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Vast stretches still aspiring to attain tecnology discovered during 1970s

While fiber optic technology was developed in the 1970s vast stretches of rural America are still aspiring to attain what is a household item in urban expanses of the U.S. That's the observation of Drew Wooley in the article "Through the Looking Glass" in a recent issue of *Connected*, the bi-monthly magazine of the Farmers Telecommunications Cooperative in Rainsville, Alabama.

Millions of miles of fiber now crisscross the globe, connecting people continents apart with instantaneous communication, and supporting high-definition video and high speed internet.

In the 1980s, engineers assumed that optical cables would replace more expensive copper cables for telephone service, saving money in the process. When the use of the Internet exploded in the 1990s, suddenly there was a great demand for cables that could carry heavy loads of digital data. Optical fiber fit the bill perfectly, and many thousands of miles of new cable have been laid all around the world.

Fiber optics rendered all previous telephone network transmission media obsolete. By 2000, copper wire for the most part persisted only in local loops that ran between telephone exchanges and individual subscribers, and microwave systems had been largely decommissioned. The cost of transmitting a phone call to any place on Earth within reach of a fiber-optic cable rapidly approached zero, thus knitting the planet more closely into a single instant communications web, greatly facilitating global commerce. The widespread adoption of fiber optics made the global internet possible. Communication-in-a- flash technology still isn't available to all of America, though rural communications providers are doing their best to bring it to the rural landscape.

"We've grown used to the idea that information can travel in many ways. Landline telephones convert the sound of a voice into electric signals transmitted across lengths of wire. Cell phones use radio waves traveling through the air. Fiber transmits light through glass for telecommunications almost instantaneously," says Wooley.

Each fiber strand is made up of a glass core thinner than a human hair, with light signals transmitted through the glass. The core is surrounded by a cladding that reflects light back into the glass, bouncing the signal from side to side until it reaches its endpoint.

Fiber optics make it possible to transmit large amounts of information simultaneously. A single cable can bundle thousands of fiber strands.

Woolley explains that a single strand of fiber is three times stronger than steel and more durable than copper, yet is light and flexible.

The glass is extremely pure to prevent signals

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WT Services

SPECIAL POINTS OF INTEREST

- Vast stretches of rural America are still striving to attain fiber optic service, though technology was developed almost five decades ago.
- A long, thin thread of fiber can literaly connect the world.
- Fiber optics make it possible to transmit large amounts of information simultaneously.
- A single strand of fiber is three times stronger than steel and more durable than copper, yet is light and flexible.
- If the ocean were made of the same glass as fiber optic cable, an observer could stand on the surface and clearly see the ocean floor miles below.
- Fiber transmits light through glass for telecommunications almost instantaneously.

38 percent of Americans today report they often receive their news through online sources

We hear a lot in these tumultuous times about fake news, biased news, and news reports slanted with an agenda.

It seems there is no single news source that is considered the authority today.

Traditional network news is vying for viewership with a vast array of cable channels, as the longtime news source for most Americans—newspapers—have fallen in readership.—For better or worse, generations seem to have abandoned any involved reading to place blind reliance in what they skim on their I-phones or online, regardless of the reliability of the information.

The technology of delivering news content has changed dramatically with the advent of the Internet, but news that is fast and flashy isn't always necessarily accurate or reliable.

The Pew Research Center reports that 38 percent of Americans today say they often get their news online, through sources that include social media, websites and assorted applications. About four in ten Americans report that they often get what news they see online. That multitude includes 57 percent of Americans who get news from cable TV, local, and network nightly news.

Radio accounts for a solid 25 percent credit as a news source and print newspapers are cited as a news source for 20 percent of Americans.

WTRT and WT Services remain committed to delivering reliable internet service over a robust broadband network. With the Internet an important source of news, it's vital to maintain dependable service.

Fiber dating from 1970s still not universal...from Page 1

from degrading over long distances--so pure, Woolley says, that if the ocean were made of the same glass, an observer could stand on the surface and clearly see the ocean floor miles below.

Making fiber is characterized as "precision rocket science"that involves mixing oxygen with liquid forms of silicon and germanium inside a glass tube. As the chemicals mix the tube is heated to extreme temperatures. An ensuing chemical reaction leaves white soot inside the glass that the heat fuses into what becomes the glasss core of the fiber. The tube itself becomes the reflective cladding that surrounds the core.

Over several hours the tube eventually collapses on itself into a solid glass rod called a preform. To stretch it out, the preform is hung from a drawing tower, where one end is heated in an oven to 3,600 degrees Fahrenheit. As the tip of the rod softens a glob falls slowly toward the ground with gravity, forming a long, thin thread. The fiber becomes incredibly thin and stretches to great lenghts without breaking.

As it cools the fiber is threaded through pulleys and receives a series of protective coatings before being wound onto a spool, ready for testing and then use.

Fiber is particularly improving people's lives in rural areas, allowing the ability to do distance learning for those who wouldn't otherwise have access to a university environment—or through telemedicine that permits diagnosis over long distances. Families are also allowed to connect at high speed over great distances.

"All of this is what is truly changing the landscape of the global community," says Woolley.

On the medical front, fiber optics are even being used to provide tiny lights for improved nonintrusive surgery techniques, and in the development of prosthetic limbs that can produce the sensation of feeling for the user, Woolley relates. "Fast internet service and clear phone conversation with someone on the other side of the world are apparent benefits of fiber, but the possibilities are endless when high speed fiber service can be brought to rural America," he says.

Shops offer two-ways

Hereford and Amarillo WT Services radio shops sell, install, and repair Motorola radio communications equipment, and design radio systems and repeaters. Contact the WT Services Radio Shop in Hereford at 364-7311 or in Amarillo at 372-6765.