



by
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Red Frontier

Platform

Red Frontier will be developed for PC, Mac, XBOX 360 and Playstation 3. Adapted versions for the Nintendo DS and Playstation Portable are possible.

Genre

Red Frontier is an single player ego-shooter with heavy emphasis on adventure. Battles are featured, but the gameplay also consists of jumping puzzles, sneaking sections and adventure-typical conversations with other persons.

Target audience

The game is targeted to female and male gamers from 16 to 29 years. It will feature violence and mature themes.

Graphics

Red Frontier is in 3D, held in realistic tones. The setting features a variety of colors, including the red/orange of the planet, the red/green of oases, white/blues of space-stations and orange/black of underground areas.

Controls

The Character is controlled via first person. When talking to other characters or hanging from cliffs the camera switches into a third person, hovering behind the back. The switch is instantaneous, the camera does not zoom into the neck.

Setting

The game is set on the partly terraformed Mars of the year 2167. The player is part of the Delta-Expedition, which is tasked with researching the planet.

Story

The story centers around Rebecca Barolay, a biologist on the partly terraformed Mars in the year 2167. The planet has become habitable and plants and animals have been settled on the surface. Barolays team discovers strange plants that seem indigenous, not immigrated. They realize that Mars once was habitable before and housed a wide variety of plant- and animal-life, including humans. Their technological remains are discovered by the team in ruins found deep beneath the surfaces. Upon entering they accidentally switch on several machines, which turn out to be defense-robots which kill several team-members. Later in the story wild animals are left out of stasis and a dangerous virus starts transforming the atmosphere, including animals.

The game takes place in the desert of mars, artificial oases seeded by colonists, underground ruins, research-bases, a station in orbit around mars and a station on the mars-moon Phobos.

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1. Basic Rules

Main Character

Rebecca Jean Barolay was born in 2142 in New Glasgow, Scotland. She studied Biology and Archeology at the Fleet-Academy. Upon finishing her studies she joined several off-world missions, but made few breakthroughs or discoveries, until she joined the Delta-Expedition. She became the head of a small excavation-team stationed at the echo-outpost, where she studied both new plant life and the newly uncovered ruins.

Rebecca is calm and carefully analyzes every situation before making she move. The safety of her crew is a high priority.



Equipment

Rebecca is able to utilize a number of items found throughout the game, both as weapon and as tool. Equipment will consist of technical items (blowtorch, lamp, etc.) and makeshift weapons instead of the classic setup.

Although there are several items in the game, the player will periodically lose items and never carry more than three at a time.

Scanner	The Scanner is basic issue for all field-researchers. It allows the user to analyze matter, but is also useful for scanning structure for weak points or to access computer terminals over a distance.
Stun-Pistol	The stun-pistol is usually worn by security-personnel. It fires a single dart which shock the target and administer a sedative, rendering it unconscious within milliseconds.
Rifle	Each base is outfitted with several high-caliber-rifles which are to be used only when absolutely necessary. Only few of those are locked in the armory.
Blowtorch	Each team is outfitted with equipment for all kinds of situations, including a blowtorch. This tool can be used for everything from repairs to structures to lighting a room.
Buggy	The AR-6X jeep is widespread through the Mars-outposts. Each base has several of these at their disposal, which are mostly used to transport people to locations nearby.

HUD

Except for life-energy, which is displayed through little symbols in the upper left corner (which vanish when out of battle), no data is displayed in the HUD. All important data (i.e. ammunition) will be displayed right on said item.

Level-progression

Rebecca begins the game at the Echo-base. After completing basic training she meets up with her team at an excavation-site 23 kilometers outside the outpost. They discover several artifacts, which point towards several others. One can be found by Rebecca at Echo-base in storage. Another one can be traded by her from a man in New Reykjavik, a civilian settlement. The third one is located in a cave beneath Phobos. The combined artifacts show a map of the planet, including underground structures, which indicate a prior human settlement. The team finds an entrance near Echo-base and enters the complex.

Once they arrive at the bottom of the structure several machines are being activated and a cave-in blocks the exit. Additionally several guard-robots are activated, which kill half of the team.

The survivors have to find another exit. They can however only progress if they release several safeties within the base, which release animals from stasis (both harmless and dangerous), and several microbes.

