

Intrepid & Valiant Workstation History

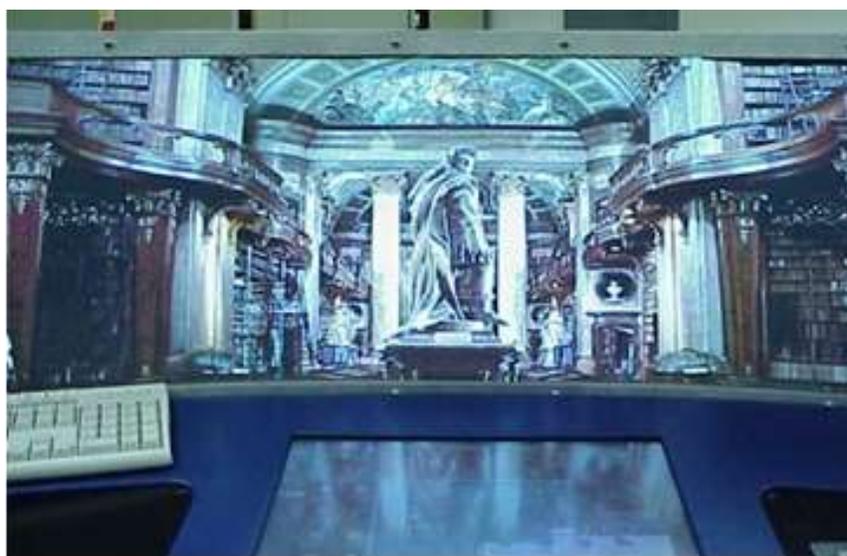
By Robert Monson, Program Manager
Sent to Legacy committee in January 2022

I was the program manager on the Independent Research & Development (IRaD) projects to develop new display consoles at Lockheed Martin in Eagan, MN from 1999-2006. During this time, we developed the Intrepid and the Valiant display workstation consoles. These would be a follow-on to the AN/UYQ-70 systems already in production. Both console types were named after U.S. Navy warships.

The Intrepid console was an IRaD effort funded by LMCO in Moorestown, NJ asking us to develop a new workstation for use on ships such as the DD-21 guided missile destroyer. As you all know, the DD-21 effort became so bogged down in paperwork and documentation that we began referring to it hopefully as the DD-22 project (perhaps being finished by the 22nd century).

Intrepid was originally based upon a display console that Moorestown had out-sourced that they referred to as the Jetta console, due to a few knobs from a VW Jetta being used on the console base. This was a console that apparently came out of SPAWAR (Space & Naval Warfare Systems Command), Glenn Osga's office. In any case, it was a concept and not available, hence we were funded to create a working model.

We developed a concept without any requirements from Moorestown. We showed artwork, however still no requirements from Moorestown. Eventually, we created a display that was made up of contiguous rear-illuminated projectors, so it created a triple-wide display that was pretty impressive. When a person opened a spreadsheet on the desktop, it opened out to column CE or so. We used huge panoramic images as screensavers, which people loved.



Picture 1. Seamless 3-wide console image.

To create the contiguous displays, we contracted a company out of Tel Aviv, who were the only people in the world who could pre-distort images to get seamless screen matching between projectors. Overall, it was a very nice console, although very large due to the real-estate.



Picture 2. Intrepid console prototype.

The Intrepid was also painted blue, simply to create interest, and I remember asking Rick Martin if I could powder coat the unit royal blue, and he said, ‘Why not, it will be wrong anyway.’ Good insight.

The Intrepid was created with two prototypes, one of which was shipped to Moorestown that ended up jammed into a small office and never heard from again. They never even set it up. When they jammed it in the room, it was slightly too wide for the door, so they proceeded to scrape all the blue powder coat off the front and rear of the desktop for the unit. They had obviously not wanted the console to succeed and were playing politics.

The following year we proposed a new type of console, one that would be a thin-client (thanks to Scott Benjamin) and would be lighter than our typical consoles, enabling easier shock and vibration qualification. The first of these was a three-eye console (i.e., Valiant Workstation), with a touch screen inset in the desktop for input. This is one of the units in the Lawshe Museum. I would note that the design team signed it inside the rear of the case if I am not mistaken. {Editor’s Note: Museum has Serial #2 & is unsigned}

The idea of the console was to create a different view of workstations, not as huge monoliths, but more like a desktop in an office. The first of these systems contained (at the time) three of the five existing largest LCD super-twist displays that had ever been produced at that size.

The first rendition of this console was intended to have no keyboard, a first. In addition to this, it had a variety of pointing devices, including a mouse, a trackpad, touch screens, etc. We wanted to find the preferred pointing device to place on future consoles. As it turns out, the operators liked all of the pointing devices and used them all. For example, they would reach out and touch a spot near where they wanted to go on the screen and then use the mouse or trackball to fine-tune their selection.

The design was created by a small team and was based on an Art Nouveau design as opposed to the traditional designs we had produced to date. (The Art Nouveau design of the legs was created from a frame around the stage at an opera “The Merry Widow” that the Minnesota Opera put on that December). Colors were selected to look similar to a Navy palette, but they all differed from the typical display somewhat.

The idea here was that we found the user didn't notice seams between the screens, and so we placed the frameless displays as closely as we could, in-line, and they turned out to be very effective overall. Our program manager, Roy Brandenburg, told us the original design was too big, which we didn't believe, so we printed out the drawings and built the first mock-up out of cardboard so a person could sit down and try it out. Once we had built it, we realized it was too big, and we scaled it down accordingly.



The design took about a year to develop, and we used a new machine shop in Minneapolis to make it for us, and they did an amazing job. When the prototypes were originally built, we were told they would never fly; they looked too flimsy and couldn't possibly pass shock and vibration testing. There was likely some truth to this, but every Navy person who saw the consoles loved them, and they became a staple in our main customer display area.

Somewhere in this time, our program manager told us to drop the project, it would never go anywhere, it couldn't be sold. A short time later an Admiral was touring our facility, saw the consoles, and said "I want those on my ship!". The project continued. We eventually designed a two-eyed version and a one-eyed version that would allow more workstations to be incorporated into a ship's space, and finally a lightweight version that could be flown aboard P-3C aircraft.



Picture 3. First prototype of a two-eye Valiant console next to the first Valiant prototype in the Eagan display center.



Picture 4. Two-eyed and one-eye Valiant consoles arranged as a ship's Combat Information Center.



Picture 5. Low-weight two-eye Valiant console designed for P-3C fuselage contour.



Picture 6. Valiant console currently on a US Navy Littoral Combat Ship.

Overall, the project series was a success, as the Valiant is now the console in use on the U.S. Navy's Littoral Combat Ships.

Bob Monson

Note: Article submitted via Keith Myhre, formatted for the web by Lowell Benson.