HSE

Health and Safety Executive

Proposals for new regulations requiring the notification of tower cranes operating on construction sites

This consultative document is issued by the Health and Safety Executive in compliance with its duty to consult under section 50(3) of the Health and Safety at Work etc Act 1974.

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to reach there no later than **9 October 2009**

The Executive tries to make its consultation procedure as thorough and open as possible. Responses to this consultative document will be lodged with the Health and Safety Executive's Knowledge Centre after the close of the consultation period where they can be inspected by members of the public or be copied to them on payment of the appropriate fee to cover costs.

Responses to this consultative document are invited on the basis that anyone submitting them agrees to their response being dealt with in this way. Responses, or part of them, will be withheld from the Knowledge Centre only at the express request of the person making them. In such cases, a note will be put in the index to the responses identifying those who have commented and have asked that their views, or part of them, be treated as confidential.

Many business e-mail systems now automatically append a paragraph stating the message is confidential. If you are responding to this CD by e-mail and you are content for your responses to be made publicly available, please make clear in the body of your response that you do not wish any standard confidentiality statement to apply.

CD221
Consultative Document

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Proposals for Notification of Conventional Tower Cranes Regulations 20—

Consultation by the Health and Safety Executive

About this document

This document sets out proposals for regulations that will require certain information about conventional tower cranes to be registered with the Health and Safety Executive (HSE) following their installation, or re-installation, on site. The HSE has a statutory duty to consult to seek stakeholders' views on proposals such as these. HSE believes that this enables an open and transparent approach to decision-making, which is essential if policies are to have widespread ownership and reflect the needs and aspirations of the people they will affect. HSE then decides on the best way forward based on interpretation and analysis of the results of the exercise.

HSE tries to make its consultation procedure as thorough and as open as possible. Responses to this consultation document will be lodged in HSE's Knowledge Centre at Redgrave Court, Merton Road, Bootle, Merseyside, L20 7HS, after the closure of the consultation period, where they can be inspected by member of the public or be copied to them on payment of the appropriate fee to cover costs.

Responses are invited on the basis that anyone submitting them agrees to their being dealt with in this way. Responses, or part of them, will be withheld from the Knowledge Centre only at the express request of the person making them. In such cases, a note will be put in the index to the responses identifying those who have commented and have asked that their views, or part of them, be treated as confidential.

Many business e-mail systems now automatically append a paragraph stating the message is confidential. If you are responding to this CD by e-mail and you are content for your responses to be made publicly available, please make clear in the body of your response that you do not wish any standard confidentiality statement to apply.

If you reply to this CD in a personal capacity, rather than as a post holder of an organisation, you should be aware that information you provide may constitute "personal data" in the terms of the Data Protection Act 1998. For the purposes of this Act, HSE is the "data controller" and will process the data for health, safety and environmental purposes. HSE may disclose this data to any person or organisation for the purposes for which it was collected, or where the Act allows disclosure. You have the right to ask for a copy of the data and to ask for inaccurate data to be corrected. Please note that all replies will be made public unless you specifically state that you wish yours to be made confidential.

We will acknowledge all responses and give full consideration to the substance of arguments in the development of the proposals; we may also contact you again if, for example, we have a query. When HSE has decided upon its recommendations to

Ministers, we will let you know how the work will proceed and how the decision reflects the results of consultation.

If you are reading this document on a computer screen and would prefer a printed version, it can be obtained on request by emailing towercranesconsultation@hse.gsi.gov.uk or contacting Essien Ekpenyong at HSE, 5SW Rose Court, Southwark Bridge, London SE1 9HS, tel: 020 7556 2210.

If you require a more accessible format, an Executive Summary is available in Braille, large print, audio formats (eg CD, audiocassette tape) or in other languages. Please contact HSE's Infoline on 0845 345 0055, or write to HSE Information Services, Caerphilly Business Park, Caerphilly, CF83 3GG.

How to respond

You can:

- Complete the online questionnaire at:

  http://www.hse.gov.uk/consult/condocs/cd221.htm;

- Respond on paper – you can do this either by:
  - printing the online questionnaire; or
  - photocopying the questionnaire (which is reproduced at Annex 4); or
  - making a written response in whatever format you wish; and

  sending your completed response to Essien Ekpenyong at HSE, 5SW Rose Court, Southwark Bridge, London SE1 9HS.

- Respond by email – you should send this to towercranesconsultation@hse.gsi.gov.uk

Whichever method you use, you do not have to restrict your response to the specific questions highlighted in the explanatory text below (see paragraphs 1-49) and reproduced in the Questionnaire. If there are issues not covered in the Questionnaire but which you wish to raise, you are quite free to do so.

Responses must be received by 9 October 2009. All responses will be acknowledged and a summary of the main issues raised will be produced once the consultation period has been completed.

Code of Practice on Consultation

HSE is committed to best practice in consultation and to the Government's Code of Practice on consultation. The Code of Practice sets out 7 criteria for consultation. These are:

- When to consult. Formal consultation should take place at a stage when there is scope to influence the policy outcome;
- Duration. Consultations should normally last for at least 12 weeks with consideration given to longer timescales where feasible and sensible;

- Clarity of scope and impact. Consultation documents should be clear about the consultation process, what is being proposed, the scope to influence and the expected costs and benefits of the proposals;
- Accessibility. Consultation exercises should be designed to be accessible to, and clearly targeted at, those people the exercise is intended to reach;
- The burden of consultation. Keeping the burden of the consultation to a minimum is essential if consultations are to be effective and if consultees' buy-in to the process is to be obtained;
- Responsiveness. Consultation responses should be analysed carefully and clear feedback should be provided following the consultation; and
- Capacity to consult. Officials running consultations should seek guidance in how to run an effective consultation exercise and share what they have learned from the experience.

If you believe that this document, or the consultation on these proposals, does not meet these criteria, or if you are not satisfied with the way in which this consultation exercise has been conducted, we want to know and put things right. Please contact Maureen Kirwan, HSE, 5S.3, Redgrave Court, Merton Road, Bootle, Merseyside LS20 7HS.

We aim to reply to all complaints within 10 working days. If you are not satisfied with the response, you may ask for your complaint to be passed to a more senior member of staff. Following our second response, if you are still not satisfied, you can ask for your complaint to be referred to the Chief Executive.

Introduction

1. This CD sets out proposals for new Regulations – the Notification of Conventional Tower Cranes Regulations 20--. These proposed Regulations require employers to notify HSE of certain information about conventional tower cranes installed, or re-installed, on construction sites. The proposed Regulations are at Annex 1. Also attached is an Impact Assessment (Annex 2), a list of organisations to which this CD has been sent (Annex 3) and a Questionnaire (Annex 4).

2. To help you comment on the proposals, the following sections provide:

- background on tower cranes providing context for the discussion of the proposed Regulations. This includes:
  - the recent safety history of tower cranes and a discussion of what already has, and is, being done to improve their safety;
  - information on the various types of tower cranes; and
  - the current regulatory controls on the safety of tower cranes.
- a discussion of the proposed Regulations. This summarises the thinking behind the way in which the proposals have been framed and highlights particular issues on which we would specifically like to hear your views. These issues are presented as questions highlighted in the text which are reproduced in the Questionnaire at Annex 4 and the online Questionnaire;
- a brief summary and discussion of the Impact Assessment which is required to be carried out for proposals of this sort; and
- explanation of a proposal to charge for the registration of tower cranes.

Background to the proposals

Tower Cranes – Recent Safety History

3. Since the year 2000, there have been a number of high profile incidents in Great Britain involving tower cranes in which a total of 8 people (including one member of the public) have died and more have been seriously injured. These incidents have led to public concern that further improvements in tower crane safety need to be made.

4. Much work has already been carried out following these incidents. HSE has, of course, taken appropriate enforcement action. It published a report into its investigation of the tower crane collapse at Canada Square, London E14 in 2000[1] and a technical report into the likely causes of the incident at Liverpool in 2007[2]. It has also issued three safety alerts drawing attention to matters which, after its investigations, need careful attention. The industry itself has been active. The Construction Plant-hire Association (CPA) has published a number of Technical

[1] A report about the HSE investigation into the collapse of a tower crane in Canada Square, London E14 on 21 May 2000 - downloadable from HSE's website: http://www.hse.gov.uk/construction/crane/report.pdf.

[2] Report on technical aspects of HSE's investigation into the collapse of a luffing tower crane at a Liverpool construction site on 15th January 2007 – downloadable from HSE's website: http://www.hse.gov.uk/construction/pdf/craneaug08.pdf

Information Notes on tower crane safety. The Strategic Forum for Construction's (SFfC) Tower Crane Safety Working Group has produced a number of best practice guides on tower crane safety.[3]

5. In addition, other work is being progressed. As well as the development of a tower crane register, HSE is taking forward (in consultation with industry) a range of other measures to improve tower crane safety. These include:

- improving competence requirements for crane erectors and dismantlers;
- consideration of the adequacy of crane design standards;
- research into the wind loading on certain types of crane (currently underway);
- research to improve our understanding of the causes of tower crane incidents at an international level;
- promotion of industry best practice guides; and
- visits to tower crane companies and construction sites to assess implementation and efficacy of industry guidance.

6. In 2008, the House of Commons Work and Pensions Committee, in its enquiry into the work of HSE, raised concerns about the number of incidents and fatalities involving tower cranes and other plant on construction sites and called on HSE to bring forward proposals such as a national register. The Secretary of State for Work and Pensions expressed similar concerns and, at its meeting in January 2009, the HSE Board agreed that, on tower crane safety:

- work was required to address public concerns as well as responding to the Committee's recommendations and the Secretary of State's concerns;
- in addition to other measures already in place, a register of tower cranes was needed. A voluntary register was to be introduced that would allow HSE to test out the register and what is required before introducing a statutory register.

HSE is committed to having a statutorily-based scheme for tower crane registration in place by 2010.

Tower Cranes – What are they?

7. Tower Cranes are cranes comprising a vertical tower with a jib located at the top of the tower. Their most common use is in the construction and refurbishment of buildings and other structures. The type of crane most commonly thought of as a tower crane is the **conventional tower crane**. It is this type that is covered by these proposals for new Regulations.

8. A conventional tower crane is defined in British Standard BS7121-5:2006[4] as a "slewing jib type crane with jib located at the top of a vertical tower which is assembled on site from components". These tower cranes are usually assembled (and

[3] For example: Maintenance, Inspection and Thorough Examination of Tower Cranes; Tower Crane Working Conditions; and Tower Cranes Operations Minimum Competency Requirements. Copies of these can be downloaded from http://www.strategicforum.org.uk/towercranes.shtml.
[4] BS 7121-5:2006. Code of Practice for safe use of cranes. Part 5. Tower Cranes:2006

dismantled) with the assistance of a mobile crane and, as a result, are often also referred to as "assisted erected cranes". For the purposes of consistency, the proposals use the terminology of BS7121-5:2006.

9. The main components of a conventional crane are the vertical tower (which comprises a series of sections fixed together), the slewing unit, jib (also often comprising a number of sections), counterweights and the rope and hoist assembly. The slewing unit is fixed to the top of the tower and includes the slewing ring (around which the jib turns) and a cab from which the crane is operated.

