

# Fleet Public Health

Navy Environmental Health Center, Norfolk, VA



Navy Environmental and Preventive Medicine

Unit No. 2, Norfolk, VA - Unit No. 5, San Diego, CA - Unit No. 6, Pearl Harbor, HI - Unit No. 7, Sigonella, IT

Vol. 3, No. 1, January, 1998

NEPMU-7 Sigonella, IT Edition

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From the OIC of NEPMU-7:

## Environmental Compliance Overseas

The “environmental movement” began in the United States in the 1960s, launched by Rachel Carson’s book *Silent Spring*, which warned of the dangers of pesticides. Since then, concern for the environment has become a way of life in America

rather than a counter-culture movement. A recent survey showed that two-thirds of Americans consider themselves to be environmentalists. That is an impressive statistic. Whether a person agrees with the environmental concerns or not, whether someone is pro-development or pro-environment, Americans think of the United States as the world-wide leader in environmental action.

There are other countries in the world which have also taken significant steps in improving environmental quality. If you’ve visited Europe lately

you may have noticed that many places are much cleaner and greener than they were in the past. That’s because the European Union now requires all members and prospective members to pass and maintain stringent laws to clean up the air and waterways and to protect natural wildlife populations. In the greenhouse gas debates, the European Union is urging reduction in greenhouse gas emissions to 15 percent below the 1990 level by the year 2010. Japan recommends a reduction to 5 percent below 1990 levels. If adopted,

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## Preventive Medicine Aspects of Moldova MEDCEUR

Navy Environmental and Preventive Medicine Unit No. Seven (NEPMU-7) was asked to provide Preventive Medicine support for a Partnership for Peace (PFP) exercise in Moldova which took place in May 1997. This exercise was the first ever between the Moldovans and American forces. US Air Force in Europe coordinated the entire exercise. It involved an Earthquake scenario where US Army helicopters and an Air Force C-130 would airlift injured people out of the earthquake-affected areas to Medical Treatment Facilities. The Participants were members of the North Carolina National Guard, the Air Force’s Flying Ambulance Surgical Team (FAST) from Incirlik, Turkey, an Army helicopter unit from Germany and a three mem-

bered team from NEPMU-7. This team was comprised of HMCS Courtney O. Abrams, HM3 Robert F. Kabata and myself. The three of us were the only Navy participants.

Moldova is a country about the size of New Jersey. It is one of the former Soviet Republics. We arrived at Chisinau airport in Moldova, which is located toward the center of the country. The exercise was scheduled to take place two and a half-hour away in Balti. During the drive from Chisinau to Balti, we saw that Moldova was a beautiful, green country with gently sloping hills. As far as the eye can see was the green of agriculture plots planted by the local nationals. Most Moldovans have a plot of land to grow

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**From the OIC: Continued from p.1**

either of these proposals would be a major stride toward cleaning up the worldwide atmosphere.

The lesson here is that many countries which may have had poor environmental records in the past now have some strict anti-pollution laws. We need to keep abreast of these laws when conducting normal Navy business on foreign soil. It may be that regulations for use and disposal of a particular substance are different abroad than in the United States. Some substances may be entirely banned. A good source of local information is the base safety or environmental office. Check with them before conducting operations such as degreasing, painting, metal treatment, pesticide application, etc. A little bit of advance planning may save some headaches, embarrassment, or even fines, later on.



CDR Thomas Anderson, MSC, USN,  
OIC, NEPMU-7, Sigonella, IT

## From the S.E.L.

I recently had the opportunity/honor to conduct a re-enlistment ceremony for one of our sailors here at the Unit. It was an honor for me to recite the "OATH OF ENLISTMENT" to the sailor re-enlisting and it brought back memories of when I re-enlisted. "My Chief" displayed certain leadership skills that I wanted to emulate, which motivated me to want to stay in this "Canoe Club" and become part of his fraternity. I began to think. Much of what a CPO does involves inspiring and influencing others as well as taking responsibility for the Unit's productivity. These are performance indicators that measure how effective a CPO is.

Another leadership characteristic of a CPO is the active role he plays in the development of personnel around him. Today, we call it mentorship, and "my Chief" used mentoring as an effective tool to motivate, guide and enhance my career advancement, which I am very thankful for today. He encouraged me to actively seek promotional opportunities; career enhancing billets and he genuinely cared about me. This made me feel good and allowed me to do my best. That same feeling, back then, returned during the re-enlistment. Have I been performing up to "my Chief's" standards??? The motivating force that "my Chief" passed down to me, have I effectively passed it down to others??? These questions allowed me to challenge myself, and I want to challenge all of you to ask yourself similar questions.

### **OATH OF ENLISTMENT:**

I, \_\_\_\_\_ do solemnly swear (or affirm) that I will support and defend the constitution of the United States against all enemies, foreign and domestic; that I will bear true faith and allegiance to the same, and that I will obey the orders of the President of the United States and the orders of the officers appointed over me according to regulation and the Uniform Code of Military Justice. So help me God. I swear (or affirm) that I am fully aware and fully understand the conditions under which I am enlisting.

HMCS (SW/AW/FMF) Courtney O. Abrams,  
Senior Enlisted Leader, NEPMU-7

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**Think Populations**



**See Individuals**

**Moldova MEDCEUR Cont. from p. 1**

vegetables for their family and for sale. Farming is a way of life there. This was a very different picture from the snow-covered grounds I saw in the photographs taken during the pre-site survey, which was done in February 1997 by LT Jeff Bush.

The NEPMU-7 team was part of the Advance (ADVON) team. Our job was to ensure adequate and safe food service was available to US personnel and the Moldovan Army's barracks were up to our habitability standards. During the pre-site survey, the details of food service were not worked out but a decision was made to supply approved-source-bottled water, available at the local stores. The ADVON team was housed at the military hotel in Baltic. The NEPMU-7 team shared a large room and one shower. Water was limited and several days we had to dip out of a bucket to have our baths. It definitely was not any sort of starred hotel. However the warmth of the staff made up for the lack of amenities.

