

For information on
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Legislative Council Panel on Manpower

Safety in the Use of Tower Cranes on Construction Sites

PURPOSE

This paper briefs Members on the concerted efforts of the construction industry and Labour Department (LD) in enhancing safety in the erection, height-alteration and dismantling of tower cranes used on construction sites in Hong Kong.

BACKGROUND

2. Tower cranes are widely used for lifting operations in the construction industry. The use of this kind of heavy construction equipment could pose risks to workers on site as well as the general public if the operations are not conducted in a safe and proper manner. Tower cranes have in the past years contributed to a number of serious accidents resulting in property damages, bodily injuries and even deaths.

3. On 10 July 2007, a tower crane collapsed at a demolition site in Causeway Bay during height-alteration operation, resulting in the death of two workers and injury of five others. The accident aroused major public concern about the safety of the use of tower cranes. It also prompted the construction industry and the Administration to work together to explore ways to further enhance safety in the use of tower cranes, particularly during the more hazardous operations of erection, height-alteration and dismantling of the equipment.

Legislation and Code of Practice for Controlling the Safe Use of Tower Cranes

4. Safety of tower cranes used on construction sites is mainly regulated by the Factories and Industrial Undertakings (FIU) (Lifting Appliances and Lifting Gear) Regulations administered by the LD. The Regulations lay down requirements with respect to the construction, inspection, testing, thorough examination, operation, erection, dismantling and alteration of lifting appliances, including tower cranes.

5. In addition, a contractor, as the proprietor of an industrial undertaking¹, is also required under the General Duties provisions of the Factories and Industrial Undertakings Ordinance (FIUO) (Cap. 59) to ensure, so far as is reasonably practicable, the health and safety at work of all persons employed by him at the industrial undertaking. The matters to which that duty extends include –

- (a) provision and maintenance of plant² and systems of work that are, so far as is reasonably practicable, safe and without risks to health; and
- (b) provision of such information, instruction, training and supervision as is necessary to ensure, so far as is reasonably practicable, the health and safety at work of all persons employed by him at the industrial undertaking.

6. To complement the legislative framework at an operational level, the LD issues codes and guidance notes to the industry where appropriate. The *Code of Practice for Safe Use of Tower Cranes (COP)*, the *Guidance Notes on Inspection, Thorough Examination and Testing of Lifting Appliances and Lifting Gear* and *A Guide to the Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations* provide practical information and suggestions to facilitate compliance with the relevant safety legislation. Although failure to observe any guidance in the codes of practice issued under Section 7A of the FIUO is not in itself an offence, that failure may be taken by a court in criminal proceedings as a relevant factor in determining culpability.

Multi-pronged Approach to Promoting Safety and Health at Work

7. The LD is committed to promoting safety and health at work through a multi-pronged strategy of legislation and enforcement, promotion and publicity, as well as education and training. We also advocate tripartite cooperation among employers, employees and the Government to bring about long-term improvements in occupational safety and health.

8. The use of tower cranes has always been one of our main targets in routine inspections. In addition, we conduct special enforcement campaigns from time to time targeting the use of dangerous equipment including tower cranes, and initiate prosecution against those who blatantly disregard their legal responsibilities. Where appropriate, we also serve improvement notices or suspension notices to secure speedy rectification of irregularities or remove imminent risks.

¹ Construction site is an industrial undertaking as defined in the FIUO.

² Tower crane is a kind of plant.

9. Through publicity, we also seek to drive home the importance of safety awareness. Apart from radio broadcast and roving exhibitions promoting safety in the use of tower cranes, we have also issued free of charge relevant publications, e.g. the COP and guidance notes. In addition, we also work with the industry, non-governmental organisations and labour unions in disseminating the perennial need for vigilance against potential hazards in the workplace including construction sites.