10. The design of each conventional tower crane (including its height and reach) will depend on the demands of the particular construction project, the nature of the site and the crane's safe operating limits. Normally, they are erected outside the building to be worked on. However, sometimes they are erected centrally inside the building (eg lift shaft) and their height increased without the addition of sections to the tower by "climbing" from floor to floor as the building increases in height (hence the term "climbing tower crane"). Conventional tower cranes are often used in longer duration and heavier duty construction work than other cranes. A particular feature of these cranes is that the base of the tower is fixed to foundations set sufficiently securely in the ground to help ensure the crane's stability.

11. There are also other types of tower crane. BS7121-5:2006 refers to these as **self-erecting tower cranes** and defines them as "a jib type crane with jib located at the top of a vertical slewing tower which is a pre-assembled unit transported to site and deployed from its travelling configuration for use". These cranes are lighter than conventional tower cranes and their lifting capacity less as a consequence. They are also more easily and rapidly transported and erected. These types of crane include:

- lorry mounted; and
- trailer mounted or towed as a trailer.

12. The main elements of these self-erecting cranes (the tower, jib, outriggers and counterweight/ballast) form an integral unit which arrives on site to be 'unfolded' on erection. They are usually operated from the bottom of the crane where the slewing ring is normally located. The duration of their use at any one particular site is also usually significantly less than conventional tower cranes. Those mounted on (or towed as) a trailer remain on-site on average usually a matter of a few months (typically around 6-9 months) while lorry-mounted self-erecting cranes are typically erected up to several times a week in different locations (on the same, or other, sites).

13. Both conventional and self-erecting tower cranes are fitted with one of two types of jib:

- **Horizontal jibs** take the form of a simple structure extending horizontally from the tower along which a trolley can travel carrying the hoist rope and hook assembly to vary the reach of the crane. Horizontal jibs are generally used when heavier loads are planned and the risk of collision with other cranes or over-sailing land adjacent to the site are less of a concern to operational safety;
- **Luffing jibs** are designed so that the jib can be raised or lowered enabling the angle between jib and tower to be varied. They tend to be used on sites where

operational space is tight and the risks of collision or over-sailing are significant concerns. Luffing jibs have no trolley: the variation of reach is achieved by altering the angle of the jib.

14. Tower cranes are used for other purposes than construction. These include cranes permanently installed at locations such as storage yards and docks and those temporarily erected for activities such as bungee- jumping.

Current Legal Requirements

15. Besides the general legal requirements applying to all work activities under the Health and Safety at Work, etc. Act 1974 (HSWA) and relevant secondary legislation such as the Management of Health and Safety at Work Regulations 1999, more specific legal requirements relating to the safe use of tower cranes are contained in the:

- Lifting Operations and Lifting Equipment Regulations 1998 (LOLER); and
- Construction (Design and Management) Regulations 2007 (CDM2007).

16. LOLER sets out a range of requirements applying to most lifting equipment and its operation – including tower cranes. It places duties on the employer in respect of the installation, examination and use of lifting equipment provided for the use of, or used by, their employees at work.[5]

17. LOLER provides that, where their safety depends on installation conditions, cranes must be thoroughly examined:

- after installation and before they are put into service for the first time;
- after assembly and before being put into service after their installation at a new site/location; and
- periodically thereafter (at least 6 months for equipment lifting people or in respect of an accessory for lifting and at least 12 months for other loads).

18. This means that a conventional tower crane (given that it is erected by assembling the necessary sections) will require an initial thorough examination to be made after first installation before it can be used on site. It must be subject to a further thorough examination whenever it is re-installed on that site (ie moved to another location on-site or substantially altered in the same location) or if its periodic examination is due. Best practice is for periodic thorough examinations to be carried out well within the maximum period laid down by LOLER.

19. However, a self-erecting crane does not require a thorough examination when it is installed on site if it already has been thoroughly examined within the last 12 months (6 months if it is being used to lift people). A further thorough examination will be required if the crane stays on-site long enough for the existing one to expire. Again,

[5] For detailed information on the requirements of LOLER requirements and practical guidance on their interpretation, reference should be made to *Safe use of lifting equipment. Lifting Operations and Lifting Equipment Regulations 1998. Approved Code of Practice and guidance* L113 HSE Books 1998 ISBN 978 0 7176 1628 2 (reprinted 2007)

best practice is for periodic examinations to be carried out well within the period laid down by LOLER.

20. LOLER requires the thorough examination to be carried out by a competent person. The competent person is required to notify the employer immediately of any defect found which is, or could become, a danger, to allow prompt remedial action to be taken. Written reports are required to be forwarded to the employer 'as soon as is practicable' (ie without unnecessary delay – normally within 28 days). Where the competent person finds defects which they consider could represent an existing or imminent risk of serious personal injury, they are required to send a copy of the written report as soon as is practicable to the relevant enforcing authority (in practice this is normally HSE).

21. CDM2007 is not concerned explicitly with lifting operations and equipment. However, it is important in setting the legal framework within which the safe use of tower cranes in construction work must be carried out. It does this by placing a range of duties on those who have responsibilities for ensuring health and safety on construction projects (clients, CDM co-ordinators, designers and contractors). These include, for example, the contractor's duty to plan, manage and monitor construction work in a way which ensures that, so far as is reasonable practicable, it is carried out without risks to health and safety. In addition, there are duties with which all dutyholders need to comply in relation to issues such as co-operating with one another to enable the duties of each to be complied with and ensuring all those employed in construction meet appropriate levels of competence.[6]

Notification of Tower Cranes – Discussion of Proposals

22. This CD seeks your views on the draft Notification of Conventional Tower Cranes Regulations 20— at Annex 1. To help you respond, this section sets out what we believe to be the aims of the proposals and the general approach we have taken in developing the draft Regulations. It also discusses the approach taken in relation to specific aspects – namely:

- the scope of the Regulations – which type of crane used in which type of work activity are to be registered;
- how the proposals fit in with current legal requirements;
- who has the duty under the Regulations to notify HSE of the required information about the crane which is to be placed on the register;
- when the notification is required;
- what information is required to be notified;
- the arrangements for how the information should be notified to HSE; and

[6] For detailed information on the requirements of CDM2007 requirements and practical guidance on their interpretation, reference should be made to *Managing health and safety in construction. Construction (Design and Management) Regulations 2007. Approved Code of Practice* L144 HSE Books 2007 ISBN 978 0 7176 6223 4

- what arrangements are proposed for information to be made accessible to those who may be affected by the use of tower cranes, including members of the public.

Aim of Proposals and General Approach to Implementation

23. The aims of the Register need to be seen in the wider context of the further improvements to health and safety sought by HSE now set out in its new Strategy[7] and, more specifically, the broader work to improve tower crane safety (see paragraph 5). In that context, the broad aims of the Register are to:

- improve the control and management of risks in the use of tower cranes;
- provide further reassurance about the control and management of such risks to workers and others who may be affected by the use of tower cranes (eg the public); and
- provide better intelligence to HSE about the use of tower cranes to inform any enforcement action it takes.

The Register supports the work being carried out to achieve the Strategy's goals – in particular, the goals to:

- reduce the likelihood of low frequency, high impact catastrophic incidents while ensuring that Great Britain maintains its capabilities in those industries strategically important to the country's economy and social infrastructure; and
- investigate work-related accidents and ill health and take enforcement action to prevent harm and secure justice where appropriate.

24. In order to achieve the aims of the Register, we have seen the need to take account of the following criteria in the general approach we have taken – balancing one against another in a way which seems sensible in the circumstances. The criteria we have identified are to ensure that:

a) due regard is taken of the safety risks associated with the use of tower cranes;

b) the draft Regulations are simple and fit as closely as possible with current legal controls covering tower crane safety;

c) due regard is taken of the costs and benefits of introducing and maintaining the Register as set out in the Impact Assessment;

d) the Register is simple and not overly burdensome, either as an administrative process or in the records it requires;

e) the Register provides information that is helpful to HSE in its work to assure compliance with the relevant legal controls;

f) the Register has readily accessible information about particular tower cranes sufficient to provide reassurance about their safety to workers and the public while being consistent with any need to restrict accessibility for certain types of information (eg commercially sensitive information); and

[7] The Health and Safety of Great Britain\\Be part of the solution. Copies can be downloaded from HSE's website: http://www.hse.gov.uk/strategy/strategy09.htm

g) the setting-up and operation of the Register can be done simply and without disproportionate cost.

Question 1: Do you agree that these aims and criteria are appropriate and provide a sensible basis for considering how the Tower Cranes Register should be set up?

Scope of the Regulations

25. The draft Regulations apply the requirement to notify information about the tower crane to conventional tower cranes used on construction sites only. The reasons we have chosen to restrict the proposed scope of the proposals to conventional tower cranes (rather than extend it to self-erecting tower cranes) are that:

a) based on accident history, the risk profile of conventional tower cranes is greater;

b) there are significantly greater costs to both industry and HSE in extending the scope of the proposals to self-erecting tower cranes (see paragraphs 45-47 and Annex 2);

c) difficulties arise in setting the trigger-point for registration of the crane if both conventional and self-erecting tower cranes are included in the scheme. Restricting the scheme to conventional cranes means the trigger point for registration is relatively straightforward – after assembly, following the thorough examination required by LOLER and prior to operation on site. The trigger point for self-erecting tower cranes could not be linked to the thorough examination required by LOLER, because in most cases the examination will have been done before the crane reaches the site – potentially up to 12 months beforehand. The complications this raises run counter to our aim of a simple Register;

d) there are practical considerations. Self-erecting tower cranes are often on site for a short time – often a matter of days or weeks rather than the months and years that conventional cranes remain on site. If they were to be included in the Register, they may well have been removed from the site by the time their erection has been registered. The Register would therefore provide information which would be out-of-date as soon as it was registered and would be of little use to HSE or anyone seeking reassurance about their safety.

26. On the other hand, a reason for including both self-erecting and conventional cranes is that some stakeholders would see both types as 'tower cranes' and might want reassurance as to their safety in both cases.

Question 2: Do you agree that the scope of the requirement to notify details about tower cranes should be limited to conventional tower cranes and not extended to self-erecting tower cranes?

27. The reasons we believe the scope of the proposed Register should be restricted to tower cranes used only on construction sites are as follows:

a) based on accident history the risk profile is greatest in construction;

b) most of the cranes used outside construction sites are permanently in place in workplaces such as docks and storage yards. The use of such cranes clearly involves risk to safety and they are subject to the controls in LOLER. But the risks do not generally include those associated with erection and dismantling and operation on confined sites which affect passing members of the public or local residents;

c) although tower cranes are used for other activities (such as bungee- jumping) the number used for such activities is very low and does not warrant imposing further requirements on top of those in LOLER to which they are already subject;

d) including other sites than construction may draw in other types of crane which are superficially similar to tower cranes but do not pose the same risks or attract the same degree of public concern. For example, slewing jib cranes - very large examples of which are found in shipyards and small examples inside factory workshops.

Question 3: Do you agree that the scope of the requirement to notify details about tower cranes should be limited to tower cranes used on construction sites?

How the proposals fit in with current legal requirements.

28. The draft Regulations at Annex 1 are 'stand alone' Regulations which place a duty on the employer to notify certain details about the crane following its installation, or re-installation, on site and the thorough examination required before it can be put into service. Framing the duty in this way provides the clearest and most practical fit with the requirements of LOLER - which, for example, place a duty on the employer to ensure the thorough examination is carried out before the crane is put into service.