The next morning we were asked by the Task Force Commander to make food service a priority but the Moldovans had a different agenda for the ADVON team. All of us had to visit the exercise sites and fly in a Moldovan helicopter. This was an experience. Try flying in a helicopter with the gas tank right next to your seat with no safety belts or hearing protection. We were taken to two airfields where the airlifts would occur, but not to the food service facility or the barracks. This we were told was scheduled for the next day. The next morning we inspected the barracks, which were in the process of being painted with oil-based paint. The vapors were very strong and overpowering. It appeared to us that there was no way to get rid of the vapors before the FAST team would arrive the next morning. The barracks were definitely not in any condition to move approximately 80 people into them. They were instructed to ventilate the barracks by opening all windows and placing fans to circulate the air and allow for quicker drying of the paint. Construction was also still ongoing. The Moldovans surprised us by working all night. Before the FAST team and the National guards arrived, the barracks were in excellent condi-

tion. There was still the presence of organic vapors but not as strong as it was the previous evening. The bathroom had been renovated and there were porcelain toilets instead of the holes in the floor that used to be the toilets.

Finally we were taken to the food preparation area. I finally understood why we were not taken there before. The Moldovans were busy cleaning. Upon inspecting the facility, my recommendation to the Joint Task Force Commander was that it was unsatisfactory. Some of the equipment was in disrepair and encrusted with old dirt; drains were backed up and slugs were crawling on the floor. Since this was the only facility the Joint Task force personnel could eat from, it had to get cleared before the Moldovans could prepare our dinner that evening. Otherwise, we would be using the limited quantities of MREs the FAST team had brought from Turkey. The facility could not be cleared in its present condition, so I recommended to the Moldovan Food Service Officer, via an interpreter, of all the necessary cleanup and sanitizing procedures needed to be done before they could begin to prepare our evening meal. I was told to reinspect in three hours. HMCS Abrams and myself returned in the specified time and we were amazed. The scent of bleach was everywhere, all the equipment were gleaming and the floor was spotless as much as a broken concrete floor can be spotless. It was a wonderful surprise. We immediately cleared the facility for food preparation, especially after we found out all the food handlers were trained in basic Food Service Sanitation. However, there was one exception that I insisted on and that was in the principles of Hazard Analysis Critical Control Point (HACCP). Since all the refrigerators were not working, I asked that all fresh produce and meats be bought just before meal preparation, prepared, and served immediately and that leftover food be disposed of after the meals. To ensure they were complying with this recommendation, I asked to accompany the Food Service Officer during one of their trips to the local markets and meat store. Hours before dinner, we

went food shopping. First, we went to the produce stores and bought all the fresh produce and then we went to the meat store where we purchased all the meats for the evening meal. All meats were placed in coolers and transported to the kitchen where they were promptly prepared and served. The Moldovans stuck to this principle and it was our saving grace from having a massive food borne illness outbreak. I also asked to return during dinner preparation and was given approval by the Moldovan Food Service Officer. When I returned later, I found all food handlers were wearing hairnets and were practicing good hygiene procedures. I was impressed. These people did not have the high technology equipment we are used to, but by practicing basic personal hygiene and cleanliness they were able to prevent a foodborne illness outbreak.

With the food problem solved, only maintenance inspections were necessary to ensure the food was prepared and served safely. Daily inspections of the food preparation areas accomplished this. However, all of our problems were not solved. We were having problems in obtaining the approved-source water identified during the pre-site survey. This particular brand of water was not available at any of the local stores. With no approved-source water and abundant well water untested for potability, we had to use two untested brands of water. HM3 Kabata conducted several bacteriological tests with negative results. The brands of water were subsequently cleared for use but both were carbonated water and were not appreciated by the US personnel. Unfortunately, all the other available brands of water were carbonated. Natural water was unavailable. We did not test the well water because the Moldovans were still using DEET for pesticide application and our lab capabilities were limited to bacteriological testing. There was no way we could test for pesticides with our limited capabilities, so I made decision not to use the well water. The Moldovan Army tried to obtain uncarbonated water by having a local water plant change their process, deleting the carbonation. The resulting water tested positive for coliform bacteria and all personnel were instructed to abstain from drinking this water. Several

**Continued on p. 8**

## Create your own Good Lab Results

Remember the interesting case history that eluded you because the microbiology lab messed up? You know – the first case of cholera in Topeka, Kansas since ... Who knows when? Everything fit. The patient had traveled to Peru during an outbreak and had recklessly partaken of the local cuisine. The resulting watery diarrhea on his return dehydrated him to a dangerous degree. You just knew he had cholera, and submitted specimens to the lab, which would confirm your diagnosis. However, that's where the laboratory let you down. All the specimens you sent came back "negative for enteric pathogens," and you were left without anything to publish. Since that time, whenever you get the chance to say something bad about the lab to your colleagues, you don't miss the opportunity.

Scenarios similar to this occur all the time, and often it is not the laboratory but rather the care provider who is responsible for the poor results. In many cases, the clinician can greatly influence the outcome of laboratory testing. Physicians often misunderstand their laboratories' abilities to perform the testing which will allow for the confirmation of their clinical diagnoses. The keys here are "knowledge" and "communication" – knowledge of how the laboratory functions and communication to ensure that everything is done properly to obtain reliable answers.

Amazingly few physicians really understand the limitations of their local laboratories. Often they expect that once a specimen leaves their hands enroute to testing, the only thing necessary is to await results. For the routine sample this attitude may be sufficient, but for important samples, such as

in our example, it is hardly enough. The problem is that no microbiology laboratory, no matter how well equipped, can perform the testing to ensure diagnosis of all of the possible infectious organisms in any given specimen. Indeed, the tests that are performed are limited in terms of their relative abilities to support the clinician's impression. This is where a little understanding and communication can play a big part in the laboratory diagnosis.

In the modern era of funding and personnel cuts, laboratories are not immune. In fact, since they are often considered expensive cost centers, they are at the front of the line when the hard decisions are made. As money and labor become less and less available, microbiology laboratories must decide on a cost/benefit basis what tests to perform. In other words, if a disease is rarely seen in a given location, the testing to diagnose it may be eliminated in favor of testing which gives a higher likelihood of being useful. Take for instance the case in point. How often is cholera seen in Topeka? Not often. The genus *Vibrio*, of which the pathogen is a member, consists of a large number of salt-water bacteria, which can easily be distinguished using a certain differential medium called TCBS. In places where cholera and the other *Vibrio* species are seen, such as along the seacoast, use of this medium is often standard for fecal specimens. In a place like Topeka, it may not normally be used. Even so, many laboratories have the capability to expand their testing (or refer specimens to laboratories which can perform unusual tests) if the circumstances dictate. Here's where communication plays a big part. In this case did you, the physician, bother to call the microbiologist and let him know that you were thinking of cholera? If not, you rather than the lab, are responsible for the poor outcome.

