

To: FRRS Board of Directors
From: Paul Finnegan, Webmaster
Re: Museum Web Page
Date: August 4, 2020

COVID-19 Update

The website has been kept up to date with all the new museum information regarding the COVID-19 health emergency. The home page, the Latest Museum News column, the calendars, etc. have been updated as I received material.

Webcam Performance

The webcam performance/reliability has been a hot topic this spring. As I reported earlier, there are some policies at our web hosting service, Hostmonster, that have negatively affected the uptime of our webcams. Earlier this spring I made significant improvements to the code that I created that runs the webcams. These changes, in the HTML webcam webpage, the FRRS created software running at Hostmonster and the FRRS created software running on the webcam server at the museum have significantly improved the webcam system. Two months ago, I added more logging of the webcam system performance.

Before I report the performance information collected in July, let me share a basic description of the webcam system. There are two hardwired webcams at the museum. There is a small UNIX system at the museum that captures still images from the cameras alternating between the cameras. It captures an image and then sends it over the internet to Hostmonster in Utah. The webcam server then waits for 15 seconds and then repeats the process using the other camera. The system reboots early every morning to do a hard reset to clear any possible issues.

Meanwhile at Hostmonster, there is a program watching for a new image. When the image transfer is complete, it adds the caption and renames it so the webpage can load the new image. There is JavaScript running inside the webcam webpage that alternates between the latest two captured images, one will be from the east-facing camera, the other from the west-facing camera.

If the program at Hostmonster does not see a new image within two minutes, it replaces the real image with a "Webcam Out of Service" image, until it finds a new image. This way we do not keep presenting a stale image. The "Out of Service" message is displayed only when a new image is not found. This can be caused by the internet at the museum being down (or VERY slow) or the webcam server at the museum being down, perhaps because of a local power outage. If caused by a power outage, the system is configured to restart the service on power restoration.

During the month of July 2020, the "Out of Service" message was displayed 28 times. The vast majority were very short outages, 23 of them were less than one minute long. Only two were longer than three minutes. The five longest outages were:

7/1/20 12:31:28 PDT out of service 2 hours 1 minute 21 seconds
7/5/20 23:24:05 PDT out of service 2 minutes 50 seconds
7/11/20 03:21:37 PDT out of service 2 minutes 37 seconds
7/20/20 00:11:26 PDT out of service 1 minute 47 seconds
7/31/20 09:19:48 PDT out of service 1 hour 57 minutes 50 seconds*

* - Steve Habeck reported there was an area wide outage on 7/31 that accounted for that service interruption.

Given our situation, I do not find this service level objectionable.

SN Mobile Friendly Web Pages

On Friday July 24, I created 53 web pages on the [SN site](#) that are mobile friendly. This is a project I started about a year ago, and it got side tracked. All the SN pages now have both desktop and mobile friendly versions. As long as I was working on the SN site, I improved the layout of the main page and updated the contact information.

New Audit Tool for Policies & Procedures

Working with Kerry Cochran, I have created and deployed a new audit tool to check all the FRRS, WPRM and Arthur Walter Keddie Library Policies and Procedures. It creates a report showing which (if any) polices are past their review dates, which need review this year and which are OK. It also checks several webmaster potential issues for the [Museum Policies](#) web page.

I have configured the tool to run automatically once a month on the 15th. This tool will simplify the maintenance and review of our polociies.

Continuous Improvement – Behind the Curtain

I took on another background project this month to improve how our website handles redirects. When a user tries to follow an internet link, one of many things can happen: The link is good and the page opens, this results in a HTTP status code of 200 (OK). Another common outcome is the more dreaded 403 (forbidden) or 404 (not found) or 500 (internal server error) which results in an error page being displayed to the user. Another class of status codes include 301 (moved permanently) and 302 (found), in these cases the user is displayed the desired page, but several additional http requests had to be performed by the user's browser resulting in a slower response.

Our website has 5,047 href links to pages not on our website. I enhanced my website audit tool to identify and report the 301 and 302 links to me (it already reported the 403 and 404 errors). It found 77 hrefs that returned a 301 or 302 status code. I have fixed those links so the status is now 200, OK. This improves the website performance, but also protects us from the link going dead at some time in the future. Many websites only redirect for a finite length of time after something is moved and then the dreaded 404 is returned when the page is requested.

Additional Security

An ongoing problem with all public websites is the constant attack from malicious users. A favorite target on our website has been the sign-up for crew training form. The use of Google's reCAPTCHA tool stops the vast majority of malicious attacks, but recently more attackers are successfully getting past this tool. As a counter measure, I have created and implemented another layer of defense. For a long time I have maintained a deny list of IP addresses and anytime an attacker got past reCAPTCHA, I added that IP address to the deny list. Of course, this means they got in once, which would necessitate that I clean up the sign-up database. My new tool looks at the IP address of all users that get past reCAPTCHA (valid and malicious), and if the IP address is not from within the United States, it rejects the request. After testing the tool for several weeks on the crew training sign-up system, I added it to the train crew and museum event sign-up tools. The premise here is that all valid signups will only be done from people in the U.S.

General Items

- 7/9/20 – Posted five photos from Ethan Doty to the [Around the Museum 2020](#) gallery.
- 7/10-11/20 – Posted material for July Board Meeting as it became available.
- 7/12/20 – Updated calendar from changes from 7/11/20 board meeting.
- 7/12/20 – Posted preliminary minutes from 7/11/20 board meeting.
- 7/28/20 – Posted a photo of QRR 4 from Greg Elems to the [Around the Museum 2020](#) gallery.
- 7/29/20 – Posted two more QRR 4 photos from Greg to the [Around the Museum 2020](#) gallery.
- 7/29/20 – Created [QRR 4 collection page](#).
- 8/4/20 – Added WP 705 Repaint Fund to [Donation webpage](#).
- 8/4/20 – Added a new article to the [Historical/Archive Department web page](#).