

Different types of reusable space transportation

[Transportation](#)



**ASSIGN
BUSTER**

PRESENT SCENARIO

Till now we were talking about past scenario, but what past will do? It give us lesson to improve from the past and make our system better day by day, talking about the present scenario I must be covering about the incidents taken place in last 5 years, because this tells what's happening present. The main thing is that firstly there was only NASA In this well known space exploration but now many countries are there working for better future, there are few private company as well and most famous is " SPACE X". The list of space exploration in most sufficient way was classified as

Earthorbiting space station

Space shuttle

Manned mars expedition

The earth orbiting space station is working at high peak, it has every facility, it is a great work that more than 230 individuals from 18 countries have visited, and group of 6 live and work there with speed of five mile per second, petty witts on has set record also by living by 665 days in space station, many scientific studies is taken place and four different cargo ships have delivery scientific material for research and exploration, supplies and other cargo for space station. These are

orbital ATK's CYGNUS

SPACE X's DRAGON

JAXA's HTV

<https://assignbuster.com/different-types-of-reusable-space-transportation/>

Russian Agencies

The space shuttle program worked at great peak but comes to an end in idea of starting new program that will make the cost more efficient. Some of the reason was due to Columbia accident happened. We come to know about the risk and problems faced by a reusable space transportation.

Many ways the exploration of space is being done, this has given us the answer to most suspicious answer due to which exploration has started initially, due life exist beyond earth? There are many planet soul but not every planet have life. The existence of life has found in my planet's either it's mars , stars of any planet or any solid gas body. The importance is present of essential things which humans need and can't survive without that and those things are found only at specious place.

Space x-:

Talking about mars many countries with mostly government companies and few private as well are working for mars to be seen as planet for living. Everthing was under control of government of countries but then comes the " Space X " or Space Exploration technology corporation. The company started right in 2002 with a simple goal to make space exploration cheaper and making mars colonized. The founder of company Elon Musk is an entrepreneur who has interest in colonizing mars. He started the company and set many records some of them are -:

First private funded liqued propellent rocket to reach orbit in 2008 by rocket name FALCON 1

<https://assignbuster.com/different-types-of-reusable-space-transportation/>

First private company to launch and recover spacecraft named DRAGON IN 2010

First private company to send spacecraft to INTERNATIONAL SPACE STATION (ISS) In 2012 by DRAGON

First propulsion land for an orbital rocket in 2015 by FALCON 9

First orbital rocket to be reused in whole world in 2017 by FALCON 9

Private company to launch TESLA ROADSTER an orbit around the sun in 2018 by FALCON heavy .

Space X has also flown 14 Resupply missions with partnership of NASA. This is the power of developing company along with this the CEO of TESLA And SOLAR CITY Elon musk have many other achievements.

Falcon 9-:

The best of the present scenario is falcon 9 of which we will be talking about, because this is the only spacecraft how have reusable transportation till date. Falcon 9 a rocket which is in words of every teenager, the name is due to use of 9 Merlin 1st stage engines. Falcon 9 have 3 variant till date, falcon 9 V1 which is expandable, falcon 9 v1. 1 which is partially reusable and v1. 2 “ full thrust ” which is also partially reusable. The current full thrust can lift 22, 800 kg of payload to earth orbit which is lower and 8300 kg to geostationary transfer orbit. It is a 2 stage space transportation vehicle out of which 1st stage is reused immediately after its landing. Falcon 9 uses rocket engines which is powered by liquid oxygen and rocket grade kerosene

<https://assignbuster.com/different-types-of-reusable-space-transportation/>

as propellant. The propellant tank walls are made from aluminium – lithium alloy which carry strength and friction stir welding is done which is most reliable at present time. Falcon 9 interstage, which connects the upper and lower stage, is a carbon fiber aluminium core composite structure. By late 2014 SpaceX determined that the mass needed for a re-entry heat shield, landing engines, and other equipment to support recovery of the second stage was at that time prohibitive, and indefinitely suspended their second-stage reusability plans for the Falcon line. In 2018 Elon Musk has said to make stage 2 reusable as well with giant party balloon .

Falcon heavy

Another Present stage space craft from SPACE X is falcon heavy. The modified version of falcon 9 in short it's the combination of 3 falcon 9 joined together. The falcon 9 first stage as the centre core with two additional falcon 9 as strapon boosters. The best modification is that it can carry alot weight, as much as

63, 800 kg (140, 700 pound) to lower earth orbit, 26, 700 kg (58, 900 pound) to geo stationery transport orbit, 16, 800 kg (37, 000 pound) to Mars and 3500 kg (7700 pound) to Pluto, hich makes it the highest payload capacity of present time and at fourth till now. It's due to triple coresor 27 rocket engines

Saturn 5 (NASA)

ENERGIA (SOVIET UNION)

N 1 (Soviet union)

<https://assignbuster.com/different-types-of-reusable-space-transportation/>

After these 3 rockets come the falcon heavy. This is someone near to reach what we want more weight to carry to mars. SpaceX conducted falcon heavy launch on February 6, 2018. The rocket carried a Tesla roadster belonging to SpaceX founder Elon Musk, as a dummy payload giving him human rating certification. The structural safety margins are 40% above flight loads, higher than the 25% margins of other rockets. Falcon Heavy was designed from the outset to carry humans into space and it would restore the possibility of flying crewed missions to the Moon or Mars

Ariane 6

European space agency is also that far from all, European space agency is making Ariane 6 which is somewhat like Ariane 5 but is made reusable. Ariane 6 is basically divided into 4 parts. The first stage include 3 P145 solid rocket motors, the second stage include 1 P145 solid rocket motors after that the upper stage is powered with Vinci cryogenic engine which intake liquid oxygen and liquid hydrogen for burning and the last stage fairing or the payload dispenser. It will be able to take 6500 kg payload to GTO. The spaceship is still in process and will be first tested in 2021-2022 as expected, it gives a tough competition by just got made in 3 billion euros. The arien is Available in 2 variants

Ariane 64

Ariane 62

Ariane 64 consists of 4 P12 boosters which will be able to lift 11, 500kg to GTO And 21, 500 to LEO

Ariane 62 consist of 2 P120 boosters which will be able to lift 5000kg to GTO
And 10, 350 to LEO

The Ariane has reusable Prometheus engines and other few external parts
are made reusable which will be used in first stage and can be used again.

This is about the present day biggest known reusable invention till the date
but still knowone knows the future and anything can happen in future, so
what do we exactly need, will discuss further in future Scenario.