

Jump on Board the World's Only Flying Eye Hospital

Ismael Cordero and Joao Carlos Langanke Pedroso

What if you can help save someone's eyesight and travel the world at the same time? The staff and volunteers of the world's only flying eye hospital do just that. Aboard a DC-10 converted into a state-of-the-art medical facility, ophthalmologists, anesthesiologists, nurses, and biomedical equipment engineers and technicians board the flying eye hospital to help developing nations provide comprehensive eye care training.

The flying eye hospital has conducted training programs in 73 countries. ORBIS is a nonprofit, humanitarian organization dedicated to saving sight and eliminating avoidable blindness worldwide.

From the Ground Up

The idea for the flying eye hospital was conceived in the mid-1970s by Dr. David Paton, a Houston ophthalmologist. During his travels around the world, he observed that the high costs of tuition, international travel, and accommodations prevent the majority of doctors and nurses in developing countries from participating in overseas training programs.

Dr. Paton's solution was a mobile teaching eye hospital. With a fully equipped airplane, American doctors trained in the latest techniques could teach doctors in developing countries their surgical knowledge and skills through hands-on training and lectures.

In 1980, a DC-8 aircraft was donated by United Airlines and converted into a modern eye hospital equipped with state-of-the-art medical equipment. It flew its first program to Panama in 1982.

In the early 1990s, it became clear that a newer, larger aircraft was needed. In 1992, with donations from three generous patrons, ORBIS purchased a wide-body DC-

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Joao Carlos Langanke Pedroso joined the ORBIS flying eye hospital as healthcare technology trainer in July 2004. Previous jobs held include Vice-President and co-founder of Brazilian Association of Clinical Engineering and Chief Clinical Engineer at Hospital de Coracao in Sao Paulo, Brazil.



An ORBIS volunteer ophthalmologist carries donated corneas to the flying eye hospital.

10, doubling the amount of space available for training and surgery. In 1994, the aging DC-8 was formally retired, and the newly renovated DC-10 took off for its inaugural mission in Beijing, China.

Facilities

The flying eye hospital facilities include a flight deck, classroom, audio-visual room, laser/examination room, conference room, operating room, sub-sterile and scrub room, recovery room, and a technical training and maintenance center.

The flight deck is perhaps the only conventional area of the flying eye hospital. Volunteer pilots from FedEx and United Airlines donate their time to fly the ORBIS aircraft to and from each country. Located in the belly of the plane, the Biomedical & Technical Training Center is used for training in the repair and maintenance of ophthalmic equipment.

Many people remain needlessly blind in developing countries because broken equipment cannot be used to restore sight. Rather than simply repairing this equipment, the two ORBIS biomedical engineers teach their counterparts how to repair their equipment and how to manage it properly.

The center is also used for maintenance of the flying eye hospital's equipment including lasers, operating microscope, anesthesia unit, patient monitors, phacoemulsification machines, vitrectomy machines,

and ophthalmic ultrasound units. All medical equipment is packed in shipping cases and secured with nets to the floor of the aircraft in preparation for flight.

Training and Public Awareness Program

The flying eye hospital travels to about 10 developing countries per year with a team of 25 professional employees and volunteers representing some of the world's leading eye care institutions. Together, they conduct surgical, nursing and biomedical engineering training on board the plane and at nearby hospitals. The program is customized to the needs of the host country so the length and scope of a training program varies. A typical plane program ranges from 2 to 4 weeks. Only about 4 surgeries per day are performed since the

emphasis of the program is on teaching and not on volume of surgeries.

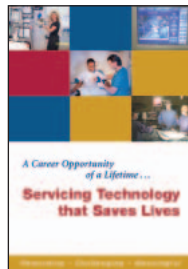
The impact of an ORBIS training program is felt long after the airplane departs. The skills, equipment, resources, and motivation left behind dramatically increase local capacities to prevent and cure blindness. Doctors, nurses, and engineers trained during an ORBIS program go on to train their peers, multiplying the program's impact many times over. All programs are followed up with surgical case reviews and most programs are followed up with hospital based training programs. The plane is a powerful symbol of cross-cultural humanitarian partnership, as well as the life-affirming possibilities of aviation.

For more information about the Flying Eye Hospital, visit www.ORBIS.org. ■

Inside AAMI

Career Brochure Promotes Biomed Field

AAMI has created a new brochure to encourage more students to consider the biomedical field as a career option. The brochure is designed to help healthcare facilities, schools, biomedical societies, manufacturers, and recruiters attract more biomed to the field. If you would like to obtain copies of the brochure, please e-mail Steve Campbell, AAMI's vice president of communications, at scampbell@aami.org.



BI&T Expands Online, New Features Added

BI&T will soon be available online for the first time, enabling AAMI members to view the current issue online and search for archived articles as well. The online version of the journal includes archived articles dating back to 2002 and all current editorial content of the print version, which AAMI members will continue to receive in the mail. To access BI&T online, visit www.aami-bit.org.

Company News

Hologic Expands Intellectual Property

Hologic, Inc., provider of diagnostic imaging and digital imaging systems, has acquired Fischer Imaging Corporation's intellectual property relating to its mammography business and products. The acquisition includes rights to Fischer's SenoScan digital mammography and MammoTest stereotactic breast biopsy systems. Fischer Imaging designs, manufactures, and markets medical imaging systems for the screening and diagnosis of breast cancer.