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## NEPMU-2 Deploys to the Caribbean

Navy Environmental and Preventive Medicine Unit #2 participated in a humanitarian assistance deployment to St. Lucia, West Indies, 19-26 July 97. Members of the deployment team included CDR Nancy Von Tersch, NC, USNR-R, (Health Promotion), LTJG Mary Jean Burkes, MSC, USNR, (Environmental Health) and the team leader, CDR Mike DeJaeger, MSC, USN, (Industrial Hygiene). The deployment was funded by United States Atlantic Command (USACOM) to provide "hands on" training and equipment in support of the St. Lucia Minister of Health's Preventive Medicine Programs.

The NEPMU-2 team had arranged a site visit in March of 1997 with the Health Minister's representatives, to discuss the various preventive medicine areas in which we could provide assistance. As a result of the site visit, an agenda was finalized. A workshop specifically addressing three preventive medicine areas: Health Promotion, Environmental Health and Industrial Hygiene was scheduled. A four-day workshop was planned for the St. Lucia Ministry of Health

representatives. Day 1: Set up the classrooms and equipment in preparation for training. Days 2-4: NEPMU-2 team to conduct classroom training. Day 5: NEPMU-2 team and Sr. Lucia Ministry of Health representatives worked together to perform field risk assessments utilizing the equipment and classroom training to complete the evaluations at various St. Lucia sites.

There are many lessons learned from our deployment to St. Lucia. Planning and logistics are paramount. Ensure you have planned every small detail of your trip, training workshop, audio visual support, transportation, accommodations, and other miscellaneous items. Site visits before your actual trip are important for many reasons. One item of primary importance is face to face contact with the local representatives. Also important is understanding the layout of the area, transportation system and developing a communication network. Management of this program will shift from U.S. Atlantic Command to U.S. South Command this fiscal year. NEPMU-2 looks forward to future participation in this program.

CDR M. J. DeJaeger, MSC, USN  
Industrial Hygiene Department  
NEPMU-2

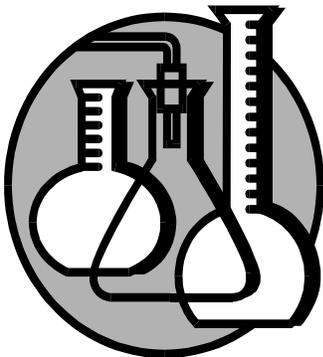


**Create...Lab Results Cont. from p. 4**

Poor laboratory results can often be attributed to one or more common errors. First, does the specimen taken truly represent the disease process? Second, was the specimen submitted to the lab in a timely fashion, or if not, was an effort made to properly preserve it? Third, was the proper testing requested in order that the correct processing would be ensured? Fourth, if the physician was considering something in particular in his differential, especially something unusual, was this fact communicated to the testing personnel?

It comes down to this. The clinician must know his laboratory well and have good communications with its key personnel. A basic understanding of the limitations of the tests requested and a knowledge of exactly what standard tests are performed for any given specimen are critical. If the procedure required is not on the standard menu, communication becomes the bridge by which the health care provider can get the excellent laboratory results he expects.

**CDR Harvey J. Adkins, MSC, USN**  
**Head, Laboratory Department,**  
**NEPMU-7**



## Microbiology Down Under

Providing clinical microbiology support in a deployed environment is always logistically challenging, especially when dealing with diseases endemic to specific areas of Australia. This challenge was met head on during Operation Tandem Thrust when the Deployed Public Health Laboratory (DPHL) included LT Marshall Monteville, Microbiologist, and HM1 Michael Humberstone an Advanced Laboratory Technician on the team. These two individuals were in charge of all the microbiology testing for the entire operation. This testing included bacteriology, serology, parasitology, virology, and limited mycology. The laboratory received approximately 150 various specimens throughout the operation. Identification of organisms ranged from *Taenia saginata* (beef tapeworm) to *Neisseria gonorrhoeae*.

One of the major concerns of the DPHL was the potential for a large outbreak of the Ross River Virus Disease (RRVD) which inflicts severe debilitating joint pain on its victims. Another concern was the potential for people being infected by Barmah Forest virus. For this reason, LT Monteville traveled to the Institute of Clinical Pathology and Medical Research (ICPMR) located at Westmead Hospital in Sydney, Australia prior to the start of the exercise to train on new protocols using enzyme-linked immunosorbent assay (ELISA) technology. Taught by Linda Hueston, one of the most knowledgeable arbovirologists in Australia, LT Monteville became proficient in testing for IgG and IgM seroconversions for both Ross River and Barmah Forest virus.

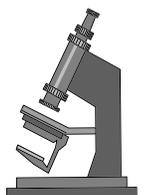
This training was put to good use shortly after arriving to Shoalwater Bay Training Area. The microbiology section received blood specimens from ten patients within the first week of setting up the laboratory to rule out RRVD. Prior to working up patient specimens, it was important to determine if the protocols would work identically under the high temperatures and humidity found in the field condi-

tions as they had in a controlled laboratory environment. A planned correlation study was quickly initiated to test 160 control sera brought from Westmead Hospital. The test showed greater than 99% correlation when compared to the results obtained at the ICPMR. The patient specimens were then tested and the DPHL had the honor of confirming cases of RRVD for the first time under field conditions.

There was a great concern at this point because the bulk of the operational forces had not yet arrived and there were already two confirmed cases of RRVD. Personal protective measures such as mosquito nets, permethrin treated uniforms, and insect repellent became the focus of attention. Stressing preventive measures in turn limited the number of confirmed clinical RRVD cases throughout the deployment to six. Out of these six cases, there were two live viral isolates recovered by the arbovirology laboratory at Westmead Hospital. The DPHL was especially delighted with this finding because these were the first two Ross River viral isolates in all of Australia this year. Viral load, antibody response rate, and other various tests are being run using sera from two of the infected patients who have volunteered to help in the study. DNA tests are also being run on the viral isolates in order to genetically map any type of mutations when compared with the previous strains encountered over the years.

The study was still underway after returning from Tandem Thrust 1997. The Microbiology Department at NEPMU-6 continued to test Sailors, Marines, and Soldiers who returned home and later developed symptoms of RRVD. All of the data gathered by epidemiology, entomology, and microbiology will hopefully give us a better understanding of the disease transmission as well as the rate of clinical to subclinical infection.

