

Seasons Greetings

THE MODERATOR

B R E A C T O R M U S E U M A S S O C I A T I O N

January-March

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Winter 2021

From The Control Room

by BRMA President Robert Franklin

Firstly, I would like to wish all of you a Happy Holidays and I am wishing for your safety and prosperity in the new year. As 2020 comes to an end I want to spend this space wrapping up some important news of 2020 and forecasting to changes in 2021. As you know there was no tour season this year. One of the last in-person events that I attended was a docent meeting in March of 2020 where we both prepared for an upcoming tour season and discussing the possibilities that it may not happen. This was before the virus ran rampant throughout our communities. As I reflect on 2020, I see the damage that wishful thinking can do. Perhaps that is because we are rarely confronted with such a challenge and disruption to our lives and livelihoods. As a historian I am drawn to make comparisons and relate to history. The challenge COVID posed to us has its closest analog in the Spanish Flu of the late 1910s. I would argue that our response to that challenge should NOT have been our response in 1918, which was patchwork, partisan, and scientifically ignorant, but rather been on the scale of the Manhattan Project – immense, immediate, and well-coordinated to achieve its goals. It is sobering that more Americans have died of COVID in less than a year than all those that died in combat during WWII. It is not enough to learn history; we must learn from it.

I bring this up because I will not engage in wishful thinking going forward but rather focus on realistic communication. Long ago when I worked in sales the mantra was “under promise and over deliver.” Given the ongoing dysfunctional COVID response and partisan nature of everything from government funding to vaccine implementation there will almost assuredly not be a tour season this year. As I mentioned in the Fall edition of this column, the NPS stepped up its social media and web presence during the summer, and these efforts will continue in 2021 and will be more important than ever. As the agency in charge of interpretation we should expect nothing less. The DOE is much opaquer when it comes to communication. For example, the MAPR (Manhattan Project National Historical Park) tour website has not been updated since April and still lists that updates for the 2020 season will be available soon. This is not meant to excoriate the DOE for their job is not interpretation, but rather to manage facilities and

provide access. The first they do with aplomb, the second they are prevented from doing. It is also a year of major contract changes that will go into the new year (and likely take up most of that year) and understandably the cleanup work takes up most of the bandwidth in these pandemic times. It is my hope that 2021 is a year of maintenance and structural improvements at MAPR Hanford facilities, including a new roof on the B Reactor and stabilization of endangered Pre-Manhattan resources. These issues are vital for the ongoing survival of MAPR when tours do resume, and they depend on money and political will. Our elected officials, local, state, and federal, should know how important these are to our community.

As our engagement will continue to be virtual there are several resources for you to be aware of. The NPS is unveiling their new smartphone application (app) at the beginning of the year. The app will have brief content (text, photos, video) for all three sites of our park and links to more detailed content. The Hanford History Project is working on longer essay-length works for many of the Pre-Manhattan sites and that content will be featured in the app. There are plans in future years to expand to Manhattan Project content. More information about the app will be sent out by the secretary when it is available to the public. Content will be added as well to the NPS MAPR website (<https://www.nps.gov/mapr/index.htm>), and the quickest way to stay informed is through social media, so follow MAPR on Twitter, Facebook, and Instagram.

The BRMA website is scheduled for an overhaul this year as well. This has been a long-championed wish of John Fox and I’m hoping he’ll be the one to lead the update committee which will suggest changes to the website. In the meantime and in addition to the NPS website (which is as I mentioned still working on content) if you are thirsty for MAPR history I encourage you to visit the Atomic Heritage Foundation website (<https://www.atomicheritage.org/>) now in partnership with the National Museum of Nuclear Science and History and the Hanford History Project website (<http://hanfordhistory.com/>) which continues to add content such as oral histories and historic photos. Lastly, the National World

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The B Reactor Museum Assn. meets on the 2nd Monday of each month at 7 PM, in a Conference Room at the Richland Public Library, 955 Northgate Dr., Richland. Our meetings are presently cancelled due to COV-19 social distancing.

**Dupus Boomer — by Dick Donnell
Contributed by Connie Estep**

Charitable Contributions

This is a Public Acknowledgement of the generous cash contributions to BRMA. The following list covers the period, October through December, 2020.

