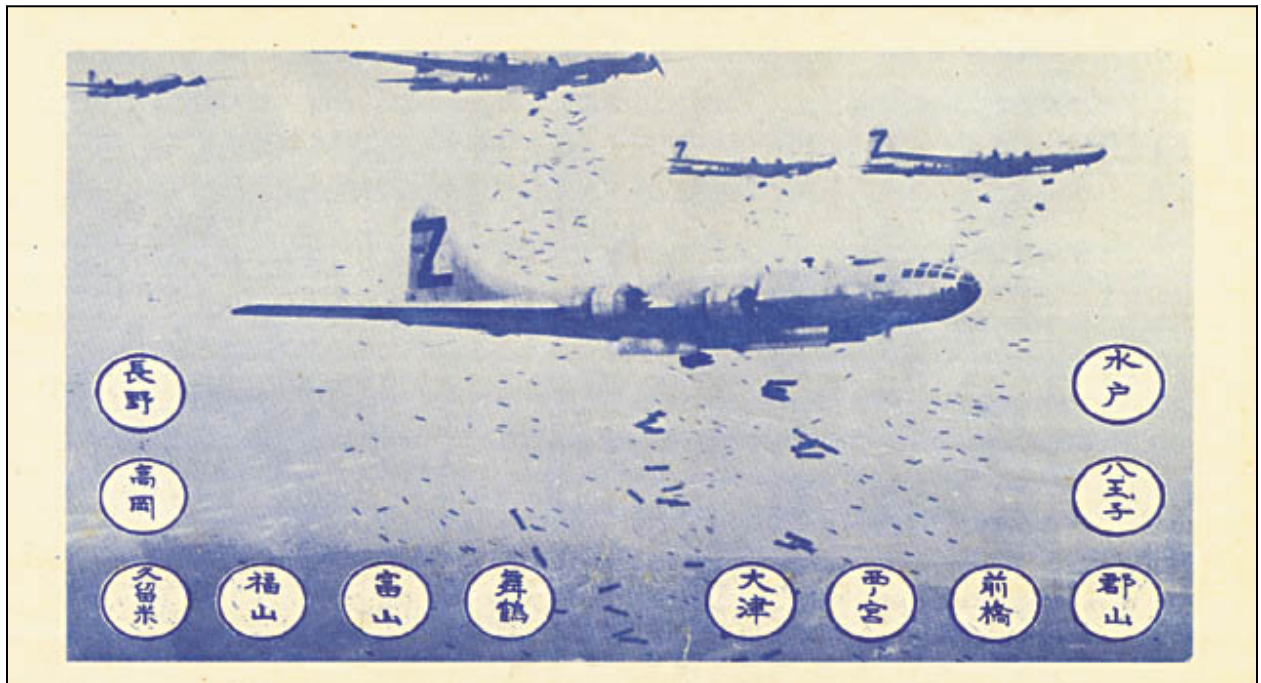


The Precautionary Principle and Launch-On-Warning

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From the first class in law school, young lawyers are instructed and trained to reason carefully, master the facts and the law, analyze an issue from all angles, concoct novel legal theories (if necessary), and to come to a thoughtful conclusion. This carries over in practice, where millions of dollars or someone's life, are at stake, depending on a lawyer's judgment. Yet, when it comes to a nuclear strike, a decision to possibly annihilate millions and leave the planet uninhabitable for billions of others, legal analysis can be required to be made in minutes, if required at all. Launch on warning (LOW), also known as hair-trigger alert, is the launch of forces between the detection of an attack and the arrival of a first warhead, according to the Joint Chiefs of Staff.¹ It requires the President to make a decision to launch a nuclear weapons strike in as little as ten minutes with very little time for deliberation or measured reasoning.² And in the words of the late nuclear-weapons expert Dr. Bruce Blair "is the antithesis of a deliberative process."³

The United States claims to adhere to international law, including the law of armed conflict which requires comports with international law before using nuclear weapons.⁴ Consequently, a host of rules and principles such as distinction, proportionality, and necessity must be considered to ensure the legality of a strike. This paper argues that another rule, the often neglected principle of precaution, must be met as well. Specifically, this paper asks if the principle of precaution can be met during a hair-trigger strike. The paper starts with a brief historical and operational framework of LOW. Then it explores the principle of precaution and its requirements from international and domestic law (both during a strike and before a strike). Finally, it concludes that the principle of precaution cannot be met during a LOW strike.

¹William Burr, *The "Launch on Warning" Nuclear Strategy and Its Insider Critics*, National Security Archive, June 11, 2019, <https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2019-06-11/launch-warning-nuclear-strategy-its-insider-critics>.

²Stephen Young, *The Failures of Biden's Nuclear Posture Review*, *The Equation*, Oct. 27, 2022, <https://blog.ucsusa.org/syoung/bidens-nuclear-posture-review/>.

³Bruce Blair, *Loose cannons: The president and US nuclear posture*, *Bulletin of the Atomic Scientists*, Jan. 1, 2020, https://thebulletin.org/premium/2020-01/loose-cannons-the-president-and-us-nuclear-posture/#_ftnref3.

⁴Charles J. Moxley Jr., *Nuclear Weapons and International Law*, xxvii (2022).

Launch on Warning: A Brief Historical and Operational Overview

The policy of LOW can be traced to two main technological developments, the Minuteman rocket and Ballistic Missile Early Warning System. With the advent of the Minuteman rocket in the early 1960s the U.S. had a weapon that could deliver a nuclear payload quickly and accurately as well as be produced economically.⁵ The system was integral to the overall U.S. policy of deterrence.⁶ Also coming on line in the early 1960s was the Ballistic Missile Early Warning System (BMEWS), a system of three radar sites that would give the U.S. at least 15 minute warning of incoming intercontinental ballistic missile (ICBM) strikes.⁷ The new reality of missiles being possibly launched in minutes and radar capabilities that detect incoming missiles lead to the fear that the Soviet Union could destroy U.S. ICBM installations before they dispatched their weapons, leading to the destruction of one leg of the nuclear triad, and U.S. vulnerability. To avoid this fate the U.S. adopted LOW which posited that any incoming missile strikes would be met with immediate retaliation before all U.S. installations could be destroyed. This policy aimed to bolster deterrence theory by creating a cost, potentially as high as mutually assured destruction, if the Soviet Union were to strike. This policy remains in place today, albeit with much more sophisticated technology. The Minuteman I has given way to the Minuteman III which weighs over 79,000lbs and has a range of over 6,000 miles (Washington D.C. and Moscow are 4,861 miles apart).⁸ The BMEWS has been supplemented and upgraded over the years to now include additional radar, computer, and satellite systems.

