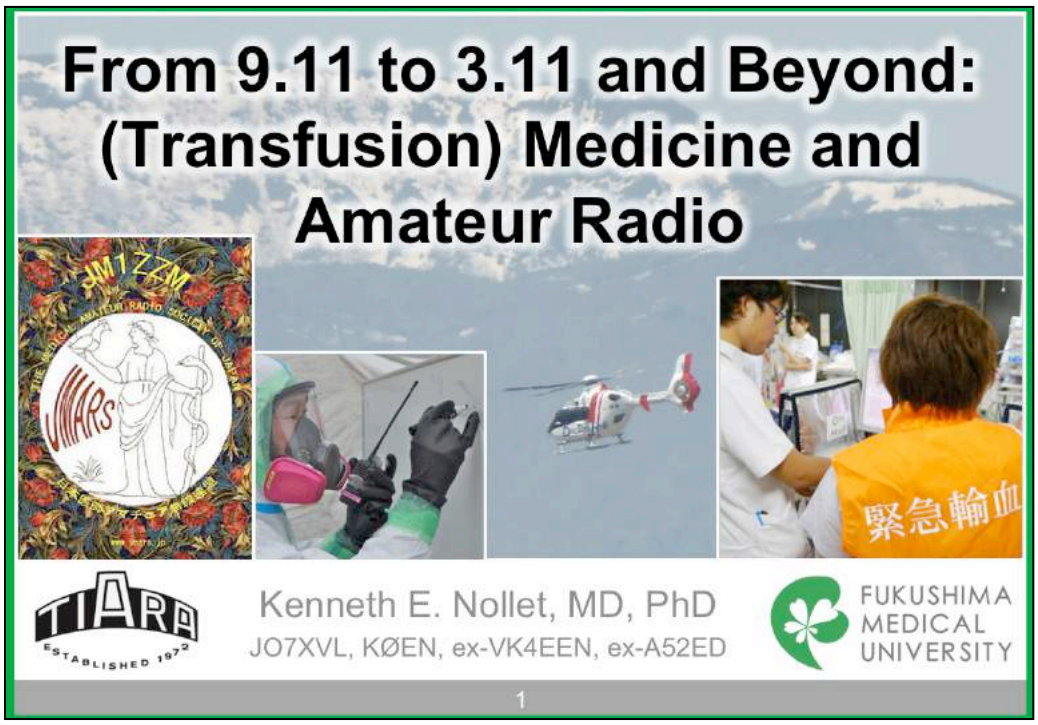
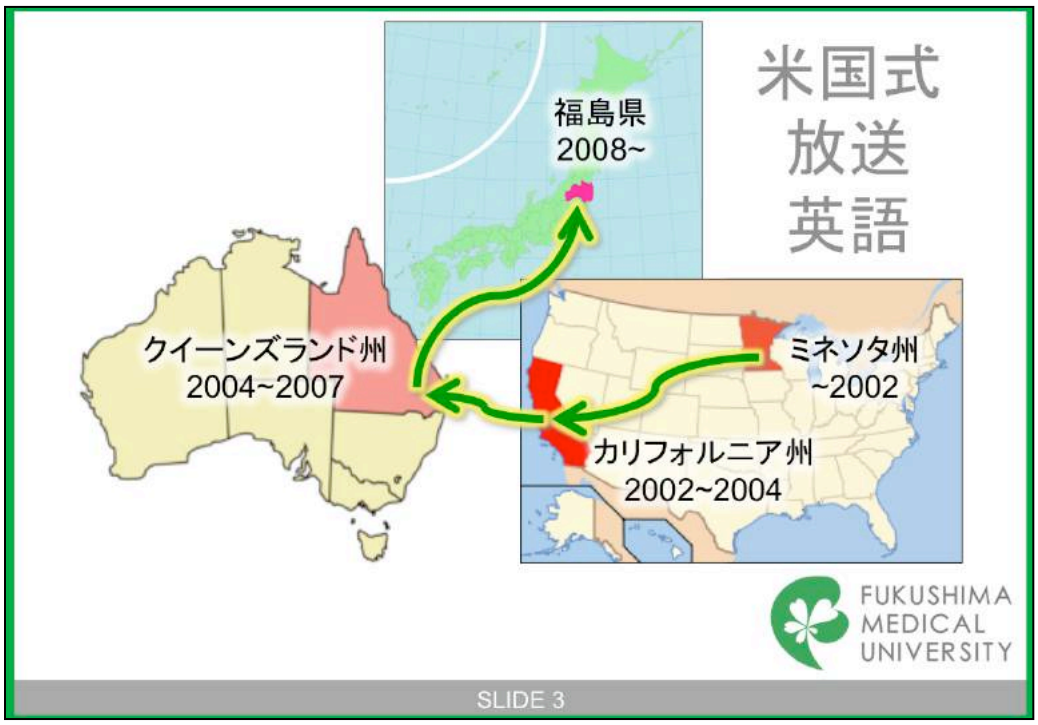


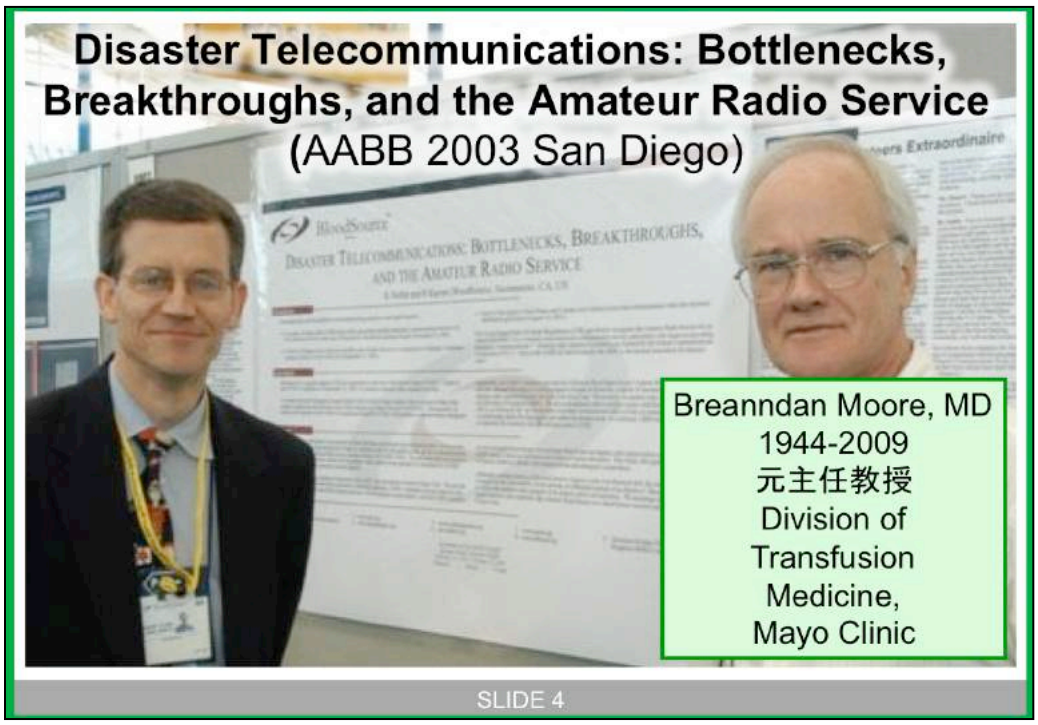
As always, it is a pleasure to be among fellow members and guests of the Tokyo International Amateur Radio Association.

[NOTE: These slides and associated notes are not for sale or rent. They are freely available in PDF format from Fukushima Medical University's Office of International Cooperation at http://fmu-global.jp. Electronic and printed copies may be used as-is for personal scholarship and non-commercial educational activities in accordance with "fair use" copyright and other applicable laws. Notes under each slide approximate what was said, with some editing for the convenience of readers.]

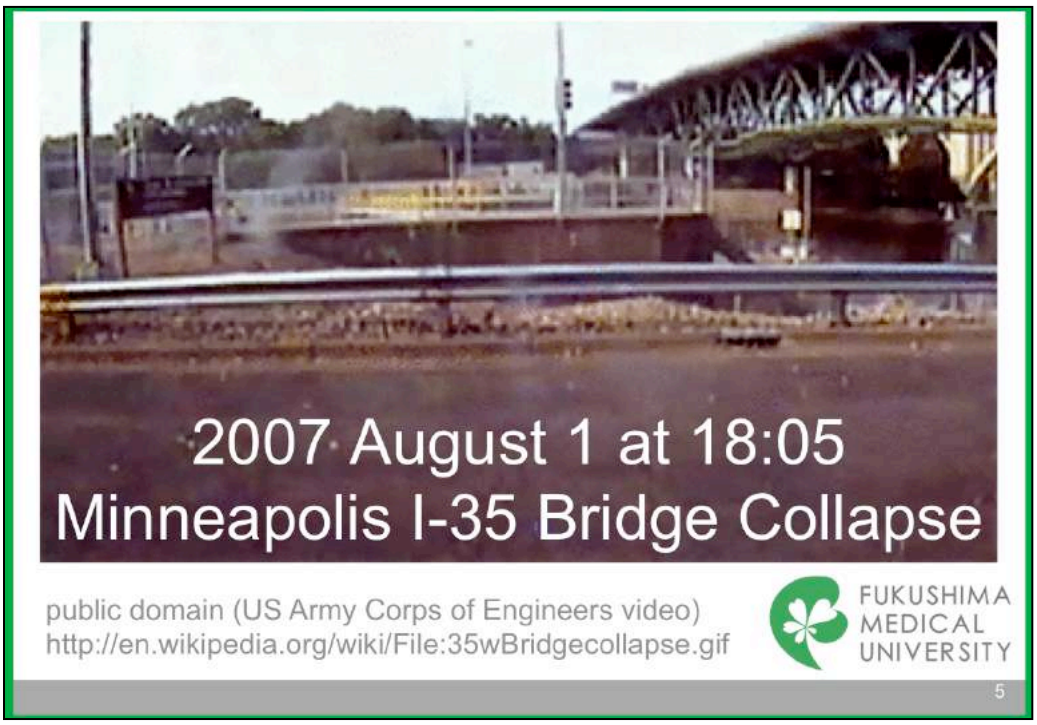
TIARA's official language is English, but foreign language skill around Japan varies, so I have fallen into the habit of using Voice of America's style of English for international listeners.



As a native of Minnesota, my natural accent is close to American Broadcast English, but I also worked 2 years in California, and 3 years in Queensland, Australia, before moving to Fukushima, the place that has been my home since 2008.

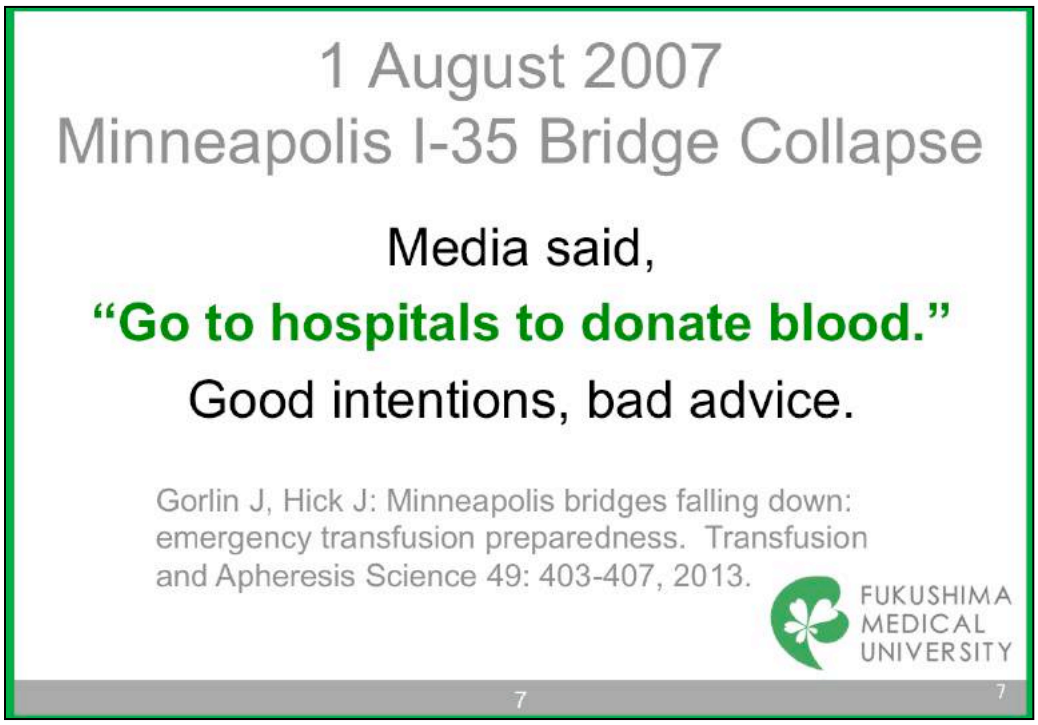


At the Mayo Clinic in Rochester, Minnesota, English has many accents, including the Irish accent of Dr. Breanndan Moore, a great mentor in transfusion medicine. Here, we are standing by my 2003 poster, Disaster Telecommunications: Bottlenecks, Breakthroughs, and the Amateur Radio Service.

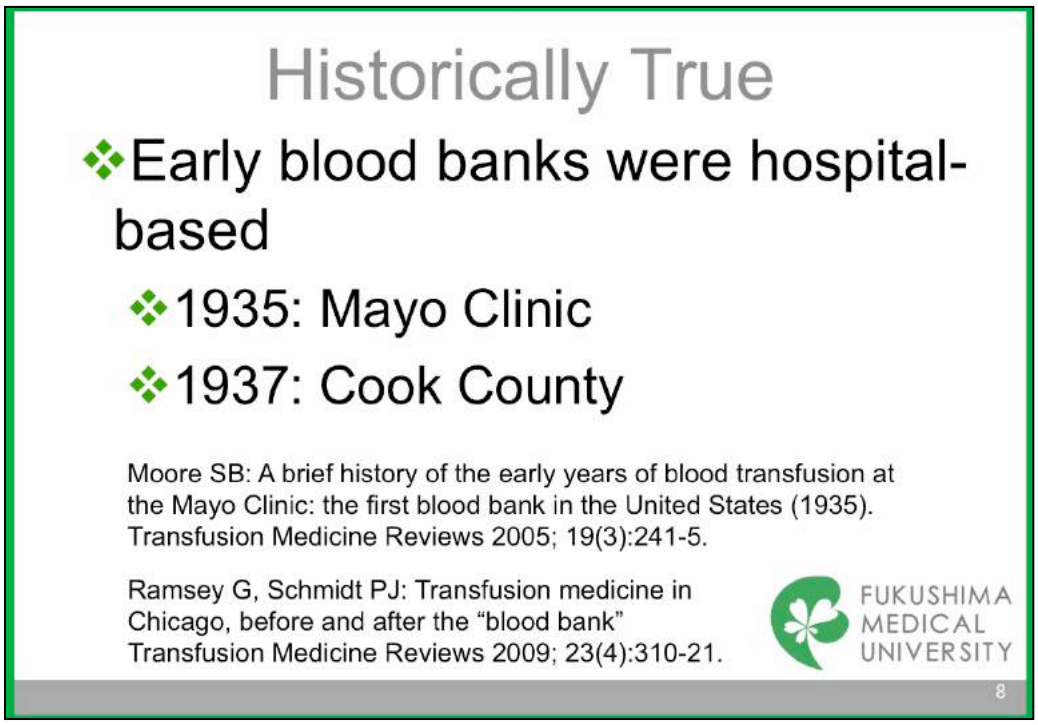


But first, let's go to the year 2007, August 1, during rush hour, when the Minneapolis Interstate Highway 35 bridge collapsed.

There were more that 100 injuries, but only 13 fatalities.

