Demining in Iran

Eddie Banks

The "Ca'd'oro"

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Demining in Iran

Demining in any country has its challenges. Here, the author discusses those faced in Iran, how the deminers overcame the problems and what equipment was used to accomplish demining goals.

by Eddie Banks

The Islamic Republic of Iran

The United Nations classification of mine-affected countries names the Islamic Republic of Iran as one of the world’s most affected countries. Historically Iran has been called the “cradle of civilization,” and it contains a number of important historical sites, including the ancient city of Persepolis (or Takht-e-Jamshid), which was destroyed by Alexander the Great in 330 BC.

There are also many beautiful natural sites like the caves at Ali-Sadr, unusual wildlife and, for many of us, one of Iran’s top priorities. The vast majority of clearance programs in support of national and international organizations involved in oil and gas exploration, or in support of the various ministries. Much of the work has been undertaken by the army and the Revolutionary Guard (SEPAH), and in the last few years by MAI, the mine action arm of E&I International. These duties have involved two- and three-dimensional seismic tasks, as well as mine and unexploded ordinance clearance operations around wellheads, pipelines, gathering centers, and construction sites.

Azadegan Project

One of the largest projects recently was the clearance, to very exacting standards, of the Azadegan development fields—a massive mine and UXO clearance operation involving three separate contractors. This project also involved an international client and an independent organization (MACC International Ltd.) to conduct quality control (monitoring and inspections) to the International Mine Action Standards.

One six-month MAI task was to clear a large complex (5 square kilometers [2 square miles]), known as the CTEP (a location that contains the gathering center, construction sites and accommodation areas) that would contain an oil- and gas-gathering center, a construction site and the two accommodation areas. In addition, MAI needed to clear more than 48 kilometers (30 miles) of routes for oil, water and gas pipelines. The contract presented a number of challenges:

1. Establishing a local workforce that could work to IMAS.
2. Selecting high-performance equipment.
3. Clearing and flattening defensive structures, which required the removal of more than 700,000 cubic meters (975,506 cubic yards) of uncompacted soil.
4. Completing the contract in six months, most of which would be during the winter periods, when the site is subject to periodic flooding.

Never before has demining in Iran had to operate to the strict specifications of IMAS.

As each layer of soil was checked with detectors, the top meter (3 feet) of soil was removed, and the new surface would be searched again and soil removed until the entire site was barren. Banks notes (see picture on previous page) were utilized to ensure that, during the mechanical removal process, any hazardous munitions could be detected, prior to being moved or blown in-situ. Like all project work, this task was not without its frustrations and problems. The local residents included numerous poisonous snakes and scorpions; fortunately, the only snakebite was from a nonpoisonous species—not that we knew at the time, so casualty evacuation was done with some urgency. Bedouins, with their flocks of sheep, cattle and goats, also crossed the area with little regard for our warnings, signs, or instructions and no regard for the tape and string; their owners took the wooden marking pegs as firewood and left behind metal residue, often in areas that had been cleared and were awaiting quality-control inspections. Added to that were winter rains and ice flooding.

Other Activities

Farther south, MAI has recently completed a number of seismic clearance operations, requiring the clearance of seismic lines in what the oil industry refers to as the top meter (3 feet) of soil was removed, and the new surface would be searched again and soil removed until the entire site was barren. Banks notes (see picture on previous page) were utilized to ensure that, during the mechanical removal process, any hazardous munitions could be detected, prior to being moved or blown in-situ. Like all project work, this task was not without its frustrations and problems. The local residents included numerous poisonous snakes and scorpions; fortunately, the only snakebite was from a nonpoisonous species—not that we knew at the time, so casualty evacuation was done with some urgency. Bedouins, with their flocks of sheep, cattle and goats, also crossed the area with little regard for our warnings, signs, or instructions and no regard for the tape and string; their owners took the wooden marking pegs as firewood and left behind metal residue, often in areas that had been cleared and were awaiting quality-control inspections. Added to that were winter rains and ice flooding.

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The workforce consisted of several groups, ranging from experienced ex-soldiers to mine and UXO clearance novices, and required the integration of personnel from several locations, thus blending different languages (English, Arabic and Farsi), attitudes, knowledge and cultures.

While a number of problems were initially encountered, the successful teams became extremely proficient, working strictly to the standard operating procedures and adapting to the use of advanced technology equipment.

