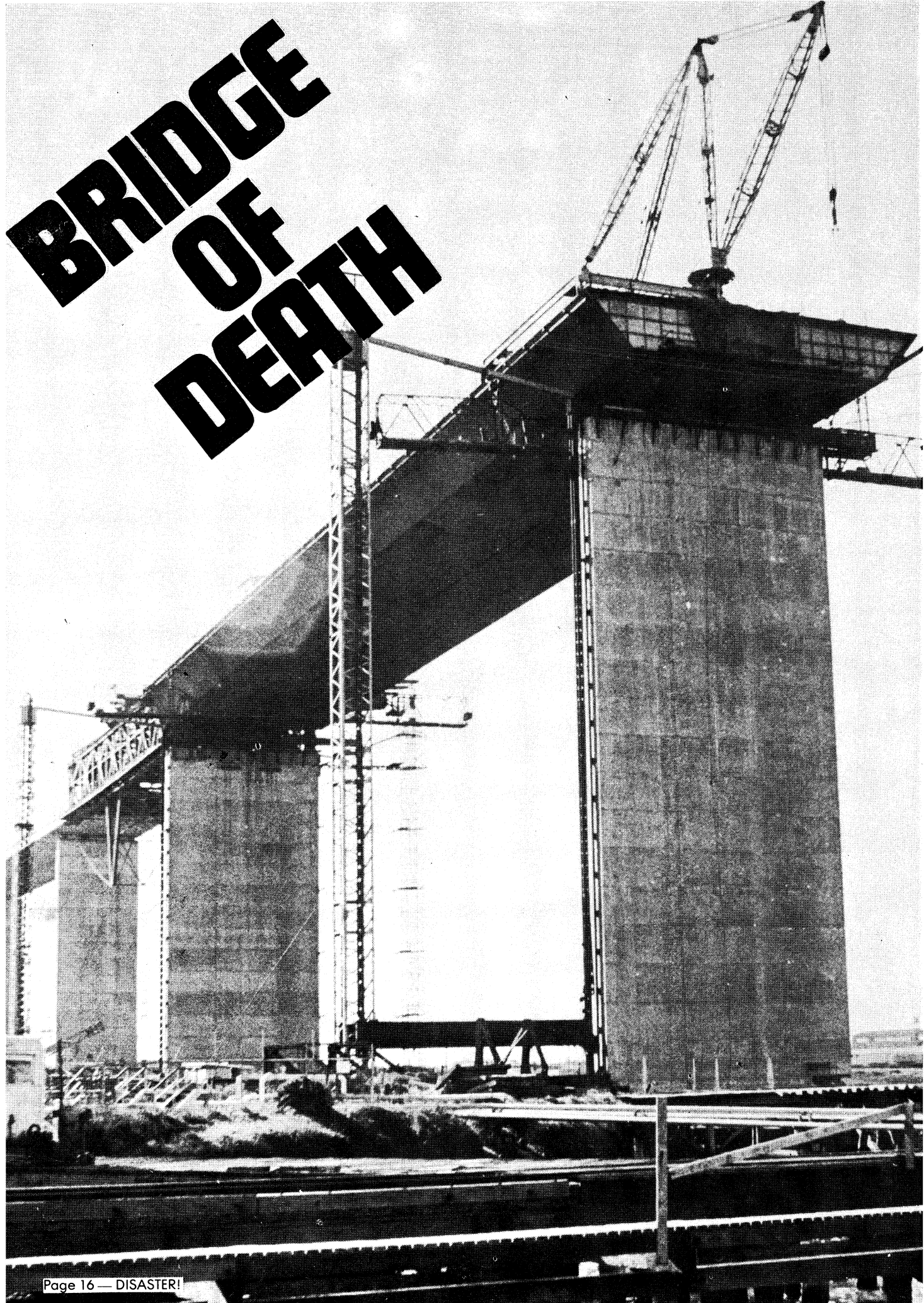


BRIDGE OF DEATH



MELBOURNE'S WESTGATE BRIDGE GAVE DEATH GROANS — BUT NO ONE LISTENED

THOSE who survived still remember the sounds . . .