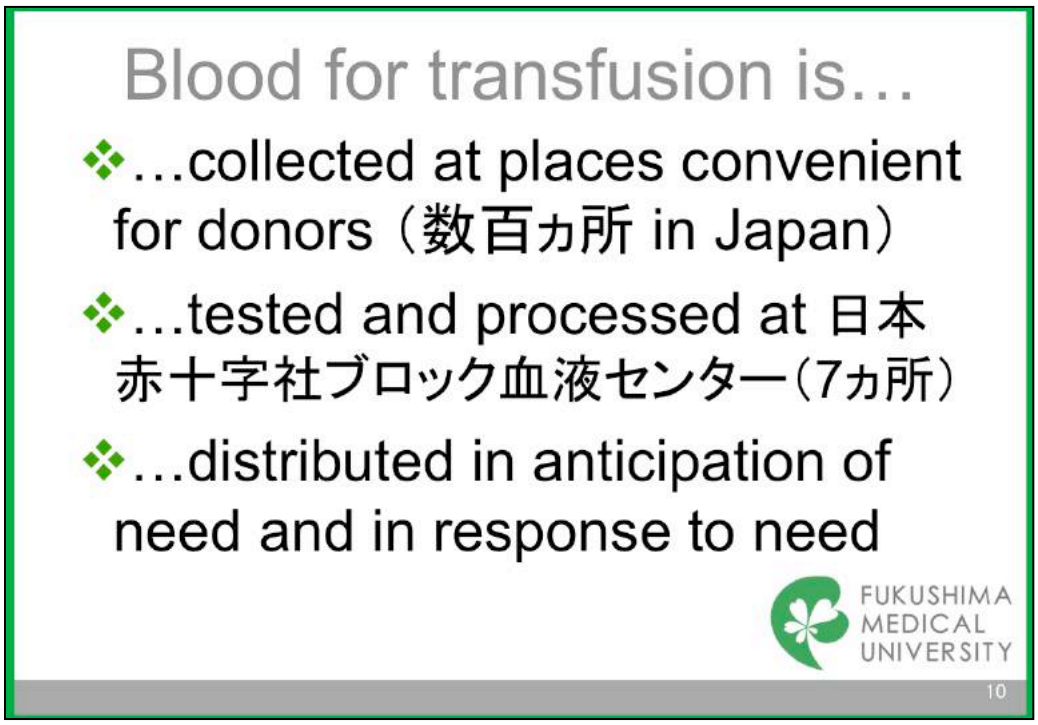


The media told people, "Go to hospitals to donate blood." This was said with good intentions, but it was bad advice.



Historically, yes, Mayo Clinic established America's first hospital blood bank in 1935, followed by Cook County Hospital, where the name "blood bank" was created by Fantus.

Now, in America, blood transfusion is the most common procedure performed in hospitals.



But in America and most other developed countries, blood for transfusion is collected at places convenient for donors – 100s of places every day in Japan. Here, blood is tested and processed at 7 high-tech Red Cross Centers. Blood is distributed in anticipation of need and in response to need.

JRC Blood Distribution

- 116 regular blood delivery vehicles
- 627 emergency blood delivery vehicles
- Want blood?
  - Roads and fuel
  - Air transportation
  - Electricity and water
  - ***Communication***

Transfusion Medicine Reviews, 27, 29-35, 2013

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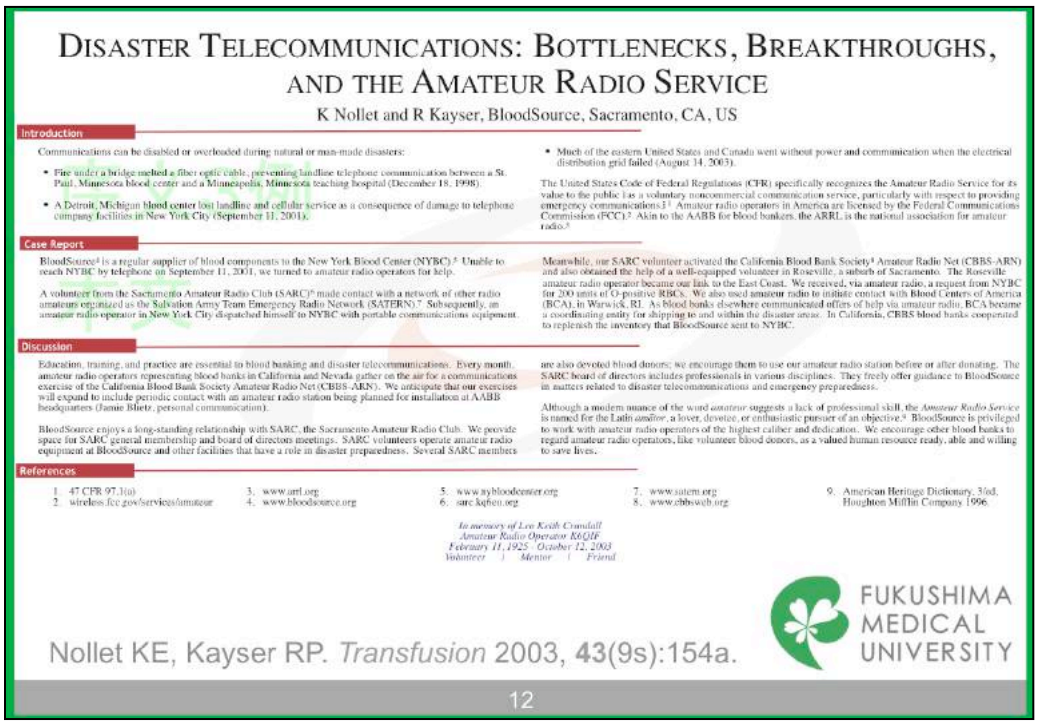
The Japanese Red Cross uses more than 100 regular delivery vehicles, and more than 600 emergency delivery vehicles. If you want blood, you need roads and fuel, air transportation, electricity, water, and communication.



Disaster Telecommunications: Bottlenecks, Breakthroughs, and the Amateur Radio Service

K Nollet and R Kayser, BloodSource, Sacramento, CA, US

Introduction

Communications can be disabled or overloaded during natural or man-made disasters:

- Fire under a bridge melted a fiber optic cable, preventing landline telephone communication between a St. Paul, Minnesota blood center and a Minneapolis, Minnesota teaching hospital (December 18, 1998).
- A Detroit, Michigan blood center lost landline and cellular service as a consequence of damage to telephone company facilities in New York City (September 11, 2001).
- Much of the eastern United States and Canada went without power and communication when the electrical distribution grid failed (August 14, 2003).

The United States Code of Federal Regulations (CFR) specifically recognizes the Amateur Radio Service for its value to the public [as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.][1] Amateur radio operators in America are licensed by the Federal Communications Commission (FCC).[2] Akin to the AABB for blood bankers, the ARRL is the national association for amateur radio.[3]

Case Report

BloodSource[4] is a regular supplier of blood components to the New York Blood Center (NYBC).[5] Unable to reach NYBC by telephone on September 11, 2001, we turned to amateur radio operators for help.

A volunteer from the Sacramento Amateur Radio Club (SARC)[6] made contact with a network of other radio amateurs organized as the Salvation Army Team Emergency Radio Network (SATERN).[7] Subsequently, an amateur radio operator in New York City dispatched himself to NYBC with portable communications equipment.

Meanwhile, our SARC volunteer activated the California Blood Bank Society[8] Amateur Radio Net (CBBS-ARN) and also obtained the help of a well-equipped volunteer in Roseville, a suburb of Sacramento. The Roseville amateur radio operator became our link to the East Coast. We received, via amateur radio, a request from NYBC for 200 units of O-positive RBCs. We also used amateur radio to initiate contact with Blood Centers of America (BCA), in Warwick, RI. As blood banks elsewhere communicated offers of help via amateur radio, BCA became a coordinating entity for shipping to and within the disaster areas. In California, CBBS blood banks cooperated to replenish the inventory that BloodSource sent to NYBC.

Discussion

Education, training, and practice are essential to blood banking and disaster telecommunications. Every month, amateur radio operators representing blood banks in California and Nevada gather on the air for a communications exercise of the California Blood Bank Society Amateur Radio Net (CBBS-ARN). We anticipate that our exercises will expand to include periodic contact with an amateur radio station being planned for installation at AABB headquarters (Jamie Blietz, personal communication).

BloodSource enjoys a long-standing relationship with SARC, the Sacramento Amateur Radio Club. We provide space for SARC general membership and board of directors meetings. SARC volunteers operate amateur radio equipment at BloodSource and other facilities that have a role in disaster preparedness. Several SARC members are also devoted blood donors; we encourage them to use our amateur radio station before or after donating. The SARC board of directors includes professionals in various disciplines. They freely offer guidance to BloodSource in matters related to disaster telecommunications and emergency preparedness.

Although a modern nuance of the word *amateur* suggests a lack of professional skill, the *Amateur Radio Service* is named for the Latin *amator*, a lover, devotee, or enthusiastic pursuer of an objective.[9] BloodSource is privileged to work with amateur radio operators of the highest caliber and dedication. We encourage other blood banks to regard amateur radio operators, like volunteer blood donors, as a valued human resource ready, able and willing to save lives.

References

1. 47 CFR 97.1(a)
2. wireless.fcc.gov/services/amateur
3. www.arrl.org
4. www.bloodsource.org
5. www.nybloodcenter.org
6. sarc.kqhen.org
7. www.satern.org
8. www.cbbsweb.org
9. American Heritage Dictionary, 3/ed. Houghton Mifflin Company 1996.

In memory of Lee Keith Crandall
Amateur Radio Operator K6QIF
February 11, 1925 / October 12, 2003
Volunteer | Mentor | Friend

Nollet KE, Kayser RP. *Transfusion* 2003, **43**(9s):154a.

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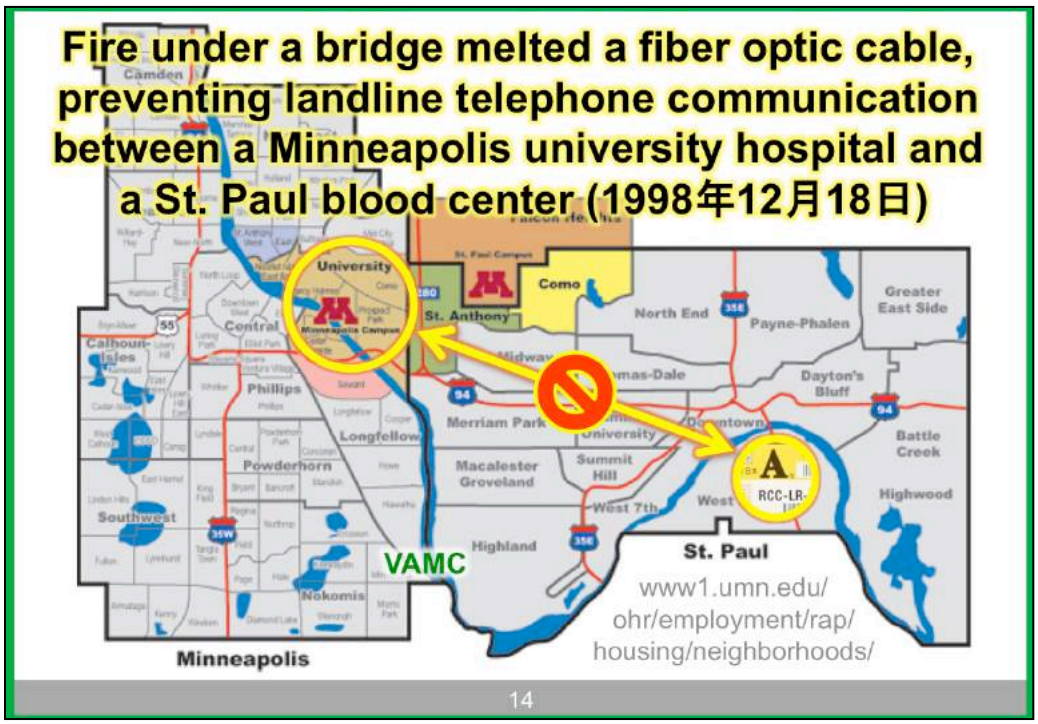
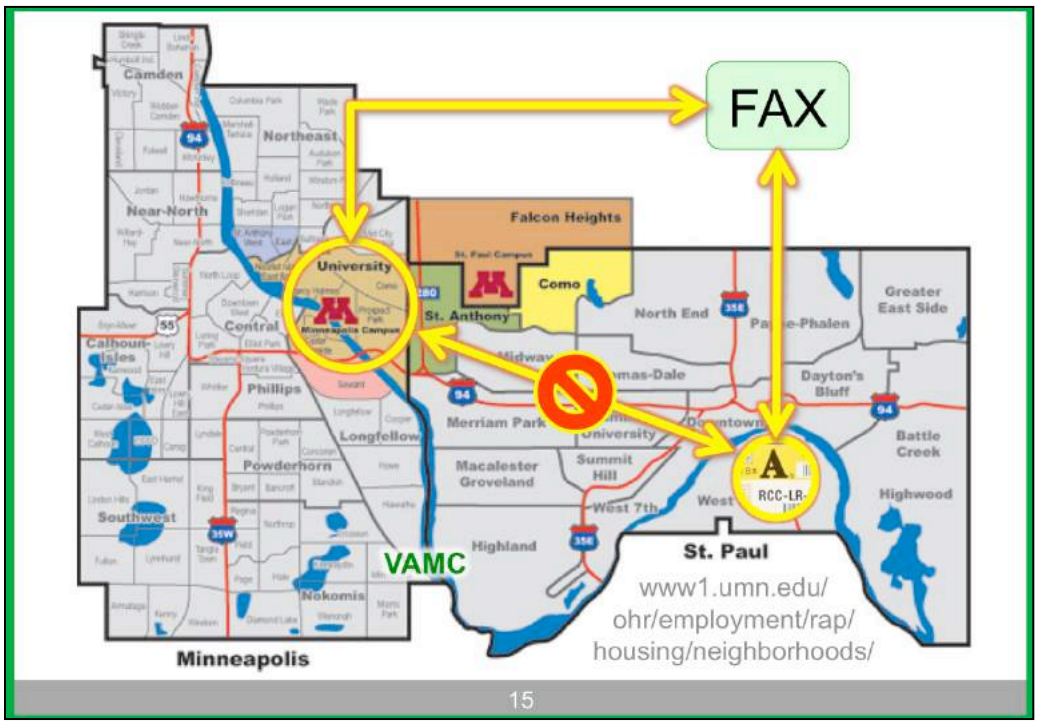
This is true in normal times, and in times of disaster. Let's consider some examples from the 2003 AABB poster, Disaster Telecommunications: Bottlenecks, Breakthroughs, and the Amateur Radio Service.

By way of introduction, here is something that happened in 1998, December 18.

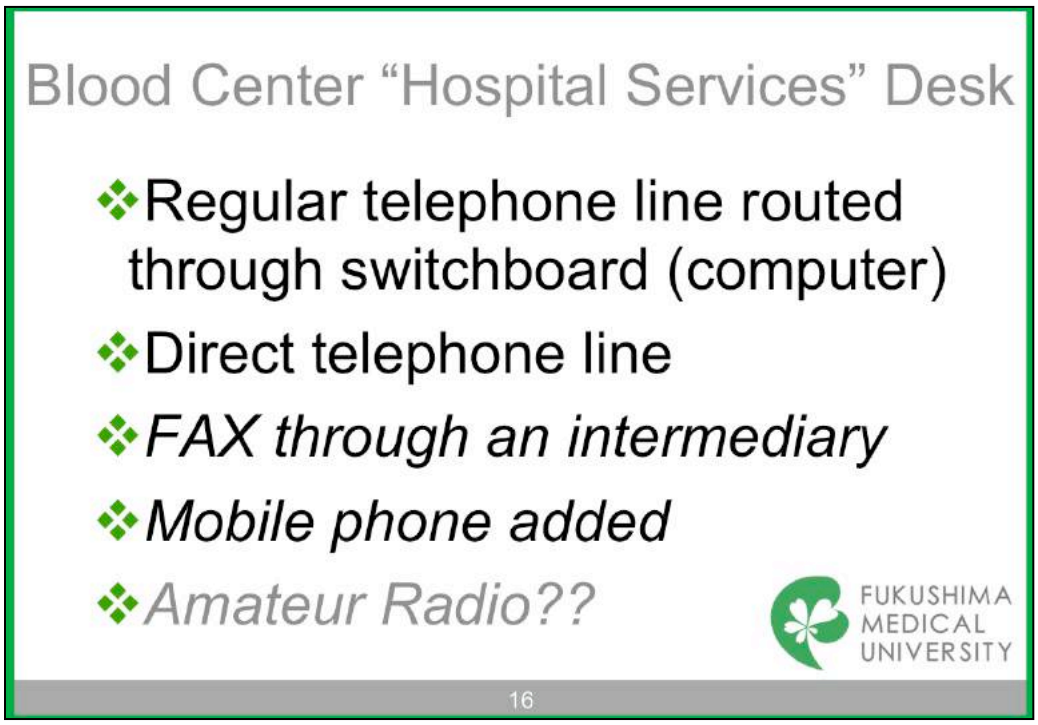


Fire under a bridge melted a fiber optic cable, preventing landline telephone communication between a Minneapolis university hospital and a St. Paul blood center. Minneapolis and St. Paul are part of a single, large metropolitan area divided by the Mississippi River. Sometimes people on the west side of the river think they are better than the people on the east side. That's when we remind them that Minneapolis is never mentioned in the Christian Bible.

