VANDERBILT UNIVERSITY MEDICAL CENTER • OCTOBER 1988

HOUSE ORGAN

Portrait of LifeFlight

Watching the wheels

by Wayne Wood

People whom I've known for years pass me in the hall and don't say hello.

Friends bombard me with questions concerning my personal grooming habits.

There is a stranger in my house, and it's me.

I no longer have a beard. After wearing one for (this time) more than three years, I recently stared into the bathroom mirror, and reached for the scissors.

Sharon and I had been looking through some photographs, and there were some of me from several years ago, and my face was actually visible. I realized that I hadn't seen my face in a long time.

I would like to take this opportunity to staunchly deny that my new clean-shaven look has anything to do with wanting to look younger now that I've turned 30. I'm not sensitive about turning 30, turning 30 is NO BIG DEAL, so let's just DROP IT, OK?

Sorry. Anyway, now that I have to get up 10 minutes earlier every morning to stare into a mirror and scrape soap off my face, I decided to look into the history of shaving.

I learned that there are things worse than a nick or cut. Ancient Egyptians used straight razors made of bronze, which I don't imagine holds an edge too well. An older version of "walking like an Egyptian" was striding rapidly while forcefully pressing both hands into the chin to staunch the flow of blood.

Some early American Indians used two halves of a clam shell to pluck their whiskers one by one. I'm not sure that all of them cheerfully went along with this—I'll bet some of them had reservations (snort, snort).

Some ancient Romans thought shaving was for sissies, until some of those clean-shaven Greek "sissies" engaged them on the battlefield with a little strategic whisker-yank-

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Special issue: LifeFlight

- What has it meant to the region?
- What has it meant to VUMC?
- Chronicle of a flight

Spectators look out from all over the hospital as LifeFlight comes in for a landing at dusk.

FLIGHT CHRONICLE

This is Dr. Reeves in Springfield. I have a man with multiple trauma. I need the helicopter.

written by Wayne Wood

reported by Wayne Wood and Kathleen Fox

photographs by John Howser

LifeFlight transports hundreds of people every year.

Most of the patients come back to Vanderbilt Hospital, but some go to other area hospitals. Some of the patients are children, though most are adults. Some flights go directly to the scene of an accident, though most are hospital-to-hospital.

Trauma is the main reason for calling the helicopter, though some patients are transported for illnesses or other reasons. The helicopter can carry two patients at once, but most flights pick up only one patient.

This is the story of one of those flights and one of those patients. It begins in Springfield, Tenn., on a summertime Friday morning.

7 a.m. — When Leonard Cook pulls his tan 1980 Chevy Malibu into the parking lot of the Springfield post office, the day is already getting hot. It's going to be another hot day of driving with the window down, leaning out over hot pavement to put mail into hot metal mailboxes. The air conditioning feels good as he walks into the post office.

Cook has been a postman for 23 years. His route is rural. He covers the area north of town, along highway 41.

Springfield is a town of about 10,000, located in Robertson County. U.S. highways 431 and 41 intersect there, merging for a few miles until separating to the north, both cutting through rural farm country on up into Kentucky.

About 35 miles to the south, in Nashville, flight nurses Laura Stanley and Jack Baltz are also reporting for work and getting ready for the day.

Stanley has been at Vanderbilt for about five years, first as an E.R. nurse, then, since December of 1984, as a flight nurse. In August she was named chief flight nurse.

"I guess it's just always intrigued me," she explains. "It gets you out of the emergency room. There's a little more autonomy, it's a little more exciting."

She earned a degree in nursing from Central State University in Edmond, Okla., and has just completed her training as a paramedic.

Her partner, Jack Baltz, came to flight nursing from another direction — that of fire fighter. His father was a fire chief in Brentwood. "I grew up around emergency work," he says.

Baltz worked as a fire fighter, then decided on a career change and went to nursing school at the University of Tennessee in Memphis. He honed his emergency nursing skill in the emergency room at General Hospital, and has been a LifeFlight nurse for about three years.

"They needed somebody with some outside field experience, and that's where I came in," he says.

Stanley and Baltz begin today's 24-hour-shift work day by carefully doing an inventory of the medical supplies in the helicopter. Every team of flight nurses begins its workday with such an inventory.

"If it's not here, it's not like you can step to the next room to get it," one of them explains.

8:45 a.m. — Leonard Cook continues to prepare for his mail route. He doesn't have to sort the mail — that part is already done — but he must place it in the proper sequence according to his route. Slowly the route takes shape in the order of the mail. Bills, letters, postcards, catalogs, magazines, all bound for the houses, farms, gas stations, grocery stores, and fast food places along his route. In his 23 years as a postman, Cook has done this literally thousands of times. He could probably do it in his sleep.

Stanley and Baltz are back from the helipad and are in the LifeFlight dispatch area. Today's dispatcher is Doug Spann, who has been with the program for a little over a year. Spann is a Dickson County native who had previously worked for three years as an Emergency Medical Technician with the Dickson County Ambulance Service. All the LifeFlight dispatchers are EMTs or paramedics, and all have gone on flights. They have a knowledge of emergency treatment and of what it's like to be aboard the helicopter treating a patient.

The dispatchers are the nurses' and pilot's link to the medical center when they are on a flight.

"It's the excitement of it," Spann explains when he is asked what he likes about his job. "There's never a dull moment."

9 a.m. — This looks suspiciously like a dull moment. Stanley and Baltz are catching up with some paperwork and talking in the office. Spann fields routine phone calls.

Cook has completed ordering his route and pulls his old Chevy around to the post office's dock to load it with mail. Rural mail carriers often use their own cars to make deliveries; Cook's tan Chevy has logged thousands of miles up and down highway 41.

9:37 a.m. — Cook arrives at his first stop of the morning, the Grower's Supply feed store. The highway running in front of the feed store is four-lane, but merges into two lanes within sight of the store. A tobacco sales warehouse, the county fire department, and the National Guard armory sit along this stretch of 41.

Cook delivers the day's mail to Grower's Supply, and pulls out into the

Facts of 'Flight

Some facts about the LifeFlight program:

- Number of flights made last year (July '87 — June '88) — 896
- Number of patients transported on those flights — 989
- Number of full-time flight nurses — 10
- Number of full-time dispatchers — 4
- Number of part-time dispatchers — 4
- Average number of flights per month — 75 to 90.
- Heaviest season — summer
- LifeFlight's service area — 150-mile radius of Nashville
- Number of hospitals in LifeFlight's service area — 104
- Actual number of hospitals served, July '87 — June '88 — 88
- Date of program's first patient flight — July 6, 1984
- Helicopter vendor — U.S. Jet Aviation
- Number of pilots assigned to LifeFlight — 4
- Manufacturer of helicopter — Messerschmitt-Boelkow-Blohm GmbH of West Germany
- Model number — BK-117

right-hand lane. There is a car in the left-hand lane at about the same point, and coming up fast in the rear view mirror is a Nissan truck. The driver of the truck slams on his brakes; later, the Springfield police would measure 24 feet of skid marks leading up to impact.

Impact. The Nissan truck's front end is smashed in, and the mailman's Chevy is blasted down the road. Cook is flung backward by the impact, then slumps forward, his foot inadvertently resting on the damaged car's accelerator. The car jerks forward, gaining speed. It accelerates 125 feet and then pitches off an 18-foot embankment, crunching nose first into a creekbed, then falling backwards and coming to an upright rest in a concrete culvert.

Cook has been flung backward by the truck's impact, then slammed forward into the steering wheel. His hands are forced through the windshield and he feels his blood trickling from his fingertips. He is pinned in the wreckage.

9:39 a.m. — A call comes in to the Springfield Police. There's been a wreck on highway 41 north of town. Officer Jeffrey White is on patrol and is directed to the scene. It takes him three minutes to arrive.

The car jerks forward, gaining speed. It accelerates 125 feet, then pitches off an 18-foot embankment, crunching nose first into a creekbed.

9:41 a.m. — Robertson County Emergency Medical Services is notified of the accident. One of the EMS workers that morning is Greg Snow. He and his partner arrive two minutes after the call comes in.

9:45 a.m. — The fire department is already on the scene. The accident occurred in front of their station. Fire workers, police, and EMS people make their way down the embankment to Cook's car. Several bystanders look down from the highwayside. As extrications go, this one is rather routine; Cook is removed from his car shortly after 10 o'clock. The EMS workers strap him on a backboard and hoist him up the embankment and into the ambulance. The emergency room at Springfield's Jesse Holman Jones hospital knows he is coming. In two minutes, he is there.

10:10 a.m. — Dr. Robert Reeves, director of emergency medicine at Jesse Holman Jones meets the ambulance at the door. He already has several things in mind. One is that the time Cook has spent trapped in his car has taken valuable treatment time. It has now been more than 30 minutes since the accident. An evaluation must be done quickly.

Some time later, Reeves explained some of the guidelines hospitals such as Jesse Holman Jones use in deciding whether or not to transfer a trauma patient to a more sophisticated medical center.

"Generally we transfer multi-system trauma, or that requiring the treatment of more than one specialty concurrently," he explained. "Or, one-system trauma not handleable on site here."

Even before Cook arrived at the hospital, Reeves knew he would be a prime candidate for transfer.

"We felt there was a distinct possibility of multi-system trauma. As soon as we heard the mechanism of injury, this ran through our minds," he said.

Two of the injuries Reeves is on the lookout for are an interabdominal injury, and a back injury.

