



Michael Harrison Jr. operates Harrison Crane Service, Miami, Fla., along with his dad, Mike Sr., and brothers, Paul and David. Established in 1947, the company is a mid-sized taxi-crane provider. He can be reached at michael@harrisoncrane.com.

By Michael Harrison Jr.

A Review of Lift Planning Software

Options available in complex and simple packages

It wasn't that long ago that computerized lift planning software (CLPS) was reserved for massive, critical lifts at petrochemical facilities and similar environ-

ments. Today, CLPS is far more prevalent and commonly used by average-sized crane rental companies for everyday jobs.

In the United States, the advent of one CLPS package in particular set the bar for future product development and contributed to lift planning software becoming a more universal tool in our industry. This software was Compu-Crane, a simple and inexpensive PC-based software that required no knowledge of computer-aided design (CAD) programs.

Compu-Crane's success may have also been its undoing. Being the market leader drew large suitors for ownership of the software, which was purchased from its developers by PAT America in 2001 and then in 2005 by Manitowoc, which currently owns the software. While Compu-Crane was being bounced around between new parent companies, the software itself seemed to languish. Ongoing development and support of the product no longer seemed to be a priority.

My calls to Compu-Crane for comment in this article went unanswered, but Doyle Bryant, director of product marketing and new product development for Manitowoc, Manitowoc, Wis., recently told *Crane Hot Line*: "We designed, continue to update, and provide Compu-Crane software free of charge exclusively for current Manitowoc products. There are no plans to integrate non-Manitowoc products into the software program because the need for exact machine dimensions, machine geometry data, and other engineering data required for the non-Manitowoc product would likely not be available directly from other manufacturers."

Similarly, Liebherr has long had its own brand-specific software. While neither of these packages are that complex, it makes little sense for a crane owner to have to master different packages for different cranes. Instead, an open platform that would work with all cranes in a fleet is preferred by many estimators, such as myself.

When I began researching what's available, I was surprised to learn how few CLPS solutions are available today. What solutions are available can be divided into two categories—complex and expensive CAD-based solutions, and simpler to use, affordable solutions that do not piggyback onto CAD. My opinion of the overall pros and cons of these products follows.

CAD-based systems

The two main CAD-based CLPS solutions are LiftPlanner, developed by Jim Meehan, and Cranimation produced by craniMAX, based in Germany. Both are incredibly robust packages but have a high barrier to entry in terms of cost.

Michael Koelsch, CEO of craniMAX, recently gave me a demonstration of his product. I call the package Cranimation, but Cranimation is just one part of the package, which also includes Crane Manager and the CAD program itself. The whole package runs about \$4,000 and the license for Autocad is about the same.

The adage that you get what you pay for is true to a degree with both LiftPlanner and Cranimation, although they both require knowledge of the underlying CAD program to fully utilize their features. The 3-D CAD environment provides a level of detail and sophistication that cannot be matched by the non-CAD-based offerings. If you have the time and inclination to learn CAD, plus a big budget, these products will provide the most realistic simulation of your real-world lifting environment.

One important point to note about the CAD-based offerings is that both are focused on the lift plan itself and basically leave it up to the user to determine the crane and configuration. In this sense they are straight CLPS solutions, whereas the non-CAD-based offerings are actually Crane Lift Planning and Selection Software (CLPSS) and offer the user more guidance in determining crane selection.

I think LiftPlanner and Cranimation are pretty comparable. LiftPlanner has an edge in creating lift movies that simulate the entire lifting process from start to finish, but Cranimation has a larger database of available cranes. Cranimation has made strides with Crane Manager to automate some of the CAD inputs by creating relatively simple-to-use interfaces that allow use of Crane Manager to export directly into CAD. Both have extensive rigging libraries.

While I don't think you could go wrong with either product, if I had the budget for it, I would select Cranimation because the company has a larger development team and seems to have closer ties to the manufacturers. (Cranimation was originally a Demag product and was spun off by Terex-Demag, but they still have a close working relationship.) In fairness, I recently saw a demonstration of the Cranimation product, which may influence my choice.

Non-CAD based systems

Three options are available if you don't have deep pockets or don't want to learn CAD—Compu-Crane; 3-D Lift Plan, designed

by A1A Software, Fernandina Beach, Fla.; and KranXpert, based in Germany.

If you are one of the many Compu-Crane users out there, you will probably agree that the program has only received modest tweaks over the years without anything substantial being added to the feature set. So what does Compu-Crane do well and where does it falter? It's easy to use and easy to learn, and it allows for a simple lift plan to be completed in short order. The primary negative is that it may be a moribund product and will solely support Manitowoc brands. In addition, the software has some maddening idiosyncrasies and is also fairly simplistic graphically, offering only 2-D views from either the side of the crane or straight down on the crane.

Tawnia Weiss, president of A1A Software, cut her teeth in the CLPS world while working for Compu-Crane. Her 3-D Lift Plan succeeds in retaining some of the familiar and simple-to-use form-based planning and input fields that will be familiar to Compu-Crane users, while radically improving the output generated from them.

Weiss gave me a demonstration of the product, and the thing that struck me most was the true three-dimensional environment in which plans can be rendered. It is to Compu-Crane what Playstation is to an old Atari. Although not quite there yet, the graphical results are getting close to what can be achieved in CAD-based systems.

