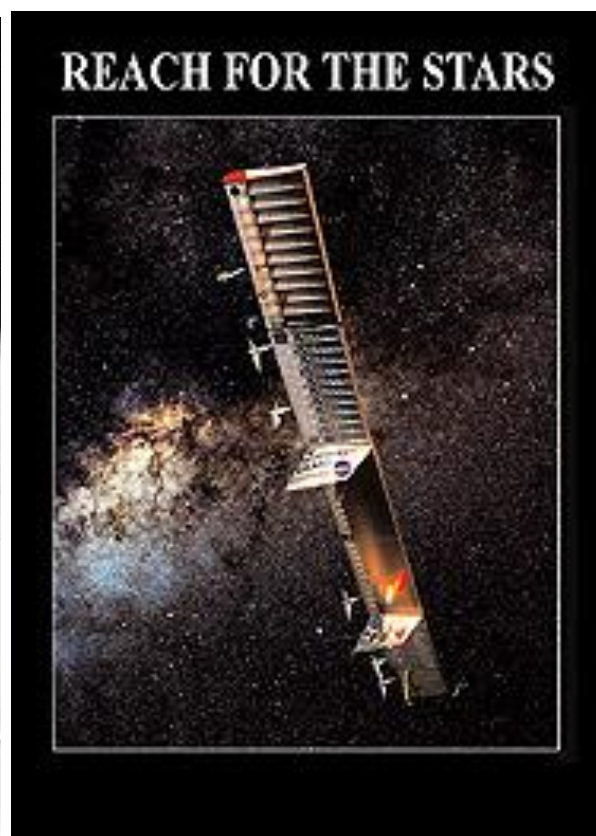


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Hope From on High:

HALE UAVs Could be a Ray of Hope to Disaster-Prone Areas.

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Hope From ON HIGH

**HALE UAVS COULD
BE A RAY OF HOPE TO
DISASTER-PRONE AREAS.**

PeaceWing is being considered for use in the response phase of disasters and to extend emergency telecommunications.



The Global Disaster Information Network (GDIN) was formed to help disaster managers around the world conceive of new ways to develop and share disaster-related information. This is the key objective of GDIN and the motive driving its work with the UAV industry.

GDIN believes that the use of UAVs represents a cutting edge approach to the field of disaster information management and it wants to be a part of helping that application grow.

SOLAR POWER

The Institute of Electrical & Electronics Engineers' (IEEE) GeoScience and Remote Sensing Society Vice-President for Technical Activities, Al Gasiewski, has been

working with GDIN on using solar-powered UAVs – PeaceWing (AeroVironment's PathFinder Plus) – in the response phase of disasters and to dramatically extend the power of emergency telecommunications. In this context, any field expert will agree that satellites are not enough.

GDIN needs UAVs to improve its understanding of the properties of disasters and therefore respond to them more effectively. Natural disasters have an impact on more nations and people than war or disease, so it makes perfect sense to expand the use of UAVs from purely commercial applications, such as monitoring coffee crops in Hawaii or for mobile phone networks.

UAVs have special properties that significantly augment the advantages of satellites (low altitude, low speed, low costs, etc) and should be an essential part of the global strategy to reduce the impact of disasters. GDIN, the European Community and others want to use UAVs

to enhance their ability to reduce disease, poverty and war, to save lives and property, and build a foundation for sustainable society. UAV technology can help the West to assist the developing nations to improve their disaster-resistance.

FROM EXPERIENCE

Several years ago, I used a satellite to help me determine the extent of a lava flow in a remote part of former Zaire. Mexican experts want to pre-position UAVs over semi-active volcanoes; South Africans want them to help with fire-prone lands. Both countries wish to provide better early warning systems, as well as quicker, smarter response.

In 1990, 87 million people were affected by natural disasters in poor countries. By 2000, the number was over 255 million. This brought the decade total to almost two billion. This only takes account of major disasters. Add in the minor fires, etc, and the number goes up markedly.

