

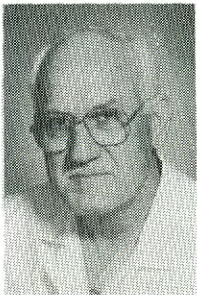
THE ASA M SENSOR

Volume 6, Number 2

April 1996

THE QUARTERLY NEWSLETTER OF THE
AMERICAN SOCIETY OF ANESTHESIA TECHNOLOGISTS AND TECHNICIANS

PRESIDENT'S MESSAGE...



CERTIFICATION: IT'S HERE!

by Jerry S. Guttery

I take this opportunity to congratulate those anesthesia support specialists who have registered to take the first certification examination for anesthesia technology. You are the pioneers in the development of a new discipline in medicine; one that is fast becoming recognized as needed and relevant in today's operating room environment. May 18, 1996 will truly be a day to remember.

ASATT is proud to have developed the certification process. Many dedicated ASATT members have contributed time, expertise, and money toward the development of this first certification examination, and to have so many accept this challenge is very rewarding.

As ASATT grows, so does its presence around the world. This April, two of our most dedicated members, Immediate Past President, Chris Patterson and Region 5 Director, Ann Martin will represent us at

the World Congress of Anesthesiology in Sydney, Australia. Attendance at the World Congress of Anesthesia will also give our two delegates the opportunity to continue our dialogue with the Australian Society of Anaesthetic Technicians (ASAT), the New Zealand Society of Anaesthetic Technicians, Inc. (NZSAT), and our old friends from England, the British Association of Operating Department Assistants (BAODA).

We, the members of ASATT, have come a long way in seven short years and this is just the beginning. The future holds great promise for those who have chosen to follow the career path of the Certified Anesthesia Technician (Cer. A.T.).

Don't forget to make your plans early for our annual meeting at the Radisson Hotel on historic Canal Street in New Orleans, Louisiana, October 19-21, 1996. A lot of planning and effort has already gone into making this our best meeting ever.

Inside your Sensor:

The View From...

Music City, page 3

Science and Technology...

Blood Components, page 6

National Meeting...

and All That Jazz, page 12

News from the "Net"...

ASATT-On-Line, page 4

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Classified Ads: Individuals seeking employment, or employers seeking candidates in anesthesia technical support.

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(ASATT reserves the right to refuse advertising copy for any reason at any time.)

THE SENSOR: Quarterly Newsletter of the ASATT

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The opinions expressed herein are those of individual authors, and do not necessarily reflect the views or opinions of the ASATT.

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All submissions pertinent to the objectives of the ASATT will be considered for publication. Preferred format: micro diskette, (PC or Mac), or email text file. Photographs, preferably black-&-white are also welcome and will be returned.

Deadline for the next issue is May 15, 1996

Printed on recycled paper



VANDERBILT UNIVERSITY MEDICAL CENTER

Sharon Baskette and David Moriarty, Technical Supervisors
Nashville, TN



Vanderbilt University was founded more than 100 years ago with a gift from Commodore Cornelius Vanderbilt. The 333 acre campus includes the Blair School of Music, the University College of Arts and Sciences, Graduate School, and the professional schools of Law, Engineering, Medicine, and Nursing. Vanderbilt University is the largest employer in Middle Tennessee and the second largest in Tennessee.

Vanderbilt University is located in the heart of Music City, Nashville, Tennessee. Nashville is a city bustling with activity and is centrally located within 600 miles of 50% of the population. Among the attractions are Opryland, Vanderbilt Commodore sporting events, Music Row, a minor league hockey team, a minor league baseball team, and, hopefully in the future, professional football. Nashville also has a very diverse offering of cultural events and performing arts. Nashville, of course, has country music, but attracts other musical talent of various styles as well.

The Vanderbilt University Medical Center, which is part of the university, includes The Vanderbilt Clinic, the Vanderbilt Hospital (established during the 1920's), and the Children's Hospital. The Vanderbilt Medical Center includes 660 beds. There are 25 adult, 4 obstetric, and 6 pediatric operating rooms. The department of Anesthesiology covers Radiology which includes CT, MRI, Pet Scan, Radiation Oncology, and Cath Lab. Vanderbilt University Hospital is a Level I trauma center and transplant center which offers a wide variety of experience.

The Anesthesiology Department includes 45 physicians, 16 CRNA's, 45 residents, 7 fellows, 17 technical staff, 7 research, and 32 administrative staff. The technical staff includes 5 supervisors. Coverage of the operating rooms on Monday through Friday is 6:00am until 11:00pm and Saturday/Sunday coverage is 7:00am until 9:00pm. There is 24 hour call for liver transplant.

Our roles as technicians are multifaceted. We do the standard stocking of carts and supplies. We also assist the anesthesia staff with line placements, inductions, troubleshooting of equipment, and data gathering for research studies. At Vanderbilt University Medical Center, there is a very active transplantation program. We perform over 25 heart, 25 liver, and 60 kidney transplants per year. Our anesthesia technical staff

contributed significantly to the initial development and continued evolution of protocols for liver transplants. During the liver transplant, the anesthesia technicians are responsible for the set up of the rapid infusion system, the set up and operation of the thrombolastograph analyzer, and drawing of blood for all lab work. We also log lab values and track blood products and fluids as they are administered.

One of our major goals is the education of our technicians. To accomplish this goal, we are developing a training program for new technicians plus a continuing education program for all technicians. We have weekly lectures and inservices, provided to us by our faculty, with topics ranging from patient positioning to interpretation of ECG. The department has a human patient simulator which provides a wonderful aid in the teaching of our technicians.

Our plans for the future include 24 hour technical coverage for all areas. We face the challenge of increasing the number of technicians while not decreasing the quality and skill of those technicians. We plan to require certification as soon as it is widely available. The anesthesia technical program will continue to make possible the delivery of safe and efficient care to our patients.



Anesthesia tech staff at Vanderbilt University Medical Center pictured with patient simulator, "Stan." Included are authors of the preceding article: Sharon Baskette, Technical Supervisor and President, Tennessee Society of Anesthesia Techs (seated far left, second row); and David Moriarty, Technical Supervisor (standing far right, back row).

