



White Paper

August 15, 1998

**Martian Law** by Edward L. Hudgins

---

A country's economic development and utilization of its resources depend foremost on the country's economic, legal and political regimes. The fall of communism and state-directed systems in poorer countries heralds the victory of the free market. That regime gives maximum incentives for individuals to utilize the ultimate source of values, the human mind, to create wealth. But misunderstandings about markets have led to rough transitions.

To utilize fully the resources of the Mars, humans will need to bring to that planet more than machines, tools and scientific instruments. They will need to bring law. Not too much law. Most of the economic, political and social problems on earth result from an overabundance of rules, regulations and restrictions on individual liberty. What will be important is that humans bring the right law. Thus to fully exploit Mars' potential and to make it another home for the human race, an economic-political system will have to emerge that allows individuals or voluntary associations of individuals to secure exclusive rights to use resources and to exchange freely with others, and that protects property, and enforces contracts.

In this discussion I will do three things. First I will examine what kinds of economic-political regimes do not work. Second, I will set down basic principles and assumptions about the appropriate economic-political regime for Mars. And third I will consider how such a regime might come about.

## **What Doesn't Work.**

It is useful first to examine already existing treaties dealing with territories and resources not claimed by any governments. These treaties are not models for Mars and, in fact, are antithetical to the goal of developing Mars. They are versions of the statist regimes now rejected by most countries. They would guarantee that Martian resources remain unexploited. Let's review them.

**The Antarctic Treaty.** Since 1948 the United States wanted Antarctica to fall under United Nations supervision. In the 1950s, America was concerned about claims of sovereignty by various countries over that frozen continent and about its possible military use. The Antarctic Treaty was signed in 1959 and took effect in 1961. The twelve original signatories have grown to about forty. That treaty at least is honest in its aim: In addition to keeping Antarctica demilitarized, it sought to prevent economic development. That Treaty, between governments, reserved the continent for scientific use. No provisions are made for individual ownership of property or resources. Economic activity is, in effect, frozen out. And Antarctica has remained a

deep-chilled desert of no commercial value. This clearly is not the model for Mars.

**The Law of the Sea Treaty.** The Law of the Sea has been approved by many countries, but not the United States. This Treaty governs the exploitation of resources in the oceans. It tries to standardize the limits of a countries' sovereignty over their offshore zones. But the most onerous part of that Treaty deals with the open oceans not subject to the sovereignty of any given country. The Treaty states that "Coastal States share with the international community part of the revenue derived from exploiting resources from any part of their [continental] shelf beyond 200 miles."

In essence, that treaty assumes that governments, not individuals, have rights to ocean resources. Further, the treaty assumes that citizens of the member states who invest their capital and creativity in creating wealth in the oceans are subject to international law. Worst of all, some of the fruits of their efforts will be taken from them by their own governments and distributed to the governments of non-coastal countries. Thus, for example, Saddam Hussein and the dictators in Africa and other countries would profit from the productive efforts of free men and women. This is not a good model for Earth and certainly not one for Mars.

This approach can be contrasted with an interesting experiment being conducted in the oceans today. Dr. Michael Markels and his enterprise, Ocean Farming Inc. experimented in the Gulf of Mexico with farming the oceans. They have seeded the seas with a fertilizer that produces phytoplankton, that, up the food chain, attracts fish that eat, breed and produce more fish. The Republic of the Marshall Islands has agreed to allow the Markels group to fertilize 70 square miles of ocean within that country's 200 mile economic exclusionary zone. If Markels succeed in producing the exponential increase in fish production that is expected, the Marshall Island will grant Markels property rights in that part of the ocean, title that can be rented out or sold to others. Naturally Markels will pay taxes on his catch. But this is a way that property rights could produce a significant increase in worldwide fish production.

**The Intelsat Agreement.** This treaty between governments was meant to finance and establish reliable satellite international telecommunications. But this government monopoly has hindered private space efforts. For example, Article 12D of the Treaty stipulated that private firms wishing to provide international satellite telecommunications must prove to Intelsat that its efforts will not cause "substantial economic harm" to Intelsat.

We recently saw the adverse effects of this provision. Earlier this year millions of pagers could not receive messages because the satellite carrying the communications suffered technical problems. That private satellite had been launched by the Pan Am Satellite Company. That company had to fight for years with Intelsat to get permission to launch. Without Intelsat, no doubt there would be many more satellites in orbit to carry pagers messages and the loss of one satellite would have been only a minor inconvenience.

