

SATTELITE IMAGERY: FRIEND OR FOE

By

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To my Dad, who taught me that hard work comes with reward.

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SATELLITE IMAGERY: FRIEND OF FOE

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Google Earth is a virtual globe created by superimposing satellite imagery. The Web site amalgamates the ease of the Google search engine with Google maps. Google Earth has been used to illustrate the path of wild fires, track diseases such as the bird flu, and demonstrate the fighting in foreign wars. There is little question of the usefulness of Google Earth, but it has been criticized for providing information that could potentially harm a nation's security.

Information is a resource that is vital to the success of military missions in the U.S. and abroad. The military has imposed several regulations in order to protect information from the enemy. The military has deemed that certain information that is not classified by Executive Order 12,958 is still considered sensitive but unclassified.

The purpose of this thesis is threefold: to determine if information the military has deemed important to the success of a mission can be found on Google Earth, to identify the current regulations governing remote sensing, and to determine if adding additional regulations or provisions on Google Earth would stand constitutional muster.

The research will show that Google Earth does display imagery that the military has deemed mission essential vulnerable areas. The current regulations governing Google Earth offer little protection in times of increased threats to national security. The nonbinding

principles that the U.N. enacted in 1986 are quickly becoming antiquated because of advances in technology. The research will conclude that the government holds a heavy burden of proof in removing imagery based on national security. Similar imagery is available from many different sources outside the U.S., making additional regulations moot.

CHAPTER 1 REMOTE SENSING AND SATELLITE IMAGERY

If I could get one message to you it would be this: the future of this country and the welfare of the free world depends upon our success in space. There is no room in this country for any but a fully cooperative, urgently motivated all-out effort toward space leadership. No one person, no one company, no one government agency, has a monopoly on the competence, the missions, or the requirements for the space program.¹

Introduction

The Soviet Union launched the first successful artificial satellite, Sputnik I, in 1957 and started what was soon coined “space race.”² The space race lasted from 1957 until 1975 and was described as a battle between the United States and the Soviet Union to dominate space.³ The space race played a pivotal role in technological, economical and political advances of the United States and the Soviet Union during the Cold War. The United States and the Soviet Union both evolved technologically, paralleling the space race with the arms race as each country developed weapons, advanced their military, and used satellites as “eyes in the sky” to spy against one another.⁴

The space race helped establish among both U.S. and Russian officials the need to initiate regulations and laws pertaining to space. President Dwight D. Eisenhower and Soviet Premier Nikita Khrushchev petitioned the United Nations to intervene in disputes over space and requested legal guidance on issues involving space. In response, the

¹ DAVIS ENGLISH, *THE AIR UP THERE: MORE GREAT QUOTATIONS ON SPACE* (McGraw Hill-Professionals 2003).

² MATT BILLE & ERIKA LISHOCK, *THE FIRST SPACE RACE*, 12 (Texas A&M University Press 2004).

³ *Id.* at 55.

⁴ *Id.* at 25.

United Nations commissioned the Committee on the Peaceful Uses of Outer Space (COPUOS) responsible for the discussions and negotiations as they pertain to space.⁵

Military and intelligence agencies of dominant world nations were the primary users of satellite technology prior to the launch of SPOT I by the French government in 1986.⁶ During the early 1980's, the U.S. tried unsuccessfully to open a market for remote sensed imagery.⁷ President Ronald Reagan's administration, in partnership with RCA Corporation and Hughes Aircraft Company, devised a plan to market imagery from the satellite Landsat. The imagery had a coarse resolution and the partners discovered there was little market for it. Because of the low demand for the imagery, and the lack of funding from the government, the price for customers was very expensive.

Although there was not a high demand for imagery, France launched SPOT I, a satellite that provided ten-meter resolution, with a shorter time between satellite rotation than Landsat, and privatized satellite imagery. France was the leading distributor of satellite imagery by 1989. During the Persian Gulf War, the U.S. spent an estimated \$5-6 million on satellite imagery, commonly referred to as remote sensing. The Remote Sensing Policy Act defines land remote sensing as "the collection of data which can be processed into imagery of surface features of the Earth from an unclassified satellite or satellites."⁸ Today more than nine countries have successfully launched satellites for commercial use, making the commercialization of remote sensing a billion dollar

⁵ NANDASIRI JASENTULIYANA, *INTERNATIONAL SPACE LAW AND THE UNITED NATIONS*, 36 (Kluwer Law International 1999).

⁶ Jasantuliyana, *supra* note 5, at 2.

⁷ Ann M. Florini & Yahya Dehqanzada, *Commercial Satellite Imagery Comes of Age*, *SCI. & TECH.*, Dec. 1999.

⁸ Jasantuliyana, *supra* note 5, at 37.

industry. The technology has advanced the imagery to a .67 meter resolution, clear enough to read the numbers on a house.⁹

However, the commercialization and increased technological advances of remote sensing create several risks to national security and military operations. The capability of a foreign country to obtain satellite imagery of an object in the United States without permission or knowledge has invoked concern that the current regulations on land remote sensing were inadequate. If an insurgent in Iraq wanted to launch a mortar at an airfield in Iraq, the insurgent would only need a computer and Internet connection to obtain satellite imagery with grid coordinates of the base within his or her legal rights under current regulations.

The purpose of this thesis research is to answer: first, whether the advances in technology associated with satellites and the Internet allow the release of information to the public that the military has deemed potentially disruptive to military operations; second, whether current regulations by the United Nations coincide with the United States' military's safeguards for protection ; and lastly, whether the United States remote sensing regulations such as "shutter control" are constitutional under the free speech and free press clause of the First Amendment.¹⁰

The research will begin with an extensive review of past literature on remote sensing and will analyze other research on remote sensing and how it applies to this study. The literature review will consists of four parts. Part one is an overview of what

⁹ Bille, *supra* note 2, at 4.

¹⁰ The Land Remote Sensing Policy Act, 15 U.S.C. §§ 5601-5672 (1992), defines Shutter Control as method to interrupt satellite communication during times of increased threat to national security.

effects remote sensing has on national security. Part two will introduce Google Earth and Terraserver, easily accessible free satellite imagery Web sites, and will review prior issues that have arisen from remote sensing Web sites available to the public. Part three is a review of the regulations on remote sensing in relation to protecting the national security of the nation sensed. Part four is an examination of previous analysis on the constitutionality of regulations on remote sensing. Following the literature review is an in-depth description of the methodology used to answer the research question posed by the thesis.

Literature Review

Remote Sensing, National Security and Military Operations

Since the launch of SPOT I in 1986, several law reviews and journal articles have been written pertaining to the effect of commercialization of remote sensing on national security, the effectiveness of current regulations on remote sensing, and whether current U.S. regulations governing remote sensing are unconstitutional. However, there is very little analysis post 9/11 and very few studies on the effects of remote sensing on military operations.

The continued advancements in technology, including the development of the internet superhighway, sparked concerns by the National Geospatial Intelligence Agency over the potential risk of commercial satellite imagery on national security. The National Geospatial Intelligence Agency commissioned the RAND National Defense Research Institute to investigate publicly available geospatial data on government Web sites, including remote sensing imagery to determine if they were providing information that could impact national security. The RAND Institute's primary focus was to determine if information on government sponsored Web sites could potentially aide terrorists in an

attack against the United States. The research, conducted over a one-year period during 2005 and 2006, evaluated publicly available geospatial data on government Web sites and assessed if the information could aide terrorist organizations in an attack against the United States.

The RAND Institute analyzed information publicly available on the Internet and applied analytical reasoning to determine if the data could assist in planning and executing an attack on the United States. RAND analyzed the information found on government Web sites based on three criteria: 1) usefulness, 2) uniqueness, and 3) cost analysis.¹¹ More specifically, RAND examined how useful information available on the government Web sites would be in aiding an attack, whether the information is unique or can it be found through other public resources, and whether restricting the information would affect citizen's rights to view the information.

The RAND Institute's research concluded that public geospatial information provided on the government Web sites is unlikely to aide a terrorist in an attack because the information is otherwise available.¹² Therefore, RAND said removing the information from government Web sites does not protect national security. One of the recommendations from the Rand Institute was that the federal government play "a proactive role in bringing greater coherence and consistence to the public question of assessing the Homeland Security implications of publicly available geospatial information."¹³

¹¹RAND National Defense Research Institute, *Mapping the Risks: Assessing the Homeland Security Implications of Publicly Available Geospatial Information*, 2004 (Washington, DC), XVII.

¹²*Id.* at 123.

¹³*Id.* at 128.

Although the RAND research is an extensive evaluation of publicly accessible remote sensing data and how that data could assist a terrorist in future attacks against the U.S., the research was not intended to explore the effects of data on military operations nor to explore non-government Web sites.

The effects of available remotely sensed data on military security and operations were addressed by Theresa Hitchens, vice president at the Center for Defense Information, in a speech to the U.S. Space Operations Conference in February 2004. The U.S. Space operations conference was sponsored by the U.S. Army's Dwight D. Eisenhower Institute National Security Series in order to discuss international space operations. Hitchens stated that although the increased accessibility of high-resolution remote sensing imagery benefits national security, it also poses a threat. Hitchens stated the benefits of remote sensing were evident during the Persian Gulf War.¹⁴ She said military intelligence officers were able to determine Iraqi troop placement by analyzing remote sensed imagery. The intelligence gathered from the images were utilized to plan the "left hook maneuver" an instrumental maneuver in the success of U.S. troops during the Persian Gulf War.¹⁵ Hitchens stated military commanders determined that if Saddam Hussein's Army had the intelligence gathered from the imagery, the left-hook maneuver would not have been successful.

Hitchens' said the government has implemented three main safeguards to protect military operations from data collected from remote sensing: 1) shutter control, 2)

¹⁴ Theresa Hitchens, Address at the U.S. Space Operations in the International Context Space Conference (Feb. 24, 2004) (transcript available at the Center for Defense Information).

¹⁵ The US military used intelligence to plan an attack from the West (left) while simultaneously setting up a deceptive frontal attack. Saddam's Army was focused on defending the front making the West a vulnerable position. See HART LIDELL B.H., STRATEGY 62 (Plume 1991).

buyouts of foreign imagery and 3) embedding media in military units.¹⁶ The first of the three safeguards, shutter control (turning off satellites from taking images) can be initiated “when national security or international obligations and/or foreign policies may be compromised, as defined by the secretary of defense” or when the secretary of state requires the licensee to limit data collection and/or distribution.¹⁷ In essence, the government now has complete control over access to U.S. private or government-owned satellites and can impose restraints on data distribution by restricting the selling of remotely sensed images, shutting off access to satellite and reducing the image resolution over areas of interest. The second security safeguard “buyouts” refers to the U.S. government policy of “buying out” satellite images from foreign nations to control distribution of images.

Hitchens’ third effort to safeguard military operations from remote sensing is to embed media with the forces. Embedded journalists are news reporters attached to a military unit; the reporters eat, sleep and travel with the unit in order to tell the factual stories of the unit. Hitchens stated that by providing access to journalists the government can reduce news agencies from searching for information from outside sources. Hitchens stated that it is difficult to regulate remote sensing because remote sensing is an open industry. Several countries have access to imagery from satellites and the U.S. can not regulate the distribution from foreign countries. Hitchens stated that the only effective way to regulate remote sensing is to develop a weapon that can be used to destroy satellites in times of crisis.¹⁸

¹⁶ Hitchens, *supra* note 14.

¹⁷ The Land Remote Sensing Policy Act, *supra* note 10.

¹⁸ Hitchens, *supra* note 14.

Contrary to Hitchens, Captain Michael Hoversten, chief of the Air Space law branch in the U. S. Air Force Staff Judge Advocate Office, contended in a 2001 law review article, that regulations initiated by the United States to regulate remote sensing provide adequate safeguards to protect the security interest of the United States. Captain Hoversten conducted a legal research analysis of regulations and policies relating to remote sensing and applied them to issues of national security for the U.S. Airforce. He determined that remote sensing imagery is a vital tool in protecting national security and that the U.S. government must strike the right balance between maintaining technological power and protecting the nation's interest.¹⁹ Captain Hoversten said that an example of using remote sensing as a tool for protection against foreign nations is the discovery a North Korea missile site sensed by an IKONOS satellite operated by the U.S. owned company Space Image Inc. in 2000. The images were used to determine that North Korean had a missile site that could launch missiles at Japan, and eventually at the United States.²⁰

Captain Hoversten said that U.S. licensing rules and procedures, shutter control and audit practices are adequate in ensuring protecting national security from U.S. sensed imagery.²¹ The major concern Captain Hoversten mentioned in his paper was the lack of global policies pertaining to internationally sensed images owned by foreign nations.²² Captain Hoversten said that remote sensing imagery with greater than one meter

¹⁹ Michael R. Hoversten, *U.S. National Security and Government Regulation of Commercial Remote Sensing from Outer Space* 51 A.F. L. Rev. [253] (2001).

²⁰ *Id.* at 271.

²¹ Auditing refers to the U.S. government's review of current policies on remote sensing to determine if they are effective.

²² Hoversten, *supra* note 19, at 272.

resolution is a vital tool for the military, agriculture and the environment. Captain Hoversten stated that although the imagery is useful to the U.S. it is also a double-edged sword.²³

Captain Hoversten stated images from international satellites could negatively impact military national security by identifying vulnerabilities in U.S. infrastructure.²⁴ An example used by Captain Hoversten is the public images of Area 51. Area 51 was a top secret military testing base in Nevada until satellite images sensed by a Russian satellite were made available to general public.²⁵ Captain Hoversten's report acknowledges the difficulties in maintaining secret military areas from being identified by foreign satellites with the current international regulations of remote sensed imagery in a global market but stated he feels that in order to strike the right balance the Department of Defense should implement internal regulations in order to prevent a breach in security. Captain Hoversten stated internal regulations should include camouflaging and concealing military base layouts that could be of interest to other countries.²⁶

U.S. Senator Daniel Kahikina Akaka, from Hawaii, shared Hoversten's concerns but disagreed with his recommendations. Sen. Akaka addressed President William J. Clinton at the Security and Commercial Satellite Imagery Council Meeting on May 2000. Sen. Akaka's concern was that the "eye in the sky" had suddenly made previously secret sites in the United States no longer secret and that if satellites have the capability to

²³ Hoversten, *supra* note 19, at 272.

²⁴ Hoversten, *supra* note 19, at 265.

²⁵ Hoversten, *supra* note 19, at 245.

²⁶ Hoversten, *supra* note 19, at 265.

gather images such as Russia's use of images on Area 51, the host country (Russia) can sell the images under current regulations.²⁷ Sen. Akaka stated that current restrictions such as shutter control will be difficult to enforce in a free global market. He expressed concern over the lack of a unified regulation on the purchasing of commercial imagery. Sen. Akaka suggested that advancing technology should be coupled with advancing regulations from the United Nations on a global level.

Research conducted for the Commission to Assess the United States National Security Space Management and Organization (CAUSNSSMO) confirmed Sen. Akaka's hypothesis that the increase in technology should run parallel with advances in remote sensing regulations. The commission said that the continued expansion of the commercial remote sensing industry increases the risks of foreign nations discovering vulnerabilities in the U.S.²⁸ The researcher indicated that a greater than one-meter resolution assists adversaries in precise targeting and bomb damage assessment.²⁹

Lieutenant Colonel George Harris, of the U.S. Army 250th Military Intelligence Battalion study, agreed with the finding by CAUSNSSO. The empirical study analyzed SPOT I imagery sensed at three different stages of Operation Desert Storm. The first series of imagery analyzed was taken five months prior to the start of Operation Desert Storm, the second set of imagery analyzed was two weeks after the air war and the final imagery analyzed was imagery sensed four weeks before the ground war. Lieutenant Colonel Harris studied the imagery to detect if military movement and operations could

²⁷ Senator Daniel Kahikina Akaka, Address at the Security and Commercial Satellite Imagery Council (May 11, 2000).

