratory at an earlier date and described in reference (b).

ENVELOPE

2. The envelope material was identical with that from other balloons of the same type. Blue tape was used on some of the seams. A number of figures, in ink and put on with a rubber stamp, were observed. Apparently the sections of the balloon had been numbered as an aid to assembly.

VALVE

3. The valve was of the type first found on the Estacado balloon and was stamped 4590 on the spring support. There were rope loops on the valve for suspension from the envelope.

SHOCK ABSORBER

4. The shock absorber was of the usual construction consisting of strands of rubber and covered at the two ends with braided cotton and lashed back to form loops.
To: Officer in Charge
Technical Air Intelligence Center
U. S. Naval Air Station
Anacostia, D. C.

Subj: Balloons, Japanese Paper, from Laurens, Iowa and Schuyler, Nebraska, CEE No. 22201.

Refs: (a) Visit of LA(jg) C.L. Miller of TAIC to NRL on 12 Feb 1945
(b) NRL lst S-EF37(L55-HAT)S-155-8/45 of 15 Jan 1945 to TAIC

1. At the request of the Technical Air Intelligence Center, NAS, Anacostia (reference (a)), the Laboratory has examined the subject balloon parts. The material from Schuyler, Nebraska consisted of a single fragment of paper identical with that used for the envelopes of Japanese paper balloons of the type described in reference (b). The material from Laurens, Iowa consisted of parts of the envelope, the shroud lines, the envelope ignition charge and the envelope ignition charge fuse from the same type of balloon.

DISCOVERY

2. The fragment of paper from Schuyler, Nebraska was discovered on 2 February 1945. The material from Laurens, Iowa was discovered on the same date.

ENVELOPE REMAINS

3. The fragment from Schuyler, Nebraska was a single triangular section about two yards across the base and one yard from base to apex. It appeared to be charred along one edge while the other edges were cut, presumably after discovery. The paper was no different from that used in previous balloons.

4. The material from Laurens, Iowa was in a number of irregular pieces of various sizes. Many appeared to have scorched edges. Possibly the destruction of the balloon by its demolition charge produced the fragmentation and charring. No colored tape was observed on the seams. The skirt was of the usual construction but contained a lighter rope (3/16 inch diameter) than the 1/4 inch rope used on previous balloons. The loops were knotted and bound with hard cord.
SHROUDS

5. The shrouds consisted of the usual 19 branched lines terminating in hooks for attaching to the skirt. The splices and end loops were bound with silk cord. The rope was in new condition.

SUPPORT ROPES

6. The support ropes were knotted through the usual two sister hooks used for attaching to the shrouds. There was no evidence that a rubber shock absorber was used but the condition of the ropes does not permit a definite conclusion on this point. The support ropes consisted of the customary 8 lengths of 3 strand 3/8 inch diameter rope. The lower end terminated in frayed ends. The rope was weathered in appearance.

ENVELOPE IGNITION CHARGE

7. The envelope ignition charge was the customary cylindrical paper container filled with magnesium flash powder.

ENVELOPE IGNITION CHARGE FUZE

8. There were three sections of fuze totaling approximately 48 feet. This was the same type of fuze found leading to the envelope ignition charge on previous balloons. About one-third of this fuze was burned.

R. H. BULLARD
COMDR USNR
BY DIRECTION OF DIRECTOR
NAVAL RESEARCH LABORATORY
To: Officer in Charge,  
Technical Air Intelligence Center,  
U. S. Naval Air Station,  
Anacostia, D. C.


Refs: (a) NRL ltr S-EF37(455-HAT), S-455-8/145 of 15 Jan 1945 to TAIC  
(b) CG, G-2 Western Defense Command ltr B0211 to G-2, War Department dated 6 Feb 1945

1. The subject material was examined at the Naval Air Station, Anacostia on 24 February 1945 by representatives of this Laboratory and certain portions were brought to the Laboratory for further study. The material consisted of the ballast release mechanism and six increments of ballast from a Japanese paper balloon of the type described in reference (a). Reference (b) describes four incendiary bombs which were recovered with this ballast release mechanism. The altitude settings on the barometric contactors (aneroids) as measured at this Laboratory do not agree with the settings reported in reference (b). The hook-up of the contactors was slightly different than that found on previous balloons. A radio type relay was found with this material.

DISCOVERY

2. The subject material is reported to have been recovered at Hayfork, California on 1 February 1945.

INVENTORY

3. The material examined at the Naval Air Station included the ballast release mechanism without battery, six sand filled ballast bags, a Japanese radio type relay, and nine molded rubber rings. According to reference (b) four incendiaries were recovered with or near the release mechanism.

BALLAST RELEASE MECHANISM

4. The ballast release gear was similar to those previously examined. It was suspended on the customary four doubled ropes and evidently no rubber shock absorber had been used.
The wood and plastic battery boxes were of the usual size and construction. The battery was not received. A part of the battery connector plug was received.

The barometric contactors were mounted in the usual manner but were wired differently. Enclosure (F) of reference (a) shows the customary connections. In this particular case the No. 2 contactor was connected in series with No. 3 and No. 4 which were in parallel. The No. 2 contactor was adjusted to make a contact above a set altitude and to break the contact below that altitude. All other contactors to date have been adjusted to make a contact below a set altitude. This series arrangement would keep the ballast release from functioning until the balloon reached the set altitude of No. 2 contactor and might conceivably take the place of the starting fuzes. However, there were starting fuzes with the mechanism. The contactor covers were marked as follows:

#1 - Underlined V in chalk
#2 - Triangle in white paint
#3 - 3 in chalk
#4 - 7 in yellow chalk or crayon.

The pressure settings of the contactors were as follows:

#1 - Makes contact at 2.2 miles descending and breaks contact at 2.2 miles ascending.
#2 - Breaks contact at 1.5 miles descending and makes contact at 1.6 miles ascending.
#3 - Makes contact at 4.1 miles descending and breaks contact at 4.2 miles ascending.
#4 - Makes contact on a pressure increase of 35 mm of mercury from a minimum. This corresponds to a drop of 0.5 miles starting at 4 miles or 0.7 miles starting at 6.0 miles altitude.

