

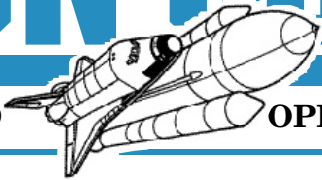
# MISSION SUCCESS<sup>®</sup>

April 26, 2001

MICHOUD

OPERATIONS

BULLETIN



## NASA celebrates shuttle's 20-year anniversary

NASA recently marked the 20th anniversary of the first Space Shuttle launch on April 12, 1981, with special ceremonies in Washington D.C. A group of 13 Lockheed Martin honorees who have worked at Michoud Operations the past 20 years participated in the Washington events.

At one event, the crew of STS-1 – Commander John Young and pilot Robert Crippen – addressed honorees. Earlier, Crippen added his congratulations to the entire ET team for two decades of Space Shuttle success.

“I think everyone on the ET team can be proud of the 20-year history because you helped make it happen,” **Crippen** said. “This is not the shuttle John and I flew 20 years ago. It’s much improved and that includes the External Tank.”

Michoud President and General Manager **Dennis Deel** agreed, saying he has a tremendous amount of pride in the fact that Michoud has a 100 percent record of Mission Success.

“Wherever you go, you’ll find people who are excited about what they do. They have pride in their work. If we can keep that attitude, we’ll fly another hundred as successfully as well.”

Crippen echoed Deel’s words. “I personally believe that it’s (shuttle) going to be capable of flying another 20 years plus, and you have the opportunity to make that happen.”



*Rey Abadie (left), Dennis Deel, Randy Tassin, UNO Engineering Dean John Crisp and NASA Manager John White check the groundbreaking for the fiber placement machine.*

## NCAM Project gets under way

Imagine a futuristic, state-of-the-art manufacturing facility, where everything from cryogenic tanks for reusable space launch vehicles to low profile components for advanced aircraft are assembled.

That future may arrive sooner than you’d think with the establishment of the National Center for Advanced Manufacturing (NCAM), the product of an initiative generated by Lockheed Martin, resulting in a Memorandum of Understanding between NASA and the University of New Orleans (UNO).

The NCAM effort will be led out of the NASA Marshall Space Flight Center, where material and process development will take place to support NASA technology goals. Large scale manufacturing development, education and

training will take place at the Michoud Assembly Facility in New Orleans, where Lockheed Martin Space Systems Company, Michoud Operations will play a significant role.

To prepare a workforce for state-of-the-art composite manufacturing, the University of New Orleans has begun offering higher education courses for both students and Michoud Operations’ employees. These undergraduate and graduate level courses will initially focus on composite materials, mechanics, and manufacturing.

Classrooms and related facilities are already in place in Building 420 (2nd floor), turning it in effect into a satellite UNO campus. The campus is staffed by UNO professors and administrators and

*Continued on Page 2*

# NCAM

Continued from Page 1

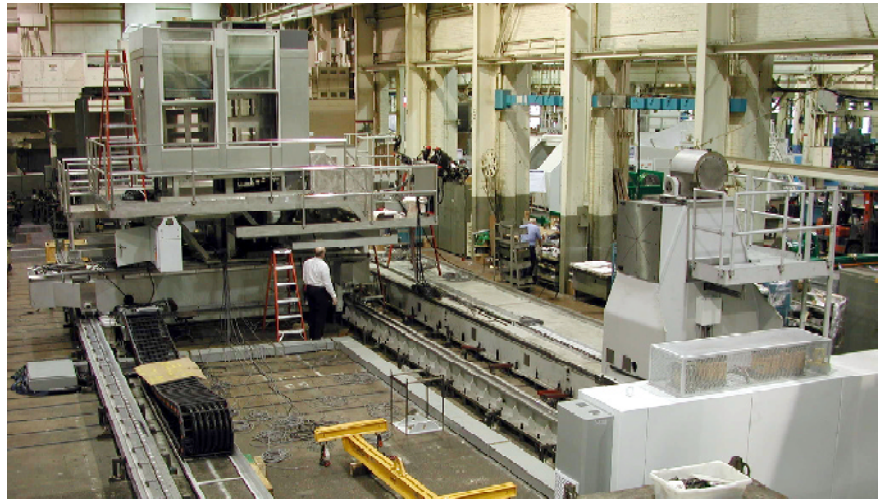
will become a resource for training and education in support of NCAM technology goals and those of a UNO-led university consortium consisting of Texas A&M, Mississippi State, Virginia Tech and Tennessee Tech.