Despite the technological innovations since the 1960s, the LOW *process* today faces many of the same challenges as it did 60 years ago. Former CIA director Gen. Micheal Hayden described the problem succinctly when he stated the system is “designed for speed and decisiveness. It’s not designed to debate

⁵ National Park Service, *Series: Minuteman Missiles and the Nuclear Arms Race*, <https://www.nps.gov/articles/series.htm?id=28936465-1DD8-B71B-0B038D76C2901721#:~:text=The%20Minuteman%20missile%20was%20a, truly%20effective%20nuclear%20deterrent%20system>.

⁶ *Id.*

⁷ Library of Congress, *Ballistic Missile Early Warning System*, <https://www.loc.gov/resource/hhh.ak0486.sheet/?sp=1>.

⁸ United States Air Force, *LGM-30G Minuteman III*, <https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104466/lgm-30g-minuteman-iii/>.

the decision.”⁹ As previously mentioned, debate and deliberation are prerequisites for effective legal analysis. Whether it be analyzing for proportionality, distinction, or precaution it takes time to make an effective and *legal* decision. Analysts have determined that the decision time could be as low as eight minutes, with much of that time spent informing the president. Former National Security Advisor Zbigniew Brzezinski recounted how in one instance he had only three minutes to decide whether to inform President Carter of a strike which would have left Carter only three minutes to respond.¹⁰ Proponents of the system will argue that despite the truncated decision time, that the president can pick from pre-vetted options that have been approved for legality. Additionally, if the strike is existential, as feared in the Cold War, then almost any counter strike would be legal.

An Expansive View on the Principle of Precaution

When one thinks of the laws of war the rules of distinction, proportionality and necessity often come to mind. Additionally, academic commentary seems to focus on these principles. However, there exists another principle, the principle of precaution, which has a long history and holds great potential to be impactful in mitigating civilian harm, which the rules of war hold as their goal.¹¹ This section will survey the major sources of the principle of precaution in international law along with analysis on the status of each source in United States law. Additionally, it will argue for a broader conception of the principle of precaution than is currently realized.

Currently, the most contemporary source for the precautionary principle in international law is the Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I). Protocol I outlines the precautionary measures that shall be taken *during* an attack which consists of doing everything feasible to: verify that objectives are

⁹ Amy F. Woolf, *Defense Primer: Command and Control of Nuclear Forces*, Congressional Research Service, Nov. 19, 2021, <https://sgp.fas.org/crs/natsec/IF10521.pdf>

¹⁰ Jeffrey Lewis, *Our Nuclear Procedures Are Crazier Than Trump*, Foreign Policy, <https://foreignpolicy.com/2016/08/05/our-nuclear-procedures-are-crazier-than-trump/>.

¹¹ Geoffrey S. Corn, *War, Law, and the Oft Overlooked Value of Process as a Precautionary Measure*, 42 Pepp. L. Rev., 419, 424 (2015).

not civilians, choosing means and methods of warfare will minimize civilian casualties, refraining from attacks that will cause incidental loss of civilian life, canceling or suspending attacks if civilian damage is excessive to military advantage, giving advance warning when possible.¹² Similarly, the latest ICRC Volume of Customary International Humanitarian Law Rules, which outlines rules that have risen to customary international law status, includes two chapters on precautions. The ‘Precaution against the Effects of Attacks’ chapter lists measures states can take to spare civilian populations from attack while the ‘Precautions in Attack’ chapter lists seven relevant rules: constant care must be taken to spare civilians, parties must verify that targets are military objectives, parties must take feasible precautions in the means and methods of warfare to reduce civilian casualties, each party must avoid incidental loss of civilian life, parties should cancel or suspend attacks if civilian costs outweigh military benefits, advanced warnings should be given to civilians when possible, when choosing targets those with less civilian harm should be chosen.¹³ These rules are crucial considerations during military operations *jus in bello*. However, precautions also entails parties taking adequate preventative measures to ensure military compliance with the law.¹⁴ The traditional definition hints at this broader conception, especially when it refers to ‘means and methods of warfare’, which can encompass assessing legality in the procurement phase, which the U.S. military conducts.¹⁵ Similarly, training military operators to use weapons effectively is a necessary prerequisite for employing measures that will reduce civilian casualties. As are *process* considerations such as allowing for the time necessary to conduct sufficient operational and legal analysis. Dr. John Burroughs states that “[t]he requirement of precaution would therefore seem to require in-depth consideration in advance, for typical scenarios, of compliance with the requirements of distinction and proportionality.”¹⁶ Law Professor and Retired U.S. JAG Lieutenant Colonel Geoffrey Corn staunchly

¹² Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), June 8, 1977, 1125 U.N.T.S. 3.

¹³ Louise Doswald-Beck & Jean-Marie Henckaerts, *Customary International Humanitarian Law Volume I: Rules* 51-65 (Cambridge University Press)

¹⁴ Moxley, *supra* note 4, at 85.

¹⁵ *Id.*

¹⁶ Dr. John Burroughs, *International Humanitarian Law, Law and Order*, at 71.

argues for the broader conception of precautions in *War, Law, and the Oft Overlooked Value of Process as a Precautionary Measure* stating:

“that process is inherently precautionary in nature, the overall implementation of precautions is a central component of substantive LOAC compliance, and precautions must also be conceived more expansively than is suggested by the current discourse, which focuses mainly on the precautions rule of Additional Protocol I... This process involves both training and preparing combatants for implementing their LOAC obligations, as well as the process used for targeting decision-making... How commanders and these advisors are prepared for the complex challenge of targeting decision-making should, therefore, be included within the scope of the concept of precautionary measures. Accordingly, a broadly conceived precautions obligation must be a core LOAC principle, standing in stature alongside the core substantive principles of distinction and discrimination (to include the proportionality principle). The scope of the precautions concept must be expansive and pragmatic, including not only choice of methods and means of warfare or issuance of warnings, but also the process utilized to select targets and the implementation of the substantive LOAC principles central to the legality of the target decision-making process.”¹⁷

The Principle of Precaution Throughout History

The principle of precaution stems all the way back to the Hague Convention of 1899. Chapter 1 of the Convention states that “The right of belligerents to adopt means of injuring the enemy is not unlimited” and that it is prohibited to “employ arms, projectiles, or material of a nature to cause superfluous injury...to destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war...The attack or bombardment of towns, villages, habitations or buildings which are not defended, is prohibited...The commander of an attacking force, before commencing a bombardment, except in the case of an assault, should do all he can to warn the authorities.”¹⁸ Many of the contemporary precautionary rules stem from the Hague Convention of 1899. The United States never ratified the Hague Convention of 1899 but ratified the Hague Convention of 1907, which revised some of the 1899 convention. In addition to including the aforementioned language from the 1899 convention the 1907 convention also states that it is forbidden to “To employ poison or poisoned weapons...To employ arms, projectiles, or material calculated to cause unnecessary suffering.”¹⁹

¹⁷ Corn, *supra* note 11, at 425.