Transfusion under Triple Threat



An immediate solution to the broken telephone circuit was to relay orders through a location that could communicate with both the hospital and with the blood center, using FAX to avoid errors.



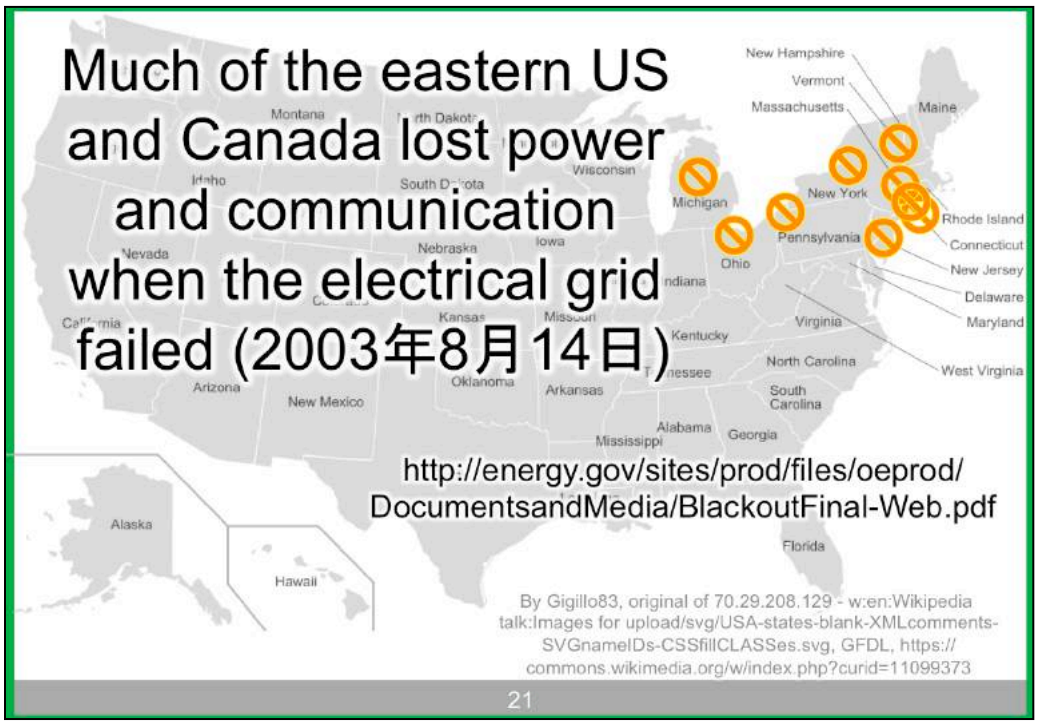
Blood centers need to have many ways to communicate. Most business telephones go through a computer switchboard. But computers crash and switchboards fail, so this blood center also had a direct telephone line in the hospital services department. Immediately after the fiber-optic cable failure, a FAX relay system was introduced, and a mobile phone was permanently placed in the Hospital Services Department. No Amateur Radio yet, but these improvements were made at the recommendation of an amateur working at the blood center.

In America and in Japan, it is common to see Amateur Radio antennas on top of Red Cross buildings, but as blood services have become more complex, they have been separated from disaster services, so many transfusion medicine specialist are unfamiliar with Amateur Radio as an emergency communications medium.

The second introductory example is part of the 9.11 story, from 2001, September 11.

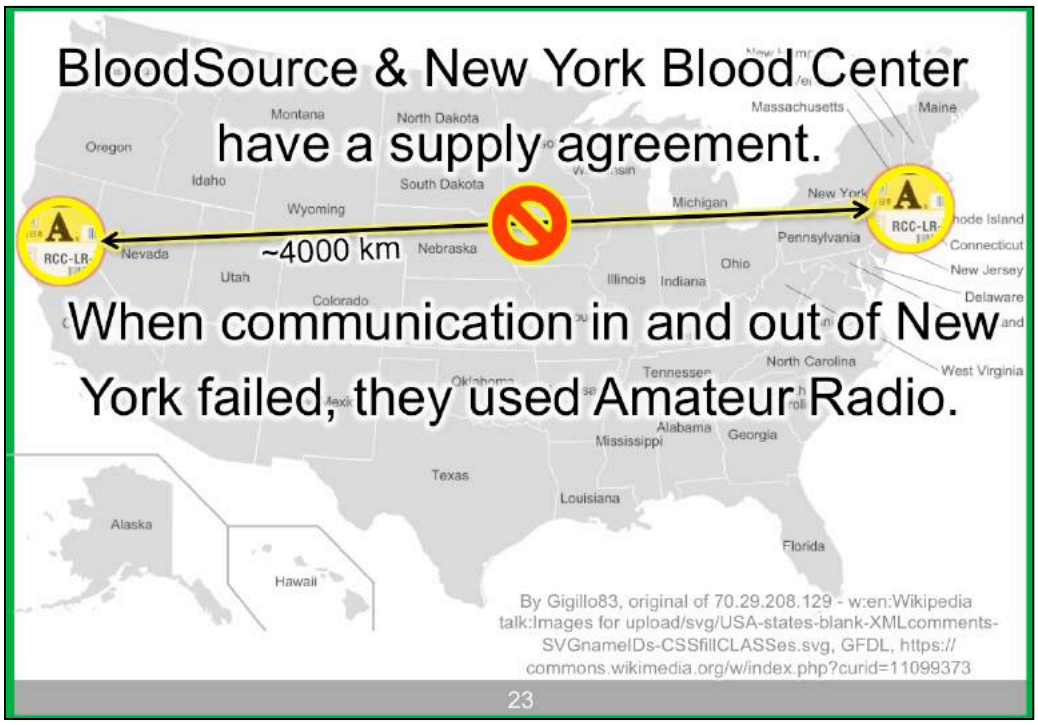
On 9.11, not only was communication interrupted in and out of New York, but also, a blood center 1000 km away, in Detroit, Michigan lost landline and mobile telephone services because of damage to telephone network facilities in New York City.

The third introductory example, from 2003, August 14, is something we worry about more and more every year.

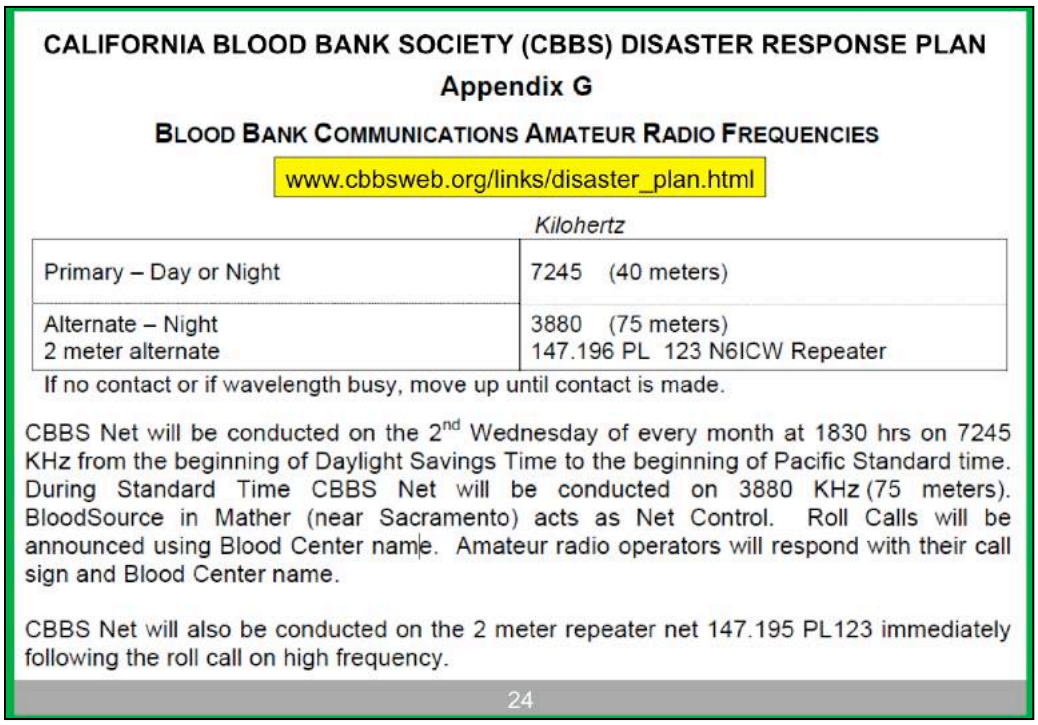


Much of the eastern United States and Canada lost power and communication when the electrical grid failed. In modern times, the grid can be affected by overload, bad weather, and terrorists, including hackers.

Now, let's move to the main case report of this poster.



A blood center in California called BloodSource and the New York Blood Center have a supply agreement. BloodSource sends extra blood to New York, where demand for transfusion is greater than the local supply. When communication in and out of New York failed, the blood centers turned to Amateur Radio for help.



CALIFORNIA BLOOD BANK SOCIETY (CBBS) DISASTER RESPONSE PLAN

Appendix G

BLOOD BANK COMMUNICATIONS AMATEUR RADIO FREQUENCIES

www.cbbsweb.org/links/disaster_plan.html

	Kilohertz
Primary – Day or Night	7245 (40 meters)
Alternate – Night 2 meter alternate	3880 (75 meters) 147.196 PL 123 N6ICW Repeater

If no contact or if wavelength busy, move up until contact is made.

CBBS Net will be conducted on the 2nd Wednesday of every month at 1830 hrs on 7245 KHz from the beginning of Daylight Savings Time to the beginning of Pacific Standard time. During Standard Time CBBS Net will be conducted on 3880 KHz (75 meters). BloodSource in Mather (near Sacramento) acts as Net Control. Roll Calls will be announced using Blood Center name. Amateur radio operators will respond with their call sign and Blood Center name.

CBBS Net will also be conducted on the 2 meter repeater net 147.195 PL123 immediately following the roll call on high frequency.

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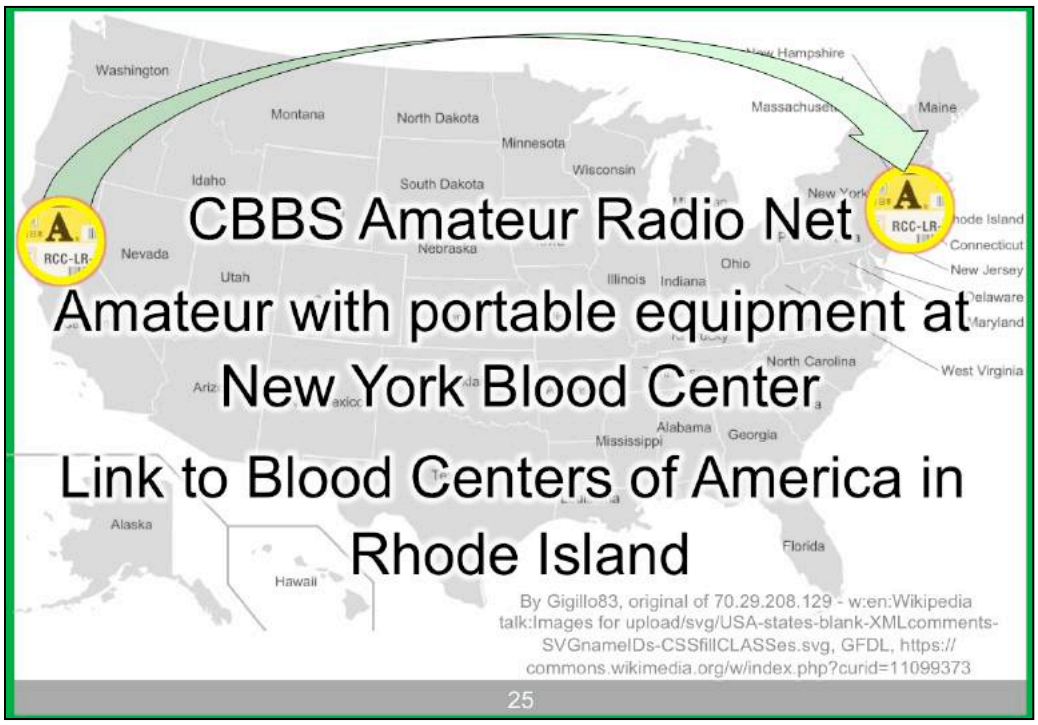
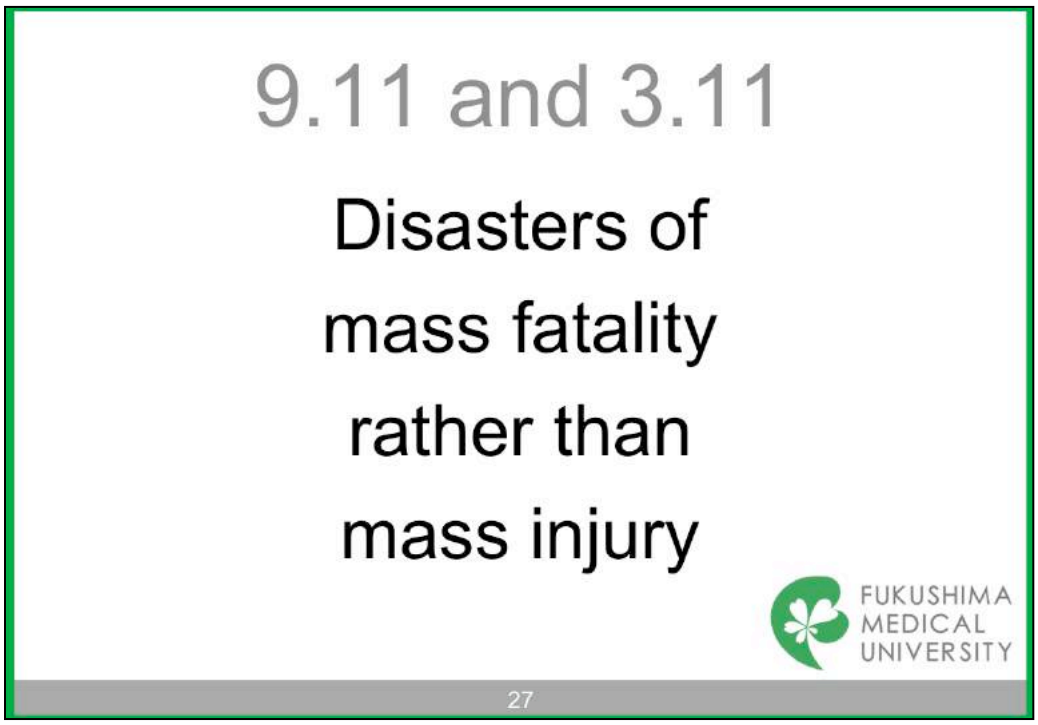
Amateur Radio was already part of the California Blood Bank Society's Disaster Response Plan, with three major blood centers hosting permanent Amateur Radio stations.



