

Offensive Counterspace and US Military Superiority above the Skies: ."Parasitic" Weapon Eyed for Space

Theme: Militarization and WMD

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The Air Force's cadre of space war planners has always liked to dream big. Take the current issue of <u>Air & Space Power Journal</u>, for instance. In it, fifteen USAF officers muse about how best to apply (and extend) the American military's superiority above the skies.

Maj. Mark Steves foresees a <u>fleet of airships</u>, operating at the atmosphere's edge, keeping watch and relaying communications around the globe. Les Doggerel, a civilian at Air Force Space Command, looks forward to an array of cheap, "<u>plug and play</u>" satellites that can be launched at a moment's notice.

But perhaps the most ambitious plan comes from ICBM combat crew commander Capt. Joseph T. Page II, who calls for <u>launching cyberattacks on enemy satellites</u> — and then capturing the orbiters, or tossing them into the atmosphere, if the need arises.

Military planners have long considered space to be the "<u>ultimate high ground</u>." And to defend that high ground, <u>Air Force doctrine</u> calls for two main strategies – defensive counterspace (protecting our satellites) and offensive counterspace (knocking out the other guys').

Capt. Page isn't too impressed with playing defense. "It will not increase the balance in our favor but only 'hold the line' against enemy attacks,'" he writes.

But offensive counterspace has proved tricky, with the specter of <u>shards of broken satellites</u> strewn in space, or crashing down to Earth. Page's suggestion: hijack an enemy orbiter's attitude control system — which runs everything from propulsion to communications – and replace it with a "parasitic attitude control system," or PACS.

The idea of covertly supplanting a satellite's ACS is technologically feasible and may become a desired, mature capability when conflict arises in space.... [It] involves controlling an enemy satellite by supplanting its original ACS and negating the satellite's mission with the PACS. [It] can control a satellite in numerous ways...

• Depleting the satellite's primary fuel until the satellite is drifting (denial/disruption). Once a satellite runs out of maneuvering fuel to counter drifting, it is considered dead.

• Stressing and straining the satellite bus until body-part separation occurs from changes in angular-momentum spin rates (destruction). Assuming the

satellite is three-axis stabilized, enough rotational velocity would put tremendous stress on the solar panels/deployed antennae. Application of enough stress and strain will separate the appendages, depending upon the rate of spin applied to the satellite bus.

• Realigning... antennae for friendly-force intelligence collection by moving the directional antenna's "footprint" away from hostile ground-station coverage areas and towards space-based signals-intelligence satellites or simply aiming the antennae into deep space, away from Earth (deception/denial)...

• Pushing the satellite into transfer orbit for atmospheric reentry or physical capture (destruction/denial/degradation/disruption). Deliberate movement of the satellite out of its expected orbital plane would allow the PACS controller full, positive control over the satellite's designated path. Physical capture by friendly spacecraft and crews becomes possible by bringing the satellite down to an acceptable orbital altitude. If the plan calls for its physical destruction, lowering the satellite's altitude and speed can allow atmospheric friction to heat up and structurally weaken or burn up the satellite bus and payload. (emphasis mine)

Now, to be clear, this is just one Captain's concept – not some official Air Force program. And other writers in the current *Journal* take much more sober views of the limits of U.S. space power. Retired Lt. Col. "Mel" Tomme <u>calls B.S.</u> on the idea of launching little, "tactical" satellites into low-earth orbit. Space and Missile Systems Center commander Lt. Gen. Michael Hamel says that the military's space capabilities have badly eroded, and that it's time to get "<u>back to basics</u>."

But Page sees efforts underway now that could eventually lead to his "parasitic" spaceweapon: prototype <u>orbital tugboats</u>, that would move satellites from one orbit to the next; <u>small space ships</u> designed for "proximity operations" near another satellite. Both are, in effect, physically correcting a satellite's flight. Maybe software could do a better job... Hey, a Captain can dream, can't he?

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