ENHANCING TOWER CRANE SAFETY

Blitz Operations

10. After the accident on 10 July 2007, we immediately launched a blitz operation targeting the erection, height-alteration and dismantling of tower cranes. Within a fortnight, Occupational Safety Officers inspected 113 construction sites with 215 tower cranes installed, and provided advice to the contractors concerned on proper use and maintenance, safe erection, height-alteration and dismantling of tower cranes. Contractors were reminded of their legal obligations to conduct proper risk assessments on the operations, formulate and implement safe working methods for the processes, and appoint competent persons to supervise the jobs. During the operation, we issued 123 warnings related to tower crane safety. In addition to the said blitz operation, safety in the use of tower cranes was also one of the major focuses of a special enforcement campaign targeting high-risk construction activities in December 2007.

Partnership with Stakeholders of the Construction Industry

11. The LD has all along adopted a tripartite approach to promoting occupational safety and health. After the accident in July 2007, we have further capitalized on the close partnership with stakeholders of the construction industry to explore ways to enhance the safety standard of tower crane operations.

Promotion

12. On the promotion front, the LD organised in August 2007 a safety seminar on the erection, height-alteration and dismantling of tower cranes in collaboration with the Occupational Safety and Health Council, Hong Kong Construction Association (HKCA), the then Construction Industry Training Authority (CITA), Hong Kong Construction Industry Employees General Union, other Government Departments concerned and relevant trade associations and workers' unions. The seminar was well received and attracted some 800 participants from the construction industry.

Training for Workers

13. Noting that training is essential to raising the safety awareness and internalising such an awareness on the part of the workers, LD began a dialogue in July 2007 with various stakeholders in the construction industry, including HKCA, CITA, Hong Kong Professional Hoisting Engineering Association and tower crane suppliers on training for tower crane workers that would go beyond the minimum set in the law. As a result of this joint effort, the CITA launched a two-day safety training course for the workers concerned in August 2007. So far, some 450 workers have attended such training course.

Informal Task Force on Safety of Tower Cranes

14. As part of the tripartite effort to improve safety in the use of tower cranes, the Construction Industry Council (CIC) established an Informal Task Force (ITF) on Safety of Tower Cranes under its Committee on Construction Site Safety shortly after the accident in July 2007. The ITF was tasked to carry out a thorough study and come up with recommendations on how to improve safety in the use of tower cranes. It comprised members from various stakeholders including relevant government departments (i.e. LD and Buildings Department), HKCA, the Construction Industry Council Training Academy³, Hong Kong Professional Hoisting Engineering Association, construction companies, tower crane owners, tower crane erection contractors, professional engineers and workers' unions.

15. The ITF reviewed step-by-step the full process involved in tower crane operations from pre-erection, to installation, operation and maintenance. The LD has participated actively in the work of the ITF and has provided input in formulating the recommendations.

Guidelines on Safety of Tower Cranes

16. The ITF concluded its study earlier this year and formulated a set of "*Guidelines on Safety of Tower Cranes*" to set out the good practices for enhancing the safety of tower crane operations for voluntary adoption by the construction industry. The Guidelines contain recommendations for improving safety in the use of tower cranes through measures like –

- (a) inspection and certification of tower cranes before installation;

³ CITA before 1 January 2008

- (b) enhancement of site supervision by professionals with relevant qualification and experience;
- (c) proper keeping of maintenance and operations records; and
- (d) enhancement of the requirements with respect to competence of specialist contractors and working crew.

The CIC, HKCA and LD jointly organised a seminar on 13 June 2008 to brief the construction industry on the recommendations contained in the Guidelines.

17. The LD will step up inspections on tower crane operations to tie in with the promulgation of the Guidelines. Where there is an imminent risk of death or serious bodily injury, we will also consider issuing suspension notice for non-compliance with the Guidelines. Experience in the adoption of the Guidelines will enable us to consider if any refinement to our current regulatory framework is necessary.

CONCLUSION

18. Tower crane operation, being an inherently high-risk activity, calls for sustained efforts by all stakeholders to proactively manage the risks and enhance safety standards. The tripartite approach involving cooperation of the government, the industry and frontline workers provides the best approach to promoting the safe operations of tower cranes. In addition, we shall continue to be rigorous in enforcement and vigilant in identifying scope for improvement.

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