The second semester of classes in the new classroom facilities is under way. Those interested in more information or enrolling in future courses may contact Ray Kuchler at UNO at (504) 280-5418. UNO will tailor course availability and degree programs based on student and employee interest.

Progress is also being made toward the acquisition of equipment to support the NCAM facility, including a composite fiber placement machine funded by the State of Louisiana, with Lockheed Martin providing technical support.

This 16' x 40' seven-axis machine will be capable of placing up to 24 - 0.125" wide "tows" of composite pre-impregnated fibers on complex tool surfaces. Installation at MAF is scheduled to begin during the fourth quarter of 2001 to support the manufacture of parts in the first quarter of 2002. Facilities modifications already have begun in the New Technology area on the east side of Bldg. 103 to prepare for tool placement.

This unique technology is designed to enable designers to optimize composite part weight and performance by allowing the



*Ingersoll is currently manufacturing the NCAM composite fiber placement machine in Rockford, IL. Michoud site preparation has begun and machine installation is scheduled for later this year.*

application of fibers only where they are needed and in exact ply layouts. Optimized parts from this process are the basis of modern advanced aerospace designs, such as the Joint Strike Fighter (JSF).

Last year, Michoud Operations used the process to successfully fabricate a JSF nacelle. The part was sent to Lockheed Martin Aeronautics Company in Fort Worth where it has been compared to a hand laid up version built by another company. Michoud's fiber-placed nacelle saved considerable time and afforded greater process control for lay-down accuracy and repeatability. Additional projects are also being proposed and planned using this process.

Lockheed Martin's involvement in NCAM also includes the installation of a 10' x 20' autoclave

acquired from Missiles & Space Operations in California. The autoclave is currently being installed in the New Technology area and is expected to be on-line by October of this year.

Parts made on the new fiber placement machine will be cured in the autoclave, where temperature and pressure are applied to consolidate the composite fibers for best properties, as well as resin cure.

These initial steps toward an advanced manufacturing capability are the beginning of a comprehensive long-term program to enable the development of advanced large structures at Michoud, and expanding to encompass other materials and manufacturing processes in the future.

## Graphics Archive - your new presentation tool !

Ever been asked to build a PowerPoint presentation and become overwhelmed wondering where you might find "the right stuff" to achieve the task?

The Communications Department has just unveiled a new **Graphics Archive** containing hundreds of images, illustrations, charts and renderings of programs at Michoud Operations and Space Systems Company. The archive brings

together resources previously difficult or impossible to obtain.

"The web-based archive is not only easy to use but contains .jpg images that are appropriately sized for drop-in use into PowerPoint presentations," explained **Kevin Barré**, Graphic Services. "This will not only conserve file sizes and storage space on PC work stations, but will help to ease printing problems experienced site-wide."

The Graphics Services department will continue to populate the archive by adding new images on a monthly basis.

Access to the password protected website can be obtained through your Department Data Processing Representative.

Look for the Graphics Archive at: [https://lmmss.maf.nasa.gov/cgi-bin/graphics\\_archive.perl?display\\_billboard](https://lmmss.maf.nasa.gov/cgi-bin/graphics_archive.perl?display_billboard)

# Michoud workforce reduction schedule modified

The schedule for a 250-position workforce reduction announced in March has changed with the receipt of additional guidance from NASA. The reduction was a result of the NASA decision to no longer fund the X-33 program and their request for a plan to reduce External Tank deliveries from eight per year to six.

