ATK
ALLIANT TECHSYSTEMS

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Mr. Meyers

We've reviewed your proposal to privately finance the development of a shuttle-derived, heavy lift launch vehicle built from a modified shuttle External Tank (ET) and existing Reusable Solid Rocket Boosters (RSRBs). As we understand it, there is "cargo" attached to the side of this launcher in place of the standard space shuttle orbiter. This "cargo" module would be a second, habitable ET hydrogen section and a variation of the "Delta Clipper" SSTO vehicle.

While we cannot evaluate the commercial markets you propose for these habitable ET structures in orbit, the launch vehicle approach to delivering heavy payloads to orbit is similar to concepts ATK has considered. ATK has conducted studies looking into Shuttle Derived Heavy lift launch vehicles using the existing Space Shuttle Main Engines (SSME), external tank (ET), and reusable solid rocket boosters (RSRB). Our studies showed that configurations similar to the one proposed by SIG could deliver in excess of 150,000 pounds of payload to orbit. This could potentially be increased to approximately 200,000 pounds with the addition of five segment boosters (FSB) and stretching the ET.

ATK currently has production capability to produce about 9 flight sets of motors per year and could easily increase that to 12 flight sets per year with minimal facility investment. This production capability is more than adequate to support both Shuttle flights and the anticipated flight rate for the early years of the SIG concept. Additional capability could be made available if the flight rate for SIG missions grows as you have projected. One constraint that would have to be worked would be obtaining NASA approval to use government facilities and tooling to support this commercial venture. However, since the increased production rate should reduce the cost of RSRMs to NASA , their approval could be relatively straight forward.

ATK would be willing to respond to a Statement of Work issued by either SIG or some lead integration contractor to further evaluate the detailed aspects of the viability of the SIG approach. We have significant capability that could be used to enable the success of this venture.

Thank you for the opportunity to review your ambitious project. We're looking forward to working with you to make it a success.

Sincerely,

Kent Larsen
Manager, Space Contracts