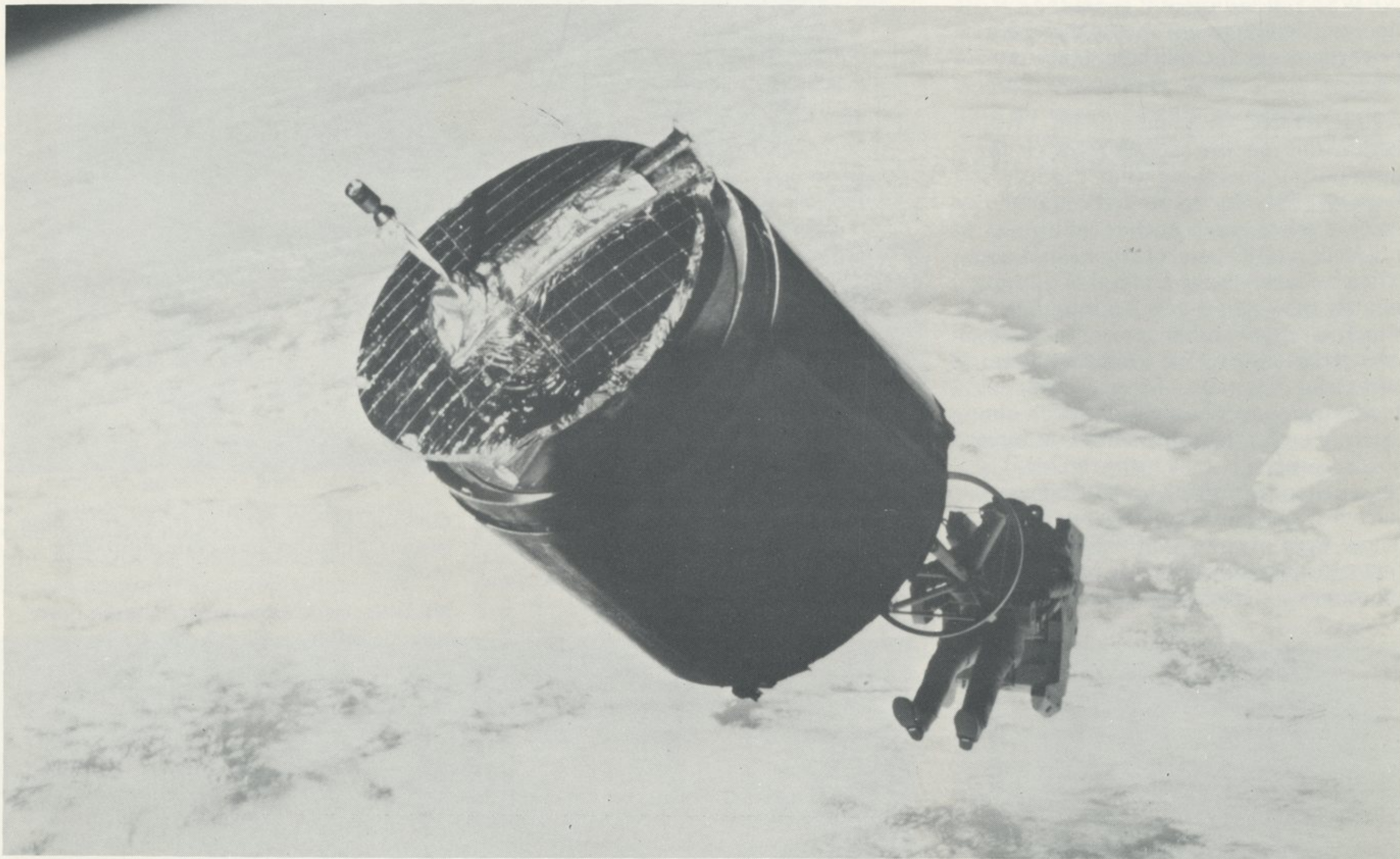


NUMBER 27/1984



1984: A record year

And the future seems to be getting brighter by the minute . . .

(Editor's note: Norman R. Augustine, president of Denver Aerospace, recently reviewed the company's 1984 accomplishments and outlined his views on its future. The cover photograph, taken from the space shuttle, shows astronaut Dale Gardner using the manned maneuvering unit (MMU) to retrieve the Westar 6 communications satellite from space during last month's rescue operation.)

MARTIN MARIETTA NEWS: 1984 was another record year — in all respects — for Denver Aerospace. How long can this type of record setting go on?