The initial one-phase plan to reduce 250 positions within 60 days was based on expectations for an immediate reduction in ET production to six per year. In the current NASA External Tank Program Operating Plan, the

proposed schedule will have Michoud Operations at a production rate of six ETs per year by 2002.

As a result of this decision, 70 positions will be eliminated on May 4, with an additional adjustment anticipated in the fall.

Michoud Operations is actively pursuing other new business opportunities to minimize the potential future impact. Although NASA will no longer fund the X-33, Lockheed Martin, the Air Force and NASA are developing a plan that may result in the program's continuation as a Military Space

Plane demonstrator.

To provide some near-term relief, Michoud is actively pursuing technical work packages in support of Lockheed Martin and other companies.

"Keeping ourselves focused on Mission Success is the most important thing we can do right now," said **Dennis Deel**, Michoud Operations president and general manager. "We can not lose track of our primary goal: to build reliable External Tanks that achieve 100 percent Mission Success and allow our astronauts to return home safely."

## An ounce of prevention makes all the difference

You think you're protected, you've taken precautions from contamination, but you've just infected several hundred co-workers – with a computer virus.

Case in point – the Anna Kournakova virus. Over 2,000 Michoud Operations users were ultimately affected by that one, according to **Steve Stefancik**, manager, Information Technology Systems.

"Basically every person who opened or triggered the virus sent out approximately 2,500 messages across our facility. Mailboxes rapidly exceeded their allotted space on the system and the mail started backing up. The servers that move mail around the facility soon became overloaded and eventually came to a halt."

The first line of defense is to keep the virus protection software ON all the time. Think of it as an electronic vitamin.

But don't get the idea that's ALL

you have to do. DO NOT open e-mail from people you don't know, or open non-work related messages.

"I don't believe anyone could justify reviewing a picture of Anna Kournakova as work-related," Stefancik pointed out. "And please don't send around pictures, chain letters, jokes or executables."

We've all been told not to talk to strangers or give out phone numbers. Stefancik offers the same advice for e-mail addresses.

"Do not give out your e-mail to websites and have mail sent to you from them.

Receiving mail this way could bypass the security that we have in place to stop viruses.

If you receive several messages with the same title from several people, don't open any of them. You can bet that a virus has been released at our site. A user can unwittingly start or accelerate the spread of a hostile code throughout Michoud's messaging system by opening unsolicited or otherwise suspicious e-mail messages or their attachments."

You'd call your doctor if you were ill, so call the ITS Help Desk at 257-3184 if you suspect a virus.



## Employee Survey slated for May

We want your opinions!

On May 2, Lockheed Martin will distribute an Employee Preferences Survey to salaried employees at Michoud Operations. The Web-based, corporate-wide survey will explore workforce issues and help identify the factors that contribute most to job satisfaction.

An independent research group called the *Forum For Workforce Engagement* will administer the survey. Responses are due May 17 and will go directly to the *Forum* and be completely confidential.

Previous employee surveys have made a difference at Michoud Operations. As a result of employee feedback and information obtained from focus groups of employees at all levels following our most recent survey, Michoud added new training for first-line supervisors; developed the Leadership Toolkit for more effective communications; established a casual dress and a 9/80 work schedule; made staff meetings mandatory; and provided guidelines so that performance goals map with company objectives.

Be on the lookout in May for your opportunity to continue making Michoud Operations a better place to work.

# Honorees hold fond memories of 20 years

**Editor's Note:** As part of events commemorating the 20th anniversary of the first Space Shuttle mission, 13 Michoud Operations employees participated in Space Flight Awareness program celebrations in Washington D.C. Prior to their departure, they shared two decades of memories with the *Mission Success Bulletin*.

## What was it like while building ET-1?

“Very heart-stopping, with lots of questions! How could such an odd-looking vehicle fly? Weren't we taking a lot of risk with no prior testing of the configuration and a manned first flight?”

