

SHARES

BULLETIN

May 29, 1998

HF RADIO PROGRAM



The SHARES High Frequency (HF) Radio Program provides a single, interagency emergency message handling system by bringing together existing HF radio resources of Federal, State and industry organizations when normal communications are destroyed or unavailable for the transmission of national security and emergency preparedness (NS/EP) information. SHARES is one of a number of initiatives sponsored by the National Communications System (NCS) in its role of planning and preparing for NS/EP. SHARES is available on a 24-hour basis to support intra- or interagency mission requirements. Use of the flagword "SHARES" is all that is needed to get the critically important information through.

El Niño Operations

Each year the Federal Government is involved in providing disaster support during hundreds of emergency situations. Response to most of these situations is accomplished without major limitations on communications. Day-to-day communications usually remain intact or are sufficient to support emergency relief activities. It is in those situations where communications are disrupted that contingency communications programs such as SHARES are kept busy. This past winter was no exception.

While the focus of SHARES for the past few years has been in support of emergencies caused by destructive hurricanes and earthquakes, this winter has seen a shift toward weather-related operations attributed to El Niño.



On January 9, the SHARES Coordination Network (SCN) was placed on heightened alert at the request of the Immigration and Naturalization Service as a result

Mudslides caused by El Niño, such as this one in California, resulted in an increase in SHARES Coordination Network operations

of destructive ice storms throughout the northeast. Seventy-five SHARES stations from 23 states, to include the 8 states most directly impacted by the disaster, supported the 8-day operation. On February 8, the SCN was again placed at a heightened operational level to support simultaneous emergencies on both the east and west coasts. In the east, the National Guard Bureau requested SHARES support as a result of severe El Niño-related weather and flooding from West Virginia to New Jersey. In the west, NASA requested SHARES support due to severe flooding in California. Over 125 SHARES stations located in 42 states and representing 19 entities participated in operations.

During the past winter, the national and regional channels of the SCN were operational on 38 separate occasions. Over 950 Station Availability Reports were received by the SHARES Coordination Stations, a remarkable show of support.

In this issue:

El Niño Operations	1
<i>Change in Focus</i>	
SCN Operational Levels	2
<i>3 Levels Established</i>	
Y2K Compliance	3
<i>HF Radio Assessed</i>	
Availability Reports	4
<i>Submitting Procedures</i>	
Working Group Activities	5
<i>Advantages of HF</i>	
Exercise Activity	6
<i>Participation Increases</i>	

SCN Operational Levels Established

In response to recommendations following SHARES operations supporting weather-related emergencies this year, the SHARES HF Interoperability Working Group established Operational Levels for the SHARES Coordination Network (SCN). As originally established in October 1996, the 10-channel SCN could be used by SHARES stations for training and communications checks during periods when SHARES was not conducting emergency operations. During emergencies, however, use of the SCN was restricted to coordinating emergency operations. The purpose of the Operational Levels is to improve the responsiveness of the SCN at the outset of an emergency by providing a transition from the day-to-day, non-emergency use of the SCN, to an SCN which is fully engaged in supporting SHARES during an emergency. The SCN Operational Levels are as follows:

◆ **Operational Level 3** - Conditions normal. No emergency exists. The 10-channel SCN may be used by SHARES station personnel for training and non-emergency operations.

◆ **Operational Level 2** - Emergency potential exists. Non-emergency operations on the SCN suspended. SCN monitoring increased. Check-in windows are established on the national and regional nets to receive Stations Availability Reports.

◆ **Operational Level 1** - Emergency exists. SHARES message support required. National and regional nets maintain full-period operations to receive Station Availability Reports, to list SHARES message traffic, and to coordinate the processing of SHARES messages.

Changes in SCN Operational Levels are disseminated through the SHARES points of contact to all SHARES stations using the SHARES Operational Level Change Message. Level change information will also be provided through periodic announcements and updates on Channels 1, 2, 9, and 10 of the SHARES Coordination Net.

Program Update

Sixty-eight Federal, State, and industry organizations currently contribute the resources of 1,137 HF radio stations to the SHARES program. The Emergency Operations Centers of Connecticut, Maine, and Wisconsin, and the resources supporting the National Disaster Medical System and Urban Search and Rescue are the most recent participants to join the SHARES program.

