# Registered Engineers for Disaster Relief (RedR) Australia and its work in Papua New Guinea and other places

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RedR Australia, incorporated in 1995, operates a register of experienced and trained engineers ready for deployment in disasters, whether natural or man-made. In the past three years it has dispatched some 40 engineers to assist UNHCR in locations as far apart as PNG, Central and West Africa, Bosnia and Chechnya, principally in the fields of water supply, sanitation, shelter and infrastructure at refugee concentrations under the care of UNHCR. This article describes the role of engineers in humanitarian emergencies, the mission, organisation and work of RedR Australia, and describes some of the challenging tasks undertaken by its members. Most recently this includes dispatch of two specialists for de-mining work in Bosnia.

The article also covers the work of the RedR Society, a technical society of IEAust, the principal supporting body for RedR Australia, and canvasses the possibility of incorporating engineers from PNG and other countries in the region into the RedR Australia database and training programs.

## Introduction

Humanitarian aid agencies today are responding to two very different types of humanitarian disasters. There are always emergencies caused by natural disasters, such as floods, droughts, or earthquakes. The more complex emergencies or, as they have been appropriately described, 'total disasters', involve large population movements, collapsed governments, violence and slim chance of a return to normality. These emergencies require not only humanitarian commitment, but also assume great political responsibility.

While many aid agencies appear to be very capable of responding to natural disasters, there is a general concern regarding the adequacy of current levels of preparedness and capability to respond competently to complex crises. The toll of human life in Complex Humanitarian Emergencies is high, illustrated clearly in Rwanda, Bosnia, and Somalia. Populations flee to escape rival factions or because supportive infrastructures are destroyed. Complex Humanitarian Emergencies cause people to lose their traditional coping strategies that helped them to survive during natural disasters.

The greatest loss of life in refugee situations occurs as a result of poor water supplies, sanitation, communications and logistics, all areas in which engineers are make a valuable contribution. Engineers enable greater speed in providing and improving essential infrastructure, and therefore have a major contribution in saving human lives. Their assistance in construction and improvement of roads, bridges and shelters also has a direct impact on food aid and medical assistance. Some four million people have benefited from the work of Australian engineers through RedR since 1995. The value of engineers in relief situations has grown steadily, and is still to be fully realised by some humanitarian agencies. Having access to engineering expertise provides affected communities with the possibility to acquire skills that would normally be unattainable. Skill transfer is considered essential to ensure the retention of any improvements.

## About RedR

RedR Australia is an impartial and independent agency that relief agencies can approach when they require experienced engineers, anywhere in the world, in the aftermath of a disaster. It is a streamlined, non-profit organisation of working professionals supported by the industry. RedR Australia is fast and flexible in its response time, with a great degree of humanitarian commitment in extremely difficult working environments. RedR engineers are working in a variety of sectors: water, sanitation, shelter, roads and bridges, mechanics, as well as hydrogeologists, logisticians and other allied disciplines.

RedR selects and trains appropriate staff with professional qualifications, experience and aptitudes. On request, competent and effective personnel are provided to humanitarian relief agencies world wide to relieve suffering in disasters. RedR does not employ disaster relief workers itself, or run its own field programs. The main work of RedR Australia to date has been in providing assistance to the victims of man-made disasters, but the resource is available to assist in any type of emergency.

### History and Formation

RedR was launched in Australia by the late Fred Hollows AC, who issued a firm challenge to Australia's engineering community to mobilise its collective skills, experience and resources for the benefit of the suffering and disadvantaged of the global community.

RedR Australia was incorporated in 1995 as a company limited by guarantee, with The Institution of Engineers Australia, The Association of Consulting Engineers Australia, The Association of Professional Engineers, Scientists and Managers Australia, and The Institute of Municipal Engineering Australia as its founding bodies.

RedR gets a high degree of practical and professional support from the peak bodies and major employment groups within the engineering sector in Australia. The four founding bodies represent the engineering profession in Australia and all its disciplines. The wide membership offers an optimal pool of human resources, with their involvement endorsed by their employers.