A New York amateur with portable equipment went to the New York Blood Center. A combination of VHF inside California and HF across North America took the place of regular telephone communication. A link to Blood Centers of America, an association headquartered in Rhode Island, was also established.

Amateur Radio made it possible to send 200 units of group O red cells from California to New York via military aircraft. Not only radio connections with other amateurs, but also, personal connections with health care, police, and military people are important.

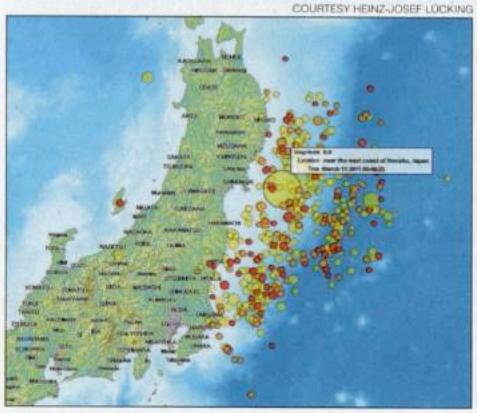


In retrospect, 9.11 and 3.11 were disasters of mass fatality rather than mass injury, but as things were happening, no one knew what might happen next.

Radio Amateurs in Japan Keep Providing Communications Support in Earthquakes' Aftermath

Amateur Radio operators became involved in the rescue effort soon after the March 11 9.0 earthquake and devastating tsunami — now known as *Higashi Nihon Daishinsai* or The Eastern Japan Great Earthquake Disaster — that hit Japan, and that effort continues nearly two months later. "In the early stage following the earthquake and tsunami, several radio amateurs were able to activate their stations with car batteries or small engine generators, despite the electric power outages," IARU Region 3 Secretary Ken Yamamoto, JA1CJP, told the ARRL. "They transmitted rescue requests and information on the disaster situation — including refugee centers and their needs — and the availability of basic infrastructures, such as electricity, water and gas supplies." After the earthquake and tsunami, there was no electricity, water or gas service in many of the affected areas.

COURTESY HEINZ-JOSEF LÜCKING



This map shows the March 11 earthquake and its associated aftershocks through March 14, 2011 at 11:20 PM JST. The size of the circles is a function of magnitude and the color indicates the date: March 11, light green; March 12, yellow; March 13, orange, and March 14, red.

Keen SK. Happenings. QST* 95(6)77, 2011
*Official Journal of ARRL, the national association for Amateur Radio in the United States

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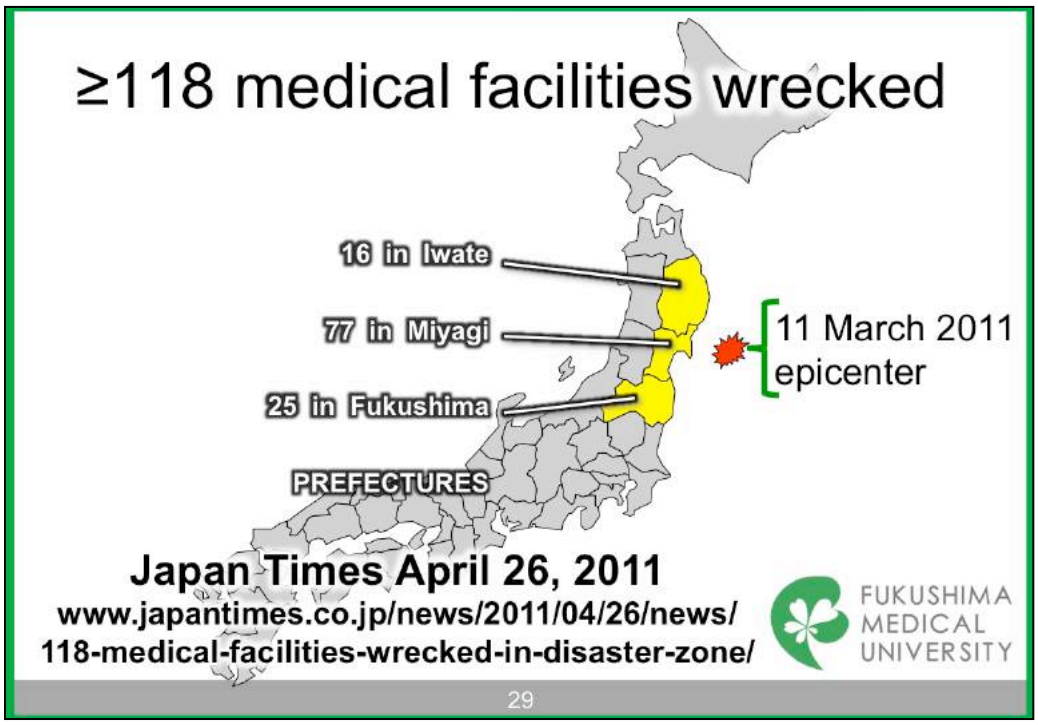
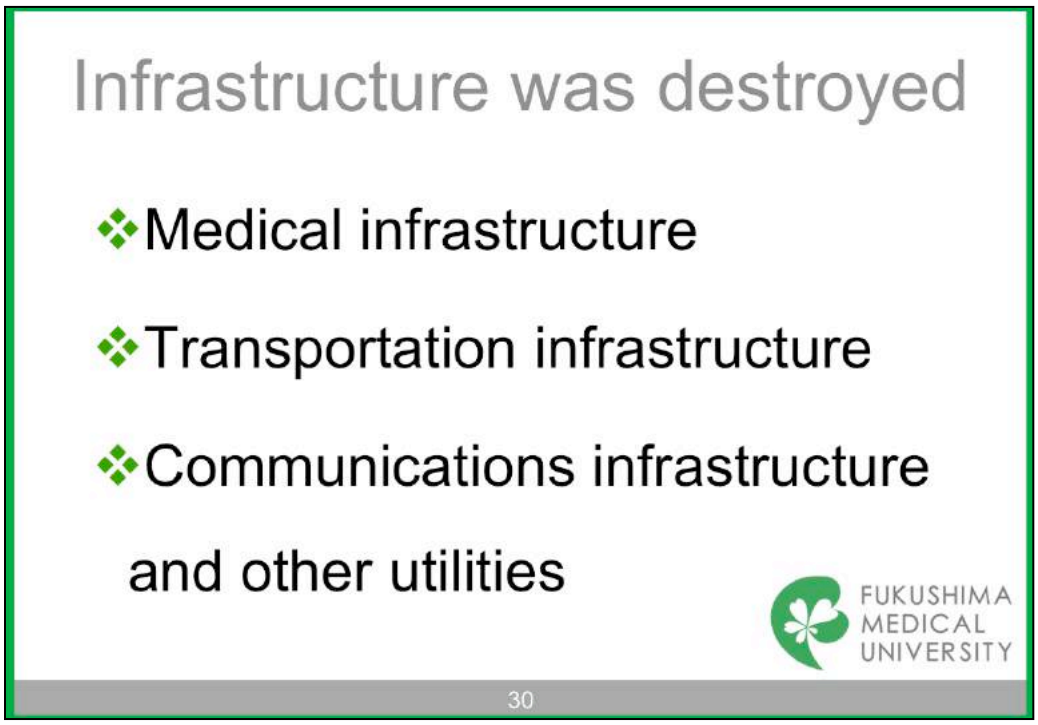
After the 3.11 earthquake and tsunami interrupted power and usual means of communication, radio amateurs in Japan provided communication support with their own power sources and radio equipment.

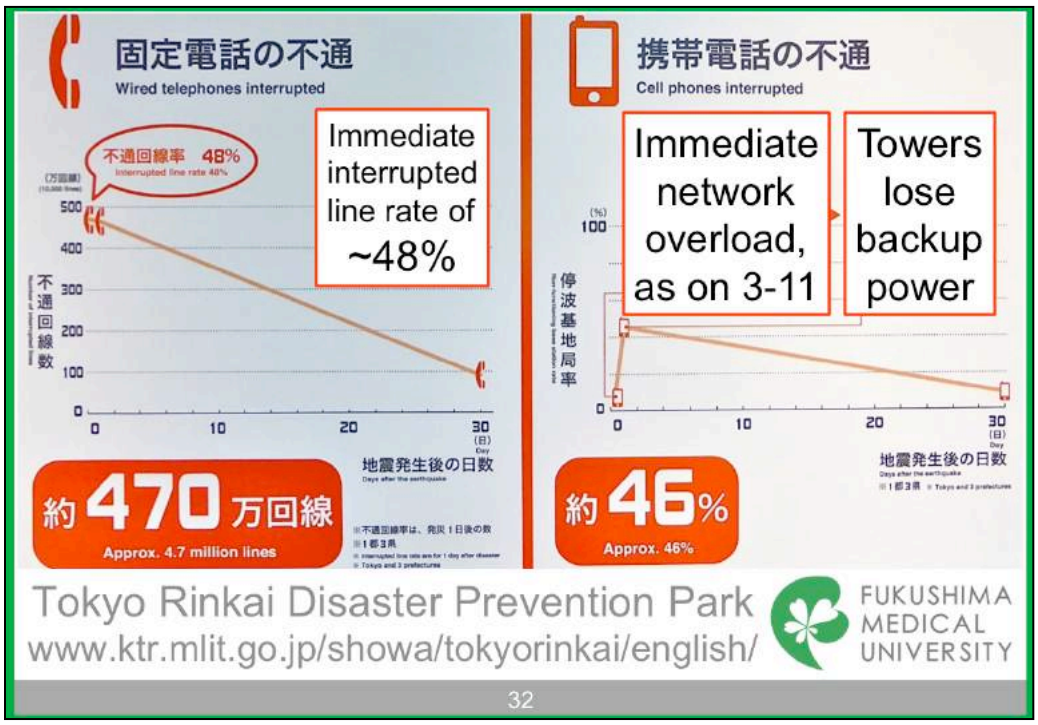


At least 118 medical facilities on the Pacific coast were destroyed or rendered unusable, and healthcare professionals were among the nearly 20,000 lives lost.

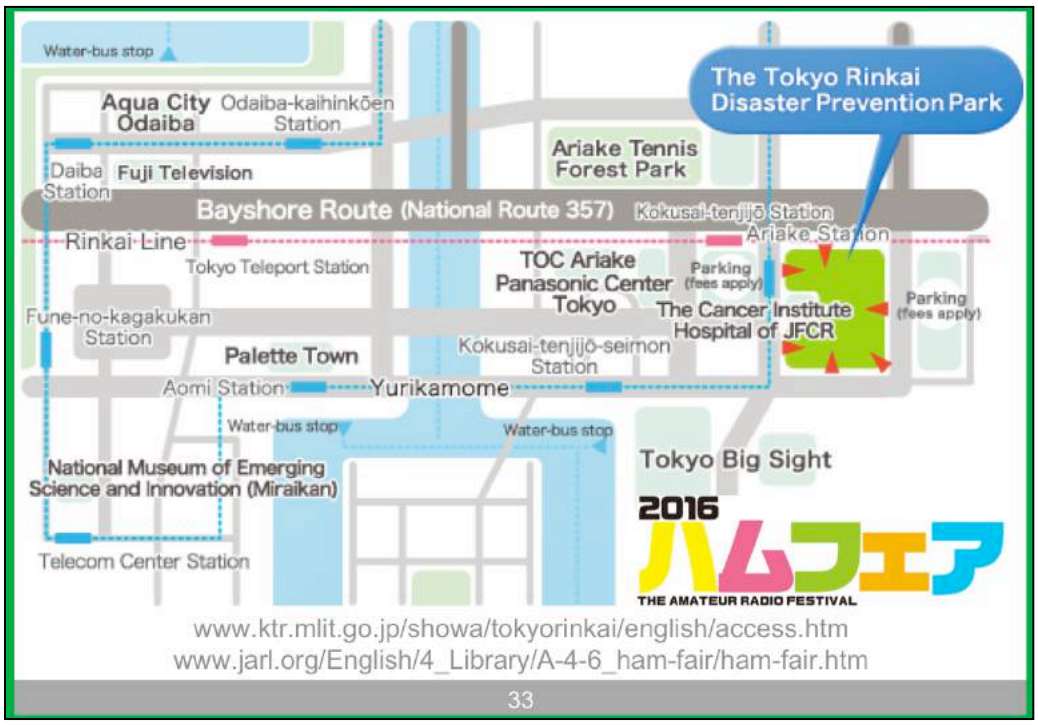


Not only medical infrastructure, but also transportation infrastructure, communications infrastructure, and other “lifeline” utilities were lost.

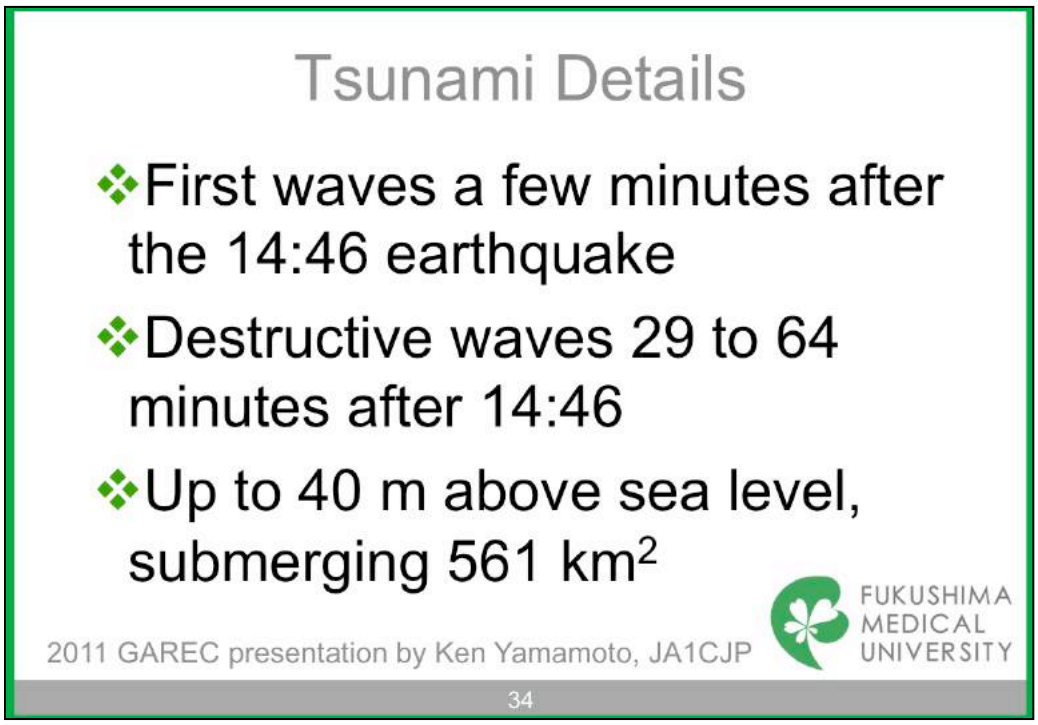
Tokyo's communication systems were not destroyed, but they were overloaded as mobile phone users sought information and tried to exchange messages about their own and others' health, welfare, and whereabouts.