The number of people affected by major disasters over this period increased by 185%, while reported events in these same countries increased by just over 30%. GDIN believes that this alarming trend is likely to continue without the use of UAVs to improve early warning systems and provide quicker and more accurate mapping of crises.

However, the number of disasters may not be increasing in any significant way, only the number of vulnerable at-risk people. The tendency in international settings is for governments to point to the results of recent uncontrollable natural events – hurricanes, earthquakes and floods – and ask for help with response. The number of disasters may appear to be increasing as a result of vulnerable populations moving to high-risk areas, such as Bangladesh. We need to move the focus from the number of disasters to mitigating the number of people at risk.

A hurricane is not a disaster unless it hurts people and destroys property. Move poor people into hurricane-prone locations without constructing hurricane-resistant villages and you will have disasters. Add corruption, diseases such as HIV/AIDS, and you have historic disasters. The more people in an area, the larger the disasters will be. The result of this spiral is a demoralised society.

If a community is already suffering from disease, ineffective government, corruption, etc, this trend leads to greater famine, starvation and death, then to weakened social and political structures and a greater potential for civil war and cross-border conflict, as people go where the resources are. If we can get funding for fleets of UAVs such as PeaceWing and others, it will help us to understand the mechanics of disasters and thus better develop appropriate building codes, evacuation routes, flood plain management, and so on.

AN EXTRA EDGE

Predator UAVs are now weapons of war aligned under Air Combat Command's Air Warfare Center; why not also use them to give disaster managers better situational awareness of refugees fleeing an arriving hurricane?

Satellites pass over every 12 hours or so. If we could pre-position UAVs, particularly the up-and-coming solar variety that will stay up 24/7 for months at a time, we

could carefully study a disaster-prone region before the crisis hits with more accuracy and at less cost than using satellites. This would help to develop an effective plan to reduce the impact of a major weather system. Satellites will always be valuable but UAVs will give us that extra edge.

PeaceWing, for example, will fly at 100,000 ft for multiple day flights up to a month or more at a time, providing civil telecommunications to pay its way and conducting commercial remote sensing at the sub-foot level, giving FEMA and international disaster managers the data needed to understand a region's strengths and weaknesses.

Once a disaster strikes, the air vehicle can fly above weather and air traffic, cheaply and accurately assisting in response without risk to pilots, distributing high-resolution aerial photos in real time to anyone who needs them.

This article is not a scientific argument for UAVs. If you know about UAVs then you already know they can make a difference. This was made abundantly clear at the TAAC 2002 conference held in Santa Fe, NM, in October 2002. Here the consensus was that these air vehicles are the tool of tomorrow. So this article is a call to the UAV industry to join us in the humanitarian disaster field in finding new ways of using UAVs for response, prevention and preparation.

GDIN believes that using UAVs to develop practical development policies could, for example, reduce indiscriminate logging which leads to desertification, enhance access to roads needed for markets or evacuation routes, and educate people about practical risk assessment of living areas.

UAVs can help to properly manage the safe concentration of resources in urban areas, the numbers and distribution of schools and health centres in rural areas, reduce slums and offer economic opportunity. People will always live in riverbeds, gorges, volcanic slopes and exposed lands. But adequate planning can mitigate the risks. The need to use UAVs for this purpose is urgent.

By way of example, 30 years ago a flood on the outskirts of Dhaka would have affected a quarter of a million people. Today, more than one million would be made homeless or killed.

Finally, some people in the developing world feel that the industrialised West doesn't contribute enough resources to disaster mitigation or development. We will never be able to do away with this argument but we can reduce its impact. UAVs need to be on the scene helping us help others save lives. ●

Editor's note:

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GDIN invites the UAV industry to attend the GDIN 2004 Conference taking place on 4-7 November 2003 in Washington, DC. The event is sponsored by the US Department of State. Details can be found at: www.GDIN.org.

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