All of the blow out plugs above the #24 pair were still in place. In addition to the fuzes from the unfired plugs there were 7 other fuzes which did not burn. None of these were in pairs.

Three arming wires were attached to the bottom of the mechanism and a fourth was found in the packing case. Reference (b) describes four incendiary bombs found attached to or near the mechanism when discovered. They were attached in the number 31, 32, 33 and 34 positions.

Reference (b) also reports that seven sand bags weighing 4.75 pounds, 4.375 pounds, 2.5 pounds, 2.25 pounds, 2.375 pounds, 2.5 pounds and 6.75 pounds were attached in positions numbered 25, 26, 27, 28, 29, 30 and 35 respectively. The sand in the bags consisted of a mixture of orange-yellow, black, and white particles and therefore resembled a mixture of sand from the Marshall and sand from the Holy Cross balloons.
11. The cause of malfunction of the ballast release mechanism could not be ascertained.

12. In the packing case with the material was a Japanese relay which is in effect a four pole double throw solenoid operated switch. A relay identical in appearance but wired slightly differently was found in a Japanese radio transmitter type 99 Hi4 at TAIC. Reference (b) does not mention this item. If it was found with the release mechanism it would indicate that some electronic device had been attached. The electronic device could have been dashed to pieces at some time when the balloon first descended and the relay thrown free and lodged in the release mechanism.

13. Nine molded rubber rings about 5 inches in diameter and having a round 3/32 inch diameter cross section were also found in the packing case. These are not mentioned in reference (b).

R. H. BULLARD
COMDR USNR
BY DIRECTION OF DIRECTOR
NAVAL RESEARCH LABORATORY
10 March 1945

From: Technical Air Intelligence Center.

To: Distribution List.

SUBJECT: Japanese Balloons and Attached Devices.

(b) NEL Secret Report Serial L529, dated 2 March 1945.
(c) Secret Memo from Lt. J.W. Hoffman, AAF, dated 1 March 1945, Subj: Incident Concerning Balloons Reported by an Officer from the Philippines.
(d) Air Intelligence Group Secret Report Serial 0517116, dated 7 March 1945.

Disclosure: (A) Copy of Reference (a).
(B) Copy of Reference (b).
(C) Copy of Reference (c).
(D) Copy of Reference (d).

1. The attached Reports are submitted for information to distribution list by Technical Air Intelligence Center (Op-16-7-T).
To: Officer in Charge, Technical Air Intelligence Center, U.S. Naval Air Station, Anacostia, D.C.

Subj: Balloon, Japanese Paper, from Alturas, California; CEE No. 22206.

To: Officer in Charge, Technical Air Intelligence Center, U.S. Naval Air Station, Anacostia, D.C.

Subject: Balloon, Japanese Paper, from Alturas, California; CEE No. 22206.

Reps:
(a) Visit ofLt.(jg) C.L. Miller of TAIC, NAS, Anacostia to NRL on 6 Feb. 1945.
(b) NRL ltr. S-3EF37 (455-HAT), S-455-8/15 of 15 Jan. 1945 to TAIC.
(c) NRL ltr. S-3EF37 (455-HAT), S-455-30/15 of 16 Feb. 1945 to TAIC.

1. At the request of the Technical Air Intelligence Center, NAS, Anacostia (Ref (a)) the laboratory has examined the subject balloon material. It was found to consist of the envelope, valve, and shrouds from a Japanese Paper Balloon similar to the one described in Ref. (b).

2. This balloon was discovered at Alturas, California. It was received at NRL on 6 February, 1945.

3. The material received at NRL consisted of the balloon envelope, the relief valve, and part of the shrouds.

4. The envelope was a paper sphere similar in size and construction to those previously examined (Ref. (b)). Some of the tape used on the seams has a faint blue-green color. The paper is apparently the same as in the other balloons. There was no evidence of the use of an envelope incendiary however certain parts of the envelope had been removed.

5. The valve was similar to those on the Katispell and Holy Cross, Alaska balloons. A photograph of this valve and a discussion of the two kinds of valves will be found in Ref. (c). The valve had a printed 3050.
and h2 in chalk written on it. There were rope loops on this valve. These loops were not present on the Marshall, Alaska balloon valve but have been found on all the other valves. They were not used on this balloon. The purpose is to help support the weight of the valve by means of light lines running to rope loops around the base of the envelope.

Shrouds

6. The shrouds were badly frayed and tangled but apparently the same in arrangement as in previous balloons. With the shrouds was the rope assembly used to hook the ballast release mechanism to the shrouds, consisting of 8 strands of rope knotted to two sister hooks. Probably no rubber shock absorber was employed but the damaged condition of the ropes prevents a definite conclusion on this point.

R. H. BULLARD
Comdr., USNR
By direction of Director
Naval Research Laboratory
To: Officer in Charge, Technical Air Intelligence Center, U.S. Naval Air Station, Anacostia, D. C.


Ref: (a) Visit of Lt. (jg) C. L. Miller, TAIC, NAS, Anacostia to NRL on 8 Feb. 1945.
(b) NRL ltr. S-EF37(455-WAT), S-455-8/A5 of 15 Jan. 1945 to TAIC, NAS, Anacostia.
(c) NRL ltr S-EF37(455-WAT), S-455-12/A5 of 1 Feb. 1945 to TAIC, NAS, Anacostia.

1. At the request of the Technical Air Intelligence Center, NAS, Anacostia (Ref.(a)), the Laboratory has examined the subject balloon material. The material has been identified as parts of the envelope, valve, shrouds, and ballast release mechanism from a Japanese paper balloon of the type described in Ref.(b). The principle difference found between this and previous balloons was that the ballast units recovered were lighter in weight and filled with a different kind of sand. The only previous ballast bags examined at this laboratory were from the Marshall, Alaska, balloon (Ref.(c)), and weighed 5.5 pounds each. The ballast bag with the present balloon was smaller in size and weighed 1.5 pounds.

