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7 June 1982

Worldwide Report

ENVIRONMENTAL QUALITY

(FOUO 4/82)

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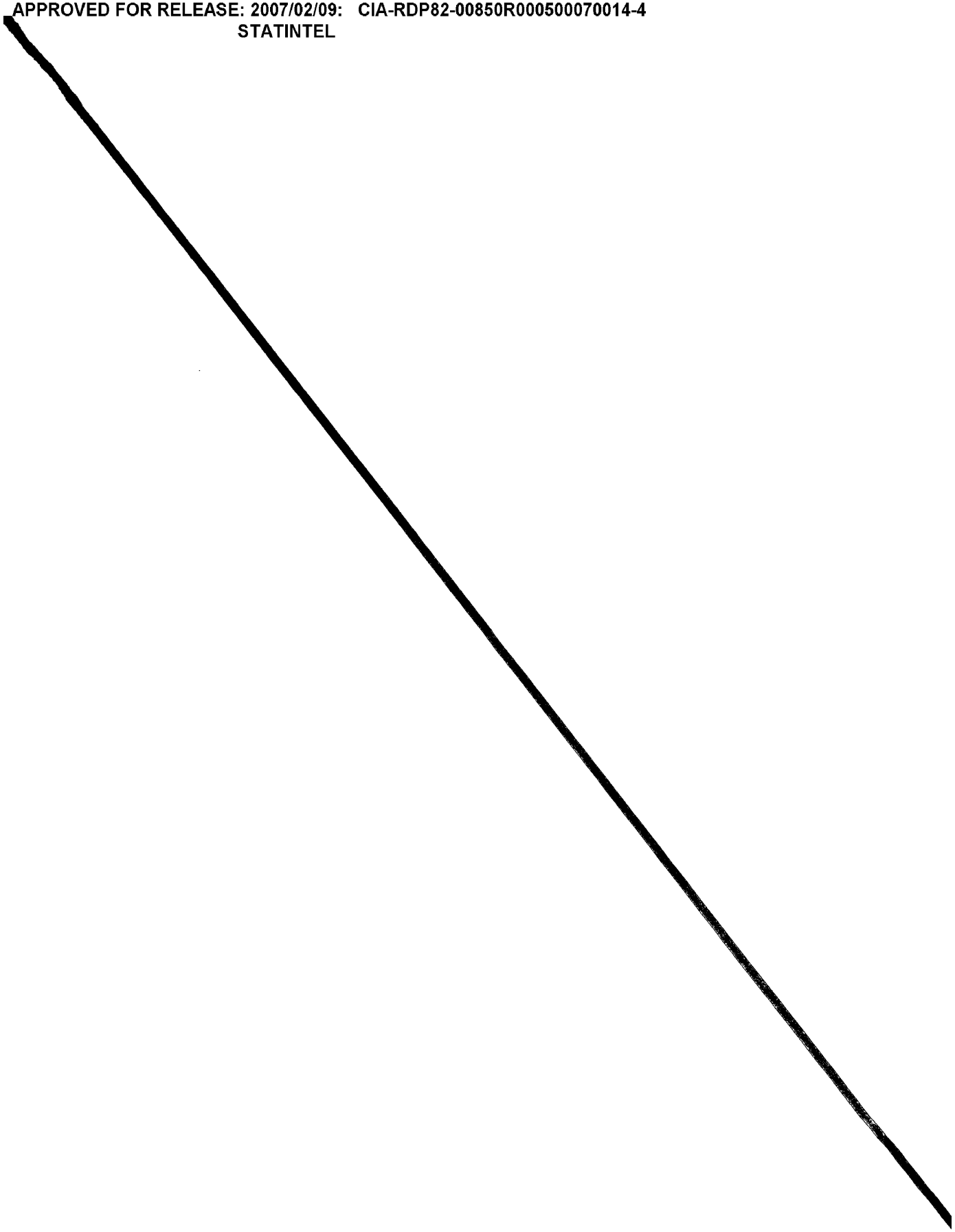

FEDERAL REPUBLIC OF GERMANY

MEASURES AGAINST ACID RAIN DAMAGE TO FORESTS

Hamburg CAPITAL in German Apr 82 pp 281-282

[Article by Hans-Josef Joest: "Aerated"]

[Text] Saving the German forests. Sulfurous precipitation threatens the German forests. Experts react helplessly and perplexed. But a tinkerer from the Hunsrueck discovered a technique to keep the trees from dying.