AUGUSTINE: Indefinitely. The reason is the quality of our people. There is no

doubt in my mind that our success is due to the dedication, commitment and talent of the team we have put together here at Denver Aerospace and, when I say team, I'm speaking of everyone. This has been a very active year for us, and our people really excelled. As long as the U.S. continues to support strong national defense and space programs, and as long as we maintain our record of excellence, Denver Aerospace will continue to prosper.

NEWS: Exactly how successful have we been this year and could you review our anticipated financial performance?

AUGUSTINE: 1984 was an outstanding year, most importantly, characterized by a remarkable record of mission success in one of our busiest years ever. Finan-

cial results also set new records. Some of the other highlights of the year included a significant increase in Denver-located manpower, staffing of a new air traffic control organization and a new information & communications systems (I&CS) company, and a strong win record. All this was accomplished in an orderly manner without compromising our high standards of mission success.

This year, our orders will top \$2½ billion, beating even our forecasts. Sales and profits also will exceed expectations. But most important from a financial standpoint is that the backlog of work at Denver Aerospace will be well over \$3 billion at the end of the year. The orders and backlog are the most important indicators of our strong position and foretell our continued growth.

Employee support of mission success leads to outstanding record

NEWS: You indicated it is not the figures as much as our mission success performance that took center-stage in 1984.

AUGUSTINE: Without a doubt. I really believe our mission success record is the most outstanding thing when I reflect back on 1984. Our continued commitment to mission success has again resulted in a 100 percent record in a year when we have reached a level of approximately two flight events per month — which is roughly a 300 percent increase over recent history. We conducted four successful flight tests of Peacekeeper, fueled five space shuttle flights with our external tanks, flew nine sorties on three space shuttle missions using the MMUs (manned maneuvering units), and conducted six successful Titan launches. Those were, of course, all flight events, but mission success extends to many other areas, including ground support.



Another factor that underlines our success and the commitment of our people is the score we received on our independent research and development (IR&D) programs. This year, we received an overall score of 8.24 out of a possible ten. This was the third successive year in which we have improved our IR&D scores. Also important is that we have increased our award fees in most major areas, and in



defense systems especially, we increased our award fees from 50 percent two years ago to 88 percent in our most recent evaluations. On one — the KSC (Kennedy Space Center) contract for external tank activation, checkout and launch operations — we have compiled a string of seventeen 100 percent award fees, 14 at Kennedy and three at Vandenberg Air Force Base.

In addition, our win record on new business this year was very good, with significant additions such as the air traffic control contract, small ICBM (intercontinental ballistic missile) and its hard mobile launcher, the orbital transfer vehicle and the orbital maneuvering vehicle, the autonomous land vehicle, the all source analysis system, and a fifth buy for external tanks — just to name a few.

NEWS: To keep up with that increased activity and new business, you announced about this time last year a concerted effort to hire substantial numbers of employees of the quality that matches the team we have in place. Have you been satisfied with that effort?

AUGUSTINE: Very much so. About 4000 new employees have been hired as of this date at all locations, with a significant increase in employees gaining special security clearances. Far more important than the numbers is the quality of these new employees. Now we need to concentrate not only on making these new people feel welcome, but share with them the spirit and dedication that characterize Denver Aerospace — and above all, the importance of quality and

mission success. Next year, we anticipate further, but more moderate, employee growth.

NEWS: Aside from hiring a large number of employees, we also staffed a new division — air traffic control (ATC) — and formed an entire new company — information and communications systems (I&CS). What's the importance of those changes and the likely effect on the company?

AUGUSTINE: The scope of the air traffic control contract is so massive that we had to form a new division to concentrate our efforts for the Federal Aviation Administration (FAA). We opened a new headquarters for ATC in Washington DC and are completing the staffing of that division.

The new company, I&CS, was almost demanded by the growth in those areas of our business, and it was a move designed to focus attention on both the current growth and potential growth in those areas of information and communication systems, especially C³I (command, control, communications and intelligence). I believe I&CS will experience significant growth in the years ahead. The new company offers a whole new channel of promotional opportunities for our employees.

It is also appropriate here to mention another significant change at the corporate level this year. With the divestment of our aluminum business, we now



Hard mobile launcher by Denver Aerospace artist Bob Murray.

will be able to focus more of our resources and investments on the aerospace and high technology segments of our business.

NEWS: Would you review some of the significant increases in business in the areas that will be covered by the new I&CS company?

AUGUSTINE: The FAA contract to redesign the nation's air traffic control system was the largest. As prime integration contractor for the national airspace system (NAS) plan, Martin Marietta will play an important role in the complete upgrading of air traffic control facilities throughout the U.S. and, most likely, for many other countries in the years ahead.

