Know Outer Space Treaty, ITAR, Canadian Space compared to US

**US Space Policy**

* Space policy drafted by executive branch at the direction of the president and sent to congress for approval.
* Space advocacy groups provide advice to the government and lobby for space goals, such as National Space Society and the Space Generation Advisory Council.
* President consults with NASA and DoD on space policy drafting
* Space council was created and destroyed during the end of the last century, with the recent creation of it in 2017 by President Trump
* For international treaties, the President negotiates and signs policies on behalf of the USA
* US is a party to 4 of the 5 space law treaties ratified by the United Nations Committee on the Peaceful uses of Outer Space
  + Outer Space Treaty
  + Rescue Agreement
  + Space Liability Convention
  + Registration Convention
  + Not the Moon Treaty
* The five treaties and agreements of international space law cover "non-appropriation of outer space by any one country, arms control, the freedom of exploration, liability for damage caused by space objects, the safety and rescue of spacecraft and astronauts, the prevention of harmful interference with space activities and the environment, the notification and registration of space activities, scientific investigation and the exploitation of natural resources in outer space and the settlement of disputes."[[](https://en.wikipedia.org/wiki/Space_policy_of_the_United_States#cite_note-10)
* The United National General Assembly adopted five declarations which encourage exercising the international laws and unify communication between countries.
  + *The Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space* (1963)
    - All space exploration will be done with good intentions and is equally open to all States that comply with international law. No one nation may claim ownership of outer space or any celestial body. Activities carried out in space must abide by the international law and the nations undergoing these said activities must accept responsibility for the governmental or non-governmental agency involved. Objects launched into space are subject to their nation of belonging, including people. Objects, parts, and components discovered outside the jurisdiction of a nation will be returned upon identification. If a nation launches an object into space, they are responsible for any damages that occur internationally.

Administrations

1. Eisenhower
   1. After Sputnik, Eisenhour created the Defense Advanced Research Projects Agency (DARPA) to work on the development of advance military technologies
   2. To avoid viewing the space race as this militaristic image many americans had of Soviet Russia, Eisenhour fought for Vanguard, but after failures, turned to the Explorer satellite headed by the Army Ballistic Missile Agency
   3. Later in 1958, Eisenhour, in search of creating a agency not controlled by military created the National Aeronautics and Space Act creating NASA.
   4. NASA took over the space tech research ran by DARPA, and the US manned satellite program from the Air Force as Project Mercury
2. Kennedy Administration
   1. Dismantled the plans for the Apollo Program
      1. Opposed as a senator, but trusted his VP to support it
      2. Johnson was the VP
      3. James Webb – first administrator
   2. Made the famous address for getting US astronaut to the moon by the end of the decade
   3. Assigned VP to the chair of the National Advisory Space Council
   4. Supported other satellites to be focused on in weather and communications
3. Johnson Administration
   1. With the assassination of Kennedy, Johnson took over and made big strides setting up the space agency, very big supporter of the pursuit.
   2. NASA budget declined after cancelling three of the planned Apollo missions back to the moon
   3. Approved the space shuttle program
      1. Did not support mars landing, colonization of the moon, or a permanent space station
   4. Approved better communication with Soviet Union and US in joint space projects including the Apollo-Soyuz test project
4. Ford Administration
   1. Maintained most initiatives, but not much happened in terms of dropping or adding initiatives.
5. Carter Administration
   1. Also fairly inactive and didn’t have any long term goals and just maintained current projects.
   2. Supported it for its ability for our own self-defense
6. Reagan Administration
   1. First flight of Space Shuttle happened early in his career
   2. Created excitement and renewed active space efforts
   3. When the Challenger disaster happened, it led to some upset from the public and how we go about assessing risk for NASA.
   4. The national commission on Space created a report on the future of the national space program
7. George H.W. Bush
   1. Created the space exploration initiative
      1. Disbanded later with the sub of robotic exploration
   2. Increased the budget by 20% during a pretty tight budget during that era
8. Clinton Administration
   1. Space shuttle flights continued, and the ISS began construction
   2. Goals were: enhance knowledge of the Earth, the solar system and the universe through human and robotic exploration" and to "strengthen and maintain the [national security of the United States](https://en.wikipedia.org/wiki/National_security_of_the_United_States).
9. George W Bush
   1. Space Shuttle Columbia disaster, hurt the country a lot.
   2. Made a speech for the Vision for Space Exploration a few months after addressing the disaster and why what we do is important
   3. New rockets being made like the Ares 1 and V
   4. New national space policy released that established overarching national policy governing US space activities. Emphasized security issues, encouraged private enterprise in space, and role of US space diplomacy largely in terms of persuading other nations to support US policy
10. Obama
    1. Started to review human spaceflight in the US to ensure the nation is on a sustainable path to achieving our boldest aspirations in space.
    2. Comes with the plans to retire the space shuttle program
    3. 6 billion to plans for the development of a new heavy lift vehicle for moon and mars
11. Trump
    1. Carry Obama work on commercial carrying astronaut to space to ISS!
       1. SLS
       2. Orion
       3. SpaceX
       4. Boeing
    2. Signed a law to integrate commercial into NASA work to get to the moon followed by missions to mars
    3. Policy calls for “"lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities.”
    4. Really under the mindset of getting America back on top

