THE PEACEWING PROJECT

Recalling the potential for solar power to revolutionize how NGOs operate in disasters and humanitarian emergencies.

By

Larry Winter Roeder,Jr., MS
Editor in Chief, ClimateCaucus Network

In 2001 I was in my seventh year as the Policy Adviser on Disaster Management in the Department of State's Bureau of International Organization Affairs, and very frustrated over the cost of emergency telecommunications. To ease access to satellite phones, radios and similar tools in places like Sudan, I led the US Delegation in 1998 (ICET-98) that negotiated the Tampere Convention on the Provision of Emergency Telecommunications. The convention, which finally became international law in 2005, did break down legal barriers and provide new protections for NGOs, but cost was still an issue.

Figure 1 Photo of Peacewing by Larry Roeder

One of the things I also did in my job was look for emerging technologies that could be used in emergencies, like the Internet, which we exploited just after the Rwanda crisis by fostering ReliefWeb. That became the first major web project to stimulate the sharing of disaster information between NGOs, governments and the UN. ReliefWeb is still recognized as a leader in that field, in large measure because InterAction members and other NGOs have made it so. Later when working with the Office of the Vice President, I became Executive Director of GDIN, the Global Disaster Information Network, which extended the use of maps derived from government and private satellites by NGOs. GDIN became the model for the Charter, a European Union effort to share satellite based information in emergencies. Despite those enhancements, in 2001 telecommunications was still one of the most expensive aspects of a crisis. Even if high speed communications were available to all for telemedicine in a war zone by NGO doctors, even if logisticians and managers could upload and download maps and images of a volcano or tsunami in real time, could any NGO really afford it?

To resolve the cost issue, I approached NASA and a wonderful little Simi Valley company called Aerovironment which were developing a solar powered UAV

(unmanned aerial vehicle). In 2001 I watched Helios, Aerovironment's best effort at Dryden Flight center in Edwards, California reach record heights. The flying wing pictured above was to me both a shining example of America's scientific innovation and a model for environmentally friendly aeronautics. The plane, which had ancestors dating back to 1974, could have led to a new solar powered industry. At the Department of State we called Helios "PeaceWing" when talking to the Kenyan and Sudanese governments in order to emphasize its non-military nature. It was 206 feet in length and on that historic day in 2001 rose to 100,000 feet. More work was needed to make sure the planes stayed in the air 24 hours a day, and we were convinced that the platform could be a cell phone tower in the sky, far enough up that it could not be seen from the ground. In addition, the plane could be outfitted with satellite nodes. What this meant was that once operational, for the cost of a local cell phone call, a Park Ranger in Kenya and a scientist in California could jointly track black Rhino in real time and a doctor with IMC (International Medical Corps) could do complicated surgery in South Sudan while being assisted by a team of doctors in Miami. To us, this could have been the most important telecommunications advance in a generation for the NGO community, not just NGOs, but also their partners, governments and Internatonal Organizations.

Unfortunately, global politics and the realities of engineering new systems interfered. In June 2003, the Helios prototype crashed. This was the same year we invaded Iraq and at a time when there was heightened interest in using UAVs for warfare. PeaceWing could never hold weapon payloads, so NASA advance other priorities. I'd like to propose that we in the NGO world consider investing in a rebirth of PeaceWing. There is little doubt that the airframe for the Helios model was too weak for its last missions, which is why it crashed into the Pacific when it met strong turbulence. Research can bolster the airframe, the fuel cells and batteries used to run the platform. What the NGO community would achieve in return for its investment would be a tool that could revolutionize civil telecommunications in the developing world, enabling, cheap, high speed communications with even the most remote of locations. No cell phone towers to fall from earthquakes or tsunamis. Relief workers could do the most sophisticated, band width hungry applications to foster development in peacetime and save lives in the middle of a war. Conservationists would also have an invaluable tool for tracking rare species. Environmentalists could more effectively fight climate change.

It would be difficult to resurrect this effort for anything short of ~$10-15M+ due to the cost of employing the engineers, buying the materials, testing, etc... Why should the NGO world invest? If civil society decided to develop PeaceWing, we would own the technology, giving ourselves an independent robust information management system – a system that could not be diverted into a military tool and thus could be acceptable for useful in conflicted situations. The platforms could also be marketed for use by civil telecommunications ministries. The income from leasing the platforms would then fund relief operations, buy food and medicine.

Mr. Roeder retired in October 2005 as the Policy Adviser on Disaster Management in the Bureau of International Organization Affairs and is now the Editor in Chief of Climate

Network, an NGO alliance based in New York. Mr. Roeder was also the Executive Director of GDIN, the Global Disaster Information Network, a project begun by former Vice President Al Gore, and led the design team which created ReliefWeb. Professor Albin Gasiewski of NOAA and the University of Colorado and Mr. Roeder also developed the initial Peacewing concept.