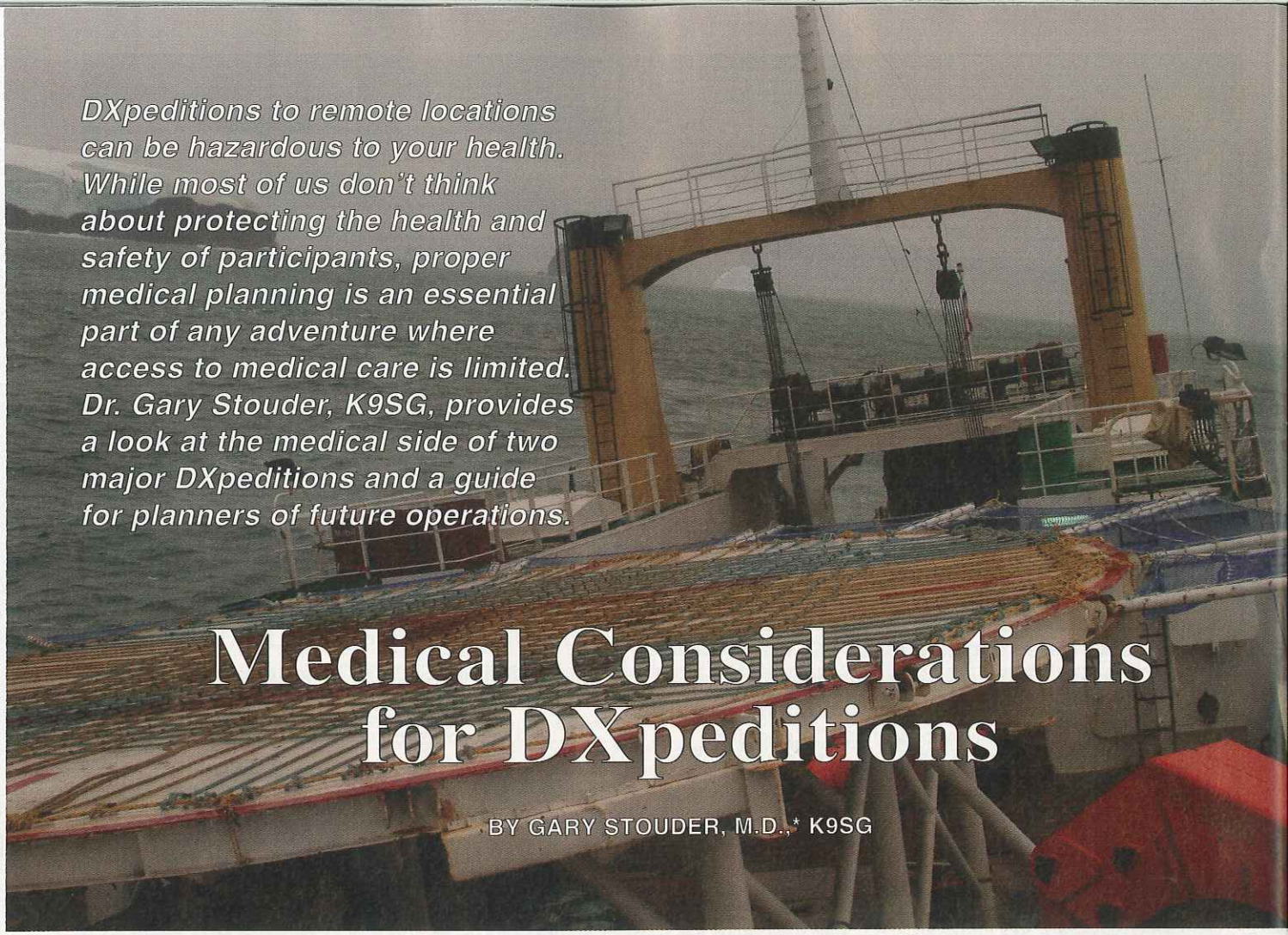


DXpeditions to remote locations can be hazardous to your health. While most of us don't think about protecting the health and safety of participants, proper medical planning is an essential part of any adventure where access to medical care is limited. Dr. Gary Stouder, K9SG, provides a look at the medical side of two major DXpeditions and a guide for planners of future operations.

Medical Considerations for DXpeditions

BY GARY STOUDER, M.D.,* K9SG

I was the medical officer for the Peter I (3YØX) and Desecheo (K5D) DXpeditions and would like to share my experiences with fellow hams to give everyone an understanding of what goes on behind the scenes to keep a team healthy and improve the overall outcome of a DXpedition. I have been a family physician for 30 years and have done everything from delivering babies to sitting with elderly, dying patients. Being the medical officer for a DXpedition was a new and challenging experience for me, and hopefully some of the things I learned will be helpful to anyone providing medical services for future DXpeditions or similar adventure trips.

