

CAR LOSS

**Delhi Metro Bridge Collapse (Incident 1) and
Mechanical Failure of Crane during Rescue
operation (Incident 2)**

12th and 13th July 2009, New Delhi

BRIEF INFORMATION

- The construction was done under phase II extension of Delhi Metro from Central Secretariat to Badarpur Border.
- Total length of this stretch is 20.04 Km.
- 15 Stations are to be constructed on this line.
- The project was likely to be completed by September 2010.
- The main contractor for this stretch is a famous infrastructure company.
- CAR and CPM policies were taken from two different local insurers.
- According to news papers the expected loss was INR 60 Million.

INCIDENT I – Bridge Collapse – 12th July

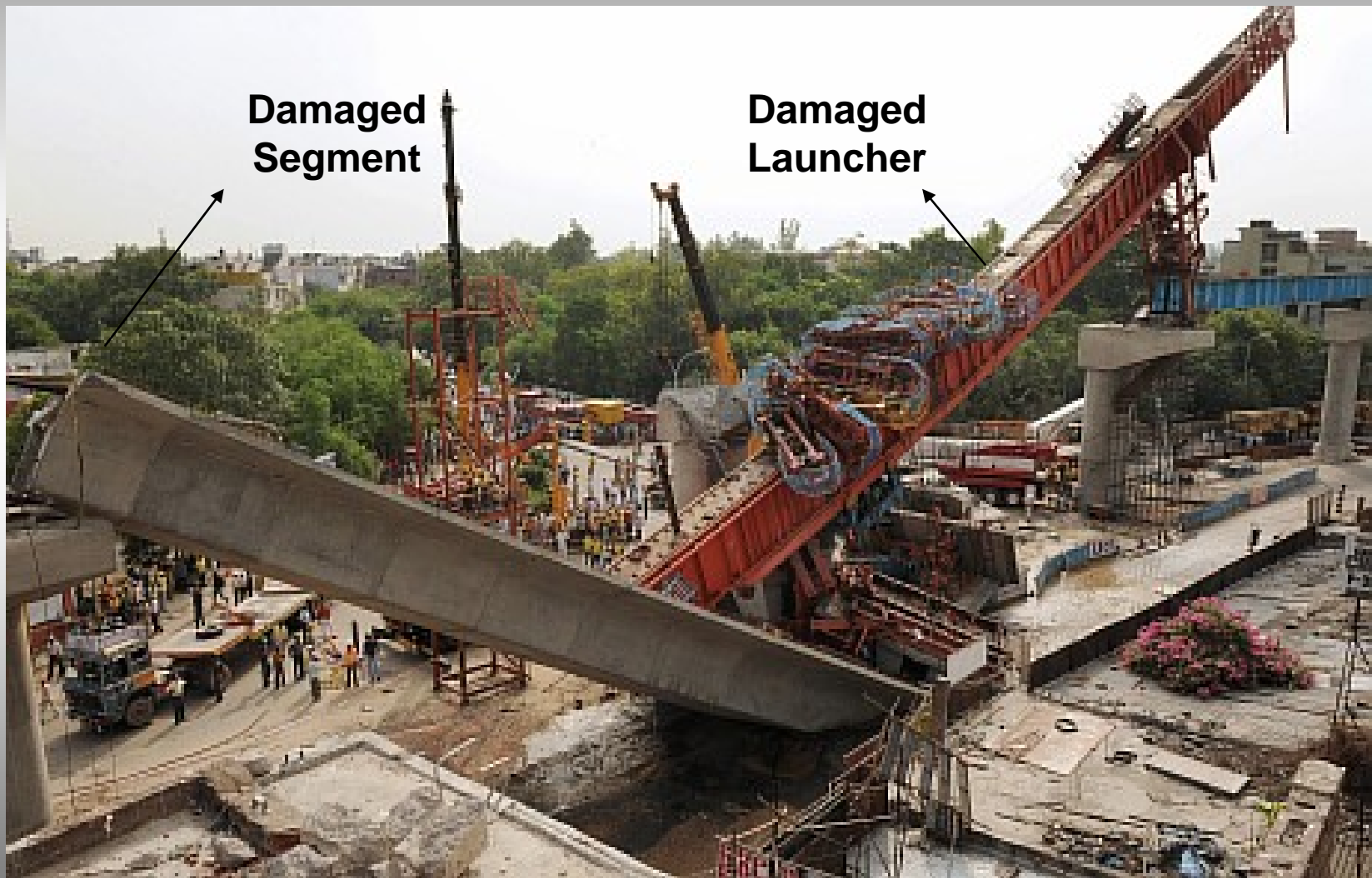
- The incident took place on 12th July, 2009 at 5 A.M.
- Preliminary inquiry showed that the accident had occurred as a pier cap got displaced.
- The pier cap on top of the pillar gives support both to the launcher and the segment. The launcher is used for erecting the segment.
- Around 30 persons were working at the site at that time out of which 6 persons died and 15 were injured.
- Delhi Police, Fire Brigade, Disaster Management team all rushed to the site soon after call of the collapse came at 5 am.
- The injured people were rushed to the nearby hospitals for treatment.