. . . the tortured groans of twisting metal and the inevitable shouts of warning or help.

But most of all there was that eerie, ear-shattering pinging noise — like thousands of bullets bouncing off rocks — that came from the flakes of rust peeling off the weathered steel.

It was as if the mighty Westgate Bridge was telling the men who had created it that there was something terribly wrong.

This was the first inkling they had that the bridge could no longer take what they had been doing to it.

They had sapped it of its strength.

Now, it had finally started to wilt from their abuse, their stupidity, their haggling among themselves, and their sheer thoughtlessness.

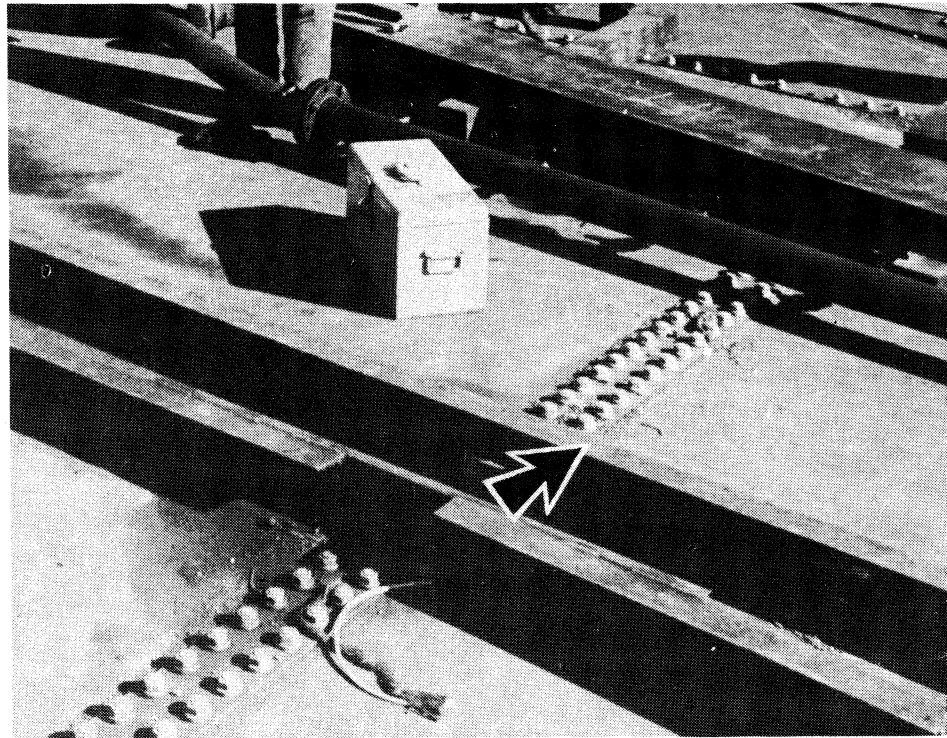
The first few flakes of rust go unnoticed until someone sees parts of the steel — particularly the bolts — have gone a strange blue color instead of the usual grey.

Then, as the pitch of the pinging sound grows, a huge tremor runs through the 120 metre (393 feet) length of the span. Everyone stops. An instant and sudden dread runs through the shocked minds of each of the 68 men on the site.

The October sun is high. There's little or no wind.

But slowly and agonisingly the bridge begins to move.

