

Technology and History, what happened to my Flying Car? or Where are we, Why and What do we do next?

Technology hasn't advanced as far as it could. The Pulse destroyed a whole lot of information and set technology back 50 years. So things may not be as advanced as you would expect. The Blight set North America back many years and the damage to Europe from the *Espranza* crash is only now coming to light.

However, the space race did take off. The Americans return to the Moon missions established what became the Lunar Base Olympus. The Chinese and Russians also went to the moon and built near by Olympus. Now a maglev train joins the three colonies. Olympus was once taken over by Aberrants calling themselves the Space Brigade and this set back the U.S. a lot. By that time a Mars base was established, but after the Space Brigade took Olympus the U.S. was set back in the space race and never regained its footing again. Eventually the moon was liberated and now hosts and Embassy with the alien Qin. China moved into the lead of the space race. They started the major Mars bases and against the objections of the West they started the Century Project; a project to terraform Mars for human habitation. The West objected that they had never determined if there was life on Mars or not. The Chinese said it didn't matter, it was all dead now and it was time to make way for humanity. Soon after this decision the U.S. changed greatly; the Blight happened in the heartlands destroying America's breadbasket.

The Aberrants had declared war on humanity and in a manifesto they said that humans were to Aberrants as monkey's were to mankind. With orangutans endangered and gorillas almost extinct in the wild the comparison was chilling. Much of the world rose in anger against them. A few Aberrants were heroes and sided with humanity, but because of the Taint many Aberrants went evil. It could be fought, but with the increase in powers or their use comes a natural distain and disconnection to normal humans; characterized by body deformities, usually accompanied by a swelled head.

The U.S. held a unification referendum with Canada and combined into the FSA. (Federated States of America) as a result. Quebec never wanted to go along, but were pulled in against their will. They have cut a deal with the FSA. for autonomy, but the FSA. walks over that autonomy at will. In practice Quebec is left alone except for military troop and police maneuvers; incursions that happen regularly. Quebec is left to itself, but if they complain too much the FSA could easily annex them. There are a lot of Canadians who don't like the FSA. and thought there was a lot of illegal pressure and voter fraud in the election and they object strongly to the results. So strongly some of them have become terrorists. The Intuits (Eskimos) want to be left alone and are slowly developing their own independent society. The FSA is too busy with other problems to crack down on the Intuits. After the annexation referendum the FSA turned its attention south and annexed Mexico. This election was full of voter fraud, ballot stuffing, double voting, and a lot of other illegal activities. Still the FSA called it valid and took over all of Northern Mexico. The UN objected, but the FSA ignored them. The UN threatened to intervene, but the US had a permanent seat on the Security Council and vetoed all such measures. Finally, the world settled with having the FSA as it is known today. Not all the Mexicans agreed though and there are a lot of terrorists active in the middle and south of Mexico. South America is providing funds and support for many of these terrorists. Cancun and the tourist areas have decided they want to join the FSA so no one is quite sure what is going on and who wants to be an American or not in Central Mexico. This amount of unrest and terrorism has kept the government busy and raised

the Patriot Act to the 10th degree. Lots of money was poured into security and R & D suffered. The Aberrants went for soft targets like Silicon Valley so again technology suffered. Now in a new War on Terrorism technology again takes a back seat to security. Ogrotek, in the New York area, is the most advanced technology company, in the FSA specializing in biotech. It is also a Psionic Order.

Have no fear Europe and the E.C.U. could take the lead. But that was before the space station *Espranza* was brought down over France. Europe is only beginning to try and recover from that disaster. India and China never went to war, but India did go to war with Pakistan and the whole area saw unrest. Pakistan and Kashmir were both taken over by India. The politicians favored security over research, development or work on new technologies, as did their voters.

Medicine has advanced as have a lot of small technologies. Computer science advanced, but stumbled when it came to creating artificial intelligence; they just can't get a computer to think creatively. China and Africa are the new economic leaders and their societies aren't as heavily invested in technology as the West was. Technology has continued to improve, but not at the rate you would expect for 100 years. After all in 100 years we went from horses to airplanes. The computer age only took 50 years to blossom and shrink a full fledged computer, the size of a small building, down to the size of a cell phone. If mankind can regain its footing it will pick up in technology development. That is going to happen any day now, or so the politicians promise. What will really happen is unknown. Certainly mankind can't get its house in order until the Aberrant threat is dealt with. The Aberrants were bad at their height and then they left. Psionics developed, in secret, and the Aberrants have just recently come back. The psionics revealed themselves and fought against the Aberrants. Some people think that the psionics are okay, a few think there is little difference between them and the Aberrants (this opinion is championed by Japan), most people are of the wait and see variety. The world is going through a rough patch and our troubles never seem to end.