**LT Monteville, MSC, USN**  
**Microbiology Department,**  
**NEPMU-6**



CIHL CHAT:**DETERMINATION OF  
ASBESTOS IN FLOOR TILES**

**D**etermining if asbestos exists in floor tiles is a recurring topic that our customers ask us about. At one time, floor tiles were manufactured with up to 30% asbestos in a vinyl polymer matrix. Over the years, the proportion of asbestos has been reduced and tiles manufactured today do not contain any asbestos. Therefore, when floor tiles are submitted to the laboratory for analysis, the asbestos content may vary widely. The tile may contain from about 3% to 30%, or the tile may contain no asbestos at all.

Some laboratories have difficulty analyzing floor tiles because the tile matrix does not dissolve or break up easily. Additionally, because the fibers are often very fine, it becomes difficult to isolate them from the non-fibrous components tile for identification using polarized light microscopy (PLM). This problem has led many laboratories to recommend that samples found to be asbestos-free by PLM also be analyzed by transmission electron microscopy (TEM) to ensure that the sample indeed does not contain asbestos.

When analyzing floor tiles, the tile should be broken by hand to expose a newly fractured cross sectional surface. This cross section is examined using a stereomicroscope for the presence of visible fibers. If fibers are observed, they can be removed for identification by PLM. If no fibers are observed, several more pieces of tile should be broken and examined. If no fibers are observed in any of these pieces, they (the broken cross sectional areas) should be examined again for "suspicious" areas where it looks like fibers may exist below the surface of the sample. Small pieces from these areas are examined for asbestos using PLM.

If the presence or absence of asbestos cannot be resolved after examining the sample as described above, portions of the tile can be removed and treated with a suitable solvent to try to break up the matrix and isolate fibers. The recommended solvents are amyl acetate and tetrahydrofuran (THF). These solvents are flammable and have OSHA permissible exposure limits: amyl acetate - 100 to 200 PPM (depending on the isomer), and THF - 200 PPM. The samples should be examined using a solvent hood, or an asbestos hood equipped with a charcoal filter so the analyst is not exposed to the solvent. Our laboratory does not use solvents to treat tiles because they often turn the sample into a gummy mess from which the fibers are impossible to isolate, and the THF has a very nasty smell.

We use a procedure adapted from the Chatfield Method, which is a method developed by Dr. Eric Chatfield for analysis of floor tiles by TEM. Using a clean scalpel, thin layers are shaved, about 0.5 to 1.0 gram, from a cross section of the tile by cutting perpendicular to the plane of the tile. We are careful to avoid taking any mastic from the underside of the tile when we do this.

The shavings are placed into a porcelain crucible, covered

**Continued on p. 8**

**September '97 – Agricultural  
Washdown in Rota, Spain**

**W**e are all familiar with the recruiting commercials for the various armed services. Featuring jets zooming through the sky, ships cruising at high speed to face the enemy and tanks bounding across rough terrain at break-neck speeds. These advertisements appeal to people's sense of adventure and being part of the action. However, those of us in uniform are also aware that these scenes are just part of the story.

Once that helicopter has dropped off its load of supplies to the dug-in Marine battalion and returns to base, it's time to get the bird cleaned up. The same holds true for those tanks and wheeled vehicles that we love to watch. After they have finished weeks of maneuvering through the mud and snow, there is clean-up work to be done. This cleaning is vital to the preventive maintenance of the equipment, ensuring their crews can keep their equipment in combat ready shape. But cleaning is also important to another kind of PM, preventive medicine, especially if the vehicles and equipment in question are returning from foreign soil.

NEPMU-7 personnel recently assisted the 2<sup>nd</sup> Force Service Support Group in conducting USDA agricultural inspections at Rota, Spain. These washdown operations are observed by USDA-approved inspectors, often Navy entomologists and their assistants. They are held whenever US naval forces return from overseas deployments; washdowns are important in keeping a variety of troublesome organisms out of the United States.

Originally known as De-snails, washdowns were initially performed to prevent damaging snails and slugs from entering the U.S., where they could damage or destroy crops. As the practice developed over the years, the focus moved away from just mollusk pests. According to one instructional video used to train washdown inspectors several unwanted and damaging plant and insect species have been introduced into the U.S, due to improper inspections or lack of inspection. Hundreds of millions of dollars have also been wasted due to lost crops.

Soil caked on vehicle wheels, undercarriages and elsewhere in the chassis can harbor organisms such as parasites, insects, seeds of certain plant species, bacteria and even viruses. Stagnant water can also provide a temporary home for pests in transit from their native habitats into ecologies in the United

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**Agricultural Washdown...** **Continued from p. 6**  
States.

Organization plays a big part in maximizing success in washdown operations. A good plan to follow is listed below:

- 1) Vehicles to be washed ashore are taken ashore, all others remain aboard ship.
- 2) Dirty vehicles have their mobile equipment removed.
- 3) Both vehicle and mobile equipment are cleaned.
- 4) Vehicles and equipment are thoroughly inspected.
- 5) Cleaned vehicle and equipment are tagged; unclean items/vehicles are cleaned again. And inspected again.
- 6) Cleaned equipment is returned to a clean, designated vehicle.
- 7) Vehicles that were taken ashore for cleaning are returned to the ship.

Wheeled vehicles are brought ashore and their mobile loads (canvases, pioneer tools and other equipment) are unloaded for cleaning, separate from the vehicles. The vehicles are vacuumed thoroughly to remove as much dirt and debris from the interior as possible. Once this is accomplished, the vehicles are moved to the washrack, a ramp that allows the undercarriage to be thoroughly cleaned with water from high-pressure hoses. Other bulk equipment such as generators, water buffaloes and cargo trailers must also undergo washdown except that this equipment must be thoroughly washed and inspected without mounting the washrack.

While the washrack crews are busy with the vehicles and other bulk equipment like the generators, the mobile load crews are hard at work cleaning vehicle mobile loads. Canvases and tarps are swept down. Camouflage nets must be checked and twigs, leaves, seeds and sticks must be removed. All other equipment like axes, shovels and picks must also be clean before they can receive an inspector's approval.

Tracked vehicles like the armored assault vehicles and tanks are treated similarly. The decision whether or not to bring these vehicles ashore depends on which method best suits the operation. In this washdown, the tanks remained aboard ship while the AAVs deployed ashore for cleaning.

Inspectors should provide a detailed brief to washdown hose crews and other cleaning personnel as to the standards they are expected to attain. These briefings should also cover any trouble areas that crews should concentrate upon during cleaning. Attention to detail and the cooperation of the cleaning crews are invaluable in making things happen. Remember that a well-briefed cleaning crew is more motivated and better able to meet the standards inspectors expect of them than a crew that has not been briefed.

