



Case Studies: **Water-inrushing Accident at** **Chaohua Mine, PR China**

Gui FU, PhD

Professor

Dept of Safety Engineering

China University of Mining & Technology - Beijing



The Accident, Chaohua, Zhengzhou, 11 April, 2004

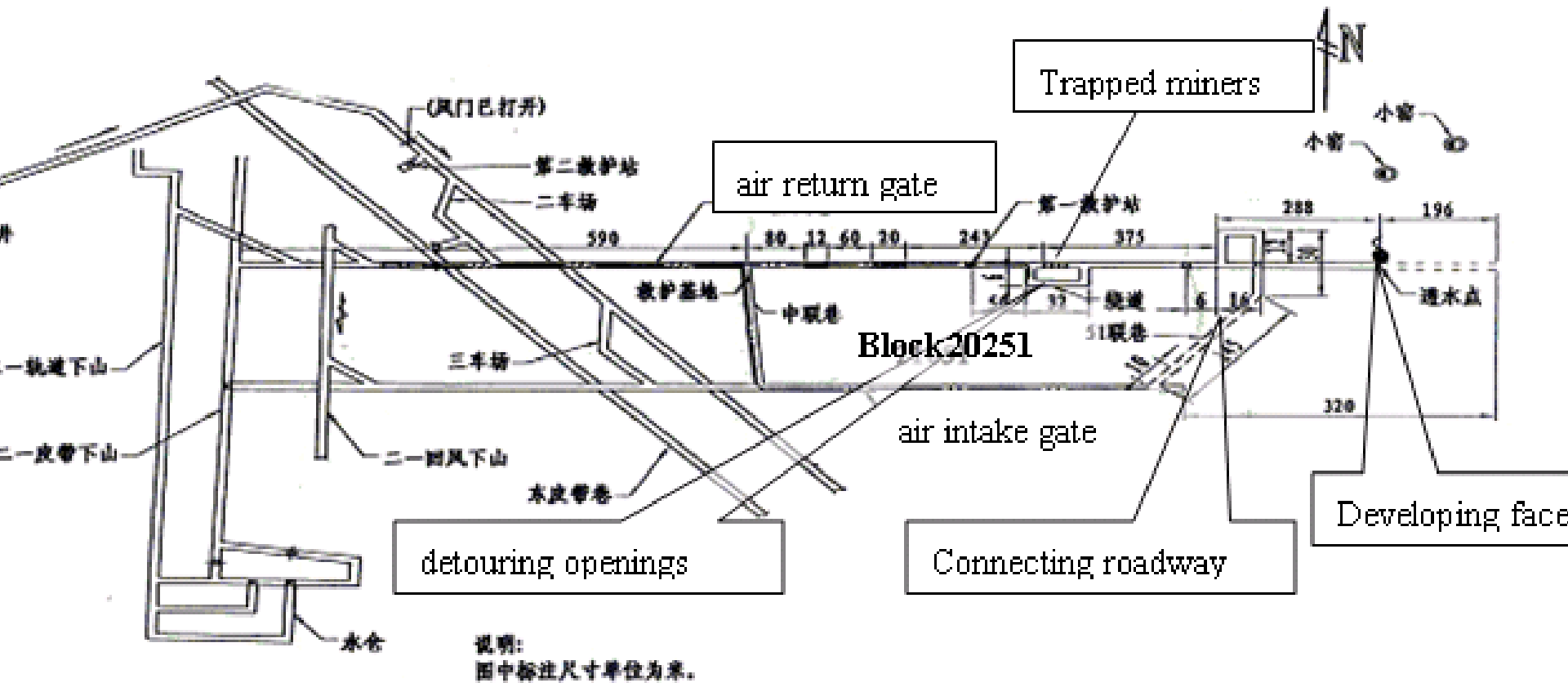
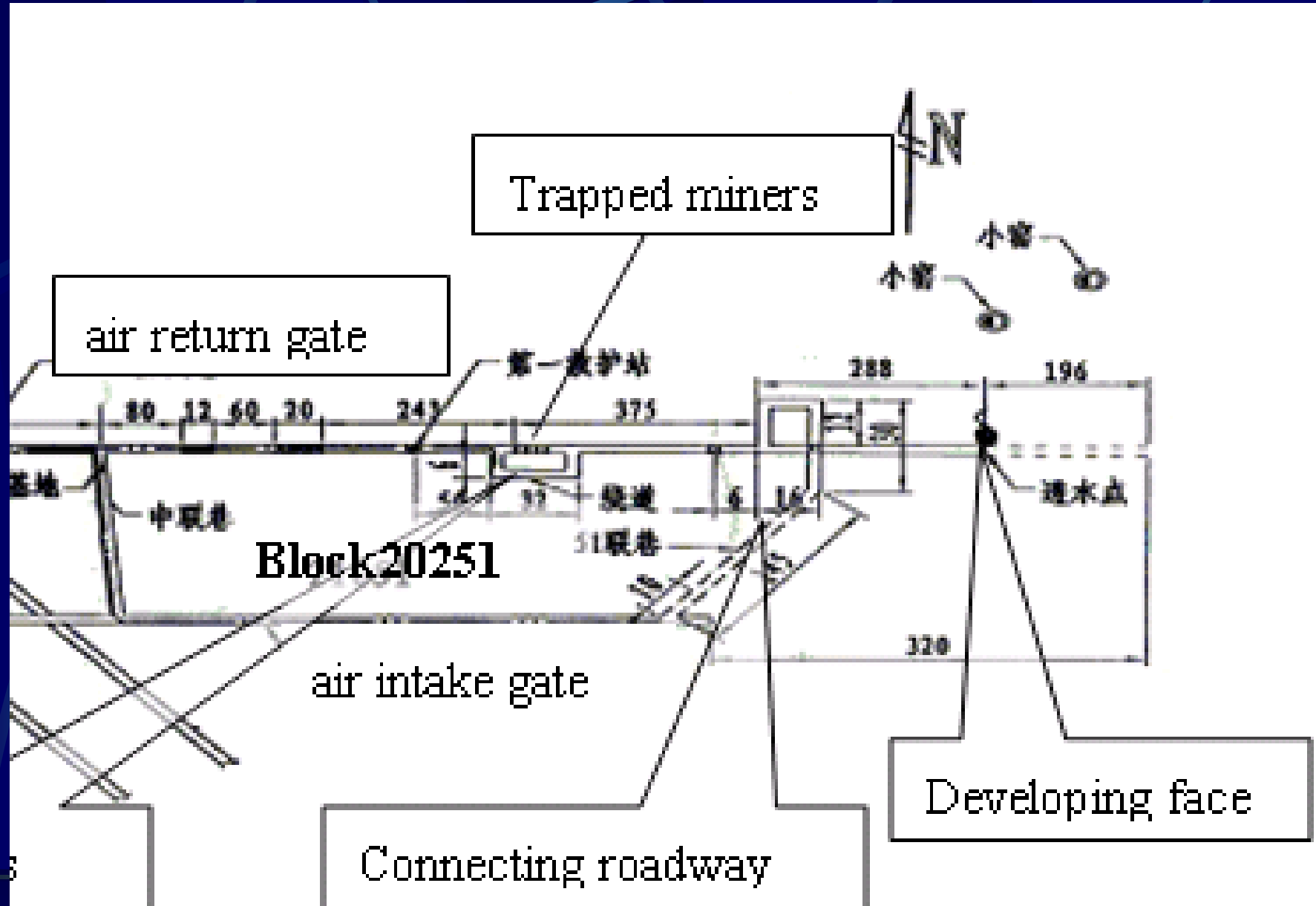