29. The option of amending LOLER itself to include the new duty was considered. However, to do so might result in a complex set of amending Regulations and a consequential lack of clarity for dutyholders. Given that LOLER applies to lifting equipment in general, it does not set out requirements for specific types of plant. Such amendments might also have unintended consequences for other lifting equipment.

30. Also considered was the option of amending the notification requirements of CDM2007 to include additional particulars about any tower cranes being used in the course of the construction work. However, for legal and practical reasons this option was discounted. Notification under CDM2007 often occurs well before work on site begins and before the intended use of tower cranes has been fully determined – perhaps even before any decision to use tower cranes has been made. Thus the CDM Co-ordinator (who has the duty to notify construction work under CDM2007) may not, at the time of submission of notification, have the necessary information about the specific crane(s) being used. This raises potential complications for dutyholders in having to make a multi-stage notification. It also raises complications for HSE in setting up and maintaining a simple register.

Question 4: Do you agree that the use of stand-alone Regulations provides the clearest and most practical vehicle for presenting the new duty and fitting it to existing legal requirements?

Who has the duty to notify HSE of the information to be placed on the Register?

31. Draft regulation 4 places the duty to notify information about any conventional tower crane installed on a construction site on the 'employer'. Following regulation 3 of LOLER, the duty applies to employers (including self-employed persons) in relation to cranes "provided for use or used by an employee of his at work". It also applies to any person who has control to any extent of cranes including anyone at work who uses, supervises or manages their use, to the extent of their control.

32. As well as ensuring a good fit with LOLER, placing the duty in this way encompasses all those who have the main responsibility for ensuring the safe erection and operation of a crane on-site. This includes those who own or operate cranes, principal contractors and sub-contractors involved in lifting operations - those who are, in the main, currently responsible for ensuring that cranes are thoroughly examined in accordance with LOLER. It is envisaged that guidance for dutyholders will be produced which will include further detail on who has the duty to notify information and practical ways in which this duty can be discharged.

33. You may wish to note that draft regulation 5 provides a power for the Secretary of State to exempt, in the interest of national security, the armed forces from the need to notify information about tower cranes.

Question 5: Do you agree with where the proposed Regulations place the duty to provide information about tower cranes?

When will notification of the information be required?

34. The proposed Regulations require notification of the information within 14 days of a tower crane's thorough examination. This applies whether the thorough examination follows the crane's first installation, after any re-installation or if the crane stays on site long enough for the existing thorough examination to expire. The 14-day period is a compromise. On the one hand, there is a need for details of cranes to be notified quickly if the Register is to provide an up-to-date record that gives reassurance about their safety. On the other, dutyholders will inevitably need time to draw the information together following the thorough examination and notify the relevant information.

35. Some consideration was given to aligning the period to the 28 days within which written reports of defects normally need to be rectified (see paragraph 20). But this was felt to allow too long a time lag between the erection of tower crane and its notification. In addition, informal soundings with industry indicate that notification could be done within 14 days, provided that the notification system was simple. However, it would be helpful to receive confirmation as to whether the 14-day period is, or is not, practical.

Question 6: Do you agree that notification of the relevant information within 14 days of the thorough examination is reasonable?

36. The proposed Regulations also require notification of the information within 28 days in respect of any conventional tower cranes already installed and in use on the date the Regulations come into force. The aim again is to have these cranes notified quickly, although dutyholders will clearly need some time to notify the relevant information. Informal soundings with industry indicate that 28 days would be sufficient to notify the required information about the approximately 1000 tower cranes that may already be erected and in use when the Regulations come into force. However, confirmation is sought as to whether this period is a reasonable compromise.

Question 7: Do you agree that information about conventional tower cranes erected and in use at the time the Regulations come into force should be notified within 28 days?

37. There is a possibility that a tower crane might be erected but not be thoroughly examined and put into service because of some unforeseen delay to construction work. If the trigger point for notification of the relevant information is as proposed (ie 14 days after the thorough examination), this would mean that the register would not have a record of the crane. Informal soundings with industry suggest that this is likely to occur very rarely and is not a significant enough problem for the Regulations to provide for notification in such circumstances. However, your views are nevertheless sought on whether the Regulations should make provision for circumstances such as these.

Question 8: Do you think that the Regulations should provide for notification of a tower crane if it is erected but not thoroughly examined for a significant period?

What information is required to be notified and to whom?

38. Schedule 1 of the draft Regulations sets out the information it is proposed the relevant employer should notify to HSE for inclusion in the Register. For notification following the thorough examination required under LOLER before first use of a conventional tower crane at a particular construction site, the draft Regulations require the following information to be notified:

- name and address of the conventional tower crane owner;
- the address of the construction site at which the conventional tower crane has been installed;
- particulars sufficient to identify the tower crane including, where known, its date of manufacture*;*
- the date of the thorough examination;
- the name and address of the employer for whom the thorough examination was made; and

- whether the thorough examination revealed any defects involving an existing or imminent risk of serious personal injury (as required by LOLER – see paragraph 20).

39. Where conventional tower cranes are re-installed or stay on site sufficiently long enough to require a further thorough examination, the draft Regulations require the original notification to be up-dated with the following information:

- particulars sufficient to identify the tower crane including, where known, its date of manufacture;
- the date of the thorough examination;
- the name and address of the employer for whom the thorough examination was made; and
- whether the thorough examination revealed any defects involving an existing or imminent risk of serious personal injury (as required by LOLER – see paragraph 20).

40. We believe this information would meet the aims of the Register in that, on the one hand, it would provide help to HSE to carry out its regulatory functions and reassure other interested parties who may have concerns about the safety of particular cranes, whilst, on the other, would keep the Register relatively simple. This legal requirement would be supplemented by guidance to dutyholders providing more detail, for example, on what is meant by "particulars sufficient to identify the tower crane". Our initial view is that this should include make and age, but views are sought as to what other details of identification should be included.

Question 9: Do you agree that the above approach strikes the right balance between providing sufficient information about the safety of a particular crane and keeping the Register simple? If not, what information do you believe should be included or omitted from either the proposed Regulations or guidance?

<u>The arrangements for how the information should be notified to HSE</u>

41. HSE is in the process of developing a database for the Register. Our aim is to have arrangements in place which would allow for electronic notification via HSE's website. These arrangements would be separate from the notification process required under CDM2007. Provision would also be made for manual notifications to be scanned and input to the database. A standardised notification form (similar to the F10 form used in CDM2007 notification) is being developed to enable easy input to the database.

Question 10: Do you agree with the proposed arrangements for notifying HSE?

<u>The arrangements for making information on the Register accessible.</u>

42. HSE's starting point will be to make all information that dutyholders place on the Register as fully accessible as possible. It is intended that the Register will be hosted on the construction pages of HSE's website and that the information it contains will be "searchable" by a number of criteria such as location. This will allow anyone to

check such matters as whether a particular crane has an up-to-date thorough examination.

43. If the information held on the Register is as proposed (see paragraphs 38-39) we do not see any reason to restrict access to the Register. There may, however, be issues of commercial sensitivity if access is extended beyond that relating to a particular crane allowing, for example, information to be gathered about the fleet of cranes belonging to a particular owner. In cases such as this, HSE will endeavour to limit the extent to which the database can be interrogated.

44. The proposals place no requirement on dutyholders to "de-notify" tower cranes once they are dismantled. This means that the Register may include records of tower cranes which have been dismantled as well as those currently in use. However, to ensure that the Register does not get clogged with records of dismantled cranes, the intention is that HSE will delete from the Register any record of a crane for which a re-notification has not been received in the last 2 years.

Question 11: Do you agree that this approach to administering access to information on the Register strikes the right balance between making as much information as possible readily accessible, while restricting any information that may be commercially confidential or out-of-date?

Summary and Discussion of Impact Assessment

45. This CD seeks views on HSE's preferred option for setting up and maintaining a statutory scheme for a tower cranes register. The Impact Assessment (IA) at Annex 2 examines this option and four others which vary the scope of the Register in order to compare their estimated costs and benefits. The IA sets out the estimated costs for each in more detail and how they have been calculated, but the total estimated costs over 10 years to both industry and HSE are set out below:

- Option 1 - Do nothing. The costs are zero;
- Option 2 - the Register covers conventional tower cranes on construction sites. This is the option on which the draft Regulations is based and the total costs are estimated to be a little under £450,000;
- Option 3 - the Register covers conventional tower cranes but also extended to such cranes on non-construction as well as construction sites: total costs are a little over £450,000;
- Option 4 - the Register covers conventional tower cranes on construction sites, but also includes self-erecting cranes: total costs are around £3,200,000;
- Option 5 - the Register covers both conventional and self-erecting tower cranes on construction and non-construction sites: total costs are around £3,200,000.

46. As can be seen, the costs of a tower crane register rise significantly if self-erecting cranes are included. It has not been possible, for any of the options, to quantify or ascribe financial value to the expected benefits arising from increased public assurance or from better quality information potentially allowing HSE to better

target its interventions. It is therefore difficult to say for sure whether any increased benefit arising from the inclusion of self-erecting cranes would be sufficient to warrant their inclusion in the scope of the Register. However, for the reasons set out in paragraph 25 it is our belief that it would not.

47. The IA shows slightly increased costs if the scope of the Register is extended from construction to non-construction sites. Again, because it has not been possible to quantify the benefits, it is difficult to say whether any increased benefit arising from such an extension would warrant the inclusion of non-construction cranes in the Register. However, for the reasons given in paragraph 27 we do not think there is likely to be any such benefits.

Question 12: Do you agree with the IA's cost benefit assessment of the main policy options for a tower crane register?

Charging for Registration

48. HSE has a policy of recovering the full costs of some of its functions including operating registration schemes. A flat rate fee for registration of £20 per registration is proposed for this scheme. This reflects the expected costs of establishing and administering the Register. Recovering these costs will enable an effective Register to be provided and the benefits expected from it described above at paragraphs 23 to be achieved.

49. We would be grateful for any comments you have on this proposal, including any suggestions which might reduce administration costs for HSE and hence fees to industry. These will be reported to and considered by the HSE Board and Ministers.

Question 13: Do you have any comments on the proposals for charging for registration

D R A F T S T A T U T O R Y I N S T R U M E N T S

2009 No.

HEALTH AND SAFETY

Notification of Conventional Tower Cranes Regulations 2010

Made - - - -	***
Laid before Parliament	***
Coming into force - -	***

The Secretary of State makes these Regulations in exercise of powers conferred by sections 15(1), (2), 5(a), (8), 43(2), (4), (6) and 82(3)(a) and paragraphs 5 and 15(1) of Schedule 3 to the Health and Safety at Work etc. Act 1974(**a**).

These Regulations give effect without modification to proposals submitted to the Secretary of State by the Health and Safety Executive under section 11(3) of that Act (after carrying out the consultation required by section 50(3) of that Act).

Citation and Commencement

1. These Regulations may be cited as the Notification of Conventional Tower Cranes Regulations 2010 and shall come into force on xxxx (the "commencement date").

Interpretation

2. In these Regulations, unless the context otherwise requires -

"the 1974 Act" means the Health and Safety at Work etc Act 1974;

"conventional tower crane" means a slewing jib type crane with jib located at the top of a vertical tower which is assembled on a construction site from components;

"the Executive" means the Health and Safety Executive;

"thorough examination" has the same meaning as in regulation 2(1) of the Lifting Operations and Lifting Equipment Regulations 1998(**b**) in relation to regulation 9(1), (2) and (3) of those regulations;

"construction site" has the same meaning as in regulation 2(1) of the Construction (Design and Management) Regulations 2007(**c**).