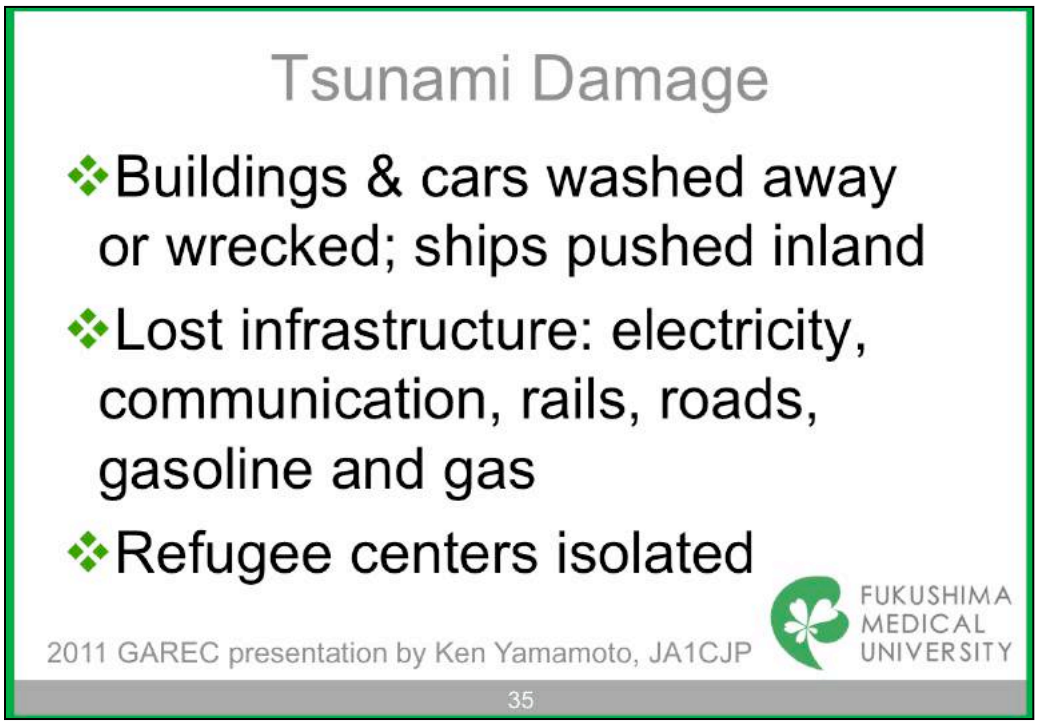
Physical damage and circuit overload estimates have been made for the next disaster predicted for Tokyo. This information is from the Tokyo Rinkai Disaster Prevention Park…



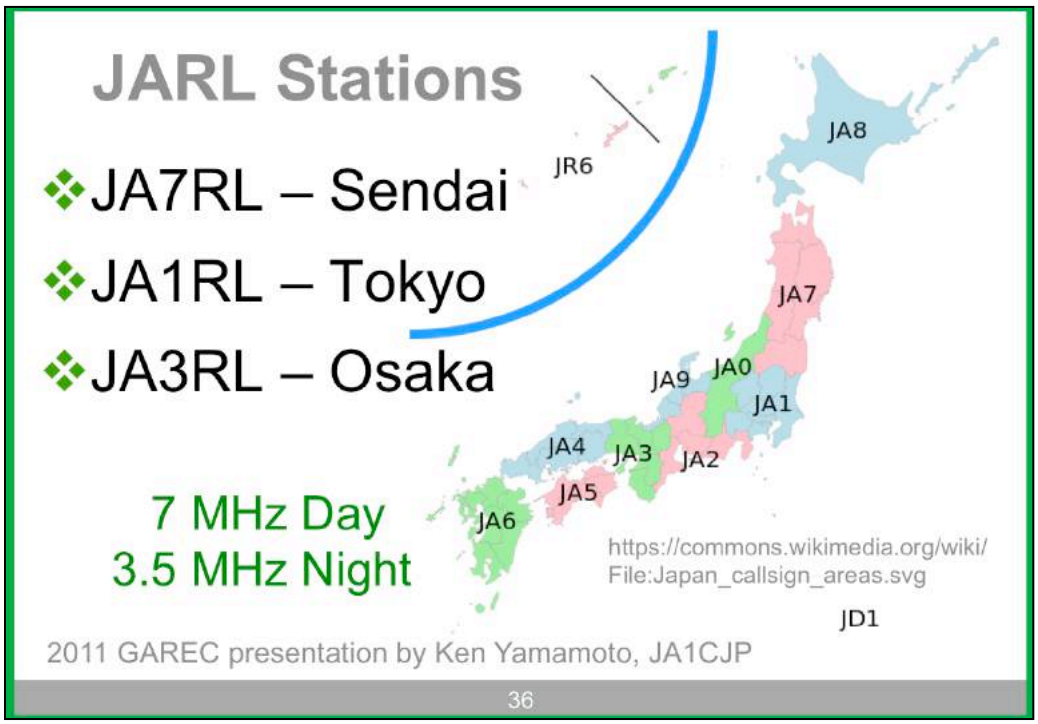
…which is conveniently located next to Tokyo Big Site, where Ham Fair convenes every year.



Ken Yamamoto of JARL made a presentation at the 2011 Global Amateur Radio Emergency Communications Conference in South Africa. With his permission, I am presenting some parts, starting with the tsunami details.

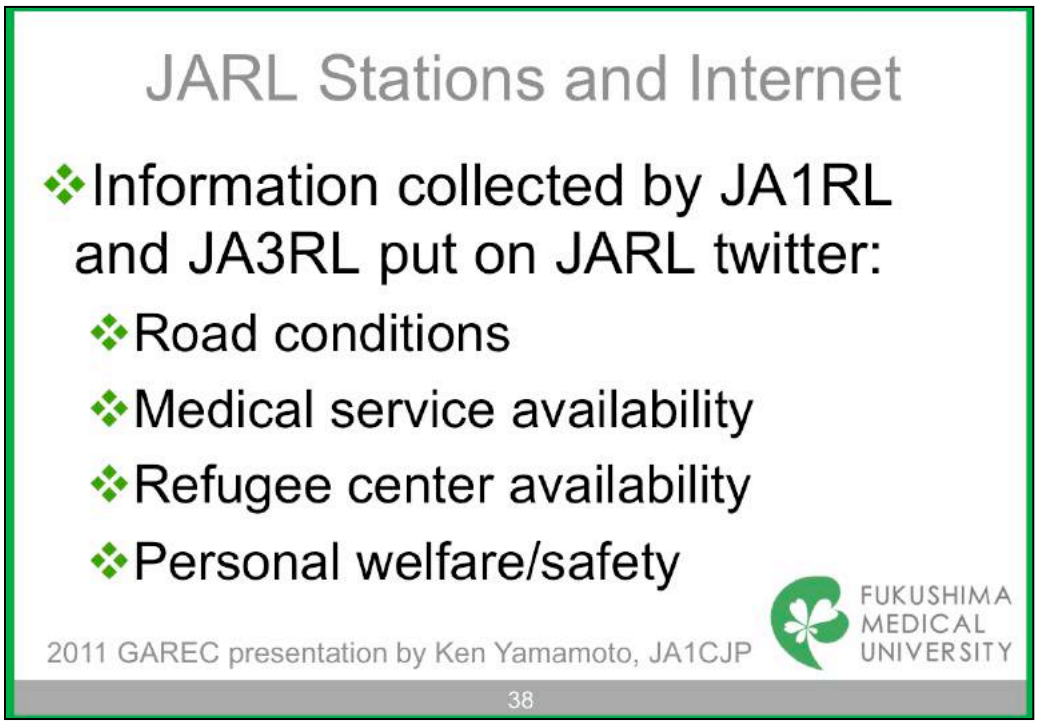


As a result of tsunami damage, buildings & cars were washed away or wrecked, and ships were pushed inland. Lost infrastructure included electricity, communication, rails, roads, gasoline, and gas. Refugee centers were isolated.



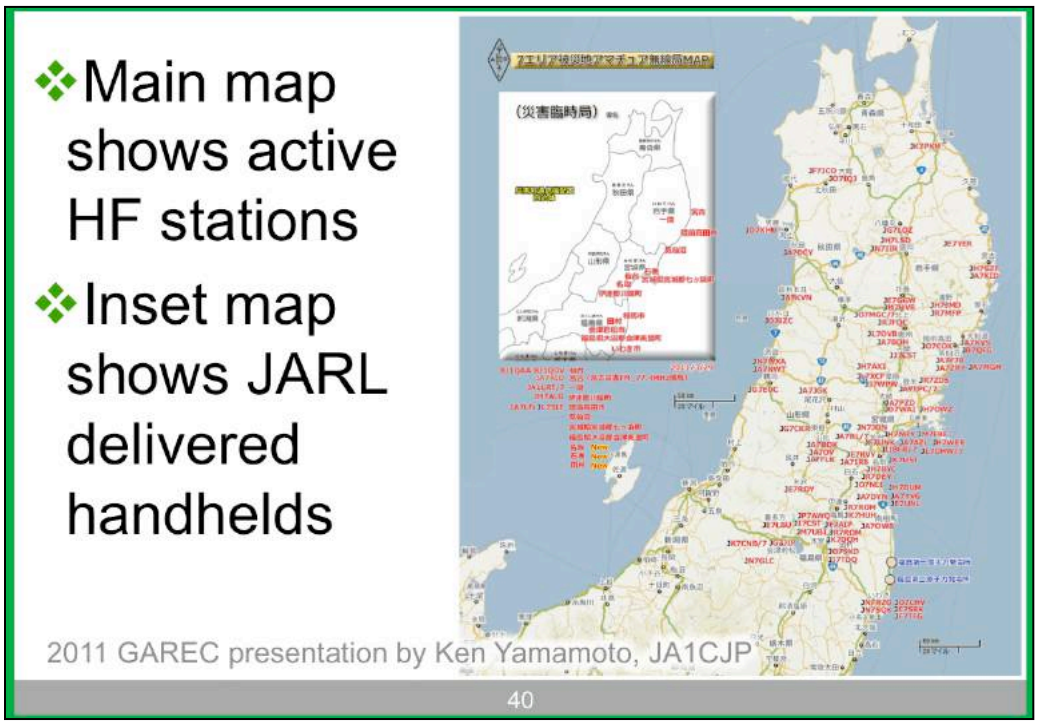
JARL stations in Sendai, Tokyo, and Osaka devoted themselves to disaster communications.

They received need requests from affected areas, provided relay support for other stations, and forwarded need requests to rescue administrative offices.



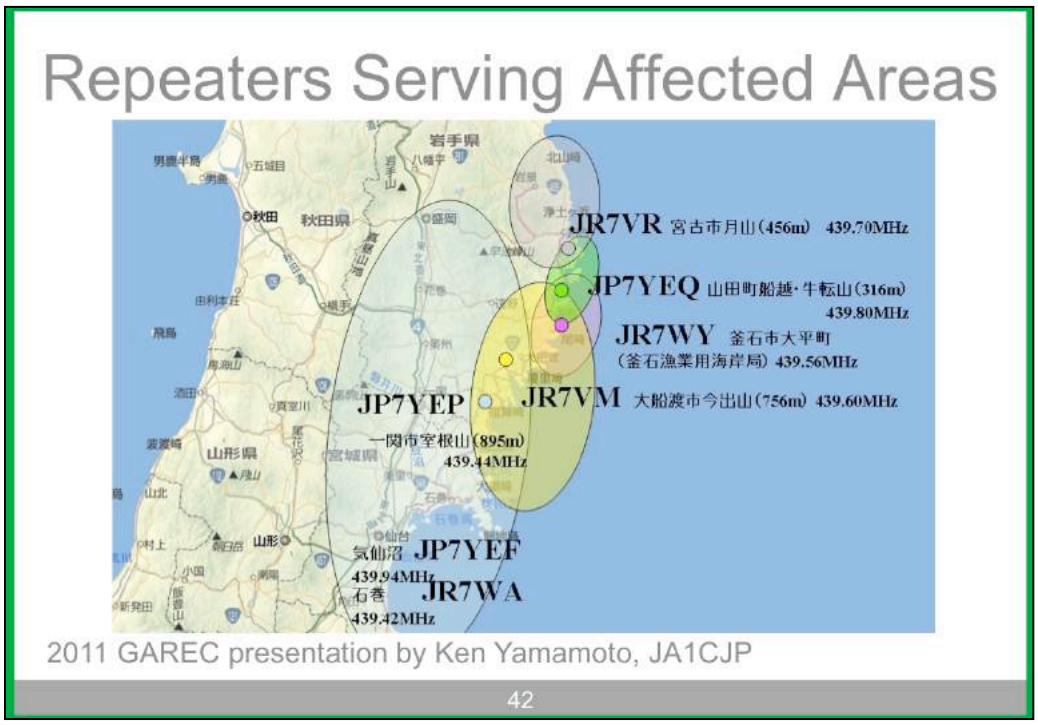
JARL also used Twitter to inform people about road conditions, medical services availability, refugee center availability, and for personal welfare and safety messages.

JARL received 300 VHF/UHF handy-talkies from Amateur Radio manufacturers, and got government permission to distribute them for use in affected areas. They also got a repeater.



This map shows active HF stations on the right, and in the upper left inset, places where JARL delivered extra hand held transceivers. After I made a similar presentation to the Japanese Medical Amateur Radio Society, one of the members from Osaka mentioned that after the Hanshin-Awaji earthquake, the Ministry of Internal Affairs and Communications authorized the distribution and use of pre-programmed amateur hand-held transceivers among non-licensed shelter workers.

Show here is the installation of repeater JR7VM at an existing television relay station…

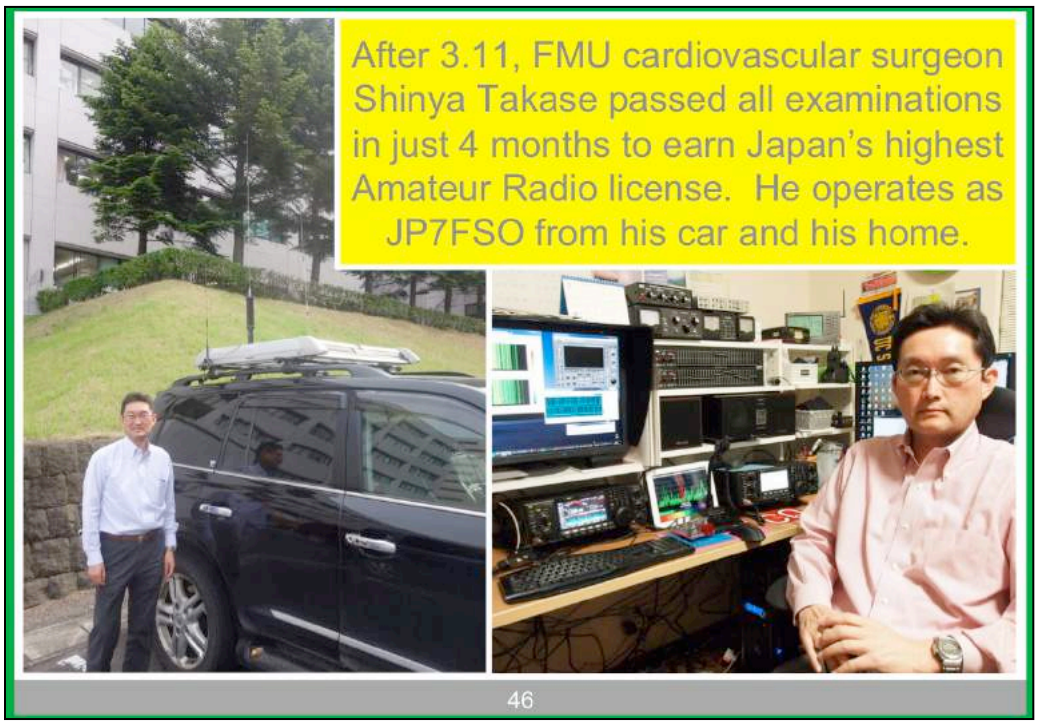


…which added essential coverage in the affected area, as shown by the yellow oval.