Congress this year is attempting to privatize Intelsat.

**The Outer Space Treaty.** The 1967 Outer Space Treaty, signed by 91 countries, and 1972 Liability Convention are rather blatant forms of socialism. Like the Antarctic Treaty after which it was modeled, the Outer Space Treaty seeks to demilitarize both space and other celestial bodies. It also seems to preclude ownership of such bodies by particular governments.

But that treaty also maintains that "The exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development." That statement can be construed to mean that if, for example, an individual sets up a mining Mars, that individual might be forced to turn over part of the product of those labors to governments or some international body.

Like the Antarctic Treaty, the Outer Space Treaty does not make provisions for establishing private property rights. Worse, it declares that "States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on

by governmental agencies or by non-governmental entities."

This means, for example, that the U.S. government has strict regulations of private rockets, since if one create damage in another country, the U.S. government is liable. Of course, private insurance is the way one deals with potential accidents. If this regime were in place for civil aviation, there would be few international flights.

The treaty states that "The activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty."

In other words, the governments of the Earth claim Mars and private individuals cannot send landers to transform CO<sub>2</sub> into methane, cannot mine the surface, cannot use harvest water from the North Polar cap, cannot engage in any commercial activity without permission from international bureaucrats.

The Moon Treaty, which has only been ratified by eight countries, excluding United States, is even more pretentious. Its principles are designed for not only the Moon but "Other celestial bodies." It declares the Moon and all planets are "common heritage of mankind." And it states that "Neither the surface nor subsurface of the moon, nor any part thereof or resources in place, shall become property of any state... non-governmental entity or of any individual." Private property is explicitly banned. The model for this Treaty is the old Soviet constitution.

Robert Zubrin was correct to ignore NASA's approach to a Mars mission and ask "What is the most technically feasible and least costly way to go to Mars?" Similarly we should ignore current treaties and government regulations, and ask "What is the best economic-political regime that will foster exploration and settlement of Mars?" And it should be for this approach that we should fight.

## **Principles for Martian Law.**

The development of permanent settlements on Mars will be determined in part by how the initial trips to the Red Planet are financed and how initial infrastructure is built up. There will be a transition between the initial voyages and the settlement period. The challenge will be to make certain that the transition is to a free society with property rights and limited government. This brings us to the question "On of what principles should Martian law be based?" I will assume a best-case scenario, that initial exploration of Mars, utilization of resources and settlement is done by a private consortium or consortia, not by governments.

Mars is a case of what political theorists would call a perfect state of nature. No one lives on Mars. No one currently has legal title to any part of Mars. On what basis then can Mars be exploited by individuals or consortia? Simply landing on the planet should not give an individual title to the planet any more than settling foot in the New World gave Columbus title to the whole of North and South America. Yes, Conquistadors took possession of it for the Spanish government and repressed millions of Aztecs, Incas and others, but those native peoples might have had a different view of rights of the Spanish.

This brings us to the first principle for a Martian regime. The natural law-natural rights approach holds that individuals in a state of nature must make some productive use of a resource in order to acquire a property right in the resource. For example, homesteaders would be given legal title to land that, within a certain period of time, they had actually farmed. On Mars then it is sound to say that anyone who, for example, begins mining operations on part of the planet not otherwise being mined establishes property in that land. Of course, consortia of individuals can and are likely to be the ones first to establish rights of property.

This property principle implies a second principle for a Martian regime. Mars should be an open planet. Any individual or group of individuals that can make it to Mars should be free to live there. Let the immigrants

come!

These first two principles implies a third one. No Earth government or group of Earth governments has any authority or sovereignty over Mars. Mars is currently a free planet.

This implies a fourth principle. Humans on Mars should be self-governing, meaning that they should not be bound by decisions made on Earth.

These principles leave us with two fundamental questions to consider. First, "How do we establish property rights and a free market?" And second, "How do we establish a political system to protect these rights as well as the lives and liberty of Martian settlers?"

Mars will need an economic-legal regime based on property rights and contracts. Initial planetary development will depend on consortia arrangements that serve immediate needs. But consortia must allow for a transition to a system with market prices, the only efficient way to allocate resources, and with incentives for entrepreneurial innovation.

Let us then consider how Martian law and government might evolve.

