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GODDARD NEWS

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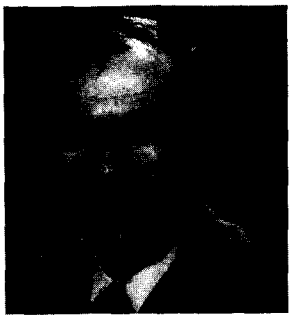
Center Director A. Thomas Young expresses thanks for CFC support



I would like to take this opportunity to thank you for your fine support of the Center's recent Combined Federal Campaign. I am proud that we not only reached our National Capital Area goal of $205,000 but that we exceeded it by another $7,046 for a total of $212,046. In addition to our contributions to the National Capital Area campaign, we have also collected $18,381 toward Central Maryland's campaign, bringing the Center's total contributions to $230,427.

I realize that giving to the Combined Federal Campaign may have been a little more difficult this year than in previous years. In view of this, I think we can be especially proud to have maintained our solid tradition of open-heartedness and sensitivity toward people in need. As Director of the Center, it is certainly gratifying to me to see the Goddard people having this compassion and feeling of responsibility. Thank you very much.

A. Thomas Young
Director

Inside

Guest Editorial

Marathon running and engineering What do the two have in common?

This article was written by Richard Backe, Manager of the on-site Sperry facility. It previously appeared in the Washington Institute of Electrical and Electronics Engineers Bulletin. Backe had recently competed in the Fifth Annual Marine Corps marathon.

In a paper I gave last week at the IEEE Careers Conference at Denver, I compared the training required for a marathon to that required for a lifetime career in engineering. Both require long periods of preparation, sharpening of special skills, flexibility determination, some courage and a little luck. If an engineer possesses these attributes, he or she can look forward to 40 years or more of rewarding, challenging work.

Yesterday's race focused my attention on the age factor which has particular relevance to engineering. In track competitions, those over 40 are generously called "masters" runners...and the race was flooded with them. A 74 year old retired jockey from Eastern Maryland finished yesterday's Marine Corps marathon in somewhat over 4 hours. This summer, Ruth Rothfarb, at age 80, completed the Avon International marathon in 5:39:56 hours. Walter Stack, a noted 75 year old San Francisco racer completed the Hawaii Iron Man race, a 2.5 mile ocean swim, followed by a 112 mile bike race immediately followed by a 26 mile-385 yard marathon. The best older runners don't often beat the best younger runners...but they do compete very effec-

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Human-implantable device offers new system for continuous delivery of medication

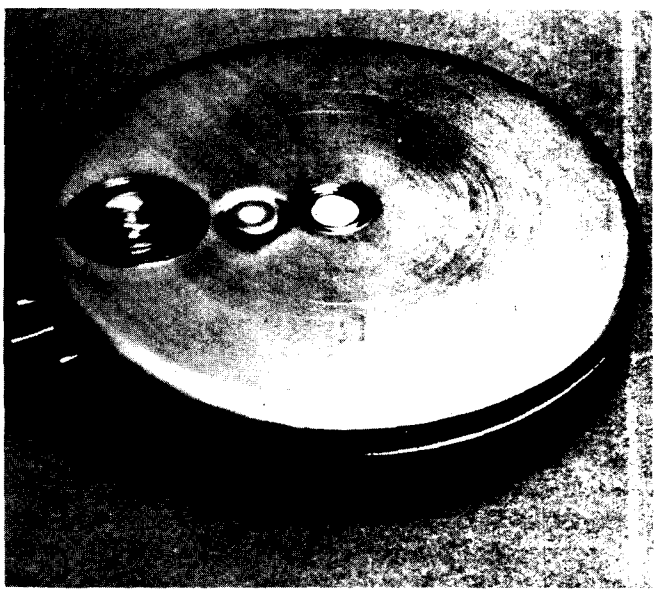
A cardinal rule of spacecraft design is that everything destined for orbit must be super-efficient yet as small and as light as technology permits.