Charles & Elaine Davis

Maureen Hamilton

Cindy Kelly

Lloyd Piper




**Membership Report
By Bob Carosino, Membership Chair**

2021 BRMA MEMBERSHIP DUES ARE NOW DUE. 27 people (including 10 individual Lifetime Members) & 2 Groups (Atomic Heritage Foundation and The REACH) took advantage of the Early Renewal Period for 2021. During membership year 2020 we welcomed 10 new members and one renewal as a Lifetime member.

Thanks to all of you who support BRMA with your dues and additional charitable contributions.

To send in your Renewal, the Form is below to Print and/or Clip and Send In.



2021 Renewal and New Member Application

Name: _____ Date: _____
 Address: _____ City: _____ State: _____ Zip: _____
 Phone: (h): (____) _____ (cell): (____) _____
 E-mail: _____ (Please print legibly)

Renewal New
 Individual (\$20) or Senior (age 60+ - \$10) or Student (\$10) or Life Member (one time — \$250)
(Individual Members Only)

Society/Group (\$25) Name of Voting Representative: _____

Additional tax deductible contribution: \$ _____
Note: both Dues and Cash Contributions are Tax Deductable. (Tax ID # 94-3142387)
No goods or services were provided in exchange for your contribution
If your total enclosed contribution is \$50 or less, print a copy of this application for your records. Over \$50 will be separately received.

Total Enclosed: \$ _____
 (Please make check out to BRMA)

Thank you; please mail this application with payment to: **B Reactor Museum Association
 PO Box 1531
 Richland, WA 99352**

Japanese Balloon Bombs And the Hanford Engineer Works (Re-visited)

By Burt Pierard, BRMA Historian

Note: This article originally ran in the Spring 2014 Moderator. Some minor revisions are included for the layman's understanding of what happened. The exact devices that caused the SCRAMS have been recently identified.

There were only two, confirmed, Japanese Balloon Bomb landings that affected the Hanford Engineering Works (HEW). Both incidents occurred on the afternoon of March 10, 1945.

In my opinion, the Japanese Balloon Bomb barrage was one of the most ingenious weapons of WWII but in the end, proved largely ineffective. It is not the purpose of this article to describe the balloons and barrage in detail. Suffice to say that they were fairly large (about 32 feet in diameter and 75 feet tall, including the rigging and "pay load"). The balloon envelope was constructed from several layers of fiber paper and cellulous glue that comprised an electrically semi-conductive surface. As we shall see, they posed a short circuit, or "fault," threat to High Voltage Transmission Lines but that was not their intent – they were designed to drop their bombs and self-destruct before touching down. Literally, thousands of the balloons were launched into the Jet Stream and hundreds made the 5000 mile, 100 hour (est.), journey to the United States West Coast and were recovered, at least partially.

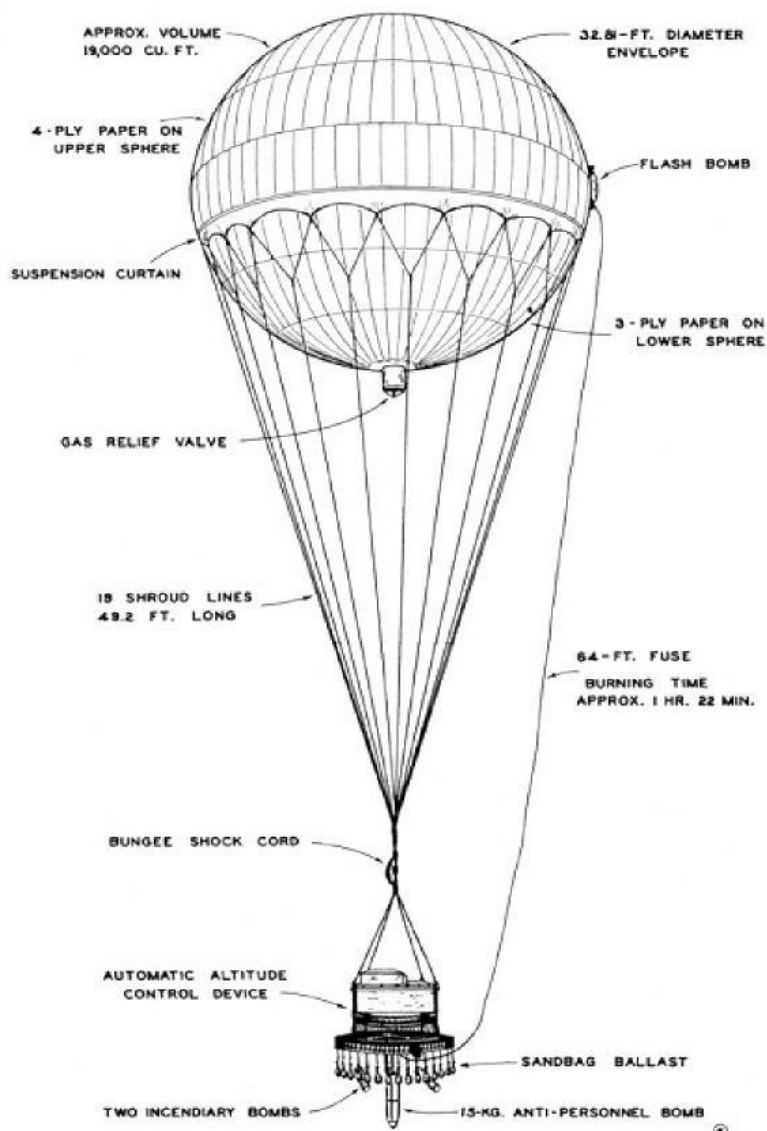
The FIRST MARCH 10 incident has been described in, essentially, all the History Books as a balloon going into a 230Kv transmission line between Grand Coulee and Bonneville generating stations and causing an electrical surge through the Hanford line (a looped load from the Midway Substation Bus) that carried power to all 3 reactors, B, D and F. Automatic safety devices were actuated, which resulted in a full SCRAM of the reactors (dropping of the Vertical Safety Rods and the Accumulators to insert the Horizontal Control Rods).

