

# Holies & Heresies

May '67, 5:15am. Sun's just up and I'm already rocketing the Mustang past the Portland exits along the Maine Turnpike. Making decent time out of Boston. Have to be back at the TV station in Manchester by 5p. Gotta move. Hope I don't get lost. Cheezy radio laboring to crank out square waves of rock-n-roll (...and the hits just keep on comin'). I'm on a quest to find a high tech holy place. A field trip cum pilgrimage for one.

Four hours pass. Asphalt gets thinner and trees taller with each successive turnoff. Roadmap has nothing left to offer, and from here I rely on rustic road signs pointing askew. Splintery wood planks are lettered in the same uncertain hand as kiddy signs that say, "LEMNAID Sets/GLAS". They point. MEXICO (this-a-way). RUMFORD (just-yonder). PARIS (up-a-piece). A few locals help by pointing - with hesitation. (Why'n Hell some kid in a Mustang need t'go on up theyah?) In Rumford/Mexico Maine I slow down to avoid crushing the box turtles stampeding across the main drag. Asphalt is long gone now. Exchanged for mud and ruts. Lots of tall trees. This is paper country. Looks like it; smells like it, pristine, poor and pungent with chemistry. Fifteen muddy ruddy miles later the road is reduced to a rumor and the trees and underbrush are clearly in



Andover Satellite Tracking Station

charge. I can barely catch any sky. Then a Cyclone fence reaches out of the woods and across the trail with the customary DayGlo™ yellow **Federal Stuff/Danger/Go Away Now/Shoo** signage. The gate is left wide open as promised yesterday over the phone. I roll slowly into a clearing. The trees open up to reveal a nicely manicured area crowned with a massive radome, 6-ish stories high. All teed up against big sky, ready for God's nine iron.

I am dumbstruck in withering reverence. This is not the Boston Science Museum model. It's real and huge and hugely wondrous. I see Winston Churchill's funeral again. It was televised through this place two years earlier. Whenever "big stories" from Europe were trotted out by the networks they came from here. The anchors would bring great import to their words, "I'm told we have our *live overseas television connection to (London/Paris/Geneva) via the Andover Satellite Tracking Station. Now let's go to*" – Cut to a fuzzy picture of some important building far away.

I hit the buzzer on the important building next to the dome.

George is dressed for the part. Horn rims, checkered flannel shirt, suspenders and chinos accessorized with pocket protector sporting a pipe and assorted tweaking tools. He is bemused- no, amazed- that I actually came. He's also starkly alone.

The facility was originally designed to be driven by a dozen or so engineers. A large room of hammertone grey equipment racks and workstations is stuffed with display monitors, meters, nixie readouts - all still in place; all working. And there were the office chairs - all empty. Abandoned.

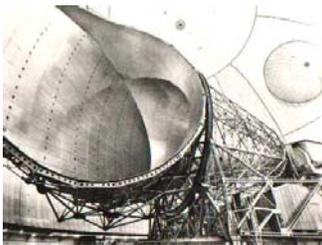
“All automatic now. Just keepin’ it all plugged in.”

We talk for an hour about tech stuff. He still can’t quite grasp my ogling interest.

“Like to take a gander inside the big dome?”

We step back outside and down the walkway. The airlock door is like on a futuristic spaceship. (Such as one envisioned in ‘67) Odd to watch George rattle it open with a big ring of keys. We step into a tight little chamber and there’s another door.

“Air pressure. We keep the dome positive. Don’t need much though.”



Then we step into the whiteness. It comes from everywhere and goes up to forever. In the middle is a flying circular walkway that clanks around a lower circular track and stage for a huge gimbed antenna. It’s a TAHA, a tapered aperture horn antenna. Before the geosynchronous satellite era this thing chased Echo 1 and Telstar across the Atlantic until the signal faded. 15 whole minutes of live TV from far away.

Philo Farnsworth, the father of electronic television talked about “anchored balloons across the ocean” for television from Europe; a heresy in his time thirty years earlier. Today’s global glut of webwide info has some roots here.



