

Stealth and Pilotless Modes Added to Air-Spacecraft of the Third Millennium Traveling on the Hyperbolic Trajectory, Military Version (ASTM 786-H-M)

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Published in ‘Chinese Journal of Physics’ (Elsevier), member AIAA

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Abstract – Air-Spacecraft of the Third Millennium traveling on the hyperbolic trajectory, military version (ASTM 786-H-M) is launched in VTOHL (Vertical-Takeoff and Hovercraft-Landing) mode and then put into the hyperbolic trajectory using the extended-Q system (position and velocity vectors managed through the normal-component-cross-product steering expressed in the hyperbolic-astrodynamical-coördinate mesh). Further check is performed through the normal-component-dot-product steering expressed in the hyperbolic-astro-dynamical-coördinate mesh, accomplishing vanishing of the down-range/the cross-range errors. ASTM 786-H-M lands in the hovercraft mode (suspended above the ground, allowing passengers and cargo to be downloaded through ropes and chains), permitting the landing possible on marsh (soft muddy) landscape as well as in thick forests (wet landscape) and deserts (soft sand reserves). Other benefits include, practically, no upper limit on velocity (exception is the limit imposed by special theory of relativity) as well as prevention from EMP attacks and GPS-signal blocking/blinding by using INS (Inertial-Navigation System — needs to be fine-tuned as well as made accurate and precise comparable to GPS), combined with stellar (celestial) navigation; crew communicate among themselves through secure-encrypted messages employing cipher code. In this paper, the stealth (reduced time of flight in the boost phase and then travel on the ballistic trajectory beyond the reach of radars — special material used on the surfaces to render it invisible to radar during the re-entry/the homing phase; engine operating for a very short time in the boost phase and no engine IR signature available in the ballistic phase, improving the stealth capability) and the pilotless modes (in fact, the hybrid mode, ASTM 786-H-M is flown by a pilot during normal operations, but switches to the pilotless mode, if the pilot becomes unconscious, severely injured or killed during flight operations — programmed to return to point-of-launch, flying by computers and instruments, only) are added to the aircraft operations.

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Keywords – Ellipse-orientation steering, Elliptic-astrodynamical-coördinate mesh, Extended-Q system, Hyperbolic-astrodynamical-coördinate mesh, Normal-component-cross-product steering, Normal-component-dot-product steering, Two-body problem [ASTM \(786-E\)](#) • [ASTM \(786-H\)](#) • [INS-based Navig. for ASTM](#) • [Cipher Code for Secure-Encrypted Comm.](#) • [SDI](#)

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