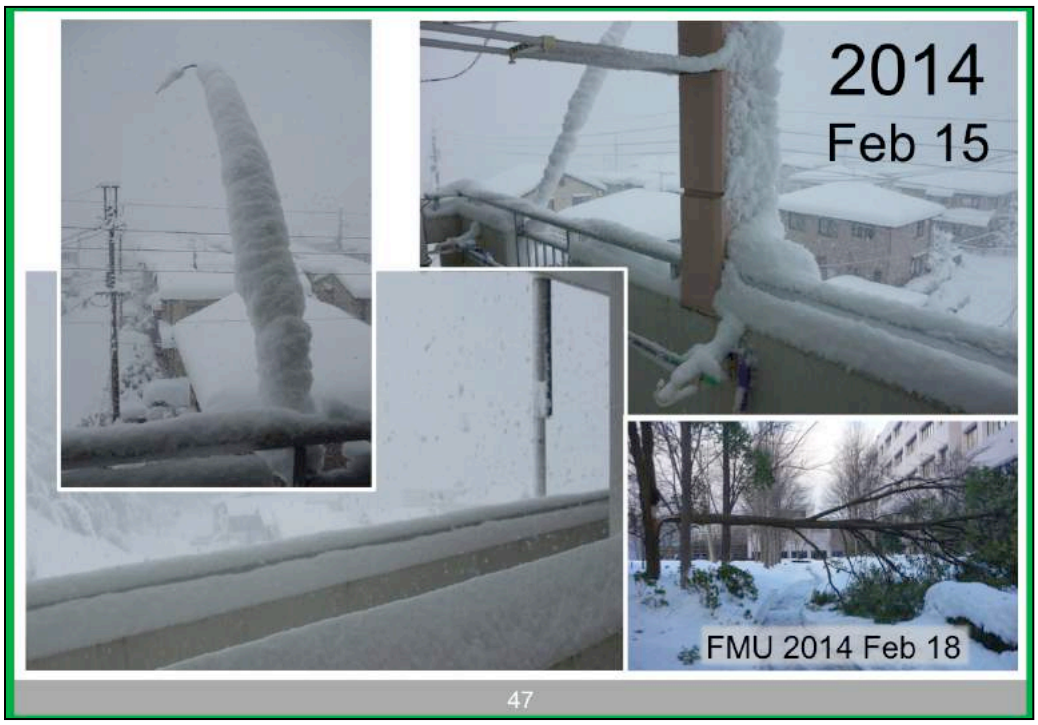
Northeastern Japan is doing better these days, so let's take a more general view of ham life in Fukushima.

The antenna farm at JO7XVL began simply, with whips protruding from my veranda. Getting on the air from Guam as a member of TIARA's TIGER II operation in 2010 February was more productive. We were in Guam when a magnitude 8.8 earthquake off the coast of Chile caused a tsunami warning on our side of the Pacific. So federally managed beaches in Guam were closed on February 28, and the communication skills we were using on holiday were ready for emergency service. In the end, Guam was not affected by the Chilean earthquake. By the way, the upper right photo shows what may be the last paddle and straight key combination ever manufactured by GHD in Miyagi Prefecture. They still sell straight keys and paddles separately, and continue to be a strong company in post-3.11 Tohoku.

It was quite late when I got home on the evening of March 11, and things were a mess. But my anti-earthquake desk, built with utility ladders, held up and protected the radio gear. A rice cooker in the kitchen wasn't so lucky. It fell to the floor, but, being of Japanese manufacture, it didn't break, and I still use it today.



March 11 was a big motivator for cardiovascular surgeon Dr. Shinya Takase, who saw the value of emergency communications and passed all examinations in just 4 months to earn Japan's highest Amateur Radio license. He has accomplished more in 4-1/2 years than I have accomplished in 45.



People still ask about radioactive fallout, but the fallout you see here – what Mel Larson, KC0P, calls “solid-state rain” – was more dangerous, and it actually killed people.

But on good days, my veranda is a nice place to operate, and with a zoom lens…

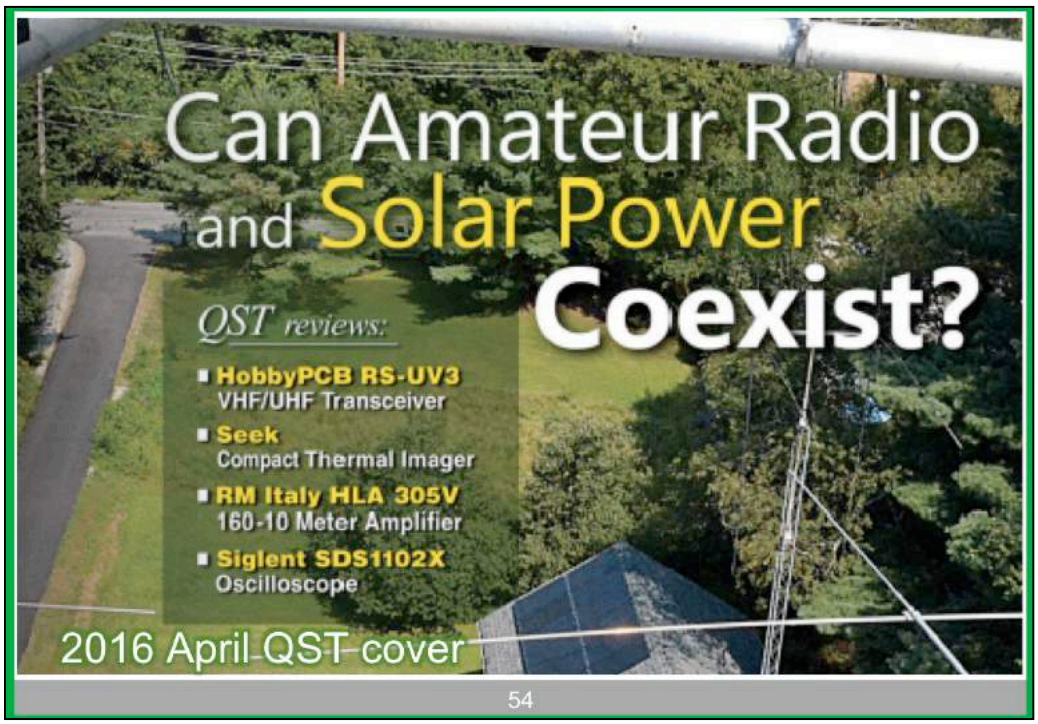
…I can see the super antenna farm of JP7FSO's second ham shack.

Here is a closer view of the hill where he put up two towers…

…and here is what the towers look like when the antennas are all the way up.

These pictures show the delivery of electrical power.

The arrangements Shin-san made might help you believe that Fukushima lives up to its name as a lucky island. A big landowner wouldn't sell the hilltop location, but he allowed JP7FSO to lease it for 30 years, at a total cost around $3,000. Japan's electricity market was deregulated in April, letting small retail resellers into the business. but Tohoku Electric earned some credibility and loyalty by installing new utility poles and a meter for free.



Of course we all wonder about running our shacks with renewable energy, like solar power.

JP7FSO’s neighbor is a farmer with a solar farm.

In fact, solar power has been around for a while in Japan, as you can see from this house on a hill that was ruined by the Great East Japan Earthquake. When you walk out of the east exit of Fukushima Station, you'll see a billboard for a solar power company in business since the year 2000.

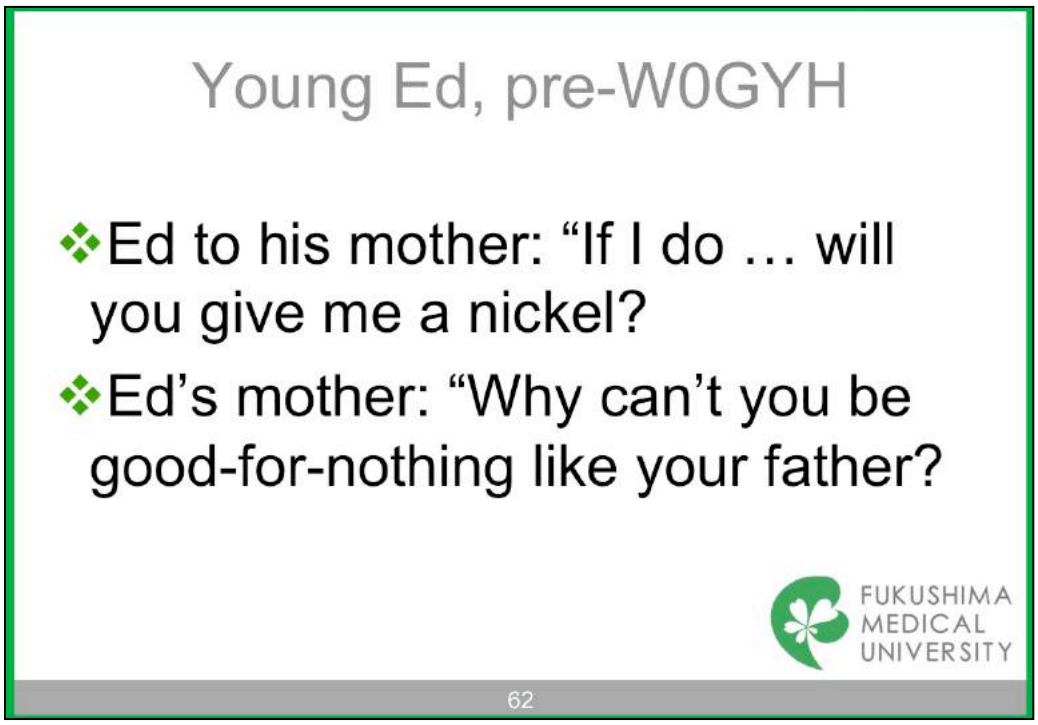
But renewable energy has really taken off since the nuclear accident. Now, more than ever, when you are in Fukushima, you are in solar country.

What about ham life in addition to getting on the air? These are some of my other activities.

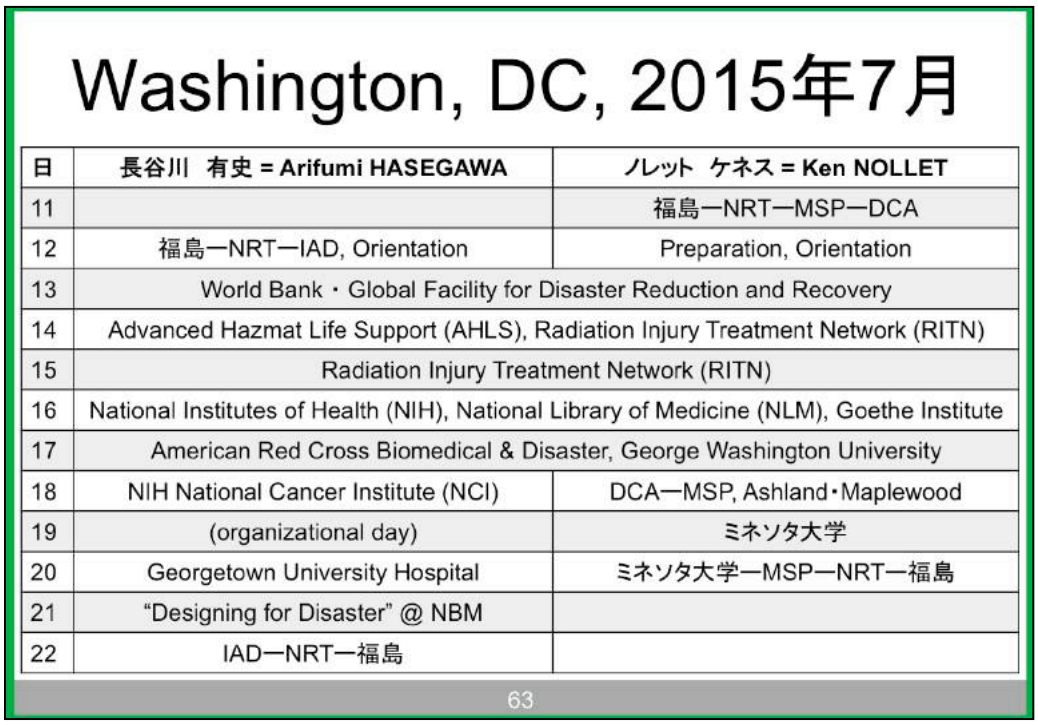
By the way, the professional societies to which I belong insist on COI disclosures, in other words, speaking plainly about any potential conflict of interest. Listed here are organizations that have provided travel support to hear about my personal experience in Fukushima, and data from the Fukushima Health Management Survey. I try not to let long flights in economy class affect my thinking one way or another, but COI etiquette says to tell people where the money is coming from.

Have I received any travel support from Amateur Radio clubs? No, not yet.

Well, after all, we are volunteers. Let me mention my uncle Ed, W0GYH in this context.



As a young boy, before getting his ham license, he would sometimes ask his mother, “If I do such-and-such a chore, will you give me a nickel?” Back then, a 5-cent nickel was worth something. His mother, my grandmother, would reply, “Why can’t you be good-for-nothing like your father?” Tonight, in that spirit, I am being good for nothing.



Washington, DC, 2015年7月

日	長谷川　有史 = Arifumi HASEGAWA	ノレット　ケネス = Ken NOLLET
11		福島ーNRTーMSPーDCA
12	福島ーNRTーIAD, Orientation	Preparation, Orientation
13	World Bank・Global Facility for Disaster Reduction and Recovery	
14	Advanced Hazmat Life Support (AHLS), Radiation Injury Treatment Network (RITN)	
15	Radiation Injury Treatment Network (RITN)	
16	National Institutes of Health (NIH), National Library of Medicine (NLM), Goethe Institute	
17	American Red Cross Biomedical & Disaster, George Washington University	
18	NIH National Cancer Institute (NCI)	DCAーMSP, Ashland・Maplewood
19	(organizational day)	ミネソタ大学
20	Georgetown University Hospital	ミネソタ大学ーMSPーNRTー福島
21	“Designing for Disaster” @ NBM	
22	IADーNRTー福島	

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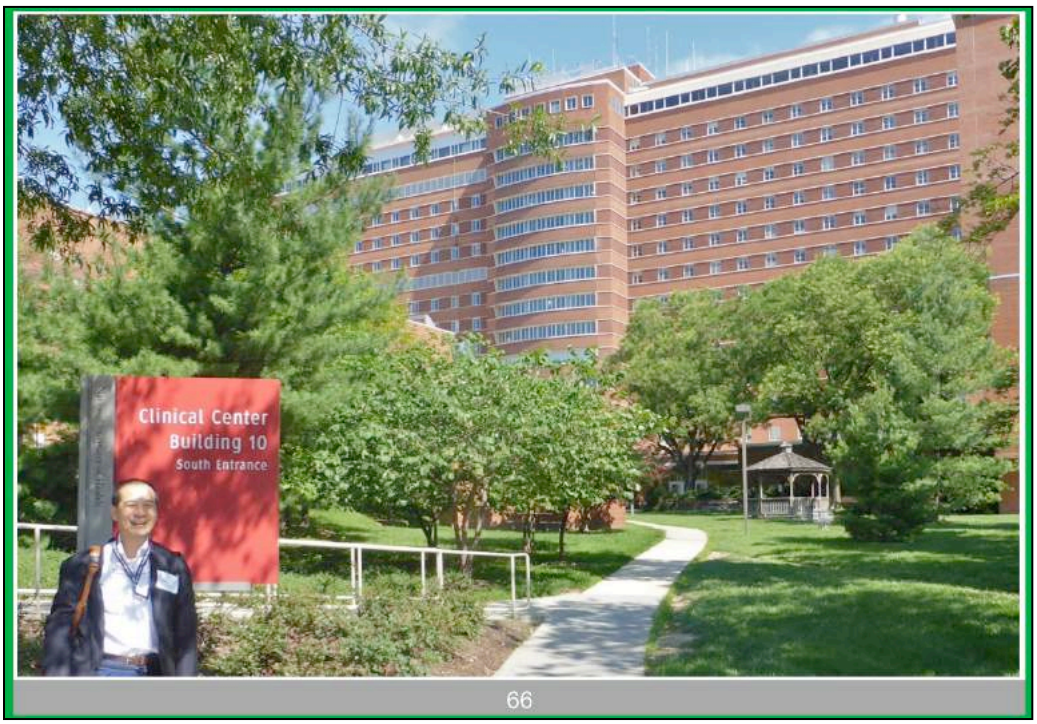
With or without support, I try to make the most out of professional travel. Here’s an example that started with an invitation to speak about Fukushima at a meeting hosted by the Radiation Injury Treatment Network, which operates under the umbrella of America’s National Marrow Donor Program. For all the trouble of flying across an ocean, I added a few more meetings and activities, not only for me, but for Professor Arifumi HASEGAWA, an emergency medicine doctor who was deeply involved in our 3.11 activities. He had never been to America before.