She makes it to the surface with one remaining survivor. Upon exiting the structure they realize that the microbes are beginning to change all animals and plants, except humans. They make their way back to the base, which is heavily damaged. They analyze an artifact they found beneath the surface, which holds data concerning the previous human civilization 60000 years ago. They manage to locate another subterranean super-structure, which is large enough to navigate with vehicles.

Rebecca takes a buggy inside and fights towards the core, where she stops the microbes and robots.

However, the changes in plant-and animal-life are irreversible. Taking into account the newly released animals an entire new ecosystem has been created on Mars.

Puzzles

The game features several kinds of puzzles, which have to be solved

Instances within bases feature an adventure-like game play, where the player must talk to other NPCs to gather information about the whereabouts and the means of acquisition of his target objective.

Gunplay is featured, but takes only a minor role. Enemies can be avoided or cleverly dispatched by using the environment, e.g. blasting animals into space, using the scanner and a makeshift bolt-gun to cause a cave-in, which will block the route from several enemies, etc.

At some points minor jumping-puzzles have to be solved. The player is able to hang from ledges and jump long distances using the gravity-boots. When dangling from a ledge the perspective shifts instantaneously into a 3rd-person-view.

The game features several vehicle-sections, where the player can pilot the buggy or a shuttle. Vehicle-sections include races against the time (to make it out of an collapsing structure), reaction, jumping (using ramps) and makeshift combat, utilizing the jeep as a weapon.

2. Mars

Time line of events within the Red Frontier-universe

- 60k BC Humans on Mars leave the planet. They take along several animals and plants. All lifeforms interbreed with earth species and spread their genes throughout the entire ecosphere. Current plants and animals still carry dormant genes which are easily activated upon entering Mars, making adaptation quite easy.
- 59k BC Due to a cataclysmic catastrophe caused by the humans on Mars the planet has become uninhabitable.
- 1969 AD The first humans step on the moon.
- 2037 AD The first humans step on Mars. Mankind's interest in the stars has just awoken. Due to political problems however the exploration of space will have to wait several decades.
- 2047 AD Basic food-synthesizing technology is invented. It will help ease world hunger.
- 2067 AD The major political powers on earth create the International Aeronautics and Space Administration. This will help unite the entire planet.
- 2072 AD Advanced Ion-drive becomes operational.
- 2079 AD The Tesla-array, basically a giant magnet, starts collecting debris throughout the Earth-orbit. The Risk of in-space-collisions is immediately negated.
- 2084 AD A probe equipped with an experimental ion-drive is sent to Alpha Centauri, the next star-system. It will require 20 years to reach its destination.
- 2088 AD The Alpha-Centauri probe passes the ancient Voyager-Probe. It reactivates its systems, extending its lifespan by another 55 years. Earth's first mission outside the solar-system continues.
- 2101 AD Lunar Base Alpha is established. The outpost is heavily dependent upon supplies and help from outside. This model will not be used again.
- 2102 AD The Delta Expedition begins operations. It sends several probes to Mars which will orbit it for the next 60 years and collect data.
- 2104 AD The first images from the three suns of Alpha Centauri arrive on Earth. "Although this was a huge step for mankind, we are just scraping at the crust of the universe" - Admiral Wealer. High command plans self-sustained missions to the next two systems.

