

## **It Was the Thousands of Employees at Southern California's Many Aerospace Companies Who Put . . . The First Man on the Moon**

[July 17, 1994](#) | GREG JOHNSON | TIMES STAFF WRITER

*Los Angeles Times 7-7-1994*

Casey Patelski helped Neil Armstrong and Buzz Aldrin make their giant leap to the moon, and the retired aerospace engineer is ready to celebrate the 25th anniversary.

"All the astronauts are still alive, and most of us who worked at Mission Control in Houston are still around, so I figure it's going to be a big deal," said Patelski of Costa Mesa, who was a flight manager for McDonnell Douglas Corp. in NASA's Houston Mission Control facility during the first lunar landing.

But Patelski and others in Southern California whose efforts led to the moon landing on July 20, 1969, are finding this year's observance bittersweet, as memories of exuberant years compete with frustration over today's layoffs and cost-cutting by NASA and the aerospace industry. They remember a period seemingly without limits; today, the constraints of recession and federal deficits appear everywhere, ending careers and extinguishing the grandest ambitions for space exploration.

"Around the country, engineers and scientists are being crudely dumped onto the street" as aerospace companies and NASA scramble to cut costs, said Jerry Rosenberg, executive director of the NASA Alumni League in Washington. "I'd guess that it will be an interesting anniversary celebration."

### **For the Record**

Los Angeles Times Friday July 29, 1994 Home Edition Business Part D Page 2 Column 6 Financial Desk 1 inches; 28 words Type of Material: Correction APOLLO 11--Grumman Corp. built the lunar landing vehicle that went to the moon during Apollo 11's historic 1969 mission. A story that ran July 17 incorrectly identified the lander's manufacturer.

**At the hub of Southern California's Apollo community was the sprawling North American Corp. (now Rockwell International) plant in Downey, which produced three key Apollo components: the engine, the lunar module and the lunar lander.**

**Wrote Los Angeles author Mike Gray: "From all over the country, bits and pieces of the spaceship flowed to the assembly bays at Downey--fuel and oxygen tanks from Boulder and Buffalo, instruments from Davenport and Cedar Rapids and Newark, batteries from Joplin, valves from San Fernando, electronics from Kalamazoo and Lima, fuel cells from Hartford."**

**As that parade of parts, components and subsystems flowed into Downey, Gray wrote in his 1992 book, "Angle of Attack," the industry "slogged toward the moon, a vast national network of brainpower and craftsmanship slowly coming to focus on a single problem."**

**Southern California's rich aerospace heritage proved a fertile ground for NASA, and in return, local companies were forced to adopt manufacturing techniques that later served them well in the commercial aerospace industry.**

**"When NASA came in with their fine-tooth comb inspection, they absolutely turned our company around," recalled Harold Stout, formerly president of Long Beach-based Airdrome Parts Co., which manufactured about a dozen high-strength, low-weight tubing connectors for Apollo. "That proved to be the salvation of our company."**

**Other Southland communities contributed mightily to the space effort as well. In the 1960s, Rockwell was making the Saturn rocket's second stage in Seal Beach, McDonnell Douglas was building the rocket's third stage in Huntington Beach and TRW's San Juan Capistrano facility was helping build the engine that powered the lunar module.**

**Hundreds of Southern California companies played roles in Apollo, and NASA pumped hundreds of millions of dollars into the local economy. "In a word, the space program meant everything to Southern California's economy," said Shirley Thomas, a USC professor who has authored more than half a dozen books on space exploration.**

Engineers, factory employees and managers recall workdays that involved a higher calling. Exploring the frontiers of space imposed special burdens, too, from fulfilling the hopes of an attentive public to assuring the safety of astronauts who had become national heroes.

Don Barcus, who joined McDonnell Douglas' corporate finance staff in Huntington Beach in 1962, tells of employees working overtime and weekend hours without complaint and with a sense of mission.

"A man was going to be put on top of that rocket and blasted into space," he said. "Any time you put a man on top of it, it had to be a quality job."

The space program was also "peace-oriented, it was pushing technological frontiers, and it wasn't made to destroy something," Barcus said. "People loved working on this project."

Those involved in the program "were almost like heroes," said Fountain Valley resident Bob Younkin, 55, who joined McDonnell Douglas as an engineer in 1964. "People could identify with it."

Rosendo Romero, a Buena Park resident who was a welder at McDonnell Douglas for 41 years, said he once labored 36 hours straight to repair cracks in a thick, steel deflector plate at the Cape Kennedy launch pad. Another shift stretched to 30 hours as he struggled to repair a damaged Saturn rocket part and keep the lunar mission on schedule.

