Minuut

Ministerie van Verkeer en Waterstaat

Aan
Het College van Burgemeester en
Wethouders van Amsterdam
Postbus 202
1000 AE AMSTERDAM

Classificatienummer

Contactpersoon
ir.H.n. Wolleswinkel
Datum
3 juli 1997
Ons kenmerk
LI/DIR.97.900137
Onderwerp
Uranium.

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Uw kenmerk
121 EZ '97

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Adres

Ministerie van Verkeer en Waterstaat

Directoraat-Generaal Rijksluchtvaartdienst

Directie Luchtvaartinspectie

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Geacht College,

Uw brief van 26 mei jl. over uranium aan boord van Boeing vliegtuigen werd mij ter behandeling voorgelegd.
Nederland heeft geen bevoegdheden om wijzigingen aan buitenlandse vliegtuigen voor te schrijven. Er kan hooguit sprake zijn van beïnvloeding.
Omdat ook door anderen vragen gesteld zijn over "depleted uranium" is contact opgenomen met Boeing. De reactie van Boeing heb ik in copie bijgevoegd.
Het standpunt van de Rijksluchtvaartdienst in deze is dat verdere stappen niet mogelijk zijn maar ook niet nodig zijn.
In het vertrouwen U naar behoefte te hebben ingelicht,

hoogachtend,

ir.H.N. Wolleswinkel
plv.Directeur-Generaal

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May 30, 1997
B-B600-16143-ASI

Mr. Henk N. Wolleswinkel
Ministry of Transport, Public Works and Water Management
Directorate General of Civil Aviation
PO Box 575, 2130 AN Hoofddorp
The Netherlands

BOEING

Subject: Use of Depleted Uranium

Reference: (a) Your letter dated May 21, 1997, LI/DIR.97.97900100

Dear Mr. Wolleswinkel :

In your reference letter you requested Boeing policy regarding its own participation in accident investigations with regard to the FAA Advisory Circular and the service letter.

The FAA Advisory Circular (20-123) indicates the non hazardous nature of the material as installed in the aircraft with the protective plating installed. It provides precautions that may be taken if the balance weights have lost their coating.

Boeing Service Letter, SL-747-51-11-F discusses the procedures to be followed in handling the depleted uranium balance weights.

These two documents, copies of which I am enclosing for your information, describe certain precautions to be taken, but also discuss the minimal hazards involved. Precautions listed in the Advisory Circular and the Service letter are generally followed in accident investigations. In most cases, the tail of the airplane does not sustain sufficient damage to cause damage to the balance weights.

The following discussion provides additional detail which may be of interest to you.

Introduction:

Boeing began using depleted uranium as counterbalance weights in the tail section of its 747 aircraft in the late 1960s. This material was used on early models because it provided a significant amount of weight that was needed in a small area. Studies conclude that no practical level of risk existed from this material, even in the remote event of an airplane crash and ensuing fire.

BOEING

Historical Data:

In all, 551 Boeing 747s were manufactured using depleted uranium as counterbalances for the empennage flight-control surfaces. The exact amount of this material used on each airplane varied slightly; however, at the time of manufacture, about 950 pounds of depleted uranium was used in each 747-100 and 747-200, and about 1,200 pounds was used in the 747 Special Performance.

In the early 1980s, depleted uranium material experienced a price increase and generally became less available. Availability of tungsten (which originally had been the harder-to-find, more expensive material) improved, and it was chosen as a replacement material. Since that time, all counterbalance weights have been fabricated from tungsten. Airlines that have replaced depleted uranium counterweights on their airplanes do so with tungsten. We stock only tungsten replacement weights as spares.

What is Depleted Uranium?

Depleted uranium is the residue left after U-235 has been taken from natural uranium. It is called U-238, and has 98.8 percent of the radioactivity removed. The industry refers to the depleted material as D-38. The D-38 emits extremely low levels of radiation – alpha, beta and gamma – when not encased (we encased the weights in nickel-cadmium plating, then painted them, before installation). Alpha particles are stopped by the nickel-cadmium, and the beta and gamma particles do not pose a health hazard under normal operating conditions. The predominant mode of the very low emission is the alpha particles; however, they have a short range of travel – less than one inch; they are stopped by paper, and will not penetrate skin, so they are not considered an external hazard. The range of travel for the beta and gamma particles is several inches, but since the emission is much lower than alpha particles, they represent a very low level of external hazard.

Is it Safe?

Boeing's evaluation of this material showed that the form in which we used D-38 would require exposure to temperatures exceeding 1,472 degrees Fahrenheit for more than four hours before the material would oxidize and release particulate matter. Using U.S. Army data, we concluded that under these conditions a release of uranium oxide would be confined to a limited area and persons could ingest the material continuously and never accumulate a hazardous amount of material. Concentrations of respirable airborne uranium would be lower than the maximum permitted.

A very localized release of particulate might be possible if all of the following conditions were met:

- A 747 would have to crash (the 747's safety record is enviable in the industry – 1.63 fatal crashes per 1 million departures);
- The crash would have to produce a fire with temperatures beyond what we normally would expect to occur fire (we have no evidence this happened in the El Al 747 Freighter crash in Amsterdam in 1992). In the bulk form we used depleted uranium, it cannot be ignited at the temperatures of a jet-fuel; and,
- The entire tail section structure would have to be consumed in the fire.

This unlikely chain of events would result in no more danger to persons than that described above.

The U.S. Nuclear Regulatory Commission and the U.S. Federal Aviation Administration approved the use of depleted uranium as counterbalances in aircraft. As with the use of all materials in airplane design, manufacturing and operation, this would not have been possible before exhaustive analysis of safety data – approval simply would not have been granted if the material represented any practical level of risk to airline operators or the public.

Summary:

In this matter, The Boeing Company stands behind the statement it has repeatedly made to media and other interested parties:

- Boeing is first and foremost concerned with safety of its products.
- The facts are that both the Nuclear Regulatory Commission of the United States and the Federal Aviation Administration approved the use of this material in commercial airline operation.
- We would never knowingly put something on our airplanes that we did not think was safe.
- Boeing testing and independent U.S. Army testing confirmed its fitness for use.
- So in the strongest terms possible, Boeing believes the use of this material is safe.

BOEING

Very truly yours,

C. R. Higgins
Vice President
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Enclosures: (2) as noted

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121 EZ '97
uw brief

onderwerp

bijlagen

datum

Geachte minister,

Graag vragen wij uw aandacht voor het volgende.

In de pers zijn onlangs berichten verschenen over mogelijk schadelijke effecten voor de volksgezondheid van het uranium dat tijdens de ramp met de El Al Boeing in Amsterdam Zuidoost is verbrand. Deze berichten hebben in onze gemeente tot de nodige ongerustheid geleid.

De risico's die zijn verbonden aan het luchtverkeer dienen waar mogelijk te worden beperkt. Het derhalve raadzaam om, als voorzorgsmaatregel, uranium niet langer als contragewicht in vliegtuig te gebruiken. Temeer daar er voor dit materiaal goede alternatieven voorhanden zijn.

Wij dringen er bij u op aan om te onderzoeken of er vliegtuigen op Schiphol landen waarin uraniu is verwerkt, en indien nodig te bevorderen dat de desbetreffende maatschappijen het uranium vervangen door een ander, onschadelijk materiaal.

Met vriendelijke groet,

Het college van Burgemeester en Wethouders van Amsterdam,

Secretaris

Burgemeester