ANESTHESIA TECHNICIANS ON THE "NET"

TECH TALK

ASATT-ON-LINE

ASATT now has its own home page on the Internet. King Systems, Inc., has donated the space and expertise for ASATT to publish *The ASATT Sensor-On-Line*. The home page is at <<http://www.kingsystems.com/asatt.htm>>. This newsletter will be updated regularly, so look here for the latest ASATT information. Links to other relevant home pages are being added to ease your internet "surfing." A link to "Tech Talk" has already been added. ASATT would like to thank King Systems, Inc. and Dennis Irlbeck, Director of Marketing, for their generosity.

Page 2 of *The Sensor* will also begin listing email addresses for members of the ASATT Board of Directors and Sensor staff members. Articles and ideas for *The Sensor* can now be emailed either in the body of an email message, or as separate files. Newly available email addresses are:

Jerry S. Guttery, ASATT President: <jsguttery@aol.com>

David G. Mastalski, ASATT Region 7 Director, Associate Editor, *The ASATT Sensor*: <nmastalski@aol.com>

Dianne Holley, Editor, *The ASATT Sensor*: <ldholley@aol.com>

by Jim Tibbals, CRTT, Chief Anaesthesia Technician
The Hospital for Sick Children, Toronto, Ontario, Canada

TechTalk is one word and is the 'short form' for the Anaesthesia Technology Discussion Group. TechTalk is a subscription-based electronic mail discussion group. Messages sent to TechTalk are resent to all subscribers. That way, if you have a question for your on-line peers, TechTalk takes care of the work of distributing your message. The same is true if you need to announce something. TechTalk is a vehicle we will use to carry on discussions.