Before the Peter I trip, I read several books documenting specific Antarctic injuries, illnesses, and causes of death over the last 30 years. I had several discussions with Ralph Fedor, KØIR, since he had past experiences with medical problems on Peter I and other islands located in the Southern Ocean. I even had phone conversations with Antarctic medical leaders from two different countries to get additional insight into medical conditions that I should prepare for. After getting wise counsel from these sources it became obvious that identifying and managing risks that lead to injuries and reducing excessive physical exertion for participants who are "out of shape" would do more to improve the health of team members than treating random serious ailments that might occur in remote and difficult environments. This led to a five-step plan that methodically looks at different aspects of the trip with the goal of improving health and reducing risks during the trip.

Five things to look at when planning a DXpedition:

1. Health issues of individuals and the group as a whole
2. Travel issues to and from the site
3. Deployment issues and site setup
4. Environmental issues and medical care at the site
5. Travel time to a hospital

I would like to discuss each of these items and how I used them to try to reduce injuries and make an educated guess about what medical supplies and skills would be needed on two very different DXpeditions. Finally, I will discuss the medical problems that were actually encountered on these two DXpeditions and see how this method of planning helped make these trips more successful.

*e-mail: <k9sg@arrl.net>

↑ *Photo A– The deck of the Dap Mares, the ship that transported the 3YØX team to Peter I Island, listing at 15 degrees even while the helicopter is transporting us onto the island. During the trip it listed as much as 30 degrees in larger waves. Several months later the ship sank in 300 feet of water and has never been recovered! (Photo by K9SG)*

Health Issues

Some people have the misconception that DXpedition teams consist of young, healthy operators who are conditioned athletes. The average age of ham radio operators is increasing each year and in reality, a typical DXpedition team has members ranging from around 30 to 70 years of age with an average age of about 55 to 60. Many members have medical conditions such as coronary

Photo B– Helicopter carrying a sling load from the Dap Mares to Peter I in the background, the only possible way to get onto the 500-foot tall Peter I glacier. (Photo by WØRUN)

artery disease, high blood pressure, joint replacements, chronic back pain, high cholesterol, and diabetes. People with these diseases of aging have a decreased ability to do hard physical labor and are more prone to injury and illness with moderate exertion when compared to young athletes.

I send all team members an e-mail "welcome packet" that includes a list of required immunizations, suggested age-related medical tests, and a four-page medical history form that is to be filled out and returned by e-mail ASAP. I make certain that each team member realizes this information will be confidential just like office medical records. I condense the form into a concise one-page summary of each individual's medications, allergies, medical conditions, and prior surgeries (see my own history in fig. 1). This summary is then sent back to each team member for clarification of any questions and correction of any errors. If I see a major potential problem at this point, I call the individual by phone to discuss the problem. When all forms have been returned, I summarize all of the medical conditions, allergies, and medications of all individuals into one list that gives me a good idea of the general health of the team as a group, which helps in planning what medical supplies to take on the trip. Prospective team members with medical conditions such as congestive heart

Stouder, Gary S., K9SG

DOB: 4 Sept. 1951
Physician contact information:
Family contact information:
Medications:
Lantus 24 units/day; 81 mg Aspirin/day; Actos 30 mg/day
Lipitor 20 mg/day; Synthroid125 mg/day; Nexium 40 mg daily
Allergies:
Tessalon causes severe hives
Surgeries:
Appendectomy 1962; Cholecystectomy 2001
Back Fusion L4 L5 S1 2007 R; Colon resection 1992
L Knee Scope 1987 2008
Summary:
Diabetes with occasional mild hypoglycemia, A1c 6.1
Back fusion with some pain
Chronic left knee pain and swelling
Elevated cholesterol
GERD

Fig. 1– Sample one-page medical information sheet for DXpedition participants.

failure, severe asthma, seizure disorders, poorly controlled diabetes, unstable coronary artery disease, or conditions requiring blood thinners such as Coumadin shouldn't go on remote DXpeditions and may need to be "cut" from the team for their safety and for the safety of the entire team, should a rescue or heroic measures be needed.

Travel Risks and Associated Illnesses

Travel to and from DXpedition sites may result in more injuries and stress-related illness than any other part of the trip. For example, it may be necessary to travel for five to ten days in a small ship on rough seas (see photo A), while other destinations might require long trips over unimproved roads in poor vehicles to remote destinations. Last-minute contract disputes may cause major changes in transportation plans with major increases in individual and team workload. Team members may become seasick, dehydrated, and extremely fatigued during their trip and require six to 12 hours of rest and feeding prior to deployment at their destination. I found it very important during this and the following planning stages to get information from those who had taken the same or similar trips and find out what medical problems they ran into. I also found that it was important to collaborate with team leaders on each of the planning stages so we could reduce injury risks and excessive physical stresses on team members to make our DXpedition more successful. Before each trip I summarized the expected travel problems to help plan for the medical needs of the group.

