

The Risk of Accidental Nuclear War and the War in Ukraine

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Tensions between Russia and NATO over Ukraine have steadily increased during the past months and led to the launch of military attacks on Ukraine by Russia on 24 February 2022 – without a doubt an offensive war that violates international law. In the meantime, the whole of Ukraine has become a war zone. In this situation the question arises, to what extent is there a risk of the use of nuclear weapons, possibly by accident?

1. Nuclear deterrence

The possession of nuclear weapons acts as a deterrent to potential opponents because of the devastating consequences of their use. The great nuclear powers possess reciprocal second-strike capabilities: the state being attacked can wait until nuclear weapons strike and then still have enough time and potential to deliver a lethal counterstrike. In short: "Whoever shoots first, dies second." This principle of nuclear deterrence can also prevent wars. Since Ukraine does not possess nuclear weapons, this aspect did not play a role in the current situation.

2. Deliberate nuclear attack

The consequences of a nuclear war are so serious for all sides that a high threshold for the use of nuclear weapons exists even in times of crisis and war.

This situation could change with the development of further smaller nuclear weapons, and the threshold could be lowered. There are also other scenarios that could lead to a deliberate use of nuclear weapons. For example, a nuclear power that considers itself to be in existential danger may consider the use of nuclear weapons. Russia's strategy papers provide for the use of nuclear weapons if the existence of the Russian Federation is at stake, regardless of whether this situation is the result of military or economic causes. If sanctions against a nuclear power are so severe as to constitute an existential threat, this could increase the risk of the use of nuclear weapons. The same applies to severe cyber attacks against a country. The question is, when is such a limit reached? The spectrum of potential damage is a continuum from "minimal" to "huge" or "total". There is a large discretionary margin for determining the threshold for a nuclear attack. At the begin of the attacks on Ukraine on 24 February 2022 the Russian president declared, "Now a few important, very important words for those who may be tempted to intervene in ongoing events from the outside. Whoever tries to interfere with us, and even more so to create threats to our country, to our people, should know that Russia's response will be immediate and will lead to such consequences as you have never experienced in your history. We are ready for any development of events. All necessary decisions in this regard

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have been made. I hope that I will be heard."² This threat is understood as a threat of the use of nuclear weapons.³

The imminent defeat of a nuclear power in a conventional conflict could also lead to the use of nuclear weapons.

On 27 February 2022 Russia put its "deterrence forces" on high alert;⁴ this includes nuclear weapons. This also happened in 2014 during the annexation of Crimea, but this time the situation is significantly more dangerous. Also because of announced and possible further sanctions. Just because such a situation of nuclear forces being put on high alert went well once, it doesn't mean that it will always go well. On the contrary, the willingness to take a risk can rise to the point where a serious accident can happen.

3. The risk of accidental nuclear war in times of crisis or war

Early warning systems for nuclear threats are based on sensors and very complex computer networks and serve to recognize nuclear attacks early enough that a counterattack ("launch on warning") can be triggered before the attacking nuclear missiles strike and impede or prevent a retaliation.

However, false alarms can happen in early warning systems, i.e., a signal may be triggered although no threat exists. Such false alarms are particularly dangerous in political crisis situations, where mutual threats may have been issued or if further events happen concurrently with a false alarm, which could be perceived as connected with the alarm signal. There have been a number of situations in the past in which it was only by great luck that an accidental nuclear war did not occur.

In the current situation in Ukraine, too, there is still hope that a false alarm issued by an early warning system would be interpreted as such, without causing a nuclear counterreaction. False alarms such as these are extremely critical if threats or other information have been received on the basis of which a nuclear attack by the opponent is expected or considered to be plausible. In such a case there is a danger that the assessment team will assume that an actual attack has occurred and has to decide on a retaliation.

In section 2 above it was mentioned that a nuclear power that finds itself in existential danger may also consider the use of nuclear weapons. Assuming that a false alarm occurs in such a situation, will the state that is apparently under attack wait and rely on its second-strike capability, or rather decide for an immediate nuclear counterstrike?

If second-strike capability exists, one could as a precaution abstain from an immediate retaliation ("launch on warning"). This would correspond to currently accepted principles and expectations. But such a decision depends on the respective head of state. In wartime and in very tense situations such as the current one it cannot be guaranteed that such principles will always be followed. The possibility cannot be excluded that a head of state decides for a launch on warning. There can be different reasons for this, whereby several of the following may apply:

- A direct counterstrike is much easier and more effective than a second strike after one has been hit.

² <https://www.bloomberg.com/news/articles/2022-02-24/full-transcript-vladimir-putin-s-televised-address-to-russia-on-ukraine-feb-24>

³ https://www.icanw.org/ican_condemns_russia_invasion_of_ukraine_an_escalation_risking_nuclear_war and <https://www.icanw.de/action/ican-verurteilt-russische-invasion-in-die-ukraine/>

⁴ <https://www.tagesschau.de/ausland/europa/putin-atomstreitkraefte-101.html>

- If a nuclear attack is expected, the assumption that the warning signal is real is much more likely.
- One's own nation may be in such distress and existential danger that a nuclear attack is being considered anyway.
- The head of state wishes to personally trigger a retaliation and not rely on others to execute a second strike after a first strike. He/she will possibly not be in a position to do so him/herself after an attack.

4. Cyberwar

Weapon deliveries to Ukraine and sanctions against Russia could trigger serious cyberattacks in retaliation. Recently, conflicts between states have ever more frequently been accompanied by cyberattacks. Therefore, serious cyberattacks are to be expected now as well, which could escalate to a cyberwar between NATO states and Russia. Serious cyberattacks need not originate from states: hacker groups or individuals can also be responsible. As a rule, however, this cannot be ascertained. Therefore, it is likely that the states involved in the current conflict will be held responsible. This means there is a great danger that the current war in Ukraine could spread to NATO and Russia, at least in cyberspace. Consequently, mistakes in the early warning systems for nuclear threats will become more dangerous and can very easily lead to an accidental nuclear war.

5. The risk of accidental nuclear war in armed conflict between nuclear powers

The situation can become particularly dangerous if the current situation in Ukraine escalates further and NATO also gets drawn in to combat action. This could easily lead to nuclear conflict. Military experts also warn of this risk.⁵

In the event of imminent defeat in a conventional war between nuclear powers the losing side could consider the use of nuclear weapons. Furthermore, every false alarm in an early warning system for nuclear threats becomes extremely dangerous in such situations. If violent conflict is already in course, an alarm signal regarding nuclear weapons could very easily be assessed as plausible and corresponding to current expectations. It would then also be more effective to initiate a retaliation before the opponent's nuclear weapons strike and make retaliation more difficult. Violent conflict between nuclear powers will be accompanied by cyberattacks and these also increase the risk of misinterpretations in the event of false alarms in early warning systems.

6. What is to be done?

De-escalation is the order of the day. Further escalation and military conflicts between nuclear powers must be prevented by all possible means. This means that crisis communication must be strengthened, in particular between the military leaderships of Russia and the USA. That presupposes the approval of the heads of state. In the critical phase of the transition from the Trump to the Biden administration, the American Chief of Staff Mark Milley made full use of the options of crisis communication with his colleagues in China and thereby averted the danger of an accidental nuclear conflict. Such responsible behaviour is imperative today as well. Nuclear wars cannot be won; the destruction of the European theatre of war, with global consequences, would be inevitable.

⁵ <https://www.n-tv.de/politik/Ex-Oberst-warnt-vor-Eskalation-mit-dem-Westen-article23151797.html>