"He had a severe mechanism of injury — he was hit from behind and driven down an embankment without restraint," he explained later.

Reeves's examination rules out neither possibility; Cook complains of pain in both his back and abdomen. The lacerations on his hands are bloody and painful, but not life-threatening; they can wait.

In a matter of minutes, Reeves decides Cook would best be served by going to a trauma center. He steps outside the E.R. treatment room to the nurses' station, picks up the phone and dials. Dispatcher Doug Spann answers.

"Doug, this is Dr. Reeves up in Springfield. I have a 67 white male. A Mr. Leonard Cook. He has multiple trauma, and I need the helicopter if it's available."

It is 10:20 a.m.

VUMC named level one trauma center

Vanderbilt University Medical Center has been designated a Level One Trauma Center by the State Board of Licensing Health Care Facilities.

Unlike a regular emergency room, a "level one" trauma center maintains the most sophisticated equipment, helicopter ambulance and 24-hour surgical staff trained in treating critically injured patients, according to the standards set by the American College of Surgeons.

"Vanderbilt has been in compliance with these standards for more than a year," said Dr. John A. Morris, assistant professor of Surgery. "What the state is saying now is that we have the Good Housekeeping Seal of Approval."

"We're providing the same standard of care that we've been providing and in some cases we're exceeding the level of care that is mandated," Morris said. "We will continue to strive for those high standards in caring for the injured and in public education."

Morris said he is relieved that the designation has been given. "The process, while painful, has been very worthwhile," he said.

Also receiving the Level One designation were four other Tennessee hospitals — Erlanger Hospital in Chattanooga, the Regional Medical Center in Memphis, UT-Knoxville Hospital and Holston Valley Hospital in Kingsport.

10:20 a.m. — Laura Stanley is in the LifeFlight office when the call comes in. "Are we going to fly?" she asks.

"Springfield. Trauma," Spann answers with a nod.

As Spann pages the E.R. attending physician to come to the phone to talk with Reeves, Stanley picks up another phone and dials in the code to activate the walkie talkies that the nurses and pilots carry.

"Flight control to all personnel," she says. "We have a trauma flight, adult trauma flight, to Springfield."

10:29 a.m. — The helicopter rocks gently as it lifts from the pad, rapidly gaining speed and altitude as it crosses 21st Ave. S. and cuts an arc over the Peabody Campus. Springfield is about 12 minutes away.

Both Jack Baltz and Pilot Mike Mullins had been across the street from the hospital in the Oxford House when they heard Stanley's page. Resting quarters for the pilots and nurses are there. The run down the stairs, across the street, and the ride up the elevator to the rooftop pad are a familiar ritual. The nurses arrive before Mullins, and they talk about who will be responsible for the direct care of the patient and who will handle the writing and in-flight documentation.

"Do you want to take this one?" Baltz asks.

"I'll take it," Stanley answers.

Done.

10:35 a.m. — "LifeFlight flight control — we're ready for patient report whenever you are," Stanley says. She is riding up front with Mullins in the co-pilot's seat. Baltz is in the back of the craft. Everybody on board wears headsets with speakers in the earpieces and a microphone on an adjustable stem that fits almost against the lips. The headsets help seal out the noise of the craft and allow everybody on the craft to communicate with each other and with flight control; they also allow the nurses to switch to EMS channels and talk to ambulance workers to get patient information.

On this flight, information from EMS people is not needed. Reeves has talked to both Dr. Paul Auerbach, director of emergency services for VUMC, and to Doug Spann.

It is Spann who passes along Reeves' assessment of the patient.

The helicopter rocks gently as it lifts from the pad, rapidly gaining speed and altitude as it crosses 21st Ave. S. and cuts an arc over the Peabody Campus. Springfield is about 12 minutes away.

"En route to Jesse Holman Jones, returning to Vanderbilt. Sixty-seven-year-old male, weight approximately 175 pounds. Involved in an MVA with a long extrication...."

Moments before, Reeves had told Auerbach: "He complains bitterly of back pain in the mid-back area, and he has an acute belly and hypotension." The pain in the back concerns everyone. It could be nothing, or it could be a broken back. Until proven otherwise, everybody is assuming it's a broken back.

"Acute belly" usually means internal bleeding in the abdomen — which would certainly be no surprise in somebody who's been bounced around in a car going over an embankment.

Pulse, blood pressure, respiration rate. Stanley and Baltz take down the information on pieces of tape stuck on the front part of their upper legs. A random piece of paper or a notebook can be misplaced in the shuffle; the tape and its information will be stuck to their legs until they decide to remove it. It's one less thing to worry about.

10:37 a.m. — The nurses have their information and are basically simply waiting to arrive. Baltz later explains that the nurses usually go in with the idea of doing a head-to-toe assessment of the patient — another assessment can't hurt, and it may allow them to see something that somebody else has missed or a problem that is new.

"Sometimes I mentally picture the patient and the E.R. I'm going into," he says.

The hot summer air causes some turbulence, and the craft bobs and weaves as it passes over the rolling hills south of Springfield. Baltz doesn't seem to notice.

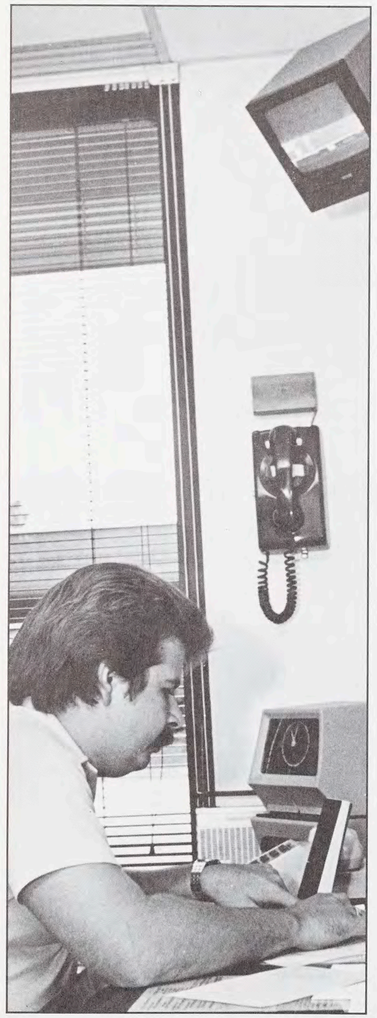


Mike Mullins checks the weather radar in the pilots' Oxford House headquarters.

10:39 a.m. — Pilot Mike Mullins radios Spann that he is on the final approach to Springfield.

The pilot's demeanor is quiet and professional as he reports his location and speed to Spann, as he has done several times throughout the flight. Each time, Spann takes the information down. The dispatcher can plot the helicopter's location at any point in its flight.

Mullins is military-trained, as are all four of LifeFlight's pilots. They are under contract to the medical center from the helicopter vendor, U.S. Jet.



Doug Spann and the other dispatchers are the link between LifeFlight and the medical center during a flight.
Opposite page: *Mike Mullins*

The hot summer air causes some turbulence, and the craft bobs and weaves as it passes over the rolling hills south of Springfield. Baltz doesn't seem to notice.

Mullins flew one tour of duty in Vietnam, and has more than 4,000 hours of flight time.

"There's a lot of routine elements," he says of his job," but I get excited when we go out. I enjoy flying. It's an enjoyable job. The flight nurses are exceptional people. Really professional.

"I think this work has a basic, intrinsic value. I like the teamwork. There are very good people here."

Mullins brings the craft lower over Springfield on his approach. A WalMart, a bank, fast food places, and convenience markets pass below. Jesse Holman Jones has no helipad, so Springfield police block a section of Brown Street near the corner of 8th Avenue for the helicopter to land in.

Normally, an ambulance meets them at the landing site to drive them the block-and-a-half to the hospital's E.R. Today there is no ambulance in sight, so Baltz and Stanley grasp the stretcher and walk.

10:44 a.m. — The phone rings in the E.R. at Jesse Holman Jones. It is Doug Spann calling to confirm that LifeFlight has safely landed. The dispatcher loses radio contact when the craft loses altitude to land, so the confirming phone call is necessary.

10:46 a.m. — The doctors at Jesse Holman Jones have not been relaxing, waiting for LifeFlight to arrive. When Stanley and Baltz walk through the door, Leonard Cook has two large-bore IV lines in place, a Foley catheter, an N. G. tube, and Reeves has had taken an anterior/posterior X ray of Leonard's check and an X ray of the lateral cervical spine.

The IVs will aid in fluid replacement; trauma treatment requires a massive amount of fluid resuscitation. The Foley catheter is to drain urine. The N.G. (nasogastric) tube is in place to decompress the stomach. A trauma often temporarily stops the motility of the stomach and intestines, and makes the patient prone to vomiting — especially a problem if the patient may have a broken back and must keep the same position. The N.G. tube eliminates the problem.

The X rays will help answer the questions most on the minds of the doctors and nurses at this point: does Cook have a broken back, and does he have internal bleeding?

He has received 50 milligrams of Lidocaine to treat some cardiac arrhythmias he is having. He has no history of any heart trouble, but he has no history of getting knocked down embankments, either, and especially in older patients the shock of trauma can cause the heart to do odd things.

Baltz and Stanley step into the Jesse Holman Jones E.R., saying hello to the people who work there. There are few strange faces; LifeFlight is called to Springfield a couple of times a month.