We also completed one military tactical fusion program in 1984 and won a contract to begin another. We completed the OASIS (operational application of special intelligence systems) program, which

involved modernization of the command and control capabilities of the Air Force tactical fusion center in West Germany. Recently, a contract was won to integrate and build portions of a system for a joint Army-Air Force development program — called the all source analysis system/enemy situation correlation element. This will be a transportable military intelligence system.

The automated staff message processing systems (ASMPS) continued to support the Army in major communication exercises in Europe, and we delivered a single-shelter version of the system, called the standard tactical operations facility (STOF). This will provide a more flexible capability for the Army. We are now developing STOF II, which is a third generation of ASMPS.

We also recorded significant progress on the AN/MSR van program, delivering two of those tactical training vans for testing in Colorado and Nevada. The units — designed to evaluate Air Force crews and equipment in electronic countermeasures operations — are the first of seven we are building.

There was much more in the information and communications systems area, including a contract to build 11 digital

plotters for the U.S. Navy and the new ground communication system we will be designing for the Kennedy Space Center.

... Martin Marietta will play an important role in the complete upgrading of air traffic control facilities throughout the U.S. ...

NEWS: Defense contracts remain a significant part of our business. Would you comment on the intense scrutiny defense contractors have come under in recent years.

AUGUSTINE: That is an important area of concern for all defense contractors and their employees. Not only are we all under intense scrutiny by the government, but the Defense Department has tripled in two years its use of suspensions and debarments of individuals and corporations they believe have tried to cheat the government and taxpayers. We must continue to take every possible step to assure that we conduct our business in the most efficient manner possible and, obviously, with the highest integrity.

I do object, however, to the customary combining of words like 'fraud, waste and abuse' as if they were all one and the same. I have worked in both industry and government at many levels and have come to know the people in government and out as decent, honest, hard-working citizens. While I suspect we all have been guilty of inadvertent waste or inefficiency at one time or another — and are trying our best to eliminate that — I have read of very few cases where dishonesty was involved.

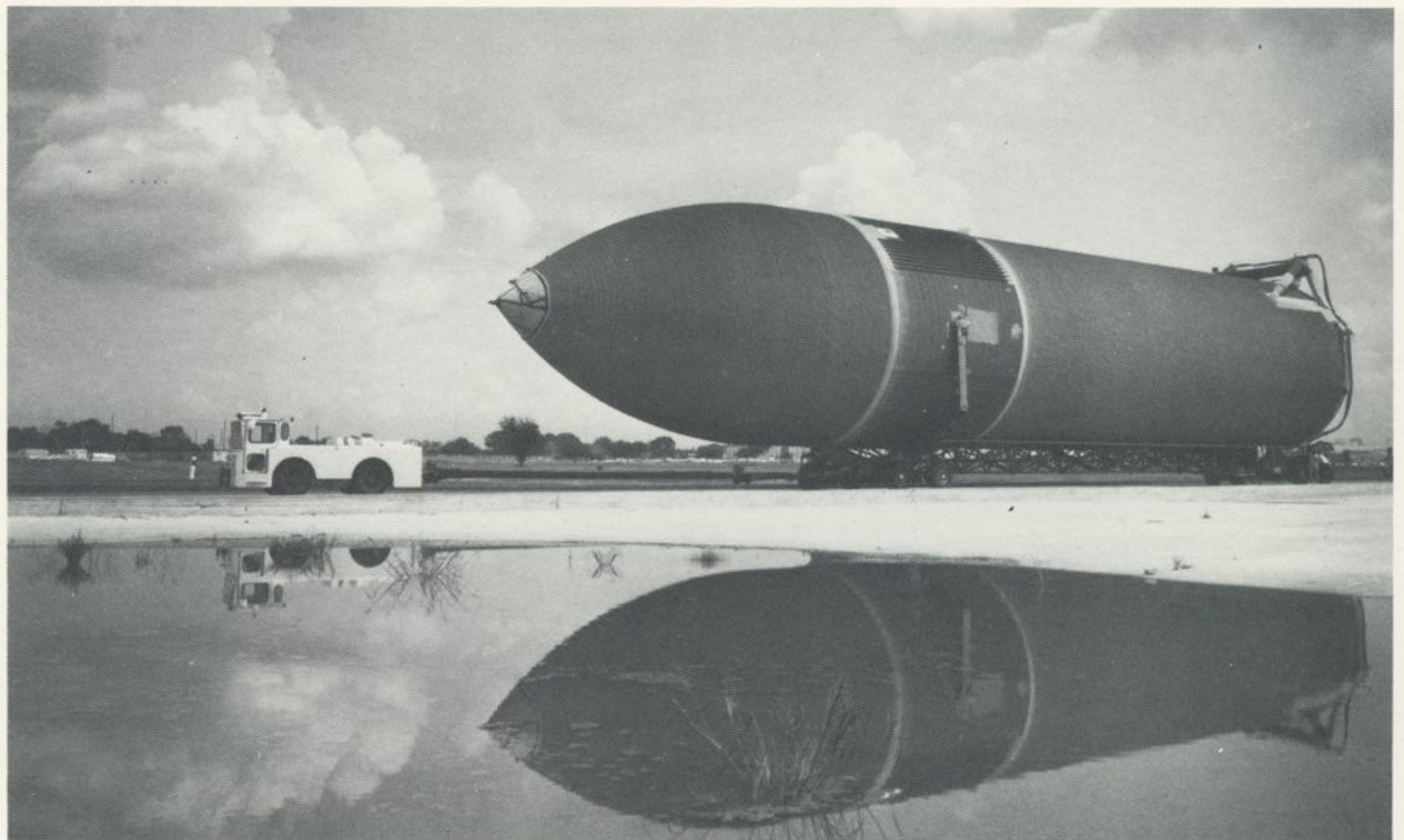
The media demean the great majority of honest people by implying that those who may be guilty of inefficiency at times are also guilty of fraud. Let's prosecute fraud and abuse to the fullest extent of the law. And, let us all seek to be less wasteful. But let's not brand entire categories of the nation's most dedicated workers as scoundrels or treat American industry as an adversary.

