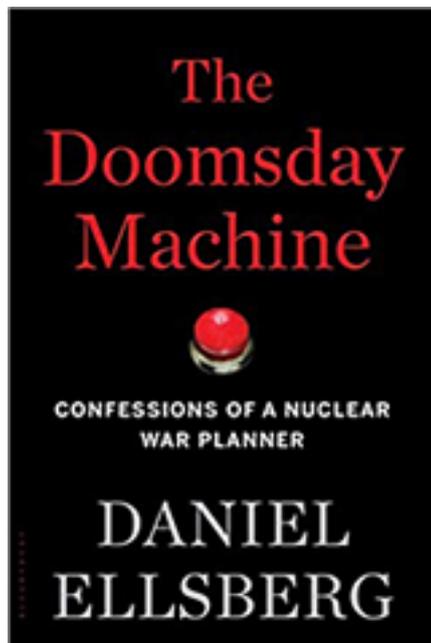


By John V. Walsh

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"From a technical point of view, he (Stanley Kubrick) anticipated many things. ... Since that time, little has changed, honestly. The only difference is that modern weapons systems have become more sophisticated, more complex. But this idea of a retaliatory strike and *the inability to manage these systems, yes, all of these things are relevant today. It (controlling the systems) will become even more difficult and more dangerous* ." (Emphasis, jw)

Vladimir Putin commenting on the film, Dr. Strangelove: or How I Learned to Stop Worrying and Love the Bomb, in an [interview with Oliver Stone, May 11, 2016](#). Putin had not seen the movie and did not know of it before Stone showed it to him.



[The Doomsday Machine](#), the title of Daniel Ellsberg's superb book is not simply an imaginary contraption from a movie masterpiece. A Doomsday Machine uncannily like the one described in *Dr. Strangelove* exists right now. In fact, there are two such machines, one in US hands and one in Russia's. The US seeks to hide its version, but Ellsberg has revealed that it has existed since the 1950s. Russia has quietly admitted that it has one, named it formally, "Perimetr," and also tagged it with a frighteningly apt nickname "Dead Hand." Because the US and Russia are the only nations with Doomsday Machines to date we shall restrict this discussion to them.

*The Doomsday Machine* was published just a little more than a year ago, but its terrifying message has failed to provoke action. And Daniel Ellsberg is a man who knows whereof he speaks; the subtitle of the book is "Confessions of a Nuclear War Planner," which is how Ellsberg spent the early part of his career. What follows on this first anniversary of the book's publication is a brief restatement of the main argument of the book and then a summary of Ellsberg's plan of action. (Not included are memoirs and personal experiences of this remarkable, very intelligent and moral man, which are found in the book and which I recommend to flesh out the line of thought presented herein.) Ellsberg's plan is to be considered a stop gap measure to remove the nuclear sword of Damocles hanging over our heads and allow time to move to total abolition of nuclear weapons, a much more arduous task. Hopefully this essay will serve as a reminder of Ellsberg's warnings and as a call to act on them.

### **How Do the Doomsday Machines Work? – Two components:**

What is the essence of a "Doomsday Machine"? The first component is a mechanism of launching nuclear weapons that is on hair trigger alert and not always in the hands of the Presidents of Russia or the US. The fact well concealed from the US public is that the US President or those in the line of Constitutional succession are *not* the only ones with a finger on the nuclear button, and the same is true in Russia. The second component of a Doomsday Machine is a weapon of such destructive force that it can kill billions in the immediate aftermath of an attack and then the entire human race and perhaps all animal life on earth.

### **The Launch Mechanism – Command and Control**

Russia and the US each have a First Strike capability, that is the ability to strike the other with great force, destroy the other's cities and industrial and military base – and *knock out the*

*other's nuclear deterrent*

The essence of a First Strike capacity is this ability to wipe out the deterrent of the other side or weaken it sufficiently that the remaining force could be intercepted for the most part. How can a targeted nation prevent the use of a First Strike? It must convince the adversary that such a strike is futile and will not destroy the deterrent of the targeted nation. The attacker must understand that he will not escape retribution, because the nuclear force of the targeted nation, its nuclear deterrent, will survive.

