

National Aeronautics and Space Administration
Kennedy Space Center
Kennedy Space Center, FL 32899



February 15, 2018

Reply in Attach:

VA-E

Mr.

CANADA

Dear Mr.

I am the manager of the Infrastructure Management Division of NASA's Launch Services Program. Among other duties, our organization is responsible for telemetry processing support for all of NASA's unmanned launch operations, and we are the organization which formerly employed the NASA Telemetry Amiga computer you now possess. I would like to personally thank you for your cooperation with regard to the information security concerns surrounding this computer. The hard drive you sent us contains two partitions. One partition contained only the operating system and some commercially available software. We left these files untouched. The second partition did include files with information controlled under International Traffic in Arms Regulations (ITAR). Therefore we were required to remove the files on this partition.

I will say it was very enjoyable working with an Amiga again. To access your hard drive, we pulled an Amiga out of storage and spent no small amount of time getting it operational again. It was like a trip down memory lane for our guys. I do not know how familiar you are with the role this computer played in the United States' space program, but we brought them into service in the late 1980s. At that time NASA was moving away from larger computers like the DEC PDP 11 and VAX computers and were experimenting with using the new, more powerful desktop computers. NASA had a requirement to process a large amount of data coming from its launch vehicles and spacecraft, but needed computers that could respond quickly to incoming data and were simple and cost effective to maintain. NASA engineers first looked at the IBM PC style of computers running DOS (remember, this was the 1980s!), but found that these computers were too slow and the operating system too limited to handle the amount of data they were receiving. Then NASA engineers looked at the Apple Macintosh, but again found a slow system with little documentation on how to modify them for NASA's unique requirements. Lastly, NASA engineers discovered the Commodore Amiga. Commodore was well known for the VIC-20 and the Commodore 64, but these were toys that were totally unsuited for NASA's requirements. The Amiga was different. NASA engineers found a fast computer built around a handful of powerful custom chips and running the most efficient, multi-tasking operating system of its day. Additionally, Commodore was very open on the computer design and provided a lot of detailed documentation allowing

NASA to build the specialized communication interfaces needed to interface with its vehicles. The resulting system was, in typical NASA fashion, simply called CARDS for Computer Aided Recording and Display System. CARDS and the Amiga were so successful that they remained in operation even after Commodore closed up in 1994. NASA finally retired the last CARDS Amiga in 2005.

NASA placed this particular Amiga into service around 1992 and was among the final group that NASA decommissioned. The "Dave Brown" you saw noted in the software registration was the lead NASA telemetry engineer for the NASA Launch Services Program for a number of years. During its operational lifetime, this Amiga supported more than 150 launches including the Cassini probe to Saturn, Mars Orbiter, Mars Lander, Mars Odyssey, Mars Exploration Rover A and B, Mercury Messenger and Mars Reconnaissance Orbiter, along with a host of commercial, scientific and weather satellites. It is truly a piece of aerospace history.

Again, please accept my thanks for your cooperation in this matter. Enclosed please find some patches, pins and other memorabilia from the NASA Launch Services Program, including some patches from missions supported by this Amiga. If you are ever in the vicinity of the Kennedy Space Center, please contact me directly at the number below and I will personally arrange for a tour of our communications and telemetry facilities where this Amiga was once such a core component.

Very Respectfully,



Ralph Mikulas
Chief of Infrastructure Management Division
NASA Launch Services Program
Kennedy Space Center