The German pine forest is beginning to falter. Sulfuric acid rain from factory smokestacks, exhaust pipes and house chimneys is thinning its evergreen top, poisoning its life-giving roots. Exhaust gases from coal and oil furnaces are attacking pines, firs and beechtrees--in the northern Ruhr district, the Rhine-Main region, the southern Black Forest and the Bavarian Forest. For a long time the acid rain has been eating at the sandstone facades of historical buildings, causing coats of oil paint to fade or is corroding the unalloyed steel of autobahn bridges.

The economic loss by such clouds of sulfur smoke is set by the OECD at three to five percent of the gross social product of a country. For the FRG that meant an annual loss of DM40 to DM70 billion. The Federal environmental office in Berlin considers 40,000 to 70,000 hectares of German forest to be damaged by acid. Losses of 20 percent in felled trees cause losses amounting in the millions today.

In addition to forest owners and strollers, forestry experts also join in the song of woe, "O Tannenbaum." For so far they have been able to combat the environmental damage in the forest soil only with a radical method. They must fell the trees and then try to neutralize the acid rain by applying lime. The effect is limited because the lime does not reach the places where it is most needed: the root system in the subsoil.

Therefore, the soil scientists are forcefully demanding vigorous cures. In the long run the acid rain can, of course, dissolve heavy metals in the soil and release aluminum--deadly poisons for the woods. For that reason, Karl-Friedrich Wentzel, chief director of forests of the Hesse Land office for environment senses unrest over all the treetops: "A time bomb is ticking here in our forests." For Dr Wilhelm Knabe of the North Rhine-Westfalian Land office for ecology the character of the forest is no longer in order:

"For all practical purposes there are no longer any completely unpolluted areas in our country." Forest director Bruno Sponsel of the Bavarian Forest: "In my entire career I have never felt so helpless toward nature as I do now."

In this threatening situation assistance is promised by a tinkerer from the Hunsrueck. Eugene Zinck, business manager of Zinck Motor Technology Ltd in Bad Kreuznach, has developed a portable compressed air probe. Comparable to an air hammer, it can bring the saving lime to the sick roots, up to 1.50 m deep in the acidified soil.

Engineer Zinck, who came into contact with the soil as a student of Professor Gerhardt Preuschen at the Max-Planck Institute for Farmwork and Agricultural Engineering ("the soil is my great passion"), has so far designed 30 different field and garden devices. Thus, he invented a complete harvesting machine for tea for the shah of Iran and made weeding easier for amateur gardeners with a hand-held motorized hoe (Black and Decker has the license).

The idea for his compressed air probe came to the 60-year old businessman 4 years ago upon growing numbers of complaints by farmers about heavy tractors that were increasingly compacting their fields and choking yields. Therefore, Zinck pondered over a plow which could break up the topsoil without being heavy itself and by doing without a heavy tractor. The desired plow force was literally in the air: in a traditional compressor from the Swedish pneumatic specialists Atlas Copco AB.

Laboriously Zinck figured out a new kind of air hammer which rams itself into the soil without any external pressure. By pressing a button approximately 500 liters of compressed air can then be blasted into the subsoil in a fraction of a second in order to break up the impermeable structure. BASF styrene pearlettes, moreover, carried along by the compressed air, kept the cracks in the earth open for a long time. For effective use in the sulfuric forest, where right off the dense stand of trees hinders any kind of soil treatment with mechanical plows, now, instead of plastic pearls, the saving lime had then to be pressed into the subsoil.

This Zinck probe signifies for geoscientist Dr Manfred Krieter of the University of Mainz a "very great help." As director of a research project in the Soonwald with excess acidity he wants to show scientifically for the first time that with the help of this new kind of technique the forest soil can be effectively cured: "The probe has perhaps arrived in the nick of time." At the same time in the Alpirsbach Forest in the southern Black Forest efforts are underway to blast lime into the threatened root zones using Zinck's pneumatic pump. Zinck recalls: "When we made the first beginning, there was sheer enthusiasm." Observers clearly feel an air blast at 50-cm depth from the shaking of the earth's surface in a 5-m range.

While for the present the forest experts are carefully checking whether in the probe they have the long sought weapon against concentrated sulfur air pollution, the German Society for Large Tree Transplanting Ltd, Hofheim, Hesse, appeared convinced of the success from the outset. This umbrella organization of German nurseries immediately ordered 20 probes although Zinck's assembly lines have not yet started. They baptized the invention the "Terralift" which has great publicity appeal.

Soil scientist Krieter shares the optimism of the merchants. He considers the probe to be a simply "ingenious idea" as an aid against acid rain in German forests.

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