The HOSTILE TECHNICAL MANUAL is a gritty science-fiction roleplaying add-on for the Cepheus Engine – and for Zozer Games' Hostile setting.

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Pages 17, 19 and 20
Mainly Hyperdrive stuff
Exam – Monday the 12th
See Chief Nichols
Do it!

HOSTILE TECHNICAL MANUAL

A Technical & Engineering Manual for Off-World Personnel

Leyland-Okuda

"Forward Thinking. Innovative, Relentless"

LEYLAND-OKUDA

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HOSTILE is a gritty setting for Cepheus Engine and all other Classic 2D6 SF RPGS, based on the late-70s and early-80s movies we grew up with.

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ORIENTATION

The universe of HOSTILE is not our universe – set in the future. It is a genre and an assumption, a future that was outdated within years of its creation in the late-70s and early-80s. And of course the setting is essentially a cinematic one. These factors have shaped the technological assumptions of the **HOSTILE** setting. Artificial gravity onboard starships is there because it costs less to film, hyperdrive-equipped starships are used, quite literally, as vehicles with which to move the plot along. With a universe of possibilities out there in deep space, we want to 'get *out* there!'

But we are roleplayers, suspending our disbelief and we like to know how and why things are the way they are, even if the art director on a film had no clue. Quality concept artists and designers have often worked on these movies however, people like Syd Mead and Ron Cobb and Chris Foss. Ron Cobb is responsible for the extremely realistic interiors of the Nostromo in Alien (1979). He described his approach in an online interview:

My problem with designing Nostromo's interiors, the control bridge, corridors, auto doc (or med lab), bulkhead doors, the food deck, etc., was that I grew up with a deep fascination for astronomy, astrophysics, and most of all, aerospace flight. My design approach has always been that of a frustrated engineer (as well as a frustrated writer when it came to cinema design). I tend to subscribe to the idea that form follows function. If I'm to arrive at a cinematic spacecraft design that seamlessly preserves, as in this case, the drama of the script, the audience has to experience it as something impressive and believable.

My method for designing the Nostromo interiors was to emulate the engineering of the entire [ship] as though it were real, from the interior to the exterior and back again. So, while I was not supposed to be spending any time deriving exterior designs from my all-encompassing technique, I did produce them if only as a personal guide to making the interior sets more interesting.

Our setting must not just look and feel realistic, it must act realistically. Of course much of this technology is imaginary, yet we still want a sensible degree of engineering logic to back it all up. If the player characters want to disable all the anti-gravity on a ship's deck, were do they go? What kind of infrastructure will they be sabotaging? It's these practical in-game problems that depend on what would normally be considered the totally theoretical and frivolous assertions appearing within the HOSTILE Technical Manual.

RETROTECH

Look at those cathode-ray tube monitors in Alien and Outland, marvel at the lack of flat-screen technology, touch-screen computers, cell-phones and a hundred other modern marvels. Why aren't they in that setting? Well, firstly because some of the technology we have now just wasn't available in the late-70s and early-80s, and secondly, people like Ridley Scott chose to eschew far future wonder gadgets in favour of an industrial reality that the movie-going audience would recognize – because we're supposed to be interested in the alien/exotic problem/conspiracy, and not be distracted by the advanced technology of the future. Scott had seen the flat screen computer monitors of 2001: A Space Odyssey (1968), but chose instead to go with 1970s CRT monitors, 'for the look'. But, how do we rationalize a future, some two centuries hence, where cell-phones, plasma screens and wi-fi just don't exist?

An Alternate Future

As in our timeline, technology in **HOSTILE** looked on the verge of a virtual electronics developmental explosion as the 1970s gave way to the 1980s but a series of seemingly minor circumstances and major historical events hampered what might have been a wondrous new age and changed the course of human history. As President George Bush gave his now famous Space Exploration Initiative speech on July 20, 1989 and launched an enterprise that would send mankind out into the solar system and beyond, there were already factors affecting the technologies that would take them there.

The Decline of Moore's Law - Moore's Law is "the observation that the number of transistors in a dense integrated circuit doubles about every two years." In April 2005, Gordon Moore stated that the projection cannot be sustained indefinitely: "It can't continue forever. The nature of exponentials is that you push them out and eventually disaster happens." The ongoing miniaturization and improvement of integrated circuits therefore slowed dramatically as the 20th century came to a close. Dreams of micro-electronic components and palm-sized super computers crashed as improvements in computer technology were slaved to large main-frame processors and bulky terminals. Now, mechanical and electrical engineering would have to take up the slack and become the main agent of technological progress.

Network Insecurities – Rampant security breaches and the hacking of civilian, commercial, industrial and governmental data networks cost those affected billions and on more than one occasion threatened world-wide economic collapse. As a result a compartmentalizing and decentralization of databanks was instituted as well as a shift from risky wireless connectivity to a more secure hard-wire format. Transmitted data, when necessary for a given application, was sent by tight-beam data-burst or secure carrier frequencies.

While wireless networks are common today, in the retrofuture of **HOSTILE** such technology is just too risky. Wireless networks can be too easily spied on, jammed and spoofed, etc. This makes a smartphone full of personal information a liability, not an asset. The open trading of computer files on a network is not something that the governments, corporations, or other organizations support. There is an increased reliability on material memory disks instead of virtual data storage as a high-security means of data management. If someone buys or sells music, video, or software, it's typically in person with a disc, not via the network. Network engineers, hackers, and technicians may use a computer tied into a network, but the average person does not, except to use email or videophones.

The Flight 926 Incident – On May 12th, 2009 an Emirates Boeing 777 exploded just off the cost of Qatar en-route to Cairo. The 1.7 megaton nuclear device vaporized the 378 passengers and crew, contaminated thousands with far-spreading fallout, and devastated the region's power grid and electrical services for months. Long term casualty estimates were nightmarish and the effect on petroleum production and trade from the EMP alone was a universal calamity. The radical religious zealots responsible for the tragedy were identified and brought to justice but the effects of the disaster were far reaching. The vulnerability of solid state technology to EMP emissions on such a wide scale prompted a manufacturing frenzy towards more secure, EMP resistant and dependable alternatives. The resulting technology succeeded in these aims but at a cost of performance, power requirements and most of all size.

The revolution began a design and developmental trend that would see heavier, bulkier and sturdier electronic devices in every application and a closer symmetry with mechanical alternatives. The limited but still catastrophic East Asian Nuclear conflict in 2047 only served to entrench the need for such an institutional shift and established manufacturing principles for the next century.

Development of the Vacuum Channel Transistor – At the onset of the 21st century, NASA engineers tinkered with an odd new technology, the Vacuum Channel Transistor (VCT) which was essentially a high-tech version of the old vacuum tube that had been all but made extinct by the onset of solid state electronics in the 60s. The VCT utilized a field-emission principle and was faster, more powerful and lacked many of the vulnerabilities of its electronic rivals including operation at high temperatures and tolerance to high dose radiation. When coupled with developments in carbon nanotube heat transfer the new technology sparked a subtle revolution as processing operating frequencies in the terahertz range became possible. The answer to the failing solid state market had been found with one major disadvantage. VCT technology was bulky and heavy and required additional supportive hardware that ended the steady migration to smaller and lighter electronics that had dominated for decades. The future of electronics would be bright and unimaginably efficient, but it would be big.