(**a**) 1974 c 37, as amended by the Legislative Reform (Health and Safety Executive) Order 2008 (S.I 2008/960). Sections 15 and 50 were amended by the Employment Protection Act 1975 (c.71) Schedule 15, paragraphs 6 and 16 respectively.
(**b**) S.I. 1998/2307, as amended by S.I. 2002/2174, 2005/831, 2007/320 and 2008/1597.
(**c**) S.I. 2007/320.

Application

3.—(1) The requirements imposed by these Regulations on an employer in respect of a conventional tower crane shall apply in relation to a conventional tower crane provided for use or used by an employee of his at work.

(2) The requirements imposed by these Regulations on an employer shall also apply:

(a) to a self-employed person, in respect of a conventional tower crane he uses at work;

(b) subject to paragraph (4), to a person who has control to any extent of –

(i) a conventional tower crane;

(ii) a person at work who uses or supervises or manages the use of a conventional tower crane; or

(iii) the way in which a conventional tower crane is used,

and to the extent of his control.

(3) Any reference in paragraph (2)(b) to a person having control is a reference to a person having control in connection with the carrying on by him of a trade, business or other undertaking (whether for profit or not).

(4) The requirements imposed by these Regulations on an employer shall not apply to a person in respect of a conventional tower crane supplied by him by way of sale, agreement for sale or hire - purchase agreement.

(5) These Regulations shall not impose any obligation in relation to a ship's work equipment (whether that equipment is used on or off the ship) and in this regulation "ship" has the meaning assigned to it by section 313(1) of the Merchant Shipping Act 1995.

Notification of conventional tower cranes

4.—(1) Subject to regulation 5, every employer shall ensure that in respect of every conventional tower crane installed by him the information specified in paragraph (2) is notified in writing to the Executive within 14 days from the day of completion of a thorough examination required to be carried out in relation to such conventional tower crane under regulation 9(1), (2), 3(a)(i) in respect of lifting equipment for lifting persons, (ii), (iii) and (iv) of the Lifting Operations and Lifting Equipment Regulations 1998(**a**).

(2) The information referred to in paragraph (1) is:

(a) in respect of any thorough examination carried out prior to the first use of a conventional tower crane on a construction site, the information specified in Schedule 1; and

(b) in respect of any thorough examination carried out following first use of a conventional tower crane on a construction site the information specified in Schedule 2.

Exemptions

5.—(1) The Secretary of State for Defence may, in the interests of national security, by a certificate in writing exempt any of the home forces, any visiting force or any headquarters from any of the requirements of these Regulations and any such exemption may be granted subject to conditions and to a limit of time and may be revoked by the said Secretary of State by a certificate in writing at any time.

(2) In this regulation –

"the home forces" has the same meaning as in section 12(1) of the Visiting Forces Act 1952(**b**);

"headquarters" has the same meaning as in article 3(2) of the Visiting Forces and International Headquarters (Application of Law) Order 1965(**c**);

(a) S.I. 1998/2307, as amended by S.I. 2002/2174, 2005/831, 2007/320 and 2008/1597.

(**b**) 1952 c 67, amended by the Criminal Justice Act 1988, s 170(1), Sch 15, para 14.

(**c**) S.I. 1965/1536

"visiting force" has the same meaning as it does for the purposes of any provision of Part 1 of the Visiting Forces Act 1952(**a**).

Transitional provision

6. If before the commencement date of these Regulations an employer has installed a conventional tower crane which continues to be installed on the commencement date, the employer shall within 28 days from and including the commencement date notify the Executive in writing of the information specified in regulation 4(2).

SCHEDULE 1

Regulation 4(2)(a)

Information prior to the first use of a conventional tower crane

1. Name and address of the conventional tower crane owner.
2. Address of the construction site at which the conventional tower crane was installed.
3. Particulars sufficient to identify the conventional tower crane including where known its date of manufacture.
4. Date of the thorough examination,
5. Name and address of the employer for whom the thorough examination was made.
6. Whether the thorough examination revealed any defects involving an existing or imminent risk of serious personal injury.

SCHEDULE 2

Regulation 4(2)(b)

Information following first use of a conventional tower crane

1. Particulars sufficient to identify the conventional tower crane including where known its date of manufacture.
2. Date of the thorough examination.
3. Name and address of the employer for whom the thorough examination was made.
4. Whether the thorough examination revealed any defects involving an existing or imminent risk of serious personal injury.

Signatory text

Name
Address — Parliamentary Under Secretary of State
Date — Department

(a) 1952 c 67, amended by the Criminal Justice Act 1988, s 170(1), Sch 15, para 14.

EXPLANATORY NOTE

(This note is not part of the Regulations)

The Regulations require an employer who provides a conventional tower crane for use or used by an employee of his at work on a construction site, to notify (regulation 4) to the Health and Safety Executive certain information regarding the crane, within 14 days of:

(i) the completion of the thorough examination of the crane, required under the Lifting Operations and Lifting Equipment Regulations 1998 before the crane is put into first use, the information required being specified in Schedule 1; and

(ii) any thorough examinations carried out following first use of the crane, the information required being specified in Schedule 2.

The Regulations also contain a transitional provision (regulation 6) and provision for exemption certified by the Secretary of State for Defence, in the interests of national security (regulation 5).

The duties under the regulations apply also to:

(a) a self-employed person, in respect of a conventional tower crane he uses at work; and

(b) a person who has control to any extent of the management, supervision and use of a conventional tower crane, subject to the extent of that control.

Partial Impact Assessment

Summary: Interventions and Options		
Department /Agency: HSE	**Title:** Impact Assessment of the statutory registration of tower cranes	
Stage: XXX	**Version:** X	**Date:** XXX
Related Publications:		
Available to view or download at:		
Contact for enquiries: XXXX		**Telephone: XXX**

What is the problem under consideration? Why is government intervention necessary?

Tower crane accidents in recent years, some involving fatalities, have heightened general awareness of these cranes and the risks to worker and public safety. The difficulty of obtaining information on tower crane installations can hinder the Health and Safety Executive (HSE) in its role as health and safety regulator, and has drawn criticism from those seeking reassurance on behalf of the public. The Government considers that a compulsory tower crane register, containing and making available appropriate information, could obviate these difficulties. The Government believes that it is necessary to ensure that a suitable national register is created and, by way of a statutory duty, that the relevant persons input prescribed information to it.

Additionally, the aforementioned incidents create a risk of the public losing confidence in tower crane owners and operators, and not trusting them to take the necessary precautions to prevent further accidents. The public's perception of the risks from tower crane operations is distorted by this mistrust. This may lead to the presence of tower cranes on a site potentially generating a level of worry among the general public that exceeds what is warranted by the real risk involved.

The intervention of an agent perceived as impartial and trusted by the public, such as HSE, can assure the public that the risk is properly controlled and restore perceived risk to a level closer to the actual risk. This assurance itself has an intrinsic value for individuals, so its increase would be a benefit in itself.

What are the policy objectives and the intended effects?

To ensure the collation and ready availability of specific information on each tower crane installation so as to: provide information and reassurance to the public; assist HSE with work planning, enforcement and statistical analysis; and encourage the industry to achieve high standards of health and safety management.

What policy options have been considered? Please justify any preferred option.

The options considered below were developed following initial discussions with the principal stakeholders and a steer from the HSE Board in response to a paper tabled at its April 2009 meeting.

The options considered have to do with the coverage of these regulations, both in terms of types of tower cranes and the types of sites on which they operate.

Types of tower cranes:

Tower cranes fall under two broad categories:
(i) Conventional tower cranes (also known as 'assisted-erected' tower cranes) - those whose essential structure involves a vertical tower on top of which is mounted a jib but where the crane is brought to the construction site in sections and these are assembled on the site to form the crane.

It is not always the same collection of sections that is brought to site to be combined into a crane - thus, it is the particular combination on site which is to be registered. (Normally, only one of the sections in any combination, the slewing ring, is marked/identified).

(ii) 'Self-erecting' tower cranes - a complete unit which arrives on site and 'unfolds' to form a crane consisting essentially of a vertical tower and jib.

Self-erecting tower cranes fall into two broad kinds:

(ii)(a) Towed - i.e. towed behind the transporting vehicle
(ii)(b) Lorry-mounted - i.e. mounted on top of the transporting vehicle

Mobile cranes with mounted tower rigs could also be included in this category.

The HSE Board has indicated that the option of consulting on including both categories of crane in the register should be explored.

Types of sites:

Tower cranes can be found mostly in construction sites but also in other sites, for example, offshore; in storage yards; and docks; or used for activities such as bungee-jumping. Following a steer from the HSE Board, the option of consulting on including either only construction sites or all sites in the register should be explored.

The options that are considered in this impact assessment are:

Option 1 – Do nothing

Option 2 – A statutory register covering conventional (assisted-erected) tower cranes on construction sites.

Option 3 – A statutory register with coverage restricted to conventional tower cranes but covering those on both construction and non-construction sites.

Option 4 – A statutory register covering both conventional and self-erecting tower cranes but restricted to those on construction sites.

Option 5 – A statutory register covering both conventional and self-erecting tower cranes on both construction and non-construction sites.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

Work to review the policy will be commenced within five years of its implementation.

Ministerial Sign-off For SELECT STAGE Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Date:

Summary: Analysis & Evidence	
Policy Option: 1	**Description: Do Nothing**

COSTS

ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups' There are no costs associated with this option
One-off (Transition) **Yrs**	
£ **Nil**	
Average Annual Cost (excluding one-off)	
£ **Nil**	**Total Cost** (PV) £ **Nil**

Other **key non-monetised costs** by 'main affected groups'
N/a

BENEFITS

ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups' There are no benefits associated with this option
One-off **Yrs**	
£ **Nil**	
Average Annual Benefit (excluding one-off)	
£ **Nil**	**Total Benefit** (PV) £ **Nil**

Other **key non-monetised benefits** by 'main affected groups'
N/a

Key Assumptions/Sensitivities/Risks
N/a

Price Base Year	Time Period Years	**Net Benefit Range** (NPV) £ **0**	**NET BENEFIT** (NPV Best estimate)

What is the geographic coverage of the policy/option?			N/a	
On what date will the policy be implemented?			N/a	
Which organisation(s) will enforce the policy?			N/a	
What is the total annual cost of enforcement for these organisations?			£ 0	
Does enforcement comply with Hampton principles?			N/a	
Will implementation go beyond minimum EU requirements?			N/a	
What is the value of the proposed offsetting measure per year?			£ 0	
What is the value of changes in greenhouse gas emissions?			£ 0	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro **0**	Small 0	Medium 0	Large 0
Are any of these organisations exempt?	N/a	N/a	N/a	N/a

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)
Increase of £ 0 Decrease of £ 0 **Net Impact** £ 0

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Summary: Analysis & Evidence	
Policy Option: 2	**Description: Register covering conventional tower cranes in construction sites**