- 2122 AD All nations on Earth form a central government, the “United Earth”.
- 2125 AD The Titan-operation begins. Due to the ice-moon titan being exceptionally close to earth in dozens of years IASA-command quickly plans to send an entire independent research-mission onto the moon. The mission utilizes an advanced design of the Lunar outpost.
- 2127 AD Contact with the Titan-outpost is lost. It is unknown whether the mission failed or communications have been permanently destroyed. Command assumes the latter and waits for the next window to contact the mission.
- 2129 AD The first batch of enhanced bacteria is send to Mars. They will create greenhouse-gases to increase atmospheric pressure and to increase temperature, while possibly melting the ice-caps.
- 2132 AD The second and third batch of bacteria arrive at Mars. The first batch has already been successful, raising temperature on Mars by two degrees Kelvin.
50 more are planned.
- 2133 AD Ares Orbital Station is complete. Research mission are periodically taken to the surface.
- 2135 AD Phobos and Deimos mining stations are complete. They will extract materials for use on the surface of Mars.
- 2139 AD Data collected from probes sent to dozens of asteroids and moons indicates permanent self-sufficient settlements might be possible of several celestial bodies in the system.
- 2140 AD Scientists aboard Mars orbital station seed an area of several square kilometers with seeds of various plants to see if plant life can already exist in the current conditions. Greenzone Alpha becomes a success.
- 2141 AD Greenzones Bravo and Charlie are established in different climatic regions, both carrying different types of plants. Greenzone Charlie thrives, but only less than 4% of the plants in greenzone Bravo develop.
- 2143 AD Greenzones Delta, Echo and Foxtrott are established.
- 2144 AD Greenzones Golf and Hotel are established. No more greenzones are planned.
- 2151 AD Plants at greenzone Echo display a red color. Scientists are baffled.
- 2152 AD After several decades of no communications a mission is sent underway to contact the Titan-Outpost. It turns out their communications array was destroyed by an asteroid, effectively isolating the mission. The station is manned by the descendants of the original crew. After repairing the station and exchanging personnel the mission continues.

- 2153 AD Due to the development of red plants the surface research outpost is rushed in production. It is constructed near greenzone Echo.
- 2154 AD After the Echo-outpost has been activated scientists discover that, unbeknown to them, animal-life already existed. They proceed letting more animals into the wild.
- 2163 AD Two more research outposts and a civilian settlement are established. Phobos- and Deimos-station are extended.
- 2167 AD Rebecca Barolay begins work at the echo-station.
- 2167 AD Strange, unnatural structures are discovered on Mars. The Delta-expedition is not sure what to do with this data.

Terraforming of Mars

The first stage of the Martian terraforming project involved deploying a large amount of genetically engineered bacteria around the surface. These artificial lifeforms transformed abundant resources found on Mars into greenhouse-gases, which in turn would help warm the planet. For Mars to become habitable an increase of approximately 50° Kelvin was necessary, which was achieved 12 years later, several years ahead of schedule. The increase in temperature not only made life as humanity knows it easier to support, but also resulted in a partial melt of both the southern and northern ice-caps. The glacial water filled several canyons and craters around the surface, creating a net of waterways spanning the entire surface. The water is yet to reach all available spaces, causing sometimes sudden shifts in water levels when a new crater or field is flooded. This, in conclusion with the higher than expected tidal-waves, make a settlement in the immediate surroundings of water-reservoirs too dangerous.

After high enough levels of pressure and moisture have been established several zones were littered with seeds of various plants indigenous to earth, to see if these could be supported by the Martian environment. Although the bravo-site failed, most plants located in the alpha- and charlie-site were able to sustain themselves from the nutrients already located within the soil.

An unforeseen mutation occurred several years after three more zones have been established. Several plants at the echo-site displayed, in addition to the casual green appearance, a large amount of red-colored parts. Further research has shown that the chlorophyll in these parts was reacting with the red light-spectrum instead of the green, indicating the first steps of a Mars-adapted evolution. Several years later red-leaved plants have become dominant over the remaining ones and almost replaced them.

Especially interesting is the development of red leaves in several distinct species almost at the same time. It is still unknown if heightened cosmic radiation caused similar mutations,

parallel evolution occurred (increased due to the abnormal circumstances), or was caused by an unknown reaction with the atmosphere-altering bacteria.

Lower gravity has resulted in plants growing up to two times their usual size. Although several areas on Mars are planned to be outfitted with increased artificial gravity, farmland and greenhouses will be kept at Mars basic gravity.

Plants also showed relatively little difficulty adapting to the slightly changed circadian cycle. Increased length of seasons however proved otherwise. In the first years plants followed their natural, earth-bound reproduction cycles, causing a slowdown in growth of new ones. In the eighth year after the original seeding plants showed two advanced reproduction cycles crammed into one Martian year, where they would carry seeds in spring and summer, but not in fall and winter.

Although the amount of oxygen in the atmosphere has reached breathable levels and the amount of carbon dioxide has fallen below threatening levels, the sky remains red. Scientists argue the appearance is caused by the reaction of the unique magnetic field with the high amounts of argon and xenon, which were released during the melting of the ice-caps. It seems unlikely that Mars will ever develop a blue-looking atmosphere like earth.