Having said that, it must be re-emphasized that the eyes of the nation are on us. At Denver Aerospace, we must always remember that anything less than 100 percent commitment to excellence and mission success may affect not only the pocketbooks of our fellow citizens but also, in many cases, the lives of people — in the space program and in our military services.

NEWS: Our performance in space-oriented work should be especially satisfying to you.

AUGUSTINE: It truly is. The most dramatic example was, of course, the MMU missions. In flight tests in February — on the Solar Max mission in April, and in the retrieval of two satellites in November — the MMU more than lived up to expectations. The MMU has proven itself to be a valuable and reliable new tool for our continued work in space, and I am certain it will be an important adjunct to the planned space station.

There were other achievements in our space program that deserve mention. For the space shuttle, our people at Michoud (New Orleans) continued to deliver lightweight external fuel tanks on schedule, under cost and of high quality. We are gearing up in both facilities and equipment to meet NASA's accelerated launch schedule in the years ahead. Michoud's efforts were recognized with the Cogswell Trophy this year from the



External tank

Department of Defense for outstanding industrial security achievement. Also, this year, we shipped one external tank more than 5000 miles to Vandenberg Air Force Base (California) as a prelude to activation of the western space shuttle launch complex there.

In other space-related achievements this year, we signed an agreement with the Italian Council for National Research to develop the tethered satellite program, which will be used for the first time in 1987 on a shuttle mission.

The faint object spectrograph for the space telescope completed final testing and modifications this year and has been sent to the prime contractor for integration into the space telescope. It will be launched in 1986.

We delivered to NASA the last of three instruments and an attitude control system we built for the Galileo spacecraft, scheduled for a 1986 mission to Jupiter. One instrument — the net flux radiometer — will help explain Jupiter's storm and weather patterns.

We made significant progress on the Venus radar mapper program, which will embark on its journey in 1988 and produce photograph-like images of Venus using synthetic aperture radar.

Also this year, we began full-scale development of the transfer orbit stage (TOS) under contract to Orbital Sciences

The MMU has proven itself to be a valuable and reliable tool for our continued work in space...

Corporation. The TOS is an independent upper stage vehicle designed to boost spacecraft and satellites into high orbits. Now we are studying an apogee and maneuvering stage for the TOS.

In the past year, we also won contracts to define both an orbital maneuvering vehicle (OMV) and an orbital transfer vehicle (OTV) for NASA, and expect to add new contracts on both in 1985. The OMV is a remotely-operated spacecraft designed to move satellites from place to place in orbits up to 1000 miles above Earth. The OTV is a reusable upper stage rocket that would ferry spacecraft to and from higher



New shuttle launch facilities at Vandenberg

orbits, including geosynchronous. Both will play important roles in the operation of a manned space station.

Those are just a few of the space-related achievements that come to mind.