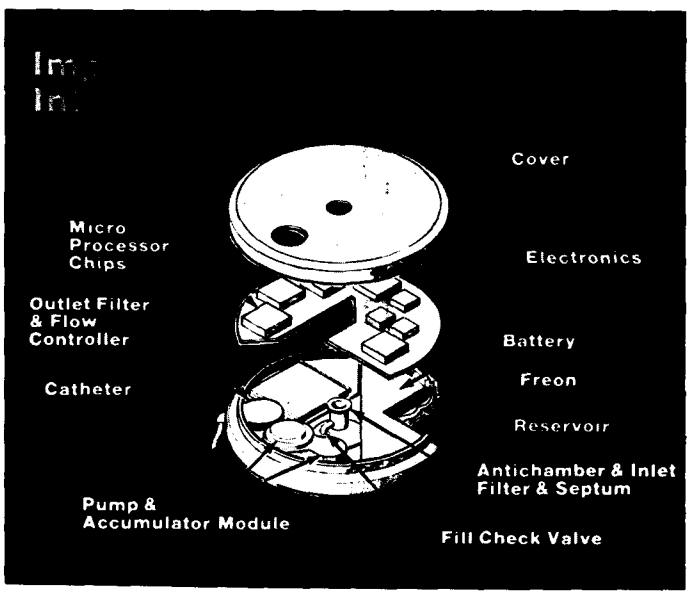
A leader in small spacecraft design is the Applied Physics Laboratory (APL) of Johns Hopkins University, Howard County, Maryland. APL is also a leader in development of medical systems, particularly devices that can be implanted in the human body.

The latest of APL's developments is the Programmable Implantable Medication System (PIMS). Being developed in cooperation with Goddard and several commercial firms, PIMS is a microminiaturized, computer-directed system for continuous delivery of medication to target organs, in precisely controlled amounts, from a source within the patient's body.

The key element of PIMS is the Implantable Programmable Infusion Pump (IPIP), contained in a package about the size of a woman's compact and implanted in the shoulder or abdominal area. IPIP consists of a mini-computer that controls the dosage, a reservoir for the medication, a tiny pump, a plastic tube leading from the pump to the target organ, and a lithium type battery to power the electronics and pump.

Another major PIMS segment is the Medication Programing System (MPS) in the physician's office. The MPS is an electronic system for programing IPIP's medication delivery according to the patient's needs. Programing is accomplished by wireless telemetry, in which command signals are sent to IPIP by means of a transmitting antenna called a communication "head." In addition, PIMS has another important feature which enables the patient to change his own dosage.





This device is a computerized pumping unit, part of the new PIMS for continuous delivery of medication - insulin, for example - from a source within a patient's body. About the size of a woman's compact, it contains a reservoir of medication, a tiny pump, a tube leading to the target area of the body, a battery, and a microminiaturized electronic system.

Although insulin delivery is the most immediate application, PIMS offers similar advantages in treatment of other diseases where long term injection from an internal source seems indicated. Examples include programmed metering of blood-thinning drugs to prevent coronary occlusion or stroke; chemotherapeutic drugs for inoperable tumors; methadone for drug addiction; antabuse for alcoholism; or opiates for pain.

PIMS is one of a number of implantable devices developed by APL, in cooperation with Goddard's Technology Utilization Office headed by Don Friedman, and other groups over the past decade. Goddard is providing program management and technical expertise for the PIMS project.

Launches scheduled for 1982 will keep NASA busy

NASA plans 12 expendable vehicle launches and three Space Shuttle flights in 1982.

The launch schedule begins in mid-January with RCA-C' (C-prime), aboard a Delta. February will see another Delta boosting WESTAR-IV into orbit.

March begins with an Atlas Centaur rocket with an INTELSAT V F-4 satellite, and ends with the third Space Shuttle mission. STS-3 will carry the OSS-1 astronomical investigations package on a seven-day flight.

April and May will have a Delta with INSAT-1A and an Atlas Centaur with INTELSAT V F-5. In June a Scout rocket will launch a Defense Department Transit satellite from Vandenberg.

