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electromagnetic weapons



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## **Deconflicting Electronic Warfare in Joint Operations**

Authors: Arthur F. Huber; Gary Carlberg; Prince Gilliard; L. D. Marquet; ARNOLD ENGINEERING DEVELOPMENT CENTER ARNOLD AFS TN

Abstract: As in combat involving weapons whose lethal effects can result in friendly casualties, electronic warfare (EW) is no less immune to the deleterious effects of fratricide. While the problem of fratricide involving projectile weapons continues to plague modern armies due to advances in velocity and lethality, it is becoming a growing issue for those who conduct EW. More and more systems both weapons and purely commercial devices are vying for their place in an increasingly crowded frequency spectrum. There is growing pressure to transfer previously reserved military frequency bands to the public domain and low tolerance for interference of any kind outside of assigned operating bands. Exacerbating this situation is the rush to field emitters of various kinds without proper vetting through the spectrum certification process. Something must be done soon to manage and deconflict the electromagnetic(EM) spectrum better if EW is to remain a weapon that warfighters can wield with acceptable confidence to yield desired effects. The problem of EW fratricide is one that exists even in operations involving the most modern equipment and well-trained, professional crews. Although this example comes from Operation Desert Storm, the problem has recently become highlighted through the experiences of warfighters in Operations Enduring Freedom and Iraqi Freedom. According to Lieutenant General Walter Buchanan, former chief of Ninth Air Force and U.S. Central Command Air Forces, "This is the first time that you and I have seen electronic fratricide reach the point that it has. . . . When you take a look at data links and the number of jammers in place and all the radios we have out there, [deconflicting] becomes a very difficult problem."

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