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DEPARTMENT OF THE ARMY
UNITED STATES ARMY INTELLIGENCE AND SECURITY COMMAND
FREEDOM OF INFORMATION/PRIVACY OFFICE
FORT GEORGE G. MEADE, MARYLAND 20755-5995

REPLY TO
ATTENTION OF:

Freedom of Information/
Privacy Office

SEP 23 2009

Mr. John Greenwald, Jr.
[REDACTED]

Dear Mr. Greenwald:

This is in further response to your Freedom of Information Act (FOIA) request of July 27, 2009 and supplements our letter of July 31, 2009.

The search with another element of this command has been completed and a record responsive to your request was located and returned to this office for final disposition and direct reply to you. The record is partially releasable and is enclosed.

Information has been sanitized from the record as the release of the information would result in an unwarranted invasion of the privacy rights of the individuals concerned, this information is exempt from the public disclosure provision of the FOIA per Title 5 U.S. Code 552(b)(6).

The withholding of the information described above is a partial denial of your request. This denial is made on behalf of Colonel Richard H. Saddler, the Acting Commander, U.S. Army Intelligence and Security Command, who is the Initial Denial Authority for Army Intelligence investigative and security records under the FOIA. You have the right to appeal this decision to the Secretary of the Army. If you wish to file an appeal, you should forward it to this office. Your appeal must be postmarked no later than 60 calendar days from the date of this letter. After the 60-day period, the case may be considered closed; however, such closure does not preclude you from filing litigation in the courts.

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Sincerely,

A handwritten signature in dark ink, appearing to read "Susan J. Butterfield". The signature is fluid and cursive, with the first name "Susan" and last name "Butterfield" clearly distinguishable.

Susan J. Butterfield

Director

Freedom of Information/Privacy Office
Investigative Records Repository

Enclosure

NOT EDITED



DEPARTMENT OF THE ARMY

NATIONAL GROUND INTELLIGENCE CENTER
220 SEVENTH STREET, NE
CHARLOTTESVILLE, VIRGINIA 22902-5396

NGIC-HT-0436-97

NGIC HUMAN TRANSLATION NUMBER

DATE: February 10, 1998

ENGLISH TITLE: New chapter in rain generating and hail preventing rockets.

TRANSLATION OF: *Hangkong Zhishi [Aerospace Knowledge]*. 1996 (Aug). No. 8(305), 27.

LANGUAGE: Chinese.

COUNTRY: People's Republic of China.

COUNTRY OF ORIGIN: People's Republic of China.

AUTHOR (AFFILIATION): Wei JUN.

REQUESTER: IANG-TSC (b) (6)

TRANSLATOR: (b) (6) Translations.

19980520 196

200 038 817

TRANSLATION ACCESSION NUMBER

W A R N I N G

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FOREIGN DOCUMENT ACCESSION NUMBER

NGIC-BT-0436-97

NEW CHAPTER IN RAIN GENERATING AND ANTI-HAIL ROCKETS

BY: Jun Wei

On May 26 of this year there was a windstorm at Linguan District in Danfeng County of Shaanxi Province with ping pong ball size hail, and which lasted for two hours. A total of 21 towns and 2,208 households were affected. There were 2,780 Mou of wheat and vegetables damaged, with losses of more than 1.3 million Yuan. Also, according the "SHAANXI DAILY", in addition to the historical drought in Heyang County, since last winter there is basically no effective moisture in the soil to a depth of 50 millimeters, and a large area of wheat fields has dried up because it has not been possible to irrigate. Faced with such a serious condition, the local government issued a mobilization order for "county-wide mobilization, everyone working to save the crops." They also squeezed out 1.85 million Yuan to be used to fight the drought. This led the author to think that if we could use space science to affect the weather, it would be possible to quickly take countermeasures against hail and rain, reducing disasters and increasing production. We should also be able to save a great deal of man power and material and financial resources. The "highly effective, multiple-use rain increasing, hail prevention rocket system (called the WR-1B Rocket" developed by the 41 Institute of the Fourth Space Academy is a new generation tool for man-made effects on nature. This rocket passed technical evaluation for production by the State Weather Bureau and the Space Industries Corporation, attaining international levels for a domestic product. It was exported to Eastern Europe in April of this year. Over the past few years, with gradual widespread use of this product, it has played an increasing role in artificially affecting nature.