Discovery

2. The subject material was found at Holy Cross, Alaska. It was received at NRL on 8 February 1945.

Inventory

3. The material received at NRL consisted of several large sections of the envelope, the relief valve, the shrouds, a 60 ft. length of fuse, part of the ballast release mechanism, a bottle of liquid, and one unit of ballast. A rubber shock absorber was attached to the ballast release mechanism.

DECLASSIFIED
E. O. 11652, Sec. 3(B) and 5(D) or (II)
ODP letter, May 1 1972
By LBS Date MAY 21 1973
Envelope

4. The envelope was apparently of the same size and construction as in the other balloons of this type. The material also appears to be the same. Some of the tape used on the seams was a light blue-green color. Because of the fragmentary condition it was not possible to determine whether an envelope ignition charge was used. Since a long fuse was received with the balloon it is presumably that such an ignition charge was used.

Valve

5. The valve was of the type found on the Kallispell and Alturas balloons. Painted on it was the number 1266.

Shrouds

6. The shrouds were in a very weathered condition but otherwise no different from those on previous balloons.

Long Fuse

7. The long fuse consisted of roughly 60 feet of cord type fuse identical with that used on previous balloons to set off the envelope ignition charge. It had burned about half way through and stopped at a point where the fuse was broken and held together only by some of the outer wrappings.

Ballast Release Mechanism

8. This mechanism closely resembled that described in Ref. (b). It was supported on a rubber and rope shock absorber assembly similar to those found with the Kallispell and Estacado balloons. The barometric contactors and the battery were not received. Two pairs of ballast release plugs, #25 and #26, were un-fired. One pair carried the usual "T" bracket for attaching ballast. The ballast bag received had a "T" attached and it is presumed that this was removed from the other pair of plugs after discovery. The failure of these two pairs to function was caused by a mistake in fuse arrangement. One fuse from the #21 plugs lead to a #27 switch instead of a #25 switch. The fuse which should have lead from the #26 plugs to the #27 switch lead instead to a #25 switch. The second fuse leading from the #21 plugs to the #25 switches failed to light when the plug blew out. In addition to the failure of one #21 fuse to light similar failures occurred on one #13 fuse, one #20 fuse, and one #27 fuse. One of the #30 fuses ignited but went out. Both center plugs apparently had fired and blown out. The fuse leading from one was about a foot long and burned. The fuse from the other center plug was about two feet long, unburned, and had a cut end. Possibly the burned fuse had lead to the envelope ignition charge and the unburned fuse had lead to a demolition charge. Wrapped about the battery box were the two usual 16 foot starting fuses. There were no arming wires nor was there any evidence that any had been attached.
Ballast Bag

A single bag of sand ballast was received. This was smaller than those from the previous Alaska balloon and the weight, allowing for spillage, was about 1.5 pounds. The sand was quite different from that previously found (Ref. (c)) in that it consisted principally of orange-yellow particles with a few black and transparent particles whereas the Marshall, Alaska sand was a mixture of black and transparent particles resembling a mixture of salt and pepper.

The flight characteristics of these balloons and the maximum pay load were calculated in Ref. (c) assuming that all ballast units weighed 5-1/2 pounds each. If the ballast units are lighter the initial operating ceiling or the maximum pay load will be increased. Ref. (d) discloses that a ballast release mechanism from Hayfork, California, carried four bombs weighing respectively 10.5; 10.75; 10.5; and 11.1 pounds and seven sand bags weighing respectively 4.75; 4.375; 2.5; 2.25; 2.375; 2.5; and 6.75 pounds. Possibly undersized ballast bags are used in combination with the incendiary bombs in order to obtain a constant total load. The four bombs found are over a 5.5 pound average by a total of 20.8 pounds and the sand bags recovered are under a 5.5 pound average by 17.2 pounds disregarding the last bag which weighed 6.75 pounds. Based on a 6.75 average the four bombs are over by 15.9 pounds and the sand bags are under by 21.4 pounds. Ref. (c) reports one barometric contactor (aneroid) set at 35,000 feet. This would indicate that a higher initial ceiling was intended and that the average weight of the ballast bags, or the weight of the pay load, was decreased. It is unfortunate that the barometric contactors on the Holy Cross balloon were not recovered as this would have provided a further clue as to whether the lighter ballast bags were to obtain a higher ceiling or to compensate for an increased pay load or the use of incendiaries as part of the ballast.

Liquid

The liquid was water containing some calcium chloride and was probably from the battery box. The plastic box enclosing the battery which is the container for the calcium chloride solution was not received.

R. H. BULLARD
Comdr., USNR
By Direction of Director
Naval Research Laboratory

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
NLR 101
By RT, NARA, Date 4/13/94
SECRET

1 March 1945

DEPARTMENT FOR REWASHINGTON:

SUBJECT: Incident Concerning Balloons Reported by an Officer from the Philippines

1. The information contained in this report was obtained through an interview with 2nd Lt. Jack W. Hoffman, O-2007294, an officer who has been engaged in guerrilla warfare in the Philippines from September 1941 until January 1945.

2. A Japanese general named Tanaka, while in the company of a German officer on 12 September 1944, consulted to the effect that the Japanese would use gas transported to the United States by means of free balloons released from submarines. This gas was mentioned as being deadly to humans as well as to insects and snakes, and would even kill vegetation. The use of this gas, however, is to be made as a last resort when it is certain to the Japanese that they are being beaten by the American forces.

3. The information mentioned above was given to Lt. Hoffman by a Mr. Nicholas Pasto, Filipino, who was employed as a foreman and interpreter by the Japanese on Mindanao, and who overheard directly the conversation mentioned. Mr. Pasto was a trusted source of information for Lt. Hoffman during the greater part of his duty in the Philippines.

4. The information contained in paragraph 2 was given to a Mr. Nelson, FBI, and Captain Ikes, G-2, on the Island of Morotai on 10 January 1945.

J. W. HOFFMAN
2nd Lieutenant, AAF

DECLASSIFIED
E. O. 11652, Sec. 3(D) and 5(D) or (F)
OSS letter, May 1972
By DIB Date MAY 21 1973

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
NLR 101
By RT, NARA, Date 4/21/44
SECRET

NAVY DEPARTMENT
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, D.C.

Op-16-WA-NVR
7 March 1945

(OU)

SECRET

00617116

From: Air Intelligence Group.