²⁸ Haller, Linda and Sakazaki, M. *Commercial Space and the United States National Security*, (2001), <http://www.globalsecurity.org/space/library/report/2001/nssmo/article06.html> (last visited Oct. 5, 2007).

²⁹ *Id.*

be ascertained by the data collected from the images.”³⁰ The study concluded that the use of remote imagery could be used by the U.S. to detect and predict troop movement even if the images are months old.³¹ This study identified remote sensing imagery as a tool that can be used during the military decision making process, but failed to assess if foreign adversaries could utilize the technology against United States military troops.

Remote Imagery and Mapping Web sites

Web sites such as www.googleearth.com or www.teraserver.com have revolutionized who can access remote sensed data. A real estate agent can access images of a house on the market, a hunter can plan his hunting trip or a student can travel to Paris without leaving his or her dorm room simply by downloading images from the Internet. How does this affect national security? Since Google Earth was introduced in 2005, Australia, the United Kingdom, the Netherlands, various Asian countries, and the United States have stated that remote sensing imagery does affect national security, and each has separately petitioned Google to remove images.

A study by the Fleximag, a European Aeronautic Defense and Space Company (EADS), analyzed threats Google Earth presents to the national defense of all countries. Results indicated that the information provided by Google Earth is available on several other media and therefore does not directly impact national security. However, the

³⁰ VIPIN GUPTA & LIEUTENANT COLONAL GEORGE HARRIS, DETECTING MASSED TROOPS WITH THE FRENCH SPOT SATELLITES: A FEASIBILITY STUDY FOR COOPERATIVE MONITORING (Sandia National Laboratory 1998).

³¹ *Id.*

researchers acknowledged that the information could assist in the early stages of planning an attack against a nation.³²

In a contrasting opinion, Indian President Abdul Kalam stated images of the Indian Parliament found on Google Earth could aid in a terrorist attack and were damaging to the security of India.³³ In an interview referencing the capabilities of Google Earth by Elizabeth Svoboda, a reporter for the Christian Science Monitor, President Kalam stated that images on Google Earth jeopardize the security of foreign nations. Furthermore, South Korea expressed concern that North Korea could use Google Earth to locate and target military installations in South Korea.³⁴ Australia petitioned Google Earth to censor images of a nuclear reactor in Sydney, stating the images inhibit national security.³⁵

The continuous concern of available information provided by remote sensed images on Web sites such as Google Earth and Terraserver challenge the effectiveness of international policies and regulations. Are the policies currently utilized by the United Nations adequately protecting national security from being compromised by terrorist organizations?

Remote Sensing Regulations

The United Nations has implemented regulations to control the use of remote sensing imagery, but several researchers suggest that continued advancements in technology, as well as globalization of commercialized remote sensed imagery, will make

³² Fleximag, European Aeronautic Defense and Space Company, *Google Earth: Impacts and Uses for Defense and Security* (2005), <http://www.fleximag.fr> (last visited Oct 2, 2007). The study is based on the accuracy of Google Earth, international regulations and how Google Earth can be used to damage national security.

³³ Elizabeth Svoboda, *Google's Open Skies Raise Cries*, CHRISTIAN SCI. MONITOR, Dec. 1, 2005, at J1.

³⁴ *Id.*

³⁵ *Id.*

the regulations obsolete and make remote sensing ungovernable. These concerns prompted a study commissioned by the U.S. National Oceanic and Atmospheric Administration (NOAA). NOAA evaluated the effectiveness of current regulations on the commercialization of remote sensing to determine if they were antiquated based on new technology.³⁶ The research concluded several countries, such as the United States, Canada, Korea and Russia, have their own regulations to protect national security but an up to date unified policy by United Nations did not exist. The research concluded that although the regulations are different from nation to nation, the general trend of each nation is to protect its own national security by regulating the imagery sensed, licensing satellites and initiating safeguards such as shutter control.³⁷

In the study mentioned earlier in the paper, Captain Hoversten analyzed the current regulations on commercial satellite imagery and national security to conclude if the regulations provided adequate protection to the U.S. national security. Captain Hoversten concentrated his research on the United Nation's Remote Sensing Act of 1987, and concluded that commercial satellite imagery is a double-edge sword that was needed to protect the nation, but, at the same time, could be used to harm the nation. Captain Hoversten said that the regulations by the United Nations were antiquated when compared to advancements in technology. He concluded that there are several vulnerabilities to security that are not protected in the Remote Sensing Principles enacted

³⁶ Joanne Irene Gabrynowicz, *The Land Remote Sensing Laws and Policies of National Governments: A Global Survey*, (2007), <http://www.spacelaw.olemiss.edu> (last visited Oct. 1, 2007). A report prepared for the U.S. Department of Commerce/NOAA. The study evaluates the "commercialization and privatization" of remote sensing systems.

³⁷ *Id.*

in 1987.³⁸ For example, the provisions in the Remote Sensing Principles permit governments to freely sense and distribute data from other nations without consent.³⁹

Dr. Scott Pace, Associate Administrator for Program Analysis and Evaluation at NASA and a member of the Critical Technologies Institute, testified before the Committee on Science, Space and Technology and the Permanent Select Committee on Intelligence on the U.S. policy and legislation affecting remote sensing and the challenges for regulating commercial remote sensing.⁴⁰ Dr. Pace said that if the U.S. places restrictive regulations on remote sensing, customers will only seek out foreign sources for the data. Dr. Pace said that the U.S. must remain competitive in commercial remote sensing with minimal regulations. He said that the most effective way to maintain competitive and protect national security is to enter government-to-government agreements on remote sensed data.⁴¹ The government-to-government agreements should include provisions for national security such as when data should be declassified for public release.

Shutter Control versus the First Amendment

The current regulations on remote sensing have been criticized by many journalists and law scholars as being too restrictive and unconstitutional. The government implementation of shutter control and use of licensing to control releasing data collected from satellite sensing has concerned members of the press.

³⁸ Hoversten, *supra* note 19, at 266.

³⁹ The Land Remote Sensing Policy Act, *supra* note 10.

⁴⁰ The Critical Technologies Institute is a federally funded research and development center which serves the White House office of science and technology. Their mission is to improve public policy that involves science and technology.

⁴¹ Scott Pace, Testimony Before the Committee on Science, Space and Technology (Feb. 9, 1994).

A case study conducted by Robert P. Merges, an associate professor of law at Boston University, and Glenn H. Reynolds, an associate professor of law at the University of Tennessee, concluded that licensing remote sensed imagery is a clear violation of content-based prior restraint. Merges and Reynolds stated that “regulations in their current form cannot withstand constitutional scrutiny in light of the principles of the First Amendment.”⁴² Merges and Reynolds stated that restricting imagery should not be overseen by the executive branch. Restrictions should come from the judicial branch based on criteria discussed in the *Near v. Minnesota* case, meaning that only information pertaining to “the sailing dates of transports and the number and location of troops” could be withheld.⁴³

Near v. Minnesota, a Supreme Court decision in 1931, established the press ordinarily should be free from prior restraints on publication.⁴⁴ The case made it clear that prior restraint of press violates the First Amendment, while providing an exception for national security. The opinion stated:

the protection even as to previous restraint is not absolutely unlimited. But the limitation has been recognized only in exceptional cases. When a nation is at war many things that might be said in time of peace are such a hindrance to its error that their utterance will not be endured so long as men fight and that no Court could regard them as protected by any constitutional right. No one would question but that a government might prevent actual obstruction to its recruiting service or the publication of the sailing dates of transports or the number and location of troops. On similar grounds, the primary requirements of decency may be enforced against obscene publications. The security of the community life may be protected against incitements to acts of violence and the overthrow by force of orderly government.⁴⁵

⁴² Robert P. Merges & Glenn H. Reynolds *News Media Satellites and the First Amendment: A Case Study in New Technologies*, 3 HIGH TECH. L.J. 2 (1987).

⁴³ *Near v. Minnesota*, 283 U.S. 697 (1931).

⁴⁴ *Id.*

⁴⁵ Merges, *supra* note 42.

Merges' and Reynolds' study focused on whether regulations relating to remote sensing are unconstitutional based on the First Amendment. The case study concluded that regulations such as shutter control are unconstitutional because they leave too much discretion to the government and are based on restricting information based on content. Merges and Reynolds stated that past precedent has dictated the government holds the burden of proof when restricting publication based on national security.

Merges and Reynolds said the U.S. Supreme Court opinion in *New York v. United States* set the precedent for burden of proof in censoring the press.⁴⁶ The court's opinion in *New York Times v. United States (1971)* declared the *New York Times* and *Washington Post* could publish the so-called Pentagon Papers, discussing the history of Vietnam War. Merges and Reynolds stated that shutter control presents a "classic prior restraint on dissemination of expression" because the government can deny a license prior to an image being sensed.⁴⁷

Similar to the Mergers' and Reynolds' work, a paper by George E. Seay, a third-year law student at Southern Methodist University, agreed the regulations on remote sensing violate the First Amendment. Seay stated there is a definitive struggle between the U.S. government and the media over the First Amendment right for media to use remote sensed imagery. Seay stated that the government and the media must find a middle ground when restricting remote sensing imagery. Seay recommended that the government and the media come to a consensus as to what should be considered a threat

⁴⁶ *New York Times v. United States*, 403 U.S. 719 (1971). The court reasoned in 6-3 decision that the government bore the burden of proof in justifying censoring the press. The court stated based on the evidence that burden had not been met.

⁴⁷ Merges, *supra* note 42.

to national security. Seay suggested that this could be accomplished by a better government-media relationship.

Pamela Hess, a Pentagon correspondent for United Press International, wrote an article discussing the U.S. government's decision to buy exclusive rights to the imagery over Afghanistan following 9/11 from Space Imaging Inc. Hess' article stated that the government's purchase of imagery stopped potential lawsuits from the media for violations of the First Amendment. Hess interviewed Mike Bender, director of Washington operations at Space Imaging Inc., who opposed the media's opinion that the U.S. government bought the imagery to censor the press. Bender stated it was just a business transaction and nothing more.⁴⁸

Ann M. Florini, in *Science and Technology* magazine, discussed the remote sensing industry and the claims that current regulations on remote sensing have been argued to be unconstitutional. Florini stated that the Radio–Television News Directors Association (RTNDA) argued shutter control is a violation of the First Amendment because it allows the government to impose prior restraint on the flow of information with no need to prove clear and present danger or imminent national harm.⁴⁹ Shutter Control is directed exclusively by the executive branch, RTNDA argued that this eliminates the need for a judicial review to determine if the information will cause harm to national security. Ironically, Florini stated in her article, even if shutter control could withstand judicial

⁴⁸ Pam Hess, *DOD Locks up Commercial Satellite Pix*, U.S. Press Int'l (Oct. 12, 2001), <http://www.globalsecurity.org>. (last visited Oct. 4, 2007).

⁴⁹ Florini, *supra* note 7. Clear and present danger is a test developed by Justice Holmes following in his opinion on *Schenck v. U.S.*, 249 U.S. 47 (1999). The test determines if speech “creates a clear and present danger that will bring about substantive evils that the United States Congress has the right to prevent.” Imminent refers to speech that will cause an unlawful act more quickly than can be handled by officials.

review, it provides little protection to national security because remote sensing is a global market.⁵⁰

In summary the continued advances in technology, coupled with the World Wide Web as a vehicle of distribution for information, has sparked concerns among government agencies that current regulations for remote sensing are becoming obsolete. This research will try to identify if there are potential risks to military operations by commercial satellite imagery, to determine if regulations are in place to protect military operations, and to try to balance the need to protect both free press civil liberties and national security. Although there have been several studies on remote sensing and the effects on national security they all fail to research the effects of commercial remote sensing imagery on military operations. In contrast, the research in this thesis will identify Web sites such as Google Earth and Terraserver that publish information that could impact military operations. The researcher will focus on information the military has classified as “sensitive” to mission accomplishment, identifying that these risks that can aide military leaders in mission planning.⁵¹ The most important aspect of this study will examine the balance of civil liberties and national security. The thesis will weigh both sides to try to determine the proper balance in an environment of self government.

Chapter Summary and Methods

To sufficiently answer the research questions posed in the introduction, a variety of methods will be used. This paper will concentrate on different methods including a case study and formal legal research. Because the thesis is three-pronged it seemed most

⁵⁰ Florini, *supra* note 7.

⁵¹ Sensitive refers to any material that is not deemed classified but can be used against military operations.

appropriate match discussion of methods in the relevant chapters. The chapters and methods are explained below.

Chapter 2 will explore if information on Google Earth and Terraserver are threatening military operations based on Army directives and Army Regulations utilizing comparative analysis.⁵² The researcher will examine Army Regulations, the Army Field Manual, Department of the Army pamphlets, Department of Defense Regulations, Executive Orders, and Post memorandums on security, force protection, antiterrorism and sensitive information and compare the data to information available on the Web sites such as Google Earth. Comparative analysis integrates key aspects of content analysis although no specific coding is utilized. The research will incorporate Army Doctrine that dictates what information, although unclassified, is considered sensitive to military operations. Army publications will be found at www.us.army.mil/usapa and opened using an Army Knowledge Online password supplied by the U.S. Army. The free trail of Google Earth and Terraserver will be the utilized to determine if information on the Web could be found contrary to Army doctrine.

Chapter 3 will examine current U.S. and U.N. regulations governing remote sensing. Legal research will be used to determine whether U.S. and U.N. regulations for remote sensing provide safeguards for military operations and national security. The legal research will be conducted utilizing the University of Florida Legal Information Center and Lexis\Nexis. The search string utilized will be “regulations land remote sensing” and “U.N. regulations land remote sensing.” The researcher will examine

⁵² Comparative analysis is a qualitative method used to compare two groups. The methodology makes comparisons to evaluate and examine research questions. See e.g. ALLEN RUBIN & EARL R. BABBIE RESEARCH METHODS FOR SOCIAL WORK (Thompson Wadsworth 2001).

remote sensing regulations and U.S. Army doctrine, found at www.us.army.mil/usapa, to determine whether current regulations have provisions to protect mission essential vulnerable areas identified by the U.S. military.

Chapter 4 will examine whether current remote sensing regulations pass constitutional muster and are available under the Freedom of information Act (FOIA). Legal research will be utilized to examine federal statutes, case law, and executive directives found at the University of Florida legal Information Center, Lexis Nexis and Westlaw. The researcher will employ on-line searches on Lexis\Nexis and Westlaw using a string of search terms such as “national security”, “remote sensing”, “shutter control”, “FOIA”, “Freedom of Information” and “first amendment” to determine whether current remote sensing regulations are unconstitutional. Additionally, an electronic search of the University of Florida’s George C. Smathers database will be conducted, using the following search terms: “remote sensing first amendment”, “media and remote sensing imagery”, “regulation remote sensing imagery” and “press remote sensing”.

Finally, Chapter 5 will provide a brief summary and an analysis of the data found in the previous chapters. The chapter will provide recommendations for current regulations and further research.

CHAPTER 2 INFORMATION AND MILITARY OPERATIONS

Information is the oxygen of the modern age. It seeps through the walls topped by barbed wire, it wafts across the electrified borders.¹

Introduction

The U.S. military has favored the idea that “information” is a major tool in defeating the enemy.² The importance of information is not a new concept to the military, George Washington stated during the colonial war that “even minutiae should have a place in our collection, for things of a seemingly trifling nature, when enjoined with others of a more serious cast, may lead to valuable conclusion.”³ The objective of military intelligence and operation security is to gather information about the enemy while simultaneously protecting information inherent to mission accomplishment.⁴ The objective is to gain “information superiority” against the enemy establishing a strategic advantage. The military defines information superiority as denying adversaries key information that could be used to disrupt military operations.⁵ Washington understood that information about the enemy could be collected and analyzed to disclose a major weakness enabling a successful plan of defeat. The same concept can be applied to the enemies’ ability to collect information about U.S. forces. Although information protection was utilized

¹ President Ronald Reagan, *GUARDIAN* (London, June 14, 1989).