NEWS: You mentioned delivery of the first external tank to Vandenberg where we are responsible for the ground support systems (GSS) for the space shuttle launch site. Are we on schedule for a first launch next year?

AUGUSTINE: Yes. I continue to have every confidence in the team we have at Vandenberg and am sure we will be able to meet our commitments to provide a safe and reliable system for the Air Force. There were some unwarranted concerns expressed by media about our progress there early in the year. The Air Force conducted an investigation of our work at Vandenberg, and not only stated that those concerns were without any merit, but supported us for our performance on a very difficult project. To add substance

to that, we were given a 90 percent award fee by the Air Force for our work on space launch complex six. However, the successful first launch of the space shuttle from Vandenberg in the coming year will speak louder about our competence than any sensationalism by segments of the media.

NEWS: Last year when we talked you mentioned one of your goals was to fly on the space shuttle. Now that NASA has announced a program to take civilians into space, have you sent in your application?

AUGUSTINE: I think I might have missed my opportunity, and Bruce McCandless (the first human to fly untethered in space, using the MMU) convinced me that I might not be cut out to be an astronaut anyway.

NEWS: How did he do that?

AUGUSTINE: When I talked to Bruce just before he conducted the first flight tests of the MMU, I suggested that although I had the greatest confidence in the operation of the MMU, that if I were going to be its first user, I think I would like to use a tether to start out. Bruce responded by saying: "That's why you're not an astronaut." So, I think I'll leave

space shuttle flights to my children and grandchildren. On the other hand. . .

NEWS: Last year, it looked like the Titan program was winding down. That seems to have changed in the last year. What is the future for Titan?

. . . the successful first launch of the space shuttle from Vandenberg . . . will speak louder about our competence . . .

AUGUSTINE: The future seems to be getting brighter every minute. First, we recorded a number of significant milestones in the Titan program in 1984. There were six successful Titan launches from both coasts this year for the Air Force. 1984 was the year in which we marked the 25th anniversary of the Titan program, and the year in which the 300th Titan was launched. That gives the Titan family of space boosters and rockets an unparalleled success record, with 127 successes in 130 launches, delivering more than 150 payloads into orbit or on deep space missions.

Although Titan II ICBMs now are being retired from active service, we added contracts for two more Titan 34Ds this year, coupled with orders for three transtage upper stage boosters. Just recently, we submitted to the Air Force a proposal to build ten more Titans, with a stretched core and seven-segment solid propellant rocket motors, to meet their needs for assured access to space. Last Friday we had passed the first gate in that program, so we could be building Titans well into the 1990's.

NEWS: Space continues to be the glamour part of our business, but aren't there many Denver Aerospace people who work in areas where there is little public attention?