The Selected Equipment

The need for a balanced response combining safety, quality and productivity required the use of special equipment. The Eblinger 2-Meter (6.5-foot) large-loop array and the Eblinger 120 triple probe with data logger provided a perfect combination for this particular contract. Both provided a good detection range, both were highly effective, and both were easily taught and easy to maintain. The data logger and the computer-generated images of the metal objects detected provided the client with a visual image of the contamination. The quality-control inspection teams also utilized the data loggers and final inspections provided the client with a clear illustration of the effectiveness of the clearance operation.

Removal of Defensive Positions

It was also necessary to remove more than 100 kilometers (62 miles) of defensive positions, all of which had to be searched with both the loop and the bomb locator in a layered removal system. These defensive positions were contained by large perimeter bunds 3 to 4 meters (10 to 13 feet) in height, with separate bunds protecting the various compounds and operational locations. Each of the large compounds contained bunds for clearing the anti-aircraft equipment.

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a “transition zone.” The transition zone contains desert land, swamps with massive reed beds, and tidal areas—a challenge to any mine and UXO clearance operation. The various channels, streams and reed beds create not only clearance problems but also a variety of additional hazards, such as snakes, leeches and insects, plus rapidly rising tides and waves from passing craft.

Clearance and Cutting of Reed Beds in the Abadan Swamps

In the north, work has involved clearance of construction and wellhead locations, flare pits and pipeline routes, and a range of quality-control and/or clearance tasks in support of seismic exploration. This is generally fairly standard clearance work, requiring clearance to varying depths in areas that will eventually support sites for oil and gas extraction, as well as work in support of 2D and 3D seismic operations, requiring battle area clearing and shot point checks.

QC for Seismic Operations Summary

Over the last few years, the gradual increase in the availability of high-tech equipment and the training of company management has created a firm foundation for future projects. MAI operational staff has also assisted both the army and SEPAH by conducting specialist training on Ebinger’s high-tech equipment. Over the last few years, MAI has conducted Technical Surveys (which are primarily a simple version of the Environmental Impact Assessments, one of the functions of the environmental side of the company), threat assessments, risk analysis, mine and UXO clearance, quality assurance and QC. Mines and UXO will continue to be a factor for some years to come in the western border regions, and in conjunction with the army and SEPAH, MAI hopes to continue working to rid the country of these remnants of war.

See “References and Endnotes,” page 104

Assisting Landmine Accident Survivors in the Thai-Burmese Border Region

Clear Path International is working with Prosthetic Research Study of Seattle to help Burmese landmine survivors obtain prostheses from afar by using a new fitting process.

by Imbert Matthee | Clear Path International

Mordecai has a problem. Or, better stated, the landmine accident survivors his small organization is trying to assist have a problem. The survivors live in the mountainous Karen state, partly controlled by Burmese troops and partly by the separatist Karen National Union. Most of the amputees cannot or will not escape east to Thailand to get access to physical mobility devices from international aid groups there. Neither can they cross the military front to the west to seek support from the limited medical services available in Burma. To make matters worse, many of the Karen mine survivors are homeless, displaced by the fighting or the presence of landmines in their villages, which are often considered rebel support bases by government troops.

So how is Mordecai, head of the Karen Handicap Welfare Association and himself a mine amputee, going to get his beneficiaries the mobility- and hope-restoring prostheses they need?

At Clear Path International, we have been talking to Prosthetic Research Study of Seattle about a portable device that could solve Mordecai’s problem. Our effort to help PRS finalize its device and get Mordecai’s group trained on it in the field provides some insight into this
A Regional Approach: Mine and Health Impact Surveys in Cambodia, Laos, and Colombia, Wells-Dang [from page 14]

Farther Reading


Facet, Michael. Informal Village Demining in Cambodia: An Operational Study. UXO Lao, P.O. Box 345, Vieliane, Lao PDR, Tel: (856-21) 414896; Fax: (856-21) 415766, E-mail: uxolao@laotel.com.

A Landmine Impact Survey, or LIS, is a community-based national survey that measures the extent of the impact of the landmine problem in a country, based on the number of recent victims, socio-economic hardships and type of mines.

USAID’s Perspective: The Role of Social and Economic Developing Strategies for Humanitarian Mine Action, Feinberg [from page 41]

Experience with the use of the LIS in Cambodia and Vietnam suggests that the LIS is an effective method for identifying landmine-affected areas and for prioritizing mine action programs. For more information see http://www.icrc.org/ihl.nsf/FULL/500?OpenDocument, accessed Nov. 4, 2005.

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