

Prof. Ted Postol: Iran's Nuclear Threshold: 20 Warheads in Weeks?

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#Nima

You know, one of the breaking news items we've learned from Channel 14 in Israel is that the early warning system seems to show some sort of malfunction. They announced that the Israeli early warning system detected a missile launch from Iran toward Israel, the Negev, but it suddenly disappeared. There seems to be a malfunction in the detection system. Why is that? Is it a problem with the communication they had before this started with the radars in the GCC countries, or is it something internal in Israel? It doesn't matter what has happened to the GCC countries.

#Ted

Well, without knowing a lot of detail, there's no way to know. But Israel's early warning system has not been functioning very well. I mean, it's been at a marginal level really since the first few days after the February 28th attack.

#Ted

The Iranians, within two days or so, destroyed all of the critical radars that are needed for quality early warning in Israel. There's a large, what's called an ultra-high-frequency radar in Qatar. They destroyed that radar. Well, the face of the radar—there are three faces on that radar—the face that looks toward Iran was damaged enough that the radar can no longer operate. And that radar was critical because it operates at what's called UHF frequencies, ultra-high-frequency radar, maybe for those who know, 450 megahertz is kind of a rough frequency range.

And at that frequency, the radar reflectivity of missiles launched from Iran is relatively large. At higher frequencies, the radar reflectivity gets much smaller. So this radar does not have the same precision of tracking that higher-frequency radars would have, but it has the great value of range capability. So it can see a large number of missiles when they're launched toward Israel in particular, or the Persian Gulf military bases that the United States has, when they're ballistic missiles, of course—I'm not talking about drones.

#Ted

And those missiles can be tracked with enough precision that they can tell roughly where they are headed. There's another warning system in space that the United States operates, a satellite system, and it can tell almost instantly that missiles are being launched because it sees the hot exhaust plume of the missile. And the hot exhaust plume is observable essentially when the rocket motor ignites. And the satellites can actually see through clouds. They operate at certain wavelengths where the attenuation of infrared in the clouds is relatively small. So they can see the launch, and they're quite sensitive.

But they cannot track the missile with enough precision to accurately tell where they are going, although they can tell—they're good enough to be able to tell—whether it's heading toward Israel or a Gulf state. So they're good enough for that. But they can't tell whether the missile is going to land in Tel Aviv or Haifa, for example. So you need a radar for that. And the long-range radar is critical in Qatar for what's called cueing the THAAD radars, these much higher-frequency, shorter-wavelength radars that operate at what's called X-band. So the UHF radar operates at 500 megahertz, or half a gigahertz, let's say; the X-band radar operates at 10 gigahertz, so it's 20 times higher frequency.

This gives it a much higher spatial resolution. The problem is the radar cross-section—the radar reflectivity—of objects at X-band is much lower, and these radars are much smaller and have less power. So they need to be told, "Look in this area of the sky," because the radar is like a searchlight. If you know exactly where to look, you don't have to spend a lot of time searching around for a target. So the acquisition of the targets is critical. And so there's a combination of these radars. Those radars no longer operate. So if you're in Israel, you would know that missiles are going to land somewhere in Israel from the space-based system. And it looks like that's pretty much what they have been using. They have radars for the Arrow system.

This is a much shorter-range missile defense. Those radars—some of those radars—may still be operating. There are Patriot radars that also might still be operating because they're harder to find and harder to attack. So I don't know if all those radars have been destroyed yet. But my guess is the Israelis have been using Patriot and Arrow radars for warning. But, you know, you don't know how well they're operating. The Patriot does have a problem, in the past at least, where it loses targets when it's tracking them. But that's a software problem that it had, and presumably that software problem has been addressed or solved. But who knows? I mean, these radars are very complex. Everything is being put together on a shoestring because the warning system that was really quite robust before it was destroyed no longer exists.

So they're operating with pieces of a system that tells them, yeah, missiles have been launched in Iran. So in the next nine or 10 or 12 minutes, things are going to be happening in Israel. But I can't tell you if it's Haifa or Beersheba or so. So everybody has to be on alert. And so I think the system, you know, and this has had a tremendous effect on the population because earlier you could say to the population in Haifa that something's going to happen, take cover. But you didn't have to roll

everybody out of bed at night in Tel Aviv and Beersheba and everywhere else. So this puts a lot of stress on people's lives if you're up a few times a night when these attacks are going on. I'm not yet... I haven't heard... that the ballistic missile attacks have again started against Israel. Has that happened? I've been working on this briefing, so... yeah. Do you know that there are ballistic missile attacks on Israel now?

#Nima

No, no, no. It wasn't a ballistic missile attack on Israel. They had detected it, but it was wrong, you know. The detection was some sort of malfunction in the system.

#Ted

Yeah.

#Nima

It wasn't. There was no attack on Israel.