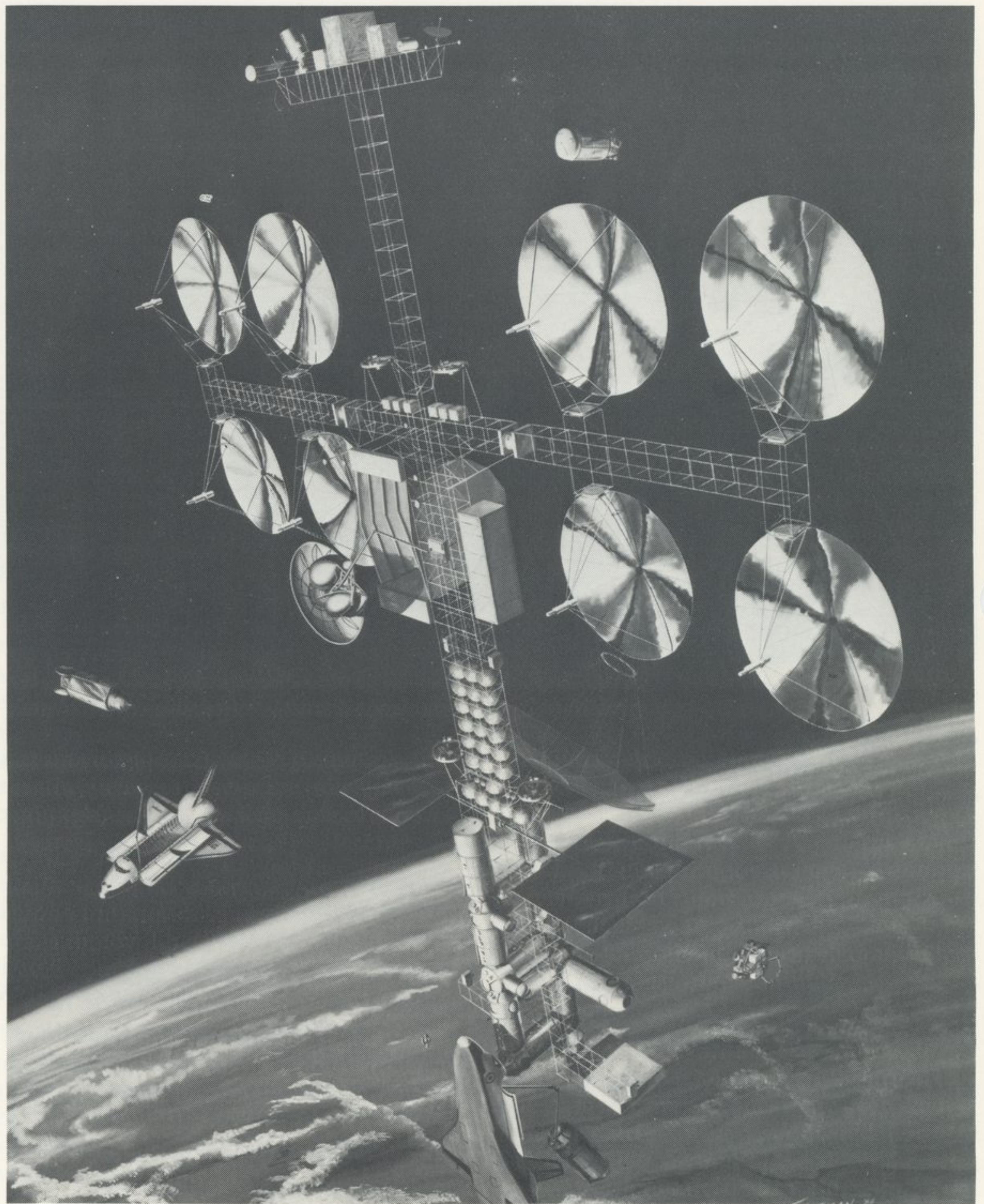
AUGUSTINE: Yes, and in a way it seems unfair that many of us who work on classified programs cannot have our accomplishments publicized or brought to the public's attention. Almost one-third of us in Denver work on such projects. We are enormously proud of their efforts. Their commitment to excellence and mission success is outstanding. While their work may go unheralded, their contributions to the strength of our country does not go unrecognized.

I believe a manned space station is the next logical step in our further exploration of space.

NEWS: One of the most exciting future programs in which we plan to participate is the space station initiative announced this year by the President. How important is the space station to the country and Martin Marietta?

AUGUSTINE: The space station program is what the space shuttle program was many years ago and the Apollo program was even longer ago — one of the most important in terms of space utilization. I believe a manned space station is the next logical step in our further exploration of space. It is important to Martin Marietta to play a role in the development of the space station, and we have formed a very experienced team — including outstanding subcontractors — to win what I hope will be a significant portion of the planned work.

NEWS: What about the Peacekeeper program? We know it's of extreme importance to the company and, while it continues to be controversial, it was singled out for praise by the Defense Department.



Space station with shuttles, OTV, OMV, TOS and MMU astronaut by Denver Aerospace artist John Tieleman.

AUGUSTINE: Despite the fact that it is a controversial program, I was pleased when Deputy Secretary of Defense William H. Taft noted that it is a "superbly managed program, so that even its severest critics have never charged that it won't work." We have conducted four successful test flights in the past year, and completed the first phase of testing.

There will be more test flights in 1985 and we will move into a new phase with silo launches later in the year.

There are many congressional hurdles ahead for Peacekeeper, but I am confident the program will proceed. Yet, with the intense scrutiny at this time, we just cannot afford any failures, and must redouble our efforts to assure mission success.

NEWS: We also have won contracts to design the small ICBM and its hard mobile launcher. Do you think the U.S. will develop both Peacekeeper and the small missile?

AUGUSTINE: From the very start, the report of the Scowcroft commission viewed the small ICBM as a complement to Peacekeeper. In light of the Soviet buildup in intercontinental missiles, the President has stated that both Peacekeeper and a smaller, more mobile, missile system are needed. It is my hope that Congress will share that view.

I want to emphasize that the people and management of Martin Marietta are as hopeful as anyone else that one day we can reach an agreement with the Soviets on balanced and verifiable nuclear arms reductions. But I agree with the President, that only by strength can we assure the resumption of arms limitation talks.