The SHARES Working Group has begun an effort to move SHARES toward a "paperless" program. Over 11,000 pieces of mail and 850,000 pages of material are currently produced annually to support SHARES. Greater use of electronic mail and PC disks are near-term actions currently underway. Response thus far has been very supportive. Feedback has indicated that this move dovetails with similar actions by Federal departments and agencies. The SHARES Working Group plans to survey SHARES members this summer to determine how best to implement a paperless program to go along with its already "wireless" HF operations.

The SHARED RESOURCES (SHARES) High Frequency Radio Program Information Bulletin is intended to keep participating SHARES HF radio station personnel and users of SHARES informed of program activities, operations, and items of interest in the area of HF radio and Federal HF radio interoperability. SHARES bulletins are prepared by the SHARES HF Interoperability Working Group, and distributed by the Chief, Operations Division (N3) Office of the Manager, National Communications System. Comments, or information for future bulletins, may be submitted to your SHARES HF Interoperability Working Group representative or to the SHARES Project Office, Office of the Manager, National Communications System, Operations Division (N3), Arlington, VA 22204-2198.

Y2K Compliance

We're all familiar with the Year 2000, or Y2K, issue, and how it relates to computers. We know that it is widespread; that it affects hardware, embedded firmware, languages and compilers, operating systems, security devices, and database management systems. We are aware that Y2K threatens any microprocessor that uses dates and relies on absolute timing functions. Yet, how many of us have taken seriously the potential implications of Y2K on HF radios and the HF radio integrated operating systems and networks we rely upon? The SHARES Working Group recently completed an assessment of the potential impact of Y2K on HF radios which employ digital and Automatic Link Establishment processing techniques, and those which rely on microprocessors as node controllers in network operations. Results from the review indicated that there is little if any concern regarding Y2K compliance with HF radio equipment designed in accordance with Federal Standard 1045, *Automatic Link Establishment*. In many cases, the manufacturers of HF radios have completed Y2K compliance assessments and provided the results to the General Services Administration (GSA).

SHARES Outreach Program

The SHARES Working Group continues to expand awareness of SHARES within the national emergency planning and response community through the SHARES Outreach Program.

During the past 6 months, the SHARES exhibit was on display at a number of national and regional activities. The multiday events included the Capitol College Information Symposium in Maryland, AFCEA West '98 Exposition in San Diego, CA, and the

National Disaster Medical System Conference in Denver, Co. The SHARES briefing was presented at several MARS conferences, a National Weather Service Conference in Washington, the National Telecommunications Alliance



Ms. D. Diane Fountaine, Deputy Manager, NCS, with SHARES members Ken Carpenter, Dale Stauffer, Don Smith, Dave Reinke and Steve Hailey

Communications Conference in Chicago, IL, and the annual conference of the Association of Public Safety Communications Officers in Virginia Beach, VA. The SHARES exhibit will be on display in Washington, DC, between June 9-11 at TechNet International '98. To schedule the SHARES exhibit or program briefing for conferences and workshops, contact the SHARES Project Office.

The review, however, did raise important concerns regarding the way radio components are linked together to form integrated networks driven by microprocessors. The only way to determine whether a "radio system" is Y2K-compliant is by evaluating the components of each individual system to include processors, modems, and security. Because the design and operation of each radio system is unique, *each must be evaluated for Y2K compliance*. This responsibility falls on the organization which operates and maintains the system. For further information on Y2K compliance, contact the SHARES Project Office.

News & Notes...

* HF E-mail. The SHARES Working Group is evaluating member activities in the area of HF e-mail. If you are currently using HF to process e-mail, contact the SHARES Project Office.

* SHARES Supports Y2K. Mr. Dennis Fischer, Commissioner, Federal Technology Services (FTS), in a briefing presented on FTS Readiness, Y2K Government/Industry Forum, identified the SHARES program as an Emergency Telecommunications Alternative to provide contingency communications in the event Y2K problems occur.

* Antenna Update. Several new antennas have been demonstrated at recent SHARES Working Group meetings. An ALE Delta Loop antenna, tactical dipoles, and vertical antennas were presented. Information on any of these products may be obtained from the SHARES Project Office.