Computers have, of course, changed greatly. The interface has even changed. Few people use keyboards anymore. Also few people write code. Computer programs have gotten so complex that other computers have to design their replacements (much like electronic circuits and integrated circuits). Now people interact with computer Agents, there are a few standard agents and many modifications, tweaks and specialties. It has gotten so accepted that several news shows are hosted by computer agents, interacting with people just like a single interviewer used to do. People know about computers, but the actual programming languages are hardly known. The code is simply too complex. Skill in computers represents how well you can use your computer agent. Computers haven't been able to reach true artificial intelligence. So a computer is rarely the author of original ideas, instead people provide those ideas and the computer figures out how to do it. For example a computer could try hacking, but unless you have a decent skill in Computers you aren't going to get very far. You will need to know how to use your agent, and what agent works best or be able to tweak an existing agent to handle more jobs. In game terms the details are more vague; all that we are concerned with is the number of successes you make in your dice pool. A really good agent would just be able to add a few dice to your dice pool.

Computers in general are similar to what they were 100 years ago, however they have shrunk. A full-blown super computer can be built into a box the size of a pickup truck's bed (including its supercooling system). Desktop computers are able to be integrated into the monitor or crammed into an object the size of a current tablet computer. Now

scientists are trying to perfect photonic computers that could be shrunk down even more. Quantum technology is also being studied to integrate into the computer. Faster than light communication with entangled particles, quantum scale memory and more all are just barely out of reach.

The Internet was killed a long time ago. It's replacement is called the OptiNet; a system of fiber optics that replaced the traditional Internet. The whole Internet and most computers connected to it was wiped clean by the Pulse; from an Aberrant. This set technology back hard. Even now we are still trying to recover the lost data.

Links are used by some people; imagine a smart phone that is implanted in the skull and so have direct neural access. This gives people advantages like augmented reality (imagine being at a party and when each person comes up to talk with you a menu of items about them appears in your mind) and direct interface with computers. The link has several problems though. Once implanted it can't be expanded or changed. They only surf the internet and don't contain their own agent. Many people have reservations about implanting something in their bodies. Most psionics prefer to use minicomps and agents rather than use and implanted link. Those who use biointerfaced technology can connect to more powerful computers integrated into the technology from a simple weapon's aiming system to the full access to jump drive navigation and a full fledged multiplexed series of super computer cores.

Biotech involves living organisms electronically integrated to the nervous system of the owner. This process is called formatting. A nonformatted biotech system functions as a normal one would, when it is formatted it becomes an extension of the person who is using it. Once a device has been formatted, a process that takes hours, a device can't be used by anyone else without it being reformatted. Imagine a weapon system that is part of your own arm and feels like a third hand. Well trained users develop reflexes based on the system and an intimate relationship with it. Biotech devices are living and derive their nutrition from the wearer. Larger systems can be made self-supporting, but smaller systems like biotech weapons can only survive a week away from its user. Biotech has a regrettable effect with psionics causing a feedback if the formatting dots exceeds the character's Psi score. People who are not psionic are barely able to use biotech, they have to have a specialized interface that is electronically powered (the batteries last only 1 week) as well as the normal nutritional requirements of the biotech device (this is different from Trinity). Allowing nonpsionic characters to use some biotech. They have a formatting limit of 5. As long as the formatting number doesn't exceed the person's Psi score a psionic person can support a device with a requirement of up to 10. Items beyond 5 are rare, but formatted items are added together. So a person with a Psi score of 5 could use one 5 point formatted item or a combination of say two one format devices and a three formatted device without problems. The most common items, that are formatted, that the characters will meet are weapons.)

There is one threat that will end our problems; the aliens. The Qin were happy to meet us, the Chromatics wanted to destroy us and the Coalition looks at us as resources not as people. Aeon Trinity's agenda is to try and reunite humanity before it is too late so we can stand up to the Aberrant threat and the aliens. They are coming here and we don't know when, but it will be soon.