¹⁸ Convention (II) with Respect to the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land. The Hague, July 29, 1899.

¹⁹ Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land. The Hague, Oct. 18, 1907.

The United States ratified the treaty in 1909 thus bringing the Convention into the legal force into the United States²⁰ since treaties are the supreme law of the land along with legislation and the Constitution.²¹

Another main source of rules that make up the principle of precaution is Protocol I. In addition, to the explicit rules regarding precautions during attack (which were previously mentioned), Protocol I has an express provision providing that States must train individuals to learn and apply the Protocol, “The High Contracting Parties shall, also in peacetime, endeavour...to train qualified personnel to facilitate the application of the Conventions and of this Protocol...The recruitment and training of such personnel are within domestic jurisdiction.”²² This requirement bolsters the broader view of the precautionary principle which requires training to *apply* the laws of war to a given scenario. Despite Protocol I’s strong endorsement of the precautionary principle, the United States commitment is not as strong. First, the United States has never ratified the treaty but only signed it.²³ In the United States treaties must either be ratified domestically or be self-executing, and Protocol I is not self-executing, to carry domestic force of law.²⁴ However, certain aspects of Protocol I have risen to the level of customary international law, though the United States has persistently objected to others. To aid in understanding which parts of Protocol I apply and which don't, the *Unofficial United States Guide to the First Additional Protocol to the Geneva Conventions of 12 August 1949* (“Guide”) is tremendously helpful. Firstly, the Guide, referencing the Department of Defense Law of War Manual, states that “AP I . . . does not apply to the use of nuclear weapons...Parties to AP I have expressed the understanding that the rules relating the use of weapons introduced by AP I were intended to apply exclusively to conventional weapons. Thus, Parties to AP I have understood AP I provisions not to regulate or prohibit the use of nuclear weapons. Although the

²⁰ ICRC, Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land. The Hague, 18 October 1907, <https://ihl-databases.icrc.org/en/ihl-treaties/hague-conv-iv-1907/state-parties?activeTab=default>

²¹ U.S. CONST. Art. VI, cl. 2.

²² Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), June 8, 1977 1125 U.N.T.S. 3.

²³ ICRC, Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, <https://ihl-databases.icrc.org/en/ihl-treaties/api-1977/state-parties?activeTab=undefined>

²⁴ *Foster v. Neilson*, 27 U.S. 253 (1829) (established that there are self-executing and non self-executing treaties).

United States is not a Party to AP I, the United States participated in the diplomatic conference that negotiated AP I based upon this understanding”²⁵ This is a meaningful repudiation of Protocol I and the precautionary principle when it comes to nuclear weapons use. However, the Guide still analyzes each section of Protocol I in turn. In regards to Protocol I requiring trained personnel, the Guide references a Joint Chiefs characterization that it is seen “as a measure to encourage compliance.”²⁶ Regarding “Article 57 - Precautions in attack” the Guide cites State Department Legal Adviser statements which endorse the view the U.S. abides by the precautionary principle in attack: “We support the principle that all practicable precautions, taking into account military and humanitarian considerations, be taken in the conduct of military operations to minimize incidental death, injury, and damage to civilians and civilian objects, and that effective advance warning be given of attacks which may affect the civilian population, unless circumstances do not permit. We also support the principle that attacks not be made against appropriately declared or agreed non-defended localities or agreed demilitarized zones.”²⁷ Additionally, the Guide cites a Joint Chiefs of Staff determination that: “Article 57 was militarily acceptable, except for art. 57(2)(b).”²⁸ 57(2)(b) covers the cancellation and suspension of attacks, which the military still generally abides by but slightly differs. The remaining rules of Art. 57 are incorporated into domestic law in one way or another, usually through the Department of Defense Law of War Manual. Notably, some provisions were ruled as part of customary international law such as the rule that “effective advance warning should be given to civilian populations when possible.”²⁹ “Article 58 - Precautions against the effects of attacks” was also considered as binding U.S. law with the Guide again quoting the State Department: “We support the principle that all practicable precautions, taking into account military and humanitarian considerations, be taken in the conduct of military operations to minimize incidental death,

²⁵ Col. Theodore T. Richard, *USAF, Unofficial United States Guide to the First Additional Protocol to the Geneva Conventions of 12 August 1949*, 9 (Air University Press, 2019). Available at:

https://www.airuniversity.af.edu/Portals/10/AUPress/Books/B_0157_UNOFFICIAL_UNITED_STATES_GUIDE_TO_THE_FIRST_ADDITIONAL_PROTOCOL_TO_THE_GENEVA_CONVENTIONS_OF_12_AUGUST_1949_PDF

²⁶ *Id.* at 19.

²⁷ *Id.* at 119.

²⁸ *Id.* at 117.

²⁹ *Id.* at 127.

injury, and damage to civilians and civilian objects, and that effective advance warning be given of attacks which may affect the civilian population, unless circumstances do not permit.”³⁰ The Joint Chiefs of Staff considered Art.58 binding on the U.S. but with some qualifications, primarily regarding the term ‘feasible’: “AP I, art. 58, to be militarily acceptable but was concerned about reasonable interpretations.”³¹

Protocol I also requires legal review on new weapons systems or means of warfare during “study, development, acquisition or adoption” to ensure the weapon is not prohibited by Protocol I or any other rule of international law.³² This requirement falls within the broader conception of precaution and the need for precautions to be taken throughout the military process, starting with development and ending with use. The Guide cites the DoD LOW Manual which asserts that the U.S. is already in compliance with this rule and has been before Protocol I. Additionally, the Joint Chiefs have affirmed that “these legal reviews were already being conducted.”³³ Overall, Protocol I highlights the conflicting nature of the United States with international law. The military manuals and customary international law requires U.S. adherence to many of rules that make up the principle of precaution, however, the U.S. has expressly prohibited certain rules from applying to nuclear weapons, which can possibly be considered as a persistent objection.

Another source of international law on the topic of precautions and nuclear weapons use writ large is the 1996 International Court of Justice *Legality of the Threat or Use of Nuclear Weapons Advisory Opinion* (“Opinion”). In the United States, ICJ cases are only entitled “respectful consideration” in court.³⁴ Though precautions are not explicitly mentioned in the Opinion there are nonetheless some applicable conclusions. First, the Opinion did not find that nuclear weapons would be lawful or unlawful in extreme circumstances.³⁵ A per se illegality finding would have made an analysis regarding the

³⁰ *Id.* at 130.

³¹ *Id.*

³² *Id.* at 62.

³³ *Id.*

³⁴ *Sanchez-Llamas v. Oregon*, 548 US 331 (2006).