Aboard ship, there are the aircraft and the ships themselves to inspect. Inspectors should coordinate with the ships to get

a letter of certification of uncontaminated spaces. This letter delineates all the areas that the ship's command declares have not been contaminated by foreign soil or organisms. It is then up to the inspector whether or not he or she will inspect the areas declared contamination-free. An inspector's working relationship with the vessel in question and the ship's reputation for willingness to clean to standards will greatly influence the decision to either inspect all the ship's spaces or to rely on a few random spot checks. Areas of particular concern aboard ship include vehicle holds, flight decks and well decks where heavier vehicles such as tanks are often stored while the ship is under way.

On the flight deck, inspectors will be happy to discover that properly maintaining aircraft requires an extremely high level of cleanliness. Thus, these craft are often close to final standards by the time the ship pulls into port to download the other vehicles and equipment, which brings up another key to success in these operations. The Marines and Sailors of the amphibious readiness group (ARG) we recently inspected had made good use of their time underway to the washdown point. They had cleaned a great deal of their equipment aboard ship before arriving at Rota; this initiative alone ensured that things went much smoother once the ships tied up to the pier.

It is important to note that the facilities for washdown at Rota are well set up for this type of activity. There is ample water, washracks are in place and there is also plenty of parking for both dirty and clean vehicles. In other ports, where washdown operations are not the norm, these logistical items would have to be considered well in advance of the actual washdown. Once these items have been taken care of, work organization, attention to detail, communication, and cooperation between the wash crews and the inspectors are all important to making a washdown happen in a timely manner. After inspectors and wash crews know their respective roles and proper equipment has been provided, everyone can get down to completing the mission. The mission, of course, is to remove all of the unwanted guests that would otherwise accompany our Sailors and Marines back to the States.

**ENS Daron Patton, MSC, USNR**  
**Environmental Health Department**  
**NEPMU-7**

**NOTICE!!**

**NOTICE!!**

**NOTICE!!**

**NOTICE!!**

**NOTICE!!**

**NEPMU-6, Pearl Harbor has  
a new e-mail address  
for the Unit.**

**It is:**

**nepmu6@nepmu6.med.navy.mil  
(see page 2, column 3)**

# CPS STUDY

The anticipated use of chemical, biological, and radiological (CBR) weapons against naval forces has prompted the need to provide effective protection for personnel, and vital designated ship spaces aboard combatant vessels. The Navy Shipboard Collective Protection System (CPS) provides CBR protection to designated shipboard zones. CPS is an integral component of the ship's ventilation supply and exhaust systems. CPS consists of two types of protection zones aboard ship: Total Protection (TP) and Limited Protection (LP). TP zones are designated to protect against CBR contaminants and are pressurized to allow ship's personnel to carry out normal duties without personal protective equipment. LP zones are not pressurized and are limited to machinery spaces, and do not provide gas protection. Pressurized zones generally

operate at two inches of pressure greater than sea level.

Several complaints have arisen on CPS ships regarding the high incidence of respiratory illness. Concerns from surface ship commanders of (DDG 51) class destroyers and NAVSEA has prompted a study to look at indoor air quality within the shipboard environment

Navy Environmental Preventive Medicine Unit 2 has been asked to conduct this study. This investigation concerns itself with the CPS of "Arleigh Burke" class destroyers in comparison to "Spruance" class destroyers which don't have the CPS. The study, as it applies to industrial hygiene, deals with determining the quality of air, as set forth by standards, rate of air exchange and ascertaining the presence of Microbial Volatile Organic Compounds. (MVOC). MVOC are produced during the metabolism of microorganisms such as fungi and bacteria. Most MVOC associated

with "sick building syndrome" are alcohols and ketones which have an odor threshold in the parts per billion and parts per trillion concentration ranges, and can be detected by humans in moldy environments.

Currently, NEPMU-2 has completed its investigation on two "Arleigh Burke" class destroyers. The information center, crew mess, and berthing spaces have been chosen as test sites to determine air quality aboard both classes of ship. Preventive maintenance of the collective protective system is crucial in maintaining the ship's ventilation system. A comprehensive analysis will be provided after the remaining data have been gathered and reviewed.

**LTJG T. Badar, MSC, USNR  
Industrial Hygiene Department  
NEPMU-2**

## CIHL CHAT:.... Continued from p. 6

with a lid, and dry-ashed in a muffle furnace at 450° C for 2-12 hours. We usually place several samples in the furnace and ash them overnight. The furnace is programmed to heat from room temperature to 450° C at about 5 degrees per minute so that the sample does not burn. If the tile burns, temperatures may exceed 600° C, which can alter the dispersion staining colors of the asbestos fibers.

After the tile is ashed, the residue is easily pulverized and can be examined for fibers under the stereomicroscope. Any fibers isolated can be analyzed by PLM. Make sure that any time the sample is handled or examined it is done inside an asbestos hood.

If you would like more information about analyzing tiles for asbestos, or have any comments, please contact the NEPMU-6 Pearl Harbor CIHL at (808) 474-4428, DSN 474-4428, or by e-mail: rmishika@hq.pacom.mil. Your comments are welcomed and appreciated.

**Roy M. Ishikawa, Ph.D., CIH  
CIHL Department, NEPMU-6**

## ...Moldova MEDCEUR

Continued from page 3

participants were starting to experience dehydration symptoms due to an inadequate water intake. We found that these individuals were not drinking the carbonated water although it was readily available. Fortunately, the FAST team had a few bottles of approved-source uncarbonated water, which was given to the affected individuals. The rest of us had to drink carbonated water during the entire two weeks we were there. Constant monitoring ensured everyone was drinking sufficient quantities of water.

Toilet facilities at the airfield were pit latrines, which were built by the Moldovans. Their comments, after we showed them copies of the field toilets in Chapter 9, were "those are for the jungle." They offered to show us their field toilet and they built one latrine at each airfield. These facilities were excellent. Hand washing stations with soap and running water, were also provided. Lime was not available, therefore we recommended to all personnel to place a scoop of dirt after using these facilities.

Lessons learned are to approve the

food preparation facility and ensure an adequate supply of potable water is available throughout the mission. This can be done by pretesting local municipal and bottled water available on the local economy. Sample collection must be done during the pre-site survey to obtain the results before the mission. This decision must not be postponed until unit personnel are already in theater. At this point, it is too late to fix problems that could have been addressed before the mission became compromised.