Fifteen years later I’m videotaping archival footage for the Computer Museum. We go downstairs to a room within a room- a sanctum sanctorum. It’s 1956 inside this movie set. The walls are made mostly of beige equipment racks humming intently. The racks pause for venetian blinds; the old thick ones of my childhood. Then more racks form a corner and move on to meet more venetian blinds and still more racks. The floor is an institutional brown-on-brown motif of linoleum tile squares. The ceiling is neatly done in interlocking acoustical tiles of flaky cream pressboard with the even rows of holes. At the center is the altar; a beige metal sloped operator’s console complete with durable Masonite™ work surface. Left and right sloped panels are clustered with switches, dials, and patch wires. A clunky Telex printer and keyboard stands guard to the left of the desk. In the center is a round, dinner-plate-sized display tube. Beneath it is a small rectangle, a brown plastic engraved nameplate:

TX-Ø



I’m looking at the world’s first solid state computer. After 25 years it’s - *still alive!?!*  
It was built at Lincoln Labs with a honkin’ 4KBytes of flip-flop memory. (the racks)  
The heresy here is in the computer’s name, TX Zero, an arcane nod to the piddling point

that they were never chartered to actually build a computer. They were only to test the applicability of solid state circuitry for square waves. Technically, TX-Ø didn't exist. This room was indeed a most thoughtful reincarnation of a holy place. Someone, somewhere obsessed to considerable lengths to take me back in time. Dan, my escort exercises some switches at the console. The Telex snaps to, and he stab-types a few characters into its mechanical keyboard. The display vector traces out, "HELLO PETE". Dan slides a look my way and warms up a knowing smile.

"HELLO PETE"

"We like to keep it plugged in." (Where have I heard that?)

I did what I always do at these places. I just stood there for a while in the quiet and took it all in. I have been to other such shrines- like the original mission control room at NASA. Rows of consoles of nixie tube numeric readouts play to empty chairs. Another lone technocrat echoes George's words, "All automated now. Jus' keepin' it plugged in."

I treasure my vivid sense of these holies. If you know of any, I'm game. It can be a humbling, restorative experience. A musty grace rises from the gritty wisps of gravitas that linger in the fading paint of such places. (Is that why we touch the walls?)



In an early winter evening in 1987 I arrived at a holy place in the making, or rather, at the loading dock to one. Typical heretic's quarters. Low rent and high hopes. I pushed my presence into the buzzer, and waited in waning daylight. Jeff Bedell slid the door open. I looked into a dusky space and an awareness kicked in. There is significance here.

Before Avid's first NAB show Bill Warner, Jeff and I talked heresies in that machine shop through many late evenings over sub sandwiches.

(Movie editing- in a *computer*??) By such faith a heretic transcends to a founder.

So, here's to our heretics. At some point each of us is granted a heresy, if we are lucky. Innovation begins as heresy, but heresy carries risk. New vision and new promise elude the complacent. Innovation has no concern for our convenience. Never let your world become too familiar. Seek the holy places. Such pilgrimages can help restore that childlike sense of wonder. (Where did it go?) Play is the work of children. Each holy place was once a heretic's sandbox.

Afterthought:

The heretic abhors conventional wisdom as the veneer of myth. The high priests know that myths are not for nothing. They are a powerful palliative, an ointment of order to salve our nagging confusions. They are naive inventions by convention and convenience. They are mental amulets to rattle against the cognitive dissonance that skulks at the edges of what we think we know. Myths are often work-hardened by repetition into dogma and shaped to fit like armor against the new. How do we instead suspend these all too comfortable constructs to explore and embrace cognitive dissonance as a welcome first step toward some new wisdom?

It's frightening to get on the boat and sail westward to the edge of the Earth.  
The heretics remind us that it's also every bit as dangerous to stay home.

Pete Fasciano  
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Co-Founder, Avid Technology

From an interview with Digital Equipment Corporation Founder, Ken Olsen:

“The reason for building the TX-Ø computer- this was about 1955- was to demonstrate how efficient in power, how fast in speed, and how easy it would be to build a solid state computer for defense.

TX-Ø was similar to a modern personal computer. Someone sits in front of the oscilloscope display with a light pen and plays games, does work, is creative.”

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