* SHARES Member Retires. Mr. Don Josephs, SHARES representative for the Department of Justice, recently retired after a long and distinguished Federal career. In addition to being one of the originators of SHARES, Don also served on the NCS Council of Representatives, a position which enabled him to play a key role in obtaining White House approval of SHARES. In a note to the SHARES Working Group, he wrote "...I wish all in SHARES the very best because SHARES IS THE VERY BEST program the Government ever authorized...." Don's voice will continue to be heard in SHARES as an Army MARS member (AAT3VU).

* New E-mail Address. The SHARES Project Office has a new e-mail address: 'hfmail@shareshf.com'. SHARES is on-line at <http://www.ncs.gov/~shares/shares.htm>.

SHARES Bulletin Board System

The SHARES Bulletin Board System (BBS) has become an integral part of SHARES and the SHARES Coordination Network (SCN). Operating on SCN Channel 9 (6800.0 kHz) and Channel 10 (13242.0 kHz), the SHARES BBS uses the "TOR" modes of operation to provide a nationwide, 24-hour digital network to support SHARES operations.

The network is used for processing Station Availability Reports, listing and relaying SHARES message traffic, and distributing SHARES Readiness Notices and SCN Operational Level Change information. Channels 9 and 10 are the only SCN channels on which SHARES messages may be passed.

The SHARES BBS is currently made up of several monitoring locations. Some locations provide full-time monitoring operations; others activate upon notification of an emergency in which SHARES support is required. SHARES stations which can store-and-forward messages using any of the "TOR" digital modes can become a SHARES BBS Monitoring Station. Stations which can operate in the "TOR" mode are indicated in the Capability Column of the Directory with a code of G, N, O, or P.

Station Availability Reports

The first responsibility of the SHARES Emergency Coordination Team (SECT) during an emergency is to determine how many of the 1,137 SHARES stations are on-the-air and available to support SHARES operations. This information is provided to the National Emergency Operations Center for relay to the emergency planning and response personnel conducting emergency relief operations.

The SECT relies on the Station Availability Report to obtain an initial assessment of SHARES capability and to monitor the status throughout the emergency. Submitted by stations when the SCN Operational Level is changed to Level 2 or Level 1, Station Availability Reports are provided to one of the nine SHARES Coordination Stations using the SCN voice Channels 1 or 2, SCN ALE Channels 3 through 8, or SHARES BBS Channels 9 and 10.

During Level 2 operations, reports are submitted during designated check-in windows established by the SHARES Coordination Stations. During Level 1 operations, Station Availability Reports are submitted whenever a station elects to participate.

SHARES Working Group Activities

The SHARES HF Interoperability Working Group is tasked by the NCS Council of Representatives to maintain the readiness of SHARES, and foster interoperability of Federal HF radio by examining regulatory, procedural, and technical issues. Established in 1986, the Working Group is made up of 114 members representing 86 Federal, State, and industry organizations. Issues raised by the members are processed under a tracking and coordination mechanism called the Action Item Process. Four Action Items are currently under review by the Working Group. These include:

Automated HF Radio Network Management
 HF Interoperability with Public Switched Network
 HF E-mail Development and Operations
 Development of HF ALE STANAG

The Working Group recently completed a review of the potential impact the soon-to-be-operational low earth orbit satellite (LEOS) communications systems will have on the future requirements for HF radio. Scheduled to be operational in September 1998, LEOS systems are being designed to provide worldwide service using a combination of local-area cellular networks and space-based systems. While this application of satellite communications is expected to provide improved coverage over current satellite systems, the review concluded that due to design and operational limitations the need for HF will continue as strongly as ever.

Under LEOS access will be limited in both the cellular and satellite network segments. Service and uninterrupted access will continue to be at the discretion of the network provider. The close proximity of the satellites will increase the potential vulnerability for collateral or cascading damage in the event of a mishap in space. While LEOS communications are an attractive application of current satellite and cellular technology, the requirement for HF which exists today to support national security and emergency preparedness will continue to exist long after the first LEOS system becomes operational.