This was a very interesting mission from a preventive medicine standpoint. We were faced with numerous difficulties and overcame them by using basic hygiene principles and being flexible without compromising the mission. I am proud to say that with all the difficulties encountered; we had no food or water borne illness reported during or after the mission.

**LT Rohini Suraj, MSC, USNR  
Environmental Health Dept.,  
NEPMU-7**

# Guidelines for Occupational Exposure to Tuberculosis:

It appears that there continues to be a “misinterpretation” of the CDC “Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Facilities, 1994.”

## Background:

A visiting physician conducting a follow-up interview with a “rule out TB” patient, was given a choice between a surgical mask and a HEPA filter mask before entering an isolation room. The physician, a staff member of NEPMU-5, was aware that the surgical mask provided inadequate protection for *M. tuberculosis*, and, though the HEPA filter mask was too large for her face, chose the latter.

A review of the hospital’s policy was conducted following this incident. It was discovered that the “choice” provided by the staff went against the current practice. According to the standard practice, the visiting physician should have only been presented with the surgical mask before being allowed into the isolation room, since she was not an in-house staff member, and no one was qualified to conduct fit testing. In addition to providing a “military” member with an inadequate respirator, it was discovered that non-military visitors (i.e., dependents and family members) were also provided with the surgical mask when visiting the isolation rooms. The Safety Department and the Infection Control Nurse both agreed that in order to provide the specified respirator equivalent to the one provided the staff, the visitor would have to be fit tested and counseled.

## The problem:

The language regarding respiratory protection for visitors is mentioned in three distinct passages in the guidelines.

First, under the heading of “TB isolation practices”: “The number of persons entering an isolation room should be minimal. All persons who enter an isolation room should wear respiratory protection (Section II.G; Suppl.4). The patient’s visitors should be given respirators to wear while in the isolation room, and they should be given general instructions on how to use their respirators.”

Second, under the heading of “Respiratory Protection”: “Visitors to TB patients should be given respirators to wear while in isolation rooms, and they should be given general instructions on how to use their respirators.” Under the same heading: “Surgical masks are designed to prevent the respiratory secretions of the person wearing the mask from entering the air. To reduce the expulsion of droplet nuclei into the air, patients suspected of having TB should wear surgical masks when not in TB isolation rooms.”

Third, under the heading “Implementing a Personal Respiratory Protection Program”: “Visitors to TB patients should be given respirators to wear while in isolation rooms, and they should be given general instructions on how to use their respirators.”

## The solution:

The approved respiratory protection for both staff and visitors must meet, as a minimum, the criteria established by the National Institute for Occupational Safety and Health (NIOSH). Currently, NIOSH has indicated that the N95 (N category at 95% efficiency) meets the CDC performance criteria for a tuberculosis respirator.

The guidelines specifically indicated that the PATIENT might wear the

“surgical mask.” No other personnel are indicated.

The premise that the same duty to fit test and train the “VISITOR” is incorrect. Available sizes should be made to the visitor, with instructions on the use and importance of wearing the respirator. The visitor need not be enrolled into a Respiratory Protection Program. This program is for the protection of the staff Health Care Worker. Military personnel, who are not assigned to a major Medical Treatment Facility, should be fit-tested and enrolled in a program at their own command before visiting patients at the hospital.

Mr. Josh Senter, CIH  
Consulting Industrial Hygienist  
NAVOSH Department

## Just when you think it’s Safe to Eat Out...

The U.S. Army Veterinary Command (VETCOM) now posts the Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement (also known as the “Approved Sources List”) on the Internet. The Internet address is:

“<http://inol.hcssa.amedd.army.mil/vetcom.nsf>”;

The directory will be continuously updated as changes occur, so it will be current. Following the May 1998 edition, the paper copies will not be published. Point of contact is Robert E. Kilburn, Chief, DOD Approved Sources Division, DSN 471-6547 or Commercial (210) 221-6547.

HM1 David Evans  
Environmental Health  
NEPMU-2

# Operational Preventive Medicine Course:

## A Forum for Lessons Learned

As the realization grows that prevention saves lives and dollars, interest in preventive measures in Navy medicine has grown as well. A preventive medicine course taught recently at NEPMU-5 in San Diego has established a forum for the lessons learned from major deployments, as well as a springboard for issues such as the Gulf War Syndrome and women's issues on deployment. The Operational Preventive Medicine Course (OPMC) was originally established by BUMED to insure the lessons learned from Desert Storm were not forgotten. The course has evolved over the last six years to address other deployments and exercises so that a wide variety of topics is addressed, including prevention of cold and heat injuries, communicable disease, pre-deployment planning, disease surveillance, humanitarian assistance, and industrial hygiene.

Unlike many military courses, the OPMC relies exclusively on subject matter experts rather than on pre-written lesson training guides. The result is direct exposure to both current research and historical perspectives from professionals in the medical arena who are at the forefront of preventive medicine. Invited speakers address subjects as diverse as the development of the typhoid vaccine and the status of current research on Gulf War Syndrome. In addition, a field phase provides "hands-on" instruction in vector control, water potability and field sanitation.

Although designed as a Navy course to address operational issues with the fleet and FMF, students from the Army and the Air Force have also attended the course and certain aspects of operating in the joint environment are addressed.

THE OPERATIONAL PREVENTIVE MEDICINE COURSE will be offered at the Navy Environmental and Preventive Medicine Unit No. 5, 3235 Albacore Alley, San Diego, CA 92136-5199 from 8-19 June 1998.

Instruction will identify mission critical public health concerns in operational settings, with an emphasis on planning and practical management of preventive medicine operations from pre-deployment to post-deployment.

Expert guest speakers as well as staff specialists will discuss topics such as epidemiology, international health care issues, field medical entomology, chemi-

cal/biological warfare, industrial hazards of urban warfare, lessons learned from prior armed conflicts, pre-deployment planning, post deployment after action reports, and briefing technique/scenario presentation. An overnight field exercise will also be conducted.

Navy Active Duty and reserve Medical Service Corps, Medical Corps, and Nurse Corps Officers and IDCs and PMTs E-7 are eligible to attend.

Students must provide a brief statement on how this course will benefit their current/future billet and command mission. Class size is limited to 25 students.