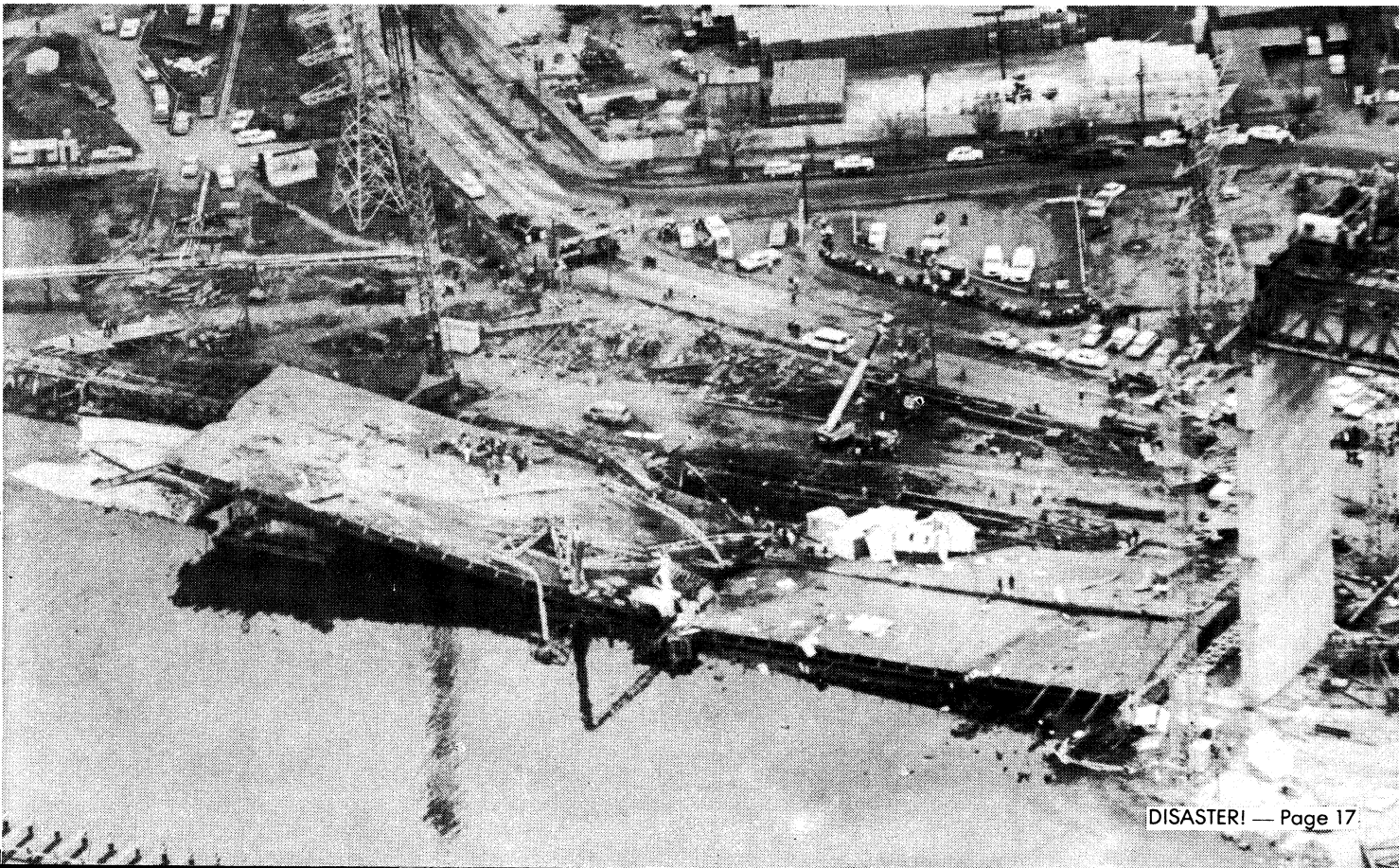
The pinging and groaning has reached crescendo pitch and a voice yells out:



ABOVE: Where it all started . . . just three weeks before the bridge collapsed, photographer Ivon Perrin saw a distinct "bump" in the row of bolts (arrowed). He was asked not to photograph this part of the bridge. Later, workmen removed the bolts to try to get rid of this buckle.

LEFT: Westgate Bridge . . . showing the span and pylon that fell.

BELOW: The collapse . . . 120 metres of the bridge lies broken in the Yarra mud — and 35 men are dead or dying.