Fig. 1 the area for the "411" accident

The Accident





The time table of the accident

11 April, 2004

16:00 pm, April 11 , 2004, drilling, water lining, drilling stopped, reported

16:32 pm, reported to the central control room to managers

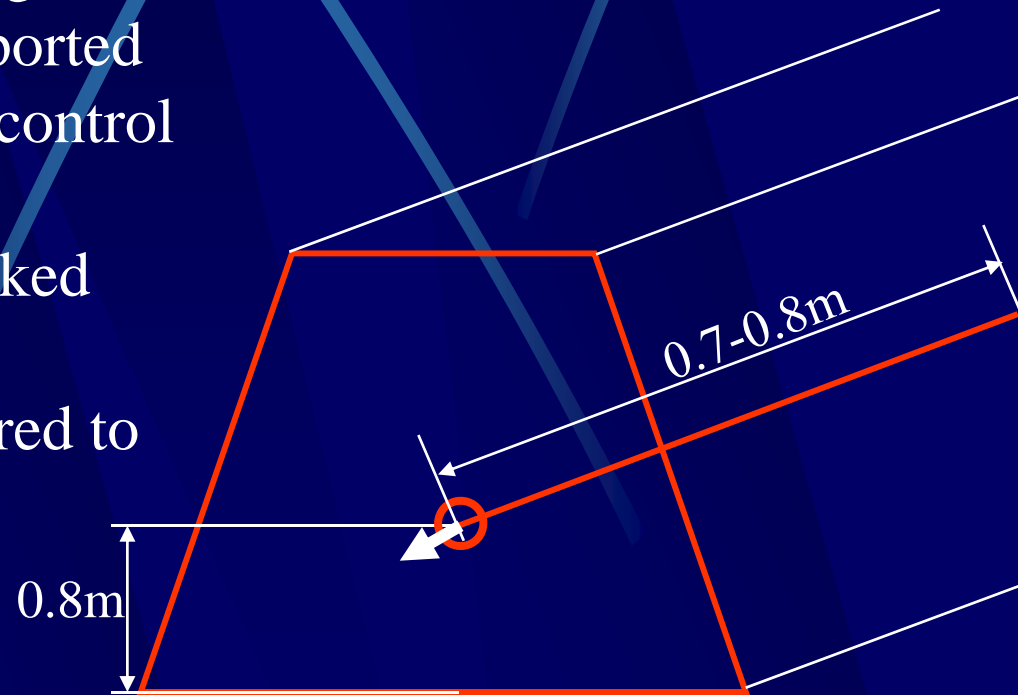
17:20 pm, Engineer-in-chief checked

19:20 pm, water-inrush occurred.

19:30 pm, a deputy manager entered to inspect

All the other miners were informed to leave the mine

21:25 pm, 12 people missing





The Rescue Process - Detection

11 April

19:57 pm: the company general control room received the accident info

21:10 pm: two rescue teams arrived at the Mine.