**Launch on Warning – Hair Trigger Alert.** The first measure to prevent the loss of deterrence in the event of a First Strike is to put the nuclear force on Launch on Warning or Hair Trigger Alert status. Most of us have heard about this, but we ought to quake in our boots every time the thought of it crosses our minds. Since the time to respond to a First Strike is only tens of minutes for an ICBM (Intercontinental Ballistic Missile) attack, which takes about 30 minutes to travel between the US and Russia, and even less time for a short or intermediate range missile, a targeted country must have its nuclear force loaded onto delivery vehicles and capable of being *launched on warning of a nuclear attack*. The weapons must be ready to go and launched before the country is struck. This is called "Launch on Warning" and the weapons are sometimes said to be on "Hair Trigger Alert." (There is some imprecision to the terminology surrounding nuclear weapons, partly due to the obfuscation used by the US in negotiations. Steven Starr gives an account of this imprecision and a brief glossary [here](#). I will use terms that are easily understood and common sense. And I will define them when necessary.)

Nuclear warheads that are loaded onto delivery vehicles are said to be "deployed," and there were roughly 1600 such warheads loaded onto long range delivery vehicles, each, in [Russian](#) and [U.S.](#) hands in 2018. They are ready to be launched in minutes. (There are several thousand more warheads in reserve on each side but not "deployed.") It is easy to see the danger inherent in this situation. The decision to launch must be made in minutes to prevent destruction of the nuclear deterrent and it would be hard to decide with certainty whether the warning of an attack was genuine or due to a technical malfunction. In fact, the signal that an attack is coming is always likely to be ambiguous. Even if the attack is real, the attacker will seek to hide it and so even then the signal will be ambiguous. Thus, even an ambiguous warning caused due to a technical malfunction must always be treated with seriousness and a decision to respond made within minutes.

That a decision of such moment must be made so quickly, under the gun if you will, is a disaster waiting to happen. A mistake is bound to occur with the passage of sufficient time. And it nearly did during the Cuban Missile crisis and again in 1983 when the Soviets detected an attack coming from the United States. According to established protocol the warning was sufficient for the Soviet officer in charge to inform the leadership that a nuclear attack on the US should be ordered. But that officer, Lieutenant Colonel Stefan Petrov, refused to follow protocol and instead interpreted the warning of an attack as a false alarm, which it was. So, a launch of Soviet weapons did not occur. In Russia, Stefan Petrov who died recently is hailed as "the man who saved the world." This is the nuclear powder keg on which we all sit.

**Decapitation and Delegation – Unknowns have their finger on "the button."** The second measure to prevent loss of deterrence is Delegation. This is not widely known or understood. One aspect of a First Strike would be an attempt to knock out known command centers so that a retaliatory strike could not be ordered. This is known as Decapitation. The antidote to Decapitation is Delegation, that is others besides the Presidents and their immediate successors are authorized to press "the button." It works this way. These "others" are located in secret command centers far from Washington or the Strategic Air Command Base in Colorado, both of which will be targeted in a Decapitation strike. If these secret centers find themselves cut off from communication with Washington or Moscow, then the assumption is made that a decapitating nuclear strike has occurred. In that event these "others" removed from the centers of power are authorized to press the nuclear button!! (One can see why the Russians call their system of delegation, Perimetr.) These others are not elected officials and in fact we do not know who they are! What Ellsberg discovered is that some of these "others," military men, were concerned that they too could be hit in a decapitating strike. So they had delegated authority to still others!! In fact, no one, perhaps not even the President and his circle of advisors, knows who can send off the nuclear weapons. Is it possible that one of them might be like the fictional General Jack D. Ripper, the psychotic and delusional man who gives the launch order in

*Dr. Strangelove*

– or a similar individual lusting after the Rapture?

It does not take much imagination to see the multiple ways in which things could go wrong; a launch due to a false alarm of attack and a lack of time to make a thoughtful check and decision; a failure of communication that puts the perimeter out of touch with the center although no decapitation has in fact occurred; or a mad man or woman or a crazed ideologue who becomes one of the Delegated. A terrorist attack with a nuclear weapon on Moscow or Washington could also mimic a Decapitating attack and set in motion the fast Delegation to the delegatee. The appropriateness of the term "Dead Hand" for this arrangement is striking.

It is true that so far as we know the probability of a mistake or a rogue element gaining control

of nuclear weapons is small. (But the fact is we do not know what the situation is – it is hidden from us and perhaps even from elected officials.) The weapons are protected from rogue use by safety locks called Permissive Action Links (PALs) but these are not perfect, and they must be capable of activation by someone in the "perimeter" in the event of Delegation. And they are no protection against a false alarm of an attack. Despite how low the probability of an error might be, the dice are thrown every moment of every day, and with the passage of time, inevitably something will go wrong.