'We're going down..'

"We're going down!" Men stand petrified, staring hopelessly at each other or at the massive buckles appearing along the decking.

Amazingly, in those interminable seconds before the huge span plummeted 45 metres (150 feet) into the mud and waters of Melbourne's River Yarra, a young migrant, boilermaker's assistant Charlie Sant, had the presence of mind to sit down on a box and await the worst. It was too late to run.

At 11.50 am on October 15, 1970, the near-400 ft. span of the bridge fell. As it did, it broke into a V shape and toppled one of the huge concrete pylons that had been supporting it. Thirty-five men died.

Thirty-three men lived and some, even today, believe a miracle saved them.

Charlie Sant for instance, and others alongside him, rode the bridge down and, while they didn't walk away, managed to smile through their pain as rescue workers reached them.

Then there was rigger Ed Halsall who looked up from the ground and saw the bridge falling on him. His legs took over from his numbed brain and he found himself running at full pelt.

As he ran the impact of the span hitting the ground sent a blast of wind behind Ed which lifted him off the ground and flung him to safety.

'He went bouncing around like a rubber ball'

And assistant rigger Des Gibson still can't work out what happened to him. He was on one knee working on top of the span when it opened up in front of him like an earthquake's gash. He toppled forward into the bowels of the hollow span and went down inside, bouncing around like a rubber ball. Not even a bone was broken.

These and other stories — some amazing but most of them tragic — added up to one of the world's worst bridge-building disasters.

It also was the final, fatal act in a series that history will remember for their crass mismanagement and inexcusable inefficiency.

Months later the chairman of the royal commission into the disaster, Mr. Justice Barber, penned one of the most scathing reports ever seen of any tragedy.

