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# POLICY CONSIDERATIONS OF LAUNCHING U.S.-ORIGIN SATELLITES IN THE PEOPLE'S REPUBLIC OF CHINA

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## Abstract

In the early years of the Reagan Administration the U.S. Government established a policy not to permit the People's Republic of China (P.R.C.) to provide launch services for Western satellites. This policy was easy to implement because under U.S. law satellites are defined as munitions under the Arms Export Control Act. All communications satellites were either built in the United States or constructed with key elements made in the United States.

Accordingly, an export from the U.S. of either the satellite or key elements was essential to a launch in China. Such exports required approval of the Department of State under the International Traffic in Arms Regulations (ITARs). These approvals were withheld in line with U.S. policy.

At the urging of the Australian government and Hughes Aircraft Company, who proposed to build AUSSATS B-1 and B-2, the Reagan Administration approved export of these satellites to the P.R.C. The massacre at Tian-anmen Square caused the U.S. to suspend indefinitely the satellite export licenses. In 1990, the Bush Administration changed U.S. policy and permitted the export of the AUSSAT satellites but stated it would not permit the exportation of other satellites or key components.

More recently, the Clinton Administration approved export of two communications satellites to China. This reversed earlier sanctions taken against the P.R.C. for alleged sales of missile parts to Pakistan.

The vacillation in policy concerning launches by the P.R.C. is tied to the U.S. policies on the Missile Technology Control Regime and human rights concerns.

## Introduction

In the 1980s, NASA and its supporters on Capitol Hill attempted to justify the enormous cost of the U.S. space shuttle program by making its shuttles the sole access to space. After the 1986 Challenger tragedy, the U.S. shuttle program stalled, and the United States found itself without a "ride into orbit. "Consequently, President Reagan took the shuttle out of the commercial launch business and opened the market to private firms.

The U.S. industry's major competitor is the European consortium Arianespace which has

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now captured over 60% of the world satellite launch market. Two other sources of competition for the U.S. are 1) the Russian vehicles Proton and Zenit, and 2) the Chinese Long March booster. Both the Russian and Chinese programs offer services at lower costs and have a history of highly successful launches. However, U.S. laws and policies impede efforts to market Soviet space goods and services in the West and restrict the P.R.C.'s offering of satellite launch services.

Internationally, the United States has asserted that launch services outside the U.S. require U.S. authorization if they involve: 1) exports of satellites manufactured in the U.S., or other U.S. components and technology, or 2) a launch by a U.S. national. These restrictions limit the launch options of both producers and owners of U.S.-made satellites to U.S. launch vehicles or Ariane. U.S. Government satellites, both military and civil, under U.S. policy may only be launched on U.S. launchers. The U.S. expendable launch vehicles (ELVs) are thus protected in many instances.

Except for one IMMARSAT launch[1] the State Department approved for Proton launch in 1994, the U.S. has thwarted future Russian launch contracts.[2]

In contrast, vis-á-vis China, the U.S. Government has grudgingly permitted some Chinese launches. The U.S. uses a broad-based export control regime to limit launch services competition from the P.R.C.

On September 14, 1992, the Bush Administration lifted export restrictions on 6 satellites (5 U.S. and 1 Chinese) bound for China for launch aboard Chinese Long March rockets. In the press, the launch industry called this an unfair turnabout in U.S. policy. Within days the recurring debate had heated up once more on Capitol Hill. Congress again sided with the launch industry while President Bush was firm in his decision to support the U.S. satellite industry. The debate is keyed to the issues of China's Most Favored Nation (MFN) status, China's record on human rights, and the objectives of U.S. trade relations with the P.R.C. in general.

The Clinton Administration again barred the export of satellites or their components to the P.R.C. in August 1993. This time it was for alleged sales of missile parts to Pakistan in violation of the Missile Technology Control Regime. This decision was reversed on January 6, 1994 permitting Asiasat 2 and Echostar satellites to be shipped to the P.R.C. for launch in 1995. This action was taken ostensibly because these two satellites do not contain militarily significant technology. Future approval for shipments of satellites built by Hughes Aircraft is stalled until there is a satisfactory U.S.-P.R.C. agreement on the transfer of missile technology. The issues are the kickmotor and propellent being used.