The flight nurses begin the process of taking over the care on Cook. The Jesse Holman Jones cardiac monitor is unhooked, and the portable model the nurses have brought in from the helicopter is attached.

Stanley introduces herself to Cook. "Sir, we've got to get you on down to Vanderbilt," she says.

10:50 a.m. — Back at VUMC, admissions liaison Pat Fann has been at work. It is her job to have a chart ready on an incoming patient.

A call to the Springfield hospital garners the basics: patient's name, age, address, type of injury, nearest relative.

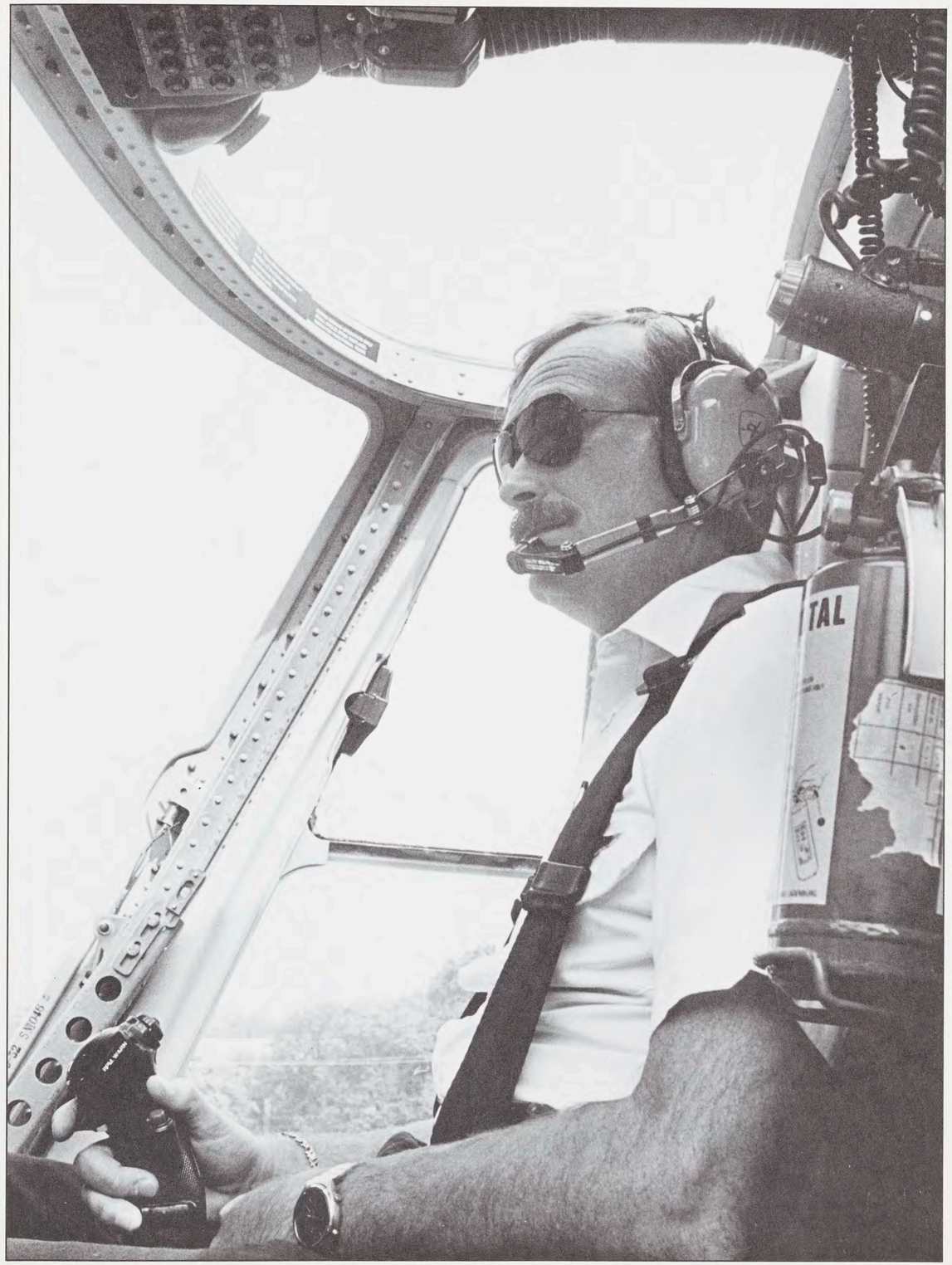
Both Fann and dispatcher Doug Spann have told E.R. nurses about Cook, and one of the E.R. rooms is prepared. The gurney normally in the room is wheeled out, so the emergency gurney can be wheeled in. IVs are hanging, oxygen is hooked up, monitors are standing by.

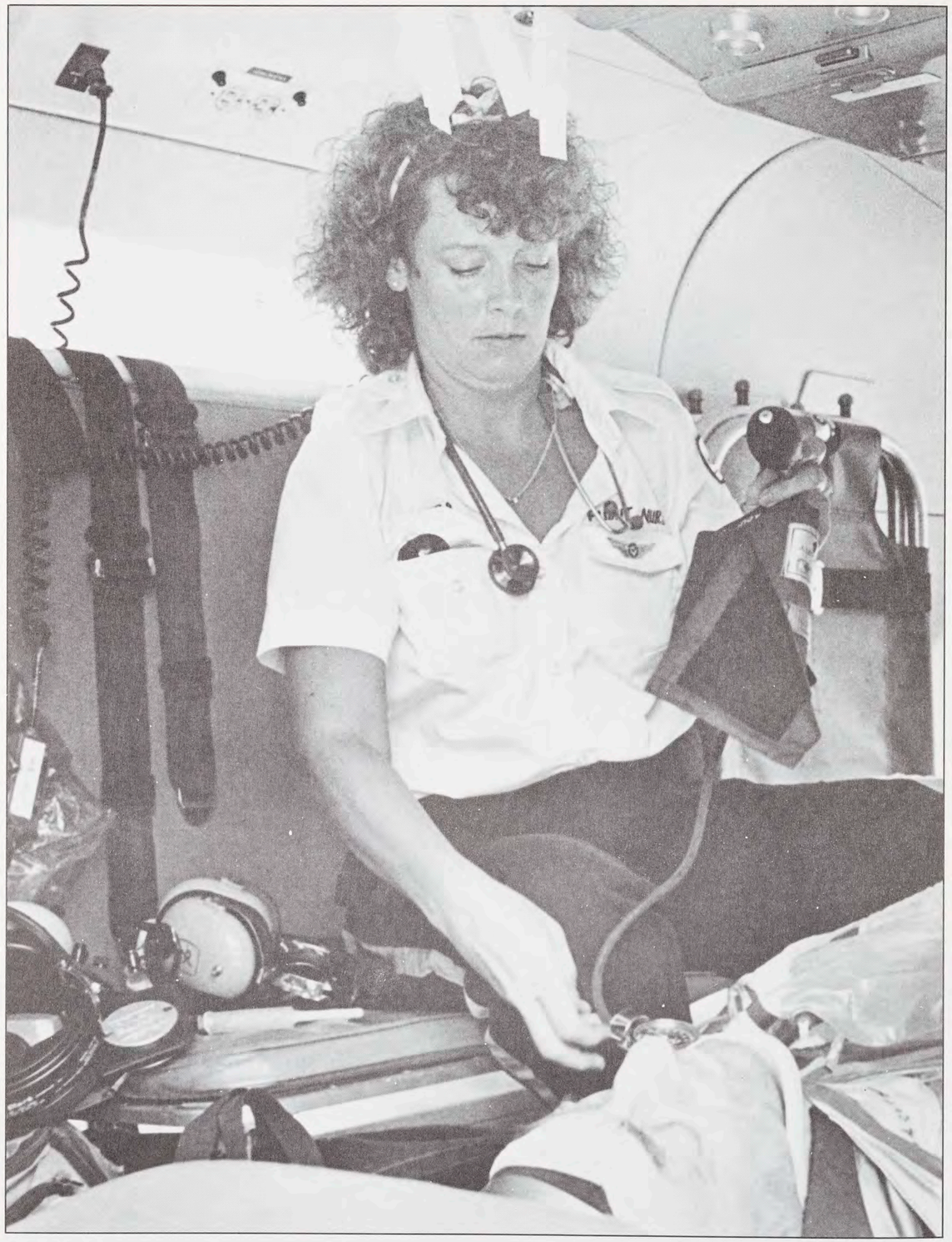
Dr. John Morris, director of the Trauma Center, strides by the room, resident in tow, and heads into the LifeFlight office.

"Where are we?" he asks Spann.

"In Springfield."

"We're on the ground? Oh, OK." Morris will be ready to take the patient





Laura Stanley

He has no history of heart trouble, but he has no history of getting knocked down embankments, either. The shock of trauma can cause the heart to do odd things.

into surgery if need be, but it's still going to be a few minutes before he knows.

"Who's flying today?" he asks.

"Laura and Jack."

10:55 a.m.—Laura and Jack are helping load Cook in a Robertson County ambulance for the block-and-a-half ride back to the helicopter. They have done a brief physical assessment of Cook, spoken with the nurses and with Reeves, found out that Cook's wife knows where he is and that he is being transported to Vanderbilt, and have secured him for the flight.

