The History of D.A.R.E.N.

On October 25, 1990 a Disaster Drill was held in Pleasants County, WV which involved a Tanker Truck and a car. The Communications Officer, Bob Kyle, KB8FVU, of the Pleasants County Emergency Services asked for communications help from the Wood County Amateur Radio operators. Since Bob had shown the Pleasants County Emergency Services Director, Doug Taylor, how Packet Radio worked, the director wanted it incorporated into the drill. He wanted to see how Packet Radio could pass chemical information from one computer to another. The Packet information was going to be passed over the frequency of 145.09 MHz. At that time the frequency of 145.09 MHz was used for everything from Rag Chewing to regular BBS traffic to DX Clusters and it was skeptical whether it could be used for emergency traffic. To keep from having egg on our face we made a computer printout of the traffic that would be sent via Packet Radio on the day of the drill, and hid it in a folder so that it wouldn't be seen unless we needed it. On the day of the drill Murphy's Law struck and the chemical information did not get relayed by Packet Radio. The hidden computer printout was slipped into the hands of the officials and they were impressed. After the drill was over, Bill Davidson, N8JXO, and Ken Harris, WA8LLM, met at the Wood County Emergency Operations Center and discussed the problem. It was decided that an emergency Digipeater, operating on its own frequency was needed, and could be used between Pleasants County and Wood County.

The first emergency Packet Radio station was located in Wood County, and went on the air January 19th, 1991. Even though DAREN hadn't been thought of yet, the use of emergency stations was needed. The emergency station was at a temporary location on Route 50 about 5 miles east of Parkersburg and was operated on the frequency of 145.69 MHz. The station was set up as Digipeater and a mailbox or PBBS Packet Bulletin Board System) with 22k of memory. The ALIAS of the DIGI (Digipeater) was WOODWV, and that of the PBBS was PKBGWV. Its primary uses were to provide Packet Radio communications for Emergency Services in Wood County, and the five surrounding counties of Pleasants, Ritchie, Wirt, and Jackson Counties in West Virginia, and in Washington County, Ohio. After the Digipeater was placed on the air, the ARES/Data (FINDERS) system, which is a database system used to keep track of victims and emergency response personnel, located at the Wood County Emergency Operations Center, was moved from 145.09 MHz to the frequency of 145.69 MHz. At a later date the station, WOODWV/PKBGWV was moved to Sand Hill, on the Wood/Ritchie County line. Moving the station increased the height of the antenna about 350 feet. At the time there weren't any formal plans to create an Emergency Packet system, but in May of 1990, a letter had already been written to S.E.R.A. (Southeastern Repeater Association), the Repeater Frequency Coordinators, for West Virginia, asking them to consider a Packet Radio Frequency which could be used for Emergency, Priority, and Time Valued Traffic. Even though they oversee the establishment of Packet frequencies, they do not coordinate them. They suggested the frequency be coordinated with the local Packet Radio users in the state. S.E.R.A. only suggests what frequencies should be used for Packet Radio. The frequency of 145.69 MHz was picked because it had very little traffic at the time, and it was the highest Packet Frequency of those suggested by S.E.R.A. It seems when something new comes along, everybody starts at the bottom and works up. By picking the highest Packet Frequency would allow the Emergency Packet Network time to grow and be known as an "Emergency Frequency", before all of the frequencies got crowded.

At a regional Amateur Radio meeting, held February 3rd, 1991 there was a discussion about a SARA Title III disaster drill that would involve 18 counties and 3 states, sometime later in the year. A SARA Title III meeting was held April 21st, 1991 in Athens, Ohio, with State and County Emergency Services representatives from Kentucky, Ohio, and West Virginia. A date was set to have the exercise October 5, 1991. This exercise was to test the communications and mutual aid between counties, and between states. The date of the exercise was later changed to September 7, and a total of 21 counties and three states would be involved.

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For the exercise a Packet link, using the emergency Wood County digipeater, was established between the Wood County EOC and the Pleasants County EOC. Several pieces of traffic were passed over the Packet link. After the exercise was over, the FEMA (Federal Emergency Management Agency) evaluation team asked several questions about Packet Radio and they were quite impressed that Amateur Radio had evolved and that such communication services were available. During the exercise the FEMA evaluation team had been taking video movies for a later release for training. The Emergency Packet Radio station at the Wood County EOC was a major part of the video since the exercise was to test communications. After all the brass had left, the EOC radio operators from Wood County and Pleasants County met at the Wood County EOC and decided to establish a Packet Radio path to the State Office of Emergency Services in Charleston.