² U.S. Department of the Army, Regulation 530-1. Operations Security (OPSEC) (19 April 2007) [hereinafter AR 530-1]. For the purpose of this paper AR 530-1 defines information superiority as “the degree of dominance in the information domain which permits the conduct of operations without effective operations.” *Id.*

³ U.S. Department of Energy, *An Operational Security (OPSEC) Primer*, available at <http://www.defendamerica.mil/articles/a02120b.html>.

⁴ *Id.* Operations security is defined as, “identifies the critical information of military plans, operations, and supporting activities and the indicators that can reveal it, and then develops measures to eliminate, reduce, or conceal those indicators.”

⁵ *Id.*

during the colonial period it did not become a standard methodology until the Vietnam War. During the Vietnam War a group of soldiers were assigned to investigate how the enemy had advance knowledge of planned military attacks. The Vietnamese soldiers had information that aided in countering the U.S. military attacks. In order to determine the source of information leaks the military developed the operational security measures. The soldiers determined that the countermeasures in place to safeguard information were insufficient and therefore developed a new methodology (operational security program) to ensure information was protected. Operational security (OPSEC) programs are programs that identify information based on an adversary's viewpoint, or on how an adversary could use the information against the U.S. military. In 2007, operational security was said to be based on the following five steps: 1) identification of critical information to be protected, 2) analysis of the threat to military operations, 3) analysis of the vulnerabilities to military operations, 4) assessment of the risks to military operations, and 5) application of the counter measures to protect release of information.⁶ The OPSEC methodology utilizes the five steps to identify unclassified information that can be used to hinder successful military operations against the enemy or aide the enemy in attacking the U.S. military installations and units.

Regulations on information security are based on Executive Order 12958, Classified National Security Information; Executive Order 12972, Amendment to Executive Order 12958; and Executive Order 13142, Amendment to Executive Order 12958 (EO 12958).⁷ Executive Order 12958 sets the parameters to balance individual's right to access to government information with protecting information that could harm national security.⁸ EO 12958 prescribes

⁶ *Id.*

⁷ *Id.*

⁸ Exec. Order 12,958, 60 Fed. Reg. 15,315 (Mar. 25, 2003).

a system to classify, safeguard and declassify information to ensure that information protection and sharing is balanced. EO 12958 was amended by President George W. Bush after he took office. EO 12958 stated that in order to classify information it must fall into specific categories such as these pertaining to military plans and operations.⁹ Information that does not meet the requirements set forth in EO 12958 maybe released under the Freedom of Information Act (FOIA).

EO 12958 places information into three categories:

- “Top Secret” shall be applied to information, the unauthorized disclosure of which reasonably could be expected to cause exceptionally grave damage to the national security that the original classification authority is able to identify or describe.
- “Secret” shall be applied to information, the unauthorized disclosure of which reasonably could be expected to cause serious damage to the national security that the original classification authority is able to identify or describe.
- “Confidential” shall be applied to information, the unauthorized disclosure of which reasonably could be expected to cause damage to the national security that the original classification authority is able to identify or describe.¹⁰

In order to achieve information superiority the military uses additional categories when planning and executing military operations to protect information that is not classified by EO 12958. The categories can be implemented by military leaders to protect military operations. Information is controlled for military operations by categorizing it into an additional category called Controlled Unclassified Information (CUI). This category includes information considered For Official Use Only (FOUO) and Sensitive But Unclassified (SBU).¹¹ FOUO is unclassified information originating from the Department of Defense (DOD) that may be exempt

⁹ *Id.*

¹⁰ *Id* at 3. Top secret, secret and confidential are considered classified information. Classified Information is restricted from public release by exemption 1 of FOIA.

¹¹ U.S. Department of the Army, Regulation 530-5, Information Security (September 2000).

from released under the Freedom of Information Act.¹² SBU is information that originates from the Department of State but is contained in a DOD document and is not required to be released under the Freedom of Information Act.¹³

The Freedom of Information Act was enacted by Congress and signed in 1966 by Lyndon Baines Johnson. The FOIA was enacted to aide in the democratic process, to provide citizens access to government information and to promote openness in government.¹⁴ The FOIA states that citizens have access to government records unless the information is protected under the one of the nine exemptions.¹⁵ Exemption One incorporates the executive order to protect national security by protecting the disclosure of information that pertains to “intelligence collection, national defense, or foreign policy that has been properly classified.”¹⁶ Information on military operations can be protected under Exemption One of the FOIA. Military officials follow the same guidelines for classifying information as found in EO 12958.¹⁷

The challenge many military leaders face is how to protect information that is unclassified because the safeguards that are instilled with classified information do not exist under law for unclassified information and therefore the information is not handled as carefully. It is difficult to identify and manage information that is considered unclassified but still sensitive to the

¹² Department of Defense Directive, Directive 5400.7R The Freedom of Information Act Program (Sept. 9, 1997) at page 43.

¹³ Homeland Security Act 6 U.S.C § 482 (2004).

¹⁴ *Freedom of Information Act Guide*, March 2007, http://www.usdoj.gov/oip/foia_guide07.htm (last visited Oct. 18, 2007).

¹⁵ The Freedom of Information is codified 5 U.S.C. 552 (b) (2003). The Freedom of Information Act has nine exemptions. The exemptions are 1) matters of national security; 2) internal personnel rules of the agency; 3) information that is protected because of federal statutes; 4) business information; 5) inter and intra- agency memoranda; 6) personal privacy; 7) law enforcement records; 8) records of financial institutions; 9) oil well data.

¹⁶ United States Department of Justice, *supra* note 14.

¹⁷ *See generally* U.S. Department of the Army, Regulation 530-1.

military mission. When identifying CUI all information that is not classified must be assessed. Since 9/11, military intelligence agencies have frequently found that information on the Internet falls into CUI. The information, although unclassified, can be assessed by the enemy and can be used to in planning attacks against U.S. military.¹⁸ For example, the U.S. military has captured insurgents with hand-drawn handbooks on vulnerable spots on the Abrams Tank. Army intelligence officers—after further investigation—discovered that the information had been obtained from pictures posted on the Internet of an Abrams tank penetrated by a rocket propelled grenade (RPG).¹⁹ These examples of sensitive information entering the media prompted the Army Vice Chief of Staff, General Richard Cody, to require military leaders to tighten measures to safeguard information.²⁰

The immense quantity of information on the Internet, combined with the ease of posting and assessing information, poses a threat to information superiority and operational security.²¹ Military leaders have aggressively tried to manage information that is posted on the Internet by posting directives such as the message from the Vice Chief of Staff, reviewing army Web sites to ensure soldiers are not posting critical information, and updating regulations that deal with information security. Critical information is not always classified but has been identified as information that could affect mission accomplishment or aide the adversary.²² Information categorized as critical information includes specific current force locations, command post

¹⁸*Chief of Staff of the Army OPSEC Guidance*, UNCLAS ALARACT, Aug. 23, 2005, <http://www.fas.org/sgp/news/2005/08/usa0805.html> (last visited Oct. 18, 2007).

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² U.S. Department of the Army, *supra* note 2.

vulnerabilities, and command post locations and communications. Critical information can be an important to successful military mission.

Army Doctrine and Freedom of Information

Although military leaders are continuously evaluating information to ensure that information is safeguarded, the protection of information is part of the mission of all military personnel. In order to ensure that all soldiers are aware of their responsibilities Army officials have implemented several regulations, pamphlets and directives. The military has several regulations that govern security to ensure that information superiority is maintained.

Military officials follow several steps when writing regulations and when reviewing current regulation to ensure they do not hinder constitutional rights, are within the limits of executive orders and are legally binding.²³ Army personnel are assigned a subject based on their individual expertise generally personnel in operations and intelligence sections.²⁴ Operations and Intelligence personnel review all current laws, directives and orders pertaining to the regulation to ensure that regulations fall within the confines of current laws and regulations. After the drafts are written they are forwarded to commanders for review for clarity and grammar. The commanders review the regulation and forward it the Headquarters Department of the Army (HQDA).²⁵ HQDA is responsible for reviewing and commenting on drafts and assigning publishing control officers. The draft regulation is corrected and forwarded to the Judge

²³ U.S. Department of Army, Regulation 25-30 The Army Publishing Program (27 March 2007). [Hereinafter AR 25-30].

²⁴ The job of an Army Operations staff serve as the principal staff responsible for preparation and sustaining of war fighting in peace and war today and tomorrow. *See generally* Mission statement by the Deputy Chief of Staff <http://www.amc.army.mil/G3/>. (last visited at Oct. 18, 2007). The Army Intelligence personnel deduce threat to the military and gather information on the enemy.

²⁵ A commander is the highest member of their echelon. The use of commander in this thesis refers to the commanders of major command.

Advocate²⁶ for legal review to ensure all policies and procedures fall under laws, directives and regulation. The regulation is forwarded to Deputy Chiefs of Staff and reviewed for justification. After the regulation is properly staffed it is forwarded to the office of the Secretary of the Army for approval.²⁷ After the regulation is approved for released it is labeled “official use only.” Army regulations are not intended for public release.

Military Operations and Operational Security

After 9/11 the U.S. military has adopted several additional safeguards to protect information. Under the military’s Operational Security (OPSEC) program access to all U.S. military posts is controlled through identification at the gates of anyone entering the military installation.²⁸ The main goal of OPSEC, which also imposes random vehicle checks in order to deter terrorist activity, is to identify critical information and initiate measures to protect it. AR 530-1, the document that authorized the updated OPSEC program in 2007, addresses new technologies such as the Internet. OPSEC mangers state that the information posted on the Internet is opened-sourced and unclassified, but when this information is pieced together can aide adversaries in attacks against the U.S. military.²⁹ AR 350-1 states that it is imperative for military leaders to identify critical information³⁰ during the planning phase of a mission’s development, and they should identify what questions an adversary will ask about U.S. limitations and intentions.

²⁶ Judge Advocate is the military’s legal assistance. The Judge Advocate consists of paralegals, lawyers and judges.

²⁷ “Staffing” refers to sending a document to through the Army staff. The staff consists of personnel, intelligence, operations, supply, and communication.

²⁸ U.S. Department of Energy, *supra* note 3.

²⁹ U.S. Department of the Army, *supra* note 2. AR 530-1 has a vast list of information considered critical information. The examples listed are used based on the thesis questions.

³⁰ See page 5 of this thesis for the definition of critical information.

In addition to critical information, a key element in OPSEC program is the identification of “sensitive information.” The term “sensitive information” refers to unclassified that requires special protection because disclosure could cause harm to military installations, operations, and personnel.³¹ Sensitive and critical information are similar, but critical information is either needed by the U.S. to meet an objective or information that aids adversary and could include sensitive information.

Another program developed by the military to protect information is the Physical Security Program, used to protect military installations during times of peace against criminals, terrorists and hostile intelligence operatives.³² The Physical Security Program identifies the responsibilities of the chain of command to protect information and describes installation Mission Essential Vulnerable Areas (MEVAs).³³ AR 190-13, the document containing the regulation, identifies MEVAs as military assets that need special protection because an attack on one could cause severe loss of life, loss of essential equipment, extreme financial loss or disruption in military operations. MEVAs can include airfields, aircraft parking or maintenance areas, classified sites, main and alternate command posts, communication facilities, motor pools and consolidated supply and storage operations.³⁴

Pictures of MEVA’s have been mistakenly posted on the Internet including base defense plans. One of the reasons that the Internet creates so much concern is that it is so difficult to monitor. For example, a training manual recovered from an Al Qaeda group stated that 80

³¹ U.S. Department of the Army, *supra* note 2.

³² U.S. Department of the Army, *supra* note 2 at 5.

³³ U.S. Department of Army, Regulation 190-13, The Army Physical Security Program (30 September 1993) [hereinafter known as AR 190-13].

³⁴ *Id.* The Mission Essential Vulnerable Areas listed does not constitute a complete list. AR 190-13 lists several MEVA’s and states that any installation commander can add to the list based on threat and mission planning. *Id.*

percent of the information needed against an enemy can be found using public sources including the Internet.³⁵ Military units place information on company and battalion Web sites, contractors put installation plans on company Web sites and satellite imagery Web sites such as Google Earth include military bases.

The Making of Google Earth

Google Earth is a Web site operated by Google Inc., an Internet search engine and online advertiser, that makes it possible for users to see a virtual globe through the use of satellite imagery and the Google search engine.³⁶ The images can be viewed in three-dimension and places can be place-marked and shared with other Google Earth users using Keyhole Markup Language (KML). KML allows the users to tag geographical locations that others can view. The program requires an operating system that supports Windows 2000, XP, Vista or MAC OS 10.3.9 and a broadband internet connection.

Google Earth provides images that are considered unclassified under Executive Order 12958.³⁷ Google Earth provides resources that enable people to obtain information with anonymity making it more difficult for military officials to identify the release of sensitive but unclassified information on the Internet.

³⁵ Former U.S. Secretary of Defense Donald Rumsfeld, *Website OPSEC Discrepancies*, Memorandum for all Department of Defense Activities, (January 14, 2003) available at http://www.iooss.gov/docs/rumsfeld_14Jan03.html, (last visited June 24, 2007). The memorandum states that For Official Use Only (FOUO) and sensitive information is continually placed on the internet. The memorandum provides guidance to military personnel on how to protect information. *Id.*

³⁶ The website has a compassion guide for Google Earth, Google Pro and Google Plus. The Google Earth homepage provides tutorials on basic use of the product, product downloads and product tours. Information on Google earth can be accessed at [http:// www.earth.google.com](http://www.earth.google.com) (last visited Oct. 18, 2007).

³⁷ Exec. Order 12958, 60 Fed. Reg. 15315 (Mar. 25, 2003). President George W. Bush kept President Clinton's executive order on national security classification. However, he amended it to include procedural matters on safeguarding information based on national security.

Google purchased Keyhole three-dimension mapping technology, including the program Earthviewer, in 2004. Earthviewer, a mapping program created for commercial use of satellite imagery, is utilized both by businesses and educators. After Google purchased Earthview, it renamed it Google Earth, now one of three Google mapping systems available.³⁸ Google Earth is a free service enabling consumers to view a specific location on a three-dimensional satellite picture and retrieve driving directions. Google Earth Pro and Google Earth Plus added global positioning services. Connecting Google Earth to GPS displays your position in real time and track data on Google earth.

In 2006, Google stated that it provides imagery of more than 20 percent of the Earth's land mass on Google Earth. The data on Google Earth is a combination of aerial and satellite data that are not updated based on customer request but as they become available.³⁹ The images on Google Earth are generally between one and three years old and have a 15-meter resolution provided by Digital Globe.⁴⁰ The Web site is available in thirteen languages and supports data sharing through the KML feature.

Google Earth is marketed as a mapping Web site that can be used to track disease,⁴¹ examine buildings in three dimensions and explore disasters. Google Earth was instrumental

³⁸ Google Earth Plus, which cost \$20 annually, provides consumers with the same features as Google Earth but also provides higher resolution printing, faster performance, and the ability to connect global positioning services (GPS) . The program Google Earth pro. costing \$400 a year, is targeted for commercial users. Google Earth pro is used primarily for research, presentations, and as tool to identify location-specific information. The author of this thesis did not evaluate the other programs because Google Earth is free, requires no registration and the simplest to use. Informationt [http:// www.earth.google.com](http://www.earth.google.com) (last visited Oct. 18, 2007).

³⁹ In July 2007 Google purchased Image America, a company that builds high resolution cameras for aerial imagery but has not released what new features will be available to their users. Details of purchase at Google's official blog <http://google-latlong.blogspot.com/2007/07/imaging-america.html>.

⁴⁰ Digital Globe is the company that owns Quickbird satellite used to produce high-quality (such as some seen on Google Earth) geospatial data.