Subscriptions (and commands) to TechTalk are sent to <macjordomo@anaes.sickkids.on.ca> with the following as the body of the message:

```
subscribe techtalk your_name  
end
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The 'end' in the second line is optional but tells Macjordomo that you are finished sending subscription commands. Messages to TechTalk (after you have subscribed) are sent to <TechTalk@anaes.sickkids.on.ca>.

Anyone having difficulties subscribing can write to me directly, Jim Tibbals, CRTT (tibbs@anaes.sickkids.on.ca). The URL for The Anesthesia Department at The Hospital for Sick Children is <<http://anaes.sickkids.on.ca/>>.

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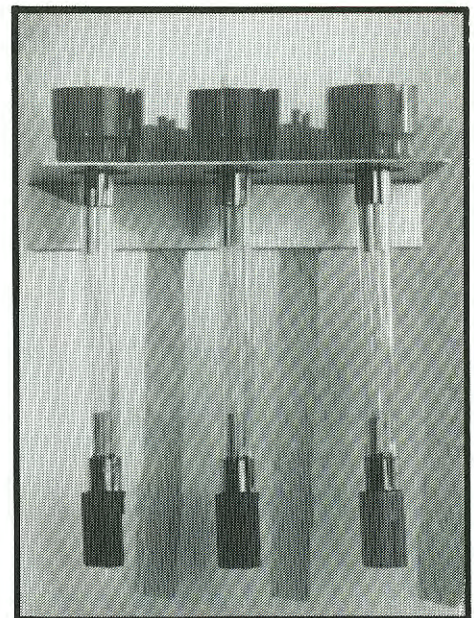
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OPEN FORUM...

by David G. Mastalski
 ASATT SENSOR Associate Editor, ASATT Director, Region 7
 VA Medical Center, Portland, Oregon

Dear OPEN FORUM:

I am an anesthesia tech in a hospital with 45 Operating Rooms, and work with many anesthesia residents. I am constantly having to throw away syringes of drugs which have been left behind by residents. Some of these residents insist on keeping these syringes for what seems like several days. Can you tell me what the expiration on drugs drawn up into a syringe is?

Charlotte, NC

It is common practice that medications should be drawn up into a sterile syringe as close as possible to the time of administration to the patient. The Anesthesia Patient Safety Foundation recommends: "All drugs drawn into a syringe should be discarded within 24 hours or when completely used, whichever comes first, unless otherwise specified by the manufacturer or the hospital pharmacy. An exception to the 24-hour use limit is any medication that is formulated as a liquid emulsion (propofol), and for these, the unused portion in the syringe should be discarded within 6 hours after the ampule, vial, or prefilled syringe is opened." The APSF further recommends: "A syringe containing propofol should be labeled with the date and time that the ampule, vial, or prefilled syringe was opened, so that disposal after 6 hours is ensured."

I would recommend that if you are uncomfortable with monitoring the discard of used/unused drugs, contact your hospital pharmacy department and express your concern (perhaps have them refer the residents to the applicable hospital policy on drug discard). Remember, it is not your responsibility as an anesthesia technician to be responsible for drug discards.

Dear OPEN FORUM:

I am an anesthesia technician from New Mexico and my hospital belongs to ASATT as a corporate member. I want to make sure I am getting all of the information from the ASATT. My question is: Do corporate members have all of the rights and privileges as active ASATT members?

Santa Fe, NM

First of all, let's look at the different categories for membership to the ASATT, according to its bylaws and membership application:

Active: ...anyone who works in a health care facility under the supervision of an anesthetist and functions in the capacity of technologist, technician, assistant, or aide. (U.S. members only)

Individual: ... anyone who has an interest in the anesthesia field.

Associate: ...Anesthesiologists, C.R.N.A.'s, and Anesthetists.

Institutional: ...academic, medical, hospital, philanthropic, scientific, governmental, or other nonprofit organizations with an interest in anesthesia technology.

Corporate: ...businesses and other profit oriented organizations that manufacture, distribute, and provide services that otherwise have an interest in anesthesia technology.

According to this information, I would say that your hospital is an institutional member, and, as such, has all of the rights and privileges of active membership, other than voting and holding office. This includes receiving any and all correspondence, other than voting matters, including memorandums, letters, and a copy of *The Sensor*. However, this includes only one copy of the material, and ensuring that the material is routed to you and other technicians is necessary. This may result in a possibility of your not receiving important material.

To be sure that you are receiving all ASATT correspondence, including information regarding national certification on a timely basis, and to secure the right to vote on society matters and to run for office, I would recommend you enroll as an active member. A membership application is located on the back page of this issue. If you have further questions regarding ASATT membership, please contact the ASATT business office at 1-(800) 352-3575.

Dear OPEN FORUM:

I would like to address this questions to your readers, and get some feedback through this column. Some nurses at my hospital are proposing to combine the Anesthesia Tech, Central Core Tech, and Surgical Aide positions to form an Anesthesia Core Tech position. They propose 2-3 levels within this position and claim that by cross-training all the ancillary personnel in the OR, that turnover times will be greatly reduced. They showed me a hand-out they had received at the AORN Congress last month detailing this proposition. Has anyone had first-hand experience with this type of position, and how well does it work? It seems like a step backward for Anesthesia Techs, but I'm trying to keep my mind open. Please send your responses to OPEN FORUM.

Houston, TX

DID YOU KNOW...?

... As an anesthesia technician, you can increase your value to your hospital by obtaining manufacturer sanctioned certification on certain pieces of equipment such as: Autotransfuser

continued on page 15...

All OPEN FORUM questions and "Did You Know ..." ideas may be addressed to:

ASATT SENSOR OPEN FORUM
 9805 NE 116th Street
 Kirkland, WA 98034-4248
 FAX (503) 721-7859

Those chosen for publication in this column will receive a free ASATT T-shirt.

BLOOD AND BLOOD COMPONENTS

by Dianne Holley, Chief Anesthesia Tech
Seton Medical Center, Austin, TX

Blood has numerous functions within the body. It acts as a vital transport system among the various organs down to the tiniest cell in the most remote tissue. It facilitates the following basic functions: nutrition, respiration, fluid balance, acid-base balance, excretion, protection (as from infection), temperature regulation, and endocrine secretion transport. The following is a vastly simplified description of blood, its components, and their respective roles in the body; as well as brief guidelines for its safe administration to a patient. *For further information, please consult circulars provided by the American Red Cross, the Council of Community Blood Centers, and the American Association of Blood Banks. For policies specific to your hospital, please consult your hospital blood bank.*