The IASA

In 2067 the European Alliance, Western Pact and Asian Coalition decided to bundle their progress into space-travel and created the International Aeronautics and Space Administration, an organization with vast resources whose main mission was research in all fields of science for the well-being of mankind (this international cooperation was also instrumental in bringing together mankind as a species and served as the precursor of the United Earth, established in 2122).

The sheer size of the IASA-operation made a ranking-structure more than necessary. It was decided to adapt a naval hierarchy, despite comprising complete of scientists. This would also help prepare the IASA for future military capabilities.

With increased funding the organization was able to make several scientific breakthroughs. Protein-synthesizing-technology, which was already in limited use since 2047, was refined in 2071 to produce any kind of food from a base of artificial proteins, thus effectively ending world hunger and the need for livestock, turning the entire population vegetarian. It would however still take decades to perfect the process, but already then the need for grown food was drastically decreased.

The development of the inter-planetary-ion-drive in 2072 dramatically increased ship speed, allowing a larger number of research-missions. Only years later dozens of probes have been send to all outer planets, half of Jupiters moons and large asteroids within the primary belt. A probe outfitted with the still experimental inter-system-ion-drive was set to Alpha Centauri, where it would arrive two decades later.

Advances in artificial gravity not only made generators so small to fit into clothes, but made it also possible to project gravity-fields onto other surfaces. It turned out unlikely to change

the way humans think about their surroundings, but was utilized to increase the gravity on the first Lunar research-outpost, which was established 2101.

Parallel to the planning of the Lunar-mission the terraforming of Mars was planned. Instead of a domed research-outpost which would be dependent on supplies, the goal of the Mars-mission would be to reach a self-sufficient level. Upon urging of high officials an own subgroup within the IASA, the Delta-Expedition was founded, whose sole purpose was the research and terraforming of the fourth planet (Delta) in the Sol-system.

Colonization of Mars

After the establishing of the orbital station as a port for Mars and the Phobos-station to extract resources, the first permanent base was established near the echo-site, where the first mutations in plant-life occurred. The research-outpost parted with the classic dome-structure of the Lunar- and Titan-bases in favor of a more open design lacking any kind of overlaying shield, thus relying on the already-established atmosphere, but still being able to lock down in case of an environmental failure.

The entire base is outfitted with artificial gravity clocking in at .8g, making it able to easily adapt between Earth- and Mars-level.

Although the majority of people on the base consists of scientists and civilians, a noticeable security-force has been present ever since the establishment.

Base-Structure

After the first series of experiments regarding the stability of the environment and plant-life has been completed, IASA-command contemplated the idea of increasing the size of the Mars-operation and including civilian settlers.

Borrowing from the successful concept of the echo-base, two more outposts were established at the Hotel- and Charlie-site. Another settlement, New Reykjavik, which was not run by the Expedition, was created shortly after. New Reykjavik remains an experiment until today, to see if an unsupported colony of humans can survive in an unknown atmosphere. There are no further plans for immediate settlement of civilians.

Research-Equipment

Researchers of the Expedition wear the basic uniform, which is color-coded for the various departments (command, technical, medical, science, security). When leaving the security of the base the uniform is completed by a vest holding survival-equipment, which includes rations, an oxygen-tank and an advanced medkit. Security personnel additionally carry a stun-pistol in a holster on upper left or right leg.

In addition to the basic uniform, which suffices for approximately 90% of all situations, an extended environmental (EV) suit can be worn when no life-support is available, including the vacuum of space.

Researchers in the field are equipped with gravity-boots. These help maintain a level of 0.8g even when the bearer is outside the confines of a base, at least until the modifications on the artificial-gravity satellite-array are complete, which will boost Martian gravity up to 0.7g, which is currently at approximately 0.4. People sometimes switch them off to gain advantages through the lower gravity, for example jumping.

Bases are equipped with several vehicles for transport of goods and personnel. Besides two shuttles for reaching the orbital- and Phobos-station, each outpost has a complement of buggies, which can carry up to three persons and additional equipment.