### Activity description

The key to a successful deployment is a well-selected professional. RedR Australia's register has over 80 interviewed members, 65% of whom have completed the relief training course. The office maintains the register up to date, so ensuring quick response to requests for assistance. RedR has a sophisticated database with a powerful search engine, which allows quick and accurate selection for the post. RedR also has developed comprehensive procedures, which enable selection of personnel, monitoring their professional development, availability and other relevant aspects. The interviewing procedures are rigorous. The purpose is to assess carefully applicants' skills and attributes and to decide whether the person is suitable to be on the Register. The interviewing panel is comprised of three persons: technical expert, humanitarian worker (often an NGO representative) and the RedR Australia Executive Officer.

The engineers on the register must undertake a RedR Australia relief training course. The course is conducted on a regular basis,

is of the highest standards and is recognised and endorsed by humanitarian agencies worldwide.

RedR Australia has a wide spectrum of skilled technical personnel, and has been able to deploy an appropriate person to 95% of the requests from UNHCR. One of the reasons UNHCR is happy to maintain this arrangement is the guarantee that the engineers' technical quality and awareness of humanitarian issues is of a high standard. The volunteers are not seeking employment, they do it for various reasons, such as a desire to help others, professional development and overseas experience. The arrangement provides a cost-effective alternative to other potential sources of technical personnel.

### Deployment of engineers under the UNHCR/RedR Australia Program

Since 1995, the principal role of RedR Australia has been to supply experienced engineers to the United Nations High Commissioner for Refugees (UNHCR). This program is funded by, and strongly supported by the Australian Agency for International Development (AusAID).

The first deployments under this program took place in April 1995, when two engineers with experience in water, sanitation and roads were deployed to UNHCR refugee camps in Karagwe, Tanzania, and one with water supply experience to Arua, Uganda. All assisted in the development of infrastructure to accommodate a large number of refugees who had fled the genocide in Rwanda. These were followed by a further seven engineers in 1995, twelve in 1996, four in 1997 and fourteen to date (July) in 1998.

These deployments were specialists in hydrogeology, water supply, sanitation, site planning, shelter, roads, building structures, mechanical engineering, logistics and, most recently, demining. They were deployed to many countries, including Chechnya, Tanzania, Zaire, Mali, Liberia, Yemen, Bosnia Herzegovina, Tajikistan and PNG.

In these humanitarian emergency postings, RedR engineers were faced with complex social and human situations. The RedR training program, described in detail in a following section, places particular emphasis on the development of personal skills, and cultural issues that are likely to be encountered in theses places.

### RedR Australia and related bodies

RedR Australia is an accredited member of RedR International and has signed on to the Fundamental Principles and Operating Principles of that body. RedR International, based in Geneva, coordinates and assists the work of individual RedR bodies and requires that certain fundamental principles of operation be adhered to.

RedR Australia maintains close working relationship with RedR (UK) which is the original RedR body and from which RedR Australia originally derived its inspiration. The UK body has been of invaluable support, in particular with training programs, database formats and a web site. RedR Australia and RedR (UK) also share mutual access to each other's database and register of members. It is of interest that RedR (UK) includes in its membership engineers from other countries, such as Ireland, France and Holland. This sets a precedent that RedR organisations are not exclusive to particular countries and may serve a regional role. This situation could well apply to RedR Australia in the future, particularly in relation to Papua New Guinea.

RedR Australia is a member of the Australian Council for Overseas Aid (ACFOA), which provides access to its many member bodies' programs and resources. RedR Australia is also a signatory to the ACFOA Code of Conduct, which defines standards of governance, management and financial accountability for use of donor funds.

The Institution of Engineers, Australia maintains strong linkages, both by providing rent-free office space and other logistical support to RedR Australia, and through the RedR Society, which is outlined below.