— Ashok Prabhakar, Program Management & Technical Operations

“Long, long hours. We always worked a minimum ten-hour day. Saturday nearly became a normal work day. My wife started cutting my hair for me. I literally couldn't get to a barber shop.”

— Gene Traylor, Business Operations

## What stands out in your mind about the STS-1 launch?

“This thing jumped off the pad. It really cleared the tower in a hurry. John Young said the shuttle was a real hot rod compared to the Saturn V.”

— John Stanley, Production Operations

“Knowing what it took to make it all work and seeing it actually come true. It was a very proud and emotional time.”

— Rick Nelson, Production Operations



Pilot Robert Crippen (left) and Commander John Young check out Columbia's controls during the shuttle's first flight.



STS-1 and Columbia roar away from the tower as the first Space Shuttle launches on April 12, 1981.

## What's your career highlight?

“Personally watching the launch of a shuttle and feeling and hearing the power of the launched vehicle. You cannot watch a launch without a tremendous sense of pride and accomplishment.”

— Roger White, Production Operations

“Meeting John Young and showing him around the Vertical Assembly Building.”

— Hal Simoneaux, Production Operations

“Receiving a Silver Snoopy from Ellison Onizuka, one of the *Challenger* astronauts.”

— Tommy Kerr, Product Assurance

## What's your most vivid memory?

“The loss of *Challenger*. I'll never forget that day, where I was, that great feeling of loss, and the fear that our ET team may have missed something that contributed to the tragedy. *Challenger* still bothers me today. That memory is the conscience that is always there with me as I make decisions on the floor. We can never, ever allow something we build to be anything less than perfect.”

— John Stanley, Production Operations

“Today our friends and adversaries are reminded that we are a free people capable of great deeds. We are a free people in search of progress for mankind.”

— President Ronald Reagan welcoming STS-1 home



STS-1 20th anniversary Honorees are from left to right: Gene Traylor, Chris Pembo, Felix Rosiere, Hal Merritt, Juan Ramirez, Rick Nelson, Astronaut Doug Wheelock, Roger White, Tommy Kerr, Hal Simoneaux, John Stanley, Alan Hislop, Ashok Prabhakar & Mark Madden.

## What's the biggest change in 20 years?

“My hair color — from brown to gray.”

Seriously, I believe funding issues and the schedule problems related to the transition to 2195 aluminum have created a much more stressful work environment. Shop work centers operating 24/7 have become the rule, not the exception.”

— Hal Simoneaux, Production Operations

“That nothing remains the same. We are constantly improving — new processes, new tools, new ETs.”

— Felix Rosiere, Facilities & Environmental Operations

## Do you remember anything unusual in 20 years?

“Returning from a supplier visit in Mississippi, my government vehicle was suddenly bombarded with golf ball-sized hail. Frightened and thinking the hail might crash through the windshield, I pulled over. Fortunately, the vehicle sustained only minor damage.

As the weather cleared, I returned to the Michoud transportation dispatcher and said, ‘You won't believe what I just experienced!’ Unmoved, she smiled, ‘You won't believe what just landed out back.’ A TACA commercial jet had just made a successful, emergency dead stick landing on the facility.”

— Chris Pembo, Product Assurance

“Catching catfish in Bldg 103 during the '83 flood.”

— Tommy Kerr, Product Assurance

“Early on, we thought we would also launch ETs from California's Vandenberg Air Force Base so we shipped four ETs via the Panama Canal. Conditions in

Panama weren't stable, and serious consideration was given to building an ET armored barge. We sent our most stalwart engineer on the first barge to use the canal to report on terrorist activity. Upon his return, executive management connected by telecon to the NASA Centers. A lively discussion ensued in which no one accepted his view that armor plating the barge would be useless. He described how banditos with ammunition bandoliers and machetes boarded the barge without permission and after looking at the ET, simply shrugged and left. Desperate to communicate the bandito mind-set and jungle nature, the engineer said, ‘Ya'll don't unnerstan’. It's like a Tarzan movie, jungle, crocodiles and birds going CAHH, CAHH.’ The silence following his jungle bird rendition was priceless. The armored barge concept was dropped.”

