

Starbooster – Summary | 1999

Starcraft Boosters, Inc. has taken a novel approach to reducing the cost of space access. Starcraft Boosters is developing StarBooster, a reusable first stage hypersonic airplane designed to house an existing ELV first stage. By using existing stages, such as the Atlas III or Zenit first stage, Starcraft Boosters believes it can significantly reduce the cost of bringing to market a partially reusable launch vehicle. Once the StarBooster has been developed, it will be mated with existing stages or vehicles to create configurations which are optimized to serve a particular market segment.



In its current configuration, the StarBooster will house the first stage of the new Atlas III launch vehicle, powered by the RD-180 rocket engine. The airplane is roughly the size of the Boeing 737 airliner and is expected to have a dry mass of 32 tons (70,000 lbs). The StarBooster is launched vertically and powered by the internally "carried" booster stage. The vehicle burns to depletion, delivering its payload, which is comprised of the expendable upper stages and payload, to near Mach 5 at an altitude of approximately 45 kilometers (150,000 feet). The StarBooster, still housing the expendable Atlas III stage, will then separate from its payload - the expendable upper stage - and decelerate as it re-enters through the Earth's atmosphere. Once the craft has slowed to subsonic speeds, the two air-breathing engines, housed on the back of the StarBooster, air-start and the vehicle cruises approximately 400 kilometers back to its launch site. Both the stage and the aircraft are refurbished to be re-flown, providing a large cost savings over expendable boosters.



A number of upper stage combinations have been examined. The first two configurations, which incorporate one and two StarBoosters respectively, utilize Lockheed Martin's existing Athena II launch vehicle. For heavier geosynchronous payloads, the Athena core will be complimented with a cryogenic Centaur stage, resulting in the third StarBooster configuration - known as StarCore I. Further augmentation results in the fourth configuration, know as StarCore II, which utilizes a partially reusable SSME derived LOX / LH2 core to deliver Titan IV type payloads.

Prime Contractor:	Starcraft Boosters, Inc.
Launch Site:	Mojave, CA (35 deg. N Latitude)
Web Links:	<u>Starbooster Web Site</u> <u>Starbooster News & Media</u>