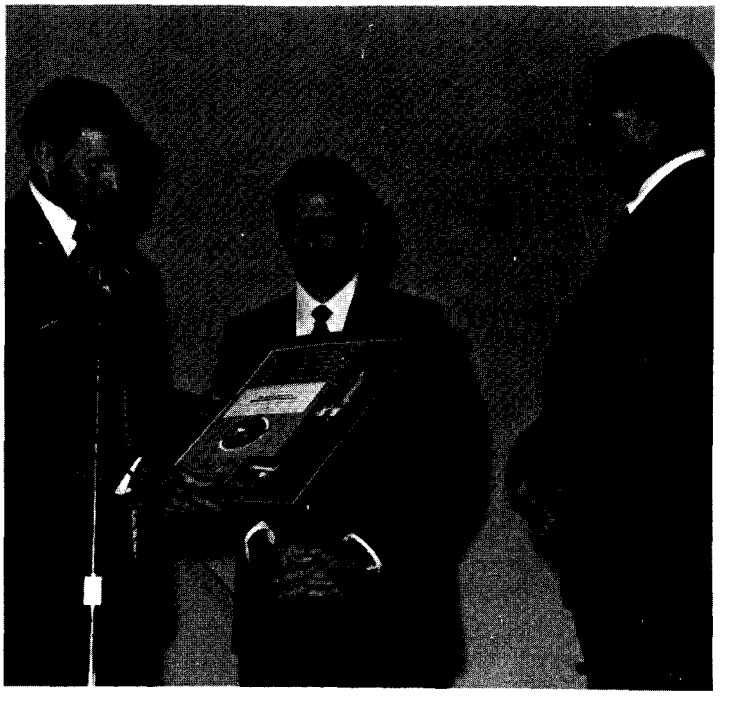
July will have two launches, LANDSAT-D, aboard a Delta from Vandenberg, and the fourth Space Shuttle mission (STS-4) from Kennedy Space Center. In early August, Canada's TELESAT-F (ANIK-D), will be launched on a Delta rocket.

In late September WESTAR-V will be launched on a Delta. November will see a Delta with RCA-E, and will be highlighted by STS-5, the first operational mission of the Space Shuttle. That flight is listed as carrying two communications satellites, SBS-C and TELESAT-E, and their boost stages plus an experiments pallet, OSTA-2. The mission is scheduled to last five days.

Also in November, the year's second Scout launch will orbit San Marco-D/L, a joint NASA/Italy project, to be launched from off the coast of Kenya Africa.

The last launch of 1982 is now listed as an Atlas Centuar, carrying INTELSAT VA F-1.

STS-2 Astronauts Engle and Truly visit Goddard



Astronauts Joe Engle and Dick Truly visited Goddard recently to tour the Center and thank those individuals responsible for the successful support of the second Space Shuttle mission. Left: Engle (l) and Truly (r) are presented book ends, decorated with models of Dr. Goddard's 1926 rocket, by Center Director A. Thomas Young. Right: Astronauts Engle and Truly present Center Director A. Thomas Young with a montage of STS-2 memorabalia.

People

Sharp appointed Federal Women's Program Manager

Ms. Mary Jo Sharp has been appointed Federal Women's Program Manager, Equal Opportunity Programs Office, Code 120. In this capacity she is responsible for planning, developing and implementing the equal opportunity program as it applies to women.

Ms. Sharp joined Goddard in 1969. She is a summa cum laude graduate of the University of Maryland, where she received a B.S. degree in Business Administration. Prior to her new assignment she was a Procurement Analyst in the Industry Assistance and Procurement Analysis Branch, Code 245.

Goddard employee is USPTA tennis champ at 61

Sixty-one year old Robert Davis, Mission Liaison Manager for the Multi-Mission Spacecraft/Flight Support System Project (MMS /FSS) code 408 was recently named the 45 and over National Player of the Year for the 1980 season by the U.S. Professional Tennis Association (USPTA).

Davis has been the premier senior player in the USPTA for the last five years. During that time, he has won the USPTA 55 and over Singles and Doubles Championship four of the five years, losing the Singles finals one year.

Davis is currently ranked #2 nationally in Singles and #2 in Doubles with Dr. Harry Burrus. Davis is Director of Tennis at the new Prince Georges Country Club, Mitchellville, Maryland.

Reeves named Deputy Director of Management Operations

Mr. Richard A. Reeves has been appointed Deputy Director of Management Operations. Reeves was formerly Deputy Chief Counsel of the Center within the Office of the Director.

He began his federal career in the Office of the Chief Counsel at the Marshall Space Flight Center in 1974, transferring to the Office of General Counsel at NASA Headquarters in August 1977. Reeves was appointed Deputy Chief Counsel at Goddard in July 1980.

Reeves earned a BS degree in Business Administration from Georgia State Univ. (Atlanta) in 1970 and a Doctor of Jurisprudence degree from the University of Tennessee (Knoxville) in 1973.

Wallops has new pilot

Wallops has a new pilot. Her name is Leslie Dittmer and she is the new Management Services, Inc. (MSI) co-pilot on the King Air. Dittmer reported for duty to MSI, the company which has Wallops' aircraft maintenance and operations contract, on December 1, 1981.

Dittmer received a BS in Business Administration in 1974, then worked for two years as an investigative officer for the Georgia Bureau of Investigation in Atlanta.