## Presidential Discretion

As the law presently stands, the President is the ultimate authority in the U.S. system of export controls. The basis for this power comes from the Constitution and from broad

discretionary waivers that are commonly included in foreign policy legislation.[3] The President's waiver authority in the Omnibus Export Amendments Act (OEAA) of 1990 reserving discretion in satellite export license decisions is not unique.

For example, President Carter used the foreign policy export control authority to embargo the sale of grain to the Soviet Union after the 1979 Soviet invasion of Afghanistan. President Reagan used a similar authority in 1981, following the imposition of martial law in Poland, to embargo sales, by U.S. firms and their foreign subsidiaries, of oil and gas refining technology to the Soviet Union for the building of its gas pipeline to Western Europe.

Broad Presidential discretion in this arena has been common historically. Congress passes legislation that enables trade and sets out a general direction for U.S. policy.

## Chinese Launches

In addition to price, a Chinese launch is attractive because of the number of Western launch failures. In 1986, the U.S. space program not only lost the space shuttle Challenger; there were two dramatic launch failures with the Titan and Delta rocket systems. Originally, U.S. policy-makers had envisioned using the space shuttle to replace the U.S. Delta, Atlas, and Titan programs, and, before the shuttle tragedy, had already put plans in motion to phase out those launch vehicles. However, after the Challenger tragedy in 1986, the U.S. reversed its strategy and incorporated the Air Force philosophy of a "mixed fleet".

In May 1986, an Ariane rocket, contracted to launch two Japanese "IntelSat" communications satellites, failed, losing both satellites. Devastated, the Europeans shut down their launch program for more than a year, and, like the Americans, spent great time and money regrouping from their costly failures. The result of the accident was that the Ariane was out of service for sixteen months.

In 1986, the outlook for the Western launch programs was grim. Western rocket failures had delayed all future launch dates, and, to make matters worse, military missions were given precedent over many commercial contracts. Many satellite makers and owners, who were dependent on contracts for timely launch services, looked in vain for other launching options. All the West had to offer were waiting lists and no guarantees.

With hard capital needs in mind, and seeing the Western failures, China used the opportunity to step into the world rocket-launching market. By 1986, it had put up both the Long March 2 and 3 rockets for sale. Numerous international corporations rushed to sign contracts with the Chinese for launch services. In fact, both U.S. and European companies saw viability in the Chinese Long March rocket option: reliable services at a low price, with no long waiting list. China capitalized on U.S. and European mistakes.

To accentuate Western problems, the first Chinese commercial

launch was an astounding success. In 1987, an LM2 rocket, China 20, placed a materials processing experiment, owned by the French company Matra, into its assigned orbit without incident. A year later, in 1988, the P.R.C. successfully launched another LM2, with a similar experiment, for a German consortium.

From the start, the Long March 3 has been a subject of major international controversy. As the equivalent of the Delta and Ariane 4 rockets in its ability to lift satellites into Geostationary Transfer Orbit, it has become the direct competition of the U.S. and European launching industries.

In January 1989 the Reagan Administration and the Deng Government signed the U.S.-P.R.C. Commercial Launch Services Memorandum of Agreement (CLS Memorandum) which permits the export of U.S. satellites to the People's Republic of China. In exchange, China promised to 1) "limit itself to launch no more than nine communications satellites for non-Chinese customers prior to December 31, 1994," and 2) "price its services 'on a par with' those of Western providers."[4] Congress generally opposes the Memorandum.

The six satellites affected by the agreement are AsiaSat 2 and Apsat 1 (Asia Pacific Satellite Co., owned by a Hong Kong consortium with Chinese partners) both manufactured by Hughes Aircraft Company; an Intelsat 7A bird manufactured by Loral; Starsat 1; Afristar 1, (AfriSpace Inc., owned by International Technologies of Washington); and China's Dong Fang Hong 3, a Chinese-built satellite with U.S. amplifiers.[5] U.S. satellite manufacturers and operators greeted the decision warmly. In a fiercely competitive satellite industry, the U.S. satellite companies need the flexibility of cheaper foreign launches to keep themselves competitive.