³⁵ *Moxley*, *supra* note 4, at 171.

principle of precautions or any other principles of the law of war moot. Next, the Opinion found that the law of war applies to nuclear weapons and use would generally violate the law of war.³⁶ Finally, the Opinion reiterates that the principle of precautions is among the “cardinal principles contained in the texts constituting the fabric of humanitarian law...States must never make civilians the object of attack and must consequently never use weapons that are incapable of distinguishing between civilian and military targets. According to the second principle, it is prohibited to cause unnecessary suffering to combatants: it is accordingly prohibited to use weapons causing them such harm or uselessly aggravating their suffering. In application of that second principle, States do not have unlimited freedom of choice of means in the weapons they use.”³⁷ The Opinion also states that weapons have been banned due to unnecessary suffering and that “these fundamental rules are to be observed by all States whether or not they have ratified the conventions that contain them, because they constitute intransgressible principles of international customary law.”³⁸ Thus, the Opinion emphasizes some key considerations regarding the legality of using nuclear weapons, namely, the use of a nuclear weapon could be illegal depending on the circumstance, the laws of war (including the principle of precautions) apply, and weapons that have caused unnecessary harm have been banned before (such as chemical and biological weapons).

A relatively recent source analyzing the legality of nuclear weapons and international law is The International Committee of the Red Cross Council of Delegates 2011: Resolution 1 *Working Towards The Elimination of Nuclear Weapons* (“Resolution”). The Resolution specifically addressed how nuclear weapons are illegal under international law. The resolution itself is not part of international law but nonetheless shows the formal position of the Red Cross Council of Delegates and was sponsored by the International Committee of the Red Cross (ICRC) and co-sponsored by 30 national red cross societies (notably no nuclear weapons states co-sponsored the resolution). The resolution states that the ICRC “finds it difficult to envisage how any use of nuclear weapons could be compatible with the rules of

³⁶ *Id.*

³⁷ Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996, p. 257, International Court of Justice (ICJ), 8 July 1996.

³⁸ *Id.*

international humanitarian law, in particular the rules of distinction, precaution and proportionality”³⁹ The ICRC resolution adds another tile in the mosaic of international sources (such as general assembly resolutions and votes) and shows the growing international consensus that nuclear weapons use would be illegal under international law.

Finally, the ICRC finds that the rule of precaution is a part of customary international law and defines it as “In the conduct of military operations, constant care must be taken to spare the civilian population, civilians and civilian objects. All feasible precautions must be taken to avoid, and in any event to minimise, incidental loss of civilian life, injury to civilians and damage to civilian objects.”⁴⁰ In the United States, as famously stated in *Paquete Habana*, “international law is part of our law” and the leading academic view is that customary international law has the status of self-execution in the U.S. even absent congressional authorization.⁴¹ The ICRC *Customary International Humanitarian Law Volume I: Rules* (“ICRC CIHL”) has determined what constitutes CIL thorough analysis of state practice of generality and *opinio juris*.⁴² Seven rules in particular have been established regarding “Precautions in Attack”: Principle of Precautions in Attack, Target Verification, Choice of Means and Methods of Warfare, Assessment of the Effects of Attacks, Control during the Execution of Attacks, Advance Warning, and Target Selection. These are relatively uncontested rules and many are incorporated into United States military operations (explored in the next section). Additionally, CIL addresses the broader definition of precaution as well, mandating training personnel to apply the rules of war. In the “Foreword” to the ICRC CIHL international law Expert Dr. Yves Sandoz comments that “individual States must be encouraged to adopt national laws incorporating the new rules into domestic legislation, to ensure that the public knows and understands basic humanitarian principles...and to integrate the subject into military

³⁹ ICRC, Council of Delegates 2011: Resolution 1, Nov. 26, 2011. Available at: <https://www.icrc.org/en/doc/resources/documents/resolution/council-delegates-resolution-1-2011.htm>

⁴⁰ Doswald-Beck & Henckaerts, *supra* note 13, at 51.

⁴¹ The *Paquete Habana*, 175 U.S. 677, 20 S. Ct. 290 (1900).

⁴² Doswald-Beck & Henckaerts, *supra* note 13, at xxxvii - xxxviii.

training.”⁴³ Furthermore, there are specific rules that mandate compliance with International Humanitarian Law. Rule 139 requires that “[e]ach party to the conflict must respect and ensure respect for international humanitarian law by its armed forces and other persons or groups acting in fact on its instructions, or under its direction or control.”⁴⁴ And directly relevant to the principle of precaution is Rule 141 which states that “[e]ach State must make legal advisers available, when necessary, to advise military commanders at the appropriate level on the application of international humanitarian law.”⁴⁵ Rule 141 was drawn from Protocol I and even though the United States has not ratified Protocol I the ICRC CIHL states: “This rule is contained in many military manuals. It is also supported by official statements and reported practice. Practice indicates that many States which are not party to Additional Protocol I have legal advisers available to their armed forces. The United States, which is not a party to Additional Protocol I, has specifically stated that it supports this rule.”⁴⁶ Finally Rule 141 states that “in particular as commanders have important responsibilities in the system of ensuring respect for international humanitarian law: they are responsible for providing instruction in international humanitarian law to the armed forces under their command...they must give orders and instructions which ensure respect for international humanitarian law.”⁴⁷ The U.S. has seemingly endorsed these specific rules of precaution as well. Michale J. Matheson, a State Department legal advisor stated that: “We support the principle that all practicable precautions, taking into account military and humanitarian considerations, be taken in the conduct of military operations to minimize incidental death, injury, and damage to civilians and civilian objects, and that effective advance warning be given of attacks which may affect the civilian population, unless circumstances do not permit.”⁴⁸

⁴³ *Id.* at xxi.

⁴⁴ *Id.* at 495.

⁴⁵ *Id.* at 500.

⁴⁶ *Id.* at 502.

⁴⁷ *Id.* at 501.

⁴⁸ Michael J. Matheson, Deputy Legal Adviser, Department of State, Remarks on the United States Position on the Relation of Customary International Law to the 1977 Protocols Additional to the 1949 Geneva Conventions at the Sixth Annual American Red Cross-Washington College of Law Conference on International Humanitarian Law (Jan. 22, 1987), 2 *American Univ. J. Of Intl'l L. and Pol'y.* 419, 426-27 (1987).

Overall, the principle of precautions in attack, and even the broader conception, have sound basis in international law. Basic rules of warnings, training, and augmenting attacks in regard to civilian risk, have been stated in multiple treaties and even risen to the level of customary international law, which the U.S. purports to follow.