COSTS

ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups'
One-off (Transition) **Yrs**	Familiarisation costs to business of £52,500 and to HSE of £8,000
£ 228,000	Registration costs to business of £157,300 and to HSE of £30,000
Average Annual Cost (excluding one-off)	Register development and communication costs to HSE of £194,000
£ 25,000	**Total Cost** (PV) **£ 442,000**

Other **key non-monetised costs** by 'main affected groups' N/a

BENEFITS

ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups'
One-off **Yrs**	It has not been possible to quantify the public assurance or health and safety benefits associated with this option.
£ Nil	
Average Annual Benefit (excluding one-off)	
£ Nil	**Total Benefit** (PV) **£ Nil**

Other **key non-monetised benefits** by 'main affected groups'

Key Assumptions/Sensitivities/Risks

Price Base Year 2008	Time Period Years 10	**Net Benefit Range** (NPV) **N/a**	**NET BENEFIT** (NPV Best estimate)

What is the geographic coverage of the policy/option?			Great Britain	
On what date will the policy be implemented?			06/04/2010	
Which organisation(s) will enforce the policy?			HSE	
What is the total annual cost of enforcement for these organisations?			£7,500	
Does enforcement comply with Hampton principles?			No	
Will implementation go beyond minimum EU requirements?			Yes	
What is the value of the proposed offsetting measure per year?			N/a	
What is the value of changes in greenhouse gas emissions?			£0	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro Negligible	Small Negligible	Medium Negligible	Large Negligible
Are any of these organisations exempt?	No	No	No	No

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ 130,000 Decrease of £ Nil **Net Impact** £ 130,000

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Summary: Analysis & Evidence	
Policy Option: 3	**Description: Register covering conventional tower cranes in all sites**

COSTS

ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups'
One-off (Transition) **Yrs**	Familiarisation costs to business of £54,000 and to HSE of £8,000
£ 235,000	Registration costs to business of £166,000 and to HSE of £32,000
Average Annual Cost (excluding one-off)	Register development and communication costs to HSE of £200,000
£ 26,000	**Total Cost** (PV) **£ 458,000**

Other **key non-monetised costs** by 'main affected groups' N/a

BENEFITS

ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups'
One-off **Yrs**	It has not been possible to quantify the public assurance or health and safety benefits associated with this option.
£ Nil	
Average Annual Benefit (excluding one-off)	
£ Nil	**Total Benefit** (PV) **£ Nil**

Other **key non-monetised benefits** by 'main affected groups'

Key Assumptions/Sensitivities/Risks

Price Base Year 2008	Time Period Years 10	**Net Benefit Range** (NPV) **N/a**	**NET BENEFIT** (NPV Best estimate)

What is the geographic coverage of the policy/option?			Great Britain	
On what date will the policy be implemented?			06/04/2010	
Which organisation(s) will enforce the policy?			HSE	
What is the total annual cost of enforcement for these organisations?			£7,700	
Does enforcement comply with Hampton principles?			No	
Will implementation go beyond minimum EU requirements?			Yes	
What is the value of the proposed offsetting measure per year?			N/a	
What is the value of changes in greenhouse gas emissions?			£0	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro Negligible	Small Negligible	Medium Negligible	Large Negligible
Are any of these organisations exempt?	No	No	No	No

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ 140,000 Decrease of £ Nil **Net Impact** £ 138,000

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Summary: Analysis & Evidence	
Policy Option: 4	**Description: Register covering conventional and self-erecting tower cranes in construction sites**

COSTS

ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups'
One-off (Transition) **Yrs**	Familiarisation costs to business of £263,000 and to HSE of £8,000
£ 439,000	Registration costs to business of £2,300,000 and to HSE of £458,000
Average Annual Cost (excluding one-off)	Register development and communication costs to HSE of £194,000
£ 320,000	**Total Cost** (PV) **£ 3,200,000**

Other **key non-monetised costs** by 'main affected groups' N/a

BENEFITS

ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups'
One-off **Yrs**	It has not been possible to quantify the public assurance or health and safety benefits associated with this option.
£ Nil	
Average Annual Benefit (excluding one-off)	
£ Nil	**Total Benefit** (PV) **£ Nil**

Other **key non-monetised benefits** by 'main affected groups'

Key Assumptions/Sensitivities/Risks

Price Base Year 2008	Time Period Years 10	**Net Benefit Range** (NPV) **N/a**	**NET BENEFIT** (NPV Best estimate)

What is the geographic coverage of the policy/option?			Great Britain	
On what date will the policy be implemented?			06/04/2010	
Which organisation(s) will enforce the policy?			HSE	
What is the total annual cost of enforcement for these organisations?			£57,000	
Does enforcement comply with Hampton principles?			No	
Will implementation go beyond minimum EU requirements?			Yes	
What is the value of the proposed offsetting measure per year?			N/a	
What is the value of changes in greenhouse gas emissions?			£0	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro Negligible	Small Negligible	Medium Negligible	Large Negligible
Are any of these organisations exempt?	No	No	No	No

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ 2m Decrease of £ Nil **Net Impact** £ 2m

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Summary: Analysis & Evidence	
Policy Option: 5	**Description: Register covering conventional and self-erecting tower cranes in all sites**

COSTS

ANNUAL COSTS	Description and scale of **key monetised costs** by 'main affected groups'
One-off (Transition) **Yrs**	Familiarisation costs to business of £264,000 and to HSE of £8,000
£ 445,000	Registration costs to business of £2,300,000 and to HSE of £461,000.
Average Annual Cost (excluding one-off)	Register development and communication costs to HSE of £200,000
£ 322,000	**Total Cost** (PV) **£ 3,200,000**

Other **key non-monetised costs** by 'main affected groups' N/a

BENEFITS

ANNUAL BENEFITS	Description and scale of **key monetised benefits** by 'main affected groups'
One-off **Yrs**	It has not been possible to quantify the public assurance or health and safety benefits associated with this option.
£ Nil	
Average Annual Benefit (excluding one-off)	
£ Nil	**Total Benefit** (PV) **£ Nil**

Other **key non-monetised benefits** by 'main affected groups'

Key Assumptions/Sensitivities/Risks

Price Base Year 2008	Time Period Years 10	**Net Benefit Range** (NPV) **N/a**	**NET BENEFIT** (NPV Best estimate)

What is the geographic coverage of the policy/option?			Great Britain	
On what date will the policy be implemented?			06/04/2010	
Which organisation(s) will enforce the policy?			HSE	
What is the total annual cost of enforcement for these organisations?			£57,500	
Does enforcement comply with Hampton principles?			No	
Will implementation go beyond minimum EU requirements?			Yes	
What is the value of the proposed offsetting measure per year?			N/a	
What is the value of changes in greenhouse gas emissions?			£0	
Will the proposal have a significant impact on competition?			No	
Annual cost (£-£) per organisation (excluding one-off)	Micro Negligible	Small Negligible	Medium Negligible	Large Negligible
Are any of these organisations exempt?	No	No	No	No

Impact on Admin Burdens Baseline (2005 Prices) (Increase - Decrease)

Increase of £ 2m Decrease of £ Nil **Net Impact** £ 2m

Key: **Annual costs and benefits: Constant Prices** **(Net) Present Value**

Review of the statutory registration of tower cranes

Purpose and intended effect

Objectives

To ensure the collation and ready availability of specific information on each tower crane installation so as to: provide information and reassurance to the public; assist the Health and Safety Executive (HSE) with work planning, enforcement and statistical analysis; and encourage the industry to achieve high standards of health and safety management.

Background

Since the year 2000, there have been a number of high profile incidents involving tower cranes which have killed a total of 8 people (including one member of the public) and injured more. These incidents have lead to mounting public concern that further improvements in tower crane safety need to be made.

In 2008, the Work and Pensions Select Committee, in its inquiry into the work of HSE, raised concerns about the number of incidents and fatalities involving tower cranes and other plant on construction sites and called on HSE to bring forward proposals such as a national register. Subsequently, the Secretary of State for Work and Pensions expressed similar concerns and, at its meeting in January 2009, the HSE Board agreed that, on tower crane safety:

- work was required to address public concerns as well as responding to the Select Committee's recommendations and Secretary of State's concerns;
- in addition to other measures already in place, a register of tower cranes was needed. A voluntary register was to be introduced that would allow HSE to trial arrangements before introducing a statutory register.

HSE is committed to having a statutorily-based tower crane register in place by 2010.

Rationale for Government Intervention

Tower crane accidents in recent years, some involving fatalities, have heightened general awareness of these cranes and the risks they pose to worker and public safety. The difficulty of obtaining information on tower crane installations can hinder HSE in its role as health and safety regulator, and has drawn criticism from those seeking reassurance on behalf of the public. The Government considers that a compulsory tower crane register, containing and making available appropriate information, could obviate these difficulties. The Government believes that it is necessary to ensure that a suitable register is created and, by way of a statutory duty, that the relevant persons input prescribed information to it.

Additionally, the aforementioned incidents create a risk of the public losing confidence in tower crane owners and operators and not trusting them to take the necessary precautions to prevent further accidents. The public's perception of the risks from tower crane operations is distorted by this mistrust. This may lead to the presence of tower cranes on a site potentially generating a level of worry among the general public that exceeds what is warranted by the real risk involved.

The intervention of an agent perceived as impartial and trusted by the public, such as HSE, can assure the public that the risk is properly controlled and restore perceived risk to a level closer to the actual risk. This assurance itself has an intrinsic value for individuals, so its increase would be a benefit in itself.

OPTIONS

Option 1 - Do Nothing

Not introducing any kind of tower crane register and continuing as we are today is the base case against which the other options are compared. This has no cost or benefit implications.

Option 2 – Register covering conventional tower cranes on construction sites.

Within 14 days of a conventional tower crane being thoroughly examined following installation or re-installation on a site, dutyholders will notify HSE of certain information.

Dutyholders will be same as those who have a duty under the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) to ensure the cranes are thoroughly examined, i.e. the 'employer'. In practice, the duty is usually undertaken by the crane owner or the principal contractor.

The information to be notified will be:

(a) Name/contact details of the crane owner;

(b) site address;

(c) crane identification particulars (including date of manufacture if known);

(d) date of the last thorough examination (as required under LOLER, which allows the crane to be put into service on the site);

(e) whether the thorough examination revealed and defects involving any existing or imminent risk of serious personal injury;

(f) name and address of the employer for whom the thorough examination was made.

Other than the name/contact details of the crane owner, this information can already be found on the thorough examination report required under LOLER. (Currently, HSE receives only the adverse reports indicating existing or imminent risk of serious personal injury).

In the case of 'conventional' cranes, under LOLER, following installation/re-installation, a crane cannot be put into use on the site until a thorough examination has been carried out.

After the initial notification of a thorough examination, subsequent notifications will be required if the crane is re-installed on site or its periodic thorough examination comes due.

Notification will be required within 14 days of a crane being thoroughly examined following installation, or re-installation, on the site. Tower cranes already operating on site when the Regulations come into force in April 2010 will need to be registered within 28 days of commencement.

Option 3 - Register covering conventional tower cranes in all sites

As with option 2, except that conventional tower cranes in non-construction sites would also have to be entered in the register. This includes tower cranes in sites such as:

- ports;

- bungee-jumping operation;

- steel stockholders;

- factories.

Option 4 – Register covering conventional and self-erecting tower cranes on construction sites

As with Option 2, except that self-erecting tower cranes on construction sites would also have to be registered.