— Gene Traylor, Business Operations



Unbelievable! TACA flight crew members congratulate each other after landing safely with 41 passengers aboard on the grass at Michoud in 1988.

June 4-15

# Michoud Operations launches Savings Bonds Campaign

This year Michoud's Savings Bonds campaign will run two weeks from June 4-15. **Brad Cartwright**, director, Contracts & Estimating, is the campaign executive advisor.

"Last year 90 percent of the workforce bought Savings Bonds, and I encourage employees to continue building their personal savings by investing in bonds because of the tax advantages, the flexibility and the safety of bonds," Cartwright said.

In 2000, approximately 86,000 Lockheed Martin employees bought Savings Bonds, which is the second-highest placement on the national Payroll Savings Plan Honor Roll.

Many employees like the convenience of payroll deduction when buying bonds because it's easy, automatic and secure.

Employees will receive their Savings Bonds packets the week of May 28. The packet will

include a blank payroll deduction savings form, the employee's current participation amount and campaign prize information.

Please fill out the form and return it to your Savings Bonds coordinator. Those who enroll quickly will be eligible for incentive prizes.

The current interest rate for EE savings bonds is 5.54 percent. I Bonds, introduced last year, are paying 6.49 percent. I Bonds ("I" for "inflation") earn a higher interest rate than EE Bonds, and offer employees rates adjusted to inflation twice a year to help protect the purchasing power of their savings.

[www.savingsbonds.gov](http://www.savingsbonds.gov)

I Bonds are also purchased for their full face value, while EE Bonds are purchased for half face value and may take up to 17 years to mature. Both EE and I Bonds can earn interest for up to 30 years, and interest earnings are payable upon redemption.

Savings Bonds offer tax advantages too. Interest earned on bonds is exempt from state and local income taxes. You can also defer paying

federal income tax on the interest until you cash your bond or until it stops earning interest.

In addition, employees who qualify can use Savings Bonds to pay for college tuition for themselves, their children or their spouses. Plus, they will not have to pay federal taxes on interest earned on those bonds.



## Bond website provides calculator and search tool

Do you know how much that \$100 EE bond that you purchased for \$50 five years ago is worth today? Would you like to know its dollar value seven years from now when your child starts college?

If so, you can go to [www.savingsbonds.gov](http://www.savingsbonds.gov) and click on the **Calculator**, and let it do the math for you. Here you can find:

- the worth of your bonds
- when each bond will stop paying interest
- how much interest each has accrued

Just choose the series and denomination of your bond from the drop-down boxes. That's it.

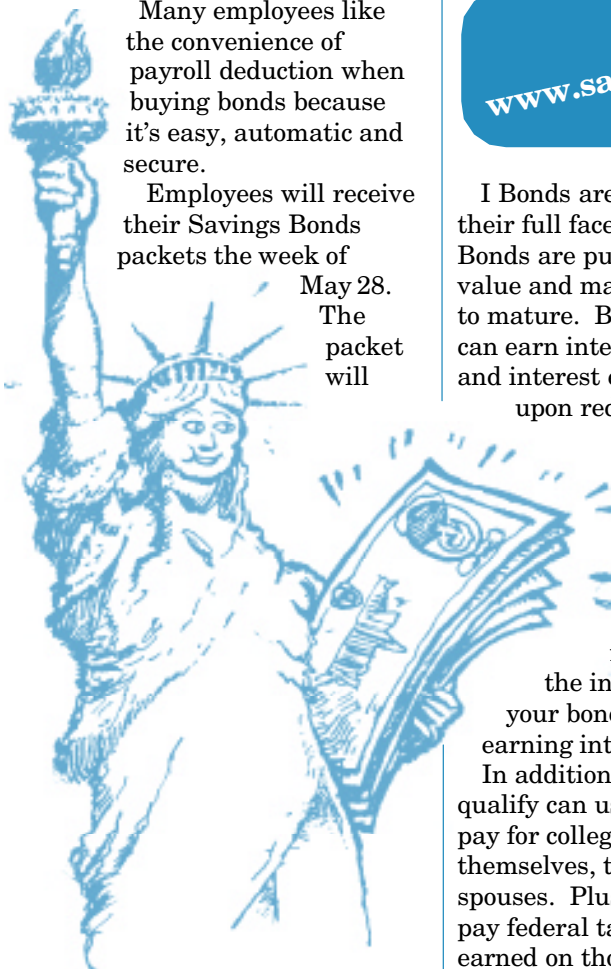
You can also build an inventory of bonds to determine total value for all your bonds. Just repeat the above process for each bond.

