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THE OPERATION DESERT STORM AND THE PATRIOT MISSILE DEFENSE SYSTEM [3] -THE CRITERIA ON THE PATRIOT'S SUCCESS

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ABSTRACT

Raytheon, the manufacturer of the Patriot, suggested the following criteria of the Patriot's success such as 1." duded", 2." damaged", 3." diverted", and 4." intercepted". However, what is considered to be the success of the Patriot is not easy to establish, raising a question on the fundamental effectiveness of the Patriot defense system.

KEYWORDS: Patriot, Scud, ballistic missiles, multi-warheads, Raytheon, operation desert storm

INTRODUCTION

The Scud missile of Iraq behaves unexpectedly in the atmosphere due to the various effects of air frictions (Shapiro, 1961), making it very difficult to intercept with the Patriot missile. Also, during a high speed re-entry into the atmosphere, the Scud missile breaks into many pieces right before a target on the ground, showing some multi warhead features of a more modernized missile system. Therefore, according to Theodore Postol, Professor of Science, Technology and National Security Policy in the Program in Science, Technology, and Society at MIT, when the Scud missiles come close toward a target, the Patriot cannot handle the incoming multiple pieces of the Scud at its short range of defense (Collins, 2012). This eventually led to the US congressional hearing where Professor Theodore Postol and Mr. Robert Stein, manager at Raytheon, the manufacturer of the Patriot, had a public discussion on the effectiveness of the Patriot missile system in April, 1992. The key topic of the discussion was centered on what is considered to be the success of the Patriot. In other words, the debate is about the criteria on the success of the Patriot. In this debate, Raytheon ended up suggesting the following criteria of the success.

Raytheon's Criteria of Success

1.” duded”

According to this criterion of “duded”, the Patriot engaged with the incoming Scud before the frontal warhead of the Scud actually reached the ground. And the Scud did not explode on the ground. So, the Patriot system must be successful. However, even without the Patriot at work, some of the Scud missile did reach the ground and did not explode at all. This happened when the Iraqi army was not fully prepared to launch a missile, but still had to launch one anyhow due to some imminent military pressures from the allied forces. The Iraqi even put in a large stone instead of an explosive warhead inside the missile toward the end of the war. In this situation, the Scud’s no explosion on the ground did not necessarily mean the successful effectiveness of the Patriot system. On top of it, even with the “duded” situation (i.e. no explosion of the Scud on the ground), the kinetic energy of the Scud was so great that it can cause an entire building to collapse and the damage was still out of control. Thus, even with the criteria of “duded”, the question on the fundamental effectiveness of the Patriot system remains to be not fully answered.

2.” damaged”

The criterion of “damaged” means that the Scud’s strength has been reduced on the ground, due to the Patriot’s engagement beforehand. However, the “damaged” Scud missile may still be strong enough to, at least partially, destroy an alleged target on the ground anyhow. Thus, the outcome is nonetheless some partial destruction of the alleged target even with the Patriot’s defensive engagement. This again questions the fundamental effectiveness of the Patriot system.

3.” diverted”

The criterion of “diverted” means that the Scud was led to the region of no people, after engaging with the Patriot. Once again, however, many of the Scud seemed to miss an alleged target even with no engagement with the Patriot system. This may be not only due to the outdated guiding system of the Scud but also due to some malfunctioning parts of the Scud itself. The fundamental effectiveness of the Patriot system is again still questionable.

4.” intercepted”

The criterion of “intercepted” means that the Patriot approached the Scud and exploded itself as planned, but whether the Scud is damaged or not is still not clear. In other words, the trajectories of the Patriot and the Scud are met each other somewhere up in the sky, but nobody knows for sure what happened to the two missiles afterwards. Thus, the fundamental effectiveness of the Patriot system is once again questionable.

CONCLUSION

The criteria suggested on the success of the Patriot system include 1."duded", 2."damaged", 3."diverted", and 4."intercepted". However, what is considered to be the success of the Patriot is not easy to establish. This situation raised a question on the fundamental effectiveness of the Patriot defense system.

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