DEPARTMENT OF VETERANS AFFAIRS
Veterans Benefits Administration
Washington, D.C. 20420

SEP 25 2012

Director (00/21)
VA Regional Office
Portland, OR

In Reply Refer To: 211B
[redacted]

SUBJ: Advisory Opinion – Service-connection based on exposure to Agent Orange due to flying C-123 aircraft.

The Veteran is seeking service connection for [redacted] He is seeking service-connection based on exposure to Agent Orange while serving aboard C-123 aircraft that was previously flown in Vietnam and used to spray tactical herbicides. The Veteran did not serve in the Republic of Vietnam.

During Vietnam, C-123 aircraft were used to spray Agent Orange herbicides. The aircraft were retired to reserve units in 1971. Residuals of the herbicide spray were later found on plane surfaces. Samples of these residuals tested positive for dioxin congeners. In a Memorandum dated December 19, 1994, Wade H. Weisman and Ronald C. Porter, Staff Toxicologists for the Department of the Air Force, noted that a C-123 aircraft, which was going to be used in a museum, would be de-contaminated and restored. The conclusion of the Memorandum noted that the aircraft was "heavily contaminated with PCDDs," and "during restoration, museum personnel could be exposed to dioxin contaminated dusts," so "work practices should be conducted to limit the generation of dust." It should be noted that dioxins are in food and the environment. The U.S. Environmental Protection Agency (EPA) states, "dioxins break down very slowly and past releases of dioxins from both man-made and natural sources still exist in the environment. Almost every living creature has been exposed to dioxins." "The health effects associated with dioxins depend on a variety of factors including: the level of exposure, when someone was exposed, and for how long and how often someone is exposed." Air Force testing concluded that the level of Agent Orange that crewmembers of C-123 aircraft were potentially exposed to, was "unlikely to have exceeded standards set by regulators or to have put people at risk for future health problems."

The Veteran submitted a few statements in support of his claim. A letter from Fred Berman DVM, PhD, from Oregon Health & Science University, dated May 25, 2011, stated that "given the extent of dioxin contamination that was found, and based on the

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analysis above, it is my opinion that the personnel assigned to the C-123K Provider, particularly the most experienced crew, were more likely as not to have been exposed to excessive levels of dioxins." This opinion notes that the Veteran may have been exposed to excessive levels of dioxins, but it did not provide a medical nexus between the dioxin exposure and the Veteran's disabilities. Also, Fred Berman DVM, PhD, is not a medical doctor that would be competent to provide that medical nexus.

A letter from Dr. Joe Goeppner, of Scientific and Environmental Consultants, dated December 19, 2011, stated that in his professional judgment, the decision by VA to deny a link between the Veteran's disabilities and dioxin exposure is not "scientifically accurate and credible" However, Dr. Joe Goeppner is not a medical doctor that is competent to provide the medical nexus between the Veteran's disabilities and dioxin exposure.

In a letter from Jeanne Mager Stellman, PhD, from the Mailman School of Public Health at Columbia University, dated February 7, 2012, it was opined that it was likely the Veteran was exposed "to both airborne herbicides and their contaminants, as well as come into contact with surfaces contaminated by these toxic substances." Dr. Stellman went on to state, "the extent and manner of exposure is analogous to that experienced by many Vietnam Veterans, with service in-country." Therefore, she opined that the Veteran should be service-connected for his disabilities, just as if he was "an in-country Vietnam Veteran." Again, Jeanne Mager Stellman is not a medical doctor that is competent to provide a medical nexus between the Veteran's dioxin exposure and his disabilities.

A letter from Thomas Sinks, PhD, Deputy Director of the National Center for Environmental Health and Agency for Toxic Substances and Disease Registry, dated January 25, 2012, noted that he could not exclude inhalation exposures to TCDD, the toxic substance in Agent Orange, in C-123 aircraft by crewmembers. However, he stated that the "information available is insufficient to establish with accuracy the degree of exposure (low or high) or the risk of adverse health effects to this population. However, it is important to note that even precise environmental or biologic testing data are not predictive of adverse health effects in any individual." In summary, there is no conclusive evidence that TCDD exposure causes any adverse health effects.

A Memorandum from the Department of the Air Force regarding Agent Orange sampling of UC-123 aircraft, noted that it was not possible to quantify the amount of potential

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human exposure to Agent Orange on the aircraft. However, available air sampling data results for the constituents of Agent Orange were within acceptable exposure limits. Wipe samples from aircraft surfaces are the only evidence of dioxin contamination on the aircraft. "Since no regulatory standard or consensus standard of practice exists in the occupational health profession, application of wipe sampling data to estimate personal occupational exposures is not warranted." "Ingestion of the contaminants of concern requires the transfer of contaminant from the surface of the aircraft to the mouth and can occur by a person touching a contaminated surface and then transferring the dioxin with hand-to-mouth activities. Given the limited contact of the general population to the UC-123, any ingestion of contaminants would likely be incidental and considered insignificant in terms of a lifetime dose." The Memorandum concluded by stating "it is not possible to derive quantitative estimates of any increased health risks for those individuals who came into contact with the UC-123 aircraft from 1972 to 1982."

A scientific review completed by the Veterans Health Administration (VHA) found that the TCDD on surfaces of C-123 aircraft has a low probability of being biologically available, meaning that the human body cannot absorb it. "Therefore, the potential for exposure to TCDD from flying or working in contaminated C-123 aircraft years after the Vietnam War is unlikely to have occurred at levels that could affect health." "TCDD may be inhaled as an aerosol. The reports and literature demonstrated that in the vapor stage, TCDD has an atmospheric lifetime of only about three days. Dried TCDD on interior aircraft surfaces does not aerosolize when exposed to temperatures found inside aircraft during any conceivable use. There is a low probability that dried TCDD would aerosolize during routine crew use and present a risk to health by inhalation. Also, there are no data from the U.S. Air Force or other sources confirming dioxins in air samples taken from post-Vietnam C-123 aircraft." "Ingestion as a route of exposure on these aircraft would require that TCDD would need to have entered the mouth through contaminated food or water or by hands contaminated with TCDD. There is a low probability that transfer of TCDD in food or water or from hand-to-mouth could occur among these crew members, especially given that the sampling for TCDD on the aircraft surfaces required use of a solvent (hexane) to displace and dissolve any residue. Solid TCDD can be extremely stable in the absence of direct sunlight. Once TCDD dries on hard surfaces, such as on an aircraft, it does not readily cross through human skin. Even if the dried material were to come into contact with perspiration or oils on skin, the skin would act as a barrier prohibiting further penetration of TCDD. There is a low probability that TCDD penetrated through the skin of these aircrews."

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In light of all the evidence in the claims folder and referenced above, exposure to Agent Orange cannot be presumed or accepted for this Veteran or any other crewmembers of post-Vietnam C-123 aircraft. The Veteran did not serve in Vietnam and has not served in any other area that would allow for presumption of Agent Orange exposure or direct occupational exposure to be accepted. Medical studies showed that it was unlikely the human body was able to absorb any dioxins from residual Agent Orange on aircraft surfaces, or that any exposure would lead to adverse health effects. Therefore, the Veteran's claims associated with Agent Orange exposure should be denied service-connection.

Thomas J. Murphy
Director
Compensation Service