The first problem with that account is that there was no such thing as a 230Kv Grand Coulee to Bonneville transmission line. Those of you who saw the Winter 2014 Moderator, know that the insertion of the BPA Midway Substation in the system created twin Grand Coulee to Midway lines and twin Bonneville to Midway lines. For the second problem, I'm drawing from my experience as an Electrical Engineer in Transmission Line Protection and Control to state that the only power surges during a fault condition are from the substations at each end of the line (and any upstream sources), into the fault. Thus, no surge was possible on the looped Hanford line. The surges do cause a voltage drop, or "dip" (the familiar blink of the lights), at the substations, which

permeates throughout the system (while the fault is present). In this case, the dip was obviously severe enough to trip the Power Failure to the Process Pump Building Protective Relays at each of the reactors (the only electrical disturbance devices that could cause a Full SCRAM). The simultaneous trip of all 3 Reactors is further indication of reaction to the system wide "dip."

The only contemporary documentation of this incident (that I could find) is the Midway Substation Operator's Log Book which recorded a trip of the Bonneville-Midway Line No.2 (at both ends) at 1523 hours (PWT). (Note: War Time was year-round Daylight Savings Time.) (The method of clearing the fault is to automatically open the breakers to extinguish the arc and then, assuming the fault has burned clear, manually close the breakers to restore the line.)

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Balloon Bombs (continued from page 3)

Bonneville closed its breaker 30 seconds later and Midway closed its breaker at 1524 hours (PWT).

At that time, no cause for the line outage (no load interrupted) was known. The fault duration (“dip” producing) was later reported as 5 cycles (1/12 of a second). What followed was a flurry of telephone conversations with an apparent ban on any paper trail (even Col. Matthias made no mention in his diary), until Gen. Groves sent a March 28 Teletype requesting a Teletype clarification of varying reports of Reactor Outage times and asking for a written report of the whole incident by mail. Col. Matthias added a note to the Gen. Groves message suggesting that Capt. Johnson, Intelligence Officer, should start the response memo by detailing the events leading up to the failure.

Capt. Johnson wrote his memo to Col. Matthias that same day. His first item concerned a March 10 report from the FBI Agent in Yakima, WA at approximately 1700 hours (PWT) stating that a farmer living approximately 15 miles south of Toppenish, WA reported that a balloon had struck a High Voltage line running across his property at about “3:30 PM.” Upon striking the wires, the balloon burst into flames. It was later concluded that this fault was, indeed, the 1523 hours event logged at Midway.

Capt. Johnson’s second item concerned a report on March 13 at 0900 hours (PWT) from du Pont’s Protection Department Superintendent, T. N. Stapleton, who tried to explain the sequence of electrical operations during the March 10 fault. I don’t know if there was a breakdown in the oral conversation, Johnson was unfamiliar with how a transmission system works, Johnson’s memory of the conversation was faulty, or some combination thereof, but Johnson’s account came out somewhat garbled and completely backward to what we know happened. His account said that a disturbance on the HEW line had caused an automatic safety device at Midway to function and cause the automatic tripping of the reactors. Also, on March 13, he received a report from the Area Engineer for the 100 Areas concerning the reactor outage times of: 100-B&D, 10 minutes; 100-F, 1 hour. (Later corrected information was: 100-B, 10 minutes; 100-D, 12 Minutes; 100-F, 68 minutes.)