The Principle of Precaution in the Military Manuals

The U.S. military has incorporated many of the laws of war into its procedures, analysis, and rules, the principle of precaution amongst them. The DoD LOW Manual states:

“Affirmative Duties to Take Feasible Precautions for the Protection of Civilians and Other Protected Persons and Objects. Parties to a conflict must take feasible precautions to reduce the risk of harm to the civilian population and other protected persons and objects. Feasible precautions to reduce the risk of harm to civilians and civilian objects must be taken when planning and conducting attacks. Feasible precautions should be taken to mitigate the burden on civilians when seizing or destroying enemy property. It is specifically provided that feasible precautions must be taken in connection with certain types of weapons. Feasible precautions to reduce the risk of harm to civilians must also be taken by the party subject to attack.”⁴⁹

A key term of art in the principle of precaution is the term “feasible”. Feasible precautions leave space for operators to dispense with precautionary rules when it is not practical. The DOD LOW Manual states the U.S. position as:

“[t]he standard for what precautions must be taken is one of due regard or diligence, not an absolute requirement to do everything possible. A wanton disregard for civilian casualties or harm to other protected persons and objects is clearly prohibited. Feasible precautions are those that are practicable or practically possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations... For example, a commander may determine that a precaution would not be feasible because it would result in increased operational risk (i.e., a risk of failing to accomplish the mission) or an increased risk of harm to his or her forces.”⁵⁰

Additionally the DOD LOW Manual makes clear that “The obligation to take feasible precautions is a legal requirement. However, the determination of whether a precaution is feasible involves significant policy, practical, and military judgments, which are committed to the responsible commander to make in good faith based on the available information.”⁵¹ This “out” is concerning for those who wish to ensure

⁴⁹ U.S. Department of Defense, *Law of War Manual*, 190 (2015).

⁵⁰ *Id.* at 192.

⁵¹ *Id.* at 194.

military strikes are legal. If commanders have the discretion to determine feasibility then the precautionary principle can be cast aside, perhaps when it is needed most. Another notable statement is that feasibility precautions *must* be taken with certain kinds of weapons. Nuclear weapons are the U.S. military's most powerful weapon. The B83 bomb has a yield of 1.2 megatons which is 80 times stronger than the bombing dropped on Hiroshima.⁵² However, in a launch-on-warning scenario, precautionary measures, such as proportionality and distinction analysis, as well as any precautionary measures during attack, would have to occur within mere minutes.

The DoD LOW Manual is clear that nuclear weapons are covered under the LOW “[t]he law of war governs the use of nuclear weapons, just as it governs the use of conventional weapons. For example, nuclear weapons must be directed against military objectives. In addition, attacks using nuclear weapons must not be conducted when the expected incidental harm to civilians is excessive compared to the military advantage expected to be gained.”⁵³

Application of the precautionary principle can be found in many other military manuals as well. A comprehensive collation is outside the scope of this paper but a few additional sources show how incorporated the principle is. For example the *U.S. Department of Air Force, Targeting: Air Force Doctrine* states that “Targets may have certain specific restrictions associated with them that should be clearly documented in the RTL, such as do not strike during daytime or strike only with a certain weapon. Some targets may require special precautions, such as chemical, biological, or nuclear facilities, or targets near no-strike targets.”⁵⁴ Targeting considerations like these are the precautionary principle in action, requiring forces to consider weaponry, characteristics of the target, and time of attack to, in part, reduce civilian harm. In relation to nuclear weapons specifically, the *U.S. Department of Air Force Nuclear Operations: Air Force Doctrine* states that “[t]he significant destructive power and other related effects from nuclear weapons demand that Air Force planners take special precautions” with specific emphasis

⁵² Eryn MacDonald, *The Fate of the B83 Nuclear Gravity Bomb*, Union of Concerned Scientists (2022). Available at: <https://ucs-documents.s3.amazonaws.com/nuclear-weapons/b83-fact-sheet.pdf>

⁵³ U.S. Department of Defense, *supra* note 49, at 417.

⁵⁴ United States Air Force, *Air Force Doctrine Publication 3-60 Targeting* 49. Available at: https://www.doctrine.af.mil/Portals/61/documents/AFDP_3-60/3-60-AFDP-TARGETING.pdf

on how an adversary will respond with a counter-nuclear strike.⁵⁵ Finally, the *U.S. Army JAG Legal Center & Sch. Operational Law Handbook* states additional precautionary measures that should be taken when possible such as “[f]easible precautions may include adjusting the timing of the attack or selecting certain weapons...[u]nless circumstances do not permit, effective advance warning must be given for any attack that may affect the civilian population”⁵⁶ In regards to the broader conception of precaution, the military manuals have affirmed that weapons and methods are analyzed at the procurement and development phase to ensure legality.⁵⁷ Similarly, the military purports to train personnel on the law of war.⁵⁸ For example, *Army Regulation 350-1 Army Training and Leader Development* declares “soldiers and leaders require law of war training throughout their military careers commensurate with their duties and responsibilities.”⁵⁹

The Principle of Precaution Applied to Nuclear Weapons

The principle of precaution demands that military operators both adhere to laws of war (which requires analysis) and apply precautionary rules during attacks. This broader conception of the principle of precaution is succinctly stated by Geoffrey Corn:

“[t]he first step in implementing effective precautions is the process of training. Although training is rarely discussed as a “process” or precautionary measure, in reality it is central to LOAC implementation and compliance...LOAC training, as a precautionary measure to enhance the probability of a legally sound military operation and to reduce the risk of LOAC violations, has risen steadily in significance since the adoption of this policy. Today, LOAC training is incorporated in virtually all classroom and field training events in which U.S. Armed Forces participate.”⁶⁰

⁵⁵ United States Air Force, *Air Force Doctrine Publication 3-72 Nuclear Operations 2*. Available at: https://www.doctrine.af.mil/Portals/61/documents/AEDP_3-72/3-72-AEDP-NUCLEAR-OPS.pdf.

⁵⁶ U.S. Army International and Operational Law Department, *U.S. Army JAG Legal Center & Sch. Operational Law Handbook* (16th. ed.). Available at: <https://ctip.defense.gov/Portals/12/Documents/2016%20Operational%20Law%20Handbook.pdf?ver=2017-02-22-135359-390>

⁵⁷ Moxley, *supra* note 4, at 45.

⁵⁸ *Id.* at 47.

⁵⁹ Chris Jenks, *The Efficacy of the U.S. Army's law of War Training Program*, Lieber Institute, West Point, Articles of War, Oct. 14, 2020. Available at: <https://lieber.westpoint.edu/efficacy-u-s-armys-law-of-war-training-program/> (One notable critique of the training is “AR 350-1 places the onus on lawyers not where it should be—on leaders”).

⁶⁰ Corn, *supra* note 11, at 445-46.