INCIDENT I – Bridge Collapse – 12th July

- Incident I on 12th July, 2009



INCIDENT I – Bridge Collapse – 12th July



INCIDENT I – Bridge Collapse – 12th July



**Workers trying to
remove
wreckage**

INCIDENT I – Bridge Collapse – 12th July



INCIDENT I – Bridge Collapse – 12th July

Damaged
Launcher



INCIDENT I – Bridge Collapse – 12th July



INCIDENT I – Bridge Collapse – 12th July



Body of a worker
trapped under debris

INCIDENT II – Crane Accident – 13th July

- The incident took place on 13th July, at 11:39 AM at the same site where 'bridge was collapsed'.
- Due to mechanical failure, the boom of the first crane developed cracks and snapped. (There were 4 cranes working together at that time).
- This put additional weight/pressure on the remaining cranes.
- Within seconds boom of second crane snapped.
- Boom of third crane did not snap but the crane toppled.
- Nothing happened to the 4th crane.
- The launcher then fell on some shops on the other side.
- The whole incident happened in merely 3 seconds.

INCIDENT II – Crane Accident – 13th July

- Load bearing capacity of crane 1 & 2 was 250 T, of crane 3 was 350 T and of crane 4 was 400 T.
- Weight of the launcher was 260 T.
- 5 people injured in the incident.

INCIDENT II – Crane Accident – 13th July



INCIDENT II – Crane Accident – 13th July



FINDINGS

- The project was delayed by almost 2 months.
- As per local residents in the surrounding area, cracks were visible in the pillar that collapsed and work had been stopped for about 2 months to 'repair it'.
- The phase 2 project was sanctioned in 2005, consisting 121 Km line and 81 metro stations and time limit for completion is October 2010.
- Phase I was started on 1st October, 1998 and was completed in November, 2006.
- Total length of project was 65 Km.

FINDINGS CONT'D...

- Total time limit for phase 1 was 8 years while that for phase 2 is 5 years while the length of the project is almost double.
- Because of short time limit, work was being on fast pace.
- According experts, because of short time limit, some compromises were done with the construction work and safety norms.
- Also the performance of the contractor is under scrutiny.
- As per terms and condition of contract, heavy fines will be imposed on contractor if the project got delayed.
- Hence in the hurry of completion of project on time, which was already delayed, the contractor ignored the safety norms, which resulted in the accident.

FINDINGS CONT'D...

- Also according to Professors of Indian Institute of Technology, Delhi, the load was not distributed properly on the cranes, that resulted in accident on next day of bridge collapse.

STEPS TAKEN AFTER THE INCIDENT

- After accident Principal (metro rail corporation) has set up a probe panel led by Technical Experts.
- Panel found 'serious deficiency in the design of the cantilever arm and the concrete (used in the construction) not having the adequate strength'.
- On the basis of this report, Principal has black listed their design consultant for five years. Also black listed was the structural consultant, who did not give 'correct advice' to Principal for two years.