To: Addressees designated on distribution list.

SUBJECT: The Number of Japanese Balloons Arriving in North America.

1. The attached report, prepared by the Analysis section of Op-16-W is forwarded for information.

[Signature]

Distribution List

TAIC - 25
KIS - 100

DECLASSIFIED
E.O. 12356, Sec. 3.3 or Sec. 3.4
MIL 101
By RT, NARA, Date 4/12/74

DECLASSE
E.O. 11652, Sec. 5(D) and 5(T) or (N)
OSD letter, May 1, 1973
By DBS Data MAY 2 1/73
THE BALLOON RECOVERY
ARRIVING IN NORTH AMERICA

This report attempts to answer the question: How many balloons have been found, how many arrived in all on land? Balloons which disintegrated completely are, of course, neglected.

The "Possible Region"

The 38 reliable incidents between 4 November, 1944 and 15 February, 1945 were plotted on a large scale map. The minimum area which encloses all the incidents was then drawn. It consists of a line along the Cord parallel from 165° W to 120° W, thence southeast to 41° N - 44°, thence along the 41st parallel to 120° W, thence to 36° N - 116° W, thence south to 32° N - 116° W. The western boundary is the coast. This area is considered the "possible region" in which balloons may descend. (The allegations are omitted from this discussion.)

"Populated" and "Unpopulated" areas

In populated areas it is assumed that balloons will be found within a week or two. In unpopulated areas it is assumed that balloons will in general be found only by chance.

The definition of "populated" depends on the size of the area selected. This unit should be small. An area with a large town may have a high average population but actually most of the area may be unpopulated. Counties were therefore used as the unit. Counties with more than five persons per square mile are considered to be populated.

DECLASSIFIED
E.O. 11652, Sec. 3(B) and 6(D) or (E)
OSD letter, May 1, 1972
By DBS
Date: MAY 21, 1973

DECLASSIFIED
E.O. 12356, Sec. 3.3 or Sec. 3.4
MLR 101
By RT, NARA, Date 4/12/14
"Balloons in "Populated" Counties"

The total area of the "possible region" in which the population (by counties) exceeds five persons per square mile is 375,000 square miles. The number of balloons reported (balloons or parts found, or bombs dropped) to 15 February is 19. The density is therefore 19/375 per 1000 square miles.

Balloons in "Unpopulated" Counties

The "unpopulated" counties total 1,628,000 square miles. Assuming balloon density here equal to that in the "populated" counties, i.e. 19/375 per 1000 square miles, a total of 82 balloons should have arrived in these "unpopulated" counties.

Hence an overall total of 101 have arrived. Of these 36 are on record. In other words, about three times as many have arrived as have been recorded. Insofar as other data indicate that such larger numbers than 100 may have been launched by 15 February, two deductions are possible: either most of the balloons launched go into the sea or else the self-destruction system works very completely in the large majority of cases.
TAEC SUMMARY WITH COMMENTS BY LTA AND NRL REPORT SERIAL LTA-1590

Distribution List

1 Copy SecNav
1 Asst. SecNav(Air)
1 Op-16
1 Op-16-B
1 Op-16-S, Mm. 1638
1 Incord
1 USNDF, Mm. 0143
1 Op-34E
1 Op-31F
1 LTA Design
1 Naval Aide to The President
1 NRL, NAS Anacostia, D.C.
1 TAEC, NAS Anacostia, D.C.
1 CoastDef SecFlon
3 Army Ground Forces
1 Airind Section, C-2
1 NFR, C-2

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
NLR 101
By RT, NARA, Date 4/1/44
Commanding General
Eastern Defense Command
Governors Island, New York

Number: WAR 54597

From Marshall to Grunert.

The following in reverse order are the most dangerous capabilities of Japanese balloons as indicated by G-2:

6. AA devices.
5. Transportation of Agents.
4. Psychological efforts to inspire terror and diversion of forces.
3. Experiments for unknown purposes.
2. Transportation of incendiary and anti-personnel bombs.
1. Bacteriological and/or chemical warfare.

It is desired that for purposes of advance planning relative to possible increase in Japanese balloon arrivals plans be developed by you for combating these balloons. Base your plans on present scale of arrival and also with a view to possible increased rate of arrival and with such personnel and equipment as is available to you. Measures for civilian defense should be included but it is not desired that you call in for planning discussions at this time Office of Civilian Defense authorities. Japanese balloons are under study in WD and new developments concerning these will be furnished you.

End

ORIGINATOR: OPD

INFORMATION: ASF, CG AAF, CGGH, G-2, ADCLASSIFIED, Col Park, NDD, G/N, C of S.

CN-OUT-54597 (Mar 45)

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
NLR 101
By RT, NARA, Date 4/12/94
WAR DEPARTMENT
CLASSIFIED MESSAGE CENTER
OUTGOING CLASSIFIED MESSAGE

OPD WDOS Theater Op American Theater WDOPD OPD 000.7
(28 Feb 45) Maj Riordan 6623
28 February 1945

Commanding General
Alaskan Department
Rear Fochelon
Fort Richardson, Alaska

Commanding General
Alaskan Department
Advance Command Post
Adak, Alaska

Number: WARX 54598

From Marshall to Fmmons book to Hqs and Advance CP.

Subject is possible increase in intensity of Japanese balloon arrivals. G-2 estimates the following capabilities of subject balloons in order of greatest danger:

5. Transportation of agents
6. AA devices.
3. Experiments for unknown purposes.
1. Bacteriological and/or chemical warfare.
4. Psychological efforts to inspire terror and diversion of forces.
2. Transportation of incendiary and anti-personnel bombs.

It is desired that the measures of advance planning that you consult with COMNORPAC for the purpose of developing joint plans for combatting these balloons. These should be based on possible increased scale of arrival as well as on present scale and should be made with equipment and personnel available to you. Measures for civilian defense should also be included but Office of Civilian Defense authorities should not be called in for planning discussions at this time.