Command-Structure

Command of a base lies in the hands of a captain, with a commander second-in-charge. Several bases are commanded by an admiral. The rank-structure remains the same in the Delta-Expedition as in the IASA.

Climate

After the terraforming-process has been mostly completed the temperature was at an average of 11° Celsius, not unlike Earth.

The increased density of the atmosphere allowed walking outside without pressure-suits, and the air contains enough oxygen to support normal breathing. Additionally the air contains relatively high amounts of argon and xenon, which pose no threat to human health.

Mars is very windy, with strong winds blowing almost half of the day. This is expected to change once enough structures and plants will stop winds.

It does rain on Mars, what however rarely happens. Plants show to be able to sustain themselves without rain.

3. Life on Mars

Animal-life on Mars

Since advanced protein-synthesizing technology made livestock unnecessary ca. 2047, there were no immediate plans to introduce such animals into the Martian atmosphere. Despite the lack of a plan some level of wildlife has developed, presumably based on animals brought in by members of the Expedition and escaped specimens from medical laboratories.

Local wildlife includes rodents and birds, although insects, bats and several other predators have been spotted. No further research has been put towards wildlife on insect- and microbe-level, although it is theorized that large, yet unseen quantities of these exist to support the biosphere.

Animals are largely limited to greenzones near settlements, and are rarely seen outside.

So far it has been shown that red-colored animals seem to have a higher survival-rate than others, which resulted in it quickly becoming the casual color among animals.

Since only later generations of the wildlife have been observed, and detailed data on the first ones is non-existent, it is assumed these animals may have had problems adapting to the lower gravity. Actual populations show a decrease in muscle-size, while the specimens themselves have become approximately 25% larger.

It is unknown how animals will develop further in the ever-changing atmosphere of low gravity and increased radiation.

Desert-cat – *felis catus ares*

It remains unknown how exactly a population of cats developed on the planet. The most logical theory is that a house-cat of an Expedition-member became pregnant, with the offspring inhabiting the nearby greenzone.

Seeing that the population of felines on Mars came from either a single or very few individuals, the variety of phenotypes is quite small. Colors range from black to red, with the occasional grey tabby presiding. Felines can have equally long or short fur, although females tend to develop longer fur more often.

An additional theory states that the “origin-cat”, which started the Martian population, must have been of a very large statue, maybe one of the last remaining Maine-Coone-breed. Otherwise the rapid increase in size would be harder to explain. *Felis catus ares* is almost twice as big as on earth, presumably owing to the low gravity. Although muscle-loss was predicted, desert-cats remain strong and are able to jump long distances and kill prey easily. The increased growth and resemblance of the Maine-Coone has led several people to dub it the “Mars-Coone”.

Felines feed mostly off other rodents and birds present in the greenzones. Surprisingly their diet seems to include large quantities of fruit, which can be explained by the

increased need for energy of the large animal and the insufficient number of prey.

An interesting observation is that cats with very long fur and slender body-architecture have been seen jumping from heights in conclusion with strong winds, thus extending their range.

All these unforeseen events make it virtually unpredictable how the feline species will further evolve on Mars.

Giant bat – *ares megachiroptera*

As with other animals now commonly found on Mars the arrival of bats was unanticipated. Thought to have been accidentally brought onto the planet in a shipment of plants, bats quickly spread over all greenzones.

As their relatives on Earth, bats are nocturnal, but can also often be found at daytime. Unlike Earth-bats however they not only feed on insects, but also on small rodents. One might argue that their increased size, caused by reduced gravity, would enable them to prey on larger food.

Although the size of the torso has increased by 40%, the wingspan of *ares megachiroptera* has nearly doubled. If this development continues, giant bats might become hazardous to humans.

Red trout - *trutta ares*

Several type of fish were deliberately set out in lakes and rivers running through greenzones. The rest of the ecosystem already existed before this happened, and was able to sustain itself without the need or help of seaborne life. Since water on Mars showed only small traces of natriumchloride, saltwater fish were not used.

Species were able to adapt without major problems and have not, unlike other lifeforms immigrated to Mars, changed much in nature (their red tones however are caused by a heightened level of iron oxide which passes at higher rate through their bodies, giving them a red appearance).