Deployment at the Operation Site

This phase can be as simple as unloading a bus or docked ship and setting up operation in a nearby building. However, if deployment was easy, chances are that the DX entity would not be high on the "Most Wanted List." With the exception of a few politically challenged entities, most DXpeditions occur in physically challenging locations. They may require dangerous Zodiac landings in big waves on rough shores, climbing wet slippery rocks while carrying heavy generators and amplifiers, or using a helicopter to unload a ship in rough seas onto an island (see photo B). Some locations don't require much effort to set up antennas and shelters, while others have sharp rocks, steep hills, 60-mph winds, tropical heat, or sub-freezing weather. Each DXpedition offers a different set of challenges, and I tried to develop an action plan to reduce or eliminate likely injuries and illnesses to keep everyone in good shape so we were ready to go when the rigs were fired up.

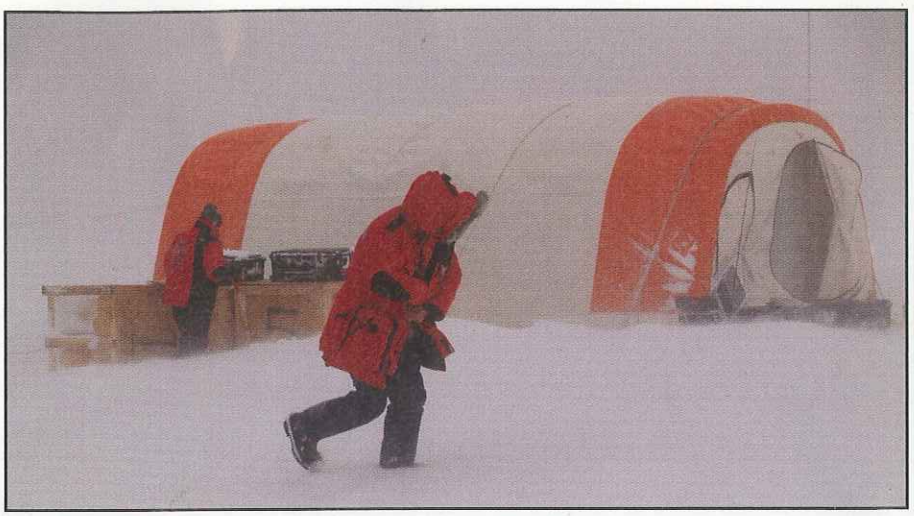


Photo C– Typical blizzard conditions on Peter I Island with "OP Tent A" in the background where conditions can go from sunny and calm to this in a few minutes. (Photo by K9SG)

Environmental Issues at the Operating Site

The operating conditions at a given site can vary considerably depending on climate, terrain, and the type of shelters used. The conditions can be hot, cold, dry, wet, windy, dusty, below sea level, right at sea level, or on high mountains. Some areas are prone to sudden dramatic weather changes that must be planned for ahead of time. There may be dangerous animals such as crocodiles, bears, poisonous snakes, or poisonous insects of which each member must be aware. Some locations will require minimizing exposure to disease-carrying vectors such as mosquitoes, other insects, and rats. Diseases such as hepatitis, malaria, typhoid, dengue fever, or cholera may be present, and it is important to disseminate proper information to team members early enough to get proper immunizations and purchase prophylactic medication to take for prevention of certain diseases.

Making the proper plans for food, clothing, and shelter are very important during the "operate, eat, sleep, fix equipment" phase of a DXpedition. Most team members will work much harder than usual, burn more than their normal amount of calories, and need increased food and water intake. The type of food taken will depend on the conditions at the site and the availability of cold storage or cooking facilities. It is extremely important to maintain a pure water supply and uncontaminated food in any environment. Good personal hygiene and elimination of fecal-oral contamination must be prevented to eliminate serious outbreaks of gastroenteritis that could severely limit team performance. Proper clothing is necessary and must be appropriate for the environment. In cold locations it is necessary to stay warm, dry, and sheltered from the wind, and in warm locations it is important to stay cool, stay out of the sun, diminish work activity, and drink up to 10 liters of fluids a day. Appropriate shelter must be planned to keep out the elements and withstand whatever nature is likely to torment the team with during the stay. This may require flexibility in certain locations that can go from calm and sunny to blizzard conditions within the time it takes to make 20 QSOs (see photo C).