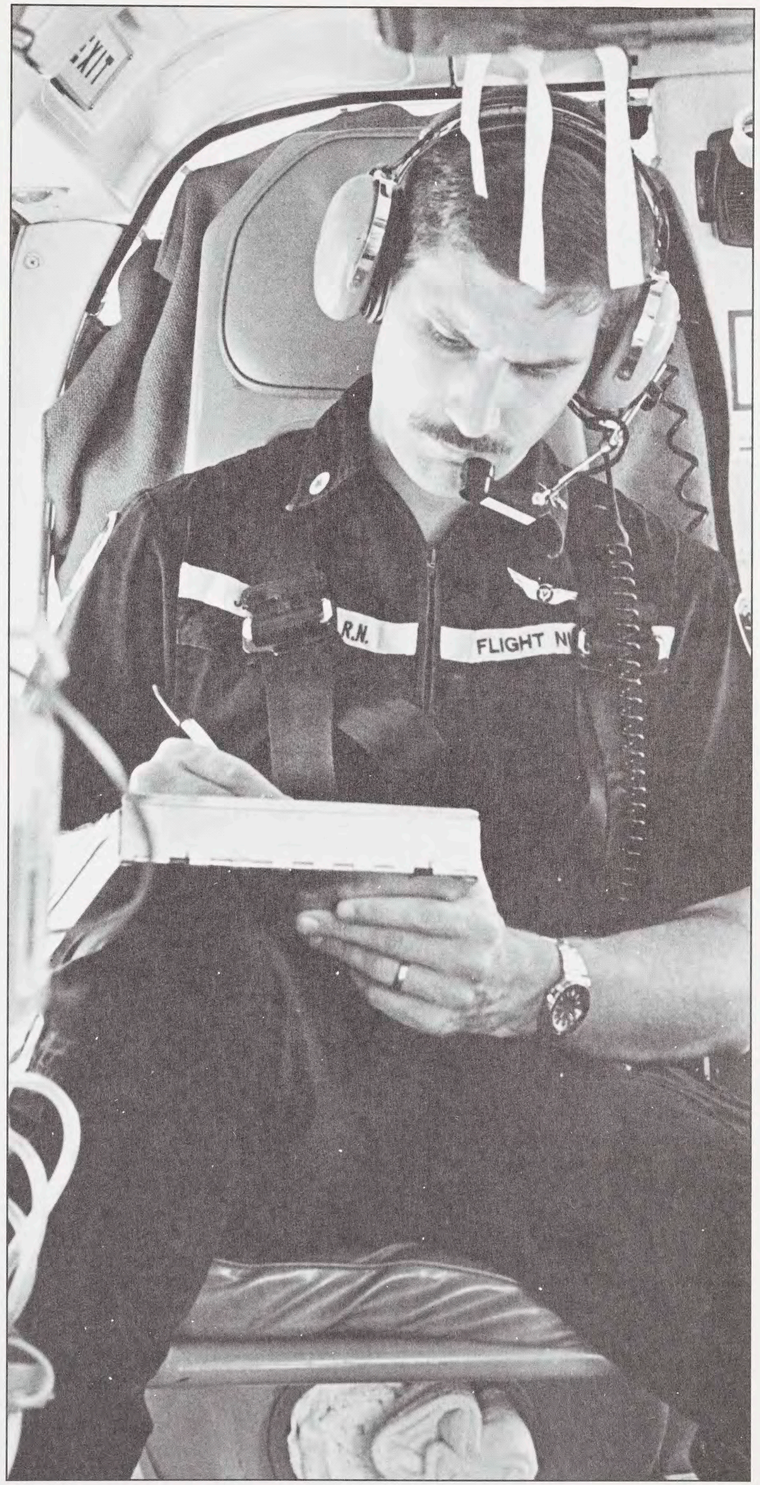
Reeves stands in the E.R. door and watches the ambulance drive toward the helicopter. Some people within his hospital sometimes suggest to him that Springfield accident victims should be treated in Springfield.

Talking about the case later, Reeves said, "I catch flack for using LifeFlight. But it's not embarrassing for me as a doctor to say 'You need more care than I can render,' and I don't think a community hospital should be embarrassed to say 'You need more care than we can render.'"

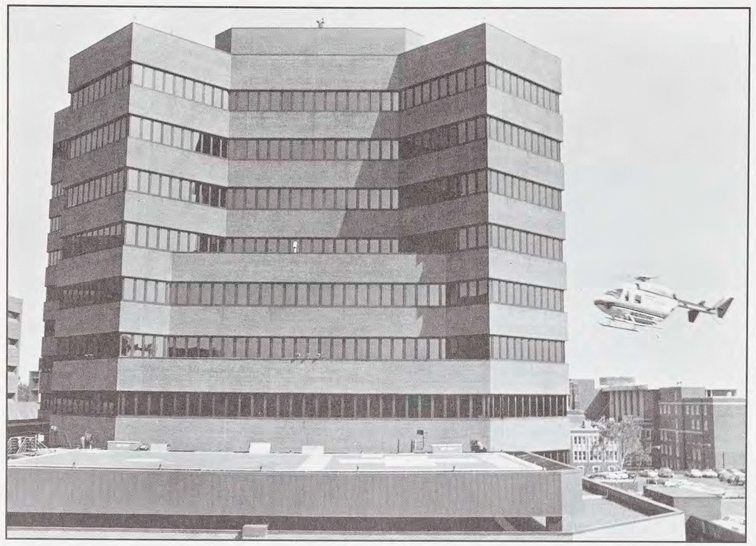
Such calls may be easier now. Since the day of the Cook case, Tennessee has named trauma centers for the treatment of such cases. Local physicians may now justify themselves by pointing out the state's guidelines.

Stanley and Baltz thank Snow and Sawyers, the Robertson County EMTs. Cook is in the helicopter, and the rotors begin to turn. The nurses keep the side door open as long as possible for air to circulate. As the engine warms up, so does the interior—the air conditioning works only after it is in the air.

"Sir, what would you like me to call you" Stanley asks Cook. "I've just been



Jack Baltz



calling you 'sir.'"

"You can call me anything you like," he says with what probably passes for a smile in a trauma patient.

Cook's stretcher is positioned and locked into place on the floor of the back of the helicopter. Stanley sits on a low bench that runs beside and parallel to the stretcher. Baltz sits at the patient's head, facing the back of the craft.

On the way to Springfield, the nurses wore lap and shoulder belts. Now, so they can easily move to take care of Cook, they wear only the lap belts.

The interior has no wasted space. As helicopters go, this is a large one, but as treatment areas go, it is very small. There are storage areas for medical supplies, IV fluids, and drugs; there is an outlet for compressed oxygen to help patients breathe; there is suction equipment; there are hooks to hang IVs and a rack to hold the heart monitor.

Baltz slides the door closed, the pitch of the rotors rises, and the corner of Brown and 8th recedes as Mullins guides LifeFlight south.

11:01 a.m. — "LifeFlight to flight control — en route back to Vanderbilt," Baltz says. It is the first radio contact in more than 20 minutes, since Mullins reported they were on final approach.

11:02 a.m. — The phone rings in the LifeFlight office. It is Robertson County EMS. "Doug, this is Joe. They're in the air."

Spann, of course, know this — he just talked to them.

"Appreciate it, Joe," he says.

"Sure."

11:04 a.m. — Stanley and Baltz have threaded a small, clear hose to dispense oxygen to help Cook breathe, and continue to take his vital signs. Their ongoing physical assessment grows more detailed, and the case is looking better. The intense back pain that Cook had complained of earlier is gone.

"He's not as sick as we thought," Baltz comments into his mouthpiece. Everybody on the craft can hear him, but it's unlikely that Cook can over the noise of the engines and rotors. "He's not doing badly at all."

Mullins sits up front alone now, his hand gripping the joystick that guides the helicopter. Digital readouts of distance, speed, time, and altitude are on the instrument panel to his left.

He is flying at about 1,000 feet — a little lower than normal because of the summer haze. He has a panoramic view of the rolling hills, crisscrossing two-lanes, and the subdivisions sprawling north from Nashville.

In addition to the flying itself, the LifeFlight pilots are responsible for keeping the official log of flying time and distance. The log is used for patient billing and for maintenance.

Back at VUMC, people have been at work: information is gathered, IVs are hung, oxygen is hooked up, monitors are standing by.

"The aircraft is overmaintained, which is great," he says.

Today's hot, hazy weather causes some turbulence, but no real problems. The LifeFlight helicopter has a built-in weather radar, so the pilots can see any problems ahead. There is also weather radar in the pilots' quarters in the Oxford House. The final decision to fly or not is always with the pilots.

"If the weather is so bad that I have misgivings, I turn the flight down. Without a problem," Mullins explains with a shrug.

11:06 a.m. — Things are going well. Stanley and Baltz had thought that they might have a patient with an acute belly and a broken back, but Cook seems to be holding up well. His vital signs, which Stanley checks periodically, are stable.

But the heart monitor is showing something else — something that is now potentially more damaging than the trauma. The cardiac arrhythmias are back. Stanley pushes a button on the heart monitor, which is mounted on a rack over the patient, and it prints out a

"I think this work has a basic, intrinsic value. I like the teamwork. There are very good people here," pilot Mike Mullins said.



Stanley, Baltz, and Mullins position Cook for the trip from the helipad to the E.R. below.

strip of paper showing the blips of Cook's rhythm. She hands it to Baltz, who looks at it in the light of the window beside him.

11:07 a.m. — "LifeFlight control — ready for patient report?" Stanley asks. Dr. Paul Auerbach crackles into the headsets a moment later: "LifeFlight, this is Vanderbilt. Go ahead."