Col. Matthias condensed Capt. Johnson’s report and added a few details of his own in his reply to Gen. Groves. He did mention that the Toppenish farmer’s power line was the North Loop of the Bonneville to Grand Coulee but he mentioned them

going through Midway from which the HEW line originates. Again the lack of knowledge of Transmission Line Operations arose when he said that the line surge opened the circuit for 5 electrical cycles representing an outage of 1/12 of a second in the line serving the HEW. We have learned that the 5 cycles were actually the duration before the Breaker opened at Midway – no outage to the HEW, just the “dip.” Col. Matthias also explained the relatively long outage time for 100-F was due to difficulty in raising one Vertical Rod.

There is also some dispute on how long it took to get all 3 reactors back up to full power. According to Col. Matthias’ diary, that date was March 28 although that date was skewed somewhat by a 100-B refueling shutdown in the middle of that period.

The SECOND MARCH 10 incident was called the “Cold Creek Landing” by the Western Defense Command but I, whimsically, refer to it as “The Cold Creek Massacre,” where 1 Hanford Security Patrolman and 1 U. S. Army MP whipped out their pistols and mercilessly, gunned down a helpless, landed Japanese Balloon (although it was being dragged by the wind, across the ground toward the same Transmission Line involved in the Toppenish incident earlier, but I’m getting ahead of myself.

Due to the Cold Creek landing occurring on HEW land it was probably the most documented of all the landings, generating 6 HEW Patrol Unusual Incident Reports representing 6 individual and at least 20 witnesses (all patrolmen or MPs). Ironically, the first sighting was only about 45 minutes after Capt. Johnson got his FBI report on the Toppenish incident. The first sighting was reported by 2 groups of 100-B patrolman’ at about 5:40 PM when the balloon was still about 1000 feet high and appeared to be heading to a landing west of the Yakima Gate. The balloon settled down about 5:51 PM at a spot $\frac{3}{4}$ mile west of the Yakima Gate and $\frac{1}{4}$ mile south of the old highway 11A (Highway 24 today), near the headwaters of Cold Creek. The previously mentioned patrolman and MP were 2 of the first 3 people to arrive at the scene and observed the balloon dragging its apparatus toward the power line so they used their guns to deflate it. They then took up positions 300 yards away to keep other arriving personnel away and organize them into a circular guard position. They also had several workers heading home who stopped to see what was going on and were encouraged to move on and say nothing to anyone else. They held these positions until the Army arrived to take over.

From Our Gift Shop

By Rick Bond, BRMA Products and Sales

Houston, we have a problem! After managing our BRMA gift shop for about 7 years, while also running her Archer Analytical Lab and her Whimzeez gift shop, Debbie Burnet is retiring. She will be moving out of her space by the end of January 2021. First and foremost, I want to thank Deb so much for her dedication to our gift shop over these many years. She not only sold the items, but also maintained our inventory, assisted with designing and ordering products, filed taxes, and helped with many other tasks. She has been there for us six days a week when she did not need to come in on Saturdays for her lab business. We can't thank her enough for her tireless dedication to our cause of preserving and promoting B Reactor and we wish her many happy years of retirement.

Back in winter of 2020 we were very busy remodeling our gift shop to make it look more like a "National Park visitor's center" gift shop. Unfortunately, we were never able to conduct tours this year and as a result, had essentially zero traffic in our newly remodeled gift shop. The Port of Benton, who owns the space where our gift shop and Whimzeez is currently located, has graciously agreed to allow us to keep our MAPR/BRMA gift shop in its current location with no rent for a least another six months. While this is great news, there probably won't be any tours at least until mid-summer of 2021, or maybe not at all in 2021, so we still won't have hardly any sales. If we can find someone to manage the shop in the near term that would be somewhat helpful; however, there will hardly be any visitors so we are not sure if it is worth keeping it open (maybe just on a very limited basis). We are also looking into the possibility of online sales.