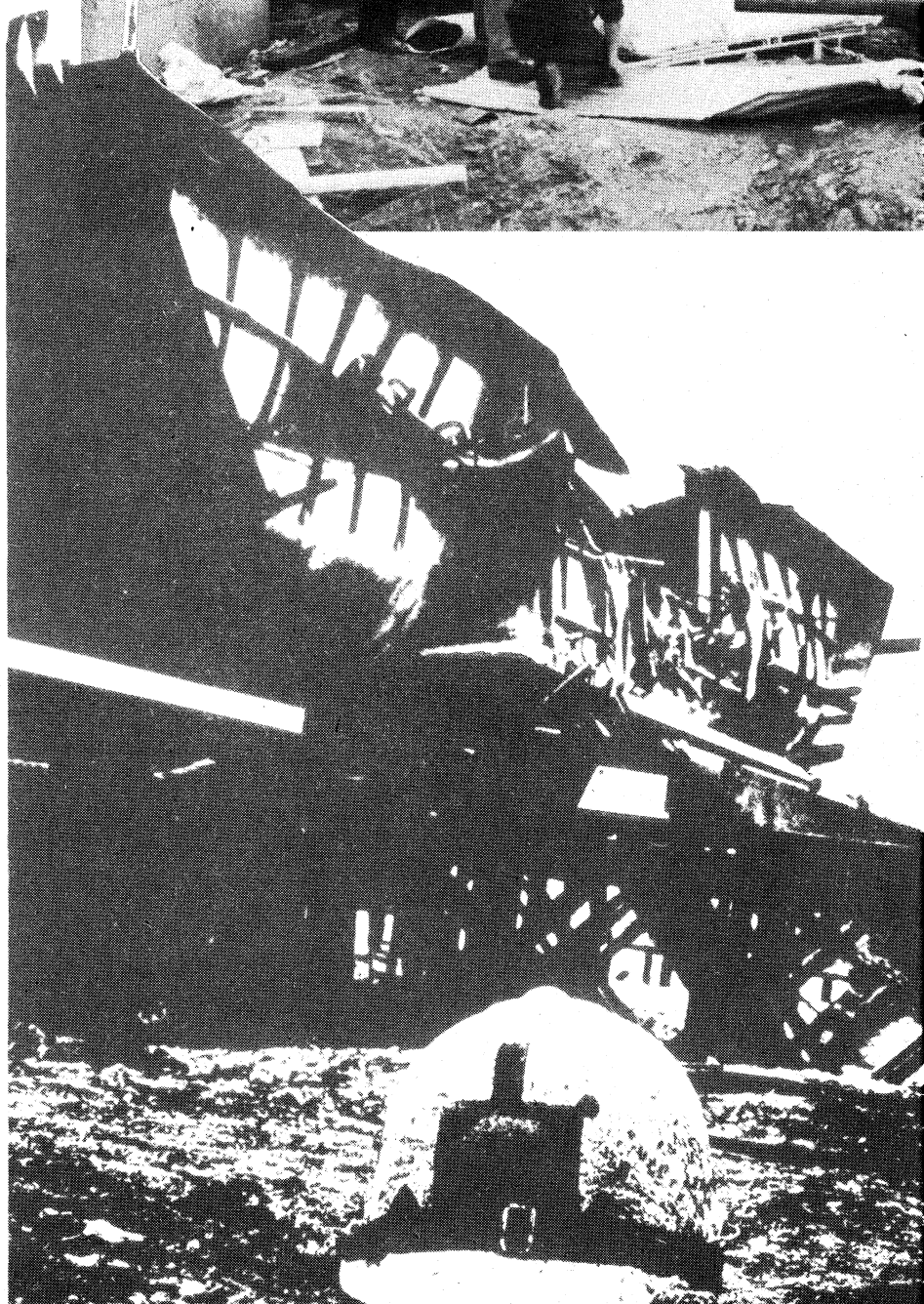
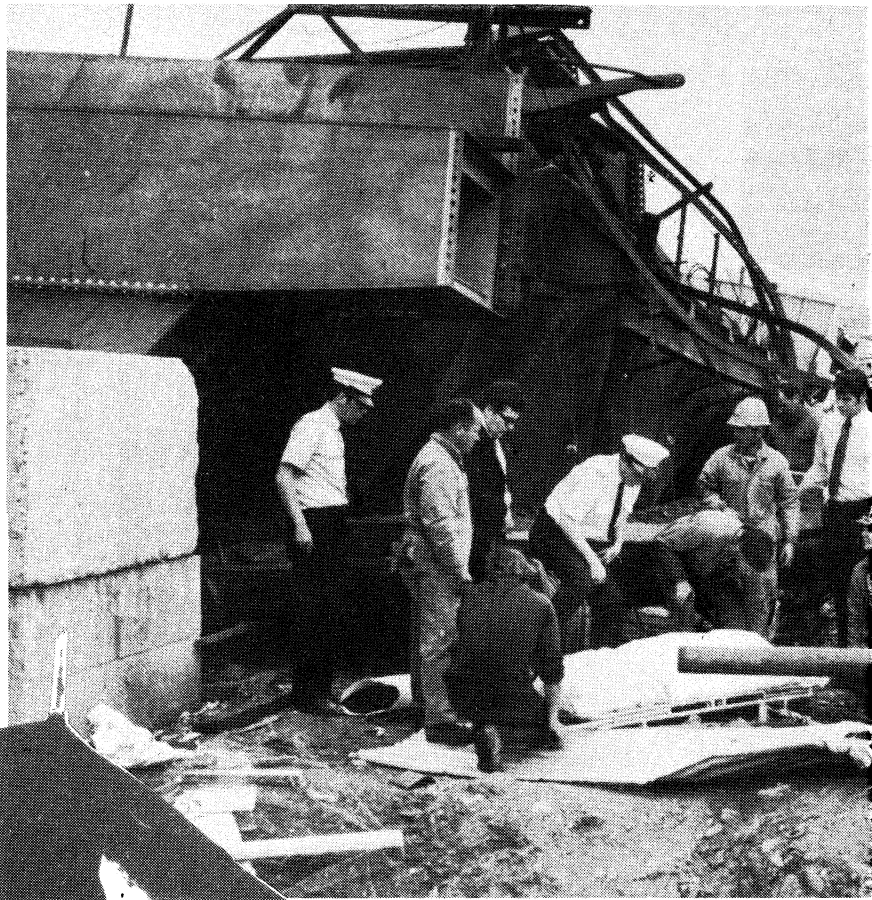
No one escaped his wrath. Not one of the designers, the engineers — among them supposedly the best in the world — escaped the blame.