In the case of self-erecting cranes, a crane can be used on the site without a further thorough examination provided it has been previously thoroughly examined and its next periodic thorough examination is not due. Self-erecting tower cranes would thus be notified to HSE within 14 days of their being put into service on a construction site.

After the initial notification of a thorough examination, subsequent notifications will be required if the next periodic thorough examination of the self-erecting crane becomes due.

Option 5 – Register covering conventional and self-erecting tower cranes on all sites

A combination of Options 3 and 4. As with Option 2, but self-erecting tower cranes in construction sites and both self-erecting and conventional tower cranes on non-construction sites would also have to be entered in the register.

COSTS AND BENEFITS

Data Sources and Assumptions

All financial figures are given in 2008 prices. Financial costs and benefits have been discounted at 3.5 per cent over a ten year appraisal period.[15] It has not be possible to quantify or monetise the expected benefits arising from increased public assurance or from better quality information potentially allowing HSE to better design and target its interventions, so benefits have not been discounted.

Sectors and Groups Affected

The different options will apply to different groups of companies, although there will be some overlap. It is expected that owners of self-erecting tower cranes will face higher proportional costs, due to the fact that these tower cranes tend to remain on particular sites for shorter periods, and will thus, on average, have to be entered in the register more often.

Benefits

It is expected that the main benefit of implementing a tower crane register will be an increase in public assurance. Members of the public will be able to directly check whether a particular tower crane they are interested in has been registered, and be confident that it has undergone thorough examination.

Quantifying or monetising this expected increase in public assurance for each of the proposed options will not be possible; the extensive research needed to determine this was not considered an appropriate use of resource given the issue at hand, or practicable given the timescales involved. The degree of public assurance provided should theoretically increase with increased coverage in terms of both equipment and sectors. Even though all incidents in the last few years have been related to conventional tower cranes on construction sites, we believe it is probable that the majority of the general public is not aware of this fact, and will seek assurance about all tower cranes.

[15] Discounting is the technique which is used to compare cash flows which occur in different time periods and is based on the principle that generally, people prefer to receive goods and services now rather than in the future, see The Green Book, available at http://www.hm-treasury.gov.uk/data_greenbook_index.htm

However, in the case of coverage extended to non-conventional tower cranes, there is a risk that this intended increase in public assurance could be undermined by the fact that some of them are deployed very frequently (depending on the type, some are mobilised an average of five times a week). Given that dutyholders would have 14 days to register a tower crane after it is put into service, this could very well lead to members of the public consulting the register and finding that the tower crane that concerns them is not registered, simply because the dutyholder has not registered it yet and is within the period prescribed to do so.

It is not expected that a tower crane register will have direct health and safety benefits, i.e. reductions in injury or ill-health arising directly from registration, although the data from the register could allow HSE to better design and target its interventions related to the sector, thus leading indirectly to health and safety benefits though, again, it was not considered appropriate or practicable to quantify or monetise these benefits.

Costs

Option 1 – Do Nothing

There are no costs from this option.

Option 2 – Statutory register covering conventional tower cranes on construction sites

Coverage

In this option, the register will apply only to conventional tower cranes and will not extend to self-erecting tower cranes or other equipment that also falls under the LOLER[16] regulations. It will apply only to construction sites.

According to industry sources, it is estimated there are approximately 1,800 conventional tower cranes in the UK. HSE experts, based on feedback from industry sources, estimate that 1,300 of them are normally in use at any one time on construction sites.

At present, however, due to the construction industry having been hit very hard by the economic downturn (with volume measures of industry output showing a year-on-year fall of almost 9% to the first quarter of 2009[17]), the figures for conventional tower cranes in use are lower.

Industry sources have indicated that the number of tower cranes in use currently is 1,000, a large fall they attribute to the house-building sector within the construction industry having experienced an especially strong decrease. This sector comprises the kind of projects which would use tower cranes most intensively.

Purely for the purposes of this impact assessment, we will assume that 1,000 conventional tower cranes will be in use at any one time during the first year of the register, and 1,300 in the years thereafter.

Each conventional tower crane will have to be registered every time it is installed or re-installed on a site, as well as if its periodic thorough examination becomes due while it is on-site.

Industry sources estimate that on average, a conventional tower crane is thoroughly examined twice a year, whether because it has been installed / re-installed or because it is required or industry good practice indicates it. This will result in a around 2,000 registrations a year for year 1 and 2,600 thereafter.

The number of dutyholders is harder to estimate. In practice, the use of conventional tower cranes is likely to be limited to larger construction projects. We will assume that only a certain

[16] The Lifting Operations and Lifting Equipment Regulations (1998)
[17] Office for National Statistics – First release of the Gross Domestic Product Preliminary Estimate – 1st Quarter 2009 (24th April 2009). See at: http://www.statistics.gov.uk/pdfdir/gdp0409.pdf

proportion of larger contractors use or are likely to use conventional tower cranes, and that it is the larger firms involved in what the Department for Business, Enterprise and Regulatory Reform (BERR) in their Construction Annual Statistics 2007[18] call the 'Main Trades', i.e. 'non-residential building'; 'house building'; 'civil engineering', who are likely to be duty-holders. According to the BERR statistics (table 3.6), in 2005 there were approximately 3,750 firms with than more than 13 employees in the Main Trades category. These will be the dutyholders for the new regulation.

In this option, the coverage will be the same for the statutory register and for its voluntary trialling period.

Costs to industry

FAMILIARISATION COSTS:

Even though a number of participants will have already been contacted by HSE during consultation, they will still need to spend time familiarising themselves with exactly what is involved in the tower crane registration scheme. We will assume this will take a manager 30 minutes to do, at an economic cost of £28 per hour[19].

Based on feedback from the Construction Plant-hire Association (CPA), which comprises the larger owners of conventional tower cranes, we anticipate that about 30 organisations will participate in the voluntary trialling period and will familiarise themselves with what is required of them, and register their tower crane mobilisations during this period. Assuming there will be 30 participants during the trialling period, and one manager per participant engaging in this familiarisation process, this results in a one-off cost of £420.

After the trial, voluntary period, dutyholders who were already participating in it will continue as before and not need to undertake any further familiarisation, other than the understanding that the register is now statutory. We will assume this imposes negligible costs on the dutyholder. For dutyholders who did not participate in the trialling period, the time required to familiarise themselves with all the requirements for the statutory register will be as before, 30 minutes of a manager's time. At an economic cost of £28 per hour and assuming 3,720 dutyholders (those who did not participate in the trialling period) and one manager per dutyholder engaging in the familiarisation process, this results in a one-off cost of £52,100.

In total, the one-off costs of familiarisation with the register are estimated to be £52,500

COSTS OF REGISTERING A TOWER CRANE:

The information that will be required to be registered is such that most of it is currently already collected during the process of thorough examination. The only exception is the name of the tower crane owner, which will not necessarily be on the thorough examination form. However, this should be knowledge the dutyholder already has or can easily get. Therefore, dutyholders will need to collect little or no further data for registration and we will assume they will incur negligible costs in this respect.

There will be a cost involved in dutyholders entering the information into the register, which we will assume they will do either by inputting it into an online form or by posting the information to HSE. Whichever of these options they choose, we assume this will take an administrative worker or secretary 30 minutes per registration to do, at an economic cost of £13.3 per hour[20]. The cost per registration is thus estimated at £6.70.

[18] See: http://www.berr.gov.uk/files/file42061.pdf

[19] Mean hourly salary of a Production Manager (SOC code 112). Information from Annual Survey of Hours and Earnings (ASHE) 2008, with an extra 30% added to account for non-wage labour costs.

[20] Mean hourly salary for Administrative and secretarial occupations (SOC code 4). Information from Annual Survey of Hours and Earnings (ASHE) 2008, with an extra 30% added to account for non-wage labour costs.

We have assumed that during the trialling period there will be 30 participants. However, the industry is highly concentrated, so these participants will cover a large percentage of the tower cranes that could be registered, a percentage we've estimated at 80%. The voluntary trial period will last for 3 months, which at a compliance level of 80%, implies 400 registrations of new installations / re-installations of tower cranes. There will be an estimated 1,000 tower cranes already operating on site when the register is launched, and it is assumed 80% of those will also be registered (i.e. 800 registrations). In total, the number of registrations we estimate will take place during the trialling period is 1,200. The cost of these registrations would be £8,000.

After the trialling period, when the register becomes statutory, a compliance level of 100% implies 2,600 registrations would be required every year. In the first year, there will be 9 months of statutory register (the first 3 months of the year having been the trialling period), and the registrations required over the remaining period would be 1,500.

Tower cranes already operating on site and yet unregistered when the statutory register comes into force will need to be registered within 28 days of commencement. It is estimated that at the beginning of the statutory period, 1,000 tower cranes will already be in place, but we will assume 80% of those will have already been registered during the trialling period, leaving only 200 still to be registered. These will bring the number of registrations required in the last 9 months of the first year to 1,700. These registrations would result in a cost to businesses of £17,300 per annum (with the first year cost being £11,300), with a 10 year present value of £149,300.

In total, the cost of all registrations would be £17,300 per year, with a first year cost of £19,300 and a 10-year present value of £157,300.

Note that it has been suggested that participants could send HSE an attachment of the thorough examinations via e-mail (and if the name of the tower crane owner is not there, this piece of information as well) and HSE would be responsible for entering this information into the register. If this were to happen, the cost to industry would be negligible and the cost calculated above would be transferred to HSE, and would be larger, as the hourly salary of a Band 6 administrative worker in HSE is higher than that used for our calculations above.

Costs to HSE

There will be costs to HSE of implementing the tower crane register. This will include the staff costs of planning and researching the implementation, with associated administration costs, as well as the cost of setting up and hosting the register itself, which will be done through the Health and Safety Laboratory (HSL). In total, an initial estimate of the total cost of the register, including the trial period, is £150,000.

HSE will also host the register through HSL. This is likely to cost £4,000 per annum for maintenance, which has a 10 year present value of £34,400.

It has been suggested that industry be responsible for the maintenance of the register. If this were the case, the amounts above would fall to industry, rather than HSE.

There will be a cost to HSE of entering the paper registrations sent by post into the electronic register. We will assume all the registrations during the trial period will be done electronically, while 5% of the ones thereafter will be done by post (i.e. 160 a year, with the figure for the first year being 85). Assuming it will take a Band 6 administrative worker half an hour to enter the registration, using HSE salary data, this will result in a cost of £3,600 a year, with a first-year cost of £2,380 and a 10-year present value of £30,000.

There will also be communications costs to HSE for publicising the register. This is anticipated to cost £10,000 in the first year.

HSE will also incur familiarisation costs, training it's Field Operations Directorate staff. We will assume that half an hour per each of 600 members of staff will be required, and that the staff will be 130 inspectors, 20 managers and 50 administrative workers. Using HSE salary data, this results in a total cost of £7,800.

Total cost for HSE will thus be £174,000 for the first year, and £7,600 a year thereafter, with a 10-year present value of £232,300.