THE COMPOSITION OF BLOOD

Blood may be considered as consisting of three basic types of components:

- the cellular component consisting of the red and white blood cells, and platelets.
- the fluid component, called plasma, which carries the other components of the blood to the various parts of the body
- the fibrous components (such as fibrinogen) which affect clotting

Cellular component: Red blood cells (RBC's) or erythrocytes have a primary function in their transport of oxygen (O_2) to and carbon dioxide (CO_2) away from the cells of the body. RBC's primary means of gas transport is hemoglobin, a protein/iron pigment. Oxygenated hemoglobin (arterial) is a brighter red than deoxygenated (venous) blood carrying CO_2 . Severe loss of blood, as can occur during surgery can result in a severe reduction in the capacity for the body to supply O_2 to the cells, leading to ischemia, then to death of tissue, and finally to death of the patient.

White blood cells (WBC's) or leukocytes are primarily involved in protecting the body from infection or invasion by foreign agents. The different types of WBC serve different functions in the immune response to include the production of antibodies. WBC's can also play a role in immunological problems a patient may experience after receiving a transfusion, (i.e. allergic reaction, Graft-vs-host disease, etc.).

Platelets or thrombocytes are actively involved in the formation of blood clots, working along with clotting proteins also present in the blood. Platelets are small and somewhat "sticky" which allows them to adhere to the site of a cut vessel and sometimes (unfortunately) the lumen of a vessel.

Plasma: This is the straw-colored fluid component of blood. It is about 95% water with various salts, proteins, fats, and carbohydrates dissolved in it. It carries the blood cells, along with

the other dissolved substances to all areas of the body. The dissolved substances can facilitate nutritive, waste, endocrinological, and clotting needs of the body.

Fibrous components and clotting factors: These work in adjunct with platelets to accomplish clotting. The various clotting factors are numbered from Factor I to Factor XIII. When a clot is being formed, a long chain of reactions occurs with the end result being the conversion of fibrinogen to fibrin which forms net-like filaments at the site of the clot. "Sticky" platelets enmeshed in these fibers form the base for a clot.

THE TRANSFUSION OF HUMAN BLOOD AND BLOOD COMPONENTS

Whole blood and/or various components of blood are sometimes transfused into a patient in the OR to replace that which is lost during or sometimes prior to surgery.

Whole blood: This is given to patients who show a significantly reduced ability to transport oxygen as well as severe hypovolemia. Whole blood contains the red blood cells in plasma, however, most of the platelets and WBC's have been removed. One unit of blood contains about 500ml and is enough to raise the hematocrit of an average anemic adult recipient about 3 percentage points.

Red blood cells: Also known as packed cells, these are the centrifuged RBC's removed from whole blood. A typical unit contains 300ml and is used to treat a significant reduction in a patient's oxygen-carrying capacity without severe hypovolemia. Immediately before infusion, 60-100ml of normal saline can be added to "thin" the packed cells and help them flow better.

Plasma: This is the clear portion of whole blood once the cells have been removed. It can be stored frozen (fresh frozen plasma or FFP) or as a liquid in a refrigerator. It contains vital clotting factors such as fibrinogen and Factor IX and is used to improve clotting (to help control bleeding) and to expand blood volume. A unit of plasma contains between 180 and 300ml.

Cryoprecipitate: This is the precipitate removed from plasma which yields more concentrated clotting factors. Cryoprecipitate (or cryo) is used to improve clotting (to help control bleeding) when blood volume expansion is not simultaneously needed. Like packed cells, cryo can be diluted with 10-15ml of normal saline.

Platelets: These are concentrated platelets removed from whole blood and suspended in a small amount of plasma. Because platelets have a tendency to curl up (which reduces their effectiveness), they are gently and continuously agitated in storage and should be administered soon after they are removed from agitation. Also, because of the "sticky" nature of platelets, some filters will filter out too many platelets, instead of letting them pass through.

continued on next page...

BLOOD TUBING AND FILTERS

Blood tubing is generally either a straight or Y-administration set. Usually a filter and air trap are also in line in the tubing. Some blood administration sets have additional filtration capacity to remove a higher number of leukocytes. Additional filters can be placed in-line to achieve higher filtration *Since a wide variety of administration sets and filters are available, hospital protocols should be followed regarding which are appropriate for different blood components. Manufacturers instructions should be referred to for priming and other instructions.* Some general guidelines include:

- Carefully prime filters and administration sets according to manufacturers instructions.
- Remove air from blood units prior to spiking with an administration set, *especially* if they are to be pressurized.
- As with all other procedures in the operating room, Blood/Body Fluids (Universal) Precautions should always be carefully observed during blood infusion.
- After blood bag is empty, keep IV line open by running more fluid, either more blood, or saline, etc.

Blood Filters: Two basic filters are the 170-260 micron clot filter, and the 40 micron microaggregate filters. All blood and blood products should be run through a 170-260 micron clot

filter, however, manufacturers instructions should be checked because some filters are specifically designed to allow passage of platelets and clotting factors better than others. 40 micron microaggregate filters are designed to remove smaller particles from infused blood such as platelets, white cells, and fibrin. RBC's and plasma pass through unaltered. These filters should not be used to filter platelets or cryo unless manufacturers instructions state otherwise. Our hospital policy states that we use the 170-260 filters on all blood products and that we use the 40 micron filters with cell-saver (autologous) blood especially from orthopedic cases and to give multiple units of whole blood and RBC's. The microaggregate filter is to be changed after every 2 units.

