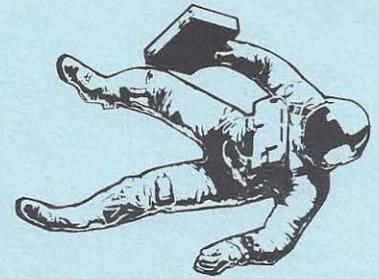


THE
**COMMERCIAL
SPACE REPORT**



PUBLISHED MONTHLY

Gary C. Hudson, Editor

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Dear Subscriber:

May, 1981

For many years now, American journalists have been perpetrating a myth. They have been telling us that the American public is no longer interested in space. With a sense of high drama and gloomy backdrops of deserted Apollo gantries, they seem to applaud the maturity of such a decision, implying that Americans have finally "outgrown" space spectacles and acknowledged that the money would be better spent on new welfare programs. They have even suggested that Americans are bored with space.

Many of us in the professional aerospace community always knew there was no truth to this. Having no way to prove it we let the press take their pot shots. Well, we don't have to take it anymore. On April 10th and again on the 12th over half a million people turned out at the Kennedy Space Center. Another half million came to Edwards AFB in California. They came to lay that myth to rest. There will never be any doubts again that the American public supports space activities. Given half a chance, they will even demonstrate that support in a big way. And, perhaps most appropriately of all, the press cheered as loudly as everyone else. The articles and broadcast coverage brought tears to the eyes of many. For the first time in a very long time the American people and the American press were in complete agreement that something important was happening. Something that all Americans should be proud of.

Like Apollo before it, the Space Shuttle has touched all of us in a very personal way. Rather than attempt to duplicate the fine efforts of reporting already done on the Shuttle flight, I am simply going to recommend them, especially the April 20th issue of Aviation Week. Instead I am going to stay on a personal level and turn the remainder of this month's Report over to a friend and colleague, Eric Laursen, who was one of the million who could be there, a survivor of the ten mile traffic jams. Eric's interest in space goes back to his childhood. He studied physics at Stanford University and is currently Technical Director of GCH, Inc. His previous articles and papers have appeared in the AIAA Proceedings on Space Manufacturing, OMNI Magazine and elsewhere.

Eric writes:

"The first flight of the space shuttle revived a lot of old memories for me. Memories of people hungry for every tasty bit of vicarious adventure. Even the cynics were awed in spite of themselves. Memories of seeming to live for a while "out of time", as though my normal daily activities were terribly insignificant compared to the important things going on somewhere else. Impressions of extraordinary competence and initiative somehow mixed with an incredible myopia and bureaucracy. Certainly a heavy dose of déjà vu. Things don't seem to have changed very much in six years; I still feel tremendous admiration for the quality of the work NASA does, and I still feel tremendous frustration with our lack of an intelligent national space policy and with the timidity of the private sector in pursuing space development.

I watched the launch on two televisions, each one tuned to a different network (I wasn't able to borrow any additional sets), and I watched the crowds gather first on April 10th, and then again for the second try on April 12th. Apparently no one gave up and went home; the people who turned out to see the shuttle liftoff reportedly numbered approximately 600,000. The often cited lack of public interest in space exploration certainly wasn't in evidence at the Kennedy Space Center on either day. I found the degree of support for space activities among the interviewed guests especially encouraging; there was very little of the kind of scapegoating of the space effort for the nation's ills that had become common during the Apollo program. There were also several welcome references to the possibility of manned commercial operations on orbit. A good sign.

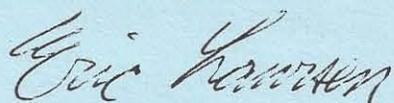
The flight, of course, was almost flawless. The shuttle may be a horse designed by committee; hoary, inefficient solids mated to the most exotic LOX/Hydrogen engines ever built, a man carrying cabin sitting atop a freight car size payload carrier, the aerodynamics of a bumblebee, the most complex and difficult trajectories ever flown, and a landing "like an ordinary airplane" on a three mile long runway, but it worked. It may never be any cheaper to operate than the Saturn V, and it may never reach its operational goal of one flight every two weeks, and so what if the wings are just dead weight all the way up into orbit and most of the way back down. It worked. Beautifully.

After watching everything happen on television for a while I decided that I had to get in on a little bit of the action myself, so I grabbed a ride with some friends and spent twelve hours sitting on top of knapsacks and sleeping bags in the back of an old van on the way down to Edwards Air Force Base. We watched the landing from the press area, and here again the amount of interest that people showed in Columbia's mission was impressive. The working press cheered the touchdown, base personnel and their families packed the flight line, and the public, who had been relegated to a spot on the other side of the lakebed so far away that they were invisible to us, still showed up about 400,000 strong. Half the dry lake seemed to rise into the sky when they all tried to leave at once; they sent up quite a dust cloud (NASA had tried to discourage visitors by issuing warnings that there would be no services at the site; no gas, no shelter, no phones, no plumbing, no electricity. Nothing, in fact, except rattlesnakes). Immediately after the landing the press raided the souvenir shop and picked it clean.

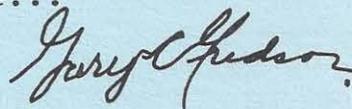
I had a good look at Columbia as it was towed from the lake bed to the shoreline, and it appeared to be in excellent condition. For all of the difficulties that arose during their development, the tiles survived the mission almost undamaged (those tiles that came loose on the maneuvering pods were among the few that had not been replaced during pre-flight modifications). Foamed silica, and the improved tile materials that are still in the works, may yet prove to have real utility in spacecraft design. I have serious doubts about the shuttle ever becoming a practical vehicle with which to support private initiatives in space, but much of the technology behind shuttle should be directly applicable to the goal of simplifying and reducing the costs of future space systems. In addition to the tile materials, for example, there are new ground support computer systems developed to monitor launch operations at the Kennedy Space Center. These systems collect and analyze roughly an order of magnitude more data than corresponding systems in place at the time of Apollo, but require only one-tenth the firing room staff. The basic system architecture is that of a distributed miniprocessor network, and reportedly offers much higher levels of reliability and repeatability. Finally, of course, the practical utility of shuttle's new waste management system, suitable for use by all potential crew members, cannot be over-emphasized.

If you're wondering why I haven't gone into much detail describing the shuttle landing itself, the answer is quite simple; there wasn't much to see. People watching at home saw Columbia through high resolution cameras as it crossed the California coast; those of us at the landing site were lucky to see the spacecraft much before the moment of touchdown. We heard the double sonic boom and were treated to a display of precision flying by the chase planes, but that was about it. We were all there because of a shared sense of history being made, and one way or another, it was. The shuttle may not be the backbone of space industrialization that NASA hopes it will be; it's probably too expensive for that, but it is the world's first largely reusable spacecraft, and it is the first manned space vehicle designed with at least some commercial utility in mind. And that may be the most important first of all."

Sincerely,



In next month's Report we will continue the theme of commercial utility by taking up an interesting report done by the AIAA for the President's Office of Science and Technology Policy. Released on January 19th of this year, the report attempts to define space transportation demands for non-federal commercial payloads through the year 2000. It has some interesting and positive surprises for both NASA and those interested in the potential markets for commercial launch vehicle systems. Until next time...



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