First indications of D.A.R.E.N. (Digital Amateur Radio Emergency Network) of West Virginia was at a Regional Amateur Radio Meeting held November 18, 1991 in Moundsville, West Virginia. Members of several Amateur Radio groups in the Mid- Ohio Valley as far South as Jackson County and as far North as Hancock County met to discuss all forms of Amateur Communications including Amateur Television, Repeaters, and Packet Radio. Also in attendance at the meeting was George Puzzuole, K8QEW, ARES SEC (Amateur Radio Emergency Service Section Emergency Coordinator) for West Virginia. George suggested those involved with the Regional Meeting contact the State ARES Packet Radio Coordinator, Dave Ramezan, KA8ZXP, about starting an emergency Packet Radio network.

Because Packet Radio operators in Monroe County, Ohio, were interested in the activities going on in Wood County, West Virginia, it was decided to establish a station that would allow access for Monroe County, Ohio. To allow Monroe County, Ohio access to the system and have a path to the West Virginia State Office of Emergency Services, the system would now need four Remote Hilltop Stations, (1) Tyler County, (2) Wood County, (3) Jackson County, and (4) Kanawha County.

To make the backbone route uniform and more reliable, it was decided to change the remote stations from a DIGI/PBBS to a NODE/DIGI/PBBS, and reduce the size of the PBBS to 7K of memory. The ALIAS name for the NODE/DIGI would stay the first four letters of the county it was in, followed by the two letter abbreviation of the state it in. The ALIAS for the PBBS would stay an abbreviation of the city it is in, or near, followed by the two letter abbreviation of the state it is in.

On December 11, 1991, after several months of planning, the Digital Amateur Radio Emergency Network (D.A.R.E.N., shortened to DAREN) started to grow. A NODE/DIGI/PBBS went on the air in Kanawha County. The station was named KANAWV/KANAWV/STALWV and was placed in operation in St Albans, West Virginia. Using the best antennas available a direct path from Wood County to Kanawha County was marginal at best. On December 13th a third NODE/DIGI/PBBS in Jackson County named JACKWV/JACKWV/RPLYWV was placed near Cottageville, at the home of Dick Tennant,N8PEK. A better path between Wood and Kanawha Counties was now in operation. The Jackson County and Kanawha County stations were only at temporary locations, until better tower sites could be found.

Some of the operators of the new DAREN system set down and started writing a plan that would make the system uniform, in case it would catch on in other counties and other states. The plan called for items such as naming the NODEs and DIGIs after the County they are in. The PBBSs would be named after the city they are in or near. The plan told how the text for the NODEs should read to say what county the NODE was located in, and that it should only be used for Emergency, Priority, and NTS Type Traffic. The text for the PBBS was to say what city the PBBS was in or near and that it should only be used for Emergency, Priority, and NTS Type Traffic. At the time the only TNC (Terminal NODE Controller) that was capable of being a NODE, DIGI, and PBBS all at same time was the Kantronics KPC-2, so it became the heart of the DAREN system. To have enough memory in the PBBS for several NTS Type Messages, and still have enough NODE channels, the PBBS memory was to be set at 7K. Most of the messages in the PBBS should only be there for a very short time, not more than a few days, before they should be picked up and delivered. Later Kantronics came out with a KPC-3 TNC which could have more NODE channels, a

larger PBBS, and run lower power. Since the system needed to be reliable and not taken out of service if someone decided he or she wanted to use their equipment for something else, it was suggested that only RACES, ARES, and clubs or groups that support and provide back-up and overload communications to their Local Governments, or Emergency Services should be the ones to establish a DAREN NODE/DIGI/PBBS in their county.

Because of plans to install a 2 meter voice repeater on the same tower as the Kanawha County DAREN NODE/DIGI/PBBS, and in the same frequency range, the Kanawha County NODE/DIGI/PBBS needed to be moved. On January 19, 1992 the Kanawha County NODE/DIGI/PBBS was moved to a storage trailer located out back of the National Weather Service building near the Kanawha County Airport on Eagle Mountain Road. The ALIAS for the NODE/DIGI/PBBS was changed to KANAWV/KANAWV/CHASWV. Moving the Kanawha County NODE/DIGI/PBBS caused a path problem to the Jackson County NODE/DIGI/PBBS. A couple of weeks later the Jackson County station was relocated to a tower site operated by the West Virginia Emergency Medical Service, just outside of Ripley, West Virginia. Paperwork was started to make the Kanawha NODE/DIGI/PBBS a permanent home on a tower owned by a Public Utility Company located on a mountain top in Kanawha County. After several months of negotiations and hassle, that plan was dropped and another tower was looked at, a tower site owned by the West Virginia Emergency Medical Services.

In February, 1992, the word was out that FEMA (Federal Emergency Management Agency) Region III was planning an exercise that would cover the states of Maryland, Pennsylvania, Virginia, and West Virginia. Now was the time to make DAREN do its thing. The exercise was named Hurricane "ZELDA", and was fashioned after the 1985 flood that caused much death and destruction in the Eastern part of West Virginia.