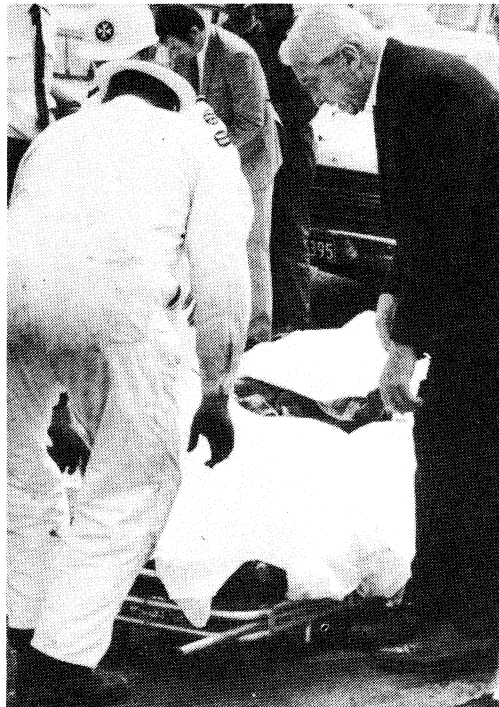
"Error begat error," he said as he listed the catalogue of mistakes, miscalculations, errors of judgment and sheer inefficiency.

And as we piece together the events which led up to the huge death toll it is hard to resist the bizarre thought that the bridge was sick and so it was somehow fitting that it had to die.

The ambitious dream of a bridge linking the western suburbs to the city of Melbourne became a reality in April 1968.

Industrialists and governments had





agreed to form the Lower Yarra Crossing Authority to build the magnificent 2575 metre (8500 ft.) — twice as long as Sydney Harbor Bridge — project.

The authority, a consortium of businessmen, hired an impressive group of builders. These included Britain's Freeman Fox and Partners, probably the world's most respected designers.

They would take overall charge with World Services and Construction Pty. Ltd., of Holland handling the steelwork and Melbourne's John Holland (Constructions) Pty. Ltd. the concrete.

But by the end of 1969 strikes, stop work meetings for often the most trivial reasons, and poor supervision by World Services had put the project seven months behind schedule.

John Holland then took most of the steelwork off World Services, but the remedy was short-lived.

While the men took days off as they pleased — often only turning up for the overtime days at weekends — Hollands and Freeman Fox haggled. As Hollands became more and more impatient, so, it seemed, Freeman Fox became slower and slower at its London office. Design and engineering queries remained unanswered for weeks.

"No responsibility" said the clause when Holland's took over the ailing contract

The Authority, which incidentally agreed to a strange "no responsibility" clause being written into the Holland contract when it took over from World Services, sided with the Holland argument.

Their views hardened with the shock news from England in June 1970 that a Freeman Fox bridge at Milford Haven had collapsed under construction and killed four men. Freeman Fox's resident engineer, Jack Hindshaw, assured everyone the Melbourne bridge was safe.

But even as they argued they were aware of a major problem.

West Gate was a box-girder bridge — so named because it was made up of a series of boxes linked together to form the span.

The boxes were so big — about 15.6 metres (52 ft.) long and 12.6 metres (42 ft.) wide or about the size of a large house — it was decided to assemble them on the ground. Seven and a half of the boxes were linked together with huge bolts to form one longitudinal half-span.