Emergency Care and Minimum Transit Time to a Hospital

The time needed to get a team member to a hospital for a life-threatening emergency plays a major role in determining the type and volume of medical supplies needed for a trip. The intensity and duration of medical treatment needed increases considerably as the estimated transit time to a hospital goes up. Many conditions that are easily treated in a hospital setting can spiral out of control and cause death or long-term disability if it takes a week to get to a hospital. All team members must realize that ruptured aneurysms, bowel obstructions, crush injuries, severe infections, and vascular accidents will probably result in death. The medical officer

must be ready to give first aid for a great variety of serious medical problems and injuries, and the longer it takes to get to a hospital for continued support of these problems the greater the risk of death or disability. On the Peter I and Desecheo DXpeditions there were two or more physicians present much of the time, and it was very reassuring to have a colleague to work with on difficult medical situations. Even with this friendly helping relationship, it is important to have liability releases signed by all team members to hold each other harmless in the event life-threatening illnesses are encountered.

Any provider considering accompanying a remote DXpedition should be ACLS[1] and ATLS®[2] certified and at some point have taken a course or done extensive reading about wilderness medicine (see <www.Wilderness-Medicine.com>). A medical kit should be stocked with versatile equipment and supplies and be labeled and organized for ready use. If a physician isn't present, an appointed physician back home should be available 24 hours a day for on-call emergency consultation by satellite phone.

Applying What We Have Learned

Now let's apply each of these five planning steps for two very different DXpeditions to show how the process works. This will include the five-step analysis, developing a specific medical plan from this analysis, looking back at the actual medical problems we encountered on the trips, and then commenting on what we did right and what we could have done better. We will look at Peter I first and then Desecheo.

The Peter I DXpedition

Medical problems and risk identification:

- Team of 22 members with a mean age of 56
- Ailments of team members from most to least common: high blood pressure, elevated cholesterol, heartburn, hemorrhoids, back problems, arthritis of knees, diabetes, kidney stones, coronary artery disease, depression, vertigo, childhood polio
- One-mile Zodiac ride in cold water to our ship in the harbor at King George Island
- Falls on the frozen deck and steps of our ship while in 20- to 30-foot waves
- Loose cargo moving and injuring us while on the ship
- Seasickness during the trip

Photo D– The WØGJ surgical emergency pack made up by Glenn Johnson in an indestructible waterproof case. (Photo by WØGJ)

- Newly refurbished ship with new crew that hadn't experienced a crisis yet
- Bacterial food poisoning on the trip
- Helicopter-related injuries from engine failure, pilot error, blade injury, or sling load mismanagement
- Helicopter failure stranding us on the island without adequate supplies
- Hypothermia, frostbite, and cold-related injuries
- Depression and other psychological problems from tight quarters in cold conditions and isolation from the rest of the world
- Getting lost and isolated from the main group on the island in a blizzard
- Fire in a shelter or carbon-monoxide poisoning from heating a shelter
- Dehydration from lack of perceived thirst
- Injury from falling into a crevasse
- Sleep problems associated with long daylight hours
- Cardiac events during times of stress
- Injuries during construction of the camp and during disassembly of the camp
- Random severe medical illnesses
- Minimum six-day travel time to a hospital

Final Plans for Peter I

At the beginning of the trip we eliminated several rough days on the ship by flying to King George Island to meet the ship rather than navigating the Drake Passage. We had seminars on risk reduction and medical problems before our trip began and had other talks while we were on the ship, reinforcing safety and common sense to avoid injuries. There was repeated reinforcement on ship safety from a fire safety drill to constant reminders of holding onto rails, securing loose items, and avoiding seasickness. Prior to flying onto the island, we discussed helicopter safety and what to do in case of helicopter emergencies. We had specific discussions about what to do if someone were to be lost in a blizzard or fall into a crevasse, how to deal with shelter fires, and how to avoid frostbite and hypothermia. A decision was made by our leaders not to heat the sleeping tents to avoid any possibility of fire or carbon-monoxide poisoning while we were asleep. I requested that each team member bring an eight-week supply of personal medications in case we were stranded for an extra two weeks, and our leaders required that all team members purchase emergency medical evacuation insurance to help get us to a good hospital in case of a medical emergency.