"There were constant change orders," said Romero, now 65. "Welders worked directly off of blueprints, and when changes were needed, an engineer would 'red pencil' it on the spot, and the welder would go to work."

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**For Romero, the crowning moment came after the lunar landing when he was chosen by his co-workers as their delegate to a luncheon at Houston's Rice Hotel honoring the Apollo 11 astronauts.**

**Romero flew home with a souvenir menu that listed Neil Parisienne Sauteed Potatoes, Buzz Miniature Glazed Carrots and Mike Tossed Green Salad, the latter named for astronaut Michael Collins, who remained in lunar orbit while Armstrong and Aldrin explored the moon. The menu was signed by all three space voyagers.**

**"I started welding destroyer escorts in Abilene, Tex., when I was 14," Romero said. "I never dreamed of (my work) going to outer space."**

**Apollo 11's technological achievement, which author Gray has compared to "throwing a dime into a parking meter from three hundred miles away," inspired people to seek careers in aerospace.**

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**Among them was Winston Hickman, 51, who joined Rockwell International's corporate staff in the early 1970s.**

**"We'd been to the moon, and the next stop was Mars," Hickman said. "It was a real heady time with lots of gee-whiz stuff. . . . After the moon landing, it seemed as if it was all there to be done. We were going to do the space station and then go to the stars."**

**Hickman spent 17 years with Rockwell before moving on to Vans Inc., the Orange-based maker of tennis shoes, where he eventually became chief financial officer. But he still professes a fascination with space. "I'm a 'Star Trek' freak at heart," he confided.**

**Their strong feelings aside, most Apollo veterans acknowledge that the nation now lacks the will to underwrite manned space travel beyond Earth orbit. But they do so grudgingly, and they harbor strong doubts about the wisdom of letting the Apollo program die during the 1970s.**

**"It was a terrible, terrible mistake," said Duane Johnson, 66, a Stanton resident who lost his engineering job when McDonnell Douglas wound down its Apollo work in the early 1970s. "That Saturn rocket was a monster," said Johnson, who drove a moving van for years before finding another aerospace job. "It's just so sad."**

**Patelski, the Apollo 11 flight manager, also was laid off in the early 1970s. He managed to find an engineering job, though for less pay, with Fluor Corp. in Irvine.**

**"I was bitter about the whole thing," he said. "I mean, we went to Houston, trained the astronauts, and all we got was a pink slip."**

**At the same time, Patelski fears that NASA is being hamstrung by "a lot of guys my age . . . still hanging on," pushing for manned space flights when unmanned missions are cheaper and more effective.**

**"We contributed mightily to Mercury, Gemini and Apollo," Patelski said. "But it seems to me they're still thinking back to the good old days when we were young. . . . They've got to get young, aggressive guys who aren't stuck with old, Model T thinking."**

**Robert Minor, who worked in Houston Mission Control during Apollo 11's flight and is now president of Rockwell Space Systems Division, worries that the lack**

of a cohesive plan will dull the appetite of younger aerospace industry employees.

"They're better trained and educated than we were, and they work just as hard as we did in the '60s and '70s," Minor said. "But they need a goal and they need one badly, even if it's something 10 years away."

Other aerospace veterans express concerns that invaluable scientific information may be lost as those who were on the Apollo team retire and die.

"We're like the monks in the Dark Ages, carrying a core of knowledge in our heads," said Jim Ball, 47, a Huntington Beach resident who joined McDonnell Douglas early in 1969 and still does mission simulation work for the company.

Today's engineers know what certain parts of the Saturn looked like, but they don't know why engineers opted for those specific designs. Said Ball: "We've got to absorb this knowledge to keep it alive."

He is concerned, too, that today's schoolchildren appear not to view space exploration as a career possibility.

"As a kid I loved space, I read about Sputnik in the third grade, made a reflector telescope to look at the moon," Ball said.

On a recent cloudless night, Ball pointed out to his children the area of the moon where astronaut Pete Conrad, now a McDonnell Douglas executive in Huntington Beach, landed during a later Apollo mission.

"I remember looking at the moon in awe," Ball said. "But the kids were not excited."

Patelski, however, says he is doing his part to ensure that at least one capable young scientist will be ready when the United States finally returns to space flights beyond Earth orbit.

The first of Patelski's grandchildren to earn an engineering degree will get the bright-red 1969 Camaro that he is painstakingly restoring in his Costa Mesa garage.

**"It's in my will," Patelski said. "I've got five kids, so there's a good chance that at least one of them will come up with an engineer."**

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