During the next four years as a Flight Attendant for Delta Airlines, she started taking flying lessons and obtained her ratings in Atlanta. After receiving her ratings, she began to instruct pilots and worked part-time with a charter airline company flying Merlin Metroliners.

People (cont.)

Taylor receives IEEE Award

Ralph E. Taylor, Code 974, is the 1981 recipient of the Institute of Electrical and Electronics Engineers (IEEE) Richard R. Stoddart Award, offered annually by the IEEE Electromagnetic Compatibility Society. This award was established in 1979 in honor of Mr. Stoddart, founder of the Stoddart Aircraft Company of Hollywood, California. Stoddart was noted for contributions to radio interference and field intensity instrumentation and measurements. Mr. Taylor was cited for his contributions in the "Control of Electromagnetic Interference and Measurement of the Electromagnetic Environment."

Goddard employee Dick Marks (code 753), captured this scenic view during Washington's first snowfall. The photo was taken from the west lot of building 5.

Ribbon cutting ceremony held for Logistics Depot

A ribbon cutting ceremony was held last month, officially opening and dedicating the NASA Logistics Depot which services the networks involved in acquiring the data from satellites and spacecraft in orbit. The depot, operated by Raytheon Service Company (RSC), was moved from Baltimore to building 16. Congressman Steny Hoyer attended the ceremony and gave brief remarks. From l-r: Ron Bierwagen, Head, Network Support Services Branch; Director of Networks Richard Sade; Center Director A. Thomas Young; President of Raytheon Service Co. Ralph A. Martin; and Congressman Steny Hoyer.

Marathon

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tively and many do get better with age.

Do you believe that age-equals-obsolescence? Should we tolerate this view of society? If an octogenerian can stay physically vital, who can believe the human mind decays after age 40? The Jesuit motto is nens sana in corpore sano--a healthy mind in a healthy body. Perhaps we all need a little exercise to keep our brain cells well nourished (as millions of Americans are discovering) ...but we must not resign ourselves to self destruction or other people's destructive thinking just because a few more birthdays have passed.

The point is, engineers don't just get older, they get better. They truly become masters of their trade when they hit 40. Unlike a road race, an older engineer can consistently outperform a younger engineer in this cranial competition. Perhaps a few become technically obsolete, the blame for which must be shared by the individual, the profession, employers and society. Continuing education in a useful direction is a real problem, in some job situations. But the average mature engineer is a bargain at the prevailing salary rates.

The "master" engineer's education and training, supplemented by judgment tempered by more than 20 years of experience, make him a formidable natural resource. This Nation and our industry had better learn to use these resources better. "Master" engineers are the keys to our economy. Those few employers that consciously or unconsciously practice age discrimination had better wake-up. The tortoises are relentlessly overtaking the hares so watch out for us. Better yet, change your ways and increase your profits by learning how to work effectively with the "master" engineering professional.

The other lesson I learned yesterday is that physically handicapped persons can "run" with the best of us. In a Friday evening pep talk, Henry Cordello, a totally blind racer, talked about his 64 prior marathons; he finished this one in about 3:15 which is near the front of the pack, but is a slow pace for him. He also water skis and snow skis. His films of a race over a Pacific mountain trail, the Dipsea (soon to be on TV), was a graphic testament to this special runner. Jerry Traylor, a victim of cerebral palsy, hitchhikes to his marathons which he runs on crutches. This special runner refuses to feel sorry for himself. He insists his life will be challenging and filled with fun. He spoke lovingly of all the younger athletes competing in Special Olympics... and proceeded to finish the Marine race in 5:27:22 hours.

"Perhaps we should look a little closer at whether our engineering schools and industries are trying hard enough to attract this special breed of competitor."

Finally, after the race, I talked to one of the many wheelchair runners. He was disappointed with his time of 3:49. Seems he had a 3:15 personal record he wanted to beat. In yesterday's race, however, he got a flat tire. He had to flop out of his chair onto the ground, pull the wheel and patch the tube before continuing the race. Nothing special, you understand, for this special runner. Just a nuisance delay.

Perhaps we should look a little harder at whether our engineering schools and industries are trying hard enough to attract this special breed of competitor. I said earlier that some of the prerequisites for our profession were flexibility, determination and courage. I'd be proud and confident with any of the special runners I saw yesterday on my engineering team; they have all three attributes in abundance. The year of 1981 was designated by the United Nations to recognize handicapped people. Perhaps their obvious handicaps are a lot less significant than many of our hidden handicaps. Give it some thought ...and action.

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