The medical supplies for this trip weighed over 200 pounds, including a nice surgical kit prepared for us by Glenn Johnson, WØGJ and packed in his "gray container" (see photo D). I made sure that we packed enough surgical supplies to do operations, including limb amputations if necessary. We carried a fully equipped cardiac emergency kit (see photo E), and a defibrillator since some team members were older and at high risk for cardiac events. I am not a surgeon and decided ahead

of time that I would not do any open abdominal surgery and informed members to have any abdominal complaints carefully checked out ahead of time and even suggested gallbladder surgery if they had gallstones or gallbladder disease. Here is a list of just a few of the items that we took:

- 30 liters of IV fluid and IV tubing
- IV Rocephin, Flagyl, and Cipro (antibiotics for severe illnesses)
- Three large marked plastic containers full of numerous medications
- Casting, splinting, suturing, and surgical packs (in the W□GJ gray container)
- Phenergan injections for seasickness
- Versed and Fentenyl for conscious sedation (almost anesthesia)
- Foley catheters, NG (naso-gastric) tubes, and endotracheal tubes just in case
- Complete emergency cardiac kit and defibrillator
- First-aid kit with easy access to gauze, bandages, and wraps (donated by Banyan International)

Summary of the Peter I Trip

We had no fatalities and only one serious illness on the entire trip. The scopolamine patches and phenergan injections seemed to do a good job with seasickness, and nobody suffered any severe injuries from falling on the ship. My greatest fear was falling on the exceptionally cold, slick bathroom floor of the ship. Our most common ailment was hand dermatitis from the wet and cold weather that responded well to steroid cream. Several people developed bronchitis, sinusitis, insomnia, muscle strains, and many became grumpy and depressed (including me) after several days of waiting for the weather to improve so we could get on and off the island. One of the most difficult times occurred when the helicopter was grounded for three days by bad weather after getting most of the team, part of the equipment, and just a small amount of food on the island. Eight men put up the main operating tent in a 60-mph blizzard over a period of about six hours instead of two men putting it up in two hours as planned. Since many supplies were missing, we had to sleep on cold, wet floors for two nights and eat mostly cake, apple juice, hot dogs, and pork chops without plates or utensils for three days. Nobody developed frostbite or severe cold injury during our stay on the island, and I didn't even get to suture any lacerations or set any fractures. One person who thought he had hemor-

Photo E– Getting the cardiac supplies (upper left, donated by Banyan International) and free sample medications and syringes ready for the trip to Peter I. (Photo by K9SG)

rhoids actually had undiagnosed colorectal cancer that was successfully treated after returning home, but this could have been a disaster if he had gotten a bowel obstruction.

Our three major potential problems were caused by carelessness of one form or another. The most serious problem was a chemical fire in the hold of the ship that luckily occurred after we returned to the harbor at King George Island. Two very reactive chemicals were side by side in faulty containers on a shelf in the hold, and when a crew member moved one of them it broke and caused a sudden reaction with the liberation of a toxic cloud of chlorine-containing fog. This crew member tried to combat the reaction and inhaled fumes that caused severe chest pain with shortness of breath and cough. He was taken to the Chilean base hospital for oxygen and observation and recovered within 24 hours.

One non-ham traveler and some of the crew decided to take a Zodiac trip and try to land on Peter I. As they were attempting the landing, the Zodiac took on several large waves and began to founder. One crewman removed his boots and began rapidly bailing out the water. They made it back to the ship safely. We all evacuated the island early because a big storm was coming and we had to wait three days on the ship before we could return to get the last of the equipment off the island. The weather was relatively clear when a group went by helicopter to pick up the last few loads. The weather suddenly turned bad, and they were stranded on the island for about 20 hours. They fashioned a make-shift shelter, stayed calm, were in constant communication with the ship, and did not sustain any seri-

Photo F– Twenty-foot waves prevented landing on an exceptionally rocky beach on Desecheo and this picture shows why helicopters were necessary. (Photo by K9SG)

ous injury. However, the incident points out the importance of planning ahead with adequate food, clothing, and shelter for even the briefest periods of time in Antarctic environments.

I believe we did a good job of planning for this trip, and in retrospect the worst potential problems were accidents caused by some degree of carelessness. I believe the repeated discussions and drills that we had done prior to departure made people safety-conscious and prevented many accidents and injuries on this trip. It was very comforting to me to have another physician (KØIR) in the group, since we were six days from the nearest hospital (assuming good weather and no flying restrictions) and we would have been able to help each other medically and emotionally if we had dealt with a major medical problem or death on this trip.

Desecheo Island DXpedition

Medical problems and risk identification:

- 22 operators age 34 to 71 with average age of 56
- 12 officers and biologists from U.S. Fish and Wildlife Service,average age of 35
- Medical problems in the group (again in order of frequency): high blood pressure, high cholesterol, lumbar disc disease, diabetes, coronary artery disease, vertigo, esophageal cancer, total knee replacement, angina, and one person with a prior pulmonary embolus who just went off Coumadin (blood thinner)
- Reconnaissance trip before the DXpedition was extremely helpful and revealed that waves were too high for successful beach landings 80% of the time
- Decision made ahead of time to use heavy-lift helicopter for equipment and initial crew because of an exact-dates-only limited timeline for the DXpedition
- Boats and Zodiacs may be okay for re-supply and crew change if water is calm
- Rocks on beach may present a problem for any beach landings
- Sharp, wet rocks may present hazard for lacerations to hands and knees
- 800-meter walk on rocky beach carrying supplies will be extremely difficult
- Heat-related illness and sunburn in tropical climate with "winterized" hams
- Dehydration is a major risk and up to 10 liters of water per day necessary at times
- No fresh water on island, requiring transport of 450 gallons of drinking water
- Rats and monkeys may carry serious diseases and must be avoided
- Poisonous centipedes and scorpions known to be on the island
- Average daily maximum temperature around 90 degrees
- Desecheo Island had been a bombing range and has many unexploded bombs
- Emergency medical evacuation in one hour or less