**Fundamentals to know**

* United Nations Office for Outer Space Affairs (UNOOSA) tasked for promoting international cooperation in the peaceful used of outer space
  + Space law is the body of law applicable to and governing space-related activities
* UNOOSA states that the "primary goals of space law are to ensure a rational, responsible approach to the exploration and use of outer space for the benefit and in the interests of all humankind."
* The five treaties
  + The Outer Space Treaty
    - Went into affect October 1967
    - The most important as it provides the framework for laws beyond our planet
    - 103 countries have signed including the major space players
    - Basics: keep space peaceful and non-militaristic. Also no nuclear weapons around earth of any other body
    - No military bases in space
      * Basically no star wars going on
  + The Rescue Agreement
    - Went into effect December 1968
    - Organizations take all steps as prompted by the sentiments of humanity, take all steps to assist and/or rescue astronauts in distress
    - States will also assist in bringing back objects from space that land in other countries, etc.
  + The Liability Convention
    - Adopted in 1972
    - Made to elaborate more on the Outer Space treaty in the liability section
    - Establishes that a launching party is "absolutely liable to pay compensation for damage caused by its space objects on the surface of the Earth or to aircraft." And per the convention, "'damage' means loss of life, personal injury or other impairment of health; or loss of or damage to property of states or of persons, natural or juridical, or property of international intergovernmental organizations."
    - Means you cant just launch shit and hope for the best, must ensure it wont hurt anyone elses stuff in space
    - When ride sharing, each party individually responsible for the whole of the launch, regardless of party share in launch
  + The Registration Convention
    - Must report on the things being launched into space
    - More specifically, parties to the convention are required to provide to the United Nations, as soon as possible: the name of launching state or states; an appropriate designator of the space object or its registration number; date and territory or location of launch; basic orbital parameters; and the general function of the space object.
  + The Moon Treaty
    - How the provisions of the outer space treaty would apply to the moon and other celestial bodies
    - All exploration must be for peaceful purposes
    - Not military bases
    - No mass destruction
    - Must protect the current environment on any planet
    - No property of a body can be laid claim to one organization
    - Property landed, although owned by someone, does not state they own that land but can use
      * Not ratified by any space org so not in affect really right now
* More and more people and stuff going to space, as we expand, law is necessary to lay out the framework of how countries should collaborate and understand the rules of it!

Mark Mozena Meeting

Go over background of what I researched, scan thru

**Questions**

1. The Outer space treaty, seems all signed it but what is currently going on with it?
2. What are the current issues hitting the hill right now in terms of launching and collaboration between nations.
3. How does ITAR come into play with space, and what countries struggle because of it
4. Canada vs. US, how do they connect and what are the issues right now
5. Policy with foreign students joining aerospace companies, what are the restrictions?

NOTES

**On the Outer Space Treaty**

* People thinking of opening up space treaty, but bad idea for most US people, because people won’t agree totally with a new one so they need to keep the old one and simply expand upon the sections when needed at small amounts
* Will cause US to not really set the terms, instead change the interpretation of what it says

**On the Other Agreements**

* Rescue agreement is just made to make people good citizens of the world. A lot of these treaties assume that we don’t have military in space