#Ted

Yeah. Well, it could be anywhere. It could even be the early warning satellites. Yeah. So... it's very hard to know. These are complicated systems. When they work, they're very helpful. They're not the silver bullet that some people think they are, but they certainly are a great help. But they're far from perfect. And that's a big issue. When you work with these systems, you always have to ask, am I getting information that's accurate? So...

#Nima

Ted, we know that they have sent an Iron Dome or something like the Iron Dome to the UAE to defend the UAE during the war. Usually, when it comes to the Iron Dome, we haven't talked about the Iron Dome. We were talking about the Patriot system, THAAD, Arrow. What is the Iron Dome, and what is the function of the Iron Dome?

#Ted

Well, Iron Dome was supposed to be able to intercept artillery rockets. That's what it was designed to do. Artillery rockets are, of course, generally unguided rockets that are launched. Their ranges are kilometers to maybe 20 or 30, even 100 kilometers or so. And they're relatively cheap and unsophisticated. They deliver warheads that range from five or six kilograms to maybe even 100, 150 kilograms if they're very big ones and long-range. And they have been a tremendous problem for the Israelis because these rockets have been fired from Lebanon and Gaza into Israel for years

now. And so the Israelis put together this missile defense system they call Iron Dome. They've been lying about its performance right from the beginning.

They claim, I think, an 87% intercept rate. Its intercept rate is probably below 5%. You know, it's been a very, very low performance, although my political science geniuses at Stanford think it's working without data. And so the idea was to try to make the interceptor very inexpensive. So what the Israelis did is they modified an air-to-air missile. These are missiles that you can carry under the wing of a plane. And they increased its booster capabilities, the propulsion section, so that you give it the extra propulsion it needs because when it's fired from the ground, it needs considerably more propulsion to gain speed and range. When it's fired from an aircraft, it's already going faster. It already has a good altitude and already has speed.

So it's really a very souped-up air-to-air missile, very sophisticated, I might add. And this was supposed to be able to hit artillery rockets. And the artillery rockets, their speed is 200, 300, 400 meters per second, which is, you know, different from 3,000 meters per second for a strategic missile from Iran. So the crossing speed is much lower. And the crossing speed is important because the crossing speed determines how I see the missile, I see the target at a certain range, and I only have a certain amount of time to adjust to hit it. If the crossing speed is very high, I just don't have time. It just flies right by me. So the crossing speeds it's designed to deal with are much lower. And for reasons I have not been able to understand, it's failed catastrophically against short-range missiles.

So I can't tell you why it's failing, but I can tell you it is failing because we have substantial data, mostly from night engagements, where we can see the motion of the missiles and we can see when an intercept occurs. Intercepts occur almost never with Iron Dome. Now, that's against ballistic targets, artillery rockets, and of course they've been firing them at strategic rockets, which was an incredible waste of interceptors. Now, this Iron Dome interceptor is enormously capable against drones and aircraft. I mean, it's basically a modified anti-aircraft missile. Drones are an even easier target than an airplane because they're moving more slowly, and they don't have the evasion capabilities that a lucky pilot who sees this thing coming might be able to bring about. So it's an excellent missile for shooting at drones.

So my guess is somebody woke up and said, let's stop wasting these interceptors and move them to a location where they can be useful, where there are lots of drone attacks chipping away at these military bases in the Gulf. And so that's what my guess is what happened here. So the people are, you know, it's very confusing. It's how these interceptors work and what they're capable of engaging. And it's been in the interest, certainly of the Israelis and the Americans, to confuse people as much as possible because none of these systems are working well against the particular targets they were designed to deal with. And so what you want to do is you don't want to tell people we spent \$50 billion on this weapon system and it doesn't work.

You know, it's a little bit of an embarrassment, to say the least. So you keep lying about it. And the more you lie about it, the more you become the victim of your own propaganda. Because there are only a few people who have the technical knowledge and expertise to understand what's actually happening. So when you lie like this, you also have the effect of misinforming all these people in the U.S. government, and probably in the Israeli government as well, about how well this system is performing. Because, as I've mentioned multiple times, the people in these supposedly privileged leadership positions don't necessarily know more than the person on the street. You know, they're getting a lot of their information verbally.

They don't read or necessarily have access or inclination to read technical reports. The technical reports about these missiles are quite commonly classified and held tightly because they would reveal that the systems are not functioning. When I was involved and I revealed that the Patriot failed to function in the Gulf War of 1991, I still had active clearances at that time, you know, for classified information. And when I went to Congress, they showed me this report on Patriot, and it was slick. And it was, you know, 90% performance. I mean, you just couldn't, you know, you wouldn't believe it if you saw it. And a very, very slick, glossy paper, very nice, expensive printing, color and all this.

And it was complete nonsense. It was complete nonsense. And this is the kind of thing that's circulating to leadership. So, you know, President Bush, H.W. Bush, used to go forward in 1991. He did not know that Patriot was failing in the Gulf War of 1991 until late in the war. Neither did Dick Cheney, his then Secretary of Defense. They were told by the Israeli Minister of Defense in a meeting, I think it was in January, so the war was almost over. It was toward the end of the war. And they literally did not know. So you see, the idea that people in these leadership positions are well informed is not necessarily true. And that's what makes things so problematic.

