

Post-Vietnam Dioxin Exposure in Agent Orange-Contaminated C-123 Aircraft

Key Findings



Between 1972 and 1982, approximately 1,500 to 2,100 U.S. Air Force (AF) Reserve personnel trained and worked on C-123 aircraft that previously had been used to spray herbicides, including Agent Orange (AO), during Operation Ranch Hand (ORH) in the Vietnam War. Samples taken from these aircraft show the presence of AO residues. However, the Department of Veterans Affairs (VA) considers AF Reservists who served in ORH C-123s ineligible for health care and disability coverage under the Agent Orange Act of 1991.

The VA asked the Institute of Medicine (IOM) to evaluate whether service in ORH C-123s could have exposed AF Reservists to herbicide residues at levels harmful to their health. In *Post-Vietnam Dioxin Exposure in Agent Orange-Contaminated C-123 Aircraft*, an expert IOM committee performs a qualitative assessment based on the science and evidence available. The committee's key findings are summarized below.

Assessment of Available Information

- C-123 aircraft that had sprayed herbicides during Operation Ranch Hand (ORH) in the Vietnam War were returned to the United States and were among the aircraft used by Air Force (AF) reservists from 1972 to 1982.
- Documentation of most aspects of the pattern of work performed by AF reservists on these aircraft has not been recovered (and is unlikely to be retrieved in the future).
- Sampling was conducted on the ORH C-123s long after the AF reservists' service and was not extensive. The committee finds that the methods used for surface sampling appear reliable, while methods used for air sampling do not.
- Limitations in the available information prevent the committee from deriving exact estimates of the AF reservists' exposure to herbicide residue.
- Herbicide residues detected on interior surfaces of three ORH C-123s provide the best available information. There is no reason to believe these aircraft are not representative of the entire fleet of ORH C-123s.
- Herbicide residues on interior surfaces would have remained mobile in an enclosed environment, meaning that AF reservists could have been exposed through multiple routes.

- All of the results of interior surface samples fall in or above the cautionary range for adverse health outcomes as defined by international guidelines.

Key Findings

1. The AF reservists would have experienced some exposure to chemicals from herbicide residue when working inside ORH C-123s.
2. Surface levels at the time of the reservists' exposure could not be extrapolated from the sampling measurements gathered long after the reservists had worked in the aircraft, but levels must have been at least as high as the available sampling results.
3. It is plausible that, at least in some cases (which cannot be associated with specific individuals), the reservists' exposure exceeded health guidelines for workers in enclosed settings. Thus, some reservists quite likely experienced non-trivial increases in their risks of adverse health outcomes. ☺