

Space exploration assignment



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First the crew members' prolonged exposure to reduced gravity environments can cause bone loss, increased loss of bone materials, increased chances for renal stones and is a factor in possible post mission bone fractures. Then there are Sensorimotor disturbances that occur during adaptation to spaceflight and during preadaptation to gravity on planetary surfaces. These changes can impact control of vehicles and impair functional performance during the important phase of adaptation to novel gravitational environmental.

Crew members can also experience muscle effects with their exposure to reduced gravity causes muscle fibers to shrink leaving astronauts weaker and less coordinated. Beyond Low Earth Orbit, the protection of the Earth's atmosphere and magnetosphere are no longer available (NASA). Space radiation may place the crew at significant risk for radiation sickness, and increased lifetime risk for cancer, central nervous system effects, and degenerative diseases.

Spaceflight associated immune dysregulation persists during exploration flights in conjunction with other factors such as high energy radiation. It is unclear if this leads to an increased susceptibility to cancer, infectious disease, allergy/ hypersensitivity and autoimmunity. One may ask about the efforts taken to reduce these risks, and make the case that The CSRR (Center for Space Radiation Research) combines exposure to both solar and galactic particles, thereby more closely mimicking the environment actually experienced by astronauts during exploration missions.

Pharmaceutical countermeasures are also being evaluated for their ability to mitigate the harmful effects of space radiation. Scientific discoveries made by the CSRR will not only enable safe and productive human exploration of space, but may also have the potential to improve life on Earth. Although this is true, radiation exposure can lead to many health problems, including acute effects such as nausea, vomiting, fatigue, skin injury and changes to white blood cell counts and the immune system.

Longer term radiation effects include damage to the eyes, gastrointestinal system, lungs and central nervous system. Exposure also increases cancer risk (Ann R. Kennedy). Another reason space exploration should be concluded is the effects of the countless money we spend on space exploration. The budget for space exploration is 17.7 Billion a year. The total cost in all of the years of space exploration is 780 billion dollars (Amadeo). One may point out that this money in the long run can help discover amazing things.

Although this is true, some possible ways this money could've been and can be used are to lower the national debt of 60 trillion dollars, reduce poverty in underdeveloped countries, reduce world hunger, and decrease global warming. World hunger could be ended for 30 billion a year, meaning no one would be hungry for 26 years if we had used that 780 billion dollars on world hunger (Yna). Vaughn 3 Another reason space exploration should end is the affects space exploration has on the environment.

At the beginning of the 21st century, the transition reached a stage where fossil fuels, notably petroleum, are dominant. Out of the world's total power

production, 87.1% is derived from fossil fuels. How our activity leads to climate change. When we extract and burn fossil fuels such as coal or petroleum, we cause the release of carbon dioxide (CO₂) and other heat-trapping “greenhouse gases” into the atmosphere. Though natural amounts of CO₂ have varied from 180 to 300 parts per million (ppm), today’s CO₂ levels are around 400 ppm.

That’s 30% more than the highest natural levels over the past 800,000 years. We also can tell that the additional CO₂ in the atmosphere comes mainly from coal and oil because the chemical composition of the CO₂ contains a unique fingerprint (Environmental Defense Fund). Air transportation plays an integral part in the globalization of transportation networks. The aviation industry accounts for 8% of the energy consumed by transportation. Air transport has high energy consumption levels, linked to high speeds.

Fuel is the second most important cost for the air transport industry accounting for 13.2% of total expenses. This accounts for about 1.2 million barrels per day. Technological innovations, such as more efficient engines and better aerodynamics, have led to a continuous improvement of the energy efficiency of each new generation of aircrafts. While ship and truck engines are adaptations of the diesel engine, jet engines are an adaptation of the gas turbine. Transportation is almost completely reliant (95%) upon petroleum products with the exception of railways using electrical power.