## **Martian Law and Government.**

In light of these principles, a number of challenges will have to be met by any groups settling Mars.

**1) Initial consortia.** It is crucial that consortia sponsoring settlements on Mars draw up sound principles of operation between members before departing. In American history we see, for example, Mayflower Compact, in which the Pilgrims agreed to a form of self-government before leaving for America. Settlers crossing the continent usually would make contracts concerning who owed what services to whom and how the members of the group would govern themselves. But some agreements are good and others are not.

The Jamestown colony, founded in 1607, had a bad compact with bad results. The company that sponsored the colony made provisions for settlers to be fed from a common store. There was no incentive to be productive. But communism did not work. Gentlemen settlers spent time hunting for gold. After less than a year, of the 104 original settlers only 46 were left alive. John Smith later instituted a new rule: Those who do not work shall not eat. A revised compact gave settlers an incentive to produce food and other products, and pay the sponsoring company from those proceeds.

Let's turn now to governance on Mars.

**2) Criminal codes.** For Mars, crime initially will not be a serious problem. Settlers in initial groups will no doubt have enough of a sense of community to prevent most such problems. After all, by analogy we hardly see crime waves sweeping Antarctic bases. And I do not believe this is because the temporary residents of those bases fear prosecution by the governments that run those bases.

Groups of settlers could use almost any good local criminal code from the United States. Such a code should be limited to the basics. You can't kill, physically assault other, steal, or otherwise initiate the use of force against others. Locals could act as juries. The consortia thus should be limited democratic. Protection of rights, not management of lives would be the basic job of government.

Most important are rules to establish and protect property. These too can be copied from a uniform commercial code used to regulate disputes between states and countries.

**3) Amendment rules.** There will no doubt be need to amend the self-government agreement. But this should

not be an easy process. To avoid changes based on the whims of a majority, a supermajority should be required. In St. Louis (and no doubt other cities) during the time of initial settlement, city blocks often were self-governing. Blocks that required unanimous votes to change rules had difficulty adjusting to new challenges and conditions, since one individual could block such change. On the other hand, when amendment was too easy, rules changed too frequently, based on whims of the moment, and the situation was unstable. Those with supermajority amendment rules fared best.

**4) Easy opt-out provisions.** Very important to the compact would be easy opt out provisions from its economic requirements. At first, resources will no doubt be shared, produced and consumed together. Each individual will have obligations to help construct basic infrastructure. But one wants a system that allows individuals to strike out on their own. If five of first hundred settlers in a particular settlement discover cheap way to produce oxygen, they should be able to start oxygen business, sell to others, perhaps pay an opt out fee.

This issue also relates to the relationship between the settlers and their sponsors on Earth, assuming that each settler is not paying the full cost of his or her own way. Are the settlers employees of the sponsor on Earth or are they truly settlers who will need more autonomy.

**5) Reconciling property rights and speculative sales.** One way to finance trips to Mars would be for consortia to sell titles to Martian land before manned landings actually are made. Similarly, when America was settled, the British Crown would sell titles to lands in wilderness where no settlers had gone. And, of course, making actual use of material assets is another way to establish title to those assets. But these two approaches, both of value and with their economic uses, could come into conflict.

These are possible ways to reconcile these but those involved in Mars settlement must at least recognize the potential problems in order to head them off. It should be noted that Noble Prize-winning economist Ronald Coase has written about how even with initial mal-distributions of wealth, as long as the free exchange system exists, economic efficiency will win out. That's why establishing markets will be crucial to Martian settlement.

**6) Relations between consortia.** The question also arises "How will relations between different consortia will be governed?" Here the law should be allowed develop naturally. Let Martian law emerge. This general insight about laws, institutions and markets have been explored by Noble Prize-winning economist F.A. Hayek as well as other thinkers, going back to Polybius in ancient Roman times and Edmund Burke.

One of Hayek's great insights concerns the nature of order. Most people conceive of order in the world as falling in one of two categories. First, trees, mountains, and solar systems arise and evolve naturally. Second, watches and tables, statues and rockets result from intentional human planning and action. This latter conception gives rise to the belief among socialists and statisticians that all-wise, caring bureaucrats can plan and benevolently guide economies to prosperity, and among social conservatives that censors and vice squads can create civil societies.