Soon after it was placed on the market, two international consortia, Asiasat Inc. of Hong Kong, and the Australian quasi-governmental company AUSSAT, signed agreements with the Chinese for three LM3 launches. Since then, all three have been successfully launched: AUSSAT 1 (1990), AsiaSat 1 (1991), and AUSSAT 2 (1992).

## The Market

In recent years some buyers have turned down superior quality American satellites because the cost of a satellite from manufacture through launch in the U.S. is too high. At the present, the Europeans, who build excellent satellites, can offer a much better package price. A buyer with limited resources may be willing to purchase a slightly inferior satellite if it has a launch deal included that will save money on the whole package. Still, the U.S. launch industry saw the Bush decision as selling out their interests for political ends.

The Bush Administration believed that the move would give a boost to the U.S. economy. According to a State Department news release, "These exports will help us reduce our trade deficit with China and provide jobs for American workers...Two of the projects are in production and

are worth approximately $150 million. The other four projects are in the technical discussion stage. Successful completion... will yield well over $500 million."[6] According to State Department spokesman Richard Boucher, the action "sends a clear reassurance to commercial markets of U.S. reliability as a supplier of high-technology goods and services".[7]

The American launch industry claimed that the Administration's figures are highly misleading, that the total of $650 million represents the composite value of all six satellite programs, including construction, launch, and operations costs, and that only $144.6 million actually represents new export sales to China. They fear that those contracts will be more than offset by the $150 million they have lost to the Chinese in launch contracts.[8] Neither side's figures appear conclusive. Both are estimates. The real issue here, is that Bush was willing to give the contracts to the Chinese, while the U.S. launch industry with Congress behind it, wanted absolutely no competition from the Chinese.

## The Issues

The Administrations of both Bush and Clinton have supported a satellite export/launch policy, which favors the satellite industry. It is based on two fundamental goals: 1) creating American jobs, and 2) fostering an amicable relationship with China. These goals are part of a greater U.S. vision for the P.R.C.: a) bringing free enterprise into Red China, and b) ensuring that China remains friendly to the U.S. They want to foster this relationship particularly because the leadership of China is aging. By encouraging free enterprise and stability when the leadership does change, the next generation will be prepared to support the transition to a free market economy. A free and democratic China could be a good friend and strong U.S. trading partner in the future.

On the other hand, the majority of Congress opposes allowing any Chinese launches. Recent legislation has worked toward two specific goals: a) ensuring the protection of human rights in China, and b) protecting American jobs in the U.S. launch industry.

After imposing sanctions on China as a result of the 1989 massacre in Tian-anmen Square, Congress has spent several years, to no avail, trying to define what U.S. policy toward human rights violations in China and other countries should be. Congress believes that by allowing satellite export licenses, and thereby giving the Chinese U.S. satellite launch contracts, that the U.S. is catering to the will of the Chinese leadership.

Many prominent members of the Senate and House do not want any competition from the Chinese. A vocal anti-Communist and launch industry supporter, Senator Jesse Helms believes that any launch contracts given to the Chinese foster the development of the Chinese program over that of the Americans. His belief is, "You just cannot trust them."[9]

Senator Rockefeller, another proponent of the U.S. launch industry, makes a very different

argument. His belief is, "The continuation of dumped launch services that undercut market pricing will seriously disadvantage our companies' ability to compete and survive." He argues that the export decisions "[make] a mockery of our credibility in trying to maintain some semblance of control over transfers of missile technology and the dumping of launch services."[10]

Technology transfer is arguably a non-issue in Chinese launches because the Chinese have never demonstrated an intention to steal technology. In fact, the P.R.C. offers "black box" security for the satellites they launch. In practice, this means that while a satellite is in the P.R.C., it remains in a sealed container, guarded by foreign nationals, to ensure that the Chinese have no more contact with a satellite than that necessary to lift it into the rocket capsule before launch.[11]

More importantly, China has never violated an agreement by transferring technology or advanced equipment it has imported from either the United States or any other country to a third party. This has earned China a good reputation among its trading partners.[12]

It is difficult to see how nine satellite launches over six years is construed as "dumping." However, Senator Rockefeller has a valid point that the Chinese are offering launch services at below market prices. This is due to two factors. The market price is high because U.S. companies have grown inefficient in their production and carry high overhead costs.[13] On the other hand, the Chinese program is both government subsidized and has a significantly cheaper labor force. This enables the Chinese to sell launches for less. The U.S. continues to press the Chinese to charge more. Still, the Congressional policy rings of protectionism.