The Working Group also continues to register ALE address codes. In accordance with NCS Handbook 3-3-2, *Federal Registry of ALE Address Codes*, members employing ALE radio systems are requested to register ALE address codes with the SHARES Project Office using the ALE Address Code Registration Form (SHARES Form 4).

HF E-Mail

In January the SHARES Working Group opened Action Item 97-1, *HF E-mail Development and Operations*. This action is intended to identify and track the level of activity by members and industry in the area of HF e-mail. The action is also intended to focus attention on the need for interoperability in the application of HF e-mail and to assess the feasibility of establishing a SHARES HF e-mail test link and network.

A demonstration of the current technology for processing e-mail over HF radio will be part of the SHARES exhibit at the AFCEA TechNet International '98 scheduled for June 9-11 at the DC Convention Center.

Advantage HF

As LEOS systems become operational, increased attention is being paid to the need for HF radio to support emergency communications requirements. The Working Group recently reviewed the reasons that HF radio communications remain a cornerstone of emergency planning and operations. Some of these reasons for HF include:

No intervening infrastructure
Severe environment operations
Short, mid, and long distance
Complex network operations
Inexpensive
Priority-free use and access
Quick setup and operations
Single-link or broadcast
Requires little training

SCN Check-Ins

Check-ins are held on the SHARES Coordination Network each Wednesday from 1600Z-1800Z. SHARES stations are encouraged to submit a Station Availability Report using any of the SCN channels. Channel 1 is used for close proximity voice operations in specific regions of the country. Check-ins on Channel 2, the national voice channel, are conducted by time zone. Beginning in the east, SHARES Coordination Stations conduct net calls in each time zone by rotating zones and stations every 10-15 minutes. Check-ins using ALE and SHARES BBS are also made on Channels 3 thru 10.

STAR Deployments

SHARES stations identified in the SHARES Directory with a Station Capability code "T" comprise a unique group of HF resources called the SHARES Transportable Auxiliary Radio (STAR) units. They represent a valuable resource by providing HF support at a disaster site. Although individual STAR units have deployed on a number of emergencies in support of SHARES, Exercise 97-3 marked the first time multiple STAR units deployed to the same location. STAR units representing the NCS, Department of Energy, and MARS joined forces near Las Vegas, Nevada, to demonstrate the capability of SHARES to support joint on-scene disaster communications.

Exercise Activity

The SHARES Working Group continues to conduct nationwide SHARES exercises and participate in emergency preparedness exercises and training sessions conducted by NCS member agencies.

In SHARES Exercise 97-2, conducted on August 6, 350 stations processed 398 messages. While emphasis during the 12-hour exercise was on fixed-site operations, 18 stations conducted mobile operations, 48 stations used emergency power, 29 stations operated using digital modes, and 8 stations used ALE.

SHARES Exercise 97-3, conducted over two 6-hour periods on December 5-6, encouraged maximum participation by extending exercise play into the weekend. A total of 571 SHARES messages were processed by 412 SHARES stations. Forty-six stations operated in a mobile configuration; 91 stations operated emergency power, 82 stations conducted digital operations, and 18 stations conducted ALE operations. This exercise marked the first time a multiagency STAR capability was established at a simulated "disaster site."

The SHARES Coordination Network was also used to support deployment and training activities conducted by the Federal Aviation Administration and MARS, and exercises conducted by FEMA and the Department of Veterans Affairs (VA). Exercise 98-1, conducted on April 16, supported VA Exercise Consequence Management '98, as the NCC STAR unit deployed to Ft. Gordon, GA. Two hundred ninety-six SHARES stations participated in the FEMA-sponsored Exercise Response '98, MARS Exercise Rolling Thunder, and Exercise Consequence Management '98.



Reynard Storey (N-MC MARS), Robert Nelson (DOE), Ken Johnson (FEMA), and Ken Mulkey (AF MARS), Ken Carpenter (SHARES Project Office), and TSgt J.D. Skilbred (AF MARS) at multi-agency STAR deployment.

Letters of Appreciation and SHARES Certificates of Participation were sent to station personnel who took part in each of these SHARES program activities and exercises. Three SHARES exercises are scheduled for 1998.