Scientists may be able to find alternative fuel sources that doesn’t harm the earth but this could possibly take millions of dollars to even start

researching (Rodrigue and Comtois). Although Alternative fuels in the form of noncrude oil resources are drawing considerable attention as a result of shrinking Vaughn 4 oil reserves, increasing petroleum costs and the need to reduce emissions of harmful pollutants. The most prevalent alternatives being considered are: Biogas such as ethanol, methanol and biodiesel can be produced from the fermentation of food crops (sugar cane, corn, cereals, etc.) or Woodwaste. Hydrogen is Often mentioned as the energy source Of the future. Electricity is being considered as an alternative to petroleum fuels as an energy source. Hybrid vehicles consisting of propulsion system using an internal combustion engine supplemented by an electric motor and batteries, which provides opportunities combining the efficiency of electricity with the long driving range of an internal combustion engine. The main concern is the amount of oil that can be pumped to the surface on a daily basis, especially where major oil fields have reached peak capacity.

Under such circumstances, oil prices are bound to rise in a substantial way, sending significant price signals to the transport market. How the transport system will respond and adapt to higher energy prices is obviously subject to much debate and interpretations. The following potential consequences can be noted: Air. This mode could be significantly impaired, both for passengers and freight. Air transportation is a highly competitive industry and the profit margins tend to be low.

Fuels account for about 15% of the operating expenses of an air carrier, but because most of the other costs are fixed any variations in energy prices is reflected directly on air fares. A long term increase in energy prices, reflected in jet fuel, is likely to impact discretionary air travel (mainly tourism), but air

freight, due to its high value, may be less impacted. Technological developments are helping maintaining the competitiveness of air transportation with more fuel efficient planes (Rodrigue and Comtois).

A final reason space exploration should be terminated is the dangers unknown. There have been 13 fatal spacecraft incidents so far in history. The Challenger is by far the most infamous memorable. At an altitude of 46,000 feet, while traveling at a Mach number of 1.92 the Challenger was totally enveloped in the explosive burn. The Challenger's reaction control System ruptured and a hypergolic burn of its propellants occurred as it exited. The oxygen hydrogen flames. The reddish brown colors of the hypergolic fuel burn are visible on the edge of the main fireball.

The Orbiter, under severe aerodynamic loads, broke into several large sections which emerged from the fireball. Separate sections that can be identified on film include the main engine/ail section with the engines still burning, one wing of the Orbiter, and the forward fuselage trailing a mass of umbilical lines pulled loose from the payload bay (Chapters III and IV).

Another incident was the spacecraft Columbia in 2003. On Feb. 1, 2003, space shuttle Columbia broke up as it returned to Earth, killing the seven astronauts on board.

NASA suspended space shuttle flights for more than two years as it investigated the disaster. An investigation board determined that a large piece of foam fell from the shuttle's external tank and fatally breached the spacecraft wing. This problem with foam had been known for years, and NASA came under intense scrutiny in Congress and in the media for allowing

the situation to continue (Chapters III and IV). A third instance is the Genesis Incident in 2004. After the collection period, the spacecraft closed up and returned the samples to Earth in a Stardust-like sampler return capsule (SRC).

On 8 September 2004 the SRC entered Earth's atmosphere as planned, but its gravity switches were oriented incorrectly as the result of a design error and the parachute system failed to deploy³. The high-speed wreck compromised the SRC and shattered many of the Genesis collectors (Chapters III and A final occurrence in spacecraft crashes is the first manned Apollo 1 in 1967. The first manned Apollo mission was scheduled for launch on 21 February 1967 at Cape Kennedy Launch Complex 34.

However, the death of the prime crew Vaughn 6 in a command module fire during a practice session on 27 January 1967 put America's lunar landing program on hold. The accident occurred during the Plugs out Integrated Test. The purpose of this test was to demonstrate all space vehicle systems and operational procedures in a near flight configuration as practical and to verify systems capability in a simulated launch (Unknown, APOLLO 1).

People may think that these fatal injuries are worth it compared to discovering other planets capable of sustaining life.

No one should lose their life looking for something that isn't necessary to human life. In conclusion, space exploration should be discontinued. The effects on astronauts and Earth are just too dangerous and unnecessary. Although many may think space exploration is a great thing and we should keep progressing in it, space exploration is a waste of time because of the

medical effects to crew members, the countless money we spend on it, the environmental effects, and the dangers of the unknown universe.