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Raven Hill Discovery Center, incorporated in 1991,
is a 501(c)(3) tax-exempt corporation.

Open year-round on weekends – noon to 4pm Saturdays and 2pm to 4pm Sundays.
Between Memorial Day and Labor Day, hours expand to include weekdays from
10am to 4pm. The Center is also open other times, including holidays, by appointment.

MISSION: to provide a place that enhances hands-on and lifelong
learning for all ages by connecting science, history and the arts.

WHERE **SCIENCE****HISTORY****AND****ART** CONNECT

To: Raven Hill friends

From: Cheri

Date: October 12, 2024

Re: Bye-Bye Pop ups -- Hello "ham"s

The saying "everything is relative" speaks to the idea that our perception of events or conditions depends on the how they affect us. For example, Raven Hill is experiencing two different scenarios right now. One is the bridge construction on Fuller Road and the other is the impact of Hurricanes Helene and Milton, which has peripherally affected the Center.

While the bridge construction on Fuller Road is disruptive for Raven Hill and others living south of Deer Creek, the project is a planned event with given timelines and predictable consequences—a new and safer bridge. Frustrations, like delays & business impacts, are manageable and relatively temporary inconveniences. In the grand scheme of things, such construction, though significant to us locally, is a routine infrastructure project.

By contrast, Hurricanes Helene and Milton represent a catastrophic natural event with far-reaching consequences, including affecting some of Raven Hill summer visitors and supporters. Hurricanes bring widespread destruction, loss of life, displacement, and long-term economic damage to vulnerable areas. The devastation caused by these recent hurricanes will last for years. The unpredictability of these hurricanes makes them far more dangerous and traumatic than our planned bridge construction.

Raven Hill was proud to learn recently that some of our local Amateur Ham Radio (**ham**) operators here in northern Michigan have joined with other **ham** operators to help with hurricane disaster relief. They are playing a crucial role in the relief efforts following the two recent hurricanes by providing critical communication support where modern networks have failed. When needed, Amateur Radio operators set up and operate organized communication networks locally for governmental and emergency officials, as well as non-commercial communication for the Red Cross, Salvation Army, and private citizens affected by a disaster. Amateur Radio operators are most active after disasters that damage regular lines of communications due to power outages



and destruction of telephone, cellular, internet, and other infrastructure-dependent systems. Our local **hams** have been helping out during Hurricanes Helene and Milton by relaying welfare messages to remote areas. Among other things, they directed a truckload of chain saws to North Carolina and semi-trucks loaded with bottled water to Florida, where supplies were needed.

Repeater tower



Pictured here is a typical repeater installation. Raven Hill is planning an 8' wooden guard around the bottom of our tower, just to keep kids safe--no climbing allowed!

Raven Hill staff talked with three of these volunteers this week, when they delivered a tower to the Center. Raven Hill's Amateur Radio Station will use the tower as a repeater. A repeater re-transmits a radio signal to extend the communication range. Raven Hill is the perfect location, being at the top of a tall hill. The repeater will allow mobile and low power handheld station signals to reach around hills and up to the curvature of the Earth, about a 40 mile radius from Earth's center, allowing those radio signals to travel further. We don't wish for more disasters, but we do like to think we have the potential to help with relief efforts.

In keeping with Raven Hill's mission of connecting science, history and the arts, the Center set up a working Ham Radio Station in 2014. John Clements and others from the Gaylord Ham Radio Club helped with the installation. John has also taught ham radio classes here and often demonstrates the ham radio for field trip groups and events. Anyone with an amateur radio license can show their license and use the Center's Station. During a Ham Radio Field Day in 2016, the Raven Hill Ham Radio Club talked with people as far away as Malaysia.

Do you want to become a **ham**? Amateur "**ham**" radio can be a fun hobby! If anyone is interested in learning more or becoming an Amateur Ham Radio operator, please email cheri@miravenhill.org--if there is enough interest, we will schedule a Ham Radio Certification class. Training

for your amateur radio operator certification takes 20 hours over 5 weeks. The **technical training to be able to obtain your amateur radio technician license** is taught by John Clements, member of the Top of Michigan Amateur Radio Club—(TOMARC). The required textbook will be available for purchase before class. The Technician License Test will be administered at the conclusion of class.

Ham Radio is a great way to connect science, history and the art of communication. Participants will:

- learn how to use radios for emergency preparedness.
- learn the history of radio communication.
- be able to participate in world-wide communication.
- gain the ability to become "audio" pen pals with people from all over the world.

Ham Radio Station



Ham radio unit at Raven Hill Discovery Center.

Field Day



*During the 2016 Field Day at Raven Hill, **ham** operators practiced communications in preparation for actual disasters, much as fire fighters train to hone their firefighting skills.*

The term "**ham**" refers to an amateur radio operator. Originally, **ham** was a reference to operators who were seen as unprofessional or inexperienced "actors," Now, the term is a badge of pride for amateur radio enthusiasts.

We don't need Ham Radio communications during the Fuller Road closure, but we have been in touch with the construction company. They said that the bridge had to be redesigned, so the projected end date has been pushed back to the end of December. Of course, this is causing different challenges for Raven Hill. As the weather has gotten cold and windy, we find visitors less willing to visit the Pop-up Museum and more willing to drive the detour to visit the Main Museum. So, bye-bye pop ups! **We have officially moved back home to the Main Museum** despite the detour. **Visitors are encouraged to use caution on the one way gravel road with its limited visibility.** 🚧

The Main Museum is now open regular fall/winter hours—12pm to 4pm on Saturdays and 2pm to 4pm on Sundays, plus other times by appointment. Plan a visit soon to explore the exhibits at the Main Museum and all the outdoor exhibits on the Main Campus, Connections Trail and in the Ancient World. Schools, scouts and other groups are encouraged to check out the hands-on room, animals and all that the Center has to offer. Raven Hill staff is also available for onsite classes and educational outreach programs that come directly to schools and libraries. Call Cheri at 231.536.3369 with questions, for more information or to book a day and time for classes, field trips or outreach opportunities.

Cheri

Thanks, Dave.



Volunteer Dave Clapp works on a bench that will serve a double purpose: to insulate water pipes and provide a place for visitors to sit a spell.

Magnetic attraction



Raven Hill is officially back home and open for business. Always a favorite, the magnet table attracted this family who visited yesterday! Here they show off the tower they built!