MEMO TO SELF
Javelin Anti-Tank Missile
June 11, 2005

I am the author of a legislative amendment requiring the U.S. Army to conduct a shoot-off between the three alternative technologies under consideration as replacements for the infamous Dragon infantry anti-tank weapon. My amendment specified that operator survivability had to be an essential criterion for determining the winning technology. Out of this process came the Javelin infantry anti-tank weapon, which has had a transforming effect on the relationship between infantry and armor in the field of battle.

As a former U.S. Army infantryman, I was familiar with the deficient Dragon infantry anti-tank weapon—a wire-guided missile that required an operator to hold his sight on the target throughout the flight of the missile, clumsily guiding it by shifting his shoulder while every enemy in sight was concentrating on eliminating him. It had the further disadvantage of emitting a loud boom and flash of light, which told every enemy in sight where to pour his fire. It could not be fired from prone or kneeling, nor from inside a room. Its night sight was poor. It was too heavy and had no ability to counter smoke or reactive armor. Its range was only about 1000m. In the words of the anti-tank Program Manager, "Dragon stinks."

I knew that DARPA was developing Tank Breaker, a set of technologies to eliminate Dragon's deficiencies. These included a small low-signature launch motor, a high trajectory to counter smoke and to strike from the top where the armor is thin, a switchable flat trajectory to attack targets under cover, a tandem warhead to penetrate reactive armor, an excellent MerCadTelluride night sight, lighter weight, and range in excess of 2000m. Most importantly, it was a fully fire-and-forget missile.

I expected the Army to welcome it eagerly. But instead, I found the Army top command in some cases wishing it would go away, and in others – including the then Army Chief of Staff – literally unaware of it. I came to understand that MICOM was promoting its own Dragon replacement, and the DARPA alternative was blocked by the not-invented-here syndrome.

Finding no support for Tank Breaker in Washington, I became concerned that perhaps I was out of touch with reality. So I went to U.S. Army Infantry School at Fort Benning to get the user's view, Over dinner with the then-commanding general of the school, Major General John Foss, I asked what was his No.1 need. General Foss

replied, "I need a man-portable anti-tank weapon that an infantryman can carry all day, kill any kind of tank from any aspect in any weather, reload and do it again, and live to tell about it that night. This means it must be fire-and-forget." His deputy, Brigadier General John Burba, echoed this sentiment.

Here was the user directly contradicting his service's top command. There was a complete disconnect between the user and the developer, and the top command was hearing only from the developer. If I hadn't heard it with my own ears, I wouldn't have believed it.

As a second reality check, I called in the commanding general of USMC R&D, who was even more emphatic. He told me that the operator survivability only fire-and-forget can give was an overriding requirement for the Marines. He stated flatly that if the Army bought one of the other candidates, the Marines would refuse to accept it and would somehow find the money to develop and purchase Tank Breaker on their own. Given that the Marine budget normally does not support a non-Army weapon, I found this astounding.

Nevertheless, the hard fact was that the Army intended to select a Dragon replacement without bothering with a competitive shoot-off. I would have none of that. So I passed an amendment that fenced off funds for a Dragon replacement until a shoot-off could be conducted with user-responsive criteria to determine the preferred technology. (The Army had proposed an additive process, with survivability getting only 13%. Under this system, a missile could give zero operator survivability and still score 87%. Instead, I required a multiplicative process and gave the highest weight to survivability. In this system, zero survivability would give zero total score.)

DARPA's fire-and-forget technology won the shoot-off. The weapon was eventually named Javelin because of its high trajectory. Javelin's phenomenal success in combat is well known and I need not recount it here. For the first time, it puts the infantry on the offensive and armor on the defensive.

Final note: Texas Instruments was the developer and original manufacturer of the Javelin. When I got into the issue, in order for my very assertive intervention to be above reproach in appearance and in fact, I insisted that no individual or PAC from Texas Instruments donate to my reelection campaigns, and that no Javelin subcontracts be located in my district or state.