Several mysteries though do surround fish population on Mars, especially *trutta ares*. Instead of one mating season per Earth-year red trouts mate all year long, producing much more offspring than they ever could on earth. There are however only few predators which would eat *trutta ares*, and yet their population remains largely stable, without too much growth or loss.

Primary theories state that either animals not known to consume fish have begun eating *trutta ares* or that some other environmental effect keeps killing fish without anybody noticing.

Seeing how fish are of little impact on the biosphere however research in this field remains largely limited.

Plant life on Mars

Common grass – *ares poaceae*

Several types of grass, including varieties needing only little nutrients or little water, were the first plants to be seeded. Only a handful emerged victorious and surviving after the adaptation period, and the common Mars-grass is the most spread. Surprisingly it needs relative large amounts of water to thrive, possibly enabling it to outgrow other grass-types around water.

Its thirst for water also confines it to mostly wet areas around waterways. Compared to other plants only 35% of all *poaceae* are of the red phenotype, making it one of the most “green” plants still on Mars. Scientists argue this is based on *poaceae* mostly needing water, while nutrients and light take on a minor (yet still relevant) role in the growth of the plant.

The grass grows bigger than on earth, but only by 10%, which is barely noticeable. Apart from the red grass *ares poaceae* is indistinguishable from grass on earth.

Wild apple tree – *malus ares sieversii*

Although priority during seeding-periods was on efficient, easy harvest able plants, several people fought for the inclusion of common fruit, which according to them would be vital for keeping morale on an isolated mission.

While several types of apples, oranges, bananas and other kinds of fruit were seeded, apple-trees appear to be well-suited for the mild climate. Among the apple-types themselves wild variants take up about 60% of the population, with domesticated only providing 35%. The remaining species seem to have appeared after the arrival on mars, making them hard to classify.

Almost all types of apple-trees sport 90% red leaf-work, while the actual apple-fruit has not changed in color. The trees grow about 20% taller than on earth. While technically a bigger growth could be possible, scientists believe that strong winds prevent larger exemplars. Additionally the apple-tree is currently the biggest plant in the flora, leaving only little protection from other large trees.

The apple-fruit grows about 70% bigger than on earth, making them primary targets for wild harvest. Local wildlife however seems to avoid apples as a source of food. It may take several decades for the wildlife to either adapt or to find the cause of this.

The Mars-flower – *rosa aresa*

Bringing flowers to Mars as part of the seeding-process was ultimately deemed a failure. While bigger plants, as the apple-tree, were able to reproduce using strong winds, smaller plants simply lacked a large enough population of bees to carry on the process. Nevertheless very few managed to adapt, although their input into the ecosystem remains either very small or non-existent.

Rosa aresa is one of the handful remaining species and is very rare. The wooden center and the flower itself are brown-orange colored. *Aresa* grows up to two meters tall and sports large petals with a diameter of up to 20 centimeters. The plants is in bloom 80% of the year.

It remains unknown if *aresa* will survive on Mars. The population might be stabilized however through artificial means. Incentive might be the pollen of the plant, which has shown unusual effects on living tissue. Further research will show if *rosa aresa* might have other uses.

Red wheat - *triticum durum ares*

The prefix “red” is actually misleading, since red wheat is not red at all. Most scientists began using it however to distinguish between wheat grown on Mars and on Earth.

Food-synthesizing has made large plantations partly obsolete, but wheat could still be used as a backup-source for food in case of technical failures (which were not uncommon, keeping food-industry alive through the technical revolution).

In addition to wild wheat, which was seeded in an own greenzone separate from the others, several fields have been prepared to test the efficiency of it.

As with other plants seasons were a problem in the beginning. Later incarnations of wheat grew larger than Earth-wheat, but did not produce more or bigger grains, making them actually less efficient than plants of Earth (until now this is the only case known).