In March 1992, Bush vetoed a joint bill that would have imposed limitations on China's MFN renewal. Many members of Congress felt that Bush's veto was in effect a pardon of the P.R.C. record of human rights violations. Bush's treatment of the satellite case exacerbated the situation. He made the export decision on September 11 but did not consult Congress, or even inform them of his decision, until September 14.

President Clinton, as did Bush and Reagan before him, sees a success story in the continued growth of trade. Despite the effects of Tian-anmen Square on the U.S.-P.R.C. relationship, the President's China policy continues to reflect an expectation that deepening ties with the P.R.C. can serve U.S. security interests in the region, while at the same time providing market opportunities for U.S. firms.

China is currently in the midst of a period of unprecedented technological cooperation with the outside world. Even though the U.S. is presently the world leader in trade with China, Hong Kong and Japan are both moving rapidly to increase their own economic ties with the P.R.C. The U.S. trade relationship with China is mutually beneficial. The Chinese are anxious to acquire high technology goods to

speed up many facets of their modernization program, and U.S. suppliers see a huge market for new products in China. The opportunities for the U.S. are too great to give up to foreign competition.

## The Commercial Launch Services Memorandum

President Bush believed that trade builds friendships and that good foreign relations are essential to national security. For this reason, he confirmed the Reagan-initiated CLS Memorandum when he entered office in 1989. Initially, President Reagan signed the agreement as a precursor to his approval of three satellite export licenses. President Bush's decision to allow six more launches merely fulfills part one of the U.S.-Chinese agreement, allowing no more than nine launches through 1994.

President Clinton continued to permit exports to the P.R.C. until mid 1993. The problem originally arose in June 1991 when the P.R.C. shipped a small number of missiles to Pakistan. U.S. law required that two years of sanctions be placed on any organization that violates the Missile Technology Control Regime. These sanctions were waived by President Bush in 1992 when China pledged to abide by the regime. U.S. intelligence sources had information that more missile shipments occurred in November 1992. Accordingly, sanctions were reimposed by President Clinton in August 1993. The Chinese dispute the violation and talks are pending. The Chinese are saying that the U.S. should waive the sanctions and that they will reaffirm their commitment to the regime. The U.S. State Department wants a signed agreement first. This discourse has been going on for several months; it is clearly a test of wills.

## National Security Debate

Current U.S. export law is derived from the Export Administration Act (EAA) Amendment of 1985. Congress attempted to achieve two specific foreign policy goals: 1) to improve U.S. export competitiveness and 2) to promote national security interests through stricter controls and better enforcement.[14] Congressional lawmakers hoped to increase U.S. competitiveness by easing the total licensing burden on U.S. businesses. Export licensing requirements have been eliminated for relatively low-level technology items, the approval process streamlined, and the Secretary of Commerce directed to review and revise the commodity control list at least once a year.

Congress intended to promote U.S. national security interests by providing stricter controls for the export of critical items and strengthening the enforcement of U.S. export regulations. Importantly, the 1985 Act also required the United States to undertake negotiations with COCOM countries to achieve greater coordination and compliance with multilateral controls, fewer exceptions to the COCOM control list, and strengthened uniform enforcement.

Within the framework of the EAA and its amendments through 1985, it is now the policy of the

United States to minimize uncertainties in export control policy and to encourage trade with all countries with which the United States has diplomatic or trade relations, except those countries with which such trade has been determined by the President to go against the national interest. Under current U.S. law, then, it is the policy of the United States to use its economic resources and trade potential to "further the sound growth and stability of the [U.S.] economy as well as to further [U.S.] national security and foreign policy objectives."[15]

Though the language of these two aims would make them sound mutually desirable, which in reality they are, the two goals can be achieved only through tradeoffs and balance. To begin with, the system was first designed to identify and restrict U.S. exports that have military significance to potential adversaries without constricting trade in other commodities and to other parts of the world.