⁴¹ The Center for Communicable Disease, scientist, and medical personnel tag areas where diseases have been reported on Google Earth to track the movement of disease. This was recently done for the tracking the bird flu epidemic, it is useful in determining the path of the disease.

during the aftermath of Katrina and the 2005 earthquake in Pakistan. Relief workers used the Web site to classify priorities, identify open routes and plan logistics.⁴² Although the images are generally one to three years old the use of Keyhole Markup Language permits users to update images using overlays. KML provides the user with recent updates to buildings, roads and points of interest by using overlays. Google Earth also acquired images from Digital Globe, processed the imagery and made imagery available within five days. Generally, Google Earth only displays imagery that is up to three years old, but because of the emergency situation encountered after the earthquake in Pakistan it used newer imagery purchased. The imagery purchased from Digital Globe was removed briefly because of disputes from Pakistan and India over the imagery of Kashmir.⁴³

Operational Security versus Google Earth

Google Earth does not analyze imagery before putting it on the Internet. Google Inc. has stated that the information it provides, whether it creates problems for the military or not, is open to the public. Although officials of the company say they believe in open access. Google Inc. is not averse to meeting with government officials to discuss images of concern.⁴⁴ For example, the Associated Press discovered information on the Internet that contained plans for a military holding facility in Iraq, geospatial data of two airfields in Iraq, and plans for a fuel farm at

⁴² Illah Nourbaksh, *Mapping Disaster Zones*, NATURE, February 16, 2006, at 787.

⁴³ *Id.* The decision of Google Earth to display images that were five days old to aid in the rescue mission after the 2005 earthquake concerned both Indian and Pakistan governments, both contended that Google Earth did not accurately portray the border of Kashmir, Pakistan and Kashmir, India. This has been a significant issue between India and Pakistan. See Somini Sengupta, *The claim over Kashmir goes to the heart of the identities of India and Pakistan*. NY TIMES, January 13, 2002, <http://query.nytimes.com/gst/fullpage.html?res=9803E5DF1738F930A25752C0A9649C8B63&n=Top/News/World/Countries%20and%20Territories/India>. (last visited at October 18, 2007) Google Earth was asked by Indian government official to remove the images until the dispute could be heard by the UN. The United Nations met with the Pakistan and Indian governments and the decision was made that the imagery did not pose a threat. After the UN decision Google Earth decided to repost the images on their Web site. *Id.*

⁴⁴ *Did Google Censor Basra Imagery*, UK TELEGRAPH, January 14, 2007.

Bagram Air Base in Afghanistan.⁴⁵ These types of information can aide terrorists in planning attacks and assessing weaknesses in military facilities. The Army Corps of Engineers asked the Associated Press to destroy the information above and added additional guidelines to their current policies relating to the Internet.⁴⁶

Army Intelligence officers believe that mapping Web sites such as Google Earth are responsible for mortar attacks on a British Military Base in Basra, Iraq.⁴⁷ Intelligence officers seized documents that contained the longitude and latitude of bases in Basra, and aerial photos downloaded from Google Earth with vulnerable sites listed on the back. Prior to Web sites such as Google Earth, terrorists had to be in the vicinity of the target in order to obtain this information.⁴⁸ This gave the military a greater chance of identifying security breaches and apprehending suspicious people.

The military has several directives to guide webmasters on information that should not be placed on the Internet. A Headquarters Department of the Army memorandum instructed all battalion commanders to perform an OPSEC review of their unit's Web sites.⁴⁹ The memorandum provided a checklist of information that was considered a violation of AR 530-1, the Army's operational security directive. The memorandum instructed commanders to remove the information and disseminate to soldiers violations of OPSEC. The checklist categorizes

⁴⁵ Associated Press, *Government Agencies Posting Sensitive, 'Need to Know' Material On-line*, FOX-NEWS, July 12, 2007, <http://www.foxnews.com/story//0,2933,289011,00.html>. (last visited Oct.12, 2007).

⁴⁶ The Army Corps of Engineers' policy for civilian contractors' states that blueprints and plans are not to be placed on the Internet for public or private use.

⁴⁷ Thomas Harding, *Terrorist use Google Earth to hit UK Troops* TELEGRAPH, January 13, 2007, <http://www.telegraph.co.uk/news/main/> (last visited Oct. 12, 2007).

⁴⁸ U.S. Department of the Army, Field Manual 3-19.30, Physical Security (January 8, 2001) [hereinafter FM 3-19.30].

⁴⁹ See Memorandum from the Director Information Operations, to Battalion level Commanders (6 August 2006), http://www.wsmr.army.mil/workforce/informationassurance/tasker_opsec_review_for_websites.pdf. (last visited Oct. 18, 2007).

categories of OPSEC violations into the personal information, technical data, administration, operations, plans and training, communication and logistics and maintenance. The logistical and maintenance guidance stated that mapping, imagery and special documentation is a violation of OPSEC and should not be placed on Department of Defense Web sites. Although mapping and imagery is a violation of OPSEC, the imagery of all military bases is available through Google Earth.⁵⁰

John Pike, the director of Globalsecurity.org, has stated that images on Google Earth are not a danger to national security because the images posted by Google Earth are not newly acquired images and the images are too outdated to pose a threat.⁵¹ Although the images on Google Earth are not newly acquired, Google Earth does simplify gaining information about military bases.

In analyzing the Google Earth Web site and comparing the information against mission essential vulnerable areas, physical security programs and operational security programs several violations occurred. Below is an image taken from Google Earth that clearly shows an airfield, UH-60 Blackhawk helicopters and a black and yellow 1st Cavalry Division patch.⁵² The airfield is a permanent infrastructure that most likely will be utilized by all aircraft that occupy Camp Taji, Iraq. An adversary could obtain the longitude and latitude of the airbase, the number and type of aircraft, and the location of aircraft maintenance facilities. Airfields are listed as mission essential vulnerable areas and are considered unclassified but sensitive that should be protected.⁵³

⁵⁰ U.S. Department of Energy, *supra* note 3.

⁵¹ Katie Hafner, *Government's Tremble at Google's Bird's Eye View*, NY TIMES, December 20, 2005 at A1.

⁵² The image was found by typing Taji, Iraq in the search bar on the Google Earth Web Site <http://google.earth.com> (last visited Oct. 18, 2007). The exact date of the image is unknown. The black and yellow patch was painted in 2004 by the 1st Cavalry Division. The author of this thesis was there when the patch was painted.

⁵³ 6 U.S.C § 482 (2004).

The information is unclassified based on the criteria in EO 12598. However, although information is unclassified does not mean it is not sensitive or considered a MEVA (mission essential vulnerable area).⁵⁴



Figure 2-1. Taji, Iraq

The image below clearly depicts air capabilities in Afghanistan. The image, similar to the airfield in Taji, illustrates the formation of aircraft, the location of aircraft and the types of aircraft available. Although the exact timeframe of picture is unknown, a lot of information about U.S. forces can be gathered.

⁵⁴ U.S. Department of Army, *supra* note 23.



Figure 2-2. Bagram Air Base, Afghanistan

A Google Earth search of Balad Airbase generated the image below. Imagery of the entire base includes an image of a UH-60 Blackhawk helicopter in flight over the airbase. The imagery depicts F-16 aircraft, Chinooks, and Blackhawk aircraft.⁵⁵ The image combined, with a Google search for textual material about Balad Airbase, provides information about base capabilities, approximate number of troops, the mission of the base, and placement of aircraft.⁵⁶ The number and types of aircraft can be estimated by scanning the imagery provided by Google Earth. Army regulations state this type of information is considered sensitive but unclassified.⁵⁷

⁵⁵ The image above depicts only UH-60 helicopters. In order to view additional aircraft scan throughout Balad Airbase.

⁵⁶ A Google Search for textual material using the words “Balad Airbase” provides information that Balad is the major HUB for the Airforce, a supply retransmission HUB and home to radar antennae.

⁵⁷ U.S. Department of Army, *supra* note 23.



Figure 2-3. Balad Airbase, Iraq

The image below is of a communication facility on Camp Victory in Iraq. AR 190-13 stated that communication facilities are considered mission essential vulnerable areas. The image depicts a satellite and several vehicles located on hill. Communication facilities are instrumental in proper dissemination of information over vast distance. If an adversary was able to interrupt communication that would severely disrupt the ability of the military to complete a mission. The image below Earth of a communication retransmission site at Camp Victory, Iraq was downloaded from Google.⁵⁸ The limited number of vehicles, combined with the satellite, would lead an adversary to reason that the base is a communications facility.

⁵⁸ The terrain in Baghdad and surrounding areas is mostly flat. A man-made lake was built for Saddam Hussein during his reign and the dirt used made one of the highest points in Baghdad. After the military occupied Baghdad the hill was named signal hill. The hill is a major signal retransmission center and is considered a vulnerable area necessary for the mission in Iraq.



Figure 2-4. Signal Hill, Baghdad Iraq

AR 190-13 stated that military motor pools are considered vulnerable areas essential to the Iraq mission. These areas are classified MEVA's, areas vulnerable to mission accomplishment, because they contain vital equipment that, if destroyed, would impact military missions. The smaller image above is that of the motor pool is of the 1st Cavalry Division Headquarters, which the author used to pinpoint the estimated time of the imagery.⁵⁹ The structure in the upper right corner is a memorial dedicated to the soldiers that were killed during Operation Iraqi Freedom II. By viewing the motor pool an adversary can determine types of equipment, amount of equipment and formation of equipment.

⁵⁹ Geographically the images are less than ½ mile apart.



Figure 2-5. Fort Hood, Texas

Conclusion

The U.S. military has gone to great lengths to limit access to mission essential information. They have put fences around the areas and placed additional guards at the gate. The Department of Defense recently stated that content on the Internet is a deterrent to information security.⁶⁰ Although Google Earth does not post images that are considered classified by EO 12958, it still provides enough information to aid in an attack from the enemy. Google Earth, particularly when combined with other publicly available information, can impact military operations.

The imagery of military bases both overseas and in the continental U.S. negates regulations meant to protect sensitive military information. A search of Fort Bragg, home of the

⁶⁰ U.S. Department of Energy, *supra* note 3.

Delta Force and Special Operations, provides the user with the exact location of Special Operations Command Headquarters with the building number. The Internet presents a significant challenge for military personnel. At the very least, it presumably would take enormous resources to monitor the information that is placed on the Internet and to determine how it could impact military operations, let alone respond by moving or camouflaging all equipment and information.

CHAPTER 3 REMOTE SENSING IMAGERY REGULATIONS

It is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind.¹

Introduction

Chapter 2 provided an analysis of U.S. Army regulations that govern the protection of information, operational security, and mission essential areas. The chapter compared the information in the army regulations to items that can be found on Internet sites such as Google Earth. Chapter 3 will discuss the current U.S. and U.N. regulations that cover remote sensing.

The Committee on the Peaceful uses of Outer Space (COPUOS) was started by the United Nations' General Assembly as an *ad hoc* committee in 1958 after the successful launch of Sputnik I by the Soviet Union.² In 1961 the General Assembly established COPUOS as a permanent committee under Resolution 1721. Resolution 1721 stated that space would fall under international law, and the continued advancements in space are to build economic and scientific developments. COPUOS was established to study and resolve legal problems that involve space.³ COPUOS' main functions are to ensure the peaceful use of outer space, encourage the use of outer space and review the legal issues involved with outer space, including remote sensing.⁴

¹NANDASIRI JASENTULIYANA, INTERNATIONAL SPACE LAW AND THE UNITED NATIONS, 36 (Kluwer Law International 1999). The launch of Sputnik one started the space race between the U.S. and the Soviet Union. *Id.*

² *Id.* Committee on the Peaceful uses of Outer Space (COPUOS) was originally an *ad hoc* committee. COPUOS has two subcommittees' Scientific and Technical subcommittee and Legal subcommittee. The subcommittees meet annually to review the questions set forth to the General Assembly that pertain to their specific areas. *Id.*

³ G.A. Res. 1721, U.N. GAOR, 16th Sess., Supp. No. 17 at 6, U.N. Doc. A/5100 (1962). Resolution 1721 stated that "International Law, including the Charter of the United Nations, applies to outer space and other celestial bodies and outer space and celestial bodies are free for exploration by all States in conformity with the international law are not subject to national appropriation." *Id.*

⁴ Jasentuliyana, *supra* note 1.

When COPUOS first convened, in May 1959, the Soviet Union, Czechoslovakia and Poland boycotted the meeting because they did not agree with the scope of responsibilities of COPUOS or the lack of veto power.⁵ The Soviet Union felt that without a veto over issues before COPOUS the United States and its allies, in the majority, would ignore the concerns of socialist nations. But after, Soviet Premier Nikita Khrushchev, Chief Director of the Soviet Union, publicly congratulated President John F. Kennedy on the successful orbiting of space by John Glenn in 1962. Soviet Premier Khrushchev proposed to President Kennedy that the two nations should combine their efforts in space.⁶ President Kennedy responded that the U.S. should collaborate with the Soviet Union in space which elated some political attitudes between the two nations.

The U.S.-Soviet agreement led to the establishment of COPUOS as a permanent committee. COPUOS meets annually to discuss issues pertaining to space and to review any new developments in space relating to space. If any member of the U.N. has a concern relating to space it is supposed to submit a draft proposal to the committee for consideration. The COPUOS legal sub-committee negotiates the legality and language of the draft proposal at the annual meeting. If the legal sub-committee deems necessary the draft is forwarded to the scientific sub-committee for further review. The draft is revised and reviewed, if the content can be agreed upon by the consensus⁷ of the Committee, “the General assembly adopts a resolution

⁵ Jasentuliyana, *supra* note 1. In the 1960’s the United States and Soviet Union were the leaders in space advancement.

⁶ Nikita Sergeyevich Khrushchev to John F. Kennedy, Feb. 21, 1962, as printed in U.S. Congress, Senate, Committee on Aeronautical and Space Sciences, *Documents on International Aspects of the Exploration and Use of Outer Space, 1954-1962*, 88th Cong., 1st sess., 1963, p. 232.

⁷ Consensus is “the acceptance of the discussed option to all its scopes, which implies a common feeling by those that chose it.” Consensus was used to create five treaties: 1) Treaty on Principles Governing Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (1967); 2) Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched in Outer Space (1968); 3) Convention on International Liability for Damage Caused by Space Objects (1972); 4) Convention on Registration

containing the text.”⁸ If the resolution becomes a treaty individual nations decide to sign or not. If the resolution does not become a treaty, then it is considered a “declaration of legal principles rather than a treaty, which are not legally binding.”⁹

Prior to the advances in space, nations had complete sovereignty over their land, sea and air.¹⁰ Remote sensing provides the means for a country to gather intelligence about another country without the country’s knowledge. Because no nation has sovereignty over space it is legal for a nation to gather information by remote sensing over another nation.¹¹

International Laws Governing Space

Remote sensing was discussed at COUPUS as early as 1968, but negotiations on regulating remote sensing did not begin until a draft proposal was submitted by Argentina in 1970. After 16 years of negotiations, COPUOS adopted the Principles Relating to Remote Sensing from Outer Space in 1986.¹² The major point of contention during negotiations was the interest of developing countries to have the authority to approve of the distribution of any imagery.¹³ The developed countries such as the United States wanted the freedom to collect and disseminate

of Objects Launched into Outer Space (1975); and 5) Agreement Governing the Activities of States and Moon and Other Celestial Bodies (1979). See Julian Hermida, *Legal Basis for a National Space Legislation* xvii KLUWER ACADEMIC PUBLISHERS (2004).

⁸ Jasentuliyana, *supra* note 1 at 27.

⁹ Jasentuliyana, *supra* note 1 at 27.

¹⁰ MERRIAM-WEBSTER COLLEGIATE DICTIONARY (11th ed.1993) defines sovereignty as the exclusive right to exercise supreme authority over a geographic region, group of people, or oneself. Page 265

¹¹ Article II of the Outer Space treaty reads, “Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”

¹² Jasentuliyana, *supra* note 1. The Principles are not binding as a treaty but as guidelines for the countries in the U.N. to follow.