Students are responsible for their own travel and lodging. Contact NEPMU5 Training Department for more information at DSN: 526-7086, commercial: (619)556-7086, e-mail: kbhandler@nepmu5.med.navy.mil, or visit the NEPMU5 website and register online at <http://trout.nosc.mil/~nepmu5>.

**CAPT Elizabeth Ledbetter, MC, USN**  
Special Assistant for Fleet Health  
at 619-556-7070 or DSN 526-7070.

Think Populations



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## Looking for Information on:

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**VISIT THE NEPMU-5  
WEB SITE AT:**

<http://trout.nosc.mil/~nepmu5/>

## Navy Offers Medical Courses Online

The Naval School of Health Sciences (NSHS), Portsmouth, V.A., now offers Navy medical correspondence courses online. Standard First Aid and Preventive Medicine for Ground Forces are the first two professional development courses available worldwide on the Internet.

In a joint effort, NEHC is hosting NSHS's homepage and providing technical support for the electronic schoolhouse, which includes registration materials, course books, assignment sheets, and a catalog of Navy Medical Department courses. The address is <http://www-nehc.med.navy.mil>.

Sailors now have the choice of receiving and submitting course materials by mail or online. Successful students receive a letter of completion, and a copy is forwarded to their service record. Reservists earn retirement points.

"We are pleased to offer these courses online in keeping with the Surgeon General's goal of finding innovative ways of using technology to deliver training," said Captain Sue Flood, NC, Commanding Officer, NSHS, Portsmouth. "The Standard First Aid Course has an impact on every fleet sailor," said HMCS (SW) Deborah Greene, head of management information at NSHS, Portsmouth. "Knowledge of first aid is required for basic damage control qualifications as well as those striving for enlisted warfare specialist."

"The Preventive Medicine Course for Ground Forces is

being offered for the first time," according to HMC Judy Shuck, of the Preventive Medicine Directorate at NEHC. "The course covers maintaining sanitary water supply, food service, and waste disposal in the field, as well as prevention of heat and cold injuries and disease control. Preventive medicine is a force-multiplier, keeping the troops healthy and fit to fight," said HMC Shuck.

"We are working hard to add more courses that will help Sailors advance and further their careers. Having the courses online makes access much easier, our customers can download and print the course books anywhere in the world," said Jill Keifer, medical department correspondence course program manager at NSHS, Portsmouth.

"Ninety per cent of the students pass these courses the first time. Successful students take the course seriously and read the manual before answering the questions," said Keifer. "There's a lot of knowledge to be gained by reading the text book."

For more information contact Keifer at (757) 953-7627 or mail [nshs\\_cc@pnh10.med.navy.mil](mailto:nshs_cc@pnh10.med.navy.mil).

**Karen Murphy**  
Public Affairs Officer  
NEHC, Norfolk, VA

### New Backflow Preventer Course

The Environmental Health Department at NEPMU-2 will offer a course on potable water system cross connection and prevention of backflow, including hazards and the various means available to prevent backflow.

In the FY98 course catalogue, this was listed as a non-CANTRAC course; however, the course has recently received the CANTRAC number of B-322-0001 and CDP 336L.

The course is one half day in length and covers various aspects of cross contamination, backflow, and the associated hazards. It will also describe the different types of backflow prevention devices available, how to select an appropriate device, testing and installation requirements.

The intended audience is Engineering and Medical Department personnel involved in maintenance, treatment, storage, and surveillance of potable water. Total capacity of each class is 25 students. Dates of classes offered during FY98 are:

28 MAY 98    16 JUN 98  
07 JULY 98    29 SEP 98

Quotas can be obtained by contacting the Training Department, NEPMU-2 at DSN: 564-7671 x-338, Comm: (757) 444-7671 x-338, E-mail: [cscollins@aol.com](mailto:cscollins@aol.com) or FAX DSN:564-1191    Comm: (757) 444-1191.

**HM1 D.A.Evans**  
Environmental Health Department  
NEPMU-2

### Occupational and Preventive Medicine Workshop

"Knowledge - the Most Powerful Form of Prevention" is the theme of the 39th Navy Occupational and Preventive Medicine Workshop scheduled for San Diego, California from March 26 to April 3, 1998. The workshop, along with the Seventh Annual Health Promotion Conference and the Fifth Annual Independent Duty Hospital Corpsman Conference, will be presented at the Town and Country Resort and Convention Center in San Diego. This is the first West Coast location for the event in fifteen years. The advance program, registration and hotel reservation information will be avail-

able electronically on NAVENVIRHLTHCEN'S homepage at [www-nehc.med.navy.mil](http://www-nehc.med.navy.mil) in November 1997. To obtain a copy of the program on disc, call the NEHC workshop team at (757) 363-5508/5512 or DSN 864-5508/5512. The email address is [workshop@nehc.med.navy.mil](mailto:workshop@nehc.med.navy.mil).

A workshop information line is available at (757)363-5423. There are no registration fees for the workshop or conferences.

**Karen Murphy,**  
Public Affairs Officer  
NEHC, Norfolk, VA

## Asbestos Abatement Monitoring

When a ship requests your support for clearance sampling during an asbestos abatement project, there are many things that you can do to make your job easier. First, contact the ship via message to make sure that berthing is available if needed. Check all the equipment that you will be taking on board with you including your personal protective equipment (PPE). Are you bringing the right pump? High volume flow-pumps capable of pulling 15 liters of air per minute will cut down your sampling time and are necessary to attain the required 3850 liters of air within a reasonable time. Bring along an extra backup pump, and make sure that battery-powered pumps have a fresh charge. Do you have enough filters? Mixed cellulose ester filters (MCEF) 25mm open-face with extended cowl are the correct filters. Also bringing a phase contrast microscope can turn out

to be useful if you are far from your laboratory. It will enable you to provide quick results and recommendations to your customers. Some good references, such as OPNAVINST 5100.19C, the Industrial Hygiene Field Operations Manual (NEHC-TM91-2) and the EPA Measuring Airborne Asbestos Following An Abatement Action (EPA 600/4-85-049) provide excellent information on the sampling protocol.