However, in practice, the means to national security often jeopardize economic stability, and vice-versa. For example, a common method of safeguarding national security is to restrict the export of items such as satellites that could significantly augment the military capabilities of unfriendly countries. Yet by restricting U.S. exports, the end of U.S. economic stability may at the same time be threatened. With added controls, U.S. firms, such as the U.S. satellite makers, are limited in their ability to export, and thereby, are less effective traders and less competitive in the world market.

However, from a longer-term U.S. Government perspective, technology transfers inevitably affect U.S. national security, particularly when the transfers involve technologies with potential military applications. The major gamble in technology transfers is that it is difficult, if not impossible, to predict China's willingness to maintain friendly relations with the United States. If China were to become hostile in the future, the U.S. could greatly regret the military and economic assistance it has given the P.R.C. Therefore, in allowing high technology transfers to China, U.S. decision-makers ultimately take the risk of potentially endangering the security of the United States.

In fact, U.S. policy-makers are further constrained by the interests of our allies and friends in Southeast Asia. Out of continuing concern for Taiwan's national security, for example, the United States will only consider sales of equipment and technology that will not contribute to the P.R.C.'s offensive military capabilities. As we have seen with the Tian-anmen Square massacre, China may at any time develop a more aggressive stance vis-á-vis enemies, real or perceived. In this sense, Western concerns about shifts in P.R.C. policy warrant U.S. sensitivity to the concerns of other East Asian countries who remain suspicious of China's ultimate intentions.

Conversely, the long-term advantage of U.S. high-technology transfers to China, which we have seen, is that they ultimately foster the growth of interna-

tional markets and better the U.S. trade relationship with the P.R.C. This is a tenuous balance. In the case of the export of the two Hughes satellites, the Reagan Administration chose, in the view of some, potentially to endanger U.S. national security in order to support the U.S. satellite manufacturing industry and enhance trade between the U.S. and the P.R.C.

According to the majority in Congress, the United States government should be responsible for maintaining the U.S. launch industry. They believe that in the event of war we do not want to be dependent on others for our defense. We cannot let the U.S. industry fail by supporting the Chinese in their unfair competition. We need to have industry able to build and fire our own rockets. In effect: do not do anything to weaken the United States.

However, the greatest problem with the opposition's case, as Reagan realized in making his decision to allow the first three satellite exports, is that the national security and economic arguments are circular: If the U.S. protects the "Big Three" domestic launch companies, the American satellite building industry will lose contracts and jobs to overseas. If the U.S. government does not allow U.S-built satellites to be launched aboard Chinese rockets, international consortia in the market for satellite services will buy satellites from countries that will. Companies that wanted to buy U.S. satellites could not afford to launch them. Other alternatives, in Europe and Asia, would be cheaper.

While pessimists complain about the problems of trade with China, optimists see the potential of the China market for U.S. businesses and see China as a key link in the global strategy of winning the competitive game. Yet, there was a positive piece of news in 1992 that overshadows these issues today. On the opening day of the Chinese 14th Party Congress, General Secretary Jiang Zemin announced that the "aim of China's reforms was to create a 'socialist market economy.'"[16] These are the very words Secretary Gorbachev used in 1985 at a Communist Party Congress to describe his plan for the future of the U.S.S.R.

The key question now is whether Clinton will continue a foreign policy with China begun under Presidents Carter, Reagan, and Bush which has liberalized trade. President Clinton cut the nexus between human rights and trade. Congress continues to weigh the P.R.C.'s short-term abuses in human rights over the longer term goal of free trade with a democratic China. It remains to be seen who will prevail.

Unfortunately, if we block trade, China may turn inward again--or take its trade to someone else. Trade encourages the exchange of ideas. If you cut off American trade, American ideas and information about the American way of life are cut off too. China needs the U.S. to become a democracy, and the U.S. needs trade with China to rebuild its economy.