Meanwhile, the Aberrants have decided that they want earth back, despite what the inhabitants say. Opinions vary on what to do with humanity, from partners (junior partners) to herds that have to be managed and controlled Aberrant attitudes are all

across the map. The only thing that they have in common is that they don't want to nuke the earth; they want to live there. Somewhere out in space, beyond our solar system is an Aberrant strong hold. We don't know where that base is or any details about it. Some suspect it is a set of space stations, others are worried that they might have the resources of a planet and an entire solar system. Whatever resources they have the Aberrants have increased their attacks on Earth, her colonies, stations and the Qin.

Aeon Trinity was founded a long time ago prior to WW1 in a time of Adventurers. It was at first a gentleman's club, but it evolved. Women were admitted, and with the development of the Aberrants the mission of Aeon Trinity has changed to that of the defense of mankind. Now, armed with the power of the psions, Aeon Trinity is trying to rally humanity for its coming trials.

The introduction of mylex paneling and bioglass shortly after the turn of the 22nd century enabled building on the Moon's surface and in asteroids without fear of radiation. These inexpensive materials makes space construction cheaper and easier.

Material science discovered olanium, a naturally occurring super heavy element that can be found on Mercury. It makes for incredibly dense metal and has replaced depleted uranium in military spec ammunition. With the discovery of stable super-heavy elements a whole new field of discovery has opened up. The problem is that the material can only be created under heavy atomic particle bombardment. This requires technology like the Super Collider in Europe. A hole for a larger one was dug in Texas, but it was never finished and being close to the Mexican border it is not considered a safe area to work in. Olanium is found naturally occurring on Mercury's sunny side. Since the planet is not quite orbitally locked it can be mined. Most of the mining is done by remote control from the space station Apollo. Apollo is a huge solar furnace and solar operated smelting and refining station. They send a lot of refined olanium to the system.

Orbital steel is another new development. It uses a development in carbon that is bonded to the steel. Called bucky balls this new state for carbon makes a material stronger than carbon nanotubes. Carbon nanotubes have revolutionized the plastic industry creating a new material mylex; a transparent, super strong plastic.

Orbital steel makes the construction of space elevators (beanstalks) possible. The elevator is anchored on the ground, as near the equator as possible. It then stretches beyond the atmosphere to a geosynchronous orbit where the other anchor is an asteroid. The cable stretches non-stop to 6 miles at the Midway station where the elevator car transfers to the other cable that stretches all the way into space. It takes 10 hours to make the one-way trip, but this development has cut the price of going to orbit drastically. Four fusion reactors are dedicated to supporting the power requirements of the system. The elevator uses regenerative braking--meaning it recovers some power as the car falls. If the cable is somehow cut, midway station can keep itself afloat through antigravity systems, but it will fall immediately in a controlled fall to land on the earth. Brazil has a beanstalk and the FSA wants to construct one in Texas. Another is planned for India, but they are having problems with China over it. A beanstalk is based on Kilimanjaro in Africa and Great Britain is planning one in England. This space elevator is controversial since it is so far from the equator. The locations of beanstalks became huge space ports sending a lot of cargo into space and receiving a lot of refined goods.

We have also discovered artificial gravity. This has revolutionized space travel. Prior to that bone thinning and fracture was a common result of living in a micro-g environment for too long. There is a colony of lower-g people living on the moon. We now use artificial gravity to create a 1 g field on Mars, asteroids and in space stations. People still work in micro-g environments, but they at least sleep in a 1-g field. This technology is not used much outside of our solar system though. This may mean that people who are living on a low-g world could never come to visit earth without a lot of medical support.

Cybernetics and prosthesis work accelerated after the Afghanistan/Iraq wars, but cybernetics were always a dream. Having a mechanical and electronic body replacement simply can't function as well as the original parts. There are prosthetic arms and legs and they function nearly as well as the original. More complex prosthetics are not yet possible. A prosthetic hand or arm can grab, hold and has a rudimentary sense of feel, a sense of temperature and pressure. These feelings are transmitted to the stump and the prosthetic wearer interoperates these feelings as what his arm, hand or leg is feeling. Actually tying the nerves to the electronics of the prosthetic is difficult, it also makes for a prosthesis that can't be removed without surgery. Running is especially complex and requires a spring action. Most runners who use prosthetics have exchangeable legs that are tailored for the task at hand. The implantation of extra devices is usually done through biotech. Most biotech devices, that are formatted for the wearer, can be removed, but an increasing number of them must be directly integrated into the body and so can't be removed without surgery.

Oh and we do have flying cars; skimmers and hover cycles. It took a long time to get there though, over one-hundred years since they were first envisioned.