¹³ A country is considered developing is when compared to other “lacks industrialization, infrastructure, developed agriculture, and developed natural resources, and suffers from a low per capita income as a result.” available at http://www.teachmefinance.com/Financial_Terms/underdeveloped_country.html. (last visited Oct. 3, 2007).

imagery without contacting the country the image was obtained from.¹⁴ Although the Principles were adopted by consensus of the nations' participants, the developing countries were not satisfied with the terms and requested the COUPUS to continue to look for alternatives that would protect the developing countries' uses of remote sensing.¹⁵

The Principles Relating to Remote Sensing of the Earth from Outer Space can be broken down into fifteen principles.¹⁶ Define key terms relating to remote sensing;

- Remote sensing should benefit all countries “with special consideration” for developing countries;
- Remote sensing falls under international law;
- Remote sensing should benefit all countries regardless of their scientific or technical capabilities;
- Remote sensing should be a “collaborative effort” between countries;
- Joint collection, storage, processing and interpreting centers;
- Countries who utilize remote sensing will provide technical assistance to other countries that are not technologically advanced;
- U.N. and countries within the U.N. will “promote international co-operation”;
- Countries should make information on remote sensing available to other nations, particularly underdeveloped nations;
- Remote sensing should protect the environment;
- Remote sensing should help protect mankind from “natural disasters”;
- Countries should have access to the imagery “at a reasonable cost”;
- Nations should consult with other nations referencing remote sensing;
- Information found utilizing remote sensing that “could be harmful” to the Earth’s environment “will be disclosed immediately”;
- Disputes involving remote sensing will be settled “through established procedures for the peaceful settlement.”¹⁷

¹⁴ Jasentuliyana , *supra* note 1 at 43.

¹⁵ Report to the Committee for the Peaceful uses of Outer space, U.N. Doc A/41/20 (June 26,1986). To date no further changes have been made to the Principles.

¹⁶ Principles Relating to Remote Sensing of the Earth from Outer Space, G.A. Res 41/65 at 115, U.N. Doc 53 (Dec. 3, 1986).

¹⁷ *Id.*

The Principles Relating to Remote Sensing of the Earth from Outer Space were not accepted as a treaty and therefore are not binding on all nations.¹⁸ However, several nations have incorporated them into their national remote sensing policy.¹⁹

As seen throughout the Principles Relating to Remote Sensing “special consideration” was given to developing countries. In the initial draft presented by Argentina to COPUOS, the Argentine officials stated that remote sensing would benefit all countries, especially those that “are not fully developed.” The draft emphasized the need to protect developing countries from being taken advantaged of by developed countries. The concern was that developed countries would have the technology to gather information by remote sensing and use that to “exploit the resources” of undeveloped countries and use information to their economic advantage.²⁰ The suggestion that remote sensing could be used to discover mineral resources in countries concerned undeveloped countries was seen as a significant economic threat by officials. This was greatly overstated and the information on natural resources gathered through remote sensing was of little benefit.²¹ In reality remote sensing was not a significant resource for identifying mineral resources.²² The principles stressed the need for developed countries to assist undeveloped countries in advancements in remote sensing and access to imagery obtained from remote sensing.

¹⁸ Jasentuliyana, *supra* note 1. In April 2006 Greece proposed that the Principles Relating to Remote Sensing of the Earth from Outer Space should be revised as a Treaty. To date the principles have not been revised.

¹⁹ The following countries have a policy governing remote sensing: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, France, Germany, Hong Kong, India, Iran, Israel, Italy, Japan, Malaysia, Nigeria, Poland, Russia, South Africa, South Korea, Spain, Thailand, Turkey, Ukraine, United Arab Emirates, United States and the United Kingdom. The U.S. is recognized as a leader in remote sensing and most nations have modeled their policy after The Land Remote Sensing Commercialization Act of 1992.

²⁰ Jasentuliyana, *supra* note 1, at 43.

²¹ Jasentuliyana, *supra* note 1.

²² Charles C. Okolie, *International Law of Satellite Remote Sensing and Outer Space*, 86 AMER JOUR OF INT L (1992) at 221.

Although several technological advances have been made, the guidelines governing remote sensing have not been updated since 1986. Several countries have identified the need to review the regulations but no evidence was found by the author of this thesis to determine if any substantial review has occurred.

The Principles Relating to Remote Sensing of the Earth from Outer Space are the only international guidelines that govern remote sensing although several treaties have provisions that could be applied to remote sensing. The Treaty on Principles Governing the Activities of States in the Exploration of Outer Space including the Moon and other Celestial Bodies (1967) stated space will fall under international law, free to access and the exploration of space will be done to benefit all nations.²³ Based on this treaty the use of space for remote sensing cannot be governed by any one nation.²⁴ The treaty declares that all nations have the right to use outer space without discrimination as long as it is done to “promote peace.” The most common theme in all regulations governing space and remote sensing is the general term that is not defined “peaceful” use. If a country uses satellite imagery from remote sensing to plan and execute an attack, as the U.S. did during the Gulf War, is that a peaceful use of space?

Another treaty, The Declaration on International Cooperation in the Exploration and the Use of Outer Space for the Benefit and in the Interests of all States, Taking into Particular Account the Needs of Developing Countries does not specifically discuss remote sensing but,

²³ Treaty on the Principles Governing the Activities of States in the Exploration and use of Outer Space including the Moon and other Celestial Body, January 27, 1967 18 U.S.T 2410, 610 U.N.T.S. 205, T.I.A.S No. 6347. The treaty contains seventeen articles regulating the exploration of outer space. [Known hereinafter as the Outer Space Treaty].

²⁴ Jasentuliyana, *supra* note 1.

similar to the Outer Space Treaty, does provide relevant guidelines.²⁵ The Declaration was brought before the General Assembly because developed countries feared that the technical gap between developed and undeveloped countries put undeveloped countries at a disadvantage with regards to remote sensing. The draft declaration in 1996 stated that space should be used to promote peace and that cooperation in space projects should be mandated by the General Assembly. The Declaration provides guidelines to promote the peaceful use of outer space in general and fosters the joint efforts of nations in space. The declaration provides guidance to ensure all nations are actively working together in the advancements in space.

United States Regulations on Remote Sensing

In the United States, President Dwight D. Eisenhower signed the National Aeronautics and Space Act in 1958 to govern U.S. activities in space.²⁶ The Space Act stated U.S. activities in space are to be for peaceful purposes to benefit “all nations.” In addition, the use of space will be regulated by a civilian agency. The Space Act of 1958 stated that in order for the U.S. to remain competitive in aeronautics and space technology developments in the field needed to continue.²⁷ This led to satellites being launched into space for reconnaissance. The first U.S. satellite used for remote sensing was launched in 1959. From 1959 to 1962, Corona satellites

²⁵ The Declaration on International Cooperation in the Exploration and the Use of Outer Space for the Benefit and in the Interests of all States, Taking into Particular Account the Needs of Developing Countries, December 12, 1996, U.N.G.A. Res. 51/122. [known hereinafter as the Declaration]

²⁶ The National Aeronautics and Space Act of 1958, 42 U.S.C. §§ 2457. [known hereinafter as the Space Act of 1958].

²⁷ *Id.* The Nation Aeronautics and Space Administration was created in October 1958 for national defense. The United States and the Soviet Union were the two focal points of the Cold War. The Cold War refers to the conflict between the U.S., Soviet Union and their allies. The Cold War lasted from the 40's to mid 90's. The Cold War involved competition in technology, military, economy, and industry. A direct result of the Cold War was space exploration creating the space race.

were launched as spy satellites for military surveillance.²⁸ The satellites were launched with small panoramic cameras that were later released and floated to the Earth on parachutes. The intelligence gathering satellite could produce a 7.5 meter high resolution image of Earth.

President John F. Kennedy placed space high on his presidential agenda. However, Kennedy was most famous for his vision to send a man to the moon and did not believe remote sensing was a priority. Remote sensing during President Kennedy's administration was performed by spy airplanes as opposed to satellites. He believed the nation that led space exploration would be the leading nation in technology, economy, and intelligence. He also was the first president to advocate for a joint space program with the Soviet Union.

President Lyndon Baines Johnson continued to follow President Kennedy's space policy after Kennedy's assassination. President Richard M. Nixon had six objectives for space: 1) to explore the moon, 2) explore planets, 3) reduce the cost of space operations, 4) extend man's ability to live and work in space, 5) hasten and expand the practical applications in space and, 6) encourage international cooperation in space.²⁹ Although President Nixon had objectives for space, none addressed remote sensing. However, there were no significant space policies put into effect during President Gerald Ford's term in office.

In Presidential Directive 37 signed in 1978, President Jimmy Carter outlined his National Space Policy. The policy stated that the U.S. will support the commercialization of space exploration in all areas except remote sensing.³⁰ The policy stated that remote sensing satellites

²⁸ Corona satellites were launched by the U.S. Air Force as a surveillance program. The imagery taken by Corona satellites was secret until 1992, when it was declassified.

²⁹ *President Richard Nixon Statement About the Future of the United States Space Program*, THE AMERICAN PRESIDENCY PROJECT, Mar. 7, 1970, <http://www.presidency.ucsb.edu/ws/index.php?pid=2903> (last visited at Oct. 18, 2007).

³⁰ Pres. Dir. 37, NATIONAL SPACE POLICY (May 11, 1978), <http://www.globalsecurity.org/space/library/policy/national/nsc-37.htm> (last visited Oct. 18, 2007)

necessitated more stringent government regulations including limits on resolution in order to protect national security.³¹

In 1984, the United States enacted the first policy on governing remote sensing which clarifies the use of the commercial satellite. President Ronald Reagan, in 1984, enacted the first policy that reversed the existing policies on remote sensing when he signed The Land Remote Sensing Commercialization Act. The Land Remote Sensing Commercialization Act (LANDSAT Act) provided guidance for the commercialization of remote sensing. The act stated there should be limited government involvement in remote sensing, that space should be privatized to enhance the ability of the U.S. to stay competitive with limited cost to the government.³² However, President Reagan had limited success in increasing the market for remote sensing. During his administration, the imagery from satellites was very expensive and there was little market for it.³³

In 1992, during George H. W. Bush's presidency, The LANDSAT Act was replaced by the Land Remote Sensing Act of 1992. The act said that remote sensing has not been a successful program in the U. S. and therefore the U.S. was in jeopardy of losing its national superiority.³⁴ The Remote Sensing Policy stated that national security depends on the United States' continued advancement in remote sensing technology. One of the major purposes of the Land Remote Sensing Act was to state that "full commercialization of the Landsat program cannot be achieved

³¹ *Id.*

³² Land Remote Sensing Commercialization Act, 15 U.S.C.4201 et. seq. (1984). The act is commonly referred to as the LANDSAT Act of 1984. The act authorized NOAA to seek commercial bids on remote sensing a move toward the privatization of remote sensing. *Id.* Privatization refers to the transfer a function from government (public) to business (private) sectors.

³³ The Gulf War was a leading component in the U.S. decision to commercialize remote sensing imagery. The U.S. spent millions of dollars to obtain imagery of Iraq and used that imagery to defeat Saddam's Army.

³⁴ *Id.*

within the foreseeable future, and thus should not serve as the near-term goal of national policy on land remote sensing.”³⁵ The policy stated that the most effective way for continued advancements in remote sensing was to keep the program unclassified and to foster “open skies” and “nondiscriminatory access.”³⁶

The Foreign Access to Remote Sensing Space Capabilities, commonly referred to as Presidential Decision Directive 23 adopted by President William Clinton, based on The Land Remote Sensing Act of 1992.³⁷ PDD 23 was the first remote sensing policy that stated of remote sensing imagery by U.S. satellites could be sold internationally. Due to this PDD 23 provided several provisions for national security as related to remote sensing. PDD 23 also stated the U.S. would have involvement in foreign remote sensing programs by establishing an export on technology involving remote sensing. PDD 23 outlines the criteria for obtaining a license for remote sensing satellites. The license issued is for a set amount of time and the criteria to obtain a license includes: 1) the licensee must maintain accurate records of satellite activity; 2) any encryption device used for remote sensing must be approved by U.S. government; 3) in times of increased risk to national security the licensee must limit distribution of imagery; and 4) the U.S. government has access to all data and equipment held by the licensee.³⁸

³⁵ Land Remote Sensing Commercialization Act, *supra* note 32. The bill was set to ensure that the U.S. remains the leader in land remote sensing.

³⁶ *Id.*

³⁷ U.S. POLICY ON FOREIGN ACCESS TO REMOTE SPACE SENSING CAPABILITIES, H.R. 6133, 103d Cong (1994). [Hereinafter known as PDD 23] PDD 23 was signed by President William Clinton. PDD 23 stated that in order to export remote sensing capabilities, the U.S. must have a government-to-government agreement, and constraints on resolution and data must be agreed upon. Licenses are issued to monitor actions relating to remote sensing. The license is issued by the National Oceanic and Atmospheric Administration (NOAA). The NOAA will periodically review the license to ensure the licensee is in compliance with regulations.

³⁸ *Id.*

PDD 23 provided safeguards for national security by providing provisions that monitor remote sensing, limit data collection and limit distribution to foreign nations.³⁹ PDD 23 was the first policy to identify shutter control, a clause stating that the government has the right in times of national security to interrupt satellites from retrieving imagery through remote sensing and can stop distribution of imagery.⁴⁰ In 1997, Congress enacted the National Defense Authorization Act which in part specified restrictions of collecting imagery of Israel, commonly called the Kyl-Bingman Amendment.⁴¹ The policy was put into effect after the Israeli government officials expressed concern that remote sensing would endanger their national security. The Kyl-Bingman Amendment stated that U.S. companies may not collect or disseminate imagery of Israel at a better resolution than available from other nations with remote sensing capabilities.⁴²

In 2003, a little more than a decade after the adoption of PDD 23, President George W. Bush authorized the U.S. Commercial Remote Sensing Policy, superseding PDD 23. The policy stated that several technological advancements and national security issues had prompted the need for revised policies for remote sensing. The policy goal of the presidential directive is to protect national security and foreign policy by continuing to advance technology in order to dominate the remote sensing industry. The policy stated that commercial remote sensing should

³⁹ See *Supra* 31.

⁴⁰ PDD 23, *supra* note 23. Although PDD 23 does not coin the term shutter control it discusses the U.S. government control over commercialized remote sensing activities.

⁴¹ National Defense Authorization Act for Fiscal Year 1997, 1745, Pub L. No. 104-201, HR. 3230, S. 1064 104th Cong., 2nd Sess (1996).[herein after known as Kyl-Bingman Amendment The National Defense Authorization Act includes but is not limited to base closures, funding for Iraq, military pay raises and military weapons. *Id.*

⁴² *Id.* Based on other countries laws the resolution could not be better than 2 meters. *Id.*

be utilized for military, intelligence, foreign policy, and homeland security.⁴³ The policy is set to ensure that U.S. commercial remote sensing providers 1) meet the needs of government agencies, 2) develop an equitable relationship between commercial remote sensing agencies and government agencies, and 3) ensure commercial remote sensing agencies are competitive with other nations advancing in commercial remote sensing.⁴⁴ The policy is a U.S. government commitment to support commercial companies such as DigitalGlobe in remote sensing.⁴⁵

In August 2006, President George W. Bush authorized a new U.S. National Space Policy.⁴⁶ As mentioned in many previous presidential directives the policy reiterates that advances in space should be used for “peaceful purposes.”⁴⁷ The Bush administration enacted the U.S. Commercial Remote Sensing Space Policy updating the commercialization of remote sensing policies set forth in PDD 23. The Commercial Remote Sensing Policy stated the U.S. would:

Compete successfully as a provider of remote sensing space capabilities for foreign governments and foreign commercial users, while ensuring appropriate measures are implemented to protect U.S. national security and foreign policy interests.⁴⁸ The appropriate measures to protect national security include but are not limited to the government’s right to restrict operations and to implement additional controls.⁴⁹

In 2006 President Bush amended his Space Policy to add additional safeguards for national security. The policy stated that developments in remote sensing are important to protecting

⁴³ U.S. Commercial Remote Sensing Policy (April 25, 2003), <http://www.globalsecurity.org/space/library/policy/national/nsc-37.htm> (last visited Oct. 2, 2007).

