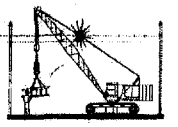
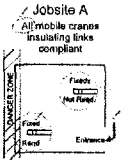
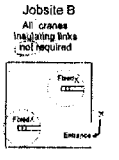
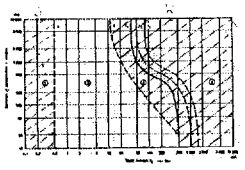
To answer some key questions:

Docket S030
Ex. 14-1-5-2

Question	Answer
1. What is a 'Danger Zone'?	A danger zone is an area near a power line where a crane can come dangerously close, as defined in section 5-3.4.5 of the 1994 ASME B30.5 standard.
2. What is a 'Job Site'?	A job site is the area under the authority of the site manager who has bought or rented the crane.
3. How are Insulating Links fitted?	The Insulating Link is attached to the hook of the crane.  **See FAQ/powerpole crane link**
4. Could the Insulating Link be fitted above the hook?	 Yes - **see FAQ/futuredesign1**
5. Could an Insulated Link replace the 'head ache' ball?	Yes
6. Do you have to use a 100t Insulating Link on a 100t crane?	Yes if it is fitted above the hook. No if you are only lifting 5 tons – then it would be appropriate to use an Insulating Link with a capacity greater than or equal to 5 tons.
7. When are Insulating Links fitted?	They are permanently fitted whilst in a 'Job Site' with a 'Danger Zone'.  **See FAQ/ Jobsite A**
8. Do all cranes on a job site with a 'Danger Zone' require an Insulating Link?	No. A fixed crane in a 'job site' with a 'Danger Zone', but where the site management determine that no part of the crane is able to reach that 'Danger' Zone, does not require the fitting of an Insulating Link.  **See FAQ/ Jobsite B**
9. If an Insulated Link is not already fitted above the hook is it cost effective to select whether or not to fit a crane with an Insulating	It is a moot point whether it is cost effective to have a 'manager' make a risk assessment prior to dispatching a crane to site. This does not allow for a crane to be diverted to a jobsite with a danger zone after leaving the depot

Link prior to dispatch from the yard?	without an Insulating Link.
10. What is a 'fail-safe warning device'?	A 'fail-safe warning device' alerts the operator via an audible alarm that the Insulating Link will permit a dangerously high current to pass. This may be due to internal resistance breakdown or to surface contamination.
11. What do Insulating Links cost?	Less than 3% of the cost of a new crane – a similar ratio to fitting an 'air bag' to a new truck. **See FAQ/Ratiocost**
12. Will crane operators' insurance rates be impacted by the use of Insulating Links?	Yes, probably. Current insurance premiums incorporate the risks and losses associated with the high accident rate. Those operators using the Insulating Link can expect to benefit from reduced premiums due to the lower risk level whereas other operators not taking appropriate precautions may be unable to obtain insurance cover.
13. How will this affect the profitability of the crane?	It is possible that the insurance savings can offset the entire cost of the Insulating Links within its warranty period.
14. How does electricity kill?	Power flows through the body usually from the hand to the foot and stops breathing or heart beat.  **see FAQ/mandiag2**
15. How much current is required to cause death?	Different currents cause different problems. 10 ma will stop you from 'letting go', 40 ma may stop your heart.  **See FAQ/killcurrent**
16. Are these figures the same for women?	No – values should be halved.
17. What about protection from wearing shoes?	The data assumes no gloves or shoes. On a construction site wet shoes and gloves offer no increased protection.
18. What then is a safe current to allow in determining a standard for Insulating Links?	The electrical safety specification is given in International Standards for footwear and flooring to provide protection from exposure to electrical shock hazards from mains. The Standards allows a leakage current of up to 5 mA. This would be a reasonable value. **See Expert Opinion/ Woolfston ref1b, ref2,Aplin-shock**
19. Is the voltage important or just the current?	It is the current that causes the problem -- voltage only controls what you look like afterwards. Once the skin of the victim is punctured and the electricity can flow through the