Another handy website tool is **Treasury Hunt**.

Here you can hunt for a savings bond that you own but never received in the mail. Or you can find out if you're due H/HH bond interest that you may not have received. Or check if a bond you own has stopped earning interest.

Each year thousands of savings bonds and interest payments return to the Department of Treasury as undeliverable.

Besides those, over \$8 billion worth of bonds have stopped earning interest, but bondholders haven't cashed them. If you hold bonds that have matured, cash them or exchange them if eligible for HH bonds so your money can start working for you again.



# Michoud Blood Drive in May

In a few weeks Michoud's second of three blood drives begins – May 14-18. Please give! Your donation will help others and you.

If you're in good health and weigh at least 110 pounds, you're probably a good candidate to give.

Lockheed Martin blood donors receive blood assurance coverage, which is provided for you and your tax dependents or four other individuals. This assurance plan provides \$500 worth of blood coverage for one full year. Please note: some medical insurance plans DO NOT provide blood coverage.

With the supply of whole blood at historic lows, it is now – more than ever – a life-saving act to donate. Besides receiving blood assurance, there are other good reasons for donating.

Whole blood is separated into several components such as blood cells and plasma for use in different situations and to greatly extend the shelf life of blood.

Your blood cells can be used for up to 30 days to save a person after surgery or major trauma. The plasma can be frozen before use and will last up to one year.

Plasma can be used for many medical and surgical problems.

In some cases the platelets and clotting factors will be removed from the plasma for use in bleeding disorders. You are therefore contributing to potentially four separate people – who might otherwise not survive – each time you give.

Unfortunately, willing donors are sometimes rejected. The reasons include low blood pressure, anemia, visits to certain foreign

countries, tattoo or body piercing within one year and elevations in liver function tests.

If you have a question regarding eligibility, call The Blood Center at 524-1322 prior to the blood drive.

Some people express the fear that in donating blood they might put themselves at risk for infection. Rest assured, The Blood Center uses only sterile needles and equipment in collecting blood.

So now you know all the good that comes from donating blood. Please give the gift of life. You never know when you or someone you love might need blood.



## Blood Drive schedule for May 14-18

Monday	5/14	Bldg. 351 Cafeteria	8 a.m. – 3 p.m.
Tuesday	5/15	Bldg. 351 Cafeteria	8 a.m. – 3 p.m.
Wednesday	5/16	Bldg.102 Special Events Room	8 a.m. – 3 p.m. <b>7 p.m. – 11 p.m.*</b>
Thursday	5/17	Bldg.102 Special Events Room	<b>3 a.m. – 7 a.m.*</b> 8 a.m. – 3 p.m.
Friday	5/18	Bldg.102 Special Events Room	8 a.m. – 3 p.m.

**\*New time**

## Employee knows blood donations save lives

A couple's worst nightmare is to learn that their child has a life-and-death condition, and that the child's survival depends on blood transfusions.

No one knows this horrific feeling better than Isaac Williams of

Facilities & Environmental Operations.