Straight and Y-Blood Administration Sets: These usually consist of a spike(s), 170-260 micron filter, drip chamber (air trap), regulating clamp, and a male luer lock fitting on the distal end. A lack of injection ports prevents the inadvertent introduction of drugs through the blood set. The Y-administration set allows a bag of normal saline to be attached to the second line to prime the tubing, add saline to packed RBC's, and run saline after blood is run to flush remaining blood into a patient and keep the IV site open. Our hospital policy is that we use a straight set for plasma, cryo, and platelets (specialized filter) and that we use a Y-set for whole blood and packed RBC's. Our administration sets are to be changed after every 2 units unless microaggregate filters are used, in which case tubings are to be changed after every 4 units or 4 hours, whichever comes first.

continued on page 8...

A SUMMARY OF BLOOD BANK POLICY AT SETON MEDICAL CENTER

PRODUCT	ADMINISTRATION SET	WARMER	ETC.
Whole Blood	Y-set (change every 2 units unless microfilter used, then good for 4 hrs or units)	OK	
Packed RBC's	Y-set (change every 2 units unless microfilter used, then good for 4 hrs or units)	OK	Add 60-100ml Saline
FFP (plasma)	Straight set (change every 500ml)	OK	
Platelets	Straight set (change every 1000ml)	NO	Give immediately
Cryo	Straight set (change every 1000ml)	NO	
Cell Saver Blood	Any blood set (use microfilter especially in Ortho Cases)	OK	Don't add saline

SET	APPROPRIATE PRODUCTS
Y-Set (w/ 170-260 Micron Filter)	Whole Blood, Packed RBC's
Straight Set (w/ 170-260 Micron Filter)	Preferred for use w/ Platelets, FFP, Cryo. Can be used with anything.
Leukopoor set for Red Cells	Whole Blood, Packed RBC's (used for immunosuppressed pts.)
Leukopoor set for Platelets	Platelets (used for immunosuppressed pts.)
40 Micron Filter	All products except Platelets & Cryo. Change every 2 units

Leukopoor administration sets: These are used for immunocompromised patients such as transplant recipients. They are available in straight and Y- administration sets for platelets or whole blood and RBC's. They remove WBC's from blood and blood components.

Warming units: Blood components as well as IV fluids administered at temperatures below 98°F (37°C) can cause relative hypothermia. Warming units, especially for the administration of multiple units can warm fluids to approximately body temperature and help offset hypothermia. Platelets and cryo should not be warmed as the warming can lessen some of the efficacy of these products.

Rapid infusion: When it becomes necessary to infuse blood or its components more rapidly than a gravity drip will allow, several methods are available to pressurize the blood to cause it to infuse more quickly. Simple bulb-inflated pressure bags and crank handle pressure boxes are two more common manual types of pressure infusers. Other types are pneumatically (O₂ or air) driven, and some systems combine rapid infusion with rapid warming capabilities for massive blood loss or major cases such as liver transplants.

INFECTION POTENTIAL OF PRESSURE TRANSDUCERS

by Linda Bewley, AT
Providence St. Vincent Medical Center

This study was designed to focus on two important issues: patient safety and the unnecessary waste of equipment. We examined whether pressure transducer systems prepared hours or days before actual use represent an infection potential.

The Centers for Disease Control's National Nosocomial Infections Study Report recommends: keeping sterile items for pressure monitoring systems, including disposable domes and lines, in their sterile wrappers until needed; that these items and the transducers not be preassembled hours or days before the time of use even for possible emergencies; and most importantly, systems not being prefilled with flush solution.

These recommendations placed a significant constraint on our ability to be prepared for emergency situations. Patient care can be compromised if proper equipment is not readily available, particularly in emergency operating room situations. Additionally, if a piece of equipment is prepared and not used, is it safe to keep it for a longer period of time rather than to discard it and waste materials?

Twenty-one disposable transducers assembled with sterile plastic disposable domes and extension tubings were used. The systems were filled with heparinized flush solution. Flush solution samples were cultured from the distal end of all transducer setups: immediately after setup (time 0), and 24, 48, and 72 hours after setup. In 11 of 21 transducers, cultures were also taken at 168 hours (1 week) and 336 hours (2 weeks) after initial setup.

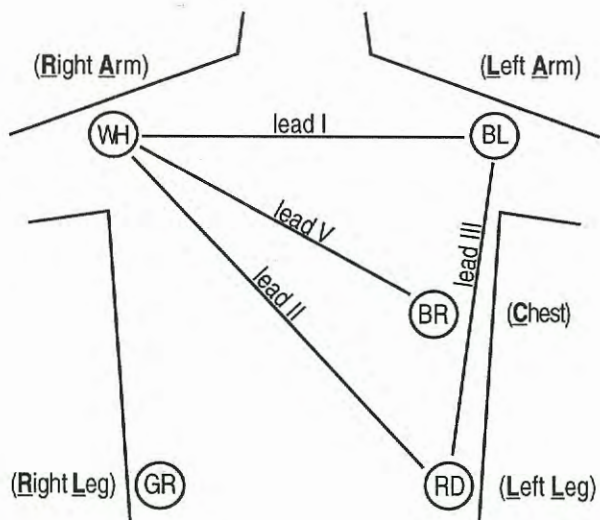
Out of the total 106 cultures, only two showed growth, both of which proved to be external skin or mouth contaminants. Binomial distribution indicated that if a .05 probability level was used, the chance was 1.3% that one or more transducers in 100 could grow positive cultures by 72 hours. Using the same statistical analyses for the 66 cultures taken after 72 hours, the chance is 2.7% at 2 weeks.

We conclude from this data that disposable transducer systems, when preassembled using standard aseptic precautions and sterile disposable plastic, show no evidence of significant bacterial growth when allowed to stand in readiness after assembly (and not connected to patients). We feel it is safe to preassemble transducers for at least 72 hours before use. Longer intervals from setup to use may also be justified.

(Editor's note: The Anesthesia Patient Safety Foundation recommends discarding IV and arterial tubing 72 hours after assembly whether or not they have been connected to a patient.)

FOR THE "TECHNO-FILE"

STANDARD 5-LEAD ECG

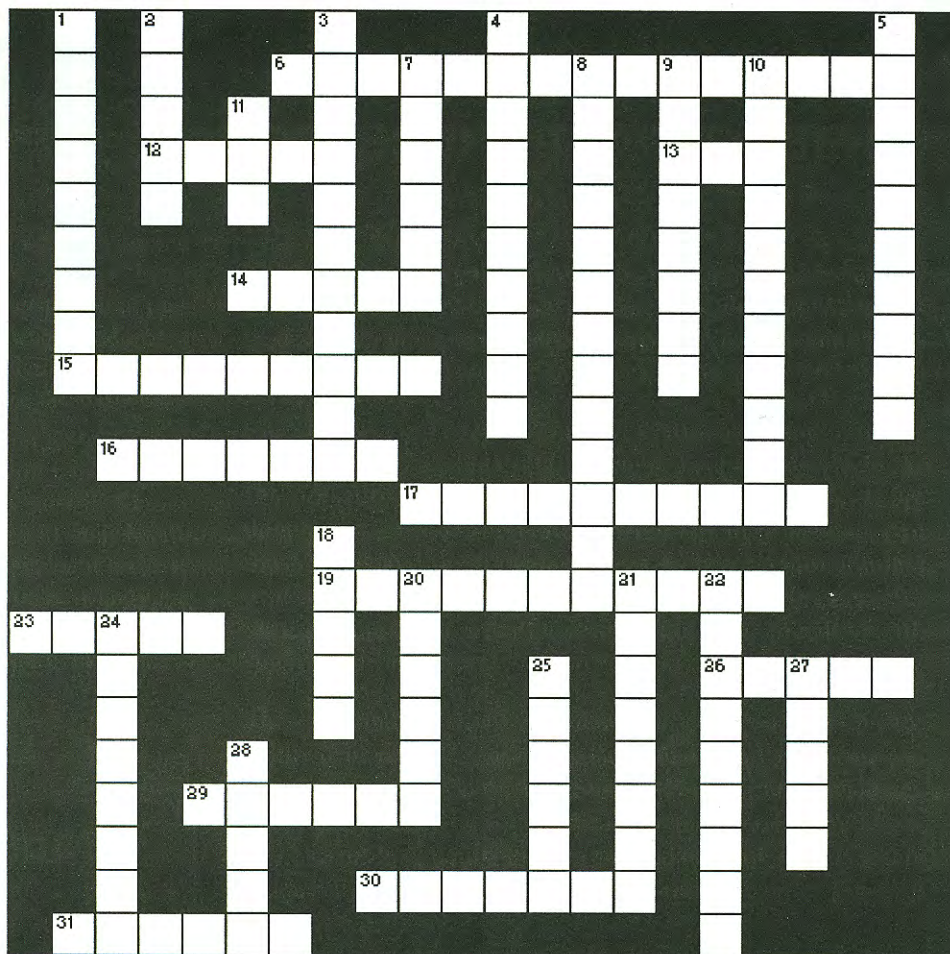


Standard 3-Lead ECG: RA, LA, LL

Modified V5: LA electrode is placed in the V5 position.

Chest (V) electrodes can be placed in various positions from the V1 site to the V6 site. Most common is V5.

The actual tracing on the monitor is determined by the electrode placement and the position its leadwire is occupying in the ECG cable. The leadwire color is only a helpful reference, (i.e. with a modified V5 setup, the black leadwire is connected to an electrode in the V5 site...the monitor will read Lead I, but the tracing shown is actually Lead V5.)



SCIENCE AND TECHNOLOGY POST TEST: Blood and Blood Components and ECG Leads

Use this crossword puzzle to test your knowledge on the "Science and Technology ..." articles on pages 6-9. Puzzle answers can be found on page 15 of [this issue](#).

Across

- 6 Concentrated clotting factors.