During his campaign for the presidency, Clinton took a critical line toward China. After Congress failed to override Bush's veto on MFN, Clinton said he supported the bill. He stressed that he did not wish to "isolate" China but blamed Bush for "coddling" dictators there.[17] As President, Clinton thus far has followed in the footsteps of his predecessors. In all likelihood, he will continue on the path toward greater trade, the U.S.-P.R.C. talks will continue, and the Commercial Launch Services Memorandum which is due to expire in December 1994 will be renewed.

Under the 1988 Memorandum, only five of an authorized nine launches will take place. There has been considerable argument over the language which required that China's pricing be on a par with U.S. and European launch providers. U.S. officials (unnamed) assert that the P.R.C.'s prices have been 30% less.[18]

The 1993 trade agreement with Russia specifies that launch prices may not be less than 7.5% below western launch prices. A similar provision is likely in the up-coming Memorandum between the U.S. and the P.R.C. A discount of some measure is needed to overcome higher insurance rates, transportation costs, political uncertainties and other factors that affect pricing and scheduling. The issue is, how much is enough?

Recent actions taken by China to crack down on dissidents will complicate the negotiations. These events occurred just prior to and during U.S. Secretary of State Warren Christopher's visit to China. He was snubbed by Chinese officials for complaining about human rights violations. Nevertheless, President Clinton certified in June 1994 that the P.R.C. was making progress in human rights and Most Favored Nation status continues.

## Conclusion

Understanding U.S. policy requires simultaneous focus in two areas: a broad view to international trade developments and a narrower view to the specific needs of industry. This is the beauty of U.S. satellite export policy, too, a subset of U.S. space law. Satellite export law is politically and commercially driven. In a sense, it is like a system of common law, where decisions are made based on precedent. However, in space law there is no rule of stare decisis. Space policy is dependent on international trade relationships, and for this reason exists in a state of constant flux.

1. IMMARSAT is the International Marine Satellite Group. It solicited bids for several launches. The Russians bid lowest (probably between $35 and $40 million) and won the IMMARSAT I contract. General Dynamics and Ariane each bid between $60 and $65 million. (Space News, September 11, 1992.) They will likely each win launches for IMMARSATs II and III. Importantly, the decisions were made, not just on price, but for political reasons. Russia won its first Western Proton launch contract by virtue of the fact that it is a member of the International Marine Satellite Group.

2. Wirin, William B., "U.S. Restrictions on Space Commerce," 33rd Colloquium on the Law of Outer Space, p. 120 (1990). This paper has an extensive explanation of the various U.S. export regimes.

3. Committee on Ways and Means, U.S. House of Representatives, Overview and Compilation of U.S. Trade Statutes, 1989 Edition, p.p. 122-123.

4. Omnibus Export Amendments Act of 1990, § 126, House Report No. 101-944, October 25, 1990.

5. Mobile Satellite Reports, September 28, 1992, v.6, no. 20.

6. Mobile Satellite Reports, September 28, 1992, v.6, no. 20.

7. Satellite News, September 21, 1992, v.15, no.38.

8. Id., p.1.

9. Space News, May 23, 1990.

10. 138 Congressional Record S16930-02, 1992 WL 259610, October 5, 1992.

11. Statement of the China Great Wall Industry Corporation on its Launch Services Policy for Foreign Countries, (Sept. 8, 1988).

12. Baocheng, Han, "On U.S. Technology Transfer," Beijing Review, No. 16, p.4, 1987. China needs the trade too badly to upset its trade ties by stealing information.

13. McCarter, Chris, reporter, Satellite Week, personal interview October 20, 1992.

14. Subsequent Congressional dissatisfaction with the Export Administration Act Amendment of 1985 led to the introduction of new legislation during both the 99th and 100th Congresses. The result, the Omnibus Trade and Competitiveness Act of 1988, made major revisions in the EAA, but these changes do not affect the discussion here, and are, therefore, excluded from the text.

15. Supra, Note 3.

16. BNA International Trade Daily, October 16, 1992.

17. Inter-Press Service, "U.S.: Bush's China Policy Sustained in Senate," October 1, 1992, published by Global Information Network.

18. Space News, Vol. 5, No. 9, Feb. 28, 1994.