⁴⁴ *Id.*

⁴⁵ DigitalGlobe is an international leader in remote sensing. The 2001 launch of the Quickbird satellite provides commercial imagery at high resolution.

⁴⁶ All policies and directives since 1984 share similarities but address the issues involving the current climate.

⁴⁷ US National Space Policy (August 31, 2006), <http://www.globalsecurity.org/space/library/policy/national/ncs-37.htm> (last visited Oct. 15, 2007). The policy supersedes PDD/NCS-49.

⁴⁸ National Defense Authorization Act, *supra* note 41.

⁴⁹ National Defense Authorization Act, *supra* note 41.

national security. The unclassified section of the policy does not address remote sensing but does provide national security guidelines that can be used for remote sensing such as the:

“Establish and implement policies and procedures to protect sensitive information regarding the control, dissemination, and declassification of defense activities related to space.”⁵⁰

National security is one of the major considerations as policies continue to evolve for developing space programs and advancements in remote sensing. The goal of commercializing remote sensing was to lessen the cost to the government while simultaneously “advancing and protecting national security.”⁵¹ The most controversial clause in the remote sensing license agreement in PDD 23 is the “shutter control” clause, as will be more apparent in the next chapter.

Conclusion

Since the beginning of the space race, superiority in space has been the overall goal of the U.S. in part because of the Cold War. Every president since Eisenhower has encouraged the continued exploration of space. Although it has been higher on some administration’s agenda than others, the space race competition has been considered when developing national policy. As technology advancements increased the uses of remote sensing became less expensive and more easily applied. President George W. Bush’s National Space Policy stated, “Freedom of action in space is as important to the United States as air power and sea power.”⁵² The importance in space has changed from President Eisenhower’s Space Policy. Eisenhower, unlike

⁵⁰ US National Space Policy, *supra* 44 at 4.

⁵¹ Fact sheet: U.S. Commercial Remote Sensing Space Policy *available at* <http://www.whitehouse.gov/news/releases/2003/05/20030513-8.html>. (last visited October 3, 2007).

⁵² See *Supra* 41.

Kennedy, did not need the prestige of being first in space exploration but favored reconnaissance satellites in space.

Both U.N. and domestic principles and regulations state that space should be used for peaceful purposes that benefit all nations. The need to protect national security is stated throughout the U.N. and domestic policies but there are few guidelines how to implement this. The U.N. regulations stated that all issues pertaining to space or disputes involved with space--including remote sensing--should be brought before Committee on the Peaceful uses of Outer Space (COPUOS). The current U.N. principles on remote sensing are not binding and offer little protect to national security of any country. The U.S. policies aim at stricter policies on remote sensing but cannot regulate international satellites. The advances in technology, such as satellites, GPS and, Internet, and the easy access to remote sensing imagery on Web sites such as Google Earth, suggest the need for updated international regulations.

CHAPTER 4 FIRST AMENDMENT AND REMOTE SENSING

That the freedom of the press is one of the great bulwarks of liberty, and can never be restrained but by despotic governments.¹

Introduction

The Bill of Rights was enacted on December 15, 1791, in order to limit the power of the government and protect individual rights.² Although the Bill of Rights was enacted to protect individual rights throughout history the government has enacted laws limiting civil liberties to protect national security. One of the jobs of the judiciary branch is to decide if the laws enacted are constitutional, and a few laws limiting speech have been declared unconstitutional. The Sedition Act of 1798 was one of the first laws enacted that caused controversy. The Sedition Act of 1798 signed by President John Adams stated it was illegal to publish “false, scandalous, and malicious writing.”³ The Anti-Federalists claimed that the Sedition Act of 1798 was a violation of the Bill of Rights. The Sedition Act of 1798 expired in 1801 and President Thomas Jefferson reversed all convictions under the Sedition Act of 1798.

The Sedition Act of 1798 is not the only law that was enacted to protect national security during times of war or conflict.⁴ It is most common in times of war for laws to be enacted that

¹ Virginia Declaration of Rights of 1776, § 12, in *Federal and State Constitutions* 7:3812, 3814 (Francis N. Thorpe ed. 1909).

² U.S. BILL OF RIGHTS, available at www.archives.gov/national-archives-experience/charters/bill_of_rights.html. (last visited at Oct. 17, 2006). Several scholars, lawyers, and judges have attempted to define what the founding fathers meant when writing and adopting the First Amendment meant. Some jurists such as Justice Hugo Black suggest that there the First Amendment should be absolute, stating that there can be no restrictions on the individual rights of free speech, press and to peacefully assemble.

³The Sedition Act was challenged by many Anti-Federalists. The Sedition Act of 1798 was set to expire in 1801 after President Adams term. GEOFFREY STONE, *PERILOUS TIMES: FREE SPEECH in WARTIME: FROM THE SEDITION ACT OF 1798 TO THE WAR ON TERROR* (W.W. Norton, 2005).

⁴ The Espionage Act is codified as 18 U.S.C. § 2388 (1917). The Espionage Act stated it was a crime to disrupt the success of the armed forces or aide the enemy. The Sedition Act of 1918 was an amendment to the Espionage Act of 1917 and stated a person could be convicted "disloyal, profane, scurrilous, or abusive language". The Smith Act

lean more toward national security than individual rights.⁵ Because of the continued threat to national security a National Security Act in 1947 was enacted, The National Security Act established the U.S. National Security Council and reorganized the National Military Establishment (NME) creating the Department of Defense.⁶ The National Security Act outlines programs that serve to protect national security.⁷ Throughout history a proper balance between the governments' role to protect national security and the people's rights under the constitution have been continually tested.

It is difficult to argue that our founding fathers could have imagined how far technology would advance since the 1790s. Lee Bollinger, noted First Amendment scholar, stated that technology creates new battles for the First Amendment.⁸ Technological advances also increase new challenges for national security. The balance of national security and individual rights are not always easily struck. As stated throughout this thesis, the emergence of satellite imagery has invoked discussion of which regulations would be the most appropriate. The inherent desire of the press to have the right to report on issues that affect citizens and the government's desire to maintain information superiority on issues that could affect national security has caused friction. The technological advances of satellite remote sensing have raised the question of whether the First Amendment restricts the ability government to control the distribution of the satellite images.

of 1940, 18 U.S.C § 2385. The Smith Act stated a person could be convicted for advocating the overthrow of the U.S. government.

⁵ GEOFFREY STONE, *PERILOUS TIMES: FREE SPEECH in WARTIME: FROM THE SEDITION ACT OF 1798 TO THE WAR ON TERROR* (W.W. Norton, 2005).

⁶ National Security Act of 1947, Pub L. No. 235, § 80, 61 Stat. 496 (amended 1949).

⁷ *Id.*

⁸ Lee C. Bollinger, *Freedom of the Press and Public Access*, MICH L. REV. 1, 24 (1976).

The technological advancements such as the Internet and satellite imagery in the information age have challenged national security protections. It is difficult to monitor such a vast medium that has so many users from several countries. Not only do journalists use information from the Internet; but so do those who want to harm the U.S. and its citizens. Joanne Gabrynowicz, a remote sensing expert, stated that citizens are part of the “open information society” and the government must weigh the fears the information could cause heavily before closing or limiting an open society.⁹

In chapter two comparative analyses indicated that information on Web sites such as Google Earth does provide information the military has deemed sensitive to military operations. These images are available to anyone who has a computer and an internet connection. Google Earth is not regulated by the Land Remote Sensing Act because it doesn't own the satellites that provide the imagery and therefore it might be difficult to prosecute the company for distributing the images during what is being called a War on Terror.¹⁰ If the imagery on Google Earth is sensitive to military operations should it be removed from the Web site and deny access to the public access? There is a significant amount of research on evaluating First Amendment concerns when restricting information based on national security. This chapter will limit the scope of the legal analysis to the possible impact of the First Amendment rights on the regulation of satellite imagery of military areas, specifically on the “shutter control” provisions in The Land Remote Sensing Policy Act.

⁹ Missy Fredrick, *Internet Availability of Imagery Worries Some World Leaders* Space News, Nov. 7, 2005 http://www.space.com/spacenews/archive05/Google_110705.html (last visited Oct. 18, 2007).

¹⁰ The images are purchased through commercial companies that are in the U.S. regulated by the Land Remote Sensing Act.

The Press Right to Access

The media has consistently tried to gain access to military operations during times of war but has the press has not had free reign to go or report on the military operations. For example, the press and public have been kept from military installations during World War I, II, Vietnam, Korea, Grenada and the Persian Gulf.¹¹ During Operation Iraqi Freedom, the military in an unprecedented event embedded over 600 journalists to accompany troops, but the military set forth strict guidelines for the embedded journalists.¹²

In order to determine if the First Amendment applies to accessing sensitive military areas on Google Earth the right of access should be examined. In other words, is there a constitutional right of access by journalists and/or the public to images of military bases on Google Earth?

The first suggestion that a constitutional right of access may not be in order is that most U.S. military bases provide only limited access of journalist to both ground and air spaces. For example, a U.S. district court ruled in 1993, in the *JB Pictures, Inc v. Department of Defense*, that journalists do not have a First Amendment right to access Dover Air Force Base. The court in that case said the First Amendment does not give a “per se right of access to government property.”¹³ The U.S. Circuit Court of Appeals for the District of Columbia upheld the lower

¹¹ The purpose of this thesis is not to evaluate the relationship between the media and military but to determine if it is constitutional to regulate access or distribution of military operations and bases on websites such as Google Earth. The Presidents during each of the wars mentioned above had different policies for access to military operations during war. President Reagan stated it was at the discretion of military leaders to provide or deny access to the media during the Grenada invasion. President George H. Bush had restraints on the press and generally had press pools or 5 o'clock follies. All press reports had to be reviewed before they could be released. During World War II reporters had free access to the battlefield but their reports had to be reviewed by officials before they could be released. The Department of the Army. *Public Affairs Guidance on Embedded Media*. Washington D.C., 2003.

¹² The Department of the Army. *Public Affairs Guidance on Embedded Media*. Washington D.C., 2003. The military set forth guidelines that stated it could issue embargos on information collected from embedded journalists but journalists also could operate independently of the imbedding process and therefore not be subject to restrictions. *Id.*

¹³ *JB Pictures, Inc v. Department of Defense*, 21 M.L.R. 1564 (1993). The case involved media groups who were denied access to Dover Air Force Base. The air base served as a point for the bodies of soldiers killed in action

court's opinion, ruling constitutional closure of Dover Air Base to the media.¹⁴ The *JB Pictures, Inc* relied on several U.S. Supreme Court cases including *Pell v. Procunier*, *Saxbe v. Washington Post and*, *Houchins v. KQED*.

Pell v. Procunier, Saxbe v. Washington Post and, Houchins v. KQED

In *Pell v. Procunier, Saxbe v. Washington Post and, Houchins v. KQED* the U.S. Supreme Court ruled the press does not have special access to prisons. In *Pell*, the press and inmates of the California State Prison system brought a suit against the Department of Corrections to repeal a ban on press' ability to choose which inmates to interview face to face. Rule 415.071 of the California Department of Corrections manual stated the media interviews with certain specifically named inmates would not be permitted. The provision was challenged as unconstitutional under the First Amendment by press and inmates.

A 5-4 majority of the U.S. Supreme Court, in *Pell v. Procunier*, stated that the press does not have an automatic constitutional right to access to prisons.¹⁵ In *Saxbe v. Washington Post*, the Court ruled "newsmen have no constitutional right of access to prisons or their inmates beyond that afforded the general public."¹⁶ In *Saxbe*, the Court stated that the First Amendment rights were not abridged by banning press from access to inmates in prison. *Houchins v. KQED*, the Supreme Court said, in a 4-3 decision, that the "First Amendment does not mandate the right

during several wars including the Gulf War. The government restricted access to the press and that prompted a law suit citing First Amendment rights. In the court's reasoning, the court relied on at least in part the argument that the media access to the White House was limited, and that was not considered a violation of First Amendment Rights.

¹⁴ *JB Pictures, Inc v. Department of Defense*, 86 F. 3d 236 (1996)

¹⁵ *Pell v. Procunier*, 417 U.S. 817 94 S. CT 2800 (1974).

¹⁶ *Saxbe v. Washington Post*, 417 U.S. 843 (1974). The press stated that Policy Statement 12201A was unconstitutional because it violated the First Amendment rights of the press and prisoners. The press wanted to interview prisoners in federal prisons in Pennsylvania and Connecticut.

of access” to county jails. ¹⁷ The Supreme Court opinion stated the press as an institution does not necessarily have a right of access to government institutions in order to gather news.

Military bases, like prisons, normally provide only limited access. If the press does not have a right of constitutional access to prisons then the same reasoning also may apply to military bases. The district court decision in *JB Pictures* said just that. The military, like prison staffs, would find it difficult to protect the facilities and critical information without the restrictions on both the press and the public. If press can be constitutionally restrained from access to bases, to protect military security, the same logic might also apply to access to pictures of the base available through remote sensing. Although no court has directly ruled whether the press in the United States has access to the images acquired by remote sensing, court precedent clearly establishes that the government can frequently ground the rights of access to the press on the very limited access rights of the public to secure institutions. Under that court precedent, the military may well have the right to determine restrictions on access to the images disseminated on the Internet by Google Earth or any satellite licensee providing images to Google Earth. The “shutter control” provision in the Land Remote Sensing Policy Act is an example of increased law. The provisions said that the government has the right to turn off remote sensing satellites, restrict the sale of images obtained from Google Earth, and lower resolution of imagery obtained by remote sensing in times of an increased threat national security.¹⁸ Although the courts have not directly ruled in cases involving remotes sensing imagery several past cases appear to apply.

¹⁷ *Houchins v. KQED*, 438 U.S. 1 (1978) *In Houchins v. KQED* the press wanted access to a county jail after an inmate had committed suicide. A psychologist had leaked the conditions in the jail may have been a factor in the prisoners suicide. The press was allowed a tour of the jail but they were restricted from certain areas.

¹⁸ The Commercial Land Remote Sensing Act 15 U.S.C § 5601 (1992).

The Freedom of Information Act

Although the U.S. Supreme Court has ruled that the First Amendment does not guarantee a right of access to government controlled property, Congress has adopted legislation that provides access to massive amounts of government information. The Freedom of Information Act (FOIA) was enacted as an instrument used to provide citizens with “access to the government.”¹⁹ All information is not available for release under the FOIA. The FOIA contains nine exemptions to protect information from public release.²⁰ To protect national security Exemption One protects information from being released if the information:

specifically authorized under criteria established by an Executive order to be kept secret in the interest of national defense or foreign policy and are in fact properly classified pursuant to such Executive Order.²¹

In order for information to be exempt under Exemption One of the FOIA, the government must prove the information is classified and it has the “potential” to cause harm to national security.²² Because it is unlikely that the Constitution would require access to military information the question is whether any statute requires nondisclosure of remote sensing. Remote Sensing could be protected from disclosure under the classification order of the president under Exemption One.

However, Remote Sensing is more directly protected under FOI Exemption Three. Exemption Three, often called the “Catch-all Exemption,” provides exemptions authorized by

¹⁹ Letter from the Coalition of Journalist for and Open Government, to House and Senate Conference Committee (Sept. 10, 2004) available at http://www.cjog.net/protest_satellite_images_and_foia.html (last visited October 18, 2007)

²⁰The nine exemptions are for national security, internal agency rules, information exempted by other statutes, business information, inter- and intra- agency memorandum, personal privacy, law enforcement, records of financial institutions and oil well data. The Freedom of Information is codified 5 U.S.C. 552 (b) (2003). After evaluating all nine exemptions commercial remote sensing data falls under exemption one.

²¹ The Freedom of Information is codified 5 U.S.C. 552 (b) (2003).