But Hayek identifies a third type of order: spontaneous order that arises from human action but is not specifically planned by any given individual. A classic example of this type of order is money. In primitive societies, individuals might travel long distances to trade with one another. But it is difficult and costly to tote four cows, seven bales of hay, and a slab of copper over a mountain, all to be exchanged for a dozen sheep, six large jars of barley, and a handful of gold nuggets. Many merchants hit on the strategy of trading their goods simply for those small yellow pieces of metal rather than sheep, which tend to wander off, and the rest of it. Gold is easy to transport, difficult to counterfeit, durable, rust-resistant, and easily divisible. Traders can take the metal home to exchange for goods they really need. Thus as individuals sought to exchange goods more efficiently, the economic institution of money emerged as an unintended consequence. No one invented it.

Attempts by merchants in the Age of Exploration 500 years ago profit through trade in a world without law gave rise to innovative market institutions like double-entry bookkeeping and insurance (a means to share risk). The development of Mars, if done right, will not only yield advances in science and technology, but in free, civil institutions as well.

So how might order or relations between different groups of settlers emerge? We might assume that individuals in first consortia will be likeminded. They will be pioneer personalities. Few will be communists. This likely will make agreements between consortia easier to make.

I suspect the first agreements to emerge will concern mutual aid. If a member of one consortia is stranded where it is easier for settlers from another consortia to rescue that person, that is what will happen. Second, I imagine rules concerning jurisdiction and conflict adjudication will emerge.

With this kind of Swiss confederation arrangement, if some given settlement has bad rules, individuals can associate themselves with another consortium. If some consortia have bad laws, they will lose members. Defectors will associate with other communities. The market for law will bring as good a result as the market for material goods and services.

**7) Terraforming.** If different groups, let's now call them cantons, set up operations on different parts of Mars for certain activities, that should pose not property rights problem. The problem could come from terraforming. Most serious discussion of exploiting Mars assume that the atmospheric pressure will have to be increased which will help warm up the planet. Later, oxygen will be added to the atmosphere to make it breathable. Such an enterprise will take at least several centuries. This could cause problems.

For example, can the first canton to be established on Mars declare that it intends to terraform the planet, thus in effect claiming ownership of the atmosphere?

But from an economic perspective terraforming probably would make little sense for a century or more. What will be important is for the first cantons to use the cheapest forms of shelter, heat and oxygen generating facilities and the like. The huge capital costs of terraforming would not be truly affordable until a true Martian economy emerges. When Mars begins to prosper, as cantons can pay their own way and turn a profit, only then will terraforming be economically feasible. Mars must avoid the mistakes we see when international organizations like the World Bank promote high-cost technologies and less developed countries when less costly technologies are available.

But when Mars reaches the point that terraforming begins to make economic sense, the confederation of cantons will face a two-pronged problem. First is the free rider problem. Some settlers might believe that terraforming is a good thing, but not wish to contribute funds to the effort. I would be reluctant to say that the majority of cantons should vote to tax the minority for the funds. I suspect that other ways will emerge to get around even this problem. On Earth, for example, it is often the case that some form of investment or activity is of such value to certain groups or industries that they are willing to tolerate free riders because they still profit from their investments.

The second problem concerns so-called "negative externalities." For example, certain settlers or cantons have a vested interest in not terraforming the planet. Some might oppose it for religious-ideological reasons, that humans should not violate the sacred, frozen, thin-aired desert by producing warmth and surface water and oxygen. But more likely than such radical environmentalist objections might be economic objections. What if the machinery and equipment of various late-arriving settlers work best in a CO<sub>2</sub> atmosphere and low pressure? Changing the atmosphere would harm their operations. Or what of a consortium that sets up operations at a Martian pole to mine the ice and sell it to others for use as water or for conversion into oxygen and hydrogen? Melting the polar ice caps certainly would be a taking of their property.

The best way to handle the externalities issue would be for terraformers simply to buy off those, if any, who

oppose terraforming. This is what happens on Earth when property rights come in conflict. Individuals, for example, might purchase an easement that allows them to cross another individual's land on a regular basis or use water from a lake or stream. But since terraforming will take place only over many decades or centuries, the actual costs the negative externalities, spread out over such a long period of time, could be very small.

## **Conclusion.**

The Earth provides valuable lessons about what works from an economic and political perspective, that is, maximum individual liberty and limited government, and what does not work, state direction and the use of force by different interest groups and citizens, usually through the state, against one another. Mars not only offers the opportunity to create a prosperous society. It offers the prospect to create a more peaceful and humane one as well.