"I just wanted to let you know we're back en route with this elderly male. He's awake, alert, and oriented. He's got really no complaints anywhere except he complains just a little bit of some back pain. He's got good neurological function. He's got good grip strength, good movement in the lower extremities. His abdomen is soft. His chest is clear. He does complain of a little bit of pain when the sternum is lightly palpated.

"What I'm calling about is he's having about 20 unifocal PVCs a minute."

A PVC is a premature ventricular contraction — an irregular heartbeat. The rest of Stanley's statement is a good news/bad news situation. A unifocal PVC is better than a multifocal PVC. Unifocal means it is coming from only one area of the heart. But 20 of them a minute is not good. At all.

> "The best information you get is from the flight crew," Morris says. "These people have seen so much more than the average E.R. attending."

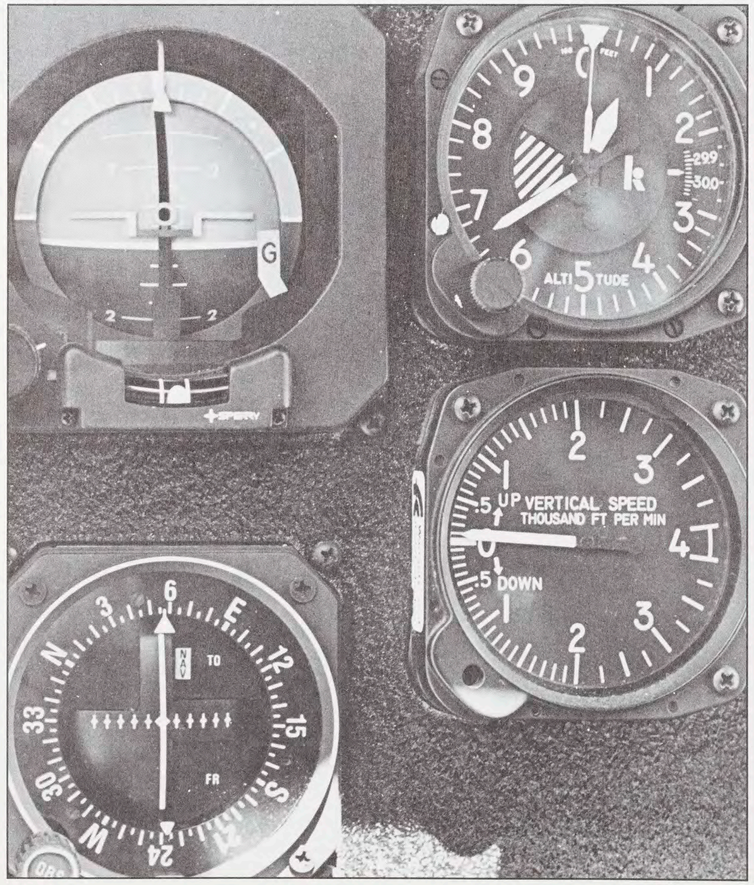
LifeFlight nurses are accustomed to dealing with matters of life or death — they do it every day. But this is a switch. Cook's trauma does not appear to be as severe as at first feared, but now his life is threatened by another source — the accident-produced heart arrhythmias. If they are not stabilized, they can lead to cardiac arrest.

Cook received 50 milligrams of the anti-arrhythmia drug Lidocaine at Jesse Holman Jones, and has been receiving small amounts of the drug through his IV since. But this calls for more drastic action. Auerbach instructs Stanley to inject an additional 75 milligrams over the course of two minutes. She fills a syringe with Lidocaine — the drug is among those always kept aboard LifeFlight — and attaches it to a port on Cook's IV.

11:09 a.m. — Even with the air conditioning, this helicopter is hot. Stanley and Baltz have sweat on their brows. Considering the vibration of the helicopter, the heat, the hard work — stamina is a definite requirement of a flight nurse's job.

Stanley checks Cook's heart monitor again. The push of Lidocaine is doing its job. His heart rhythms are stabilizing.

Morris is back in the LifeFlight office. "Flight control to LifeFlight," he says into the microphone.



"I love to fly"

Being a flight nurse gets Gayle Johnson plenty of experience in the air, but not enough to suit her. So she goes out of her way to fly even more.

"I love to fly. In fact, I'm a flight nurse in the Tennessee Air Guard at Berry Field, so I spend a fair amount of time in the air."

It's not always the air over middle Tennessee, either — Johnson has flown with the Air National Guard for training exercises in Central America.

"I get the best of both worlds — I get a civilian life and I get a taste of the military."

The crafts she's flying on vary, as well. At VUMC, she does her flight nursing from the modern, well-equipped LifeFlight helicopter. When she's with the Guard, Johnson works in propellor-driven C130s.

"They're old and dirty and grungy and I love it," she said.



A change of responsibilities takes place when Cook reaches the E.R. Baltz works with the E.R. staff to be sure the transition of care is smooth.

> Considering the vibration of the helicopter, the heat, the hard work — stamina is a definite requirement of a flight nurse's job.

"Go ahead," Stanley answers.

"Hello, this is Dr. Morris — how're you doing?"

"OK, right now. Blood pressure — we just took it. It's still 180. Pulse is 92. He's still awake, alert, and oriented. I don't see any PVCs right now. Gave him that Lidocaine a couple of minutes ago."

"Sounds good. Do you have an assessment of his injuries? I understand he had some abdominal pain, but that's dissipated. Is that right?"

"He hasn't complained of any abdominal pain with me. The only pain he does complain of is some left shoulder pain, and I can't find an injury in that area — not grossly, anyway."

"Sounds good," Morris says. "We'll tell the O.R. to stand down. Thank you."

"10-4".

Checking back

A flight nurse isn't always flying, and the job doesn't end when the flight is over. The nurses who work in the LifeFlight program are also responsible for such varied duties as keeping the helicopter well-stocked with needed medical supplies, maintaining charts on transported patients, and doing follow-up reports to referring hospitals and physicians.

These follow-up checks are done after the first 48 hours a patient is in the hospital, and after that every week until the patient is released. This information not only keeps the referring physician abreast of the treatment the patient is receiving, but also helps serve to educate referring physicians about services available at VUMC.

A resident has been watching Morris talk with Stanley. "The best information you get is from the flight crew," Morris tells her. "If it's a long flight, they are 90 percent on the button—sick or not sick. These people have seen so much more than the average E.R. attending."

Morris calls the O.R., which has been standing by in case Cook needs immediate surgery.

"He has good blood pressure and good pulse," he says. "Doesn't sound as sick. You can stand down. I'll call you if my first evaluation has me worried."

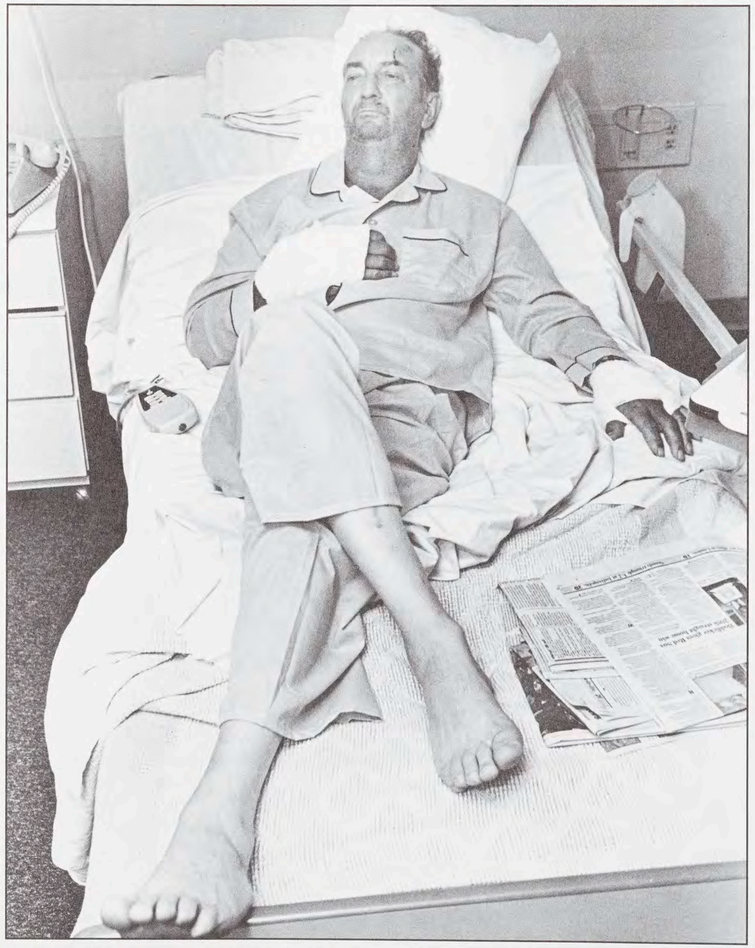
Baltz and Stanley aren't around the E.R. to see Cook admitted. They and Mike Mullins are on their way to Clarksville to pick up another patient—another trauma.

11:11 a.m.—Mullins radios he is two nautical miles out and is on the final approach.

11:13 a.m.—"On the pad at 11:13," Spann says, watching the runners touch down. The helipad is on closed circuit television in the dispatch area, and Spann watches as Mullins slows the engines for the two-minute cool-down before stopping the rotors. A severely-injured patient would be unloaded at this point—a "hot unload." For most patients, the nurses wait for the engine to cool and the rotors to stop.

