

J&J'S CHRONICLE

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CANADA'S HAND IN THE SKY

Anniversary of the first launch of the Canadarm

Thirty-three years ago Canadians from all over the country watched on in pride as the Canadarm, or big arm, as some people call it, was launched into space on the Space Shuttle *Columbia*. This impressive piece of technology was built by several of Canada's

engineer companies, including SPAR Aerospace, CEA Electronics Ltd., and DSMA Atcon

Ltd. Throughout the course of its career it has been able to perform many important functions, such as repairing the Hubble Space Telescope, and flying 90 times. The launching of this technological star was one of Canada's first steps in space exploration, and it helped to boost our national pride for years to come.

After the Canadarm's first mission it was obvious that it was a valuable contribution since it performed all of its goals and

then some. This technological invention was later used to capture, repair, and release several satellites, which includes the Hubble Space Telescope; to dock the space shuttle to the Russian *Mir* space station; to knock off any ice growths that produced an obstruction of

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This technological star weighed 410 kilograms, and therefore was not able to support itself in Earth's gravity. It was a 15 meter long, remote-controlled mechanical arm that had a wrist, elbow and shoulder. Surprisingly, it was just as flexible as a human arm since each of its joints had a motor-driven gearbox or JOD. The arm had cameras or "eyes" at the wrist and near the elbow which gave visual clues to the astronaut controlling it from the inside of the shuttle. The control

waste exit on the shuttle; and to help construct the International Space Station.

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References:

<http://www.thecanadianencyclopedia.com/en/article/canadarm/>

<http://en.wikipedia.org/wiki/Canadarm>

<http://www.lssd.ca/~svancaeselee/S0137D679.3/canadarm.jpg>

station had hand controllers, display panels, and a signal-processing interface box. It was capable of lifting over 30,000 kilograms on Earth and up to 266,000 kilograms in space where there is no gravity.

Such an amazing and accurate invention allowed Canadians in 1981 to realize how fast space exploration was progressing, and that we are now a part of that progress. To be a part of such a mission is very

exciting, to say the least. What an honour it was to see the Canadarm insignia on the actual arm as millions of people watched this moment of history on their television sets.

A DIFFERENT PERSPECTIVE

An Interview with John Taylor

Q: Did you watch the first launch of the Canadarm on November 12, 1981? What was it like?

A: I saw replays on the news. It was cool to see the arm with the Canadian name and flag on it in space with the earth behind it. The pictures were much clearer than I expected them to be.

Q: Many Canadians were very proud of this technology; however there were those who thought it was a waste of all the resources put in to making it. What is your view?

A: I think it was a worthwhile expenditure. It gave many Canadians a sense of pride that Canada could contribute to the

space program in a specific and essential way. I think it was wise to allow the Canadian space program to focus on one specific task and to perform it well rather than simply helping the Americans in a more general way, since Canada has more limited resources.

Q: Do you think the invention of the Canadarm was a great success?

A: Definitely. It proved that Canada is capable of designing and building technology that no other nation on Earth had.

Q: Do you think that the Canadarm performed essential tasks, or was it an unnecessary invention?

A: During the many years that it operated the Canadarm performed essential functions of dozens of shuttle operations, including the maintenance of satellites which help people on Earth in practical ways.

Q: As you watched one of Canada's most famous inventions rise up into the sky for the first time, did it make you proud to be a Canadian?

A: It made me proud to see Canada's name displayed prominently in the space photos broadcast in the U.S. for all of the Americans to see.



The Canadarm at work.