In summary, First Strike Capability is the source of the problem. It leads to Launch on Warning and Delegation by a targeted nation. The US pioneered and maintains a First Strike Capability and refuses to adopt a "No First Strike" policy. Another response to a first strike capability is that the targeted nation will build up the numbers in its nuclear force so that some will always survive an attack. That is precisely what happened in the first Cold War until it reached insane levels as shown graphically [here](#).

### **The Nuclear Weapon. The First Strike Arsenal.**

**Obliteration of Russia and the US** The second component of a Doomsday Machine is the weapon itself. What is the destructive power of the ensemble of nuclear weapons as used in a First Strike? I know of no such quantitative estimates released by the Pentagon for the present day. They are badly needed. But in 1961 when Ellsberg was among those working on nuclear war fighting strategy for the Kennedy administration, he asked for an estimate from the Pentagon of the deaths due to a First Strike as the generals and their civilian war planners had mapped it out at the time. To his surprise the estimate came back at once – the Pentagon had made it and kept it hidden. Launching of the nuclear weapons planned for use in a First Strike by the US would result in the deaths of 1.2 billion from explosions, radiation and fire. That number was the number of deaths and did not include injuries. And it was only the result of US weapons; it did not include deaths from a response from the Soviet side if they managed one. 1.2 billion people was the toll at a time when the population of the earth was about 3 billion! (Note that this toll does NOT include the effects of nuclear winter which was unknown at that time. More on that below.) And of course, such deaths would be concentrated in the targeted countries which in these times would be the US and Russia. Ellsberg was stunned to learn that the Pentagon would coolly make plans for such a gargantuan and immediate genocide. And so should we all be. What kind of mindset, what kind of ethics, what kind of morality has allowed for such a thing!

**Nuclear Winter and the Destruction of Humanity.** But the damage does not stop there. This is the surprise that the Pentagon did not understand at the time. The ash from the fires of

burning cities would be cast up into the stratosphere so high that it would not be rained out. There it would remain for at least a decade, blocking enough sunlight that no crops would grow for ten years. That is sufficient to cause total starvation and wipe out the entire human race with only a handful at most able to survive. This is Nuclear Winter. It is eerily reminiscent of Kubrick's Doomsday Machine which resulted in a cloud of radioactivity circling the earth and wiping out all life. Nuclear Winter was first understood in the 1980s, but at that time careful assessment of the existing computer models seemed to indicate that it was not likely and so many "stopped worrying." Now with the interest in Global Warming, new and better computer models have been developed. When the results of a nuclear first strike are put into these models, Nuclear Winter again makes its appearance as Brian Toon, Alan Robock and others have [shown](#). The TED talks of [Toon](#) and [Robock](#) describing their findings are worth watching; they are brief and well-illustrated. We are confronted with a genocide of all or nearly all humanity, an "[Omnicide](#)".

The launch of the 1600 "deployed" warheads of either the US or Russia is sufficient to give us nuclear winter. So we in the US have put in place a weapon system on hair trigger alert commanded by we know not whom which can kill virtually all Americans – along with most everyone else on the planet. We have on hair trigger alert a weapon which is in fact suicidal. Use the weapon and we lose our very existence. We should also be clear that even if we prescind from the effects of nuclear winter, the nuclear attacks would be concentrated on Russia and the US. So most of us would be consumed. Thus MAD (Mutual Assured Destruction) is replaced with SAD (Self-Assured Destruction).

### Disarming the Doomsday Machine

What is Ellsberg's plan to disarm the Doomsday Machines? He does not suggest total abolition of nuclear weapons, a worthy and ultimate goal, as a first step. He suggests intermediate steps, which can be accomplished much more quickly and remove the present danger.

From what was said above, it is clear that the Doomsday Machine with its massive nuclear force, Launch On Warning and system of Delegation all grows out of a need to protect from a First Strike. The solution to the problem does not demand giving up all nukes or even a deterrent which many are loathe to do. And that is not hard to understand when we compare

the fate of Kim Jong-un to that of Muammar Gaddafi or Saddam Hussein. Nor is it difficult to understand in the U.S. given the current intense Russophobia, or in Russia given the alarm caused by NATO's drive to the East. This is one reason that total abolition of nuclear weapons or even abolition of a nuclear deterrent will be quite difficult. However, dismantling the Doomsday Machines, the immediate danger to humanity, does not demand giving up nuclear deterrence.