### Training

It is essential that engineers prepared for deployment at any time have the necessary training and familiarity to handle the situations and problems that may arise in the field. RedR conducts a 4-day Foundation Training Course on a regular basis, the aim being to better prepare relief workers for life on assignment.

The training objectives are designed to:

- examine the causes of disasters and gain an insight into the problems faced by people affected by disasters
- review the international humanitarian relief system, the function of relief agencies and the role of individual relief workers
- develop practical techniques to increase personal effectiveness in difficult circumstances, including security and medical issues
- participate in team activities and review this experience
- explore cross-cultural issues
- clarify participant skills and identify further individual development needs.

The course was structured around four major themes as follows:

- people affected by disasters (e.g. refugees, displaced people).
- the international relief system and some of the agencies involved
- personal effectiveness and motivation in relief work
- teamwork and leadership.

The role of the relief worker is the central focus throughout each of these themes. The key practical activity is a major team exercise in planning a relief operation. This exercise is conducted in a controlled field environment.

RedR UK and RedR Australia have jointly facilitated the course. Resource persons have included members of many organisations such as UNHCR Geneva and Canberra, Medicins Sans Frontieres, Austcare, the military and other specialist agencies.

It is RedR Australia policy that all deployees attend the foundation course, although it is acknowledged that this requirement has had to be waived on occasions in emergency situations.

### Finances and corporate support

RedR was initially assisted by generous donations from the NSW Public Works Department and others, and by donations and 'soft' loans by the founding bodies at the time of incorporation. It also received a number of generous donations from individuals at that time.

A program of corporate sponsorship was initiated in 1996 among Australia's major companies in the contracting and consulting fields. To date *Major Corporate Sponsors* (committed to $8000 or more for three years) include Thiess Contractors Pty Ltd, Ove Arup and Partners, Sinclair Knight Merz and The Institution of Engineers Australia, and a *Group of Four Consultants* comprising McMillan Britton and Kell, Snowy Mountains Engineering Corporation, Douglas Partners, and Hyder Consulting.

It is our intention to have RedR Australia recognised as the 'charity of choice' in Australia's engineering community, and there is clearly a long way to go before this is achieved. A modest but increasing income stream is also received from subscriptions to the RedR Society, which is a valuable supplement to income from other sources.

### The RedR Society of IEAust

Soon after its formation, it became apparent that RedR Australia would benefit by drawing support from a wide spectrum of Australia's engineering community, whether or not they had volunteered for overseas work. Subsequently, the RedR Society was formed as a Technical Society of IEAust in 1996.

The objectives of the RedR Society are:

- to act as a resource, support and funding base for RedR Australia by assisting in training programs, recruitment and fundraising
- to facilitate networking between persons on the register of RedR Australia, and

others who support the objectives of the organisation through newsletters, meetings, reunions, home page and other means
- to facilitate and conduct meetings, conferences, seminars, workshops, and encourage the preparation of technical papers on disaster response and humanitarian relief
- to act as a resource of technology and expert advice to IEAust in the technical areas of disaster response and emergency management, and to act as the Institution's public voice on humanitarian issues
- to liaise with associated bodies in the field of humanitarian assistance and disaster relief.

The Society now has over 350 members and has an active Chapter in the Canberra and Newcastle Divisions of IEAust.

## RedR Australia and Papua New Guinea

UNHCR is responsible for management of four refugee settlements at East Awin in the highlands near the West Irian border. As in most parts of that country, generally blessed with abundant and reliable rainfall, little or no thought had been given to security of water supply in the event of drought.

As the water supply in the East Awin settlements failed, RedR Australia dispatched, at UNHCR's request, Sarah Bish, a hydrogeologist, to review the situation as a matter of urgency. Following nine days in the field Sarah produced a practical and comprehensive report setting out the immediate, short- and long-term measures needed. The project is now being implemented with the assistance of an Australian Government grant, under the supervision of John Marsh, a project engineer from RedR.

