The Continued Search for the Origins of W8UM: The Detroit Observatory

While researching the origins of W8UM, the word "code" was used as a search term at the Bentley Historical Library. This search indicated that "code" was found in Box 20 of the Detroit Observatory files. The university observatory is one of the oldest observatories in this country. Within Box 20, was a folder labeled "Unidentified Recorded Discs, some labeled code adaptive test, (ascension nos 259-262)". (Figure 1) The obvious question might be, what is the association between telegraphy and the Detroit Observatory? Five-years later, I have some answers and some interesting stories.

☐	Box 20	Documentation for Sextant Bubble (for accession no. 25)
	Special Location	Anemometer (accession no. 113) (artifact, stored in Bentley basement stairwell)
	Special Location	Spectrograph (accession no. 117) (artifact, stored in Bentley basement stairwell)
☐	Box 20	Note and Newspaper Fragment Found Under Dome Stairs at Observatory During Restoration 1997-1998 (accession nos. 145-146)
☐	Box 20	Files used in Detroit Observatory and other UM Observatories (including star charts, record sheets, and personnel list for Astronomy Department) (accession no. 285)
		Notecards
☐	Box 20	Directions (accession no. 232)
☐	Box 20	Inventory (accession no. 302)
☐	Box 20	Piece of Ribbon from Ribbon Cutting Ceremony from Observatory Rededication May 21, 1999
☐	Box 20	Unidentified Newspaper
☑	Box 20	Unidentified Recorded Disks, some labeled "code adaptive test" (accession nos. 259-262)

Figure 1. Bentley Historical Library Search Results "code"

Viewing the "Unidentified Recorded Discs" file, the name of J. F. Cline with the date 7-8-1942 was recognized on one of the two record albums contained in this folder. During the 1940's, Jack Cline was the faculty advisor and callsign trustee of W8AXZ. (Photo 1,) The reverse side of the record, manufactured by RecorDisc, is labeled "Code Test 40 RPM", with varying code speeds. This most likely is a self-recorded Morse code practice lesson done at varying levels of interpretation. (Photo 2.)



Photo 1. RecorDisc, W8AXZ Trustee & Club Advisor Jack Cline 1942

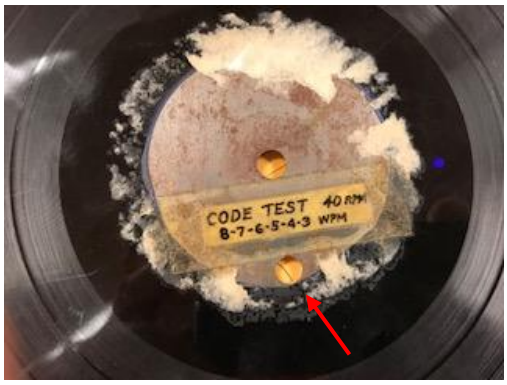


Photo 2. Reverse Side Showing the Aluminum & Anti-Slippage Spindle Hole

The second record album, maufactured by Presto, was unlabled and its contents remain unknown. (Photo 3.) Of peculiar interest to me, both records felt considerably "heavier" than the common 33 $^{1/3}$ RPM wax records used today and there were additional, spindle holes punched into these discs. In looking at the history of RecorDisc and Presto, both manufactured their recording albums using an aluminum disc which was then coated in vinyl; this accounts for their increased weight.



Photo 3. Presto Disc Showing the Anti-Slippage Spindle Holes

The additional punched spindle holes were placed to prevent slippage of the disc during the recording process. Both RecorDisc and Presto might be considered as the predecessor to the tape recorder. As an example, families might purchase the "recording" player and several, blank, discs for use in recording momentous events such as a childs birthday.

Attached to each record disc was a inventory tag and identification number; the "accesssion nos". Further searching revealed that the "accesssion number" referenced the efforts of Professor Nicholas Steneck. Steneck, an University of Michigan professor of history, had the idea to collect "all" the historic items once used on campus and to preserve these items. This collection occurred during the late 1980's. Scientific instruments, collected from across the campus, were inventoried and stored at his office in the Detroit Observatory.

In addition to the record albums, radio instruments that Steneck retrieved included; an unidentified 1930 transmitter, an unidentified 1930 receiver, a telegraph relay (that appears to have been modified for a spark-gap transmitter) and possibly the original 1913, 8XA spark-gap transmitter.

Steneck's description of the 1930 transmitter states "wooden box containing two audio-frequency transmitters and two vacuum tube sockets. Appears to be a primitive radio transmitter".

Many of the items collected by Steneck were later moved from the Detroit Observatory during its renovation between 1994-1999. At that time, Steneck's cataloged items were moved into the basement of Hill Auditorium for safekeeping. Several years later, Hill Auditorium also underwent a restoration. All reports and communications suggest that the cataloged items were removed from the basement and left on the street curb. No other details are known. Several smaller items, however, were found in the Detroit Observatory; a 3" section of the Atlantic Cable, a 2600 ohm relay and the T. R. McElroy telegraph key. (Photo 4.)



Photo 4. T. R. McElroy Key

In communicating with Professor Steneck, it was his recollection that the remaining items; record albums, telegraph key and the "modified" relay, in addition to his cataloged items, were all obtained from the East Engineering Building. This had been an earlier location of the "wireless" club and its advisors, Jack Cline and Richard K. Brown.

While discussing the subject of telegraphy with a librarian, she mentioned that there might be one other telegraph related item in the observatory. During an open house event, an "unkown" device, mounted to the base of the telescope was pointed out. This was a "sounder". (Photo 5.)