**Abandoning First Strike Policy and Capacity.** Dismantling the Doomsday Machine with its Hair Trigger Alert and Delegation *does mean* abandoning a First Strike policy *and* capacity. And right now, only two countries have such First Strike capacity and only one, the US, refuses to take the right to use it "off the table" even when not under attack. What does the elimination of First Strike Capacity mean in practice; how can it be achieved? This turns out to involve two basic steps for the US.

**Dismantling the Minuteman III.** First, the land-based ICBMs, the Minuteman III, must be entirely dismantled, not refurbished as is currently being undertaken at enormous cost. These missiles, the land-based part of the Strategic Triad, are highly accurate but fixed in place, "sitting ducks"; they are only good for a First Strike, for they will be destroyed in a successful First Strike by an adversary. Former Secretary of Defense William Perry and James E. Cartwright, formerly head of the Strategic Air Command and Vice Chair of the Joint Chiefs of Staff, have both [called for](#) dismantling the Minuteman III. We would thereby also save a lot of money.

**Reducing the SLBM Force.** The second step in dismantling the First Strike capacity is to reduce the Trident Submarine-Launched Ballistic Missile (SLBM) force to the level where it cannot destroy the entire Russian land-based missile force. With these two measures in place the US would no longer have a First Strike Capability, and so Launch on Warning and Delegation upon apparent Decapitation would both be unnecessary. It is that simple.

Of course, the Russians would also need to take similar measures that take into account the specifics of its arsenal. And that is where negotiations, treaties and verification come in. That in turn cannot take place in the current atmosphere of Russiagate and Russophobia, which is why both are existential threats and must be surmounted. We must talk despite our differences, real or perceived.

However, were the US and Russia to abandon their First Strike capacity, a reasonable deterrent could be preserved. Such a deterrent should be far below the threshold for a nuclear winter. When Herbert York, one of the original nuclear war planners and strategists, was asked how many nuclear weapons it would take to guarantee deterrence, he suggested somewhere between one and one hundred, closer to one, perhaps ten. Of course, such a small number demands giving up on a missile defense system which has been a will-o'-the-wisp since the 1950s. But would a leader of any nation, even one equipped with an Anti-Ballistic Missile system, when confronted with 100 nuclear warheads facing him or her, be willing to risk ten getting through and demolishing 10 cities?

But there is a deep problem here. The US at least has not built its nuclear forces with the simple object of deterrence. It has had the policy of being able to strike first and destroy or sufficiently degrade the Russian force so that there would be no retaliation. Ellsberg establishes that definitively based on his own experience in his days as a nuclear war planner. But this is also a will-o'-the-wisp. With Launch on Warning and Delegation both sides would be destroyed. So, this path must be abandoned. However, it is a path that has been trod for a long time. It has acquired many adherents and become embedded in the thinking of our "strategic war planners." It will be hard to abandon this way of thinking which is what will make the simple steps outlined above politically difficult although technically and logistically quite simple. Moreover, in the mind of the public there is no clear distinction between First Strike and simple deterrence. And many favor a nuclear deterrent. So the movement for total abolition of nuclear weapons has a long way to go to reach its destination.

**An additional measure – Eliminating launch on warning, aka "hair trigger alert," that is, "De-alerting."** An additional measure has also been proposed. All nuclear warheads should be removed from deployed status by Russia and the US. (The oft-used term for this is "De-alerting."). That is, the warheads should be removed from their delivery vehicles and stored in a way that would take days or even weeks to deploy – that is to remount. This has been proposed by the Global Zero [Commission on Nuclear Risk Reduction](#) which says of itself:

*As world leaders descended on the United Nations in New York for the 2015 Non-Proliferation Treaty (NPT) Review Conference, the Global Zero Commission on Nuclear Risk Reduction – led by former US Vice Chairman of the Joint Chiefs of Staff General James E. Cartwright and comprised of international military experts – issued a bold call for ending the Cold War-era practice of keeping nuclear weapons on hair-trigger alert.*

*The Commission's extensive report calls for (1) an urgent agreement between the United*

