



[Beloit College Magazine](#)



Let's Just See If You Can Make a Bomb

By George Hesselberg

Mary Munro



Professor Emeritus David Dobson (physics and astronomy) spent his early career rising to a challenge posed by the Atomic Energy Commission: Create a plan to build a nuclear bomb from scratch.

Atomic bomb secrets have been stored in Beloit for more than 30 years.

They are in the head of soft-spoken David Dobson, a retired physics professor who fondly and still, a little mysteriously, recalls the time he was given a desk in a nuclear laboratory and told to build an atomic bomb from scratch.

So, with the help of a couple of other young physicists—like him, with no background in nuclear weapons or design—he did.

Thus, in the 1960s began and ended the Atomic Energy Commission's "Nth Country Experiment," a top-secret test of whether a country with limited access but some knowledge could build a nuclear bomb.

Dobson and his young colleague, Robert Selden, at the time a recent University of Wisconsin-Madison graduate with a doctorate in physics, proved it could be done. Both men were picked to join the program specifically because they were neophytes on the topic. The fact that they took fewer than three years to succeed has some relevance today as the world's nuclear police worry about what country or faction has the expertise to make a bomb.

Last year, Dobson retired after 32 years teaching physics at Beloit. Few people know of his bomb-making background, and he didn't tell the College about it when he applied for a job there in 1968, either.

Features

- [The First Lincoln Statue in the South](#)
- [Dressing the Round Table in New Clothes](#)
- [Let's Just See if You Can Make a Bomb](#)
- [On Hallowed Ground](#)
- [You Can Go Back Again](#)
- [Homecoming/Reunion 2003](#)

Departments

- [From the President](#)
- [News](#)
- [Sports](#)
- [Letters](#)
- [Bookshelf](#)
- [Profiles](#)
- [Last Word](#)

Contact Us:

Beloit College Magazine

700 College
Street
Beloit, WI
53511-5595
608-363-2215 |
608-363-2870
FAX: 608-363-
2615
belmag@beloit.edu

[Beloit College Homepage](#)

[Beloit College Publications](#)

[Beloit College Calendar of Events](#)

“I had somewhat of a cover story,” he acknowledged in an interview. “I told them about my graduate research, because I had continued to work on that on a half-time basis. I told them I also worked on a project I couldn’t talk about, and they understood I was at Livermore.

Thanks to some recent international exposure in the *Bulletin of Atomic Scientists* and the (British) *Guardian* newspaper, Dobson’s remarkable assignment to build a hypothetical bomb for the government is no longer a Big Secret.

He worked at the Lawrence Radiation laboratory, or Livermore, a facility he had visited frequently when he was a graduate student at University of California-Berkeley. He borrowed Livermore’s nuclear accelerator for his own research in sub-atomic physics (he was bombarding atomic beams with radio waves), and one day a colleague asked him if he wanted a job. The catch was he would have to get security clearance, and he wouldn’t be told what the job was until he got clearance. It was about \$12,000 a year, pretty good money in 1964.

Sure, he said.

“I had only a high school understanding of nuclear fission,” he said, a lack of qualifications that, stunningly, qualified him perfectly for the job.

(Though, he notes, nine years of education for him at Berkeley and a similar physics instruction for Selden at the University of Wisconsin-Madison did not make them rank amateurs, either.)

“We were told at the start of the project we had access to any open literature and unclassified information. When we had a level of confidence in the design that it could be tested and actually work, then we were done.”

“We had to come up with a design which could be specific enough that it could be given to technicians who could build it; it wasn’t just hand-waving and words, there were drawings and dimensions and everything. But there never was an intention of actually building it. The Livermore labs had very good simulators and they built our dimensions into a simulation program and figured out what it would do.”



Illustration by Shoshana Ellis'05

Dobson and Selden came up with a plutonium bomb plan, submitted their design and waited. Without telling them if the bomb would work, the government sent them on a classified lecture tour to explain their design and answer questions. Finally, the government told them the bomb they had designed would work.