It is the only solution I reviewed that resides on the internet, eliminating the need to download software updates or back up

critical data. It's also easily accessible—available from any computer connected to the internet. However, being a web-based platform, the software does not afford some of the benefits of running locally on an operating system. For instance, to move a crane you have to rely on entering movement in a form, as opposed to the familiar action of dragging and dropping the file on your computer. Inputs on the form have to be refreshed every time you change it, so the dynamic movement you might see in a locally run application is not there. Furthermore, if you have a slow internet connection, some of the operations within 3-D Lift Plan take some time to refresh.

But, 3-D Lift Plan has a massive database of cranes. When I met with Weiss, the number was approaching 1,000 models, and A1A is constantly updating it. Use of the software is essentially free but fees are paid for subscriptions for each crane model you need. An agreement with Link-Belt permits Link-Belt crane owners free access to data on its models in the system. Different subscription periods range from one week to one year. The benefit is no upfront cost, while the downside is you will have to pay for continued access to each crane. The average Tier 5 crane on the site is about \$225 for an annual subscription.

Finally, there is KranXpert, which I found to be the easiest and most intuitive of all the CLPSS solutions. The power of KranXpert is its simplicity. If you have ever used Paintbrush you can quickly master KranXpert. The drawing tools are easy to use, and everything is controlled from the main screen. One screen

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Readers Share Their Opinions of Lift Planning Software

This review of several CAD-based and stand-alone products stems from Harrison Crane Service's needs as a taxi-crane company. To provide a broader perspective, *Crane Hot Line* surveyed readers for additional input on the subject. Like Harrison Crane Service, approximately 40% of those responding identified themselves as taxi crane services. Those in the "other" category, representing nearly 30%, said they work for general contractors, crane dealers, or in

specific industries, such as petrochemical or steel. Another 15.7% are steel erectors or other specialty contractors, and 12.2% are heavy-lift and rigging services. A summary of their responses follows.

Michael Harrison describes his company as progressive on technology, yet admits that he tends to be old-school when it comes to job planning. "I find that for most jobs it is far faster to simply pull out the load charts and range diagrams to figure a

job than to fire up a CLPS package. When we do use the software, it is to verify what we have already figured or to accommodate a customer who has asked for a lift plan," he says.

The anecdotal evidence from this small sample survey indicates that many crane owners feel the same way as Harrison about lift planning and using software.

Editor's note: Accounting for non-responses to individual questions, totals may not add up to 100 percent.

1. What best describes your opinion of lift planning software?

- 43.8% - It's useful and my company uses it regularly
- 24.5% - It's somewhat useful, but my company rarely uses it
- 15.7% - It is an indispensable tool
- 14.0% - My company has little or no need for it
- 1.7% - No response

2. I view lift planning software as a way to appease the few customers that ask for it rather than as a tool to be used to evaluate the bulk of our jobs.

- 63.1% - False
- 33.3% - True

3. What percentage of jobs is it used for analyzing and pre-planning the lift?

- 70.0% - Less than half the time
- 22.7% - More than half the time

4. It is quicker and more efficient to look at load charts and range diagrams to figure jobs than to use lift planning software.

- 59.6% - True
- 36.8% - False

5. What's your biggest criticism of lift planning software tools?

- 50.8% - Too costly
- 17.5% - Too difficult to learn
- 15.7% - Too limited and not accurate enough
- 10.5% - Just don't think it's useful

6. If you use lift planning software, rate your level of satisfaction with your current product.

- 35.0% - Happy, but would like improvements made to software
- 17.5% - Very happy, does everything we need it to
- 15.7% - Somewhat disappointed
- 3.5% - Completely dissatisfied

allows you to change dimensions by dragging and dropping in all three dimensions (x,y,z) simultaneously with no need to enter data in forms. Moving the crane or any objects in the plan can be achieved with just a few mouse clicks. After playing with KranXpert for a short amount of time, I could do a basic lift plan in a minute or two. I found the demonstration by Markus Scholl, CEO, to be extremely helpful.

KranXpert is a 2.5-D program, which means that it is not a true 3-D environment like CAD or 3-D Lift Plan, but it uses some tricks to make a 2-D image appear three-dimensional. While this does not come close to realistic 3-D viewing, it does allow the user to get a feel for where objects on the plan are in relation to one another and is a vast improvement on straight 2-D imagery. The 2-D (plan/elevation) views should also look very familiar to foremen who are used to looking at primarily 2-D plans.

One of the neatest features of KranXpert is its ability to import a ground plan or a Google Earth image. Google Earth images can also be imported into 3-D Lift Plan and Cramination,

but the functionality is much better in KranXpert. Using its ImageXdistance software, you can enter one known distance and add scale to the entire drawing. By overlaying objects, you get the sense of a 3-D representation.

KranXpert's crane library currently consists of 440 machines listed in metric units, but only about 65 models are available with imperial specifications. However, the company offers free downloads of Crane Editor to allow users to input their own crane data.

All in all, what you give up in realism with the 2-D imagery and available imperial crane specifications is made up in ease-of-use and price. At under \$2,000, I think it is a very good value.

While there are not a lot of choices, many of these products offer good solutions. The landscape of computer lift planning software has changed dramatically since the 1990s and will continue to evolve. All of the parties I spoke with are actively developing their software and adding features almost daily. It will be interesting to see what is available in the next few years. ■