NEWS: Last year, you emphasized the importance of our work on artificial intelligence systems and robotics. Do you see this area as one of continued growth?

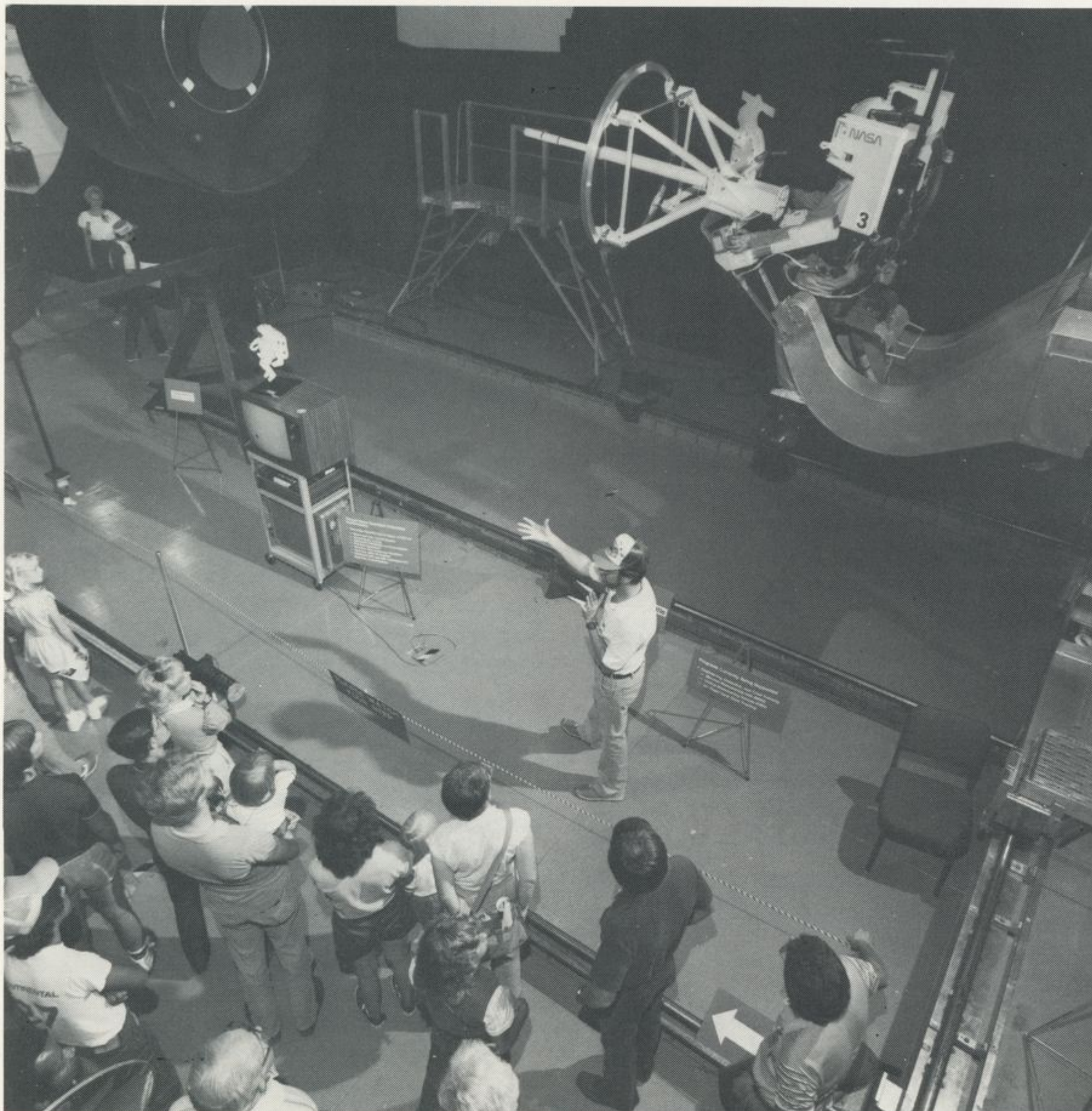
AUGUSTINE: Most definitely. This year we won a very important contract that will place Denver Aerospace in the forefront of those developing technologies. We won a contract to develop an autonomous land vehicle as a test bed for artificial intelligence technologies. We are continuing work on development of intelligent robots, and are working closely with a number of universities and other organizations.

These are very important areas for us at Denver Aerospace. We are putting a lot of effort and money into developing the tools and facilities we need to keep us a leader in these fields and, with the quality of the people we already have committed to these efforts, I am sure we will be successful.