These are welcome developments and echo the experiences of those responsible for the operational steps in a nuclear weapons strike. As Dr. Bruce Blair, a former Minuteman officer, recalled “We had been conditioned, like Pavlov’s dogs, to expect certain war orders to flow in a certain sequence, culminating in the launch of all 50 missiles... Everything else was above our pay grade. No little lights of conscience flickered in our minds.”⁶¹ The U.S. undoubtedly spends hundreds of millions of dollars every year training, drilling, and educating military personnel. Training is within the “Operation and Maintenance” section of the defense budget which was \$286 billion dollars in 2021.⁶² Legal training and analysis is also part of the picture, albeit much smaller than traditional battlefield training. For example, *DoD Directive 2311.01 DoD Law of War Program* states that “The DoD Components implement effective programs to prevent violations of the law of war, including: (1) Law of war dissemination and periodic training. (2) Qualified legal advisers advising on the law of war.”⁶³ This is echoed by Geoffrey Corn as well who notes “The inputs made by a battle staff and the process within a military command implemented to maximize the effects of these inputs makes a critical contribution to LOAC compliance. In this sense, this staff function and process is itself a precautionary measure. Integrating a legal advisor into the battle staff enhances the significance of the staff function and process as a precautionary measure.”⁶⁴ It appears that in traditional military operations, there is at least some space for legal analysis, which itself comports with the precautionary principle. A 2015 RAND study found that “U.S. implementations of the LOAC have evolved considerably in recent decades to increasingly restrict military activities. In particular, greater concern for civilian casualties has motivated the U.S. military to take increasing precautions in its planning and has deterred it from undertaking military actions anticipated to place civilians at risk.”⁶⁵

⁶¹ Jessica Sleight et al., *Bruce Blair: Challenging the accidental nuclear war machine every turn*, Bulletin of the Atomic Scientists, Aug. 11, 2020,

<https://thebulletin.org/2020/08/bruce-blair-challenging-the-accidental-nuclear-war-machine-at-every-turn/>

⁶² Peter G. Peterson Foundation, BUDGET BASICS: NATIONAL DEFENSE, June 1, 2022,

<https://www.pgpf.org/budget-basics/budget-explainer-national-defense>

⁶³ Department of Defense, *DoD DIRECTIVE 2311.01*, DoD Law of War Program, July 2, 2020,

<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/231101p.pdf?ver=2020-07-02-143157-007>

⁶⁴ Corn, *supra* note 11, at 448.

⁶⁵ Bryan Frederick & David Johnson, *The Continued Evolution of U.S. Law of Armed Conflict Implementation*, RAND Corporation, 2015,

https://www.rand.org/content/dam/rand/pubs/research_reports/RR1100/RR1122/RAND_RR1122.pdf

In traditional nuclear operations (non-LOW), legal review and precautionary measures are seemingly part of the process at multiple levels as well. In Congressional testimony Gen. Robert Kehler, USAF (Ret.), Former Commander at U.S. Strategic Command testified that “[t]he nuclear decision process includes assessment, review, and consultation between the President and key civilian and military leaders..All activity surrounding nuclear weapons are characterized by layers of safeguards, tests, and reviews...A presidential order to employ U.S. nuclear weapons must be legal. The basic legal principles of military necessity, distinction, and proportionality apply to nuclear weapons just as they do to every other weapon. It was my job and the job of other senior leaders like the Secretary of Defense and the chairman and the other combatant commanders to make sure these principles were applied to nuclear orders.” This testimony is important because it states the U.S. view that nuclear weapons use must be *legal*, thus inherent in such a claim is that there must be a legal *analysis*.⁶⁶

It is not difficult to imagine such an analysis being done when time is available and information plentiful. To determine if the principle of precaution could be met in a LOW scenario it is instructive to analyze whether the principle could be applied during a non-LOW strike (otherwise it would be moot). A remote warship in the middle of the ocean, similar to the scenario used in the ICJ Opinion, is a helpful framework.⁶⁷ As noted previously, the military states that the legal process begins at the procurement phase as evidenced by *Army Regulation 27–53 Legal Review of Weapons and Weapon Systems*.⁶⁸ The regulation addresses how weapons will be analyzed prior to combat for compliance with all U.S. treaty obligations including law of war treaties and customary international law.⁶⁹ The legal review in particular will at a minimum ensure the weapon doesn’t cause superfluous injury, and is not inherently

⁶⁶ Even the fact that the U.S. is stating that nuclear weapons use needs to be legal is a welcome step, under the ‘civilizing force of hypocrisy’ theory. Even if the U.S. has no plans for legal review, like a during a LOW strike, the fact that they want to be seen as comporting with international law is better than them arguing that they aren’t bound it whatsoever.

⁶⁷ Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996, p. 39, International Court of Justice (ICJ), 8 July 1996 (“In some cases, such as the use of a low yield nuclear weapon against warships on the High Seas or troops in sparsely populated areas, it is possible to envisage a nuclear attack which caused comparatively few civilian casualties”).

⁶⁸ Department of the Army, *Army Regulation 27-53 Legal Review of Weapons and Weapon Systems*, Oct. 23, 2019, https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN8435_AR27-53_Final_Web.pdf.

⁶⁹ *Id.* at 2.

indiscriminate.⁷⁰ Fatally, however, nuclear weapons are excluded from this regulation in particular. However, as the *DoD Law of War Manual* states, other regulations could cover nuclear weapons.⁷¹ It's also worthy to note that if *legal* analysis could not stop a nuclear weapon in development phase, *political* choices can play a role as well. Just this year President Biden requested that the B83 bomb be retired “due to increasing limitations on its capabilities and rising maintenance costs.”⁷² However, Sen. Ed Markey might have revealed the true reason for abandoning the B83, because it would never be legal to use.⁷³

Next, during a traditional strike, the precautionary principle can be applied through thorough legal and operational analysis. Joint-Publication 1-04 *Legal Support in Military Operations* outlines the role of legal analysis throughout military operations. Specifically related to Joint Operation Planning “legal advisors help ensure that the JFC and staff consider law of war principles during the planning process for all joint military operations, and particularly during planning for combat operations.”⁷⁴ Thus, in circumstances when time pressure is less severe than during a LOW strike, there is ample room for legal analysis. Indeed, military analysts have certainly performed operational and legal analysis on current possible strike targets. The 2022 Nuclear Posture Review alludes to such analysis stating “[t]hese plans [nuclear weapons employment guidance] are prepared with advice from the Chairman of the Joints Chiefs of Staff, among other senior officials. Legal advice is integral to the preparation of these documents and includes review of their consistency with the Law of Armed Conflict (LOAC).”⁷⁵ And as previously mentioned, the military performs extensive training for those operating nuclear weapons and legal analysis is sometimes embedded at the unit level to assist with targeting evaluation.

⁷⁰ *Id.* at 4.

