

My father (Phillips M. Brooks) was the physiologist at McDonnell during the Gemini and manned orbiting laboratory (or MOL as they called it). The tremendous amount of scientific research that was done by private industry for the space program -- not just the engineering -- is a largely untold story of those days, I think.

There was a pretty extensive team of scientists, hired by private industry, to evaluate the potential health effects of space flight and how to protect the astronauts from those effects. They really did not know what would be the consequences from the combined effects of prolonged absence of gravity, radiation, an all-oxygen environment, lower atmospheric pressure, high Gs, etc. And as I remember the conversations around the dinner table, there was a lot of friction between the engineers and the scientists. But given the unblemished success of their efforts, maybe there a positive benefit from those tensions that I remember so clearly.

My dad's route into the space program is illustrative of diverse backgrounds of those original atomic and space scientists.

He got his PhD from Stanford in plant physiology. A native Californian, I sense that he fully intended to devote his life to plant development for nurseries. But then WW II came along. In the Army Air Corps, he worked on development of pressure suits for bomber pilots.

After the war, and a few years in college teaching, he was called back up into the new Air Force. Because of his background in plants, he was assigned to the A-bomb tests (including Bikini) to research the radiation effects on undersea plant life (a task that led him to getting caught in a mild typhoon in a rubber boat with a couple of his staffers).

He spent the next 20 years in the Air Force -- much of the time on classified research. I never did know exactly what -- I was told not to talk about anything involving my dad's job (and on military bases during the Cold War, teachers didn't ask students to talk about their dads' jobs anyway). I know a good chunk of his efforts continued to involve nuclear research. He always wore a film badge (to measure radiation exposure). Once he brought home an irradiated (and dying) lab rat to spend its final weeks in comfort -- feeling sorry for what he did to it, I think.

But it wasn't all classified radiation stuff. He worked with Col. John Paul Stapp on his work with high altitude decompression effects. Stapp is better known and gained national attention for his research on rapid de-acceleration with rocket sleds.

When the space program became demilitarized, my dad left the Air Force eventually to work with the private contractors. He was assigned responsibility for the human environmental components because of his background in atomic radiation research and the radiation concerns for safety in space at the time.

A sad sidebar to this. My dad had argued against an all-oxygen environment in the capsules. It was not because of the fire danger, but rather because potential adverse health

effects. The sad part is that Gus Grissom was the only one of the original seven my dad talked about personally. I sensed they were pretty serious drinking buddies, no doubt because of their Air Force backgrounds. Grissom, of course, died in the Apollo training fire, less than a year before my dad's death. It was after Grissom's death that I heard about my dad's all-oxygen opposition (and that Grissom's life would have been spared if my dad had won his arguments -- although my dad also stressed fire safety was not the reason for his opposition). I'm not sure, but I recall my dad conceding that his reasons against all-oxygen proved to be wrong (had something to do with the combination of oxygen with weightlessness and capsule air pressure).

I should note that my dad was not officially in charge of the unit dealing with human environmental aspects of the capsule at McDonnell. The law (state law, if I remember the story correctly) required that anything involving human experimentation be under the direction of a medical doctor. And this, of course, was experimenting with a human in the extreme. So Mac authorized my dad to hire his boss. My dad picked a flight surgeon from, as you'd expect, the Air Force.

In a way, my dad may have been a victim of the space program. He died from emphysema that the VA determined had been caused by those early years with pressure suit experimentation. They used an explosive decompression chamber with enlisted men sitting in the chamber wearing pressure suits to be tested. My dad would be in the pressure chamber too, taking readings, wearing just his uniform when the chamber was explosively decompressed (to simulate decompression at altitude). I've got a picture from those old days lying around somewhere -- my dad in his summer uniform standing with a clipboard in the pressure chamber with others, enlisted men I assume, are sitting in their pressure suits.

Phill Brooks