A short time after the FEMA exercise "ZELDA" was made public another regional Amateur Radio meeting was held. Packet Radio operators Ray Tabeling, N8FQN, and Don Knollinger, WB8ZTV, in Marshall County, West Virginia said they were interested in installing a NODE/DIGI/PBBS in their county. A few weeks later a new ALIAS was seen on the air. It looked like the boys in Marshall County had their station, MARSWV/MARSWV/MDSVWV (Moundsville) up and running. The nearest NODE to Marshall County was Wood County, and that path was very marginal. A few telephone calls later and Bill Sams, KE8KR, (who later became the Emergency Services Director of Wetzel County) had a temporary site located in Wetzel County. Within a few days the Wetzel County NODE/DIGI/PBBS, WETZWV/WETZWV/NMARWV (New Martinsville) was on the air. Now there was a path reaching from Marshall County to Kanawha County.

About two weeks before the "ZELDA" exercise, a message was received from the West Virginia state Office of Emergency Services Communications Officer, Bill Hunter, K8BS. The message said that DAREN would be part of the drill and the State OES would be capable of receiving Packet Messages over the new system. During the "ZELDA" exercise, several pieces of traffic were passed over DAREN. Counties as far North as Hancock County, using a temporary Digipeater and connecting into the Marshall County NODE, were passing information over DAREN to the West Virginia OES.

After the exercise was over, officials from the West Virginia OES were so impressed with the operation of Packet Radio they presented Wood County Emergency Services with a plaque and a letter for their participation in the "ZELDA" exercise, and the creation of a "New Communications Media" in the state of West Virginia. The plaque was presented by Governor Gaston Caperton April 3, 1992. They also asked Ken Harris, WA8LLM, to send information about the DAREN system to the West Virginia counties that are registered as FEMA counties. The state Office of Emergency Services made Federal Revenue Sharing money available to those FEMA counties that applied for it. Copies of the original DAREN plan were sent to the 26 counties that were registered as FEMA counties. Thirteen out of the 26 eligible counties started setting up DAREN stations on hilltop and Emergency Operation Centers, and applied for the Federal Revenue Sharing money reimbursement. Some of the counties that took advantage of the Revenue Sharing money were Boone, Fayette, Hancock, Jefferson, Mercer, Nicholas, Preston, Raleigh, Randolph,

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Wood, and Wyoming. As most of these stations were put into operation, Emergency Packet Radio coverage for West Virginia was getting close to 100 percent.

To keep operators of the DAREN system informed on its growth and status, a weekly newsletter was started on July 19th, 1992. The newsletter called "DAREN News" was posted on some of the more centrally located PBBSs that had been upgraded to 80K of memory with the help of the Kantronics KPC-3 TNC. The newsletter told what stations went on the air and how they were operating. Since the DAREN system was to be used for Emergency, Priority, and NTS Type messages only, there was very little traffic on it and the users weren't able to stay familiar with the different routes available. To get the users more familiar with the system, a weekly State Wide DAREN Net was started October 31, 1992 with 22 stations checking in. The net was operated from 8:00 pm to 9:00 pm every Saturday. On June 5, 1993 the net was extended from 7:30 pm to 9:30 pm. Within two years of the net starting, it's average was 55 check-ins.

On August 24, 1993 the Kanawha County NODE was moved again, this time to the Emergency Medical Services tower on Malden Mountain. At the same time the station was upgraded to a Kantronics KPC-3 with 86K of memory in the PBBS.

On January 6, 1996 the State Wide DAREN Net was extended again, this time from 7:00 pm to 10:00 pm. The weekly net now averaged about 90 check-ins. To keep up the interest of checking into the State Wide DAREN Net, Certificates of appreciation are sent out. The certificates are sent out for every 50 check- ins. The certificates show the Call Sign, number of check-ins, and the date the station made their multiply of 50 check-ins.

As time went on more and more county Emergency Services and radio groups got involved and established DAREN stations in their counties, their Emergency Operation Centers, and their E-911 Centers. With the interest of Amateur and Packet Radio, several county Emergency Services Directors got their Amateur Radio license. Directors such as Ashby Craft, Randolph County became KB8OPH, Bill Rowan Lewis County became N8XRP, Jim Richmond, Wetzel County became KB8PKZ, Greg Groves, Preston County became KB8RZA, George Settles, Calhoun County became KC8ANZ, Ruskin Murphy, Pendleton County became KC8AOC, Catherine Collins, Upshur County became KC8AOE, and Terry Brown, Jackson County became KC8AOF.

At one time there were 34 out of the 55 counties that had a DAREN station. Some of the stations that were on the air have since disappeared, mostly because they were victims of lightening, and funding wasn't available to repair or replace the station. At some time in the future they may be put back in operation. For some of the stations that disappeared others have appeared. To continue on with this "History of DAREN" would be a duplication since the weekly "DAREN Newsletter" has most of the history in its printings.