²² *Id.*

statues outside the FOIA. In 2005, in order to add greater protection to national security in times of conflict the, Department of Defense requested additional exemption protection from commercial land remote sensing beyond the Remote Sensing Act. In the National Defense Authorization Act for Fiscal Year 2005, Congress specifically added additional provisions that stated:

The requirements to make information available under section 552 of title 5, United States Code, shall not apply to land remote sensing information.²³

Under Exemption Three of the FOIA states that “FOIA does not apply to matters that are specifically exempted from disclosure by statute.”²⁴ So even if imagery on Google Earth cannot be classified under Exemption One, it is still exempt under FOIA Exemption Three.

U.S. v. Reynolds

In addition, the U.S. government has a way of controlling images provided by private corporations not subject to U.S. law or foreign governments. Prior to the FOIA, the U.S. Supreme Court in *U.S v. Reynolds* stated the government can withhold information considered privileged because of national security implications. In *Reynolds*, a military aircraft had crashed, killing civilian passengers. The widows of the deceased wanted a copy of the accident investigation report under the Federal Rules of Civil Procedures rule 34.²⁵ Rule 34 stated that a person can request a government agency to produce documents in the discovery process in preparation for a trial. The Secretary of the Air Force stated the information requested under Rule 34 in *Reynolds* was privileged. The Staff Judge Advocate refused to provide the

²³ National Defense Authorization Act, H.R. 1812, 108th Cong. (2004).

²⁴ HARRY A. HAMMITT, DAVID L. SOBEL and, MARK S. ZAID, 67 LITIGATION UNDER the FEDERAL OPEN GOVERNMENT LAWS (Epic,2002).

²⁵ U.S. v. Reynolds. 345 U.S. 1 (1953).

information contending it could not be released without causing serious harm to national security, an argument the Supreme Court accepted in recognizing State Secrets Privilege.²⁶ The States Secrets Privilege, which can be triggered solely on a government affidavit that disclosure of the information could potentially harm national security, was invoked over 23 times from 2001-2005 alone.²⁷ Hence, during a legal proceeding, where a non-government party is seeking information about remote sensing, the government may well be able to refuse disclose the information under the State Secrets privilege.

If the Courts have so far refused to grant unlimited press access to secure government institutions the ability of the government to prevent the press or Google from publishing information publicly available is far less clear. The Court used a series of tests to determine if the restriction of national security on information is constitutional. However, the fact that government agencies are protected from disclosing remote sensing data does not prohibit private firms such as Google from releasing maps without a court order.

Prior Restraint

If the Courts have so far refused to grant unlimited press access to secure government institutions the ability of the government to prevent the press or Google Earth from publishing information publicly available is far less clear. If the courts were to rely on the precedent of *New York Times v. U.S.*, the government might not successfully use “shutter control” to restrict the distribution remote sensing imagery without meeting a much stronger burden of proof than necessary in the access cases. However, in *Near v. Minnesota*, in 1931, the Supreme Court

²⁶ *Id.* State Secret Privilege refers to the government asking the court to exclude information based solely on an affidavit. The government affidavit states the information will disclose information that could potentially harm national security.

²⁷ Carrie Newton Lyons , *The State Secrets Privilege: Expanding Its Scope Through Government Misuse*, 11 Lewis & Clark L. Rev. 1(2007).

demonstrated that it would be sensitive to national security arguments in prior restraint cases, cases involving the government's attempts to stop the publication of information that it did not directly control.²⁸

Near v. Minnesota

Jay M. Near and Howard Guilford published the *Saturday Evening Press* in Minneapolis 1927. The *Saturday Evening Press* ran articles accusing city officials of not properly dealing with crime and Jewish mobsters,²⁹ including such language as

there have been too many men in this city and especially those in official life, who have been taking orders and suggestions from Jew gangsters, therefore we have Jew Gangsters, practically ruling Minneapolis.³⁰

Minnesota had a law known as the Public Nuisance Law of 1925 which gave the state authority to control "scandalous and libelous" newspapers.³¹ County Attorney Floyd Olson stated the *Saturday Evening Press* violated the Public Nuisance Law and shut the press down. The Supreme Court ruled in a 5-4 decision that this was a violation of the First Amendment.³² Justice Charles Evans Hughes wrote that the Minnesota punishment of *The Saturday Evening Press* was unconstitutional prior restraint even though the paper had already published the offensive language. Justice Hughes said stopping the newspaper from printing was precisely

²⁸ *Id.* State Secrets Privilege refers to the government asking the court to exclude information based solely on an affidavit. The government affidavit states the information will disclose information that could harm national security.

²⁹ *Near v. Minnesota* 283 U.S. 697 (1931).

³⁰ Jay Near, *THE SAT. EVENING PRESS*, November 19, 1927.

³¹ *Near v. Minnesota*, *supra* note 3, Friendly, *Minnesota Rag*.

³² *Near v. Minnesota*, *supra* note 31.

what the authors of the Bill of Rights meant to protect. However, Hughes said in dicta that there were times that prior restraint might be constitutionally acceptable.³³ He stated:

When a nation is at war many things that might be said in time of peace are such a hindrance to its error that their utterance will not be endured so long as men fight and that no Court could regard them as protected by any constitutional right. No one would question but that a government might prevent actual obstruction to its recruiting service or the publication of the sailing dates of transports or the number and location of troops.³⁴

In 2007, *Near v. Minnesota*, a decision that appeared to recognize the government's right to protect national security, is still the most important precedent for prior restraint. And, until the arrival of commercial satellites, protecting the movement of troops and machinery was a comparatively easy task. But the government's burden of proof in court has possibly become more complicated even as the technology has added to the complexity of the law. In the 1930s, after *Near*, the Supreme Court started the process of developing a First Amendment test that may make it harder than it appeared in *Near* to restrain the media, and Google, from distributing stories and images in their possession.³⁵ Over the years, a "strict scrutiny test" has emerged from the U.S. Supreme Court when control of media content was at stake. Ordinarily the Court expected the government to prove a compelling governmental need that would limit the government's ability to restrict speech³⁶ In the opinion of the Court in the prior restraint case *NY Times v. U.S.* the Court went into less detail.

New York Times v. U.S.

The story of, *New York Times v. U.S.*, more commonly known as the Pentagon Papers case, began with the publication by the *New York Times* and the *Washington Post* of articles

³³ *Near v. Minnesota*, *supra* note 31.

³⁴ *Near v. Minnesota*, *supra* note 31.

³⁵ MATTHEW D. BUNKER, *JUSTICE AND THE MEDIA* (Lawrence Erlbaum Associates: New Jersey, 1997).

³⁶ *See U.S. v. Carolene Products* 304 U.S. 144 (1938).

reporting a government study of the Vietnam War.³⁷ The report was a classified examination of the decision making process for Vietnam. After the *New York Times* published the first article, U.S. Attorney General John Mitchell requested that the paper publish no more about the study. Because *NY Times* stated it fully intended to continue to print the articles,³⁸ the government petitioned the Court for an injunction to stop publication, and a temporary restraining order was granted by lower court. On appeal, the Supreme Court ruled in a 6-3 opinion that the government carried a very heavy burden of proof before it could stop the publication of a story, even over national security matters.³⁹ The brief opinion of the court, similar to the opinion in *Near v. Minnesota*, said that prior restraint can be used in some instances to protect national security.⁴⁰ However, because every single justice in the case wrote his own opinion, it was difficult to determine precisely what the government would have to prove to stop a publication in the national security interest. Soon, lower courts would have to determine just that. The case *U.S. v. Progressive* is particularly relevant to this paper because it dealt with an attempted prior restraint on materials available from public sources.

U.S. v. Progressive

The *Progressive* case originated in 1979 after the federal government tried to stop Howard Morland from publishing in *Progressive* magazine an article about the making of an H-Bomb.⁴¹ The magazine argued the material for the articles was available publicly and Morland had simply compiled the information. Morland stated that he found the information for the

³⁷ The study was published in the “History of the United States Decision Making Process on Vietnam Policy.” Need citation material.

³⁸ *New York Times Co v. U.S.*, 403 U.S, 713 (1971).

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *U.S. v. Progressive* 467 F. Supp 990 (1979).

article from the Department of Energy, encyclopedias and Physics textbooks that are publicly available. The government stated that some parts of the article contained expert analysis of nuclear weapons and should not be published to protect national security. U.S. District Court Judge Robert Warren found in favor of the government, and *Progressive* magazine was enjoined from publishing the article.⁴² Judge Warren stated the article could be stopped because publishing did not add to public debate but could aid other nations in advancing their nuclear programs. He stated that the government met the heavy burden in the case of providing that the article could result in an immediate and irreversible harm to the nation's national security, a First Amendment test that he would be acceptable to a majority of the Supreme Court justices after reading their opinions in *New York Times v. U.S.*⁴³ The *Progressive* magazine had started its appeal when the information in the article was published from another source. The government withdrew its injunction.

In the case of remote sensing imagery, even if the government could shut down Google Earth, the same information is available for purpose from Russia, France, Canada and other countries with similar equipment. Therefore, it might be hard to argue that Google Earth would create an immediate and irreversible harm to distributing maps that others in the world, including potential enemies, have access to anyway. Unless a U.N. policy can be adapted to regulate commercial remote sensing any decisions by the U.S. courts to control domestically owned satellites would be moot.

⁴² *Id.*

⁴³ *U.S. v. Progressive*, *supra* note 41.

Punishment after the Fact

The tension between national security and the First Amendment has been a continuous battle since the Sedition Act of 1798. A few jurists and scholars have stated that First Amendment protections are absolute. The late Justice Hugo Black stated “there absolutes in our Bill of Rights, and that they were put there on purpose by men who knew what the words meant, and meant the prohibitions to be absolute.”⁴⁴ In Justice Black’s opinion there is no reason a person’s rights should be balanced. Despite Justice Black’s opinion, several laws have been enacted in an attempt to balance national security and the First Amendment. During times of war the courts often take a more sympathetic view toward the needs of national security than is otherwise often the case.

Schenck v. United States

In 1919, Justice Oliver Wendell Holmes stated in the court opinion for *Schenck v. United States* that "when a nation is at war many things that might be said in time of peace are such a hindrance to its effort that their utterance will not be endured so long as men fight, and that no court could regard them as protected by any constitutional right."⁴⁵ In the case at hand, Charles Schenck, a member of the Socialist party during World War I, sent a pamphlet to men telling them to fight the draft. Schenck was arrested and convicted under the Espionage Act of 1917 for conspiracy to “obstruct recruitment.”⁴⁶ The Espionage Act stated it was a crime to “interfere

⁴⁴ Black, Hugo, *The Bill of Rights*, 35 N.Y. L. Rev. 865-881 (1960).

⁴⁵ *Schenck v. United States*, 249 U.S. 47 (1919).

⁴⁶ *Id.*

with the operation or success of the armed forces.”⁴⁷ The *Schenck* opinion is most famous for Clear and Present Danger test first explained in the majority opinion by Holmes, who said

The question in every case is whether the words used are used in such circumstances and are of such a nature as to create a clear and present danger that they will bring about the substantive evils that Congress has a right to prevent.⁴⁸

Dennis v. United States

For the next 45 years following the *Schenck* case, the clear and present danger test see above became the standard the courts relied upon when weighing national security and the First Amendment issues dealing with speech.⁴⁹ In 1951, in *Dennis v. U.S.*, the Supreme Court upheld the conviction of eleven communist members for violating the Smith Act using Judge Learned Hand’s adaptation of the standard

Eugene Dennis and ten additional members of the Communist Party were indicted of violating the Smith Act of 1940, which made it unlawful for a person to advocate the overthrow of the government.⁵⁰ Dennis and others contended his prosecution under the Smith Act was a violation of this First Amendment rights to free speech. Dennis and the other members of the Communist party generated pamphlets that were pro-Communist party and distributed them. The Supreme Court ruled in a 6-2 decision that a prosecution for being a member of a group advocating the overthrow the government was constitutional under the First Amendment.⁵¹

⁴⁷ Espionage Act, *supra* note 4.

⁴⁸ *Schenck v. United States*, *supra* note 47.

⁴⁹ *Schenck v. United States*, *supra* note 28.

⁵⁰ *Dennis v. U.S.* 341 U.S. 494. The case involved members of the communist party advocating the overthrow of the government. The Smith Act stated it was unlawful to “knowingly or willfully advocate, abet, advise, or teach the duty, necessity, desirability, or propriety of overthrowing or destroying any government in the United States by force or violence, or by the assassination of any officer of any such government” The Smith Act 1940, 18 U.S.C § 2385.

⁵¹ *Dennis v. U.S.*, *supra* note 53.

Using Judge Hand's test to balance the interest of civil rights and national security., the Supreme Court said the issue was whether "the gravity of evil" of a speech, discounted by its improbability. The *Dennis v. U.S.* opinion stated Congress has a right to protect the U.S. and therefore the Smith Act is not a unconstitutional as applied in the case.⁵²

Although the *Schenck* and *Dennis* cases illustrate the leeway the U.S. Supreme Court often gives the government during times when the nation's national security is perceived to be at risk, the clear and present danger test has actually itself been replaced since.

Brandenburg v. Ohio

Brandenburg v. Ohio is not directly pertinent to remote sensing because it deals with the speech inciting unlawful acts. However, in the 1961 U.S. Supreme Court used the case to replace the clear and present danger test⁵³ The *Brandenburg* test is a three prong test that states a person must show "intent, imminence and likelihood." The speaker must "intend" to cause harm, the reaction to the speech must be "imminent," and "likely" to cause harm. The case began after Clarence Brandenburg, a Klu Klux Klan leader, shouted racial epithets at a Klan rally and suggested "the president, Congress and the Supreme Court" were suppressing the white race. Brandeburg said members of the audience should march on Washington. Brandenburg was arrested and convicted under the Ohio Criminal Syndicalism Statue, which made it illegal to "advocate" violence that would disrupt the economy or the political system. The Supreme Court overturned Brandenburg's conviction because his actions did not present a clear "intent" to cause a "likely" or "imminent" danger.

⁵² *Dennis v. U.S.*, *supra* note 53.

⁵³ *Brandenburg v. Ohio* 395 U.S. 444 (1969).

Morison v. U.S.

While Brandenburg did not represent a precedent that could likely be used to govern the distribution of information gathered by remote sensing satellite, *Morison v. U.S.* did. One of the most recent cases involving the punishment of speech after the fact involved the selling pictures to a magazine published in England. Samuel Morison was convicted in 1988 under the Espionage Act of 1917 for selling imagery marked secret. The United States said that under the Espionage Act a person can not sell or give information to another that could cause harm to national security.⁵⁴ The U.S. Court of Appeals of the Fourth district stated the Espionage Act was not “constitutionally vague” and convicted Morrison. This case illustrates how the government prosecuted for dissemination of imagery that could potentially cause harm to national security.

Conclusion

The courts have not always found it easy to balance national security and the First Amendment. Congress and the Courts have worked hard to draw lines that allow both adequate security protection and adequate disclosure and publication of government-held information. The continued advances in technology, such as satellite imagery provide anyone with maps of military bases has made even more difficult to maximize both freedom of protection and national security during a time of terrorist attacks. When commercial land remote sensing imagery is made available by private companies all over the world a strategy to protect military-sensitive data is difficult to find. Under the current regulations the U.S. has authorization to protect information obtained in the U.S., but has little or no control over the land remote sensing data

⁵⁴ *Morison v. U.S.* 486 U.S. 1306 (1988).

collected by other nations. The United States government can most probably refuse to make information it controls available to commercial mapping companies. However, *U.S. v. Progressive* demonstrates that the government may have very little practical control of national security information that can be accessed from a number of different locations. The only recourse the government might have would be to punish the publication of a U.S. company only and only after the publication.

