

## Frequently Asked Questions (FAQs)

### 1) What is the function of the FAA Class 3 Review Committee (C3RC)?

The FAA Class 3 Review Committee is charged with supporting the membership in meeting the Class 3 requirements of the FAA/AST. The function is accomplished in several ways:

- Performing a 3-sigma, 6 degree of freedom dispersion analysis on submitted projects.
- Providing guidance and a review of the Class 3 waiver application package prior to FAA submittal.
- Working with the FAA/AST to educate applicants and FAA personnel to the needs of Class 3 project teams in maintaining the viability and safety of our hobby now and in the future.
- To work toward achieving a more efficient and meaningful opportunity for members to pursue Class 3 and beyond flight attempts.

Approval of a project through the C3RC committee insures compliance with FAR 101 and associated policies of the FAA/AST **ONLY**.

Compliance with Tripoli's Research code, Commercial Code, insurance, safety or any other requirements established by the Board of Directors is beyond the scope of this committee. The flier is solely and uniquely responsible for ensuring that **ALL** requirements of flying a Class 3 rocket are met to comply with regulations.

### 2) What is a Class 3 rocket?

As of the December 4, 2008, final ruling on the Requirements of Amateur Rocket Activities, the FAA Code of Federal Regulations (CFR), Title 14 Aeronautics and Space, Part 101, Subpart C, 101.22 Definitions state:

“(b) *Class 2—High-Power Rocket* means an amateur rocket other than a model rocket that is propelled by a motor or motors having a combined total impulse of 40,960 Newton-seconds (9,208 pound-seconds) or less.

(c) *Class 3—Advanced High-Power Rocket* means an amateur rocket other than a model rocket or high-power rocket.”

### 3) Where can I find the information requirements for Class 3 rockets?

The electronic version of Title 14: Aeronautics and Space, Part 101, Subpart C, 101.29 Information Requirements may be found online at

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=d0c949e5258f1255e7d29efdb7159b9d&rgn=div8&view=text&node=14:2.0.1.3.15.3.9.6&idno=14>

Keep in mind that the information is not limited to what is listed above. The FAA/AST may request additional or clarifying material to support an application.

4) What is the AST?

“The Office of Commercial Space Transportation (AST) is the only space-related line of business within the Federal Aviation Administration”. Although designated to oversee the commercial space transportation industry, the AST has been charged with reviewing all Class 3 flight applications as requested by the three FAA Regional Service Centers.

5) Who has to submit projects to the Committee FAA Class 3 Review (C3RC)?

**Any Tripoli member** flying a project with a **total impulse over 40,960 N-s** (“P” motor or greater) for a Tripoli sanctioned flight must submit the project to the C3RC. That includes the COMBINED motor impulse of a multi-staged or clustered motor project.

As of February 6, 2013, the C3RC has also been tasked by the TRA BOD to review all non-Class 3 flights attempting altitudes over 50,000' AGL.

The increased interaction between the FAA and sister government agencies requires that all rockets, regardless of impulse, designed to fly above 50,000 feet (AGL) be submitted to the Class 3 Review Committee for dispersion analysis. This is an internal Tripoli decision and not a request by any Federal agency.

This request demonstrates internal self-regulation that we continue to practice in order to present Tripoli to the various AHJ's as the world class hobby rocketry association putting safety first.

6) What information do I have to submit to the FAA Class 3 Review Committee?

The C3RC requires the following:

- a) TRA Class 3 Project Sheet
- b) RASAero project file (.alx1)
- c) RockSim project file (.rkt)
- d) RASP file(s) of the motor(s) to be used (.eng)

Further information may be found on the TRA website here,

<http://www.tripoli.org/Launches/FAAClass3Requirements/tabid/266/Default.aspx>

7) Do all Class 3 projects require review?

All Class 3 projects to be flown as a Tripoli sanctioned (i.e., insured) flight must be reviewed by the C3RC.

The FAA will "fast track" Class 3 projects that will fly at 50% or less of a TRA sanctioned event\*. A Class 3 waiver must still be requested but the depth of analysis will expedite the processing of the application.