NEWS: Turning to some employee-oriented subjects — this year the company surveyed all salaried employees to determine their likes, dislikes and suggestions for improvements. To be very frank, is the company going to do something as a result of that survey?

AUGUSTINE: Not only are we going to be doing a lot of things, we have accomplished much already. At Michoud three top survey teams wrapped up the initial activities during a two-day meeting. A total of 495 items had been identified by 86 teams for action, and a third will be accomplished by the end of this year with another two-thirds complete during the first quarter of 1985. Only one percent are being passed to Denver for assistance. The teams addressed and converted to action plans such suggestions as increased opportunities for training for all shifts, a directory of courses available, work area privacy partitions, improved rest room privacy, new safety evacuation plans, improved and increased vending machines, eleven new copy machines, increased PAR training, and a major revision to staff meetings with information disseminated to all employees.

Vandenberg and Canaveral initiated and virtually completed a similar effort responsive to the survey items. Many actions duplicate those at Michoud and



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Family open house in SOS lab.

Denver and include scheduled "all-hands" meetings, breakfast meetings, and more staff meetings for better communication, a major facility clean up-paint up program, cross training within departments for job opportunities and job enrichment, plus many more actions being taken within each department or group. Also, a permanent standing committee is being established to continue the feedback process in the future.

Turning to Denver itself, survey answers emphasized communication as an area in which we can continually improve. We have initiated more and better structured staff meetings and are planning electronic bulletin boards or video displays at

... it is remarkable how our dedication to mission success... permeates the organization.

all sites. The medical plan has been improved. An employee suggestion system has been approved and will be in use in 1985, and we are looking at affordable cafeteria improvements and improvements for work-place modules in the office areas. The spot award program has been streamlined and the intent and use of our matrix organization has been explained.

Major areas of survey dissatisfaction will continue to be worked with concentration on better explanations and tie-in of merit plans, totem poles, PAR's, and value ratings. The use of supervisor appraisal committees (SAC's) for filling higher level job openings is being reinforced, and we are considering a method of informing employees of job openings and promotional opportunities.



We are concentrating on survey answers which indicated dissatisfaction, but we all should remember the overwhelming positive response to mission success. That message explains why we have such a great record in our industry.

NEWS: We talked about employee growth; what about physical growth of our facilities?

AUGUSTINE: We will continue to expand in the years ahead, and currently are investing about \$60 million each year in facilities and equipment. We completed a new high bay at Waterton; an annex to the administration building; added 10,000 square feet of office space and a cafeteria to the Littleton Systems Center; and built a secured test laboratory. Work also began on additional office space in the engineering and space support buildings.

NEWS: And last, you've never had an opportunity to comment on how you felt about the family open house we held this year.

AUGUSTINE: It was very successful, judging from the number of participants and their enthusiasm and pride. We had more than 20,000 people at our various locations that day, and even the weather cooperated. The comments I have personally received from some of the families who attended were virtually all

positive. I think it was a great opportunity for all of us, and especially for the newer members of our team, to learn more about the full scope of activities at Denver Aerospace. I must extend again my thanks and congratulations to all of those who worked so hard to make family day a success. As for doing it again, I certainly would like to have a family open house every few years.

NEWS: While we seem to have covered a lot today, we certainly have not covered all of the significant programs or accomplishments of the past year. Will you be traveling again to all our locations to give more of our employees an in-depth view of the past year and the year ahead?

AUGUSTINE: I will. Starting in January, I will be traveling to all locations to conduct employee meetings. Overall, 1984 was a record year for Denver Aerospace and 1985 promises to be even more productive and exciting for all of us.

NEWS: With that, let us end by saying that on behalf of all of us at Denver Aerospace, we wish you and your family the best of the holiday season.

AUGUSTINE: Thank you, but before we close this interview I'd like to comment on our employees' participation in the recent Mile High United Way campaign. Martin Marietta Denver-area operations exceeded its campaign pledge goal of \$1 million by \$80,266. Some 9587 of Denver Aerospace's, I&CS's and Data Systems' 10,591 current employees are participating in the seven-county area United Way campaign to benefit 88 participating agencies. That is a 90.5 percent participation, compared to last year's 85 percent. As I have often said, It is remarkable how our dedication to mission success — whether it be technical achievement or simply helping our community — permeates the organization. On another note, more than 14,500 of our employees at all locations signed up to participate in the savings bond payroll deduction program. That was an increase of 12.4 percent over the year before. Now let me wish everyone a very joyous holiday and a new year that fulfills everyone's greatest hopes.