

Singapore Government **PRESS RELEASE**

Information Division, Ministry of Culture, City Hall, Singapore 0617 - TEL 3378191 ext 352 353 354 3362207 3362271

83-6052-22

Release No.: 58/NOV
11-1/83/11/23

SPEECH BY MR CHUA SIAN CHIN, MINISTER FOR HOME AFFAIRS,
AT THE OPENING CEREMONY OF THE SEMINAR "TOWARDS THE
CONSTRUCTION OF A SAFER MRT SYSTEM", AT THE WORLD TRADE
CENTRE ON WEDNESDAY, 23 NOVEMBER 1983 AT 9.15 AM

Development and technological progress have brought about great benefits to us. They have also fundamentally changed our environment and made it more comfortable and convenient for us to live and work in. However, while they have done away with some of the old hazards they have also brought in and created new and even greater hazards. If adequate precautionary measures are not taken, exposure to them can be very lethal and the dimension of the calamity and the loss of lives and limb they can bring about has also greatly increased.

In Singapore we have industrialised our economy, and through an urban renewal programme we are in the process of rebuilding our city. The pace by which we have done it can be considered rapid. Thus the greatest danger that we face is that our people might not have kept up with the rapid changes and adjusted fast enough to the new environment. Many may not even be aware of the new hazards and if they do, they may not take them seriously. Because of our acute shortage of land we have to build very tall buildings. Now we are embarking upon another major project by digging underground to build our MRT system. These developments, though they will bring great benefits to Singapore, can at the same time bring even greater hazards. The greatest of the hazards is the increasing fire risks.

In our factories those who work there are now more than ever before exposed to the hazards of toxic chemicals, flammable liquids and explosive gases. These are extremely lethal if they accidentally catch fire. Providing adequate safeguards and precautionary measures against such accidents are becoming problems of increasing complexity. Further, the numbers of such chemical plants in Singapore are also increasing. The latest addition will be the new petro-chemical complex which will be built at Pulau Ayer Merbau.

To date we have built 180 highrise commercial buildings. Another 12 are under construction. The numbers of these tall buildings are not only increasing but their height, size and complexity are also increasing. For example, the Raffles City, Marina Centre and Raffles Centre which are being constructed are really huge complexes with inter-connecting towers via podiums. When completed they will comprise hotels, hundreds of apartments, shops and offices and be occupied and visited by thousands of people. They will be like cities in themselves. Thus any big fire that occurs in any of these buildings can result in a major catastrophe involving the loss of many lives.

So far we in Singapore have been very lucky for not having suffered the tragedy of disastrous fires in highrise buildings as had happened in South America, Japan and Korea and other countries. There the loss of lives from one single fire was as high as 179 persons. So far the Singapore Fire Service (SFS) has been fortunate to be able to check the spread of fires that they have been called upon to deal with in highrise buildings. However, for the SFS to continue to be successful in combating highrise fires it will depend upon a number of factors. For example, it will depend upon whether the highrise building where the fire has occurred, has incorporated in it an adequate fire defence system that will facilitate the containment of fires, and the removal of excessive smoke which is the major cause of

death of most of the fire victims. This would generally depend upon how well and properly the Fire Code had been interpreted and applied at the time when the building was designed and constructed.

A recent survey of our highrise buildings to assess the standard of fire protection in Singapore revealed that weaknesses exist in the fire defence system planned for quite a number of the buildings. The findings of the survey also indicated that there was evidence of some failure by the architects and engineers to appreciate the basic fire safety requirements thereby compromising the level of safety.

The potential for large losses of life in fires due to weaknesses in the fire defence system is well illustrated in two large building fires in buildings constructed with atriums in the US. One of the fires involved the Lasalle Hotel in Chicago where 119 persons lost their lives and the other involved the Winecoff Hotel in Atlanta where the fatalities were 61.

The construction and operation of our proposed MRT system poses the greatest challenge to the SFS. During its construction, it is envisaged that some of the deep tunnels will be pressurised with compressed air to prevent water seepage. An example will be the North-South line that goes deep under the Singapore River at Raffles Place. This introduces new hazards in the working environment for the firemen. They will have to battle with heavy smoke concentration as commonly experienced at fires occurring below ground and to bear the strain of working under abnormal atmospheric pressure. These factors would have a significant effect on their performance and make accidents more likely. The death of a fire officer in a pressurised tunnel, whilst attempting to extinguish a fire in Hong Kong in 1979 is an example of the lurking danger of working in a pressurised tunnel.

In March this year a team of our senior fire officers was sent to Hong Kong to study how the Hong Kong Fire Services had prepared themselves to cope with an emergency in their MRT system. The team on their return have recommended that a Strike Force comprising officers and men who are fit to work in compressed atmosphere be formed and given the task of responding to incidents of fire in our MRT tunnels. The strike force should also conduct checking and inspection of MRT sites to abate fire hazards. The recommendation of the team has been accepted by my Ministry and plans are afoot to implement it.

During the construction of the MRT system, it is extremely important that contractors and supervisors maintain high standards of safety at worksites. They should also form emergency response teams and enlist the help of the Singapore Fire Service to train members in the basic skills of fire fighting and rescue.

The most serious problem in the MRT system during its operation will be an outbreak of fire involving train coaches in the tunnel between stations. Such a fire would expose a large number of commuters to the dangers of being overcome by heat and smoke. Such a disaster actually occurred in the London Underground when fire started after two trains collided in August last year. The smoke condition was so severe that 350 passengers trapped in the tunnel had to be rescued by the London Fire Brigade. Some of the victims had to be administered with oxygen from the compressed air cylinder carried by the firemen. Ultimately 18 passengers had to be sent to hospital.

The problems of fire in an underground transport system can however be minimised if adequate safety measures are provided for in the design and construction of train coaches, tunnels and underground stations. Fire prevention measures such as banning the use of plastics for making of

the cushions and seats, provision of adequate ventilation to provide for rapid movement of smoke away from the direction of escaping passengers, and the provision of emergency access to underground tunnels by firemen and rescue workers are some of the important measures that must be considered at the very outset with the involvement of the Fire Service.

The holding of this Seminar is therefore most timely. It will provide an opportunity for those who are or will be engaged in work connected with the MRT system in Singapore an opportunity to learn from the experts the problems and solutions relating to the safety in design and construction of the underground transport system.

I would like to congratulate the Institution of Fire Engineers, Singapore Branch, for its initiative in organising it.

It is now my pleasure to declare this Seminar open.

oooooooooooooooooooo