One of the 120 metres (400 ft.) half-span lengths had been put in position on top of piers 10 and 11 — 51 metres (170 ft.) above the west bank of the river.

Theoretically, with absolute precision and care, the other half-span should have fitted alongside the first one so that the two lengths could then be bolted together to form the whole.

However, the calculations went wrong. When the second span was lifted into place it was found to be 112 mm (4½ ins.) lower in the centre than the other.

At that point Hindshaw should have stood firm. His firm were the designers



and therefore in overall charge. But, worried by the constant bickering, the still lagging schedule with its inherent costs and his own firm's apparent sluggishness, he agreed to a suggestion from John Holland engineers.

They said the difference could be corrected by using the blocks of concrete lying around the site on the higher of the two half-spans. A total of 80 tonnes of concrete were placed on the higher span at its centre.

'The result was baffling - a major buckle'

The result was baffling — a major buckle developed at a seam joining two of the boxes.

The span remained like that for more than a month. An engineer even went to the trouble of covering the buckle with sacking just in case the Authority decided to pay a visit and began asking awkward questions.

Then, on October 14, Hindshaw and the Holland men decided to try to eliminate the buckle. They would undo as many bolts as necessary between the two boxes, allow the span to settle into proper alignment, then rebore and rebolt.

Though the preceding events could be said to have played their part, that decision was undoubtedly the crucial one that signalled the countdown to disaster.

It went as follows:

8.30 am, October 15: Workmen began loosening the bolts, forcing them off their threads with powerful spanner guns. When 37 bolts had been loosened they could see the plan having some success — the 112 mm (4½ in.) difference in all the spans had come down to 28 mm (1⅛ in.). The bulge had flattened.

9 am: A tremor suddenly ran through the bridge, but the higher span then settled gently. Unknown to the men, it was supported only by the span alongside it. Still, Freeman Fox's section engineer, David Ward, knew something was wrong and urged the men to get the bolts back into place as quickly as possible.

Suddenly the bulge began to spread.

11 am: Ward calls Hindshaw on to the bridge.

11.15 am: A steel plate inside the box buckles under enormous pressure.

11.50 am: The telltale sounds grow stronger. The men look at each other and know time has run out.

At a little under 10 minutes before noon the span begins falling from beneath the men's feet. It buckles in the middle. A crane, an oil tank and the huts on the decking slide towards the centre.

The falling deck slams into the 48 metre (160 ft.) pier and collapses in an explosion of rubble, burning oil, water and mud. Gas bottles explode. Cables catch fire.

Those who are not pinned under steel or concrete scramble through the slowly settling dust for signs of their mates.

Amid the noise and cries for help someone picks out the distant wail of a rescue vehicle. It is time to comfort the injured and count the dead.

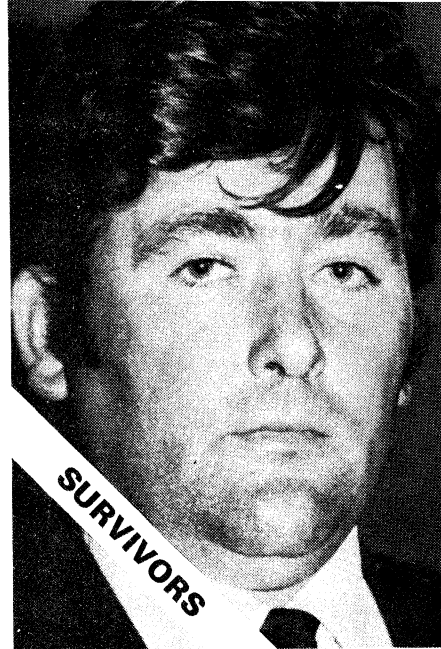
RIGHT: Sir Hubert Shirley-Smith, Mr. Justice Barber.



**ABOVE: Des Gibson
BELOW: Sir Ralph Freeman**



INQUIRERS



**ABOVE: Edwin Halsall
BELOW: John Holland**



SURVIVORS