We are currently in discussions with the Department of Energy, the National Park Service, and others to try to find a long-term solution to our dilemma. The best option would be to locate the gift shop in the visitor's center. The DOE and NPS are fine with this option; the problem is that their staff is not allowed to collect the money from sales. Since our revenue from the gift shop is fairly small, because the tours only run about half the year (when running), and because the vast majority of visitors are only in the visitor's center for a short period of time before and after the tours, it is not possible to pay a person to manage the gift shop on a full-time basis. Thus, we are in a real bind and are trying to brainstorm ideas for how we can keep the gift shop open into the future; at least until our park becomes better known and we get enough visitors to support a staff.

If anybody has any ideas for how and where to operate our gift shop in the future, or knows of somebody that might be willing to manage

our gift shop on a part-time basis, please let me or a BRMA member know. If we can find several part-time persons to share the duties, Deb Burnet is willing to help. Also, if anybody is familiar with the various aspects of online sales we could use all the help we can get in this area, if we should decide to pursue it. It is important that we keep the gift shop operating as it is the major source of revenue for BRMA and we have built up an inventory of attractive items.

If we do keep the shop open, even if on a limited basis, I encourage you to stop by, check out the "new" gift shop layout, say hello, and maybe purchase a few items to support our local Hanford Unit of MAPR. The shop is located at 2000 Logston Boulevard, just a few doors down from the visitor's center.

FINANCIAL REPORT FOR 2020 Del Ballard, BRMA Treasurer

What a year! Certainly not good for tourist gatherings or for the B Reactor Museum. Without the B Reactor tours and without tourists or customers at our gift store we saw few sales and the loss of our major source of revenue. Early in the year we had purchased substantial quantities of new and interesting park-related souvenir items in anticipation of a banter sales year, obviously that did not occur. These two situations, plus our funding of displays at the reactor resulted in an appreciable negative cash flow of \$9,306.90 for our organization.

Total revenue for the year was \$3,644.73, including \$545 dues; \$1,522.50 donations, and \$996.84* from investments. Only \$580 of our total revenue was from souvenir sales.

Our total outflow for the year was \$12,951.63. We were very pleased to be able to fund, in the amount of \$5,224.48, an interesting set of displays in support of the MAPR Park. The other major outflow was \$6,496 for souvenir purchases early in the year. Minor administrative expenses, and miscellaneous items represented the remaining expense. Total end year financial balance for all accounts was \$90,018.22. In addition our souvenir inventory represented some \$33,000 in purchase cost.

I, Del Ballard after 17 years as BRMA treasure, will be retiring and Dave Marsh will be assuming those duties at the start of the New Year.

*Note: Not including year-end dividends/interest from investment accounts.

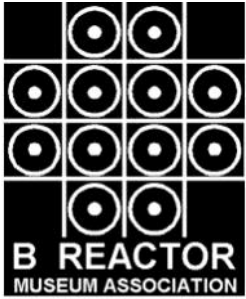
INFLOWS	
Uncategorized	0.00
Donations	1,522.50
Dues	545.00
Investment Inc	996.84
Souvenir Sales	
Souvenirs Visit Tri-Cities	136.24
Souvenirs Whimzeez	444.15
TOTAL Souvenir Sales	580.39
TOTAL INFLOWS	3,644.73
OUTFLOWS	
Box Rent	148.00
BRMA Souvenir Purchases	6,496.00
Dues and Subscriptions	185.00
Legal-Prof Fees	10.00
Misc	787.01
NPS Direct Support	5,224.48
Postage and Delivery	74.55
Printing and Reproduction	26.59
TOTAL OUTFLOWS	12,951.63
OVERALL TOTAL	-9,306.90

CONTROL ROOM (continued from page 1)

War II Museum has a good web presence and has content about the Manhattan Project, much of it aimed at students (to show perhaps to those students in your lives), including their Electronic Field Trip series (starring yours truly) at (<https://www.nationalww2museum.org/>). Try searching topics like "Hanford" and "Manhattan Project".

In other business, Rick Bond has a good update on the status of our gift shop. In the sort term without tours our gift shop is on hiatus, but we do have a couple of options forward to resume in-person sales when life opens back up again. In the meantime, we are exploring the logistics of online sales. To me, it's not the revenue that is important (although that is helpful to BRMA) but rather it's the work of giving our visitors something to remember their visit, and a way of advertising for our unique park. Lastly, due to COVID complications and the inability of BRMA members to meet in person it was decided to have a "non-election election" whereby the 2020 Board was extended through 2021.

Goodbye 2020, see you in the history books.



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