**On Defense Activities in Space**

* All nations that are using communication and spy satellites are technically at risk for a pearl harbor type of attack from anything
  + Kinetic
  + Laser
  + Power surge
* The need for space resiliency to expect the worst like loss of satellites from another power and to be able to recover from loss of use.
  + If a primary large satellite goes down, we can go blind for months on certain areas of the world that are critical for current military politics like the south china sea.
  + Large constellations make the overall system a greater space resiliency
  + What type of escalation would each nation take if a satellite that was healthy suddenly goes offline that is very critical for the USA?
  + The constellation design allows for other satellites to quickly take the place of destroyed ones and cover more critical fields of view
  + The US and China DO NOT talk on matters in Space. China is seen as an adversary.
    - We spy on them, they spy on us
    - We go to conferences and speak about how if they do certain things, we would respond in a certain way, etc. So an understanding is there.
  + The Space Force was primarily created because the government no longer thought the Air Force was prioritizing the space field in the right way and needed its own focus as a branch in the military. The US is a leader, and many European partners will follow suit.
    - Must ensure the fight is funded and prioritized as the current government thinks the future of war will be decided by the use of space.
    - Is it really needed? Maybe not but it is a start.
    - There is a concern when the citizen hears the Space Force as marines in space, but that is ABSOLUTLY not the case. They think, “oh great, the US is going to militarize more space and put atomic weapons in it”, but that is not true at all. It just a different reorganization to make a real focus in it.
  + There are no weapons in space, at least known publicly, but surely there are no assets in space that contain nuclear weapons, as far as I know.

Instead of going down road to make more sats, lets say we build bigger sats. Not hard to destroy a satellite, not much you cn do to hide. Really easy to attack. Remove the motivation to attack in the first place is the solution. Even if you take out a few of a lcuster, still can do the job and gives time for nation to respond. Everything we do in space is for earth.

Military/defense side, civil, commercial are the sides of policy

Next is civil space – this is NASA and NOAA, USGS, FCC, FAA

Nasa moon to mars, even if it happens in 2024, the amount of money and energy is definitely accelerating it. Is it possib;e, probably not. Aggressive date causes action.

With commercial space – pushing to get a piece of that artemins money. Like the lander, the transportation module, gateway, getting people, cargo, etc.

If its going to be paid for the government, it should be government property is an argument to support commercial partners.

Regulatory environment space– space policy directives one two three and 4. Made by trump

Spectrum allocation – in the electromagnetic spectrum, which bands should be open for certain things, need a license. Space satellites get certain bands, military, weather, tv, commercial, etc.

Big discussion right now for the rise of 5g, cause they want a bigger piece of the spectrum pie so will take away some spectrum from satellites are currently using. So 5g needs more bandwidth…. Should they be given to it. There are auctions for the bandwidth, they need to use. Tele is the most profitable thing in space.

Some of the fight is with weather satellites.. water molecule band. NOAA uses it to get water moisture. Communications wants to use it and if they do the weather data would be less good.

Remote sensing too, taking pictures and sell them like Planet. All companies that take pics need to be licensed. They are restructuring that process not to make sure it is beneficial to the change in remote sensing market, so many more now so it needs to be updated to keep up.

Launch regulation – done thru faa, big discussion on new space vs. tradition space. Boeing Lockheed, ULA good with FAA process, but new space has problems with it. New space wants to erase and make it quicker and faster, etc. Everything should be approved unless it poses a risk.

Commercial space is great because it’s the energy and gets people excited. There shouldn’t be policy that inhibits that. But at the same time, we must move forward in a safe manner to make sure disasters that could be avoided happen. If people get hurt on the ground, space will dry up fast. Must ensure people do not die, will lose public support fast.

Third area is commercial – unique to our time. Exploded in the last 5 years. Rate of change is increasing fast. How the information explosion is cycled back to improve life back on earth. If you have information like what planet gets and get that analyzed and brought to the customer as fast as possible. 13 tera to 40 tera in end of year. if it takes you 5 months to analyze, no use. Needs live.

ITAR

A restriction on what you can export… if we have sensitive tech, that has defense/intelligence, we should not be giving it away for free. Protect and restrict.

There’s a lot of stuff in space that is on the ITAR list for all the tech. There are the on ITAR list that isn’t sensitive anymore. If they consist internationally, why restrict the sale of they are sold in other countries… its already out there, They want to update these regulations to better reflect what is and is no sensitive to make money and sell it… why not profit from it as opposed to china Russia etc. to do so.

Canada is a 5I, the countries that speak English, UK, Australia, New Zealand, Canada, work closely with intelligence, gets access to things most others don’t. If foreign you have a hard time working for companies in the USA.

Students working at space companies unlikely to change… silicon valley mind is bring th best people, but we must follow that they must be a citizen. Richard needs to be escorted and not shown the specific designs of his companies cause he isn’t a citizen.

Can work on commercial side if it isn’t under ITAR. So it’s possible just got to find the right position. Big defense contractor is very difficult if not American. There are things, but Boeing wants people versatile to move around, so unamerican is more restricted and can’t have conversations. Commercial is a little easier but gets harder once military is involved.

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Seds come to dc, meet with white house. Mark can help. Needs to be more focused. Can be better. Need to have a direct ask and a discussion of why the member of congress should be listening to you.

Mark can help with leadership retreat.