- 12 The ___ lead can be placed in 6 different locations.
- 13 ___ should be removed before pressurizing blood.
- 14 Standard color of chest leadwire.
- 15 White blood cell.
- 16 Lead II is read between the right arm and ___ electrodes.
- 17 ___ is changed to fibrin during clotting.
- 19 Blood warmers help prevent ___.
- 23 Standard color of right arm leadwire.
- 26 A microaggregate filter filters at ___ microns.
- 29 Filters and blood tubing should be carefully ___ before use.
- 30 Lead I is read between the right arm and ___ electrodes.
- 31 RBC's can be diluted with ___.

Down

- 1 ___ precautions should be observed while transfusing blood.
- 2 Standard color of the left arm leadwire.
- 3 Red blood cell.
- 4 Special filters remove WBC's from whole blood before administration to ___ recipients.
- 5 Protein/iron pigment in RBC's.
- 7 RBC's carry ___ to the tissues.
- 8 RBC's carry ___ away from tissue.
- 9 "Sticky" cells which are involved in clotting.
- 10 Platelet.
- 11 Standard color of the left leg leadwire.
- 18 ___ blood consists of RBC's in plasma.
- 20 RBC's without plasma are also known as ___ cells.
- 21 Lead V is read between the ___ and chest electrodes.
- 22 WBC's help prevent ___.
- 24 Severe lack of RBC's can lead to ___ and ultimately to death.
- 25 The fluid component of blood.
- 27 A ___ infusion system pumps blood into a patient at a high rate.
- 28 Standard color of the right leg leadwire.

REGIONAL SOCIETY ACTIVITIES...

Let us announce what's happening in your area. Send a brief report of recent or future activities for the next issue by May 15, 1996 to your ASATT Regional Director or to Dave Mastalski (address and numbers on page 2). Send newsletters, if available, a brief write-up, or call with your info. Photos (captioned) are also welcome, and can be returned.

ASATT Region 1:

For information on future events:
Jacqueline Polak at (718) 283-7188 [W] or (718) 979-8644 [H].

New York

For information on future events:
George Mann at (315) 471-6077.

ASATT Region 2:

For information on future events:
Vicki Carse at (412) 232 5807
Wilma Frisco at (216) 261-0649.

Ohio

The Ohio Society of Anesthesia Technicians and Technologists will be sponsoring Certification Review Courses on the 4th Saturday of every month, from Noon - 2:00pm at the Mt. Sinai Medical Center in Cleveland .
For further information:
Wilma Frisco at (216) 261-0649.

Pennsylvania

For further information:
Vicki Carse at (412) 232-5807.

Virginia

For information on future events:
Linda Ferris at (703) 985-8351.

ASATT Region 3:

For information on future events:
Linda Cotton (904) 351-7343[W] or (904) 347-8118[H].

Florida

For information on future events:
Linda Cotton at (904) 351-7343[W] or (904) 347-8118[H].

Georgia

For information on future events:
Marc Dickens at (404) 712-7710.

North Carolina

Our Spring Educational Seminar will be held May 11 at the Quarry Hills Country Club in Haw River, NC from 7:45am - 3:00pm.
For information on future events:
Gail Walker at (919) 966-5136[W] or (919) 929-1865[H].

Tennessee

For information on future events:
Sharon Baskette at (615) 322-4000[W] or (615) 646-1599[H].

ASATT Region 4:

A Region 4 Pre-Certification workshop presented by AIME Inc. will be held April 19-21 in Des Moines, Iowa. Watch your mail for registration information Also, see article on page 12
For further information:
Sheila White at (319) 589-8665[W] or (319) 556-8234[H].

Illinois

For more information:
Pat Zueck (217) 788-3780.

Iowa

See article on page 12.
For further information:
Sheila White at (319) 589-8665[W] or (319) 556-8234[H].

ASATT Region 5:

For information about future events:
Ann Martin at (303) 270-8275 [W] or (303) 987-3907 [H].

Colorado

A meeting was held on March 18th at the University Hospital in Denver. New Officers were elected and Abbott Laboratories gave a presentation on Sevoflurane. Also, see article on page 12.
For information on future events:
Teresa Chavez at (303) 320-2440.

Mississippi

A Spring Educational Seminar is being planned for mid-May.
For information on future events:
Earl Coleman at (601) 984-5951, or
Nancy Marret at (601) 973-1656.

NCSAT OPENS JOB "HOTLINE"

The North Carolina Society of Anesthesia Technicians is starting a nationwide job referral service for anesthesia technicians looking for employment and hospitals with positions to fill.

A technician seeking a change of employment should send his/her name, address, phone numbers, fax number, and the city or state in which one desires employment. Hospitals should send job opening information and the name of a contact person. NCSAT is asking that technicians send in a one-time-only fee of \$5 to help defray costs. Hospitals can register at no charge.

Hospitals can fax their job listings to (919) 966-4873, ATTN Gail Walker.

Technicians can mail their applications and a check made out to NCSAT to: Gail Walker, NCSAT President
6 Tamarack Ct.
Chapel Hill, NC 27514

Phone: (919) 966-5136[W] or
(919) 929-1865[H].

ASATT Region 6:

For information on future events:
Dean Rux at (602) 821-3279[W] or (602) 497-9709 [H].

Arizona

Organon will sponsor a free seminar in June on muscle relaxants. Spacelabs and Abbott will be sponsoring future seminars for the Phoenix and Tucson areas regarding EKG and inhalation agents. Watch your mail for further details.
For further information:
Jane Fry at (602) 885-5756[H] or (602) 721-3836[W], or
Dean Rux at (602) 821-3279[W] or (602) 497-9709 [H].

California

For information on future events:
Ron Turner at (510) 674-2241.

New Mexico

Technicians in New Mexico are in the process of forming their own statewide society.
For further information:
Chris Urso at (505) 286-1168[H] or (505) 272-0383[W]

Texas

A statewide meeting is in the works for May 6 in Austin. Focus will be on preparing for the ASATT Certification Exam. Dallas/Fort Worth technicians hold their regular meetings on the 2nd Saturday of each month. [Mary Gallegos at (817) 898-7024 or Lisa Shelton ((817) 685-4917] Houston held a Target '96 Meeting on March 1-3, and held another meeting on March 30. [Gerardo Trejo at (713) 793-2898]. San Antonio also meets regularly [Raul Sanchez at (210) 675-1564].
For further information:
Dianne Holley at (512) 451-7457.

REGIONS 5, 6, & 7 JOIN FORCES IN LAS VEGAS

by Dean Rux, Region 6 Director

Forces joined on January 20-21, at the Aladdin Hotel and Casino, Las Vegas, NV, to prepare for the May 18th Certification Exam. Regions 5, 6, and 7 joined together to be enlightened, focused, and prepared for certification. Vilma Young's program was well received by the 82 in attendance. These people came from far, wide, and across the ocean (Hawaii) to partake of knowledge for the revealing day of understanding—certification. Thanks to Vilma, her staff, and attending medical reps for making this opportunity to grow a great weekend.