Total costs

OPTION 2	Costs to business		Costs to HSE	
	First year	10 year NPV	First year	10 year NPV
Familiarisation costs				
Trialling period	420	420	0	0
Statutory register	52,080	52,080	7,810	7,810
Total familiarisation	*52,500*	*52,500*	*7,810*	*7,810*
Registration costs				
Trialling period	7,980	7,980	0	0
Statutory register	11,305	149,316	2,376	30,018
Total registration	*19,285*	*157,296*	*2,376*	*30,018*
Register development and communication				
Cost of developing register	0	0	150,000	150,000
Communications	0	0	10,000	10,000
Cost of maintaining register	0	0	4,000	34,431
Cost of register	*0*	*0*	*164,000*	*194,431*
TOTAL	**71,785**	**209,796**	**174,186**	**232,259**

Option 3 - Register covering conventional tower cranes on all sites

Coverage

In this option, the register will still apply only to conventional tower cranes and will not extend to any non-conventional tower cranes or other equipment that also falls under the LOLER regulations. However, it will apply both to conventional tower cranes on construction sites and to those on non-construction sites, such as ports, bungee-jumping operations and steel stockholders.

It will be preceded by a trialling period that will cover only conventional tower cranes on construction sites. The costs associated with this trial period will be as calculated in Option 2.

Option 3 will cover all the registrations and dutyholders calculated in Option 2 (1,700 registrations in the first year, and 2,600 thereafter, and 3,750 dutyholders), but will also cover additional ones.

Estimating the number of additional registrations and dutyholders has not been an easy process. Consultation with HSE experts working with the sectors involved has yielded information that allows us to estimate that the number of tower cranes operating in these sectors is 5% of the number normally operating in construction sites (i.e. 65). These conventional tower cranes tend to be installed quasi-permanently on these sites. We will therefore estimate that each of these sites comprises one additional dutyholder, bringing the total number of dutyholders for this option to 3,815.

In terms of number of registrations per year, we will assume, as in option 2, that each tower crane will require 2 registrations a year. That results in 130 registrations being required every year, and 85 the first year (due to there being only 9 months of statutory register on the first year). We will also assume that there will be 65 tower cranes operating on non-construction

sites on commencement, and those will be registered on the first year as well, bringing the first-year number to 150.

In total, considering construction and non-construction sites, the registrations required during the statutory period would be 1,850 on the first year and 2,730 a year thereafter.

Costs to industry

FAMILIARISATION COSTS:

The costs for familiarisation during the trialling period are as calculated in Option 2: £420.

As in this option the requirements for the statutory period are different to those in the voluntary one, familiarisation will be required both for those dutyholders who were not participating in the voluntary register and for those who were.

The time required for dutyholders to familiarise themselves with all the requirements for the statutory register will be as before, 30 minutes of a manager's time. At an economic cost of £28 per hour and assuming 3,815 dutyholders and one manager per dutyholder engaging in the familiarisation process, this results in a one-off cost of £53,400.

In total, the one-off costs to business of familiarisation with the register are estimated to be £53,800.

COSTS OF REGISTERING A TOWER CRANE:

The costs to business of registering their tower crane during the trialling period will be as in Option 2: £8,000. So will the cost of registering tower cranes on construction sites in the statutory period: £11,300 in the first year and £17,300 per annum in subsequent years, with a 10-year present value of £149,300.

The cost of registering conventional tower cranes on non-construction sites (150 registrations on the first year and 130 a year thereafter) will be £865 a year, with a first-year cost of £1,000 and a 10-year present value of £8,300.

In total, the registration costs will be a cost of £18,200 per year, with a first-year cost of £20,300 and a 10-year present value of £165,600.

Costs to HSE

Costs to HSE will be as calculated in Option 2 in terms of development of the register, maintenance and familiarisation cost.

The costs of communication will be £5,000 higher, to account for the new sectors that would have to be reached.

Finally, the cost of entering paper registrations into the electronic register would be of £3,800 per year, with a first-year cost of £2,600 and a 10-year present value of £31,600.

Total costs

OPTION 3	Costs to business		Costs to HSE	
	First year	10 year NPV	First year	10 year NPV
Familiarisation costs				
Trialling period	420	420	0	0
Statutory register	53,410	53,410	7,810	7,810
Total familiarisation	*53,830*	*53,830*	*7,810*	*7,810*
Registration costs				
Trialling period	7,980	7,980	0	0
Statutory register	12,303	157,632	2,585	31,610
Total registration	*20,283*	*165,612*	*2,585*	*31,610*
Register development and communication				
Cost of developing register	0	0	150,000	150,000
Communications	0	0	15,000	15,000
Cost of maintaining register	0	0	4,000	34,431
Cost of register	*0*	*0*	*169,000*	*199,431*
TOTAL	**74,113**	**219,442**	**179,395**	**238,851**

Option 4 – Statutory register covering conventional and self-erecting tower cranes on construction sites

Coverage

In this option, the statutory register will apply both to conventional tower cranes, and to self-erecting tower cranes and also to mobile cranes with mounted tower rigs (hereafter referred to as a group as “non-conventional tower cranes”). It will apply only to equipment on construction sites.

It will be preceded by a trialling period that will cover only conventional tower cranes on construction sites. The costs associated with this trial period will be as calculated in Option 2.

Option 4 will cover all the registrations calculated in Option 2 (1,700 in the first year, and 2,600 thereafter) but will also cover additional ones. Every non-conventional tower crane on construction sites will have to be registered every time it is put into service. After the initial registration, subsequent notifications will be required if the next periodic thorough examination of the crane becomes due.

According to industry sources, there are several kinds of non-conventional cranes that would be included, each having distinctive patterns of use.

Among self-erectors, two broad categories can be distinguished:

- Towed tower cranes: There are approximately 500 to 600 of these and they behave much as conventional tower cranes, remaining on site for long periods. As with conventional tower cranes, we will thus estimate 2 registrations will be required per crane per year. As explained under Option 2, to reflect the effects of the recession, in our calculations we will assume there will be 500 in operation at any one time on the first year of the register, with the number climbing to 600 in the years after that. In total, 1,200 registrations will be required per annum for this category, with the first year figure being 1,000 for the whole year (750 in 9 months). We will assume there will be 500 cranes already in place at commencement, and these would have to be registered within 28 days, bringing the total number of registrations on the first year to 1,250.

- Lorry-mounted tower cranes: There are approximately 100 of these, and they are deployed 4 to 5 times per week. In our calculations, we will assume they will be deployed 4 times a week in the first year, and 5 in the years after that. Assuming 50 weeks a year and only 9 months in the

first year, this means that in total, 25,000 registrations will be required per annum for this category (15,000 in the first year).

There are also some 100 mobile cranes which can be fitted with a mounted tower rig, making them for our purposes, tower cranes. These are deployed twice a week, resulting in 10,000 registrations being required per annum. We will assume they will be deployed 1.5 times a week on the first year, and for only 9 months, giving us a figure of 5,625 registrations for that first year.

In total, the number of registrations that will be required for this option will be 23,575 in the first year, with 38,800 per year thereafter.

As in Option 2, we will assume that only a certain proportion of larger contractors use or are likely to use tower cranes, whether conventional or non-conventional. These will be the dutyholders for the new regulation, and we will assume they will be the same ones as identified in Option 2, numbering 3,750.

Estimating the number of dutyholders is complicated by the overlap in terms of some dutyholders using several types of the equipment covered. HSE experts have estimated that to the 3,750 dutyholders estimated for Option 2 should be added 15,000 new ones, giving us a total estimate of 18,750 dutyholders.

Costs to industry

FAMILIARISATION COSTS:

The costs for familiarisation during the trialling period are as calculated in Option 2: £420.

As in this option the requirements for the statutory period are different to those in the voluntary one, familiarisation will be required both for those dutyholders who were not participating in the voluntary register and for those who were.

The time required for dutyholders to familiarise themselves with all the requirements for the statutory register will be as before, 30 minutes of a manager's time. At an economic cost of £28 per hour and assuming 18,750 dutyholders and one manager per dutyholder engaging in the familiarisation process, this results in a one-off cost of £262,500.

In total, the one-off costs to business of familiarisation with the register are estimated to be £262,900.

COSTS OF REGISTERING A TOWER CRANE:

The costs to business of registering their tower crane during the trialling period will be as in Option 2: £8,000.

The cost of registering conventional and non-conventional tower cranes in construction sites (23,575 registrations the first year, with 38,800 per year thereafter) will be £258,000 a year, with a first-year cost of £157,000 and a 10-year present value of £2.3 million.

In total, the registration costs will be £164,800 for the first year, with a 10-year present value of £2.3 million.

Costs to HSE

Costs to HSE will be as calculated in Option 2 in terms of development of the register, maintenance, communications and familiarisation cost.

The cost of entering paper registrations into the electronic register would be of £54,200 per year, with a first-year cost of £32,900 and a 10-year present value of £460,000.

Total cost

OPTION 4	Costs to business		Costs to HSE	
	First year	10 year NPV	First year	10 year NPV
Familiarisation costs				
Trialling period	420	420	0	0
Statutory register	262,500	262,500	7,810	7,810
Total familiarisation	*262,920*	*262,920*	*7,810*	*7,810*
Registration costs				
Trialling period	7,980	7,980	0	0
Statutory register	156,774	2,264,543	32,946	458,452
Total registration	*164,754*	*2,272,523*	*32,946*	*458,452*
Register development and communication				
Cost of developing register	0	0	150,000	150,000
Communications	0	0	10,000	10,000
Cost of maintaining register	0	0	4,000	34,431
Cost of register	*0*	*0*	*164,000*	*194,431*
TOTAL	**427,674**	**2,535,443**	**204,756**	**660,692**

Option 5 – Register covering conventional and self-erecting tower cranes on all sites

In this option, the statutory register will apply both to conventional tower cranes, and to self-erecting tower cranes and also to mobile cranes with mounted tower rigs (hereafter referred to as a group as “non-conventional tower cranes”). It will apply to equipment on both construction and non-construction sites.

It will be preceded by a trialling period that will cover only conventional tower cranes on construction sites. The costs associated with this trial period will be as calculated in Option 2.

Option 5 will cover all the registrations and dutyholders calculated in Option 4 (23,575 registrations in the first year, and 38,800 a year thereafter, with a total of 18,750 dutyholders), the additional ones calculated for Option 3 (150 registrations in the first year and 130 a year thereafter, and 65 dutyholders) but will also cover additional ones.

As for Option 3, estimating the number of additional registrations and dutyholders has not been an easy process. Consultation with HSE experts working with the sectors involved has yielded information that allows us to estimate that the number of non-conventional tower cranes operating in these sectors is 5% of the number of towed tower cranes normally operating on construction sites (i.e. 30). According to our sources, lorry-mounted tower cranes and mobile tower cranes fitted with mounted tower rigs are not normally used on non-construction sites.

These conventional tower cranes tend to be installed quasi-permanently on these sites. We will therefore estimate that that each of these sites comprises one additional dutyholder, bringing the total number of dutyholders for this option to 18,845 .

Additionally, we will estimate, based on the above, that these tower cranes will be registered twice a year, as conventional tower cranes in construction sites (yielding 60 registrations a year and 45 the first year, given the 9 month-period in that year). We will also assume that there will be 60 such tower cranes operating on non-construction sites, on commencement, bringing the first-year figure to 105.

In total, considering construction and non-construction sites, the registrations required during the statutory period would be 28,830 on the first year and 38,990 a year thereafter.

Costs to industry

FAMILIARISATION COSTS:

The costs for familiarisation during the trialling period are as calculated in Option 2: £420.

As in this option the requirements for the statutory period are different to those in the voluntary one, familiarisation will be required both for those dutyholders who were not participating in the voluntary register and for those who were.