While they wait in the back, Stanley tells Cook, "There's going to be a lot of people down there asking the same questions. Try to be patient with them."

He looks at her and nods a little. Less than two hours ago he was at the feed store on highway 41, ready for a day of delivering the mail.



After two days in intensive care, Cook was transferred to a regular room.

11:15 a.m.—Cook is unloaded from the back of the helicopter, placed on a gurney, and wheeled down the ramp from the helipad. The elevator at the end of the ramp comes out in the E.R., and he is taken into the treatment room that has been prepared for him. Baltz and Stanley pass on their information, but he is no longer their patient—the E.R. people take over now.

11:30 a.m.—The flight nurses stop by the supply closet in the E.R. area to get what they need to replenish the helicopter.

E.R. doctors and nurses continue to work with Leonard Cook for more than an hour. He is admitted to the intensive care unit on the Seventh Floor of VUH—cardiac care. It is his heart, not his injuries, that most concern the doctors now.

Baltz and Stanley aren't around the E.R. to see Cook admitted. They and Mike Mullins are on their way to Clarksville to pick up another patient—another trauma.

Epilogue—Leonard Cook spent less than two days in the Cardiac Care Unit. His cardiac arrhythmias did not return, and he was transferred to a bed on 9 South. He did not have a broken back or severe internal bleeding. He was suffering sciatic nerve pain and his hands were bandaged from the windshield lacerations.

He was discharged after four days in the hospital.

Before he left, he talked to a visitor about what it was like to ride on LifeFlight.

"I had never ridden on one before," he said. "I always wanted to ride a helicopter. But not that way."

More patients, sicker patients

LifeFlight and the Trauma Center have changed the patient mix of the ICUs

by Wayne Wood



John Howser

LifeFlight nurse Jane Herring checks with SICU nurses Denise Johnston and Jane Stephens.

The lives saved by LifeFlight end up in the Trauma Center and intensive care beds at VUMC.

The director of the Trauma Center, Dr. John Morris, said the development of the helicopter program and the development of the hospital were mutually complementary.

"At the same time that a commitment was made to the helicopter program, a commitment was made to upgrading the emergency department and implementing a trauma service. These three things developed in a coordinated fashion, each one benefiting from the development of the other," he said.

"We used to be a total surgery unit with a couple of traumas. Now the trauma service is what's filling our beds."

Patients flown in on LifeFlight and treated in the Trauma Center most often end up in intensive care.

"We used to be a total surgery unit with a couple of traumas. Now the trauma service is what's filling our beds," said Sandy Greeno, nurse coordinator of the Surgical Intensive Care Unit.

Pam Orebaugh Jones, nurse coordinator of the Pediatric Intensive Care Unit, agreed.

"Our trauma population is 25 percent of our admissions. Two years ago it was 10 or 15 percent, so (LifeFlight and the Trauma Center) have made a big difference."

The difference will likely grow more pronounced, with VUMC's recent designation as a level one trauma center.

Five years ago, the typical SICU patient was an older adult who had had surgery, and the typical PICU patient was a child under 10. The increase in trauma admissions—which tend to be young adults and teenagers—has changed the patient populations in both units. Now, the typical SICU patient is much younger then before, and the PICU treats many more teen-agers than they did several years ago.

Trauma patients bring some special needs to the staff of an intensive care unit.

"The trauma patient is a high-care-need-type patient," Jones said. Some badly-injured patients may require one-on-one nursing, placing staffing strains on a unit.

Sudden, traumatic injuries can take families of patients off guard, and make it necessary for nurses, physicians, social workers, and chaplains to help families deal with the shock. Sometimes, several family members may be injured in the same accident, and may be in different units, requiring coordination of information.

The ripple effect of more trauma makes its way out to the floors, too. As ICU beds fill, the least sick of those patients are transferred to the floors.

"There's a good working relationship between the LifeFlight and PICU nurses. They're a team."

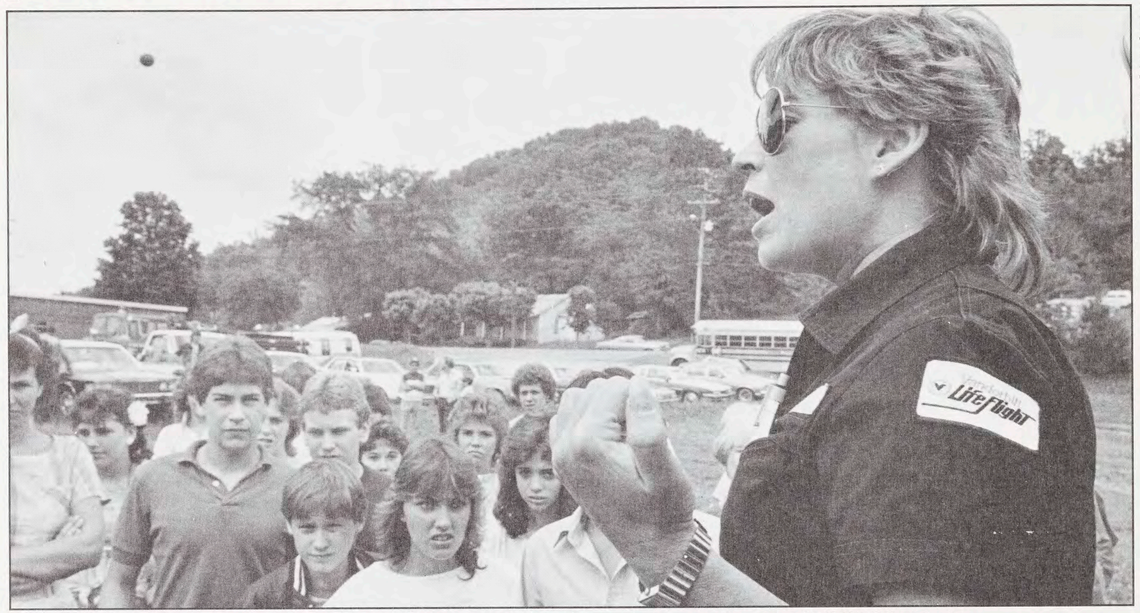
"The floors are getting sicker patients, too," Greeno said. "We're triaging more patients out to the floors."

Jones said that the LifeFlight nurses do a few days of orientation with PICU nurses to understand some of the special needs of the pediatric patients.

"There's a good working relationship between the LifeFlight and PICU nurses. They're a team," she said.

A legacy of lives

To some people, LifeFlight's difference is personal: a mother, father, son, or daughter



Lynn DeLaney Saunders

LifeFlight's Kim Ward addresses a school group. Outreach and education are important elements of LifeFlight's mission.

by Wayne Wood and Kathleen Fox

Outside of Davidson County, most of Middle Tennessee is rural. It is these areas where the effect of LifeFlight is most acutely felt.

Four years ago emergency medical service (EMS) directors in rural counties had to rely on ground ambulances to send cases which were beyond the capabilities of local medical facilities to Nashville.

Trauma surgeons, people who work in emergency rooms, and EMS workers all agree: time is life. The faster trauma victims receive the sophisticated treatment they need, the greater the chance for survival.

"It takes 32 minutes to fly from Celina and an hour-and-a-half to an hour-and-45 minutes by ground. LifeFlight gives life-saving time," said Keith Monday, the only paramedic in Clay County, Tennessee.

"I think (LifeFlight) is a blessing in dealing with critical transfers. We need to get them in there as quickly as possible. They are more stable in the air than on the ground," Monday added.

Similar comments were heard from other EMS directors in Middle Tennessee:

- Bob Thomas, EMS director, Maury County:

"We know there are people walking around in Columbia who would have perished five years ago. Lives have been and still will be saved."

"We know there are people walking around in Columbia who would have perished five years ago. Lives have been and still will be saved."—Bob Thomas, EMS director, Maury County

- Randall Kirby, director of the ambulance service, Macon County

"We've had two patients with torn aortas that are alive today because LifeFlight got them there so quickly."

- Bob Fletcher, director of EMS for Robertson County:

"LifeFlight gets them to the most advanced medical care during the golden hour."

Talk to very many EMS workers, and you'll hear a lot about the golden hour—the first hour after a patient has suffered trauma. Studies have shown that patients who receive proper medical care during this time are far more likely to survive.

"Someone who arrives here four hours after a massive closed-head injury is in very different condition from someone who arrives in two hours or an hour and 40 minutes," said Dr. John Morris, director of VUMC's Trauma Center,

"That time frame in terms of our being able to potentially return that patient to functional existence is vitally important."

Thomas of Maury County offered another example.

"We had a patient who fell out of a tree 30 or 40 feet and banged himself up every way you can. According to the orthopedic surgeon, he had more fractures in his back than any patient (the surgeon) had seen without nerve damage.

"He got to Vanderbilt with the golden hour that everybody talks about. This fellow is going to be back serving a useful life.

"He's a save if there ever was one."

There is no doubt that LifeFlight—or any similarly-operated helicopter service—can save lives. But the calls have to come in from the paramedics, the emergency medical technicians, the county EMS directors, and the local hospitals for the system to work.

"We've had two patients with torn aortas that are alive today because LifeFlight got them there so quickly."—Randall Kirby, ambulance service director, Macon County

Vanderbilt flight nurses and trauma center physicians make frequent trips to cities and counties served by LifeFlight—a 150-mile radius of Nashville—to learn about the needs of the local communities and to let the emergency and trauma workers in those areas know about LifeFlight.