Once you have arrived on board, inspect the area to ensure that the containment has been put up properly. Talk to the rip-out team members to make sure that everyone is qualified for the job, properly trained, and knows when the rip-out is going to begin and end. Prepare your gear and PPE, so that once the rip-out is complete and the containment cleaned, you can jump right into the clearance sampling. Set up a fan to provide air movement for

the aggressive sampling. On occasions we have had to bring fans with us to the ship. Collect at least 5 samples with a minimum air volume of 3850 liters each. Using your phase contrast microscope, mount and count your slides. Compare your results to the EPA limit of 0.01 fibers/cc. This limit is ten times lower than the permissible exposure limit for personal exposures set forth in OPNAVINST 5100.19C. If the concentration is higher than 0.01 fibers/cc, the containment needs to be cleaned again and another five samples be taken. If the fiber concentration is low, the containment can be taken down and the area cleared for reentry and continued use as a work space. Don't forget once you return to your office, an official report needs to be submitted to the supported command.

**HM3 Robert F. Kabata**  
Industrial Hygiene Department,  
NEPMU-7

## Notes From Operation Joint Endeavor: Part 1

From July 1996 to January 1997 two teams of Preventive Medicine personnel deployed to support Operation Joint Endeavor in Hungary, Croatia and Bosnia. This was an unusual opportunity for Navy Medicine to work with medical and support personnel from other services and foreign countries. Here are some observations and notes from this deployment, from a technicians point of view.

### ***Pest control and veterinary medicine***

Navy Medical Service Corps Officers and Preventive Medicine Technicians worked closely with Army veterinary technicians to perform or assist with a variety of missions. Our unit was called on frequently to identify spiders, snakes or other wildlife and determine their danger to humans. We couldn't spray pesticides, but we did collect mosquitoes a few times a week to determine how many and in what areas there were problems. We also got rid of wasp and bee infestations in several buildings and living areas. In addition, some dining facilities had significant bee and fly problems. Our Entomologist, LCDR Steven Rankin, made simple flying



*LT Bush collecting water samples for water chemical analysis from Kaposvar, Hungary*

insect traps by poking holes on the top of liter-sized water bottles. Then, he poured pancake syrup and water mix in the bottles to attract flying insects. These traps work well with no risk to humans or wildlife.

A few inquiries were for assistance with dogs. Many stray dogs roamed the areas, and some were cared for or even adopted by deployed personnel. This practice was discouraged and later banned by unit commanders due to the time, cost and legal hurdles in getting pets suitable for transfer to the member's permanent duty station. In addition, we worked with the Army Veterinarians and the 67<sup>th</sup> Combat Support Hospital to investigate dog bites.

Another job that was interesting and unusual had to do with Army Military Police units that were living in contracted hotels throughout Hungary, Croatia and Bosnia-Herzegovina. Prior to contract approval, preventive medicine was requested to do pre-contracting sanitation inspections to ensure proper hygiene and sanitary standards were met. Afterwards, monthly inspections were conducted to maintain standards. The enforcement of military standards in a civilian atmosphere was different, but necessary to maintain the health of the troops. Since these hotels needed the income because of a poor economy, they wanted to accommodate U.S. troops and were ready to assist the peacekeeping forces.

Environmental standards in Hungary were relatively good, but Croatia's standards were somewhat lower. Most living facilities were suitable, but the dining facilities (which were included in the contract) required more scrutiny. We had to inspect old, poorly equipped kitchens. The managers were always willing to make changes to accommodate the troops and keep their contracts. For example, we recommended the use of authorized cleansers and detergent, quicker use of leftover foods, and installation of window and door screens.

## Water

Whether it's drinking water, bathing water or swimming pools, water is a daily need. Hungarian water treatment systems were built to sanitize with very low levels of halogens (chlorine, bromine or even chloramines) because they believed that residual chemicals were potential carcinogens. So, their treated water could have acquired mild bacteria when dispensed into the water system. The bacteria were generally not life threatening to locals, but could make foreigners ill. Therefore, water supplies throughout the AOR were deemed of questionable quality and required periodic testing since illness in U.S. troops was unacceptable. Collecting and testing water samples was almost a daily task for us.

A Reverse Osmosis Water Purification Unit (ROWPU) was set up and operated in nearby Kaposvar. Army technicians ran the ROWPU, but U.S. civilians, contracted by another company, ran the bottling (bagging) unit. This was an experimental unit formed to treat and process water directly into sealed bags which were good for 30 days. Initially, we tested each batch of water produced and never had any adverse test results. After a few weeks, the chlorine residual



*The flytraps made by LCDR Rankin worked well*

decreased and bad tasting water was frequently noted, especially if the water was not stored in a cool storage area. Many of the storage areas were CONEX boxes in the hot summer sun which greatly reduced the shelf life and expected potability of the water.

An initial chemical analysis was required before all new camps were established to determine the quality of water. A particular site's, Kaposvar North, chemical analysis had been conducted when all other main camps were setup, but no records of the test results could be found. Therefore, a chemical analysis was needed. Our Environmental Health Officer, LT Bush, requested a kit from the Army laboratory in Landstuhl, Germany. He collected and tested about 20 water samples, packed them cold packs and shipped them on a MAC flight in time for the samples to arrive cold for immediate testing.

Several Air Force and Army units requested authorization to use public swimming pools, spas and baths. In addition the MWR, USO and other organizations tried to arrange the use of local swimming facilities, since the U.S. military were not authorized liberty off-base. Europeans like to frequent natural baths to relax and socialize, but these baths are not chemically treated. We inspected several of these places—unfortunately, all our bacteriological tests resulted in unacceptable levels of E. coli, which grows in warm temperatures. There was one treated swimming pool with a bath section; therefore, it was not authorized. We noted that the requests quickly disappeared as it started to get cold.

These are just a few of my observations and notes—there is more to follow in the next edition of the Fleet Public Health.

**HM1 C. D. Lemon, USN**  
**Epidemiology Department,**  
**NEPMU-6**  
 Training@nepmu6.med.navy.mil

## Welcome Aboard!

NEPMU-2

**CDR A. Bellenkes**, DUINS, University of Illinois  
**LCDR M. Malakonti**, USUHS, Prev. Med. Residency

NEPMU-5

**HM2 Stephen Carr**, BRClinic, Iwakuni, JA  
**HM2 Felicia Oglesby**, NAVHOSP, Okinawa, JA

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NONE

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**HM2 Mark Dykes**, NAS, Kingsville, TX

## Fair Winds and Following Seas!

NEPMU-2

**LTJG F. Stell**, OTS

NEPMU-5

**HN G. M. Webster**, Released from active duty

NEPMU-6

**LCDR D. Y. Shiraishi**, Third FSSG, Oakland, CA

NEPMU-7

**HMC Tony Bable**, NAVHOSP, Pensacola, FL  
**HM2 Vincent Crews**, NMC, Portsmouth, VA

# Fleet Public Health

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