CHAPTER 5 CONCLUSION

Introduction

The complexity of weighing national security and individual rights has been present in the U.S. since the enactment of the Bill of Rights. Geoffrey Stone, professor of law at the University of Chicago, has stated that the U.S. government has a history of stifling speech during times of war and conflict because of national security.¹ In Professor Stone's historical analysis of the federal government's restrictions on speech during war he claims that history has proven the government will often misuse its power in the name of national security.²

The Alien and Sedition Act of 1798 was one of the first laws punishing speech to be adopted during a time of international crisis, but each war or conflict has involved some kind of government restriction on free speech and press.³ However, changes in technology make it increasingly difficult for the government to manage information in times of increased security threats.⁴ The Internet's supply of information all over the world presents the latest challenges.

In chapter 1 of this thesis three research questions were posed. First, do the advances in technology associated with satellite imagery and the Internet allow release of information to the public that the military has deemed potentially disruptive to military operations? Second, do current regulations by the United Nations coincide with the United States military's safeguards for protection? Third, do the United States remote sensing regulations such as "shutter control" meet constitutional muster under the free speech and free press clause of the First Amendment?

¹ GEOFFREY STONE, *PERILOUS TIMES: FREE SPEECH in WARTIME: FROM THE SEDITION ACT OF 1798 TO THE WAR ON TERROR* (W.W. Norton, 2005).

² *Id.*

³ *Id.*

⁴ The founding fathers clearly could not have expected the advances in space technology.

Chapter 2 outlined what information military doctrine stated was regarded as sensitive, or potentially disruptive to operations. Based on Army Regulation (AR) 380-5 information in the Army is classified based on the criteria in section 1.5 of Executive Order 12958.⁵ The criteria do not include maps of military bases unless the map could be classified as part of a military operation. AR 530-1 spells out that sensitive information needs “special protection from disclosure that could cause compromise or threat to our national security, an Army organization, activity, family member, Department of the Army (DA) civilian, or DOD contractor.” An example of material considered by military officials to be sensitive, although not classified, is a picture of a unit’s motor pool, a picture readily available through the Internet. This research demonstrated that Web sites such as Google Earth provide sensitive information that could be used to harm military operations.

Information found on Google Earth is one to three years old but still provides sensitive information. In another example, an image from Google Earth of an airfield in Iraq could be used to determine how equipment is stored, types and estimated amount of equipment, and maintenance facilities. In fact, the recent attacks of British bases in Basra are prime examples of the enemy utilizing public information to affect military missions.⁶ Although the information was one to three years old it was used to plan and execute attacks on British bases in Basra. The British government petitioned Google Earth to remove the images and they complied. To date,

⁵ The seven criteria in section 1.5 of EO 12,958 are military plans, weapons systems, or operations; foreign government information; intelligence activities (including special activities); intelligence sources or methods, or cryptology; foreign relations or foreign activities of the United States, including confidential sources, Scientific, technological, or economic matters relating to the national security; United States Government programs for safeguarding nuclear materials or facilities; and vulnerabilities or capabilities of systems, installations, projects or plans relating to the national security.

⁶ Thomas Harding, *Terrorist use Google Earth to hit UK Troops* TELEGRAPH, January 13, 2007 available at www.telegraph.co.uk/news/main/ (last visited October 1, 2007).

Google Earth has been very receptive to requests by government officials to remove content from their Web site.⁷

However, Google Earth has removed information from its Web site after being told that it has caused damage.⁸ Imagery similar to that used to plan attacks on the British bases in Basra is still available for most U.S. bases in Iraq and Afghanistan. It could be argued that if the imagery of British bases has been removed then the imagery should be removed from all bases overseas. Information of mission essential vulnerable areas can be still found on Google Earth. This information could potentially aid an adversary in an attack against the U. S. military. Although Google could certainly voluntarily remove the images, at this time no regulations exist to require it to do so.

Chapter 3 outlines the current national and international regulations controlling satellite imagery. The major findings in chapter 3 are the lack of enforceability of vague U.N. regulations and the fact that even in the United States regulations are inconsistent. The Principles of Remote Sensing enacted in 1986 by the U.N. are non-binding and provide little protection against the distribution of photographs that are potentially damaging to nations' national security.⁹ The U.N. principles, outlined in Chapter 3, serve only as a guideline and are outdated since they have not been updated since 1986. A binding regulation or treaty could provide officials with the tools to manage commercial remote sensing.

⁷ *Id.*

⁸ Although the imagery was removed it caused significant damage to British military operations. It is clear that Google Earth was used to plan the attacks because Intelligence found printouts from Google Earth that displayed sensitive information on the Basra bases. *Did Google Censor Basra Imagery*, UK TELEGRAPH, January 14, 2007.

⁹ Some people suggest the principles are “binding” because countries have inherited them, others believe that because there is no legal reasoning the principles are not binding. and no nation is obligated to adhere to the principles. NANDASIRI JASENTULIYANA, *International Space Law and the United Nations*, 36 KLUWER LAW INTERNATIONAL (1999) (Neth.).

Commercial remote sensing became a global market after the Gulf war in 1991. The commercial market exploded after the imagery of Saddam's Army was used to defeat it.¹⁰ The U.N. Principles of Remote Sensing do not address advances in capabilities of remote sensing satellites or the uses of remote sensing possible through the Internet. The U.N. principles offer little or no protections for national security; nor do they specifically allow for the military uses of commercial remote sensing imagery. Continued technological advancements, lack of national security provisions and the non-binding nature of the principles are all issues that should be addressed by the U.N. in regards to commercial remote sensing.

The U.S. does have regulations for remote sensing that can help protect the country's national security. Under section 960.4 of the Land Remote Sensing Act of 1992, a license is required for satellites used for remote sensing.¹¹ The license requires that a licensee essentially forfeits control of commercial land remote sensing satellites during times of increased threat to national security, a policy known as "shutter control." However, although remote sensing imagery of U.S. companies can be halted, the same imagery still can be purchased in the international market. In addition, there are several disadvantages to initiating "shutter control." If "shutter control" is initiated no one, including the U.S. military, will be able to utilize the imagery. Although the military has a few military remote sensing satellites of its own, most imagery for the Department of Defense is purchased by the National Geospatial Intelligence Agency from DigitalGlobe and Space Imaging.¹² For example, the U.S. forces in Iraq are currently using Google Earth on their secure Internet. Military personnel have found that images

¹⁰ See Chapter 1 for details on the use of imagery during The Gulf War.

¹¹ The Land Remote Sensing Act, 15 U.S.C. § 5602(5) (1992).

¹² Theresa Hitchens, Address at the U.S. Space Operations in the International Context Space Conference (Feb. 24, 2004) (transcript available at the Center for Defense Information). Because of the cost of launching and operating remote sensing satellites the government made the decision to commercialize land remote sensing. *Id.*

downloaded from Google Earth are a useful tool in planning missions even if they are one to three years old. Although higher ranking officials¹³ have access to newer imagery the imagery is often not available to lower ranking military leaders. The ease of using Google Earth makes it a vital tool for soldiers at all levels as they try to familiarize themselves with enemy terrain.¹⁴ Although the U.S. regulations protect the country from harmful uses of U.S.-licensed satellites during national security threats there is a need for U.N. regulations that prohibit the sale of imagery of any nations involved in conflict.

Chapter 4 examines the legal precedent for limiting commercial remote sensing through established U.S. law governing a right to access government information, the limitations on government to restrain the distribution of information and the provisions for government punishment of illegally distributed information. Justice Holmes stated in his opinion for the Court in 1919 *Schenck v. U.S.* that

When a nation is at war, many things that might be said in time of peace are such a hindrance to its effort that their utterance will not be endured so long as men fight, and that no Court could regard them as protected by any constitutional right.¹⁵

The government has withheld information from public release in the name of national security only for it to be revealed later that disclosed of the data did not threaten national security.¹⁶ The U.S. Supreme Court has made it clear that the First Amendment protects not only individual

¹³ The author of this thesis describes a high ranking military official can be considered a person in charge of a Battalion size element. They hold the rank of Lieutenant Colonel and above.

¹⁴ Commercial land remote sensing was vital in the success during operations in the Gulf War. Shutter control turns off the satellite thereby inhibiting imagery from being processed. There is no way to initiate shutter control and still have images available for military use.

¹⁵ *Schenck v. United States*, 249 U.S. 47 (1919).

¹⁶ See, e.g. *U.S. v. Reynolds*, 345 U.S. 1 (1953). The information was released in 2000 and no national security issues were discovered. The information withheld from the widows contained information on the faulty aircraft construction.

speech and news coverage in the media, but also movies,¹⁷ cable television,¹⁸ non-obscene sexual expression,¹⁹ and the burning of draft cards.²⁰ Commercial land remote sensing imagery would most certainly be considered speech protected by First Amendment at least in part. To date, no court has reviewed the question of whether commercial remote sensing imagery would be protected speech under the First Amendment.

The legal analysis used in chapter 4 indicated three things: 1) the press does not have an automatic right of access under the First Amendment to government-controlled information; 2) the federal government, in order to prevent privately-controlled information from being distributed, must meet a heavy burden of proof, probably establishing that the release of that specific information will cause “immediate and irreversible” harm to security of the United States, a burden of proof unlikely to be met if similar information is available else, and 3) Courts often tend to allow the government greater flexibility to regulate speech and access when national security is an issue.

Google Earth purchases imagery from non-government sources that inadvertently provides access to military bases to their consumers. The military has tried to limit access to their bases by restricting entry and airspace. Given the precedence set by the U.S. Supreme Court in the prison and jail cases, the press most likely does not have a constitutional right of access to the military bases. The government does control remote sensing imagery retrieved from satellites licensed in the United States. The license states satellites can be shut down and the dissemination of imagery can be stopped in times of increased national threat.

¹⁷ *Freedman v. Maryland*, 380 U.S. 51 (1965).

¹⁸ *FCC v. National Citizens Comm. For Broadcasting*, 436 U.S. 775 (1978).

¹⁹ *Miller v. California*, 413 U.S. 15 (1973).

²⁰ *United States v. O'Brien*, 391 U.S. 367, 377 (1968)

However, although the privately-owned Google Earth provides access to sensitive information about military bases it is not the only source of obtaining the information. Hence, the federal government is unlikely to be successful in trying to restrain public distribution of the maps on Google Earth. In *U.S. v. Progressive*, the government stopped pressing its demand for a prior restraint on bomb-making information in the *Progressive* magazine after similar was published elsewhere.²¹ Even if the government could prevent access to, and the distribution of, the maps available on Google Earth, the same information can be found in the public domain in several places. What makes Google Earth practically different—and particularly problematic for the military—is that that Google Earth is easy to use and free with access to the Internet connection. It is easier for individuals worldwide to access data that is otherwise harder to find and more expensive to use.

The Courts require the government to meet a heavy burden of proof with matters of national security. In times of a threat to national security the federal government has often taken more control of the country's information flow and courts have tended to be more flexible in allowing government interference with First Amendment freedoms.

Analysis

In chapter 2, the researcher concluded that imagery on Google earth could disrupt military operations. In analyzing the finding in chapter 2 of this thesis a number of recommendations can be deduced. First, the military, to counter information gained by Google Earth, should cover and conceal mission essential areas, remain cognizant the enemy has this information, and use counter intelligence to inhibit the use of this information. The military OPSEC program instructs soldiers to alter their routines in order to counter enemy surveillance

²¹ *see generally* *U.S. v. Progressive* 467 F. Supp 990 (1979).

but the OPSEC program does not emphasize the possible affects of Web sites such as Google Earth. Military leaders should stress the possible uses of Google Earth by the enemy in their operations order.

In chapter 3, the researcher concluded that the U.N. does not have any binding regulations relating to remote sensing. The current U.N. principles took over fifteen years to be passed, much of the delay centered around the concern of underdeveloped countries that developed countries with remote sensing capabilities would use the remote sensing imagery to find the natural resources of underdeveloped countries. The fear was that information would be used in trade negotiations.²² The Principle of Remote Sensing would be more beneficial if they were binding and had safeguards to protect national security of all nations. It is doubtful that “shutter control” is the best answer but it is the most feasible for a U.N. regulation.

Chapter 4 discussed that the press does not have an inherent right of access to government controlled information. Google does not have any rights to access to information about military bases than does an average citizen. The government has a heavy burden of proof if they decided to restrict Google Earth from posting imagery it possesses on the Internet.

Limitations of Study

Among the limitations to this study was that it was limited to unclassified data that was obtained through the Army Knowledge Online.²³ The military has regulations that are secret and could have additional provisions for OPSEC. These regulations could not used in this thesis.

²² For an in-depth explanation see chapter 3.

²³ Army Knowledge Online is a secure portal to army websites.

A second limitation of the study is that it was not feasible to visit the military bases on Google Earth to ensure the information on the Web site was accurate. In order to demonstrate how accurate the images on Google Earth a comparative analysis of the base and the imagery would be ideal. The majority of the bases used in this analysis were of bases in Iraq and it was not feasible to perform the comparison.

A third limitation of this study is the lack of legal precedence surrounding commercial land remote sensing. The government has never exercised “shutter control;” therefore no First Amendment issues dealing with remote sensing have been decided in the courts. Google Earth has openly complied with all requests to restrict information on the Web site, and have suggested that this will be a continued trend. Although Google Earth has complied with requests to remove imagery the research did not analyze other remote sensing Web sites, such as, Terraserver or Microsoft.

Future Research

This thesis focused on only a relatively small aspect of remote sensing as an information source, several other areas of study would be beneficial to research, such as how remote sensing imagery is used as a tool in newsrooms.

This thesis only evaluated U.N. guideline and U.S. regulations. An evaluation of other nations’ regulations could enhance the argument that the U.N. needs to have binding regulations. Future research could compare different nations’ regulations and evaluate similarities to determine trends.

This thesis discussed in general legal procedure that would control access to, injunctions on, and punishment of Google Earth and Remote Sensing. A more thorough legal analysis of the Supreme Court jurisprudence as it might affect Google Earth and remote sensing imagery could also be helpful. A thorough analysis of the constitutionality of these issues was beyond the

focus of this paper since there was no court precedent directly on point. However, a more thorough analysis of all legal topics discussed in this paper is more appropriate. Additional research is needed for how remote sensing is classified under the federal Freedom of Information Act, for example. So is there a need for First Amendment court precedent not directly on point could affect the constitutionality of remote sensing. Still further, given the state of both national and international law, what kind of risk a punishment to private providers of remote sensing images face?

Conclusion

In conclusion, this thesis finds the information on Google Earth does provide information to the public that could hinder military operations. The current U.N. guidelines on commercial remote sensing do not offer adequate protections and do not address issues of free Web sites such as Google Earth. The government carries a heavy burden in restraining the further distribution of information already available to citizens worldwide through both governments and private companies in other countries. After careful analysis of past precedent, this researcher has become convinced that “shutter control” and any restrictions on Google Earth are not justified. Although the commercial remote sensing imagery does provide information sensitive to the military the same information can be obtained from other sources in the public domain.

In addition, although information on Google Earth does provide adversaries with sensitive information, it also provides information that serves the nation in other ways. In 2007, the media used Google Earth to inform the community on the spread of wild fires in California, soldiers overseas use Google Earth to help plan flight operations, and Google earth was instrumental in assisting embedded media report on the War on Terror in 2003. It is important to consider both the pros and cons of removing information from Google Earth or initiating “shutter control.” When “shutter control” is initiated in the U.S. no one has access to the information. This would

place the U.S. at a disadvantage because other countries would still have access to the information. The same rationale applies to removing imagery from Google Earth. It is important to consider the benefits of Google Earth used in traditional media coverage.

Therefore removing particularly sensitive imagery from Google Earth is the most efficient and least disruptive way to protect sensitive military information. The U.S. military could provide training for soldiers on the threat information on Web sites such as Google Earth could aid in mission analysis, updating OPSEC and Physical Security regulations to include remote sensing imagery, and enforcing the military to cover and conceal mission essential areas, remain cognizant the enemy has this information, and use counter intelligence to inhibit the use of this information. This would aid the military in remaining open and transparent while simultaneously protecting sensitive information.

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