CM-OUT-54598 (Mar 45)

DECLASSIFIED
E. O. 11682, Sec. 3(E) and 5(D) of (1)
OSD letter, May 4, 1972
By DBS Date May 21, 1979
COPY NO. 49

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
LR 101
By RT, NARA, Date 4/12/94
will be advised by the WD of new developments reference balloons as this subject is now under study here.

End

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN
Commanding General
Western Defense Command
Presidio of San Francisco
California

Number: WAR 54599

From Marshall to Pratt.

Subject is Japanese balloons.

G-2 estimates the most dangerous capabilities of Japanese balloons in order of greatest danger are:

1. Bacteriological and/or chemical warfare.
2. Transportation of incendiary and anti-personnel bombs.
3. Experiments for unknown purposes.
4. Psychological efforts to inspire terror and diversion of forces.
5. Transportation of agents.
6. AA devices. For purposes of advance planning and as a precautionary measure against the possible increase in intensity of balloon arrivals it is desired that you consult with the CG 4th Air Force and the Commander Western Sea Frontier with a view to developing joint plans for combatting these balloons and that your plans be coordinated with the proper Canadian Military authorities. Plans should be based on present scale of arrival and on possible increased

CM-OUT-54599 (Mar 45)

THE MAKING OF AN EXACT COPY OF THIS MESSAGE IS FORBIDDEN

DECLASSIFIED
E. O. 11652, Sec. 8(E) and 5(D)
OSD letter, May 1, 1972
By DBS Date: MAY 21 1973

DECLASSIFIED
E. O. 12356, Sec. 3.3 or Sec. 3.4
MR 101
By RT, NARA, Date 4/12/94
scale with equipment and personnel available to you. Plans should likewise include measures for civilian defense. However, it is desired that you not call in Office of Civilian Defense authorities for initial planning discussions at this time. The subject of Japanese balloons is under study in the WD and you will be kept advised of new developments of concern to you.

Frd

ORIGINATOR: OFD
INFORMATION: ASP
            CG, AAF
            CGGN
            G-2
            Admiral King
            Colonel Parker
            MOD
            CG/A
            G of 8

CH-OUT-54599 (Mar 45)  DTC 1700062  mec
WAR DEPARTMENT
MILITARY INTELLIGENCE DIVISION
WASHINGTON, D. C.

Prepared by Military Intelligence Service

GENERAL REPORT NO. 2
ON FREE BALLOONS AND
RELATED INCIDENTS

Note: Any information on the course, speed, point of landing or effect of the free balloons would be of great value to the Japanese. It is therefore essential that the Japanese be prevented from obtaining such information. Neither this report nor its contents should be disseminated to any person who does not require it in the performance of his duty.

1. Introduction:

This report brings up to date General Report No. 1 on Free Balloons and Related Incidents (called GR 81), dated 29 Jan 45.

2. Chronology:

a. Since 4 Nov 44 there have been found in the United States, Canada, Alaska and Hawaii thirty balloons or balloon fragments of Japanese origin. Incendiary bombs were found with two of the balloons. Nine additional incidents of bomb recoveries or explosions have been reported. A number of other incidents and sightings, possibly related, have been reported.

b. A chronological list of incidents and sightings is attached as TAB A. A chart showing the number of
sightings and positive incidents in each two-week period between 1 Nov 44 and 15 Feb 45 is attached as TAB 2.

3. Possible Purposes:

The Japanese may be sending out the balloons for one or more of the following purposes:

a. Ranging Shots.

b. Transportation of Incendiary and anti-personnel bombs.

c. Bacteriological and Gas Warfare.

d. Transportation of Agents.

e. Anti-aircraft devices.

f. Propaganda.

Each of the foregoing possibilities, with the exception of Propaganda, was considered in OR #1. The conclusions expressed in that report are still considered sound. They are reviewed below, together with additional evidence that has become available since OR #1 was prepared.

a. Ranging Shots: OR #1 stated (1) that the balloon episodes most probably are "ranging shots," in preparation for mass launchings of such balloons and (ii) that there is a possibility that the balloons are being used to determine meteorological conditions in preparation for launchings of some type of projectile. It was pointed out that the only rubberized silk balloon recovered was carrying a radio transmitter (range about 1,000 miles) which would have enabled the Japanese to plot the balloon's course by taking direction findings from submarines and other receiving stations along the route.

No radio equipment has been recovered with any of the paper balloons. During the past month, however, a number of unidentified radio signals have been picked up in the Pacific area. Details of these occurrences are given in paragraph 6, "Radio Signals", p. 4.

b. Transportation of Incendiary and Anti-Personnel Bombs: OR #1 stated that the balloons very probably will
be used to transport incendiary and anti-personnel bombs, which can be dropped during flight by means of the ballast-release device designed to operate whenever the balloon descends below certain altitudes. Additional bombs and balloons have been found since GR #1 was prepared, and the great majority of those so far discovered have landed on heavily forested areas. A map showing all bomb incidents and balloon recoveries, and the heavily forested areas of the western United States, Canada and Alaska, is attached as Tab C.

q. Bacteriological and Gas Warfare: Experiments still in progress have disclosed as yet no evidence that the balloons have been used to carry bacteria or disease germs, but as stated in GR #1 the balloons can be used for that purpose.

No evidence has been found to indicate that the balloons have been used to conduct gas warfare, and they are not considered practicable for that purpose.

d. Transportation of Agents: No evidence has been found that the balloons have been used to transport enemy agents, and such use is still considered only a remote possibility.

e. Anti-Aircraft Devices: No evidence has been found that the balloons have been used as anti-aircraft devices, and such use is still considered unlikely.

f. Propaganda: Since the publication of GR #1, Japanese propaganda broadcasts have mentioned the balloons. Such propaganda probably is intended to bolster home morale as a counter-measure to B-29 and task force attacks on the Empire, and to impress other countries with the ability of the Japanese to carry out long-range attacks on the United States. Details of the broadcasts are given in paragraph 7, "Propaganda", p. 5.

4. Launching:

GR #1 concluded that the balloons probably were launched from or near Japan. Since that report was published there have been additional reports of high altitude balloon sightings over Japan and Japanese-held territory. The XX and XXI Bomber Commands have reported a total of more than fifty free balloons of varying descriptions sighted on missions over Japan and Japanese-occupied China, occ-
omencing with the mission flown on 20 Aug 44. Most of the
descriptions of the balloons so far received have not been
detailed. The reported altitudes at which the balloons
were seen range from 16,000 to 36,000 feet—heights con-
sidered impracticable for barrage balloons.