PNG has a large number of engineers with experience in coping with problems with limited resources and in difficult situations. Such people are the backbone of RedR. It is probably unreasonable to expect the engineering community in PNG to mobilise the resources and infrastructure to operate and independent RedR in this country. It would also be both difficult and costly to establish the connections with international agencies that would call on their services.

The writers are sure that, if requested, RedR Australia would be more than willing to accommodate PNG engineers on its database and in its training programs. Indeed such a move would seem to be to the benefit of engineers in both countries.

## The Future

After three years of organisational development, RedR is able to administer a large number of deployments, provide training courses, and maintain and further develop

## Some stories from the field

Below are two stories by RedR Australia engineers, Sarah Bish (PNG) and Ernie To (Tanzania and Bosnia), in their own words about their assignments.

### Sarah Bish (PNG, 1997)

'I was deployed on Sunday 19 October 1997 to the East Awin Refugee Settlement. The sisters of the Mission where I stayed in the camp greeted me with open arms and hearts. They were responsible for the distribution of food to the sick and aged.'

'During the next seven days I surveyed the 17 individual settlements, the Mission facilities and health stations which make up the East Awin camp. The survey included an assessment of the current water supply and sanitation for each of the areas. The inspection involved reviewing the distance from houses to water supply, type of supply, proximity of supply to human and animal waste disposal, reliability of supply and basic water quality (EC, pH and temperature). Once the existing drought supply was reviewed, the potential for an alternative supply (providing both quality and quantity improvements) was assessed.'

'The main sources of water for the camp during 'normal' climatic conditions are rainwater collection in buckets, roof tanks and some shallow bores (<5 meters). The severe drought had resulted in marked deterioration in the quality of water for the East Awin camp, where the burden of water collection is almost solely the domain of women. Due to the drought, food and water resources were in short supply, with women having to spend the entire day on this task. The drought had resulted in people using water resources which would not normally have been used due to distance and quality.'

'Inspection of the site and comparison of drilling in a similar geological formation in Kiunga suggested that deep bores (i.e. 20–30 metres) may provide a reasonably good quality supply, which could provide an effective means of drought proofing for the camp as well as improving the existing water supply.'

'Although the length of my deployment was brief, I discovered a lot about the dynamics of a refugee camp and the vulnerability of the camp, particularly the women, to both natural and man-made influences. The need for the community to recognise its own problems and to collectively resolve to work out solutions is an important part of a camp's ability to thrive in its new environment.'

'I know I can't solve all of the problems of the camp, but I am glad to have had an opportunity to help improve the water supply for the East Awin camp.'

### Ernie To (Bosnia, 1996 and Tanzania, 1997)

'People often ask: "Was the refugee crisis in Tanzania 1997 as bad as Bosnia 1996?"'

'The quick reply is "yes", and I had the opportunity to see human suffering in vastly different contexts.'

'Bosnia was a developed Eastern European country having a reasonable standard of living.'

'The Una Sana canton in the northwest frontier where I was posted had about 300,000 refugees in foreign countries. The international community initiated a program of community infrastructure rehabilitation valued at about $60 million targeting the return of these people to their homes. People began to return from Germany and other countries of refuge to bury their dead and rebuild their lives. There was good potential for a better quality of life.'

'Tanzania was in the "third world". The Kigoma region, to which the refugees had fled from neighboring countries, was mostly undeveloped. The local living standard was low. The community infrastructure was both poor and in disrepair. The quality of life was very basic in the many villages and towns near the thirteen refugee camps. Over 250,000 refugees had fled from where they had little, to somewhere there was little or nothing to offer, but safety from the conflict. The international program of assistance was small in comparison to Bosnia, but adequate in local terms. Some camps were overcrowded and there was the possibility of forced repatriation by the Tanzanian Government. The refugees faced a very uncertain future.'