Tripoli will require the C3RC to review the project for two primary reasons:

- a) The magnitude of a Class 3 rocket requires a minimum review for stability for 50% waiver projects, and a maximum of a full 6 degree of freedom, 3-sigma dispersion analysis for all others.
- b) A database is being established similar to what the former agreement between TRA and the FAA maintained with the previous "25K Project Application" procedure. The data will be used to reference the results of planned versus actual Class 3 rocket flights.

\*If the project is not being flown at a sanctioned TRA event, i.e., an insured launch but not a group or club sponsored event, the normal FAA/C3RC submittal process is required regardless of projected altitude.

Additionally, if a Class 3 project has been previously approved and flown, subsequent waiver requests will go through an abbreviated review process with both the C3RC and likely the FAA.

8) Can I apply directly to the FAA for a Class 3 waiver?

Yes. A Class 3 flight that will not be flown under Tripoli insurance may be submitted directly to the FAA. The flier, of course, is responsible for generating all data required for the waiver application.

Even though the flight would not be sanctioned by Tripoli, if, as a Tripoli member, you would like the C3RC to help with the FAA package, a request for support may be made to Kent Newman and will be subject to review and approval by the Tripoli BOD and available C3RC time.

9) When should I submit my project to Tripoli for review?

Project submissions should be made 90 days before the day of the launch. The FAA requires 45 days with a full-time staff; the C3RC requires 45 days with part-time volunteers. Submissions may be accepted with less lead time but no guarantee for completion to meet the FAA timeframe can be made.

10) How do I submit my information to the C3RC?

Information should be submitted via email (with file attachments) to the Chairman of the C3RC, Kent Newman ([kent.newman@comcast.net](mailto:kent.newman@comcast.net)).

11) Do I have to do anything else beside submit my project to the C3RC?

Yes, you are still responsible for submitting a complete package to the FAA who will forward your Class 3 waiver application to the AST in Washington, D.C.

The C3RC will submit the aerodynamic data and dispersion analysis directly to the AST for their review to expedite processing. The flyer remains responsible to submit a complete package including FAA Form 7711-2 directly to the FAA Regional Service Center for your launch event.

A sample submittal package with narrative is available to use as a guide.

12) If I can perform 3-sigma, 6 degree of freedom dispersion analysis myself, what other data is necessary to provide to the FAA/AST and C3RC?

In addition to 101.29 and the Tripoli Project Data Sheet information, the FAA/AST would like to see the following in both graphic presentation and data table format:

Propulsion – Thrust and flow rates versus time

Aero – CP reference point  
Ca, Cn and CP versus angle of attack (AOA)

Mass Properties - Mass as a function of time until burnout (BU)  
Cg location as a function of time until BU

13) How do I coordinate my project with launch organizers if it's on a separate waiver?

- a) Indicate "Tripoli Rocketry Association" in Box 1 of FAA Form 7711-2.
- b) In Box 7, include a phrase example similar to the following: "To be launched during concurrent Arizona High Power Rocketry Association event at Black Rock, NV. Event organizers will coordinate launch activities."

This will eliminate the need for multiple waiver holders all attempting to call in at the same time by giving launch event organizers the authority to call in all waivers.

As an adjunct, keep in mind that waivers are site, time and date specific. If, for any reason, you decide to fly at a date or place other than what was originally granted, you must notify the FAA. The original C3RC review process will be necessary again if the site changes; however, a time or date change will only require a cursory review by the FAA. In each case, a new waiver must be issued.

14) Who are the members of the FAA Class 3 Review Committee?

Committee members include Kent Newman (Chairman) and Chuck Rogers with additional TRA members serving as analysts. Dick Embry (FAA contact), Pat Gordzelik and Stu Barrett are ad hoc BOD members.

15) Where can I direct additional questions on Class 3 projects?

By definition, anyone attempting a Class 3 project requires a Tripoli Level 3 Certification. Consider discussing your project with your local TAPs and begin to network with other Tripoli Class 3 applicants/fliers.

For questions regarding FAA paperwork and/or simulation requirements, please contact Kent Newman ([kent.newman@comcast.net](mailto:kent.newman@comcast.net)) or Dick Embry ([JetViper@aol.com](mailto:JetViper@aol.com)).

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