The time required for dutyholders to familiarise themselves with all the requirements for the statutory register will be as before, 30 minutes of a manager's time. At an economic cost of £28 per hour and assuming 18,845 dutyholders and one manager per dutyholder engaging in the familiarisation process, this results in a one-off cost of £263,800.

In total, the one-off costs to business of familiarisation with the register are estimated to be £264,200.

COSTS OF REGISTERING A TOWER CRANE:

The costs to business of registering their tower crane during the trialling period will be as in Option 2: £8,000.

The cost of registering conventional and non-conventional tower cranes on construction and non-construction sites (23,830 registrations the first year, with 38,990 per year thereafter) will be £259,300 a year, with a first-year cost of £158,500 and a 10-year present value of £2.3 million.

In total, the registration costs will be £166,500 the first year, with a 10-year present value of £2.3 million.

Costs to HSE

Costs to HSE will be as calculated in Option 2 in terms of development of the register, maintenance and familiarisation cost.

The costs of communication are estimated at £5,000 higher, to account for the new sectors that would have to be reached.

Finally, the cost of entering paper registrations into the electronic register would be of £54,500 per year, with a first-year cost of £33,300 and a 10-year present value of £461,000.

Total costs

OPTION 5	**Costs to business**		**Costs to HSE**	
	First year	**10 year NPV**	**First year**	**10 year NPV**
Familiarisation costs				
Trialling period	420	420	0	0
Statutory register	263,830	263,830	7,810	7,810
Total familiarisation	*264,250*	*264,250*	*7,810*	*7,810*
Registration costs				
Trialling period	7,980	7,980	0	0
Statutory register	158,470	2,277,165	33,302	460,828
Total registration	*166,450*	*2,285,145*	*33,302*	*460,828*
Register development and communication				
Cost of developing register	0	0	150,000	150,000
Communications	0	0	15,000	15,000
Cost of maintaining register	0	0	4,000	34,431
Cost of register	*0*	*0*	*169,000*	*199,431*
TOTAL	**430,700**	**2,549,395**	**210,112**	**668,069**

Effects on the Administrative burden

Option	Net effect on administrative burden (10 yr period) £	Equivalent annual net effect on administrative burden £
Option 1	Nil	Nil
Option 2	130,000	15,000
Option 3	140,000	16,000
Option 4	2,000,000	230,000
Option 5	2,000,000	230,000

Effects on small firms

It is not expected that the proportionality of the impact will be affected by the size of the company as, besides familiarisation costs, other costs will depend directly on the number of tower cranes operated.

Competition Assessment

The proposed options are not expected to have any adverse effects on competition.

Enforcement Sanction and Monitoring

HSE and local authority inspectors would be responsible for enforcing the regulations for all the options.

Implementation and Delivery Plan

For transparency, the chosen option should be communicated to affected stakeholders in advance of implementation.

Other specific impact tests

There are no other expected impacts on specific groups or the environment.

Specific Impact Tests: Checklist

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	***Results in Evidence Base?***	***Results annexed?***
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	Yes	No
Sustainable Development	Yes	No
Carbon Assessment	Yes	No
Other Environment	Yes	No
Health Impact Assessment	Yes	No
Race Equality	Yes	No
Disability Equality	Yes	No
Gender Equality	Yes	No
Human Rights	Yes	No
Rural Proofing	Yes	No

Annex 3

List of Organisations to which this Consultative Document has been sent

Employer Organisations

- Confederation of British Industry
- Construction Plant Hire Association
- UK Contractors Group
- Strategic Forum for Construction
- Construction Confederation
- Hire Association Europe
- Crane Interest Group
- Construction Industry Trade Alliance
- Federation of Master Builders
- National Access and Scaffolding Confederation
- United Crane Operators Association
- The Lifting Equipment Engineers Association
- Society of Operations Engineers
- Construction Industry Council
- Engineering Construction Industry Association
- Construction Clients Group
- CITB-Construction Skills
- Home Builders Federation
- National House-Building Council
- Guild of Builders and Contractors
- National Federation of Builders
- National Federation of Demolition
- Chartered Institute of Building Services Engineers
- Civil Engineering Contractors Association
- Construction Equipment Association
- National Specialist Contractors Group
- Specialist Engineering Contractors Group
- Site Safe Scotland
- Scottish Centre for Construction Excellence
- Scottish Construction Forum
- Scottish Homebuilders Forum
- Scottish Building Federation
- Homes for Scotland
- Rail Industry Contractors Association Limited
- Network Rail
- EEF

Employee Organisations

- Trades Union Congress
- UCATT
- UNISON

- UNITE
- GMB

Tower Crane Manufacturers/Suppliers/Distributors

- Manitowoc Crane Group
- Liebherr Great Britain Ltd
- Jaso Equipos de Obras S.A. (Spain)
- Terex Corporation
- Falcon Crane Hire Ltd
- Raimondi Cranes S.P.A (Italy)
- London Tower Crane Hire and Sales Ltd
- Jost Cranes (Germany)
- Select Plant Hire
- Ainscough Crane Hire Ltd
- Arcomet
- HTC Plant Ltd
- City Lifting
- Premier Crane Hire and Contract Lifting
- Construction Services Tower Crane Hire
- Eastern Structures
- Sparrow Mini Tower Cranes Ltd
- Ladybird Crane Hire
- Vanson Cranes Ltd
- The Crane Company
- Dowse Crane Hire Ltd
- NZ Crane Group

Governmental bodies

- Department for Work and Pensions
- Department for Business, Innovation and Skills
- Department for Communities and Local Government
- Department for Children, Schools and Families
- Department of Health
- Home Office
- Office for Government Commerce
- HM Prison Service
- Office of Rail Regulation
- Better Regulation Executive
- The Scottish Government
- Welsh Assembly Government
- HSE Northern Ireland
- Local Authorities Co-ordinators of Regulatory Services
- Local Government Association
- Welsh Local Government Association
- Convention of Scottish Local Authorities
- Highways Agency

- Transport for London
- Transport Scotland
- Olympic Delivery Authority

Safety Organisations

- Members of the Construction Industry Advisory Committee
- Association for Project Safety
- Safety Assessment Federation
- Active Safety Associates
- The British Safety Industry Federation
- British Safety Council
- British Safety Industry Federation
- International Institute of Risk and Safety Management
- Institution of Occupational Safety and Health
- Royal Society for the Prevention of Accidents
- Independent National Inspecting and Testing Association
- Institution of Civil Engineers
- Institution of Structural Engineers

Pressure Groups

- Battersea Crane Disaster Action Group
- Construction Safety Campaign
- London Hazards Centre
- Hazards Campaign
- Families Against Corporate Killers
- Centre for Corporate Accountability

Others

- Royal Institute of British Architects
- Royal Incorporation of Architects in Scotland
- Constructing Better Health
- Constructing Excellence
- Association of British Insurers
- Allianz Engineering
- Mitsui Insurance
- HSB Engineering Insurance
- Aon Construction Insurance
- BJP Insurance Brokers
- British Insurance Brokers Association
- Royal Institute of Chartered Surveyors
- Design Business Association
- The Design Council
- The Institution of Engineering Designers Ltd
- National Association of Steel Stockholders
- Shipbuilders and Ship-repairers Association

- Marine Health and Safety Group
- National Construction College
- Biglift
- Vertical Transportation
- HTF Transport
- Port Skills and Safety Ltd
- UK Major Ports Group
- British Ports Association
- UK Steel Enterprise Ltd
- Oil and Gas UK
- Sparrows Offshore Services Ltd
- Enermech Ltd
- British Elastic Rope Sports Association

Annex 4

Health and Safety Executive

Proposals for the Notification of Conventional Tower Cranes Regulations 20--

Questionnaire

Confidentiality:

Please indicate below if you do not wish details of your response to be available to the public. (NB If you do not put a cross in the box your comments will be made available to the public. This takes precedence over any automatic notes on e-mails that indicate the contents are confidential)
I do not wish my comments to be made available to the public ☐

Respondent's details:

Name:	
Job Title:	
Organisation:	
Street address:	
Town/City:	
Postcode:	
Telephone:	
Fax:	
Email:	

Size of organisation:

Choose one option:

Not applicable	☐	1 to 9 employees	☐
10 to 49 employees	☐	50 to 249 employees	☐
250 to 1000 employees	☐	1000 + employees	☐
Self-employed	☐		

Type of organisation:

Please indicate the type of organisation you work for:

Trade Association	☐	Construction Client	☐
Construction Contractor	☐	Construction Designer	☐
Tower Crane Owner/Hirer	☐	Consultancy	☐
Tower Crane Manufacturer	☐	Central Government	☐
Industry (Non-construction)	☐	Local Authority	☐
Non-governmental organisation	☐	Non-departmental Public Body	☐
Trade Union	☐	Member of the Public	☐
Other - please specify:	☐	Pressure Group	☐

Proposals for Notification of Conventional Tower Cranes Regulations 20--

Question 1: Do you agree that the aims and criteria set out in paragraphs 23-24 of the CD are appropriate and provide a sensible basis for considering how the Tower Cranes Register should be set up?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 2: Do you agree that the scope of the requirement to notify details about tower cranes should be limited to conventional tower cranes and not extended to self-erecting tower cranes (see paragraphs 25-26 of the CD)?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 3: Do you agree that the scope of the requirement to notify details about tower cranes should be limited to cranes used on construction sites (see paragraph 27 of the CD)?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 4: Do you agree that the use of stand-alone Regulations provides the clearest and most practical vehicle for presenting the new duty and fitting it to existing legal requirements (see paragraphs 28-30 of the CD)?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 5: Do you agree with where the proposed Regulations place the duty to provide information about tower cranes (see paragraphs 31-33 of the CD)?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 6: Do you agree that notification of the relevant information within 14 days of the thorough examination (see paragraph 34-35 of the CD) is reasonable?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 7: Do you agree that information about tower cranes erected and in use at the time the Regulations come into force should be notified within 28 days (see paragraph 36 of the CD?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 8: Do you think that the Regulations should provide for notification of a tower crane if it is erected but not thoroughly examined for a significant period (see paragraph 37 of the CD)?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 9: Do you agree that the approach set out in paragraphs 38-40 of the CD strikes the right balance between providing sufficient information about the safety of a particular crane and keeping the Register simple? If not, what information do you believe should be included or omitted from either the proposed Regulations or guidance?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 10: Do you agree with the proposed arrangement for notifying HSE set out in paragraph 41?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 11: Do you agree that the approach to administering access to information on the Register set out in paragraph 42-44 strikes the right balance between making as much information as possible readily accessible while restricting any information that may be commercially confidential or out-of-date?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 12: Do you agree with the Impact Assessment's cost benefit assessment of the main policy options for a tower crane register (see paragraphs 45-47 of the CD)?

Choose one option:

Agree	☐	Partly Agree	☐
Don't Agree	☐	Don't know	☐

Please provide any further comments you wish:

Question 13: Do you have any comments on the proposals for charging for registration set out in paragraphs 48-49 of the CD?

Please provide any comments you wish:

HSE

Health and Safety Executive

Proposals for new regulations requiring the notification of tower cranes operating on construction sites

The full text of this and other Consultative Documents can be viewed and downloaded from the Health and Safety Executive web site on the internet: **www.hse.gov.uk/consult/index.htm**

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