5. Description of Balloons and Apparatus:

a. No additional rubberized-silk balloons have been
recovered since that found at San Pedro, California, on
4 Nov 44.

b. The paper balloons and automatic ballast-release
devices recovered since GR #1 was written show no major
changes in design and construction. Two types of paper
balloons have been recovered. They are both built accord-
ing to the same design, but the constructional details
are slightly different—the gas release valves vary in
design and one type of paper balloon envelope has colored
seams while the other does not. It thus appears that the
balloons may have been constructed by at least two manu-
facturers.

c. Although the ballast-release devices do not show
any pattern of variation such as the envelopes and valves
exhibit, wide variations in the setting of the aneroid-
balloons switches have been found. They have been adjusted
to operate at altitudes ranging from 15,000 to over 25,000
feet. Such variations possibly are caused by attempts to
utilize the most favorable wind currents at different periods.
Because of these variations, the self-destructive device
of the balloons may operate at different altitudes. Con-
sequently, it cannot be assumed that at any given altitude
the balloons can be closely approached by aircraft with
safety.

d. The manner in which the cargo was attached to the
balloon found at Hayfork, California, on 2 Feb 45, differed
significantly from previous recoveries. The Hayfork balloon
had incendiary bombs attached to the periphery of the ring
of the ballast-release apparatus instead of to the center
of the device. Incendiaries attached to the periphery can
be scattered along the route of the balloon, and thus the
incendiary effect can be widely dispersed.

6. Radio Signals:

a. The San Pedro rubberized-silk balloon was recov-
ered with a small radio transmitter, the signal character...
instances of which have been carefully analyzed. No radio equipment has been recovered with any of the paper balloons. The only indication that the paper balloons may carry radio transmitters is the fact that a large number of signals have been received from the general direction of the Pacific Ocean. Most of these signals have been received by stations on the West Coast and the fixes obtained have been inaccurate.

b. In one instance a transmitter was tracked by a D/F net during a period of nine hours and over a distance of 1,600 miles. Without allowing for inaccuracies in D/F fixes, the estimated speed was 174 miles per hour. In another instance, two accurate fixes, spaced approximately 1,800 miles apart, were obtained on what appeared to be the same transmitter at an interval of ten hours, indicating that the transmitter had moved at the rate of approximately 180 miles per hour in the meantime. A D/F net in Hawaii has tracked a radio transmitter over a distance of approximately 1,440 miles in ten hours.

7. Propaganda:

a. The first reference to balloons in Japanese propaganda was made on 17 Feb 45 in a Domai broadcast in English beamed to the United States. The Japanese claimed that 500 casualties had been inflicted in the United States and that numerous fires had been started. The broadcast also announced that the authorities in the United States had found it necessary to issue general warnings against attacks by the Japanese balloons and thus had aggravated unrest among the people. It was emphasized that these occurrences had shattered the American feeling of security against attacks by the Japanese. Domai said that the Japanese military authorities had refused to comment on the subject.

b. The broadcast may be the first of a series designed to conduct a war of nerves against the United States. Subsequent Japanese broadcasts beamed to Europe, SE Asia and China have repeated this theme and, in one instance, added that several million airborne troops could be landed in the United States in the near future.

R. A. OSMUN
Brigadier General
Chief, Military Intelligence Service.
Figure 1. Overall sketch of balloon and sketches of equipment carried. (Prepared by WDC)
Figure 2
Alturas, California, balloon inflated for laboratory tests
Figure 3
Incendiary bomb dropped by Minton, Saskatchewan, balloon.

Figure 4
Bomb dropped by Minton, Saskatchewan, balloon.
Figure 5
Automatic ballast-release apparatus, with battery container, found with Fort Simpson, Mackenzie, balloon.

Figure 6
Aneroid-bellows switches found with Fort Simpson, Mackenzie balloon.
Figure 7
Battery in place in its container -- found with Fort Simpson, Mackenzie balloon.

Figure 8
Weight release mechanism found near Hayfork, California. The incendiary bombs are in the same positions as originally found; the sand bags are suspended from the proper plugs but not in the same order as found. Three incendiaries and six sand bags are shown.
Figure 9
Two of four incendiary bombs found near Hayfork, California. Shows general appearance and "T" shaped objects which suspended the bombs from the periphery of the weight release mechanism.

Figure 10
Demolition block found near Hayfork, California. Shows tin container and 1 pound Picric Acid charge. Holes on side and end are for blasting cap.
### CHRONOLOGY OF
### FREE BALLOON INCIDENTS