22:00 pm: the rescue team entered the mine

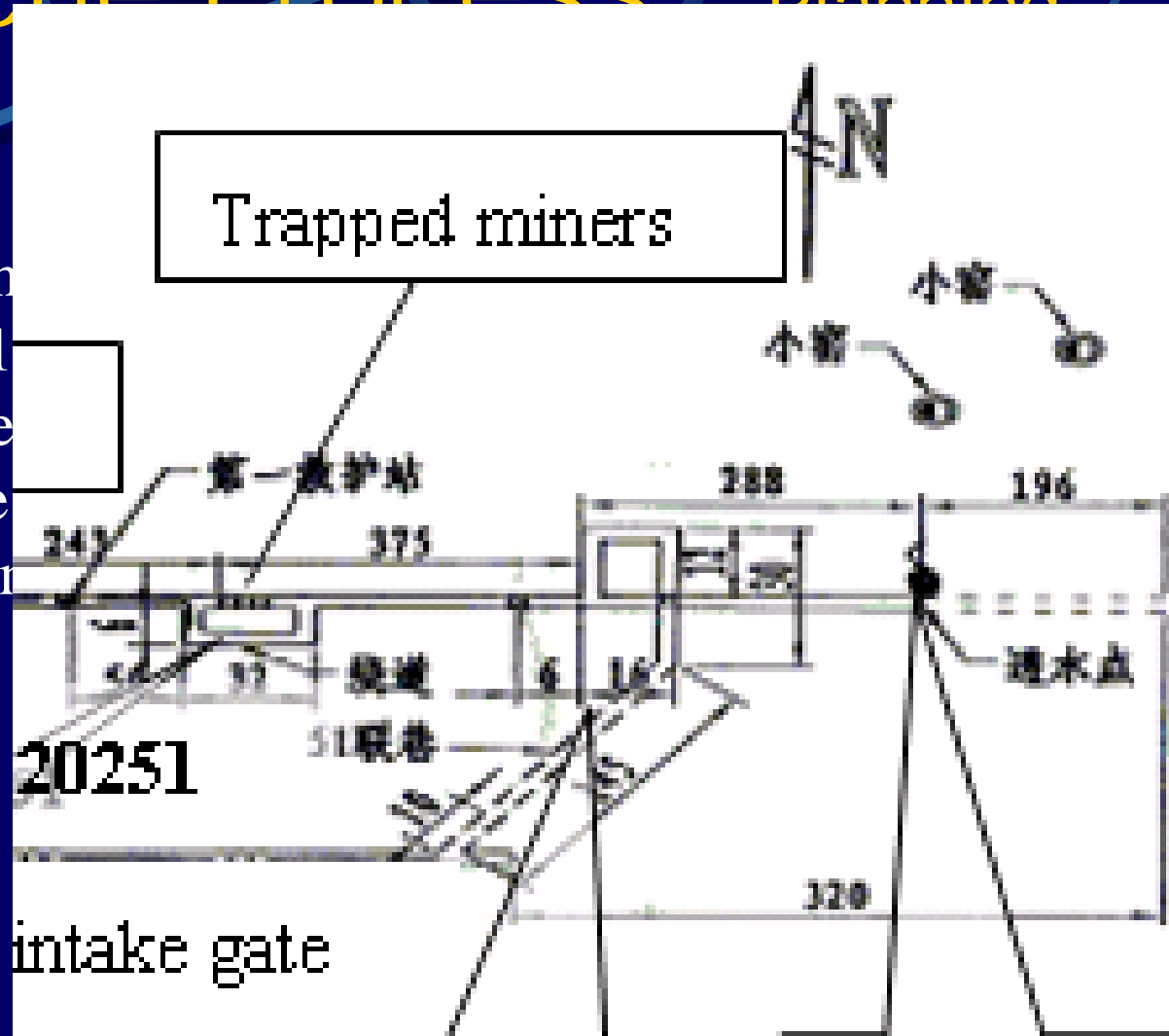
2.00 am, the rescue team inspected once again



The Rescue Process Planning

12 April

- (1) Drifting a 50m
- (2) Developing a 1
- (3) Cutting off the
- (4) Sinking a hole
- (5) Drilling a 300m





The Rescue Process - Implement

April 13

0:00 am, began to drift 8:00 am, began to drill from the mine surface

April 15

13:16 pm, miners responsible for drifting heard the **GREAT life sound**
a fresh air base was established

The Rescue Process - Implement

April 16

6:30 am, MET the people trapped for 5 days, ie 109 hours.

7:20 am, 12 people were all

RESCUED

9:30 am, all the 12 miners were lifted to the surface

CHEERFORTHAVICTORY







Experiences got from the Rescue

- **Orderly Organized Rescue**
- **Government's paid sufficient attention and arrange a series of coordination**
- **Many measures put in place**
- **Familiar with the mine and made right decisions**
- **Have professional skills, the manager and the brigades**



Survival skills

- **Orderly organized**
- **A long survival plan**
- **Send messages to outside(paper scripts, kerosene, sound of knocking)**



Lessons Learnt

- **Hydrogeologic conditions for mining**
- **Safety awareness**
- **Making miners being fully trained**
- **Enhancing emergency evacuating test**
- **Improving the emergency equipment level**



Equipments use

- Surface mining
Schramm T685ws









Thanks !