

# THE PHOENIX



Issue 7 • March 1996

Published by Phoenix Geophysics Ltd.

## EXPLORATION BREAKTHROUGH IN INDIA

**F**or many years Indian geoscientists speculated that there might be oil-bearing Mesozoic sediments beneath the basalt-covered areas of west central India. Phoenix equipment and expertise has confirmed just what the scientists wished and hoped for during a 1993 MT survey.

India imports billions of dollars of oil each year — demand is constantly rising while the country's own production is falling (largely because much of India's own oil comes from the Bombay High Field which is now in decline).

A large area of west-central India is covered by basalt which flooded out of fissures when India separated from Gondwanaland tens of millions of years ago. In some places this basalt is more than two kilometres thick; reflection seismic techniques normally used in oil exploration cannot penetrate this layer. But the magnetotelluric technique perfected by Phoenix engineers can "see" through the basalt.

Basalt is dense and electrically resistive, acting like a mirror to seismic waves; but to the low-frequency electromagnetic waves used in MT, the basalt is "transparent". Since the early 1980s, Phoenix has promoted the use of its MT techniques to the Oil and Natural Gas Commission of India. It was a chance encounter on an airplane that led to renewed interest by Phoenix and Indian scientists in exploring this play.

On a flight from Calcutta to Delhi in 1990, Phoenix President Leo Fox sat with Dr. Surajit Chalia, then chairman and managing director of Oil India Ltd. Interest was piqued; the Canadian High



**Capt. Satish Sharma, Minister of State for Petroleum and Natural Gas, and several interested onlookers pay close attention to Phoenix President Leo Fox at Petrotech' 95 in Delhi as Leo explained the results of an MT survey in India. At far left is B.K.Saigal of AIMIL, Phoenix's agent in India.**

Commission in New Delhi assisted with an application to the Industrial Cooperation division of CIDA (Canadian International Development Agency); Leo Fox made several trips to India; a \$356,000 (Cdn.) grant was approved by CIDA in early 1992 for a demonstration MT survey.

CIDA requires significant contribution of resources from the Canadian company requesting the grant as well as its foreign partner. Phoenix proposed partnerships to four groups: The Indian Institute of Geomagnetism (IIG) in Bombay; the National Geophysical Research Institute in Hyderabad; Oil India Limited (OIL) in Assam and the Oil and Natural Gas Commission (ONGC) in Dehra Dun.

The first to get its budget approved and sign an agreement with Phoenix was

IIG; OIL and ONGC soon followed suit. With IIG, Phoenix completed a 100 km profile near Jabalpur in central India, across the well-known Narmada-Son geo-fracture; for OIL, we did a 30-day MT/CSAMT survey in the desert of

*continued on page 2*

## CONTENTS

- 2** President's Message  
V-5 Sale to India
- 3** Employee News  
On the Road... in China
- 4** Hoping To See You ...  
Deep MT/AMT Exploration  
in Mining