'RedR in both crises had fulfilled a key role in providing essential engineering services and management skills. If the number of beneficiaries can judge the outcome of humanitarian relief, it would be easy to say that both missions had equal values of about 300,000. If judged by dollars spent, Bosnia was the greater. My belief is that value can only be measured by the effectiveness of the relief of suffering of the individuals, and by their longer term prospect for a better quality of life. As a member of a large team, I believe that RedR Australia cannot afford not to be there.'

an extensive specialist database. RedR Australia hopes to achieve the following

- to have all register members undertaken the Foundation Training Course conducted by RedR
- to increase the number of Register members to 200 by 1999
- to broaden the scope of RedR Australia's work beyond the UNHCR/RedR Australia Arrangement, to include other humanitarian relief agencies (including AusAID)
- to develop a resource of trainers to facilitate and act as resource persons for future RedR Australia training
- to continue the expansion of the Register to include engineering related expertise such as public health, environment, agriculture, forestry, logistics and program management
- to increase and broaden the language skills of personnel on the Register
- to become the 'agency of choice' for the provision of technical personnel
- to act as a resource, as and when requested, for engineers in nearby countries wishing to join RedR
- to establish greater independence in funding resources
- to become the 'charity of choice' in the Australian engineering community.

RedR Australia does not intend to grow for growth's sake. It will regulate the scale of operations to match the need and requests for our services. RedR does not intend to seek and deliver its own programs in the field. The role is to assist and support aid agencies that have the prime responsibility of delivering aid programs with expert technical personnel. RedR will remain a resource for services in emergencies and relief situations, as distinct from development. RedR will not compete with other bodies.

Unfortunately there appears to be no diminution in the world's need for emergency assistance and relief. RedR Australia will continue to play its part in supporting those bodies providing relief and assistance to those affected by natural and man-made disasters.

# Australian Journal of Emergency Management Instructions for authors

The *Australian Journal of Emergency Management* endeavours to provide an information-sharing forum for all those involved in emergency management.

Contributions relating to Australian and international emergency activities, articles identifying and discussing issues, policies, planning or procedural concerns, research reports and any other information relevant to the emergency/disaster management community are welcome.

The aim of this publication is the exchange of information and views across the Australian emergency management community, therefore, the views expressed in this journal should not be taken to be the views of Emergency Management Australia.

The journal will include research-based papers, case studies, reports of current trends and issues, as well as papers aimed at developing theory and good practice. Authors are asked to review the literature only in as far as it supports the arguments being discussed: to avoid specialist terminology; and to consider as far as possible the practical implications of the work described.

Each paper should start with the complete title of the paper in **Bold**, two lines after that, the name(s) of the *author*, followed by the *author(s) affiliation in italics*.

A short abstract follows of approximately 100-200 words. The abstract should be in italics and indented

Each section should be appropriately identified with appropriate headings e.g. Introduction, Technical headings, Conclusions, and References. *Subheadings* may also be used throughout and preferably in italics.

It would be appreciated if authors would use the Harvard system of referencing in their papers e.g. (Jones 1995, p 4) rather than footnotes. Thus, references cited in the text will be listed at the end of the paper.

The reference list should be structured as follows: author, initials, year, title of the book (bold and italics) or article, publisher and place of publication or journal title (bold and italics) volume and issue number, and pages of article.

### For a book source

Jones L. R. 1995, *The Firefighters Concern*, Blackwell, London.

### For a Journal source

Jones L. R. 1997, 'Hazard Management in the Fire Service', *The Australian Journal of Fire Engineering*, Vol. 12, No. 3, pp.13–15

The paper should be single spaced with all tables, figures, charts, boxes, and equations incorporated into the text. The paper should be provided in A4 format.

The length of the paper is usually between 5 to 10 pages. Longer articles will be accepted but usually they should be no more than 20 pages in length. The font is usually Times Roman 12 point.

Diagrams, tables should be included within the electronic copy. Where they are unable to be provided in this format they can be bromide copy or a high quality photocopy. Photographs should be provided in print and negative form and where possible in digital format.

A short CV should be provided of the author/s at the end of the article. This should not exceed one or two short paragraphs. The papers are to be provided in electronic format (Microsoft Word 6, Word 7 or in Rich Text format) and one hard copy.

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