Set your sights high for the horizon. The awaited time to express your know-how and understanding has come. The future is yet to grow new technology. Progress has already begun to present a 1997 Region 6 Seminar in CA.

ASATT would like to thank Southwest Med. Ctr. of Vancouver, WA for sending all six of their anesthesia techs to this seminar.

NEWORLEANS'96NEWORLEANS'96NEWORLEANS'96NEWORLEANS'96NEWORLEANS'96

Plan ahead...

ASATT's 7th Annual Meeting and Seminar

NEW ORLEANS '96



October 19-21, 1996
The Radisson on Canal St.

Get out your calendar and make a note or two!

NEWORLEANS'96NEWORLEANS'96NEWORLEANS'96NEWORLEANS'96NEWORLEANS'96

Utah

A "Super Saturday" seminar will be held in April to make the final preparations for certification.
For further information:
Jeff Mann at (801) 585-3619.

ASATT Region 7:

A regional membership survey was mailed in mid-January. Watch your mail for cumulative results. Plans are being made for an early fall Regional Meeting / Educational Seminar.
For further information:
Dave Mastalski at (503) 642-1537[H] or (503) 273-5389[W]

Oregon

The 2nd Annual Educational Seminar, "Certification Prep Course", will be held on April 20, 8:00am-6:00pm at the VA Medical Center in Portland. All ASATT members are welcome. Registration is \$50 for the entire day. \$25 for current OAATT members and \$40 for NSAT members. There will also be an extensive vendor display area.
For further information:
Shannon Krecek at (503) 273-5389 or (503) 257-2368 or
Linda Bewley at (503) 291-2151

Washington

An Anesthesia Machine (NAD) Review Course was held on Saturday, March 16 at Harborview Medical Center in Seattle. Attendance was excellent. The course and luncheon were sponsored by Anesthesia Equipment Supply, Inc. of Black Diamond, WA.
For information about future events:
Nora Tiffany at (360) 427-9562.
Lee Amorin at (206) 731-4189

All That Jazz in New Orleans '96

7TH ANNUAL MEETING AND SEMINAR, OCTOBER 19-21

The Year of Certification

by Ann Martin, ASATT Director, Region 5

Make plans now to attend our ASATT 7th Annual Meeting and Seminar in New Orleans, in order to prepare for certification and to accrue required continuing education credits.

This year is much more than just the annual meeting of ASATT. It will also be a time for celebration, for who can now deny that our profession has at last achieved a reality—"Certification."

The Board of Directors and Staff expects this meeting to be filled with educational experiences for all our members and guests. We hope you will celebrate with us by reflecting on the accomplishments of the last seven years and look ahead to fulfilling our dreams and ambitions in the future.

This year's meeting will be held at the Radisson Hotel in New Orleans, LA at 1500 Canal St., October 19-21, 1996. Telephone number for the Hotel is 800-333-3333. The hotel is within walking distance of the ASA exhibit hall and/or shuttle buses are being provided by the hotel.

Registration fee for ASATT members is \$175 (after October 1, \$200); nonmembers' fee is \$225 (after October 1, \$250). Room rate per night, single is \$110 and double, \$120.

More information will be published in the July issue of *The ASATT Sensor* newsletter.

COME AND HELP CELEBRATE THE YEAR OF CERTIFICATION!

PREPARE NOW

CRASH '96 HELPS PREPARE TECHNICIANS FOR CERTIFICATION

by Ann Martin, ASATT Director, Region 5

The 2 1/2-day technician course presented by the University of Colorado Health Sciences Center at Vail, Colorado focused on the technical and clinical aspects of the anesthesia technician's role. The session opened with a reception, Friday, March 1, at the Marriott Mountain Resort. This year's registrants were from Iowa, South Carolina, North Carolina, Texas, Washington, and Colorado. Each morning began with a wonderful breakfast followed by lectures and exhibits. Mid-morning to afternoon was spent skiing, snowboarding, shopping, sledding, or relaxing to get away from it all. The afternoon workshop and "hands-on" left us more knowledgeable and better prepared to face certification.

Three of the registrants were not ASATT members, but were very enthusiastic to tell their employees of our Society. This tells us that there are technicians out there that we haven't yet reached.

Everyone is very anxious for certification and wishes to further their knowledge so that they may provide the very best healthcare possible.

Thanks to Dr. Charles Gibbs, Professor and Chairman for the Department of Anesthesiology, Dr. Christopher Mills, and Dr. Michael Ochs, Technician Course Director, and to all the staff for helping educate us for the future and allowing us to be part of this educational program.

MARK YOUR CALENDARS, REGION 4

by Sheila White, ASATT Director, Region 4

Time is running out for you to sign up for the Preparation for Anesthesia Certification seminar, April 19-21, in Des Moines, IA. This is an excellent preparatory class for the certification exam coming May 18th. If you have any questions about this class, call me or Vilma Young (AIME, 502-549-7046). I hope to see you there!

If you have any questions regarding the certification exam, call me or the ASATT home office (800-352-3575).

MARK YOUR CALENDARS!!!! Tentative date for the Region 4 Meeting is Saturday, September 28, 1996, here in Dubuque, IA. I hope you can find time in your busy schedules to take a weekend off and travel to Dubuque for an enjoyable get-together. I'm starting to line up speakers and vendors to display their products. The food is always good, too!! Hope you can join us!

IOWA: Tentative date for our spring meeting in Des Moines is April 13-14. The Iowa Society of Anesthesiologists is holding its spring meeting on this same weekend; we may be able to listen in on their lectures if you find the topic interesting and educational. (We will also have our own speakers.) If you have any ideas or topics you would like to see covered in this meeting, or any future meeting, please contact me at any time with your ideas. I would love to hear from you. Watch your mail for further information and registration form.

NEW MEMBERS....

ASATT would like to extend a warm welcome to the following new members who have joined from 12/1/95 to 3/15/96.

ACTIVE MEMBERS

Jacinth K. Ah Sing Honolulu, HI	Albert E. Corley Philadelphia, PA	Robin F. Hobbs Dayton, OH	Cynthia Kosnosky Somerset, PA
Gilbert Alvarado Tampa, FL	Charlene J. Costanzo Pittsburgh, PA	Wanda J. Hollins College Park, GA	Allan S. Kristiansen USNH Okinawa Japan