When Dobson and Selden finished what was formally called a post-doctoral fellowship, they went separate ways, but not before Selden—who continued in the

field, but not with the military—gave Dobson some good advice.

He wanted a teaching job and Selden convinced him a small college would be just right. After nine years at Berkeley—“It was the school at the end of the bus line from my parents’ house”—that sounded just right, so he started a search. Beloit responded.

“I didn’t want to stay in the weapons business, in terms of contributing to the perfection of new weapons. (The government) offered me a full-time position.”

Explaining why he turned it down, Dobson said, “You can’t necessarily let opportunities that others offer you determine the course of your life.”

Beloit College proved to be a perfect fit. He stayed for 10 years, left for two years to work at a Colorado college, then returned to Beloit and retired.

“I found that I really preferred Beloit as an academic environment. It tends to be a liberal place, with liberal attitudes. It is a place where people interact very freely, to a high degree between different departments and areas. It is really a college community kind of school,” he said.

Did he tell anyone about his bomb-making experience?

“I would say there were probably a couple of dozen people who had heard or knew what I had done, including my department colleagues and a couple of people in other departments, and maybe a few students I became good friends with,” he said.

“I didn’t have a plaque on the wall, or talk about it a lot. It certainly was not generally known, but on the other hand the fact that I had worked on it was not a secret. I just felt it was simpler to not get into the sort of situation where some people, if they had heard, would want to pump me for technical details and that I did not want to get into. That is still a secret,” he said. Still?

“On how we did it, I can make a general statement. We really didn’t do anything that we couldn’t take from the open literature, and that’s (even more) available today,” he said. There are no secrets to making an atomic bomb, he said.

“The materials are the only things you can control because you can’t keep people from making it by keeping secrets. Basically the one secret was whether it could be done.

“From 1945 on (after the dropping of atomic bombs on Japan), the world knew it could be done, and from then on it really became applied physics and engineering to work out the details,” he said.

Though that is true today, Dobson believes there is greater danger from terrorists or rogue nations using non-nuclear weapons against America.

“While nuclear weapons are certainly something to worry about, I feel that biological weapons in particular are much scarier. Because the biological stuff can grow and spread and is very hard to detect. Look at the fuss over anthrax. That is a lot scarier.

With radioactive materials, even if you are talking about ... dirty bombs, spreading radioactive materials, it is easy to detect,” he said.

But if there is going to be a nuclear attack, Dobson said, an anti-ballistic missile defense system is not the way to thwart it. “One of the most ridiculous things our government can fund is the anti-ballistic missile program. The reason it is a giant waste of money is that anybody that comes up with a nuclear weapon and wants to use it to create terror in the United States is not going to launch a missile (because of the potential for tracking it and retaliating). Much more fearful and more likely would be to put (a nuclear bomb) in an ocean-going container and ship it into a port and then it gets trucked halfway across the country before it blows up,” he said.

“The idea of spending a huge amount of money on anti-ballistic missile defense seems to me to be the most impractical thing that could be done,” he said.

“I’m not a pacifist, and I’m not against self defense, but I am not happy with war for itself or with the recent pre-emptive war on Iraq,” he said.

Dobson is not working on any secret projects these days. He and his wife, Stephanie, are at the nucleus of plans for the Welty Environmental Center in Beloit and, once again, he has been asked to help build something with limited resources.

“We need to raise about a million bucks,” he said.

Reprinted with permission from the Wisconsin State Journal. “No Experience Necessary,” a detailed account about the Nth Country Project, written by Dan Stober of the San Jose Mercury News, can be found by searching for Dobson’s name on the Web site of the Bulletin of the Atomic Scientists, www.thebulletin.org.

EMAIL:

[Susan Kasten](#) - Editor, *Beloit College Magazine*

[Back to top...](#)

[Home](#)

[Search](#)

[Email](#)