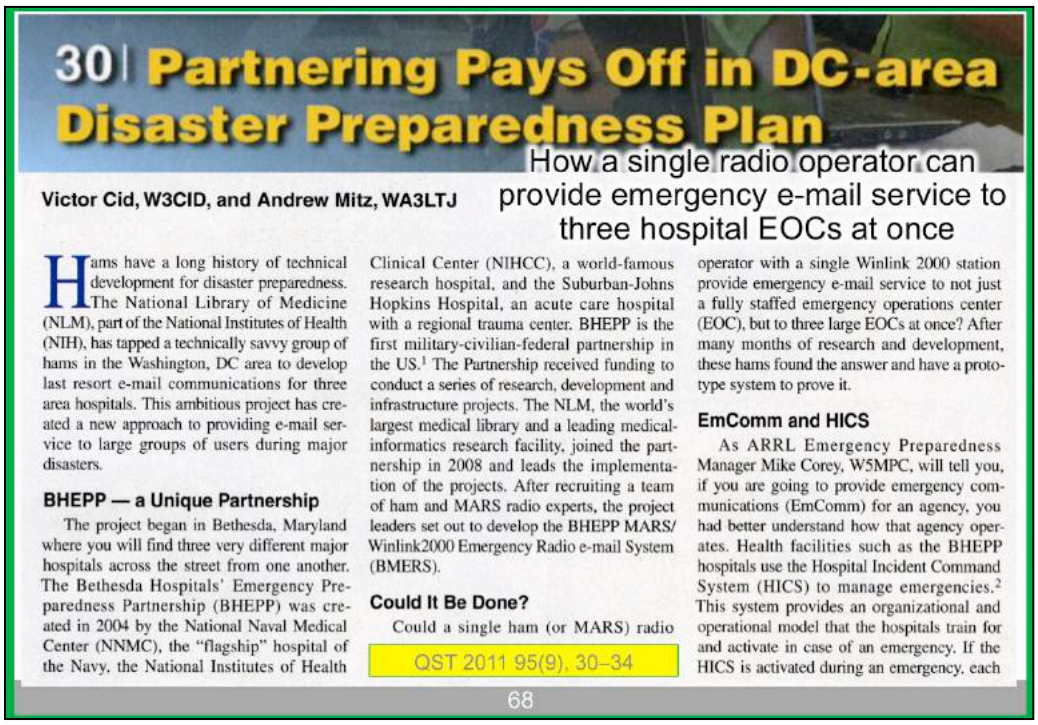
We talked about Fukushima at World Bank Headquarters.

…and participated in a radiological HAZMAT class before the Radiation Injury Treatment Network meeting.



We were also invited to NIH, the National Institutes of Health. This is Building 10, their Clinical Center

And this is Building 33, specially designed to withstand a nuclear blast.



30 Partnering Pays Off in DC-area Disaster Preparedness Plan

How a single radio operator can provide emergency e-mail service to three hospital EOCs at once

Victor Cid, W3CID, and Andrew Mitz, WA3LTJ

Hams have a long history of technical development for disaster preparedness. The National Library of Medicine (NLM), part of the National Institutes of Health (NIH), has tapped a technically savvy group of hams in the Washington, DC area to develop last resort e-mail communications for three area hospitals. This ambitious project has created a new approach to providing e-mail service to large groups of users during major disasters.

BHEPP — a Unique Partnership

The project began in Bethesda, Maryland where you will find three very different major hospitals across the street from one another. The Bethesda Hospitals' Emergency Preparedness Partnership (BHEPP) was created in 2004 by the National Naval Medical Center (NNMC), the "flagship" hospital of the Navy, the National Institutes of Health Clinical Center (NIHCC), a world-famous research hospital, and the Suburban-Johns Hopkins Hospital, an acute care hospital with a regional trauma center. BHEPP is the first military-civilian-federal partnership in the US.[1] The Partnership received funding to conduct a series of research, development and infrastructure projects. The NLM, the world's largest medical library and a leading medical-informatics research facility, joined the partnership in 2008 and leads the implementation of the projects. After recruiting a team of ham and MARS radio experts, the project leaders set out to develop the BHEPP MARS/Winlink2000 Emergency Radio e-mail System (BMERS).

Could It Be Done?

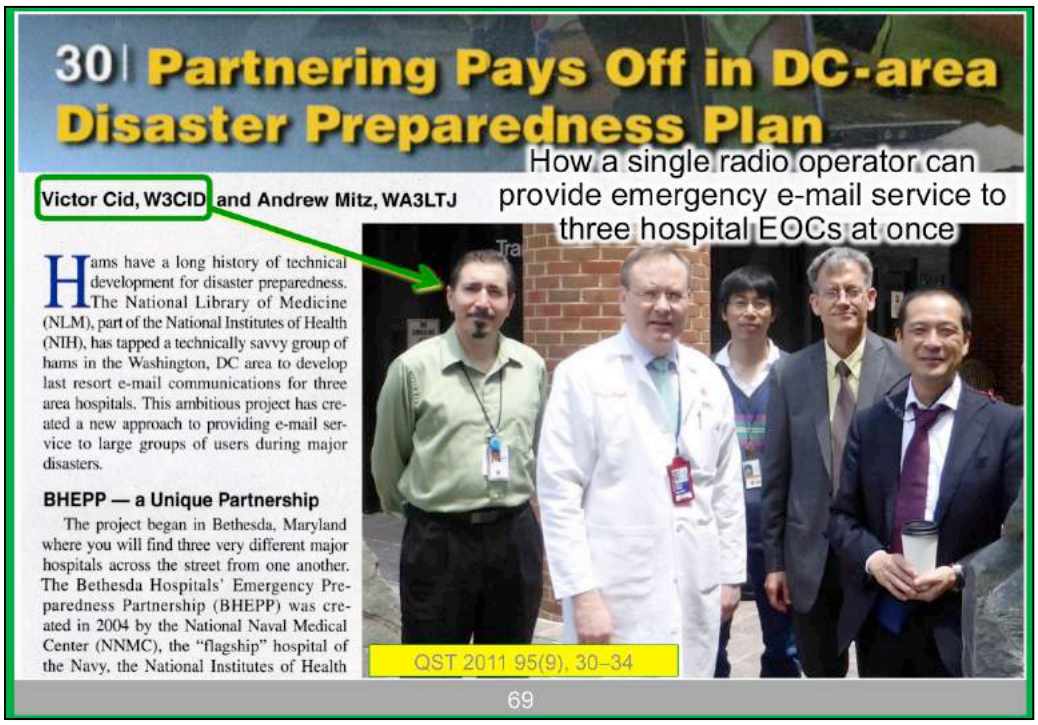
Could a single ham (or MARS) radio operator with a single Winlink 2000 station provide emergency e-mail service to not just a fully staffed emergency operations center (EOC), but to three large EOCs at once? After many months of research and development, these hams found the answer and have a prototype system to prove it.

EmComm and HICS

As ARRL Emergency Preparedness Manager Mike Corey, W5MPC, will tell you, if you are going to provide emergency communications (EmComm) for an agency, you had better understand how that agency operates. Health facilities such as the BHEPP hospitals use the Hospital Incident Command System (HICS) to manage emergencies.[2] This system provides an organizational and operational model that the hospitals train for and activate in case of an emergency. If the HICS is activated during an emergency, each

QST 2011 95(9), 30–34

Besides speaking in the Department of Transfusion Medicine, we met the authors of this article, published in QST, about how a single radio operator can provide emergency e-mail service to three hospitals: the National Naval Medical Center, the National Institutes of Health Clinical Center, and the Suburban-Johns Hopkins Hospital.



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QST 2011 95(9), 30–34

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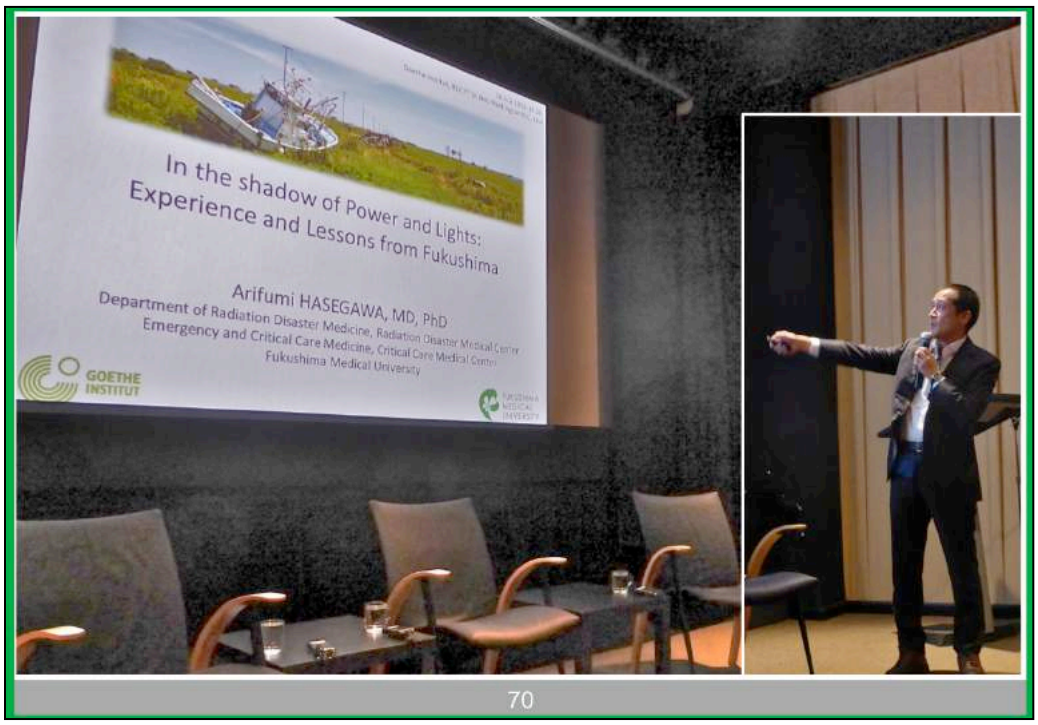
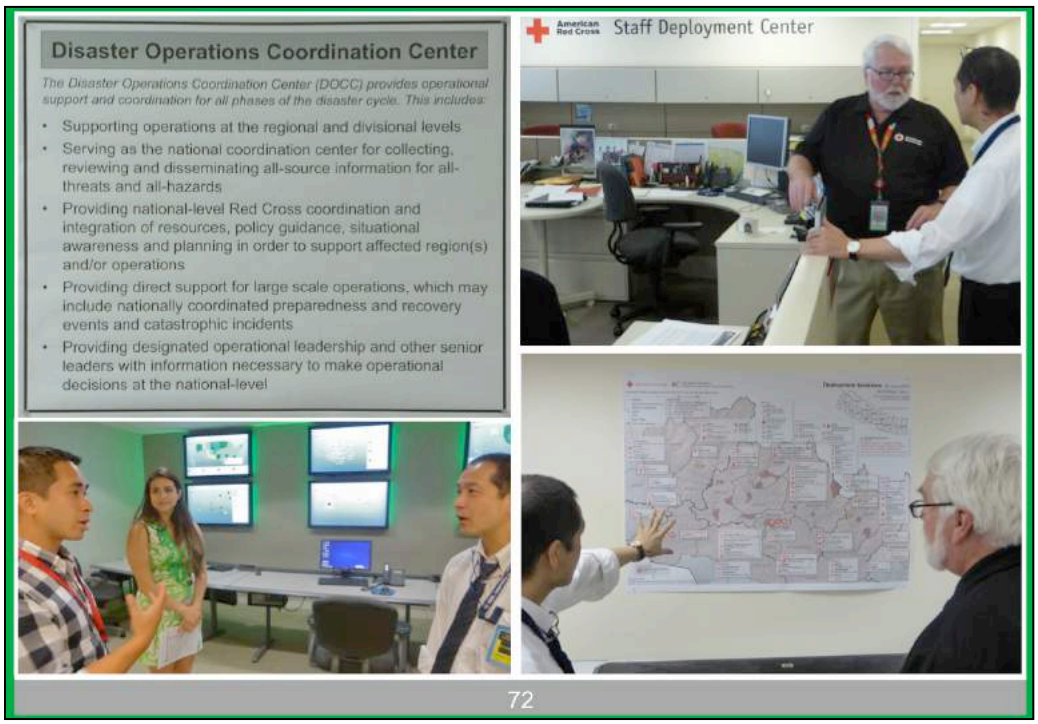
This alibi shot shows us with Victor Cid, who works for the National Library of Medicine. Dr. Bill Flegel, in the white coat, organized our presentations in the NIH Department of Transfusion Medicine.



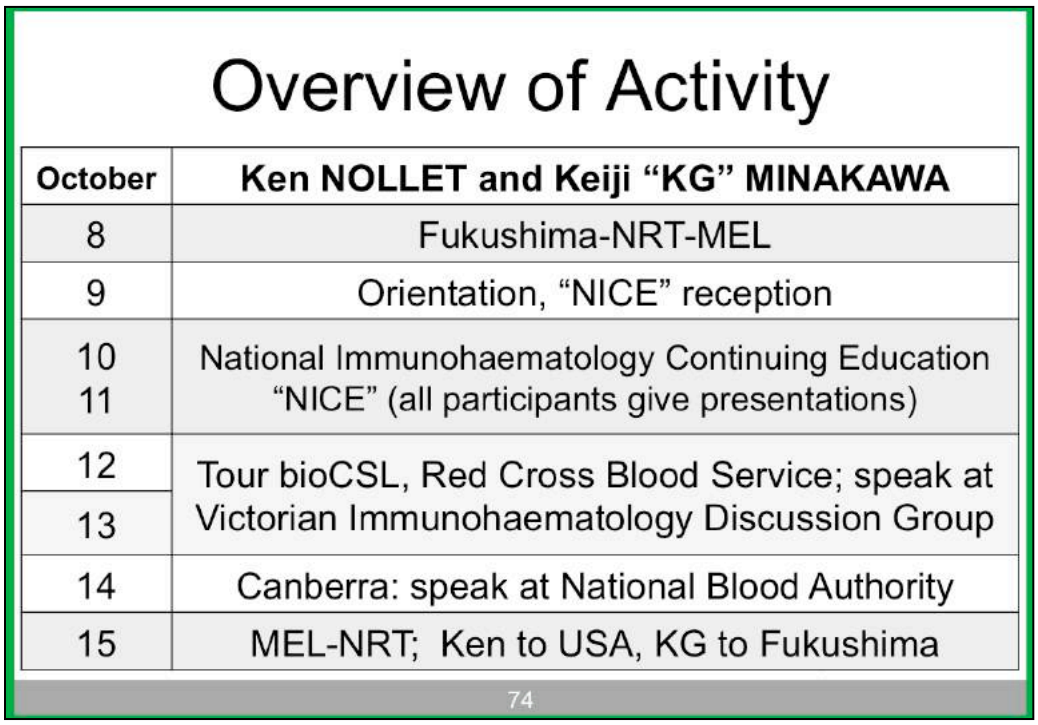
Prof. Flegel also organized an evening session for us at the Goethe Institute, a German cultural organization. That evening was well attended by all kinds of people with different views of nuclear power.

The next day, we were guests of the American Red Cross, blood services…



…and disaster services.

In October, FMU laboratory technician Keji Minakawa and I went to Australia for several meetings.