⁷¹ Moxley, *supra* note 4, at 47.

⁷² U.S. Department of Defense, *2022 National Defense Strategy of the United States 2* (2022), <https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF>.

⁷³ Bryant Harris, *Republicans lay battle lines over Biden's plan to retire B83 megaton bomb*, DefenseNews, May 19, 2022, <https://www.defensenews.com/congress/budget/2022/05/19/republicans-lay-battle-lines-over-bidens-plan-to-retire-b83-megaton-bomb/>

⁷⁴ Joint Force Development, *Joint publication 1-04 Legal Support to Military Operations* ix (2016), https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp1_04.pdf.

⁷⁵ U.S. Department of Defense *supra* note 72, at 8.

During a strike, the U.S. has shown it complies with precautionary principles (at least in some situations). For example, before the bombings of Hiroshima and Nagasaki leaflets were supposedly dropped on certain Japanese cities warning of possible attack, however the leaflets did not directly mention an atomic bomb.⁷⁶ Thus, the precautionary rule of warning was met before the United States only nuclear strike (though some claim leaflets were not dropped over Nagasaki which would be problematic). Today, much more sophisticated technology could be used to get messages through to citizens near possible nuclear strike targets. Text messages, television and radio broadcasts, other electronic communications, or even drones with megaphones playing a recorded message (these are currently in use in China to relay lockdown information) could be employed to warn populations. In the remote vessel example, drones, leaflets or electronic communications could be deployed warning sailors of an impending strike and giving them time to evacuate. Another option could be direct communication to the adversary government notifying them that strikes were incoming.

Next, if it was imperative to use a nuclear weapon, deliberations could be made regarding weapon type. A low-yield tactical nuclear weapon is much different than a strategic weapon. A tactical nuclear weapon could have a yield of less than 1 kiloton while strategic nuclear weapons start at around 100 kilotons.⁷⁷ Less than a kiloton is still an incredibly powerful weapon but at least military planners could deliberate and consider the appropriate weapon. Another precautionary rule is time of attack. With far range planning the timing of attacks can be optimized on both civilian and operational dimensions. Regarding the vessel example, a strike might be able to occur when the ship had a small crew opposed to when it was at capacity. Or a strike time could be changed if weather conditions might make a strike less accurate. As the next section will explore, during launch on warning timing of attack is completely disregarded since decisions must be made in minutes.

⁷⁶ Atomic Heritage Foundation, *Warning Leaflets*, The National Museum of Nuclear History & Science, <https://ahf.nuclearmuseum.org/ahf/key-documents/warning-leaflets/>

⁷⁷ Nina Srinivasan Rathbun, *What are tactical nuclear weapons? An international security expert explains and assesses what they mean for the war in Ukraine*, The Conversation, Sep. 28, 2022, <https://theconversation.com/what-are-tactical-nuclear-weapons-an-international-security-expert-explains-and-assesses-what-they-mean-for-the-war-in-ukraine-191167#:~:text=Tactical%20nuclear%20weapons%20vary%20in,developed%20during%20the%20Cold%20War.>

Another rule of precautions requires identification of zones where military objectives are more likely and civilian presence less likely. The vessel example is again instructive. Military planners could choose not to strike a ship when it is near a harbor or other populated area. A strike could only be approved once the ship is in a remote part of the ocean (which would have the added benefit of keeping radiation away from populations on land, though radiation can travel far distances through the wind). Finally, the rule of precaution demands canceling or suspending attacks if civilian suffering would outweigh a military objective. A carefully planned strike could be carried out by aircraft which would give maximum time to call off or recall a strike since the plane wouldn't deploy weapons until close to the target. ICBMs on the other hand, either land or sea based, cannot be recalled once fired.

Crucially, during a conventional military operation, military planners can have months or even years to gather information, develop plans, and perform analysis. Operation Neptune Spear, the mission that led to the death of Osama Bin Laden, took almost eight months to plan and execute.⁷⁸ Intelligence was gathered from human and technological sources, like drones. Models were built and teams were trained. Ten of thousands of man hours were spent on the project to kill just one individual. Even methods of warfare were debated such as the benefits of using a SEAL team or instead dropping a bomb. This is the kind of process one hopes for when lives are at stake and shows the principle of precaution being applied throughout the operational process. Similarly, many of the precautionary rules can be met even if engaging in a strike using nuclear weapons. At least trade-offs and variables can be analyzed and steps can be taken to mitigate harms on civilians.

The Principle of Precaution Applied to Nuclear Weapons in Launch on Warning

Eight minutes.⁷⁹ That is the amount of time a President would have to make a LOW decision to launch a nuclear counter-strike upon learning of an incoming strike. Proponents of LOW could argue that the principle of precaution does not apply in a LOW scenario. First, the word “feasible” qualifies many of

⁷⁸Seymour M. Hersh, *The Killing of Osama bin Laden*, 37 *London Review of Books*, May 21, 2015, <https://www.lrb.co.uk/the-paper/v37/n10/seymour-m.-hersh/the-killing-of-osama-bin-laden>

⁷⁹ Other estimates put the number as high as twenty minutes.

the rules of precaution. One could argue that if there is a potential strike on the homeland, then it's simply not possible or practical, to comport with precautionary measures given the circumstances, which could be as high as an existential danger for the United States. Missiles must be launched swiftly and targets must be hit quickly to ensure no additional strikes hit the U.S. and to degrade the belligerent's capabilities. Secondly, proponents could argue that precautionary analysis could be done beforehand, and thus the principle could be met. For example, if a counter-strike was to a remote base in Siberia, the military objective might outweigh any civilian harm and warnings could be impracticable or ineffective.

Despite these arguments it is difficult to see how a LOW strike could comport with the principle of precaution, especially since LOW is a discretionary posture. The most glaring issue with LOW is the time pressure to make an informed decision. Dr. Bruce Blair called the term "jamming" to describe the pressure put on a president by the military to retaliate under an apparent large-scale strike on the homeland.⁸⁰ In fact, multiple presidents have taken issue with LOW. President Reagan wanted to end use of ballistic weapons due to fears of accidental use and not being able to recall them when launched.⁸¹ And both Presidents G.W. Bush and Obama proposed ending hair-trigger but failed.⁸² Judge Weeramantry of the ICJ also shared a similar sentiment stating that the target of a nuclear attack "will be so ravaged that it will not be able to make a fine evaluation of the exact amount of retaliatory force required. In such event, the tendency to release as strong a retaliation as is available must enter into any realist evaluation of the situation."⁸³ Alternatives to LOW exist. For example the U.S. could choose to "ride-out" a nuclear strike and decide how to respond after deliberation and analysis. In fact, the current LOW is more prone to causing false alarms than alerting officials of an actual attack. The history of accidents is well

⁸⁰ House Armed Services Committee Hearing on Outside Perspectives on Nuclear Deterrence Policy and Posture (2019) (testimony of Dr. Bruce Blair). Available at: <https://docs.house.gov/meetings/AS/AS00/20190306/109017/HHRG-116-AS00-Wstate-BlairB-20190306.pdf>.