The Final Plan for Desecheo

We would be using one large helicopter to bring equipment from Puerto Rico directly to our campsite to avoid waiting several days for calm waters and to avoid carrying 20,000 pounds of heavy equipment 800 yards over impossible beach terrain (see photo F). We would use boats and Zodiacs for re-supply trips, trash removal, and crew changes once camp was set up and running. All of us were required to attend unexploded ordnance school to learn about bomb safety. We planned for over one gallon per day of drinking water for each person, since it would be warm and sunny. I recommended gloves and knee pads when climbing on sharp

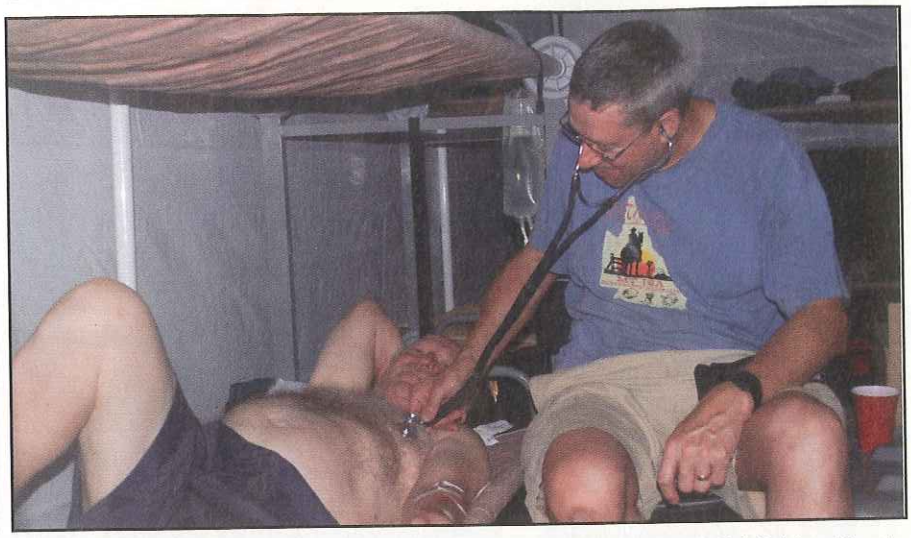


Photo G– K9SG looking after NA5U while he gets a liter of IV fluids after he fainted on Desecheo. (Photo by Billy Wolfrom of US Fish and Wildlife Service)

rocks to prevent lacerations to knees and hands, as well as taking broad-brimmed hats to keep the sun off. Most of our discussions had to do with staying out of the sun, using sunscreen, forcing fluids, and avoiding falls on sharp rocks to prevent injury.

For the first week of this stay we were going to have the luxury of having three physicians, including, KØIR, WØGJ, and me. I felt that we needed only enough emergency medication to get us through a few days for moderate injuries or illnesses that weren't severe enough to evacuate, but I didn't want to evacuate someone that I could take care of on the island, so I still packed a significant number of oral medications, IV antibiotics, and a good first-aid kit. WØGJ supplied surgical equipment, casting material, assorted splints, sutures, and some high-power pain medication in the WØGJ gray case. We still had team members with cardiac risks, and KØMD kindly arranged for the Mayo Clinic to loan out a defibrillator, since he is a cardiologist there. I replenished all of the medications in the cardiac kit that we had taken to Peter I three years earlier because they had become outdated.

Dr. Julio Medina, NP3CW, brought us several liters of IV fluids after we arrived in Puerto Rico so we wouldn't need to bring them with us. This trip didn't require the large amounts of medications that were needed for Peter I, but we still required the same amount of equipment for cardiac resuscitation, since we had some members with known coronary artery disease. Our leaders had worked out a great emergency evacuation plan after meeting several times with Dr. Carlos Rivera, N1MXB, the U.S. Coast Guard flight surgeon. He was standing by and could deliver us to a hospital within one hour of getting in touch with him, which was a huge difference from the six days it would have taken on Peter I.