Photo 5. Sounder, Detroit Observatory

Another discovery? The librarian suggested searching the 1864 Inventory of the University of Michigan. Found in this catalog were notations that lists the university's puchase of

3 telegraph keys, a 20 ohm sounder and several relays. (Photo 6.)

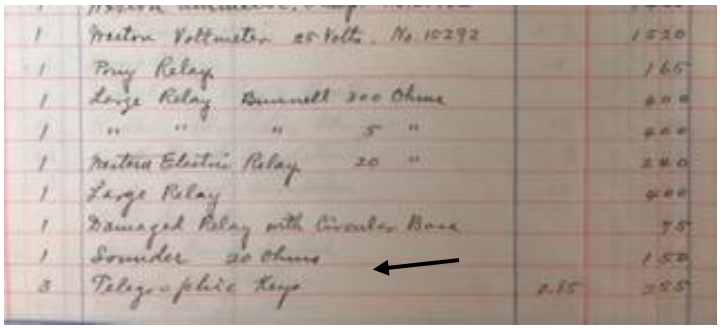


Photo 6. University of Michigan Inventory, 1864

The next questions, where were the 3 telegraph keys located? besides the sounder, did any other original equipment exist? and what purpose did telegraphy provide in the observatory'?

On a secound tour of the observatory, plenty of knob-and-post wiring was visible throughout the basement corridors but nothing else was discovered. However, a 1866 aerial map of Ann Arbor, in plain sight, offered further suggestion of telegraphy in the observatory. This map cleary depicts a telegraph wire spanning from the observatory to the Michigan Central train tracks running along the Huron River. (Photo 7.)

Photo 7.

Further review of the observatory's historical documents lists the use of the observatory's telegraph as instrumental in the longitudinal determination for the city of Ann Arbor. Additionally, the observatory also provided daily time reporting to the Detroit business district and to train stations. This service allowed business contracts to be precisely written and kept trains on a precise schedule. Weather reports were also sent from the observatory.

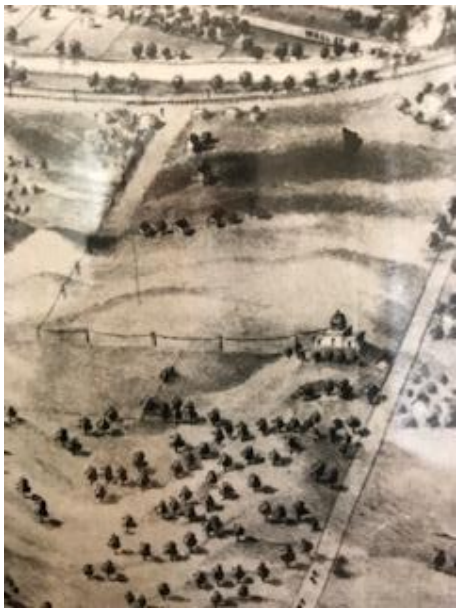


Photo 7. 1866 Aerial Map of Ann Arbor.
Telegraph Wire from the Detroit Observatory

Similar to the New Years Eve ball drop, Detroit also had a ball drop during this era. This ball was located on the roof of Smith's Jewerly, on Woodward Avenue, in downtown Detroit. Using the longitudinal determination, a telegraph signal, when it was 12 noon in Detroit, was sent from the Detroit Observatory to the jewerly store. This caused the ball to drop signaling noon. The jewerly store, downtown businesses, and those on the street could adjust their time pieces to the correct time. It is important to note that all the above were accomplished using "wired" telegraphy not "wireless" telegraphy.

A final item of interest, as amateur radio operators, reports of weather conditions are often communicated during a radio contact. Weather reporting as we know it today; temperature, wind speed and direction, rainfall and barometric pressure, likely had its origins at the Detroit Observatory. Cleveland Abbe, an university engineering instructor who studied astromony at the observatory, had more interest in weather recording and documentation than the planets and stars. Several years after leaving the university, Abbe organized amateur telegraph stations to relay reports of current weather conditions at their locations. Creating weather maps from the collected information, Abbe reliably predicted the weather. Abbe is credited in forming the National Weather Service and became its first Director. (Photo 8.)

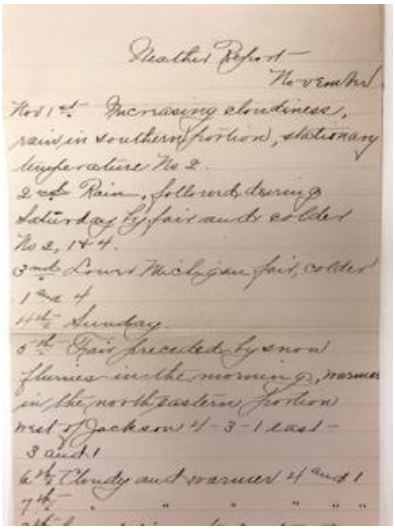

Weather Report
November
Nov 1st Increasing cloudiness, rain in southern portion, stationary temperature No 2.
2nd Rain, followed during Saturday by fair and colder
No 2, 1864
3rd Lower Michigan fair, colder
4th
5th Sunday
6th Fair preceded by snow flurries in the morning, warmer in the northeastern portion
met at Jackson 4 - 3 - 1 east -
3 and 1
6½ Cloudy and warmer 4 and 1
7th " " " "

Photo 8. 1861 Observatory Weather Report

Additionally, because of the difficulty he encounterd in coordinating train schedules across the continental United States, Abbe recommended establishing four time zones.

Unrelated to telegraphy, but interesting, was finding a document listing Edwin Hubble as an individual to direct the Detroit Observatory.

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