



AERO SPACE

1723 BENBOW COURT, APOPKA, FLORIDA 32703 USA

To: John & Angela Sharkey

From: Edward J. Guard  
Guard Lee, Inc.

Dear John & Angela,

It was a pleasure for me to meet with you and your Titan I Restoration Committee on 8/10/01. I felt very privileged to be asked to help with the project for I too believe a proud space oriented community needs an artifact symbol of the important role their area played in most all the U.S. space programs, the Titan I in particular. For years Titan I was a workhorse for both military and commercial and more Titans were built than any other U.S. missile of the type. I am sorry I was not able to get my comments to you sooner; we have never been more busy in our shop trying to meet tight schedules. Finally, here are my comments and if any question please feel free to call or e-mail.

Warmest regards,

Edward J. Guard  
President

There are many options but there is always the big question as to what funds and volunteers can be made available. I will assume in my recommend comments that the Titan I will be restored retaining the maximum amount of original body materials and detail while stopping further deterioration for at least the next ten years.

### **Option 1**

Smithsonian rebuild - completely disassemble, transport all parts to the shop, rebuild to original as possible following strict Smithsonian procedure. I am told this is not necessary - under new ownership. Cost estimate: \$225,000.00  
Also if restored to new as above and reinstalled in the vertical position another 20 to 40 thousand dollars should be added.

I assume Option 1 is out of the question.

### **Option 2**

Clean exterior, all dirt, oxidation and old paint. Patch exterior skin holes with metal plates, prime, caulk, seal, and repaint all exterior surfaces. Cost estimate: \$4,000.00 . \$6,000.00

### **Option 3**

My recommendation:

1. All parts pressure cleaned inside and out where possible, remove deteriorated bottom panels for access to the interior and have those panels reinforced with fiberglass in the shop.
2. All paint and oxidation removed inside and out where possible, including the outside holding cradles.
3. All skin holes patched from inside with epoxy resin and fiberglass especially top and bottom. Skins and structure reinforced where needed.
4. A clear protective coating on all inside structural surfaces that are exposed to the outside.
5. Seal, prime and paint original painted exterior surfaces with the new exterior paints by Dupont. We could possibly find a clear sealer for the metal skins that were originally supposed to be bare of paint. Unique to Titan I. Cost estimate: \$10,000.00 \$15,000.00



Edward J. Guard, President

I also recommend a research study as soon as possible be made possibly by volunteers; maybe a school project, to find out interesting, helpful and educational history data about this Titan I. Also seek out some possible local sources of volunteer professional help in the name of community pride.

Some possible sources:

1. The Smithsonian archives.
2. The manufacturer's records, both missile and engine.
3. Janes Space Flight Directory.
4. Encyclopedia of U.S. Space Craft by Bill Yenne.
5. The Internet.
6. NASA records of launchings. Most were done in Titusville.
7. Check local companies for professional low price restoration help such as body and fender skills, paint and cleaning companies.
8. Invite Dupont paint and chemical experts to volunteer the best materials to be used.
9. Contact retired Titan I engineers to find out why Titan I structure was so different from most all other missiles.
10. Contact sign and plaque engravers for suggestions and cost on how to word and display total history and important details of each segment of the missile.
11. Contract industrial designers for low cost or volunteer advise on how to best display your Titan I. Landscaping, colors, photo vantage points, night lighting.
12. Design hand-outs outlining all the data and work accomplished and opening/completion dates.

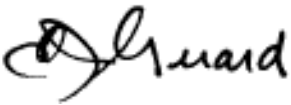
I personally believe the restoration Option 3 could be a successful one to last at least ten years, with most of the work done at the present site and preferably in the spring or fall. Appeals should be made to local skilled technicians and in the area companies for their bottom prices contributing to the community spirit. Guard Lee could offer some paid support but not a total job as our overhead and distance away would eat up available funding too fast.

I believe the total job as I outlined could be done for approximately \$10,000.00 to \$15,000.00 cash with local assistance and could be accomplished within a six month period.

Suggested cash price goals:

Cleaning	\$400.00
Researching	200.00
Rebuild labor and subcontract (main body)	7,000.00
Refinish steel supports	600.00
Show off display, signs, landscaping	600.00
Materials and misc	<u>2,000.00</u>
	\$10,800.00

Sincerely,

A handwritten signature in black ink, appearing to read "E. Guard". The signature is stylized with a large, looped initial "E" and a cursive "Guard".

Edward J. Guard  
President