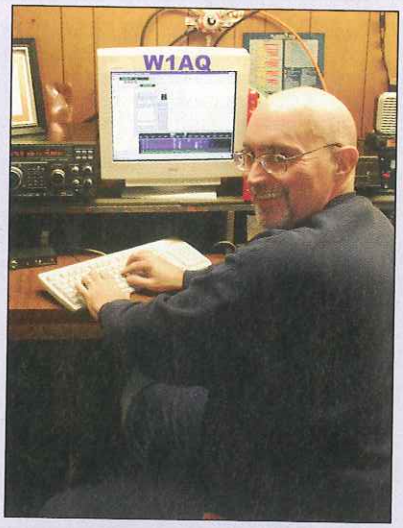
What Happened on Desecheo

Because of a changing political climate, we were unable to secure the use of the big helicopter that had been promised, and it looked as if we would need to revert to boat and Zodiac landings and carry the equipment all the way to our camp if we were able to successfully unload. However, with the help of local KP4 hams, our leaders were put in touch with a very influential person, and within 24 hours we were able to come up with helicopter transportation using much smaller helicopters. The helicopters were used to carry us and our initial payload, including heavy equipment such as 500-pound freezers full of food, generators, amplifiers, and boxes of food weighing 500 pounds right into our camp on the 10,000-square foot helicopter pad, which was the only flat and developed spot on the island. The trips were to begin early in the morning to avoid the heat but didn't actually start until early afternoon in the heat of the day because of contract difficulties.

We started so late that it was dark before we received many of our essential supplies. The remaining supplies were flown in the next day except for all of our paper plates and eating utensils, which got lost and arrived five days later. We set up our sleeping shelters in the dark and waited until the next morning to really begin working hard. All of the supplies were brought onto a large sunny, level cement area. The antennas and remaining shelters were assembled in the sun during the heat of the day 24 hours after we first arrived. Team members were very hot and fatigued, and we drank 50 gallons of water the first day, which was almost double our allotment.

It still took us two full days to set up the antennas, radios, and shelters due to the heat and steep hills. Our operating shelter and sleeping shelters were as warm as 100°F in the heat of the day, but the temperature was low enough at night to cool down and sleep comfortably. We brought in some extra drinking water and gasoline by boat and Zodiac on a very hot day about five days into the DXpedition. Several team members stayed in the sun too long without drinking enough water, even after repeated warnings by a nervous medical officer not to do this. This resulted in at least three heat-related illnesses. The worst of these resulted in a team leader fainting, falling out of a chair, and having very low blood pressure for several hours. Three team doctors converged on him within 15 seconds, beating anything we had ever seen in even the best ICUs in the United States. We administered IV fluids to help him recover more quickly, and after a few hours he was functioning normally (see photo G). It was interesting that the three people who developed the worst heat-related illnesses were taking hydrochlorothiazide (HCTZ), which is a water pill that helps lower blood pressure and probably caused some dehydration.

The most common medical ailment was "jock" itch from the constant heat and moisture. The same type of steroid cream that we used on Peter I was the most dispensed medical item on Desecheo for all of the opposite reasons. Several people fell on sharp rocks and skinned their hands and knees. One DXpedition team member received an impressive 1-KW RF burn to his finger while inadvertently acting as a live "dummy load" while doing antenna work. Another team member had a bad muscle strain from lifting a heavy load, and another had asthma with bronchitis that responded to a steroid inhaler in our medical pack. One biologist tripped and fell into a cactus, developed rashes almost daily, and developed an infected finger from a splinter that required removal of the splinter and a course of antibiotics. Another biologist developed an infected blister on his heel that had to be opened and treated with topical antimicrobial dressings (see photo H). Overall, I was much busier being a doc-



On the Cover

Our cover this month features Doug Troughton, N2RDF, operating club station W1AQ in East Providence, Rhode Island. The Associated Radio Amateurs of Southern New England (ARASNE) has been active since its founding in 1926. The clubhouse, in which the group still meets and has its station, was built in 1927. ARASNE is one of the few clubs today that has its own clubhouse on its own property. The call, originally 1AQ, has always been issued to the club and Doug, the club's former president and current Station Manager, says, "We are very proud of being five calls before Maxim," referring, of course, to W1AW, the callsign of ARRL co-founder Hiram Percy Maxim and now the ARRL station call.

The club station consists of a Yaesu FT-1000 transceiver, a Drake L4B amplifier and a Johnson KW matchbox. Outside are two 50-foot railroad signal towers. Doug says they were knocked over by the 1938 hurricane that devastated Providence, but were put back up and stand to this day. Antennas include a Mosley Classic 36 for 10, 15, and 20 meters; dipoles and inverted-Vees for 40 and 80; and a vertical for 10–80 meters, including 12, 17, and 30.