	blood the body burns from inside to out. There are four degrees of burn. Most victims suffer removal of limb as power exits the body to ground. **See Accident data/injuries/foot1L or hand.** (Note not for squeamish)
20. How many crane operatives die each year?	About 20 are reported. **See Accident data/electroprof, craneprof, fatalities involving cranes....**
21. Is this number changing?	No.
22. Does it include all fatalities?	No. Although it is mandatory to report all fatalities and if 3 or more are hospitalised. **See Accident data/accidents 98 ,accident loc.**
23. How many are injured per year– but live?	About 20. There are no figures reported it is reasonable to consider 1998 as typical. **See Accident data/accidents 98**
24. Is it a function of age /color / /experience?	No. **See Accident data/electroprof, craneprof**
25. What percentage of fatalities are riggers rather than oilers/ drivers?	85%. **See Accident data/accidents 98**
26. Why are drivers usually OK?	They are in a metal box , Faraday cage, and safe so long as they stay on the crane. If exiting they must jump clear and hop/shuffle to avoid a dangerous power gradient in the ground.
27. Should the law only provide a solution which saves the oilers as well?	No- Some times oilers are safe if the powerline contact is below the Insulating Link or contact with the object lifted. Insulating Links guarantee to save 85% of the personal. Similarly air bags and seat belts are not 100%.
28. What are proximity alarms?	They detect the radio noise from powerlines. The principal is that noise increases the closer to the powerline you get. They could be used for an operational aid but cannot stop an incident.
29. Has training programs reduced this number?	No.
30. Does B30 10 ft rule reduce this number?	No.
31. How far can 25 kV jump?	About 1" in dry air.
32. What should happen if the B30 rule is not obeyed by good people trying to work correctly?	Change the rules so they can always obey.
33. What voltages are roadside powerlines?	99.9% are below 39kV phase to phase. **See FAQ/powerline survey.**
34. At 39kV what voltage does the crane or rigger experience?	About 20 kV phase to ground.

	 **See FAQ/powerpole volts.**
35. Are these contacts 'accidents'?	No longer called accidents as there is a solution and the problem is known and constant. The correct term for a powerline contact is a 'reasonably foreseeable event'.
36. If a crane manufacturer fits an Insulating Link as standard will he not be liable to have to retrofit all existing cranes and admit fault?	No - the addition of safety devices does not expose you to litigation or mandatory retrofitting under the "subsequent remedial measures". In fact good practice can be a profitable **See Legal Opinion/Pittman**
37. Who is responsible?	The Law as perceived by lawyers. **See Legal Opinion /zeigliab, zeigtort, John Redeker, Damelio 1 to 3**
38. There is a hypothesis that an Insulating Link might be thought to encourage a crane operator to drive closer to a powerline.	This is false. This hypothesis has been coupled with a myth that seat belts result in increased driving speeds resulting in more accidents. An analysis by independent experts contradicts this assumption. **See Expert Opinion/Air bag myth exposed.**
39. How many cranes are there in the USA?	Industry watchers suggest current new production runs at 2,000 per year with 34,000 in active use. **See FAQ/Crane population**
40. How much did an electrocution cost prior to availability of effective Insulating Links?	Medical/Compensation costs ran at about $25m if he survived and $2m if he did not.
41. Were these the sole costs?	No – Financial costs must be added for down time, OSHA fines /examination, management distraction and legal fees. Personal loss cannot be valued.
42. Have the costs changed?	Yes – recent settlements are judged to be $10m for survivors. It should be noted that $114m was awarded recently. **See FAQ/$114m verdict**
43. What could be the cost to the industry at the current death rate?	Simple arithmetic suggests $200m per year in Medical/Compensation. $100m per year in other costs. Punitive verdicts excluded.
44. If a company owns 50 cranes how much could it cost to invest in safe practice by fitting all cranes with Insulating Links?	About $500,000 or $9,000 per week to hire.
45. How big is a typical deductible on crane insurance?	Typical deductibles run from $500,000 to $2m

46. How many accidents must occur to show profit from this investment?	One.
47. Where is there information on an Insulating Link	**See Load Insulator and sub folders**
48. Who is Hugh Pratt?	**See FAQ/Hugh Pratt CV**