⁸¹ Frank N. von Hippel, *Biden should end the launch-on-warning option*, June 22, 2021, <https://thebulletin.org/2021/06/biden-should-end-the-launch-on-warning-option/>

⁸² *Id.*

⁸³ Moxley, *supra* note 4, at 199.

documented and in 1979-80 alone there were four system malfunctions that triggered U.S. early-warning systems, with one even leading to the activation of the “doomsday plane”.⁸⁴

With minutes to make a decision, almost none of the precautionary rules could be followed during a LOW strike. The location of military targets would be preselected, thus there would not be additional time to verify correct technical intelligence such as the target’s likelihood of being a military asset. For example, perhaps target ICBM silos have been deactivated or become un-operational. Up to date information would not be available and a target might be selected that was a threat weeks or months ago but is no longer at the time of strike. Similarly, warning civilians would be almost impossible. Perhaps electronic communications could be sent to all phones in a certain area to warn of an impending strike but even so, civilians would not even have sufficient time to evacuate. If the U.S. placed its newer missiles in Europe they could reach Moscow in less than 12 minutes.⁸⁵ Warnings, were they to occur, would be insufficient and meaningless. Methods of and means of weapons would also be severely restricted with the President having to pick from a menu pre-packaged options quickly. The entire LOW deterrence policy is premised on a devastating nuclear retaliatory strike and “Gen. Lee Butler, the first Commander in Chief of Strategic Command, warned that if Strategic Command became convinced that a nuclear attack on the United States was on its way, the president would be pressured to launch.”⁸⁶ Additionally, the traditional LOW retaliatory strike would consist of the U.S. using its ground-based ICBMs to counter-strike (since they would be the targets of an initial strike because submarines are difficult to detect and nuclear-armed planes are hard to target and destroy). The problem with firing ground-based ICBMs however is that they are a crude instrument in many respects. First, they would need to be fired with whatever nuclear payload was attached, since presumably there would not be time to make changes.

⁸⁴ Daryl G. Kimball, *Nuclear False Warnings and the Risk of Catastrophe*, Arms Control Today, Dec. 2019, <https://www.armscontrol.org/act/2019-12/focus/nuclear-false-warnings-risk-catastrophe>.

⁸⁵ Andrew Obsorn & Katya Golubkova, *Moscow ready to cut time for nuclear strike on U.S. if necessary: Putin*, Reuters, Feb. 20, 2019, <https://www.reuters.com/article/us-russia-putin-usa-missiles/moscow-ready-to-cut-time-for-nuclear-strike-on-u-s-if-necessary-putin-idUSKCN1Q918U>.

⁸⁶ von Hippel, *supra* note 81 (It [U.S. Strategic Command] wants to be able to launch the ICBMs before they and the US nuclear command and control system can be partially destroyed by an incoming Russian attack. This posture also puts the United States in a position to be able to quickly implement a “damage-limiting” strike on Russia’s or China’s nuclear forces in case they appear to be preparing to launch”).

Second, they cannot be recalled once dispatched. Thus, if fired after a faulty warning, nothing could be done to stop the attack. The principle of precaution stands in stark contrast to this kind of decision-making. It demands that retaliatory strikes be based on military objectives, with means and methods considered, and with as little civilian harm as possible. A more precautionary approach would be one advocated by Dr. Bruce Blair who argued that “modern precision-guided conventional and cyber weapons can perform almost any mission as well as nuclear weapons, including the destruction of facilities as fortified as missile silos”⁸⁷ Instead of deploying ICBMs as retaliatory strikes there could be a mix of cyber weapons, conventional weapons, or air-based nuclear weapons (which would at least have the possibility of recall). Possible efforts to eliminate ground based ICBMs altogether might be warranted and was suggested by President Reagan.⁸⁸ Conventional weapons come with the added benefit of no radioactive fallout or nuclear winter scenarios, thus producing much less collateral damage.⁸⁹

It is worth noting three statements that hint that LOW might not be as brash as assured retaliatory ICBM counter strikes. First, a Carter administration critique of LOW declared that “the President could decide to retaliate in a few minutes [but] he shouldn't, as a matter of policy, have to do so.”⁹⁰ Similarly, a Reagen administration directive explained that LOW is not “irrevocable” and that the president has *discretion* to respond how he sees fit (albeit the aforementioned “jamming” pressures still remain) which would leave the adversary guessing.⁹¹ Finally, the 2022 Nuclear Posture Review states that:

“U.S. intercontinental ballistic missiles (ICBMs) are not on “hair trigger” alert... potential attacks will be detected and characterized, enabling policies and procedures that ensure a deliberative process allowing the President sufficient time to gather information and consider courses of action. In the most plausible scenarios that concern policy leaders today, there would be time for full deliberation. For these reasons, while the United States maintains the capability to launch nuclear forces under conditions of an ongoing nuclear attack, it does not rely on a launch-under-attack policy to ensure a credible response.”⁹²

⁸⁷ Blair, *supra* note 3.

⁸⁸ von Hippel, *supra* note 81.

⁸⁹ More contemporary rules of precaution require environmental precautions as well, but those rules are outside the scope of this paper.

⁹⁰ Burr, *supra* note 1.

⁹¹ *Id.*

⁹² U.S. Department of Defense *supra* note 72, at 33.

This is welcome language that signifies some possible distance between the LOW of the Cold War and the Executive's posture today. However, it is noteworthy that deliberation is qualified with "*in the most plausible scenarios*". Overall, a few minutes of decision making does not comport with the broader precautionary principle which demands requisite legal analysis. It simply could not be accomplished in a few short minutes. No law of war analysis could be made in five minutes and other requirements such as the principles of proportion or distinction could not be analyzed either.

Conclusion

In conclusion, LOW does not comport with the precautionary principle. The United States claims to follow international law and domestic law as communicated via the military manuals. Yet, precautionary rules cannot be followed when making decisions in just a few minutes. Additionally, the principle of precautionary should be thought of as more than just rules *during* a conflict, instead they should be seen as a broad range of measures which include, inter alia, training, and ensuring the law of war is followed throughout the weaponizing process. From procurement all the way to targeting and use, legal analysis should be incorporated at every step and be a valued part of decision-making. This broader conception of the precautionary principle *requires* the capacity for military officials to analyze and evaluate conduct with the laws of war. LOW simply does not allow for this opportunity nor does it allow for precautionary measures during attack that reduce civilian suffering.