*States and Russia to immediately eliminate "launch-on-warning" from their operational strategy, and to initiate a phased stand down of their high-alert strategic forces....; and (2) a longer-term global agreement requiring all nuclear weapons countries to refrain from putting their nuclear weapons on high alert.*

*Urgent action is needed, according to the Commission, because of heightened tensions between the United States and Russia, ongoing geopolitical and territorial disputes involving other nuclear countries that could escalate, and an emerging global trend toward placing nuclear weapons on high alert.*

*The proposal, backed by more than 75 former senior political officials, national security experts and top military commanders, makes the case that a multinational de-alerting agreement could greatly mitigate the many risks of nuclear weapons use, including from computer error, cyber launch, accidental detonations, unauthorized "insider" launch, false warning of enemy attack, and rushed nuclear decision-making.*

*The full report is [here](#).*

Such an arrangement must be solidly negotiated and verifiable. It would seem that the US President could do this by executive order and at little cost. For submarines the nuclear warheads would be stored on shore in a way that makes it impossible to reload for the period of delay that is negotiated. This arrangement means that no decisions about nuclear warfare need be taken at a moment's notice, no launch on warning is possible or even relevant any longer and the possibility of Decapitation and the consequent necessity of Delegation disappear. And when either nuclear state feels existentially threatened by conventional forces, its first response need not be to fire a nuclear weapon. Its first response could be to deploy its warheads (that is, reload the launch vehicles) while it negotiates over the threat. That along with Ellsberg's suggestions would greatly stabilize the world and lessen to almost zero the probability of nuclear war based on misjudgment or accident. From there the work on ever greater levels of reduction leading eventually to total abolition of nuclear weapons could go forward.

### **The Work Ahead to Win Support for Dismantling the Doomsday Machines**

To be able to get Congress or the Executive to move toward these changes, a number of things will be necessary. First is information. As a very basic example, Ellsberg learned in 1961 that a US First Strike at that time would produce 1.2 billion deaths as an immediate result of Nuclear War, excluding any effects of nuclear winter and excluding a Soviet response. We deserve to know what those numbers are now. Here, Ellsberg argues, both public pressure and the work of whistle blowers will be needed. As another example, we need to know from the Pentagon and the National Academy of Sciences whether the result of a US First Strike of the magnitude now on hair trigger alert would lead to nuclear winter – as it seems almost certain it would.

But far more than that would be needed. There must be some form of pressure to wake up the politicians and force them to dismantle the Doomsday Machines. But this is missing. In part with the end of the First Cold War, many thought that the danger had disappeared. Clearly it has not. A movement to abolish the Doomsday Machine is a threat to the Military Industrial Complex and so the MIC and its media acolytes would prefer silence or opposition to such efforts. It may be that the generations which lived through the first Cold War and went through its terrors, from "duck and cover" drills to mushroom cloud nightmares, to the Cuban Missile Crisis may have a special role to play. Their psyches have been most affected by nuclear horrors and they may be the best ones to convince succeeding generations of the dangers. But the strategy and tactics for such an effort have yet to be outlined. It is a task that lies before us.

The first step to sanity is to eliminate launch on warning and the second step would be to rid ourselves and the Russians of a First Strike policy and *capacity* and negotiate a stable deterrent, small enough that it does not threaten nuclear winter. That is something that the nuclear powers and the broad public can easily accept despite the opposition of a small number of nuclear war fighters. Here the idea of negotiations is not to make the other side more vulnerable but to give the "adversary" and oneself a small, stable nuclear deterrent. Such a win-win approach to negotiations is in fact necessary for survival while we take the more difficult road to total nuclear abolition.

Total abolition should be the ultimate goal because no human hand should be allowed to wield species-destroying power. But it seems that an intermediate goal is not only needed to give us the breathing space to get to zero nuclear weapons. An intermediate and readily achievable goal can call attention to the problem and motivate large numbers of people. The [Nuclear Freeze movement](#)

of the 1980s is a very successful example of this sort of effort; it played a big role in making the Reagan-Gorbachev accords possible. The effort to kill the Doomsday Machines might well be called something like Step Away From Doomsday or simply Step Away. The time may be ripe for such an effort. Getting to zero will require a breakthrough in the way countries deal

with one another, especially nuclear armed countries! Let us give ourselves the breathing space to accomplish that.

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*. The facts referenced in this essay are all found with citations and further explanation in Daniel Ellsberg's extraordinary book,*

*The Doomsday Machine*

*. Links are provided for additional references.*