GE Acquires Healthcare IT Provider

GE Healthcare and IDX Systems Corp. have entered into a definitive merger agreement for GE to acquire IDX, a healthcare information technology (IT) provider. The merger will create a healthcare IT vendor, offering suites of clinical, imaging, and administrative information systems. According to Vishal Wanchoo, president and CEO of GE Healthcare Information Technologies, "IDX's administrative, clinical, and imaging information systems complement GE's rich clinically-focused Centricity® information technology offerings."

Growing Hospital System Sets Goals

St. Mary's began a multimillion dollar construction project in April 2005. The expansion will add up to 78 more patient beds with space for families to stay overnight with their loved ones. Along with the expansion come increased responsibilities for a department that has been successful in managing its workload as the hospital system continues to expand. Joyce Williams, biomedical technician at St. Mary's, shares with *BI&T* some of the clinical engineering department's successes and challenges.

BI&T: What is your department's responsibilities? What's your biggest challenge?

Joyce Williams: Most of what we do is like what most other clinical or biomedical engineering department. A typical day would have about two-thirds of the technicians taking care of PMs and repairs at the off-site facilities. The days are always busy, just in varying degrees. Our biggest challenge has to do with demands on our time: keeping up with scheduled maintenance, repairs, urgent service requests, special projects, and time away for equipment service schools.

BI&T: How does your department manage its goals?

Williams: Our department goals are reviewed annually and adjusted accordingly. Some are always in place from year-to-year such as: reduce the number of repeat service calls to a particular piece of equipment, increase cost savings on parts and repairs by using sources other than the original equipment manufacturer. Continuing education is also encouraged and the hospital assists with tuition reimbursement. Probably the most important goal has to do with making sure that administration and the equipment users understand what we do and value our services. This means being present at discussions where we can present a perspective that may not always be seen or understood.

BI&T: Your hospital is building a new facility and remodeling existing facilities. What has your role been in the construction process?

Williams: All of the departments, including clinical engineering, have been involved in determining space needs. We've reviewed floor space and other needs to help the architects draft plans. For example, for an operating room that is being added, we've helped determine where certain equipment will go such as boom arms for surgical equipment, how videos will be



Facility: St. Mary's Hospital Medical Center is one of 24 facilities in the SSM Healthcare Corporation. SSM Healthcare is the first healthcare entity to receive the Malcolm Baldrige National Quality Award, an award given by the President of the United States to businesses that excel in such areas as strategic planning, knowledge management and human resources.

Location: Madison, WI

Facility Size: Licensed for 440 beds and currently operates with 332 beds

Department Size: Nine biomed, six medical imaging service technicians, one customer service/account specialists, and a director; the safety officer and assistant safety officer are also part of clinical engineering

integrated, and how the room will be laid out. We're now in the process of determining what to scale back due to budget constraints.

BI&T: Have you encountered any obstacles in ensuring that your department is involved in the medical equipment planning?

Williams: We are working with a medical equipment planner to identify requirements for existing equipment that will need to be moved to the new space, and where it will go. The department head has informed us at every stage of the process. It's been a very positive experience and we've been involved from the beginning.

BIOMED Roundup

Company Opens Doors to St. Louis Area Biomed



Mel Roche, president of JPC Controls, demonstrates an automated testing station for the BC Biomedical patient simulators to GBS members.

JPC Controls opened its doors to Gateway Biomedical Society (GBS) members in St. Louis during the group's January meeting. The parent company of BC Group International and manufacturer of BC Biomedical test equipment welcomed GBS members to its facility where they learned about automated testing of a patient simulator and saw a demonstration of wave soldering. The plant tour also showed attendees the construction of cases and enclosures for custom and low volume runs of specialized equipment.

One of the tour highlights was the experimentation lab where JPC devises the prototypes for new test and control systems. In addition to the tour, JPC Controls sponsored dinner and provided a meeting location.

The agenda-filled meeting included a member survey distributed by GBS President Paul Sherman. The goal of the survey is to ask about members' educational needs and to gather input on ways to continually increase attendance. Also during the meeting, a raffle drawing was held for the three individual memberships provided under the GBS' association membership with AAMI. Jeff Moser, Vince Geiger, and Robert Steinman won the AAMI memberships, giving them an opportunity to take advantage of AAMI publications and discounts on resources and courses.

Oklahoma Biomed Focus on Certification

The incessant winter winds blew in 30 biomed and clinical engineers for the Tulsa Area Biomedical Equipment Technicians Association's (TABETA) January meeting.

Jerry Warren, TABETA's education officer, told members about study materials available to those who need help preparing for their BMET Certification



Rich Ogg, TABETA Chair

exam. Chairman Rich Ogg relayed a memo from Tommy Henderson, assistant professor of electronics at Tulsa Community College, who is looking into offering a new biomedical class this fall. The course will focus on current issues in the field and what a biomedical technician needs to know to prepare for certification. Ogg also told members about the latest salary survey



Philips Medical Systems was among the presenters at TABETA's January meeting.

information in the November/December 2005 issue of *BI&T* and shared with attendees how they can access this information on AAMI's website. Speaking of websites, TABETA plans to proceed with setting up a website with the help of David Kent, TABETA secretary and computer guru of the group.

Other TABETA feature presentations included Jon McAlister and Kim Weber of Philips Medical Systems. Weber and McAlister showed how the Philips Intellivue patient monitor's removable data storage modules record a patient's medical data. Also on hand was Mark Owens of Medtronics/PhysioControl, who talked about updates to Medtronic's automated external defibrillators.