**23 February 1945**

I. **ALL POSITIVE INCIDENTS REPORTED THROUGH 22 FEB 44.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Location</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>San Pedro, Calif.</td>
<td>4 Nov 44</td>
<td>Rubber balloon, supporting electronic devices, retrieved from water 66 miles SW of San Pedro, Calif.</td>
</tr>
<tr>
<td>8.</td>
<td>Estacada, Ore.</td>
<td>31 Dec 44</td>
<td>Paper balloon found; similar to that at Kalispell.</td>
</tr>
<tr>
<td>9.</td>
<td>Medford, Ore.</td>
<td>4 Jan 45</td>
<td>Bomb, later identified as a Japanese incendiary, fell and exploded in open field.</td>
</tr>
<tr>
<td>10.</td>
<td>Sebastopol, Calif.</td>
<td>4 Jan 45</td>
<td>Paper balloon found; similar to those at Kalispell and Estacada.</td>
</tr>
<tr>
<td>11.</td>
<td>At sea, 52° 50' N, 160° W</td>
<td>5 Jan 45</td>
<td>Merchant vessel crew shot down white balloon of 30 ft. diameter. Nothing was recovered.</td>
</tr>
<tr>
<td>Date</td>
<td>Location</td>
<td>Details</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>10 Jan 45</td>
<td>M Turias, Calif.</td>
<td>Paper balloon with usual equipment forced down by aircraft and recovered.</td>
<td></td>
</tr>
<tr>
<td>12 Jan 45</td>
<td>Minton, Sask., Can.</td>
<td>Balloon descended 6 miles N of U.S.—Canada border, released 20-lb. bomb and two flares or incendiaries. One flare or incendiary exploded; the other and the bomb did not. Balloon then rose and disappeared.</td>
<td></td>
</tr>
<tr>
<td>12 Jan 45</td>
<td>Lame Deer, Mont.</td>
<td>Japanese balloon found.</td>
<td></td>
</tr>
<tr>
<td>15 Jan 45</td>
<td>Moorpark, Calif.</td>
<td>Paper balloon found about 15 miles S of where Ventura bomb (Item 16) exploded. Balloon was similar to others.</td>
<td></td>
</tr>
<tr>
<td>24 Jan 45</td>
<td>Buldir Island, Alaska</td>
<td>Balloon was seen at 29,000 ft., and shot down. Pilot estimated diameter at 30 ft. Balloon fell in sea 25 miles SW from Buldir Island and nothing was recovered.</td>
<td></td>
</tr>
<tr>
<td>31 Jan 45</td>
<td>Julian, Calif.</td>
<td>Paper balloon found with usual equipment.</td>
<td></td>
</tr>
<tr>
<td>1 Feb 45</td>
<td>Red Bluff, Calif.</td>
<td>Envelope and shroud lines only of paper balloon found.</td>
<td></td>
</tr>
<tr>
<td>2 Feb 45</td>
<td>Hayfork, Calif.</td>
<td>Paper balloon with usual equipment found; with four unexploded 10-lb. incendiary bombs.</td>
<td></td>
</tr>
<tr>
<td>2 Feb 45</td>
<td>Laurens, Iowa</td>
<td>Envelope and shroud lines only of paper balloon found.</td>
<td></td>
</tr>
<tr>
<td>2 Feb 45</td>
<td>Schuyler, Nebr.</td>
<td>Piece of balloon paper five by six feet in size found.</td>
<td></td>
</tr>
<tr>
<td>7 Feb 45</td>
<td>Provost, Alberta, Can.</td>
<td>Paper balloon and a few pieces of control equipment found.</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Date</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Laramie, Wyo.</td>
<td>8 Feb 45</td>
<td>Paper balloon found, similar to others.</td>
<td></td>
</tr>
<tr>
<td>Camp Beale, Calif.</td>
<td>8 Feb 45</td>
<td>Paper balloon and damaged weight-dropping device found.</td>
<td></td>
</tr>
<tr>
<td>Moose Jaw, Sask., Canada</td>
<td>9 Feb 45</td>
<td>Envelope and shroud lines only of balloon found.</td>
<td></td>
</tr>
<tr>
<td>Lodgegrass, Mont.</td>
<td>9 Feb 45</td>
<td>Top one-third of paper balloon found.</td>
<td></td>
</tr>
<tr>
<td>Hardin, Mont.</td>
<td>12 Feb 45</td>
<td>Bomb explosion followed by a ground fire occurred.</td>
<td></td>
</tr>
<tr>
<td>Riverdale, Mont.</td>
<td>12 Feb 45</td>
<td>Three bombs landed and exploded. Fragments indicated the bombs were incendiary.</td>
<td></td>
</tr>
<tr>
<td>Burwell, Nebr.</td>
<td>12 Feb 45</td>
<td>Badly torn balloon envelope found with 2 incendiary bombs (Indicated as envelope only on TAB B).</td>
<td></td>
</tr>
<tr>
<td>Howlin, S.D.</td>
<td>12 Feb 45</td>
<td>Unexplained incendiary bomb explosion occurred.</td>
<td></td>
</tr>
<tr>
<td>Cascade, Mont.</td>
<td>12 Feb 45</td>
<td>Bomb fragments smelling strongly of ammonia found.</td>
<td></td>
</tr>
<tr>
<td>Spokane, Wash.</td>
<td>12 Feb 45</td>
<td>Two unexploded bombs found 7 miles north of Spokane. These were believed to have been dropped only a short distance as their paint was unmarred.</td>
<td></td>
</tr>
<tr>
<td>Edin, Mont.</td>
<td>13 Feb 45</td>
<td>Paper balloon found, similar to others.</td>
<td></td>
</tr>
<tr>
<td>American Falls, Ida.</td>
<td>13 Feb 45</td>
<td>Envelope only of a Japanese balloon found.</td>
<td></td>
</tr>
<tr>
<td>Prosser, Wash.</td>
<td>15 Feb 45</td>
<td>Paper balloon found with some of the usual apparatus.</td>
<td></td>
</tr>
<tr>
<td>Flathead Lake, Mont.</td>
<td>17 Feb 45</td>
<td>Long strip of paper, believed to be part of a balloon envelope, found.</td>
<td></td>
</tr>
<tr>
<td>Takla Lake, B.C., Canada</td>
<td>19 Feb 45</td>
<td>Partially inflated balloon found.</td>
<td></td>
</tr>
</tbody>
</table>
II. BALLOON SIGHTINGS AND POSSIBLY RELATED INCIDENTS
FROM 20 JAN THROUGH 22 FEB 44.
(See General Report No. 1, 29 Jan 44, for previous sightings and incidents.)

1. Camp Wolters, Texas 26 Jan 44
Balloon at unknown height was seen passing overhead at high velocity. No appendages were visible.

2. Long Beach, Calif. 26 Jan 44
Gray balloon which had an object attached was seen descending rapidly by a sergeant and four officers.

3. At Sea, 15 m. N of Attu Island, Alaska 26 Jan 44
An object, about parachute size, was sighted at a height of about 1500 ft. An appendage was suspended below the object.

4. Marshall, Alaska 26 Jan 44
Balloon was reported seen in flight by a civilian pilot.

5. Emendorf Field, Alaska 29 Jan 44
White balloon seen at 5000 ft. It carried a small black unknown object and was lost to sight at an estimated height of 51,000 ft.

6. Cooper Bay, Alaska 30 Jan 44
Natives reported seeing a partly filled balloon on the ice of the bay. It is believed that the balloon was blown into the bay, and nothing was recovered.