Overview of Activity

October	Ken NOLLET and Keiji "KG" MINAKAWA
8	Fukushima-NRT-MEL
9	Orientation, "NICE" reception
10 11	National Immunohaematology Continuing Education "NICE" (all participants give presentations)
12	Tour bioCSL, Red Cross Blood Service; speak at Victorian Immunohaematology Discussion Group
13	
14	Canberra: speak at National Blood Authority
15	MEL-NRT; Ken to USA, KG to Fukushima

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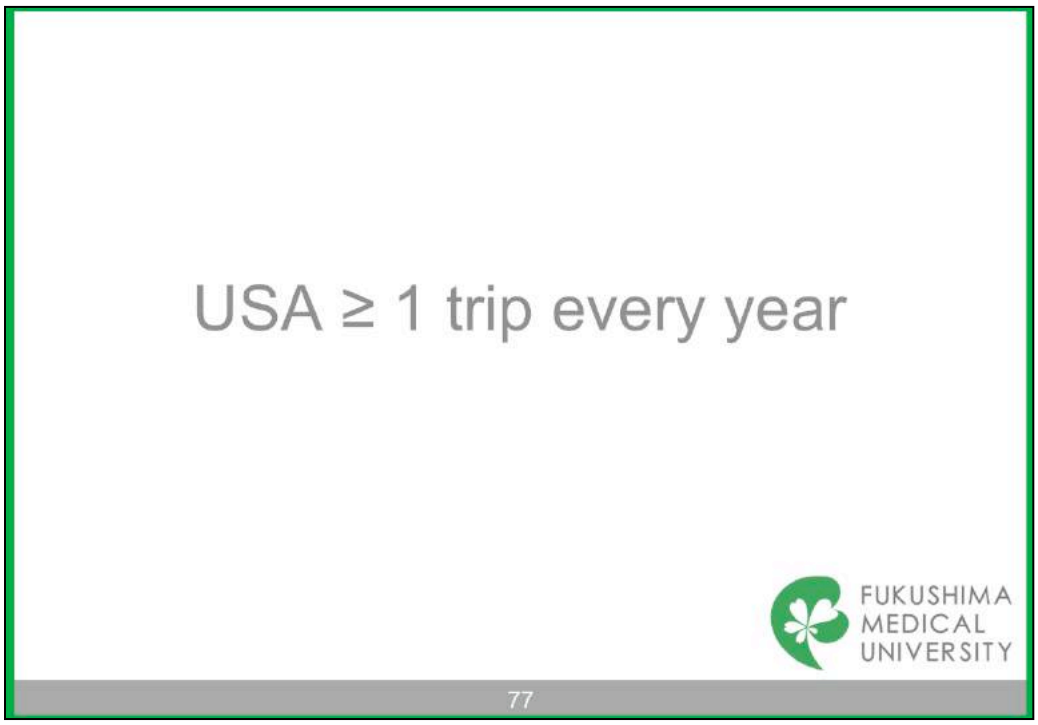
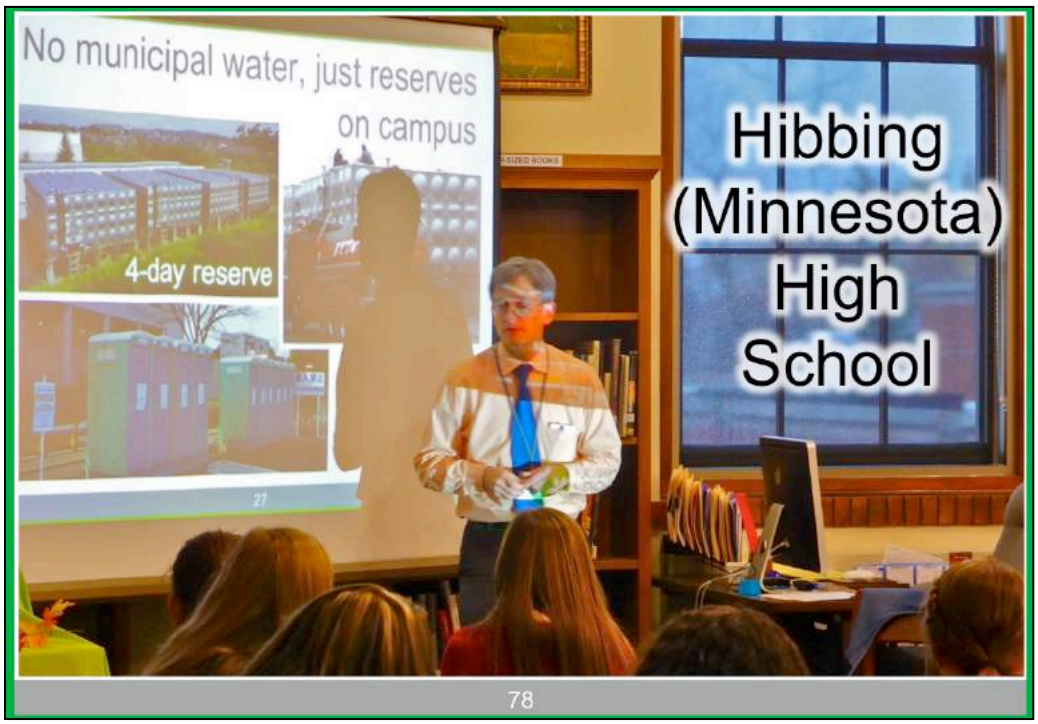
This is an outline of our schedule.

One of the places where I specifically talked about Amateur Radio was in Canberra, at the Australian Government's National Blood Authority. Attendees included not only government staff, but also, health care professionals from Calvary Hospital, Canberra Hospital, and Capital Pathology.

This is the NBA's situational awareness room, intended for routine and emergency management of the national blood supply..

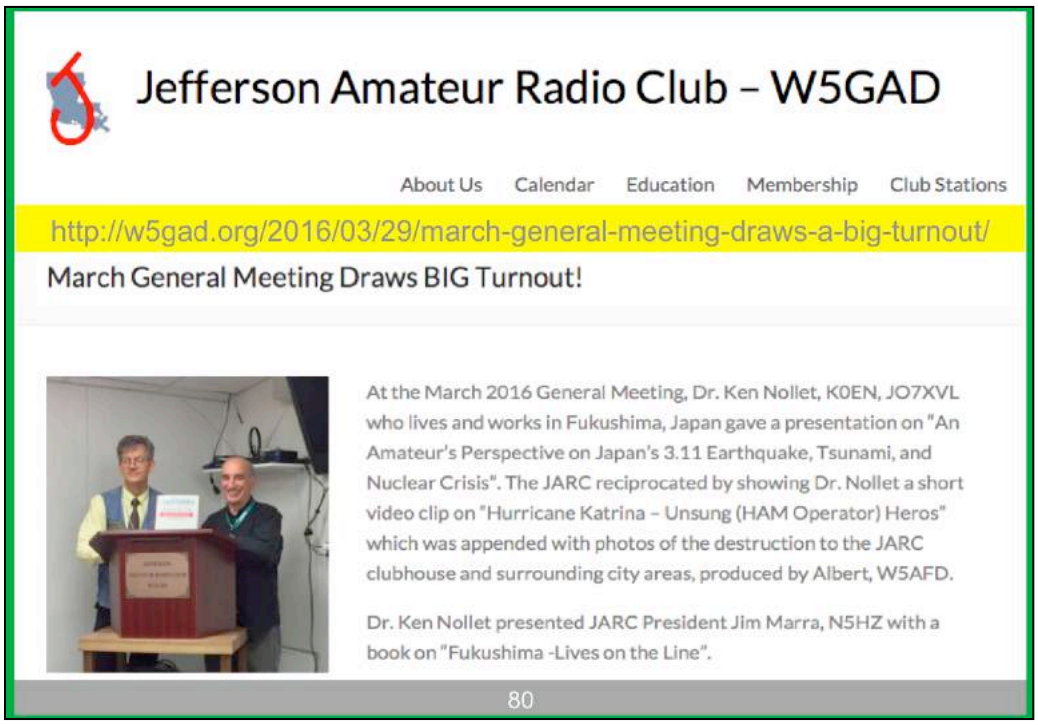


I get stateside at least once a year, and last year, five times.



In addition to Amateur Radio clubs, I have a soft spot for my hometown and its high school.

This year, in late March, after a medical conference in New Orleans, the Jefferson Amateur Radio Club, with first-hand experience of the 2005 Hurricane Katrina, welcomed me to their meeting, and they look forward to welcoming more Amateur Radio operators from Japan.

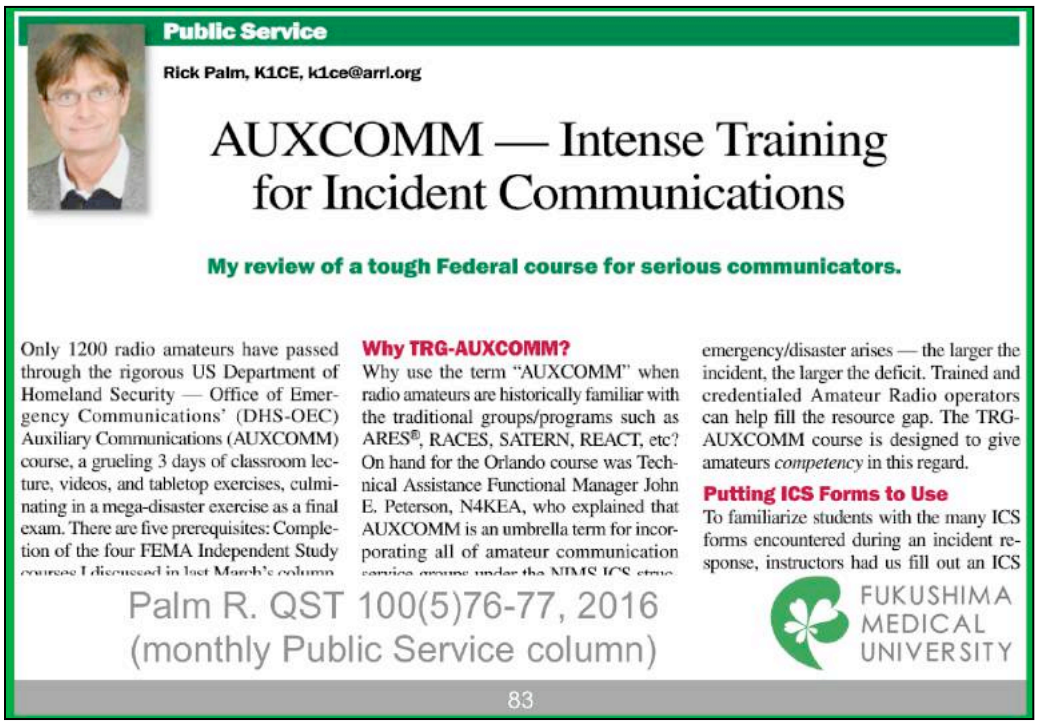


New Orleans is a popular location for tourism and conferences. Please visit w5gad.org before your next trip to the United States.

Future plans to develop Amateur Radio at FMU are proceeding with the help of Dr. Naohito Kuroda, JA7NME, and Dr. Shinya Takase, JP7FSO.

Fukushima Medical University

Later this year, the Office of International Cooperation will move to the top floor of a new building on the FMU campus. Our office space will include a well-equipped conference room that will comfortably seat 20 people, and a library, which will include my collection of QST magazines. It should be perfect for Amateur Radio clubs that are earnest about emergency communications.



Public Service

Rick Palm, K1CE, k1ce@arrl.org

AUXCOMM — Intense Training for Incident Communications

My review of a tough Federal course for serious communicators.

Only 1200 radio amateurs have passed through the rigorous US Department of Homeland Security — Office of Emergency Communications' (DHS-OEC) Auxiliary Communications (AUXCOMM) course, a grueling 3 days of classroom lecture, videos, and tabletop exercises, culminating in a mega-disaster exercise as a final exam. There are five prerequisites: Completion of the four FEMA Independent Study courses I discussed in last March's column

Why TRG-AUXCOMM?

Why use the term "AUXCOMM" when radio amateurs are historically familiar with the traditional groups/programs such as ARES®, RACES, SATERN, REACT, etc? On hand for the Orlando course was Technical Assistance Functional Manager John E. Peterson, N4KEA, who explained that AUXCOMM is an umbrella term for incorporating all of amateur communication service groups under the NIMS ICS struc-

emergency/disaster arises — the larger the incident, the larger the deficit. Trained and credentialed Amateur Radio operators can help fill the resource gap. The TRG-AUXCOMM course is designed to give amateurs *competency* in this regard.

Putting ICS Forms to Use

To familiarize students with the many ICS forms encountered during an incident response, instructors had us fill out an ICS

Palm R. QST 100(5)76-77, 2016
(monthly Public Service column)

FUKUSHIMA MEDICAL UNIVERSITY

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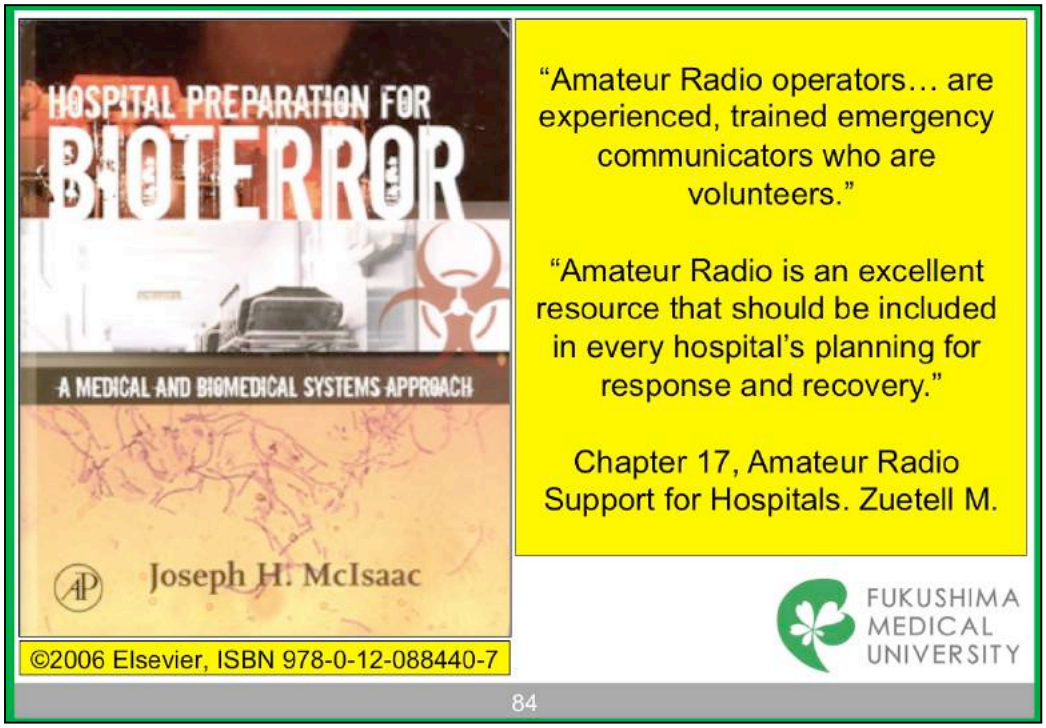
One of the most important features in QST is the monthly public service column, written by Rick Palm, K1CE, who is an emergency and critical care nurse.



I hope to include other useful material in the library as well, such as this book, Hospital Preparation for Bioterror, which includes a chapter on Amateur Radio.

- Disaster telecommunications: bottlenecks, breakthroughs, and the Amateur Radio Service. Nollet KE, Kayser RP. *Transfusion* 2003, 43(9s): 154a.
- Emergency volunteers extraordinaire. Nollet KE. *CBBS Today, Journal of the California Blood Bank Society* 2003, 21(2): 18-20.
- Shortwave radio? In the Internet age? Nollet KE. *Journal of Medical English Education* 2010, 9(2): 89-93.
- Reflections on disaster management. Nollet KE. *CBBS Today, Journal of the California Blood Bank Society* 2012, 30(5).
- Co-authors of a lifetime. Nollet KE. *Transfusion and Apheresis Science* 2013; 49(3): 376-377.
- When all else fails: 21st century Amateur Radio as an emergency communications medium. Nollet KE, Ohto H. *Transfusion and Apheresis Science* 2013; 49(3): 422-427.
- Transfusion under triple threat: lessons from Japan's 2011 earthquake, tsunami, and nuclear crisis. Nollet KE, Komazawa T, Ohto H. *Transfusion and Apheresis Science – IN PRESS.*

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In the meantime, you can ask for reprints of journal articles in the usual way.

As radio amateurs and as health care professionals, we can draw inspiration from the Red Cross Nurse's Creed of 1953, which says, "Wherever disaster calls, there I shall go. I ask not for whom, but only where I am needed."

Thank you for your attention.