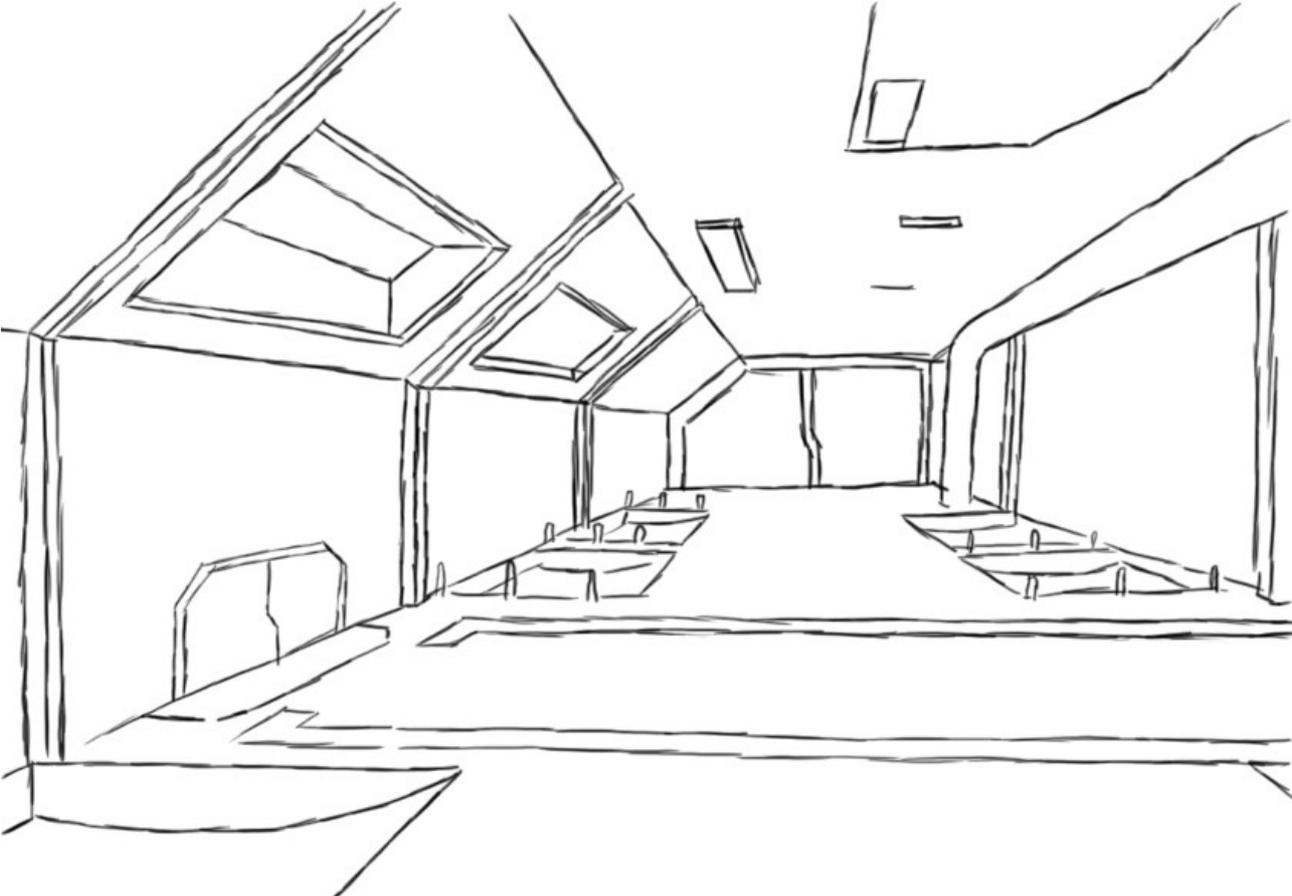
Apple-Citrus – *citrus malus*

The, for a lack of a better name, apple-citrus, is one of the most unique plants in the ecology of both Earth and Mars. The plant seems to combine several aspects of both apples and oranges. Fruits are orange-sized and consists of both apple- and orange-parts inside. The entire plant is red (including wood) and seems perfectly suited for life on Mars.

So far nobody within the Expedition has been able to produce an answer to the origin of this species. While originally believed to be a strange combined mutation of the immigrated plants, researchers opened the possibility that the *citrus malus* might have originated on Mars, making this the first actual alien life witnessed by mankind. This theory, however, lacks substantial evidence and is, even in its actual form, speculative at best. It also does not explain how such a plant, which would be indigenous to Mars, could suddenly appear on the surface.

Several departments have been tasked with research on *citrus malus*, making it the so far most-important discovery of space travel.

Addendum



Vehicle-bay of echo station concept (empty)