# Are these the last of the 'Rocket Boys'?

*Homeland security crimps use of model rocket engines, threatens to dampen interest*

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A new law made to protect America in the wake of Sept. 11 may threaten a major hobby in the Rocket City – the launching of model rockets.

Under the Safe Explosives Act signed by President Bush in November, the Bureau of Alcohol, Tobacco, Firearms and Explosives will now require extensive background checks for people who use heavy model rocket engines. The new law, and the agency's plan to begin enforcing stricter regulations by May 24, is causing concern among model rocket enthusiasts.

The worry is that rocket engines that help launch young minds into science and engineering will become too hard to come by.

"There wouldn't have been any 'Rocket Boys' if this had been around during (Author Homer Hickam's) time," said Vince Huegele, a local rocket enthusiast and NASA optics engineer.

Hickam, a Huntsville resident and former NASA employee, is the author of "Rocket Boys," a book about how his boyhood penchant for model rockets propelled him to a career in the space program. The book was made into a hit movie, "October Sky."

The tighter regulations restrict the availability of sport rocket motors that contain more than 62.5 grams of ammonium perchlorate composite propellant. The propellant, according to the ATFE, is now considered an explosive under the auspices of the Organized Crime Control Act of 1970.

The ATFE wants hobbyists to obtain a Low Explosive Users Permit in order to use the rocket engines. That permit requires an extensive criminal background check that some hobbyists and teachers might find too cumbersome, Huegele said.

To Huegele, the classification is a mistake in the first place. The rocket engines, he said, are not an explosive hazard.

"This is classified as explosive now by the (ATFE)," Huegele said. "In fact it's not. It's a flammable. We don't want an explosive in the rocket business.

Glenn Baeske/Huntsville Times

**UAH engineering students put together a rocket motor at last spring's Student Launch Initiative. The new Safe Explosives Act would prevent the shipment of such engines without extensive background checks of everyone who handles them.**

"You don't want your rocket to explode. You want it to launch."

It may not seem like an issue for anybody other than model rocket hobbyists, but the law could force teachers who use rocketry as an education tool to abandon the practice, Huegele said. That would severely cramp Marshall Space Flight Center's Student Launch Initiative, say rocket hobbyists.

Glenn Baeske/Huntsville Times

**Chuck Pierce, shown at the top of the page with his largest rocket, holds smaller rocket motors available at hobby shops.**

Students from local colleges and high schools participate annually in the Student Launch Initiative (a play on the name of NASA's Space Launch Initiative program), building model rockets and scientific payloads.

The hope is that the Student Launch Initiative will develop a strong science work force that NASA and other high-tech interests could draw employees from in the future.

The next round of student launches is scheduled for May 3, before the new restrictions take effect, according to NASA spokesman Jerry Berg, so the tighter regulations probably won't become an issue until next year.

However, the regulation change already has forced some parcel carriers to say no to delivering the heavy rocket engines because regulations require every one who comes in contact with the engines to go through a criminal investigation. United Parcel Service has refused to take the engines.

Norman Black, a UPS spokesman,

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*Homeland security laws threaten one of the Rocket City's favorite hobbies*

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said the company hopes to resume transporting the model rocket engines, but not until it gets clarification of the rules from the government.

He said UPS suspended the shipments about two weeks ago, after railroads began refusing to accept ground-shipment packages from UPS that contained anything remotely considered hazardous.

As it stands, UPS could be in trouble if one employee at one distribution center doesn't pass a background check or is found to have used drugs, he said.

"I can't certify that every part-time package sorter in Huntsville, Ala., working from 8 pm. to midnight absolutely does not fall into any category under any of these regulations," Black said.

The restrictions worry rocket enthusiasts and NASA researchers like Huegele and Charles Pierce, both active in the Huntsville Area Rocketry Association, because model rocketry not only gets students interested in learning about math and science, but it teaches teamwork and engineering principles.

"There are smaller rockets out there that many children build until they are in the fifth grade or so, but the students lose interest in them after they get older," said Pierce, Rocketry Association president and a propulsion engineer at Marshall.

The larger rockets are more complex, take longer to build and are considered a more advanced teaching tool for students.

"These guys go off and work together to build this rocket. They get to run their own little space agency and call the shots," said Huegele, who is involved in the Student Launch Initiative. "They use the same process and procedures we at NASA use on a project. They have managers and team leaders and they all have to learn how to talk and work together to build this rocket and get their payloads up and down safely.

"Where else do you find that in high school? I don't think you find it anywhere to this degree."

Aerospace engineers and managers call advanced team work "systems engineering." Simply put, it means getting complex things to work right.

"I can't say enough about the value of the Student Launch Initiative," Art Stephenson, director of NASA's Marshall Space Flight Center, said in an interview two weeks ago. "It's getting young people excited about accomplishment. We hope they come back to work for NASA some day, but more important we hope they learn a few skills along the way."

Work force issues have dominated government agency managers for the past decade. Even with a slower economy, many high skilled workers can make more money in private business. It's hard for the government to compete because there are not enough trained workers in the engineering and science fields.

To add to that problem, NASA and military organizations face a work force that is growing older. Army and NASA managers in Huntsville estimate almost half the 10,000 skilled federal workers in the North Alabama area will reach retirement age in the next five years.

Pierce said large model rocket engines generally can't be found at a local hobby store. They have to purchased through the mail and many large rocketry events will have a vendor or two on hand to sell large engines.

Not just anybody can buy one, either. Hobbyists already go through a self regulation process. They have to be certified by club members that they can safely operate a large rocket motor.

Vendors won't sell motors to someone who doesn't have that certification.

"It's like an apprentice type arrangement," Huegele said. "They come to us, and we show them how to operate it. It's all self-regulated and we've done well with it for years. There's no need for a change."

Changes could force some out of the hobby, and limit its growth not only as a teaching tool but also as fun way to spend a Saturday afternoon.

HARA members meet about once a month in a rented field near Ardmore to shoot off their rockets. About 30 or so families come out and make a day of it, Pierce said.

"The young kids have their little rockets and they launch those, and the adults have theirs and they launch them, and we all have packed lunches," he said. "It's a lot of fun."

Model rocket hobbyists face a problem NASA engineers have been trying to solve for 35 years. It costs a lot of money to get off the ground.

Large rockets — those four or five feet long and three inches or more in diameter — can be expensive because the engines are costly. A disposable, one-time use, engine can cost up to $100.

But a metal sleeve can be fitted into the rocket and a propellant slug inserted into it. It's a low cost alternative to the expensive throwaway engines. It's reusable.

The reusable approach costs about $20 a flight. But the law change might make only the disposable rocket engines available for public use.

That would lead to the hobby being very expensive, Huegele said.

"I'm afraid this law will put people who want to learn about rockets and have fun off," Huegele said. "Many people will just not want to go through the cost of having to be certified by the government. That means it will be harder, if not impossible, to get kids involved in schools."

Model rocket hobbyists hope to deal with the problem by May 24, Pierce said.

"We are hoping a grass roots campaign will take hold, and we plan to contact our elected officials about changing this," Pierce said.