Members meet informally every Friday evening at the clubhouse to chat and operate, with a business meeting on the second Friday of each month. The club's major activity is Field Day, which it enters in the 1A class. According to Doug, W1AQ usually wins that class for New England, and he attributes the success to sticking with a single transmitter, staffed continuously, rather than trying to spread the operators around to several stations. The club also sponsors a 2-meter repeater and several members are involved with emergency communications. *(Cover photo by Larry Mulvehill, WB2ZPI)*

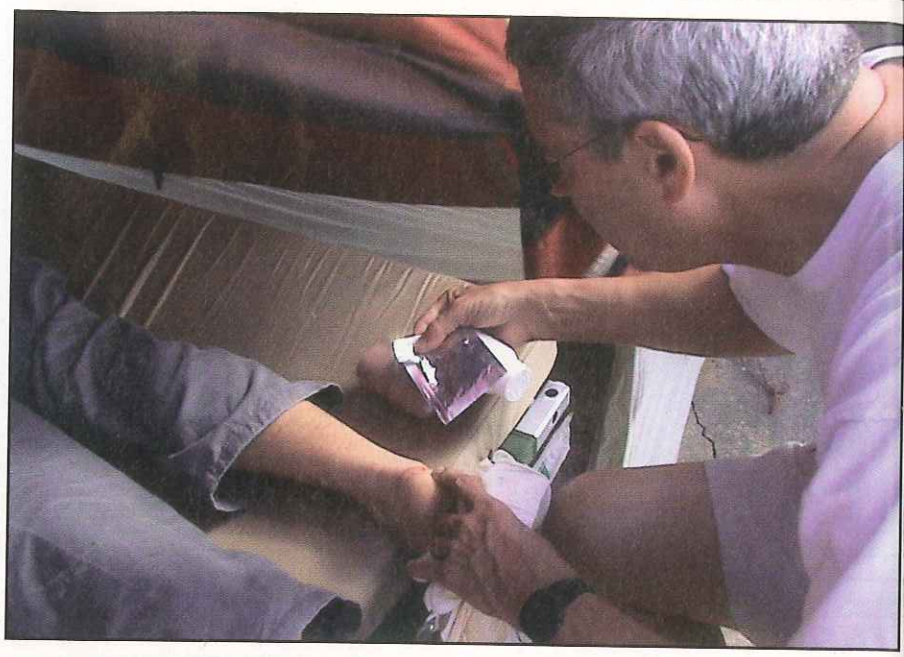


Photo H– K9SG getting supplies ready to treat an infected blister on a biologist's heel while on Desecheo. (Photo by Billy Wolfrom of US Fish and Wildlife Service)

tor on Desecheo than on Peter I, since there seemed to be many small injuries and ailments that needed attention along the way. I lost several hours of radio time because of my medical duties, which didn't seem to happen on Peter I.

In retrospect, this DXpedition would have been a disaster if our leaders hadn't found a way to transport us by helicopter. We would have had many more injuries and more heat-related illness than we did. Having IV fluids prevented an emergency Coast Guard evacuation and allowed a very important member of the team to remain active for all but a few hours. I think transporting by helicopters probably improved our final QSO count by at least 25% by giving us three to four extra operating days and likely reduced our injury and illness rate by at least 300%. I would recommend stopping diuretics with your doctor's permission to lessen the chance of heat-related illness. It would also be a good idea to make a small air-conditioned cooling shelter just large enough to quickly cool down people who have mild heat illness that is keeping them from operating.

Summary

Most people think that you just pack a few medical supplies for a DXpedition and treat ailments as they occur (if they think about the medical aspects of a DXpedition at all). As you can see, part of the success of the DXpedition comes from careful planning to decrease the chance of injuries and illnesses, as well as packing proper supplies to provide medical care for both minor and major problems. Several team members mentioned that their spouses back home were relieved to know that someone was looking out for the OM, and this may increase your chances of going on a DXpedition when you begin the bargaining process with your spouse or significant other. Quietly doing this job properly during the planning and execution of the DXpedition should eliminate many major health-related problems and injuries without team members even being aware of it.

Many thanks to my fellow "DXpedition Doctors," Glenn Johnson, WØGJ, and Ralph Fedor, KØIR, for their assistance with this article.

Notes

1. Advanced Cardiac Life Support
2. Advanced Trauma Life Support®

Your Input Requested

K9SG is planning on writing a follow-up article that deals with common medical problems such as back pain, prostate problems, diabetes, and heart failure that affect the ability to successfully operate in our aging population of ham radio operators. He is looking for input from operators who have successfully found ways to work around medical problems that have made it difficult to do serious operating or contesting. Input from physicians who have helped hams with these conditions is also welcome. Please send any helpful information or comments to <k9sg@arrl.net>