Saving lives depends on more than rapid transport of the injured; it also relies on person-to-person contact, trust, and knowledge.

If an EMS worker in an outlying county is going to send a patient out of the county for care, it helps for the EMS worker to know the Vanderbilt people who are going to provide that care. Four years of contact have sealed deep bonds.

"They're the best folks in the world. They're our friends. We've got the utmost respect for them and what they do," Thomas said.

Macon County's Kirby echoes: "We're on a first-name basis with LifeFlight people because we utilize them so much. We work real well with them."

"We've utilized them several times not only with patients, but we sponsor a symposium twice a year and call LifeFlight to line up speakers. If we have a question about something new that has come out, they can research it and get back to us," Kirby said.

In fact, each patient who is transported to Vanderbilt on LifeFlight is checked back on by LifeFlight people, and the referring physician or EMS director receives follow-up letters telling how the patient is doing. Nobody flies away on LifeFlight, never to be heard of again.

The LifeFlight people also work with other emergency personnel in the coverage area to be sure everybody agrees on what type of injuries need to be transported, and which ones can be treated locally—a forerunner to the statewide trauma system currently being implemented.

Morris said that the early days of getting out the word on LifeFlight to middle Tennessee hospitals, paramedics, and EMS personnel brought home the importance of outreach.

"It taught us beyond the shadow of a doubt the critical importance of bringing our people to the rural community, not only in the situation of a dire emergency, but the importance of our people being recognizable faces and following up with continuing medical education for the nursing staff, EMTs, and paramedics," Morris said.

Such education can be a delicate undertaking, especially at first before the person-to-person trust is established.

"Early on, there was a lot of resistance (to LifeFlight)," Robertson County's Fletcher said.

"Many things went around in people's minds. Some people thought Vanderbilt was trying to take over the services or take patients."

Fletcher said a patient in his county needs LifeFlight "once or twice a month.

"Our priority is patient care. When we know of an MVA (motor vehicle accident) where serious injury is involved, we call LifeFlight and put them on standby.

"It's not that Vanderbilt or any other service is trying to steal patients. We try to get people the level of care they need."

Thomas of Maury County said there was little resistance to LifeFlight in his county. "I don't think you'll find anybody in Tennessee that believes in 'em more than I do," he said.

"Our E.R. physicians realize some things are beyond the capability of our hospital here. The main concern is the patient."



One of LifeFlight's favorite community contacts is Tick, the canine mascot of the Maury County EMS. He meets the helicopter whenever it flies to Columbia, so the nurses took him a LifeFlight t-shirt. In the shadows behind Tick is flight nurse Gayle Johnson.

Almost home

A typical day around the office—advice, jokes, stories, sarcasm, innuendo, and the crowning of the nasal intubation queen

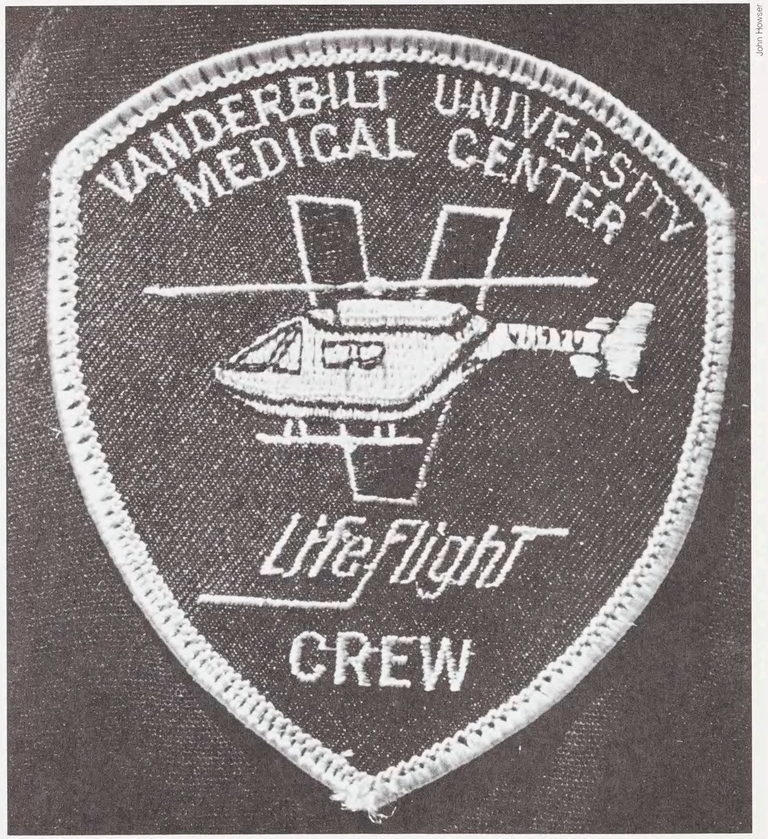
by Wayne Wood

The success of a program such as LifeFlight depends on, among other things, the camaraderie of the people involved—the nurses, the dispatchers, the pilots.

The impression a visitor to the LifeFlight office gets is that of an easy informality, combined with a dedication and seriousness of purpose.

"You're never sure what the day's going to bring. You may walk in and fly for 12 hours. You may end up sitting at the airport for four hours while the craft is in maintenance," said Kim Ward, manager for Air Medical Services.

Closeness develops among people who share meals, who share sleeping quarters for resting during 24-hour shifts, who share days of talk and hours of hard work.



John Howser

Flight nurse Gayle Johnson offered another perspective.

"Our job is not as glamorous as a lot of people think. It's a lot of heavy, heavy work," she said.

Ward agreed. "Flying is fun, but it's very serious business and you can't let your guard down."

Pilot Bill Hamblin is an inveterate kidder, constantly ribbing everybody in sight. His high-pitched laugh is surely audible halfway down the hall outside the office.

Minutes later after the call for a flight had come in, Hamblin was on the helipad doing a visual check of the helicopter. He walked around the craft, carefully inspecting the right fuselage, the rotor connections, the tail boom, the left fuselage, and the nose area. Seeing the serious set of his jaw and the keen focus of his eyes behind his aviator shades, it's almost difficult to believe that this is the same man who, a few minutes before was cheerfully dispensing innuendo to the listeners in the LifeFlight office.

Sometimes there are quiet moments to sit and talk. During one such time, flight nurse Gordon Melton—who is universally known by his nickname, Flash (Gordon, get it?)—discussed what drew him into emergency work.

"It's a real rush to come over a hill to a bad wreck and see it all lit up with the police already there and you know there's somebody there who needs you," he said.

Melton's first experience with LifeFlight came from the other side—he was a paramedic in Maury County before he went to nursing school and came to work at LifeFlight.

"When I worked in Maury County, when these guys (flight nurses) came through the door, I just wanted to hug 'em."

War stories about past flights figure a lot in the discussions, of course. Ambulance personnel from Metro Nashville or an outlying county wander in and out, saying hello and asking what's going on.

One day off-duty flight nurse Jane Herring dropped by with her children, Julie, 5, and Tony, 6. The children bore the spoils of a recent raid on a convenience market; Julie was swigging on a Coke and her brother was working on the remains of a Milky Way bar.

"Be careful and drink that Coke right," dispatcher Robert Earl Brooks cautioned Julie." If you spill it we'll all be in trouble."

In the adjacent office, their mother was listening to pilot Boyd Mitchell talk about the number of flights he had to make the previous day.

"Is it dragging?" Herring asked, turning the pilot around to check how his backside was holding up under the stress and strain.

Advice and wisdom get passed on as well. Herring told newly-hired flight nurses Lisa Cook and Maggie Handlan that they should never wear any nylon clothing or hose while flying—in case of a fire, cotton is much safer. It won't melt.

The tone is always low-key, but the meaning is clear and pervasive. The best way not to have a fire, or a crash, or not to be injured if such an event occurs, is to be ready. To think about little things, like what type of clothing is best.

"Our job is not as glamorous as a lot of people think. It's a lot of heavy, heavy work."

LifeFlight has developed a three-level incident plan which details procedures for dealing with anything from a minor incident to a major accident. The plan has existed for as long as the program has been in operation but was extensively revamped and detailed following the December 1985 crash of the Parkview Hospital SkyMed helicopter.

"That was the catalyst to get our incident plan together," Ward said. There is now a notebook of detailed plans, defining various levels of incidents and laying out what is to be done, and by whom, in the event of each one.

Beyond helping each other out in the choice of safer clothing, the nurses are quick to complement each other—especially to a visitor.

On one day, Gordon Melton's partner was Liz Glass.

"I always feel good flying with Liz because she's so good at what she does," he explained. "If you need somebody intubated, she can do it. She's the nasal intubation queen."

Glass—who has been a LifeFlight nurse since the program began—talked about the closeness that develops among people who share meals, who share sleeping quarters for resting during 24-hour shifts, who share days of talk and hours of hard work.

"It's like a second family because we spend so much time together," she said. "It's like brothers and sisters. We fight like brothers and sisters, but we take up for each other like brothers and sisters."

Flight nursing—a hard job, a proud tradition

by Kim Ward
Manager for Air Medical Services

Flight nursing is rich with tradition.

In 1943, at the height of World War II, the Army Air Corps formally established a medical evacuation unit staffed with nurses. At that time, large evacuation aircraft generally referred to as "Nightingales", were used.