7. At Sea, - Off Queen Charlotte Island, B.C., Canada 30 Jan 44
A naval vessel picked up a radar target which was later visually determined to be a balloon 450 miles west of Queen Charlotte Island.

8. At Sea, - 31 Jan 44
An aircraft pilot sighted a balloon with a rectangular object suspended below it at 32°50' N and 128°5' W, altitude 10,000 ft.

9. At Sea, - 31 Jan 44
Two balloons sighted by the crew of a Navy ship. The balloons were at an estimated height of 20,000 ft. and exploded while being watched.

10. Pendleton, Ore. 31 Jan 44
Four civilians reported the sighting of a balloon carrying a suspended object.
<table>
<thead>
<tr>
<th>Number</th>
<th>Location</th>
<th>Date</th>
<th>Incident Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Weed, Calif.</td>
<td>1 Feb 45</td>
<td>Two balloons were reported sighted at 14,500 ft. Objects were seen hanging from the envelopes.</td>
</tr>
<tr>
<td>12</td>
<td>Fort Resolution, Dist. of Mack., Canada</td>
<td>1 Feb 45</td>
<td>A balloon carrying a bright red light was reported sighted.</td>
</tr>
<tr>
<td>13</td>
<td>Duncan, B.C., Canada</td>
<td>4 Feb 45</td>
<td>A balloon is reported as having exploded while airborne.</td>
</tr>
<tr>
<td>14</td>
<td>Between Broughton and Polkingborn Islands, B.C.</td>
<td>7 Feb 45</td>
<td>A floating balloon with ring and metal box attached was reported seen. Nothing was recovered.</td>
</tr>
<tr>
<td>15</td>
<td>At Sea, Off Alexal Point, Attu Island, Alaska</td>
<td>8 Feb 45</td>
<td>The pilot of a P-38 reported sighting a large balloon at 40,000 ft.</td>
</tr>
<tr>
<td>16</td>
<td>Blackfoot, Idaho.</td>
<td>8 Feb 45</td>
<td>Three civilians reported the sighting of a balloon at a height of about 2,000 ft. The balloon was seen to hit the ground, drop equipment it was carrying, and rise again, but nothing was recovered.</td>
</tr>
<tr>
<td>17</td>
<td>Inyokern, Calif.</td>
<td>9 Feb 45</td>
<td>Naval personnel reported the sighting of five balloons at 10,000 ft. Ten aircraft made an unsuccessful search.</td>
</tr>
<tr>
<td>18</td>
<td>Santa Rosa, Calif.</td>
<td>10 Feb 45</td>
<td>A balloon sighting was reported.</td>
</tr>
<tr>
<td>19</td>
<td>Fort Hardy, Vancouver Island, B.C., Canada</td>
<td>11 Feb 45</td>
<td>A balloon was clearly seen by RCAF fighters at 12,000 ft, but the balloon was too high for closer approach before darkness.</td>
</tr>
<tr>
<td>20</td>
<td>Nanaimo, Vancouver Island, B.C., Canada</td>
<td>11 Feb 45</td>
<td>Militia Rangers reported the sighting of a balloon.</td>
</tr>
<tr>
<td>21</td>
<td>Big Fork, Mont.</td>
<td>12 Feb 45</td>
<td>A balloon sighting was reported.</td>
</tr>
</tbody>
</table>
21. Milltown, N.D. Canada 12 Feb 45
Canadian Militia Rangora reported seeing a balloon at 8,000 - 10,000 ft. Search was made by RCAF aircraft without results.

22. Molo, Hawaii 12 Feb 45
A balloon was sighted by a Swedish vessel about 250 miles southeast of Molo.

23. Red Lodge, Mont.
24. Cody, Wyo. 12 Feb 45
A free balloon was seen passing over Red Lodge, and a balloon, thought to be the same one, was seen drifting over Cody 5 hours later.

25. Cascade, Mont. 12 Feb 45
The sighting of three balloons was reported.

26. Truckee, Calif. 13 Feb 45
A ball of fire was seen falling to the ground by a rancher.

27. Verce, Wyo. 13 Feb 45
Observation of the landing of a balloon was reported by civilians. Nothing was found in air and ground search of the area.

28. Petermanville, 14 Feb 45
Galitz.
A balloon at a height of 6,000 to 10,000 ft. was reported sighted by the U.S. Forest Service.

29. Kibler, Wyo. 14 Feb 45
A State policeman reported seeing a balloon. Searching aircraft were unable to find anything.

30. Red Bluff, Calif. 15 Feb 45
Two civilians reported seeing a balloon at a great height, but four searching F-73's were unable to locate it.

31. Hanford, Wash. 16 Feb 45
Four policemen reported seeing an object which resembled a balloon fall on a mountain near the city. The object arose 15 minutes later, disappearing beyond the mountain.

32. Cordova, Alaska 16 Feb 45
A large white balloon was reported seen by school children as it drifted past above the town.

33. Xouton, Feb. 17 Feb 45
Couver Island B.C. Canada
A balloon was reported sighted drifting northeast.
<table>
<thead>
<tr>
<th>Location</th>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Bluff, Calif.</td>
<td>18 Feb 45</td>
<td>Two balloons were reported sighted by the sheriff of Red Bluff.</td>
</tr>
<tr>
<td>Courtenay, Vancouver Island, B.C., Canada</td>
<td>18 Feb 45</td>
<td>A balloon was reported seen travelling south-east.</td>
</tr>
<tr>
<td>Strait of Georgia, B.C., Canada</td>
<td>18 Feb 45</td>
<td>Three separate balloon sightings were reported, apparently all of the same balloon.</td>
</tr>
<tr>
<td>Ulrich, Calif.</td>
<td>18 Feb 45</td>
<td>A dairymen reported the sighting of a balloon. Air search produced no results.</td>
</tr>
<tr>
<td>HoCloud, Calif.</td>
<td>19 Feb 45</td>
<td>The Forest Service reported a balloon at an estimated altitude of 20,000 ft., 10 miles east of Mount Shasta.</td>
</tr>
</tbody>
</table>