On 28 August, 1995, clouds appeared over a large area at Pingliang in Gansu Province. All of the weather stations in the Pingliang District took immediate action to turn on all the weather detection systems and maintained a close watch on the movements of these clouds. The WR-1B rocket launcher trucks, which were already on stand-by, closely followed the clouds. The operators waited for the opportunity, aimed at the clouds, and pressed the launch buttons. In an instant there were several "fire trails" inside the clouds spraying fire and mist, with the entire operation lasting less than ten minutes, and there followed heavy rains over the Pingliang district. The thirsty ground opened up and drank in this wonderful rain. According to an analysis of the statistics, these rockets increased the amount of rain which fell by 10,132,000 cubic meters of water, an increase of 36.4 percent, for a harvest to investment ration of 51 to one. The WR-1B rocket really did itself proud.

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How does this type of rocket make it rain? This rocket uses the BR-91-Y high performance pyrotechnic catalyst recently developed by the China Meteorological Institute. When this catalyst is launched into the atmosphere it forms artificial aerosol crystals with an ice core. Furthermore, there is a very high rate of core formation. When ice containing clouds form in the atmosphere which have not yet developed to the degree where rain falls naturally, if the rockets spray this pyrotechnic catalyst into the warm zone in the middle and lower part of the clouds, the catalyst will produce large numbers of crystal cores which will absorb the super cooled water droplets in the clouds to form ice cores, and these will continue to grow larger while they are moving about inside the clouds. When the ice droplets exceed a certain size, they will fall as rain or will turn a small amount of rain into a major rainfall. When there are hail clouds, an even greater amount of this catalyst must be sprayed to form even more artificial crystal cores so competes with the natural ice cores to absorb the super cooled water. This forms a large number of small ice nuclei of the same size within the cloud which falls as rain, thus serving to protect against hail.

Compared with the current anti-aircraft gun explosive type broadcasting method, this type of rocket has a longer operational range, a longer horizontal broadcast distance, and has a higher rate of catalyst core formation, so rain falls over a greater area and the rainfall distribution is more even. The structure of this rain generation anti-hail rocket system is very simple, it is safe and reliable, is easy to operate and easy to maintain. It can form an integrated man, rocket, launcher and vehicle mobile operations unit. It can quickly and flexibly track follow clouds over a fairly wide range (radius of 200 kilometers) which facilitates launch at the precise proper moment. These advantages make it ore effective in increasing rainfall and protecting against hail. This system is also quite economical.

China is an agricultural country with a vast area and many different types of climate, with complex and changing climate patterns. There is are tremendous differences in the regional and seasonal distribution of natural rainfall, with an average amount of fresh water per person of only one fourth that of the world average. There are constantly such natural disasters as floods, droughts, hail and blizzards. The average annual losses to such disaster amount to several tens of billions of Yuan. Because the development of surface and underground water resources is limited by natural conditions, it is absolutely necessary to directly exploit the cloud water resources in the atmosphere. This is the best and most economical method of reducing disasters and producing a bumper harvest.

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The "rain increasing and hail preventing rocket operational system" has been used in field rain increasing and hail preventing tests since early in 1995 in Dezhou District in Shandong, in Shijiazhuang District in Hebei, in Yanji District in Jilin, in The Xinjiang Uiger Autonomous Region and in Lantian County in Shanxi, achieving satisfactory results in all of these tests. For example, in artificial rain increasing operations in Yao County of Shaanxi Province last May, aa total of eight rockets were launched with a marked increase in the amount of rainfall. An analysis indicated that these artificial rainfall increasing operations were able to increase the wheat production by ten catties per Mou, and with 20,000 mou of wheat in the effective rainfall area, it was able to increase total production by 200,000 catties, which equates to 180,000 Yuan.

China has over one thousand counties in its 30 provinces, autonomous regions and centrally governed cities which are beginning rain increasing, hail preventing operations. If the WR-1B rocket operations system were to be used nation wide to replace the currently used "37 anti-aircraft gun", it would be possible to increase an area 5.2 times as large and with operational results which are three to five times better with no increase in the actual investment.

the WR-1B rocket project was named by the State Planning Commission as a "national key point enterprise technology development item" and a "national key point development item for conversion from military to civilian technology". In 1995 the State Planning Commission named it as a "national key new product" and was approved by the State Science Commission as a "national level torch plan item". In May of this year this project was praised by experts at the rain increasing operations operation acceptance evaluation conference convened of the Qinghai, Xizang and Xinjiang Offices for Artificially Affecting Weather and Meteorological Organs.....

We can imagine that with uniform deployment by the State Mythological Bureau and the Offices for Artificially Affecting Weather, the WR-1B rain increasing, hail preventing rocket will be able to play an even greater role.