Helicopters came into use in Korea and Vietnam, as lessons were learned and expertise gained in the areas of field triage, rapid transportation of the wounded, and aggressive trauma treatment by surgeons.

Continuing through various wars and international conflicts, military flight nurses have served and set an example of excellence in nursing for their civilian counterparts.

The first civilian flight nurses were trained at St. Anthony's Hospital in Denver in 1974. The U.S. was flooded with young Vietnam-veteran helicopter pilots who had had no other career in their young lives—and they wanted to keep flying. The marriage of helicopters and medicine formed a solid basis for the network of air ambulance programs across the country today.

At the core of nearly all helicopter teams are the flight nurses. Flight nurses are R.N.s who have expanded their role in health care to encompass the needs of the severely ill and injured during pre-hospital care and transport.

Some helicopter programs pair a nurse with a paramedic or a physician, but whatever the arrangement, the judgement, skills, and adaptability of the nurse is crucial to the care of a critically-injured person.

What is that makes flight nurses different from their in-house counterparts?

Flight nurses usually come from emergency department or intensive care backgrounds. Such nurses usually will have

Continued on page 22

Nursing

Continued from page 21

topnotch skills, good judgment, and be known for aggressive patient care. Nurses who are educators or managers are always good candidates, since flight nurses must combine wide range of medical, nursing, administrative (and often political!) decisions into the care of the patient and the safety of the mission.

The helicopter becomes to the flight nurse a small flying emergency room; the aviation component of the job is always there.



Advanced certifications in nursing and certification and training as emergency medical technicians or paramedics are usually required. The expanded role of the flight nurse often requires an ability to help with the extrication of a victim from a crushed car one minute and a nasotracheal intubation the next.

The flight nurse also has an important role in the overall safety of the mission. They are not passengers on a flight, they are members of the flight crew. Aviation terminology and crew member duties—such as map reading and surveillance for other aircraft—are as familiar to the veteran flight nurse as Dopamine infusions and cardiac monitors. The helicopter becomes a small flying emergency room to the flight nurse; the aviation component of the job is always there.

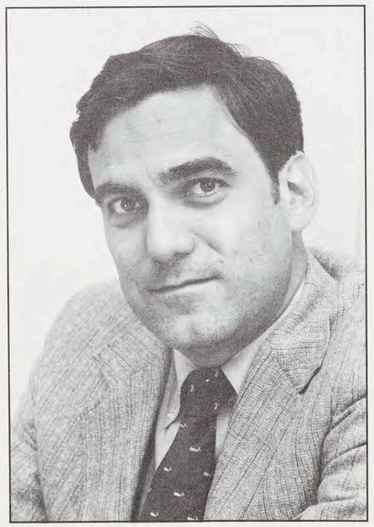
The stresses of flight are real: the vibration, the noise, communicating through headsets, altitude changes, lack of humidity, and sudden intense environmental changes are all a part of nursing in the air.

The career of a flight nurse is a very special one. The combination of autonomy and teamwork makes flight nursing one of the great challenges in health care today.

The early days — getting the program off the ground

This story is excerpted from an interview of Dr. John Morris about the LifeFlight program. In it, he recalls the summer of 1984 and the early days of the program.

by John Morris
Director of the Trauma Service



When I got here, all of the decisions had been made about the aircraft, the vendor, and the crew. But nobody, with one exception, in the entire program had ever been involved in an aeromedical program before. We were fairly green. I actually came two weeks early in an attempt to try and simply start literally from square one to figure out how we were going to use this tool.

We started with "how do you open the door?" and proceeded from there. We developed procedures for loading patients, developed procedures for taking care of patients in the air, developed protocols for when we would employ certain sophisticated techniques and when we would not. The first several months I met at the pad every patient who came in. In this day and age that seems absolutely ludicrous. When we can do 20 flights in a weekend the thought of meeting every patient is just mind boggling.

In the first months of the program, we were very unsure as to whether we were going to be able to make this work, whether we were going to be accepted by the referring community and whether we were going to be able to do what we thought we were going to be able to do, which was to take care of very sick patients in a very confined space.

It was a fun period because everybody was equal. The pilots, the nurses, the doctors—it was the whole group of people coming together. It didn't make any difference whether they were scheduled to work or they weren't scheduled to work. We did things in the early morning hours, we did things at night because, believe me, even the simple thing of loading a patient in the helicopter in the dark is very different from loading the patient in the helicopter when you've got plenty of light.

We didn't have schedules, we didn't have shifts, we just said as a group we were going to dedicate this first two weeks before we become operational to learning how to use this piece of equipment. There wasn't any overtime, there wasn't any set this, that, or the other thing. When it came time to eat, somebody went to Kentucky Fried Chicken—we had more grease that week than you can possibly imagine.

There wasn't any overtime, there wasn't any set this, that, or the other thing. When it came time to eat, somebody went to Kentucky Fried Chicken.

In retrospect, those were great times.

They were great times because retrospectively we know that it all worked, knowing that we have a successful and highly sophisticated program. The entire industry was unsophisticated.

We did some things in retrospect that are sort of glitzy. We have far less glitz today because we now do it as a matter of routine. We are set up to do it. There are less heroics because we are so much more professional.





Then and now: *Top—in the early days at the LifeFlight program, the helipad was located outside the E.R., and the craft was a Bell Long Ranger, which could carry one patient. Bottom—Today's pad is on the roof above the E.R., and the larger helicopter is able to carry two patients.*

Watching the wheels *continued*

ing. The Romans took to shaving before battle, and went on to conquer a great deal of the world. The Greeks are now stuck with a crumbling Parthenon that doesn't look half as nice as the one we have here. History is a stern dominatrix, but I wouldn't have it any other way.

But I digress. Shaving.

The modern safety razor was invented in 1901 by one King Camp Gillette, whose one previous foray into public notoriety was a book titled *The Human Drift*. In this tome, Gillette revealed himself as a flaming socialist with a dream of a worldwide corporation to control everything and end all competition.

While he was slouching toward Utopia, Gillette also figured out that if he could perfect a better way to shave, he would make a great deal of money. He did, and he did.

The research and development department at the company which still bears Gillette's name is the world's main source for shaving information, such as:

- Men's face stubble tends to be tougher than women's leg and underarm stubble, but women wear out razor blades faster because of their excess of shaving acreage.
- The average beard is composed of 15,500 whiskers.
- The average beard grows five-and-a-half inches per year, and 27½ feet in a lifetime.
- The average man spends 3,350 hours of his life shaving.

But my favorite bit of shaving trivia comes not from Gillette, but from science writer David Bodanis. It involves establishing an accurate time-of-death for facial hair:

"Hair itself...is dead cells oozed out in rope form from numerous holes on the head," he writes. "The long ones on the scalp have been deceased for weeks or months, and even the short ones...in the chin are likely to have gone through the ultimate hair throes and died 15 or 20 hours before coming out."

Just thought you'd like to know.

For art, go on Sarratt patrol

A good lunchtime destination when you want to get away from the job and let your mind head over the horizon is the Sarratt Gallery, located in Sarratt Student Center.

The gallery sponsors a year-long series of exhibitions, all of which are open to the public free of charge. Gallery hours during the regular academic sessions of the university are 9 a.m. to 9 p.m. Monday through Saturday and 2 p.m. to 9 p.m. on Sunday.

Scheduled exhibitions for the rest of this year at Sarratt Gallery are:

BREAD AND ROSES: CREATIVE EXPRESSIONS FROM THE GRASSROOTS COMMUNITY

An exhibition of photos and crafts from Appalachian communities held in conjunction with Appalachian Student Health Coalition 20th Anniversary gathering at Vanderbilt. September 26-October 14, 1988 (Sarratt display cases)

THROUGH THE VIEWFINDER: A LOOK AT VANISHING AMERICA

Photography exhibition. October 9-November 5, 1988.

GYORGY KADAR: SURVIVOR OF DEATH, WITNESS TO LIFE

An exhibition of drawings by Polish artist Gyorgy Kadar, a victim of the holocaust. This exhibition, which is funded by a Tennessee Arts Commission grant, will be held in conjunction with the Holocaust Lecture Series. November 10-December 22, 1988.

VUMC Employees can do without money

Dining Services is now offering the Commodore Card, which allows VUMC employees to make cash-free purchases at all campus services that display the card's logo.

The Commodore Card system utilizes a network of registers linked to a central computer where all Commodore Card account information is stored. Purchase amounts are deducted from your account. Since it is a prepaid account, there is no monthly bill to pay; card users replenish their accounts when they run low.

There are three methods to open and credit an account: automatic paycheck deduction, single paycheck deduction, or personal check. You must fill out a Commodore Card application regardless of which method you choose and mail it to Dining Services.

"It's convenient for faculty and staff, and it's a cash—free way to take advantage of the facilities on campus on a daily basis," said Leigh Willhite, supervisor of departmental and financial operations.

"Students have been using the card for two or three years, and we've had a lot of requests from faculty and staff to get it also."

The card can be mailed, or you can open an account in person at 125 Sarratt and receive a card immediately.

The Commodore Card is accepted at the following locations: Campus Copy, the Overcup Oak, Student Health Services, the Vanderbilt Bookstore, Mazzio's, all Munchi Marts and campus dining halls, the Medical Center cafeteria and the Sarratt main desk.

If you have any questions, stop by the office at 125 Sarratt or call 322-2999.

HOUSE ORGAN

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