Wendy Baldwin Maple Shade, NJ	Von Critcher Nashville, TN	Carol S. Holman Pittsburgh, PA	Gina A. LaSalla Hollis, NH
Albert Barba, Jr. Austin, TX	Jose M. Cuenca Montebello, CA	Constance R. Horn New Alexandria, PA	Linda M. Lebitz Staten Island, NY
Veronica D. Beasley Chattanooga, TN	Phyllis Cunningham Philadelphia, PA	Cecilia Jefferies Darby, PA	Roseann Locante Library, PA
Esterina Bellone Bayonne, NJ	Francis X. Daniels Oakland, CA	Steve F. Jeffrey Mt. View, CA	Michele S. Long Pittsburgh, PA
Doris Bennett Pittsburgh, PA	Ricky L. Davis Sugar Land, TX	Pamela J. Jenkins Philadelphia, PA	Lori Ann Longstreet Lake City, MI
Eleanora M. Bivens Detroit, MI	Vibha B. Desai Dayton, OH	Frances M. Jordan Columbia, SC	Billy Lopez Brooklyn, NY
Carolyn Y. Black Galveston, TX	Edwin S. Diaz New York, NY	Kimberly A. Cane South Blainfield, NJ	Lambrick A. Mack Houston, TX
Daniel Black Philadelphia, PA	John Diulus, Pittsburgh, PA		<i>continued on page 14...</i>
Daniel C. Blair Nashville, TN	Maryann Ehlen, LPN Parma Heights, OH		
Julie M. Bolduc Wichita Falls, TX	Suzanne M. Falke Littleton, CO		
Timothy C. Bowlin Hammond, LA	Rose A. Fish Lockport, NY		
Joseph C. Brock Antioch, TN	Terrance J. Fuller Philadelphia, PA		
Vera B. Brock Alvin, TX	Mary Garubo Bernardsville, NJ		
Lance Burner Redwood City, CA	Jonathan Garvin Philadelphia, PA		
James David Burton Nashville, TN	Gary Gaston Philadelphia, PA		
Uren Cassells Irvington, NJ	Annamma George Galveston, TX		
Ralph Cavallo, Jr. Bronx, NY	James F. Gildea Philadelphia, PA		
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	Keith S. Hemmerling Washington, DC		

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Kwik-Skan's easy to read vertical bar scale displays Celsius and Fahrenheit.

Kwik-Skan's oval design provides better skin contact for more accurate monitoring.



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Kwik-Skan is non-invasive making it ideal for sleeping, unconscious, or infant patients. Kwik-Skan is hypo-allergenic and may be worn for extended periods thereby reducing the risk of undetected hospital acquired infection. The Kwik-Skan clear plastic box holder mounts quickly and easily to walls, carts, or equipment.

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**ACTIVE MEMBERS
CONTINUED...**

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Zenaida F. Martinez
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Andre L. McClure
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Gail McGill
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Arnold Baumgartner
Mt. Uniacke, Nova Scotia

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South Euclid, OH

Charles E. Hoffman
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Pittsburgh, PA

Paul M. Nagrodzki
Birmingham, AL

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Just a Reminder...

ASATT Annual Elections

Coming This Summer

**Be prepared with your nominations for
Vice President/President Elect
Regional Director**

Membership Application



(Please print clearly or type)

NAME: Last _____, First _____, M.I. _____

Home Address _____

City _____, State (Province) _____ zip (mail code) _____

Home phone (____) _____, May ASATT release your name to other members? Yes _____

Employer _____, Dept. _____, Job title _____

Address _____ e-mail address _____

City _____, State (Province) _____ zip (mail code) _____

Phone (____) _____, ext. _____, pager _____, fax (____) _____

Applicants signature here to be valid _____, Date _____

Please check your membership category listed below and send the correct amount of membership dues in U.S. currency.

***Active: \$50**____, This category shall extend to anyone who works in a health care facility under the supervision of an anesthetist and functions in the capacity of technologist, technician, assistant, or aide. (U.S. members only.)

***To authenticate that Active membership is the proper category, you are required to have your supervisor verify that you belong in this category by having his/her signature placed in the space provided below.**

(Print your Supervisor's name and title here.) _____
(Supervisor's signature here for application to be valid.)

****Individual: \$60**____. This category is open to anyone who has an interest in the anesthesia field.

****Associate: \$60**____. This category shall extend to Anesthesiologists, C.R.N.A.'s, and Anesthetists.

****Institutional: \$100**____. This category is open to academic, medical, hospital, philanthropic, scientific, governmental, or other nonprofit organizations with an interest in anesthesia technology.

****Corporate: \$100**____. This category is open to businesses and other profit oriented organizations that manufacture, distribute, and provide services that otherwise have an interest in anesthesia technology.

*Change of Address _____

(For official use only)

Date rec'd _____, Region _____, Mem# _____, Check# _____, Amt _____

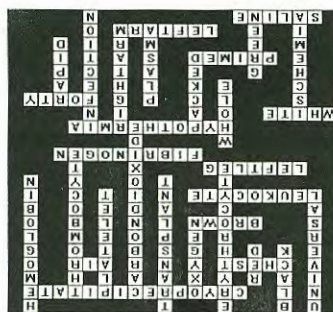
OPEN FORUM...(continued from page 5)

(cell saver), Laboratory Instruments (blood gas machine, ACT, Glucometer etc.), Anesthesia Machines (N.A.D., Ohmeda), Transcranial Doppler (Medasonics), Rapid Infuser (R.I.S. system), and Transesophageal Echo (Hewlett Packard). You can also inquire with your hospital education department regarding EKG interpretation, venapuncture, I.V. therapy, and computer skills training.

... According to the Center for Disease Control Guidelines on Infection Control: "Intravenous administration sets and tubing for hemodynamic monitoring should routinely be replaced every 72 hours."

**ANSWERS TO
PUZZLE:**

(From page 9)



ASATT T-SHIRTS & SWEATSHIRTS!



White or Navy with the ASATT Crest on the Front

**Prices: Short-sleeve T-shirts-----\$15.50ea
Long-sleeve Sweatshirts---\$22.50ea**

Sizes: M, Lg, XLg, 2X, 3X

To order, send your name, address, shirt style, color, and size, plus a check in the total amount to ASATT, 9805 N.E. 116th St. #A183, Kirkland, WA 98034-4248. Allow 4-6 weeks for delivery.

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- ★ Ohmeda Medical Systems, Madison, WI

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- ★ Florida Society of Anesthesia Technicians and Technologists
- ★ Georgia Society of Anesthesia Technologists and Technicians
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- ★ Marquette Electronics, Inc., Milwaukee, WI
- ★ Organon, Inc., New Jersey
- ★ SIMS Medical Systems, R.S.P., Inc., New Hampshire
- ★ Level One Technologies, Rockland, MA

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- Northwest Society of Anesthesia Technology
- Oregon Society of Anesthesia Technologists and Technicians

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