That's why I have spent such an inordinate amount of time warning people about Iran's nuclear capability. Not because I think—I don't think the Iranians are in any way inclined to use nuclear weapons against Israel first. I think they would if they were attacked by Israel with nuclear weapons. And so the emphasis I have been constantly placing on Iran's program is not to say, oh, these guys are really dangerous. It's to say, don't assume they can't eliminate you as a state, Mr. Israeli, if you think you can attack them with impunity, with nuclear weapons, because they can respond, and they will eliminate you as a survivable state.

So don't do it. I'm worried about the Israelis, not the Iranians. The Iranians have shown a tremendous, level-headed policy approach to nuclear weapons. They have not built a nuclear weapon. They have not taken a final step. And the reason—there's a multitude of reasons why they don't want to take steps toward a final nuclear capability. They have Saudi Arabia, Turkey, Egypt, maybe the UAE even, for, you know, these states would immediately try to get nuclear weapons. In

the case of certainly Turkey—I mean, Saudi Arabia—they could get them very fast from Pakistan. So the Iranians understand that it's not in their security interest to have all these nuclear-armed states around them.

So they don't want to provoke them. They're very clear on this. They've been very clear on this. This is well thought out. They get high marks for understanding what their options are. So they want to negotiate a sensible approach to dealing with the enrichment capabilities that they're developing. They will not give it up—absolutely will not give it up—because they are in conflict with two nations that have made it clear that their objective toward Iran is genocide. That's Israel, and that's the United States. You have a president of the United States saying, "I'll wipe them out completely. I'll end a multi-thousand-year civilization."

Now, he can't do it unless he wants to use an incredible number of nuclear weapons. But this kind of rhetoric will get your undivided attention. It would get mine. And so then you tell the Iranians, well, we want you to give up enrichment. That is, let me translate that: the only thing that's keeping Israel from attacking me with nuclear weapons, because I could strike back. We want you to give up ballistic missiles and drones, which is the only thing that keeps these Americans and the Israelis under control, because otherwise their Navy would be sailing right into the Persian Gulf and bombarding me.

And believe us, even though we attacked you while we were in negotiations with you twice. And by the way, the situation where we don't accept your government, but we created your government. We started in 1953 with Mossadegh. We then put in a terrible, repressive dictator. And then in 1979, another repressive government replaced the repressive dictator. We don't like that government, but we liked the other one. That was okay. Even though we were, in fact, giving them, through the "Atoms for Peace" silliness, we were making believe that atomic energy has no connection to atomic weapons.

We were helping the Shah build a nuclear program when it was clear his intent was to eventually have nuclear weapons. So all of this mess has been made mostly by the United States. And if you sit there as a well-educated Iranian, and there are a lot of them, you say to yourself, how do I deal with these crazies? They have no sense of history. They have no morality. They somehow think that, you know, all Muslims are like crazy lunatics, like, you know, Osama bin Laden. You know, they can't tell the difference between one person and another. You know, how do I negotiate with these people? And the answer is, it's very difficult. And you're going to need some real guarantees if you're going to reach an agreement. And that's what's going on now from the Iranian side.

And from the Western side, you have these maniacs in Israel who are destroying Israel. I mean, if you were a supporter of Israel's future, let's not say Zionist, because maybe you could be an enlightened Israeli and say we owe the Palestinians the right to be here too. You know, you could be enlightened. And you wanted Israel to survive as a state, even not being a Zionist, you would look at this current Israeli government and you'd say they're destroying our future. The Israeli government

is now persona non grata with most American people who follow politics. That includes most American Jews. You know, they look at this government, they're murdering people at a fantastic rate. They're engaged in genocide, not only in Gaza, in southern Lebanon. They're crazy. They want to kill off everybody and then take it over.

It's like, you know, 5,000 years ago, you salt the land after you defeat your enemy. So you have this in Israel, then you have the United States completely out of control. And what do you do from the point of view of an Iranian? You can't trust anything the Americans tell you. So it's a very difficult situation. I'm very sympathetic toward the Iranian leadership's dilemma with regard to dealing with diplomacy, because diplomacy is the only realistic solution. And the behavior of the United States and Israelis has thrown doubt on whether diplomacy with these two absolute lunatic states has any meaning. So it's a difficult situation. But as I'll try to point out later, diplomacy is the only way of doing things. You have no choice. The bottom line is... I'm using time, so it's all right, but I can give the summary here. The bottom line is...

#Ted

In 2025, basically before the Americans' June 2025 attack on Iran, the Iranians were producing over 400 centrifuges per month. We know that because it was under monitoring from the International Atomic Energy Agency. That's a lot of centrifuges.