Isaac and his wife have beautiful twin boys, but because they were born prematurely, complications arose. One of the twins,



Isaac Williams

Isaiah, needed an immediate blood transfusion following birth to stay alive. Because of generous donors, the blood was available.

"I really didn't know the importance of giving blood until it hit home," Isaac said.

However, the drama didn't stop there. Isaac's niece, Alexis Llopis, was diagnosed with leukemia at age 3. Leukemia is a condition where the white blood cells in an immature form reproduce in great numbers, invading the blood and bone marrow.

Alexis goes to the hospital once a week to receive her treatment for leukemia, which may include chemotherapy, spinal taps, blood and platelet transfusions or a bone

marrow aspiration.

"I've seen how gloomy she gets when she's feeling ill," Isaac said. "And I've seen the reverse effect when she's feeling well. She's like a normal five-year-old child."

Recently, The Blood Center called Williams to donate for a child who has sickle cell anemia and is in constant need of blood transfusions to stay alive. The center was running low on A positive blood, Isaac's blood type.

"You have to get involved, instead of sitting back passively, letting things go and thinking 'those poor people,'" Isaac said. "Because those people are humans too, and at any time a tragedy can occur where someone needs blood."

**Local Explorer scouts finish close second in moonbuggy race**

*Greg Forest (left), son of Bruce Forest, Production Operations, and Margaret Jones, daughter of Bill Jones, Production Operations, grind their way through one of many obstacles on the one-half mile racecourse during the Great Moonbuggy Race recently at the Space and Rocket Center in Huntsville. The two piloted the high school Monster 1 moonbuggy to a second place finish, beating out 20 other entries. Another high school entry, Quadzilla, finished fifth as did the MARNEL 1 college buggy. Michoud Operations sponsors the Engineering Explorer Post.*



**MILESTONES**

Employees celebrating anniversaries with Lockheed Martin in March and April:

**25 years**

- |                  |                  |
|------------------|------------------|
| Debbie Benz      | Donald Blackman  |
| Luril Cason      | Jeffrey Blaum    |
| Larry Decuir     | William Boni     |
| Spud Frost       | Timothy Bordelon |
| Richard Hawkins  | Cathy Brawley    |
| Darwin Hector    | Kenneth Budd     |
| Larry Irving     | Gary Burnett     |
| George Pender    | Luther Burnett   |
| Nathaniel Roche  | Robert Cameron   |
| Ralph Tortorich  | David Clack      |
|                  | Barbara Cornay   |
| <b>20 years</b>  | Joseph Culligan  |
| Arnold Augustine | Edward Diaz      |
| Craig Beegle     | Kevin Dunn       |

- Kerry Eaglin
- Verna Freeman
- Anthony Gambino
- William Hodgson
- James Holbrook
- Mark James
- Wallace Jasper
- Floyd Jolivet
- Monty Lacy
- Dwayne Leal
- Linda Lynch
- Joseph Marchand
- Laraine Marsh
- Annette Martin
- James Matthews
- Paul Mazant
- Ronald McQueen
- Richard Miceli
- Brenda Miles
- Christopher Mouton
- Patrick Nikolas
- Iva Nunez

- Anthony Palestina
- Janice Pearl
- Peter Perbes
- Keith Philip
- Barbara Phillips
- Kevin Pierre
- Donald Pittman
- Gail Reese
- James Riley
- Theresa Rivera
- Emmett Ryan
- Brian Schmitt
- Jason Scogin
- Otto Shultz
- Richard Steadman
- Jerry Sumrow
- Michael Taylor
- Betty Thomas
- Edward Washington
- Eric Washington
- David Welsh
- Russell Williams

- Patricia Wilson
- Danny Winn

**15 years**

- Dow Manlove
- Mark Pokrywka
- Jules Schneider

**10 years**

- Susan Blanchard
- Trellis Carter
- Annvernette Graham
- Thomas Leboeuf
- Wayne Wilcox

**5 years**

- John Chatelain
- Gregory Farve
- Robert Hebert
- James Lemann
- Gino Saladino

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