KnowledgeXpert

The expert still forms the opinion

How a forensic engineer uses AI on a live case file without handing it the analysis, and the five rules he works by.

With Raymond Thompson, PhD, PE

Raymond Thompson has worked as a forensic engineer and expert witness for about three decades, mostly on product liability with some insurance work. He has run his cases through KnowledgeXpert® for three years, since it was a chat program. These notes set out how he works, in his words wherever we could keep them.

WHY THIS MATTERS NOW

Bigger files, closer scrutiny

- Case files keep getting bigger. Everything gets handed to the expert, and Raymond loads all of it into one case knowledge base, “whether it’s 2 terabytes of whatever.”
- Courts are watching how experts use AI. In his words, recent cases say, “the court’s going to be very severe on you if you’re using AI to do your expert analysis and expert opinion.”
- What you type can be produced. “When your case file gets subpoenaed, they’re also going to be able to subpoena your chat discussions.”

His answer is not to avoid AI. It is to decide, case by case, how to use AI most effectively, both in the apps available to him and in case related AI chats.

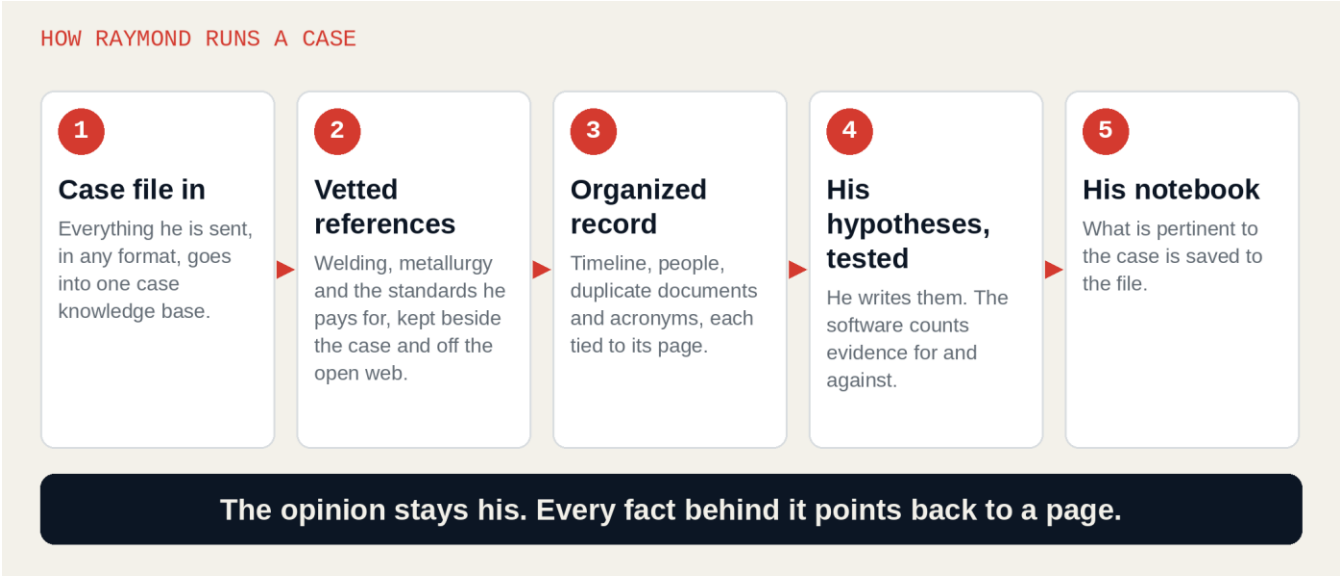


Figure 1. The five steps Raymond follows on every matter.

KnowledgeXpert® is a registered trademark of Bear Creek AI, Inc.

FIELD NOTES

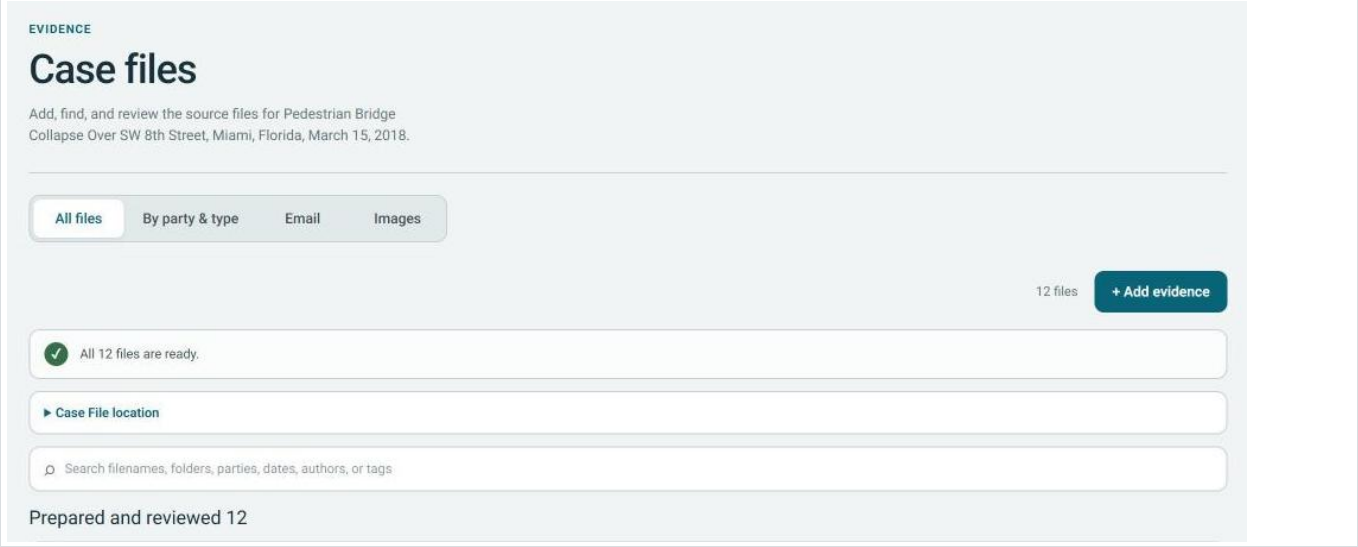
Five rules he works by

Raymond works in KnowledgeXpert's forensic workbench. Each rule below shows the screen he uses for it. The screens come from a demo case built on the public NTSB record of the 2018 pedestrian bridge collapse in Miami, so nothing from his own cases appears.

1. One case, one knowledge base

Everything he receives on a matter goes into a single case knowledge base. Reference material he trusts sits in separate knowledge bases that he brings in only at the analysis stage. Nothing comes from the open web unless he turns it on.

> "I have one knowledge base for that case, and everything on that case goes in that knowledge base. Because I know it's a welding failure and there's metallurgy involved, I've got two other knowledge bases, one on welding and one on metallurgy. It doesn't go out and find any noise or cross talk between different cases."
>
> Raymond Thompson



WHAT HE SEES Every document in the matter goes into one case record, tagged with its parties, dates and source. Reference knowledge bases stay separate until the analysis stage.

2. Every fact points back to its page

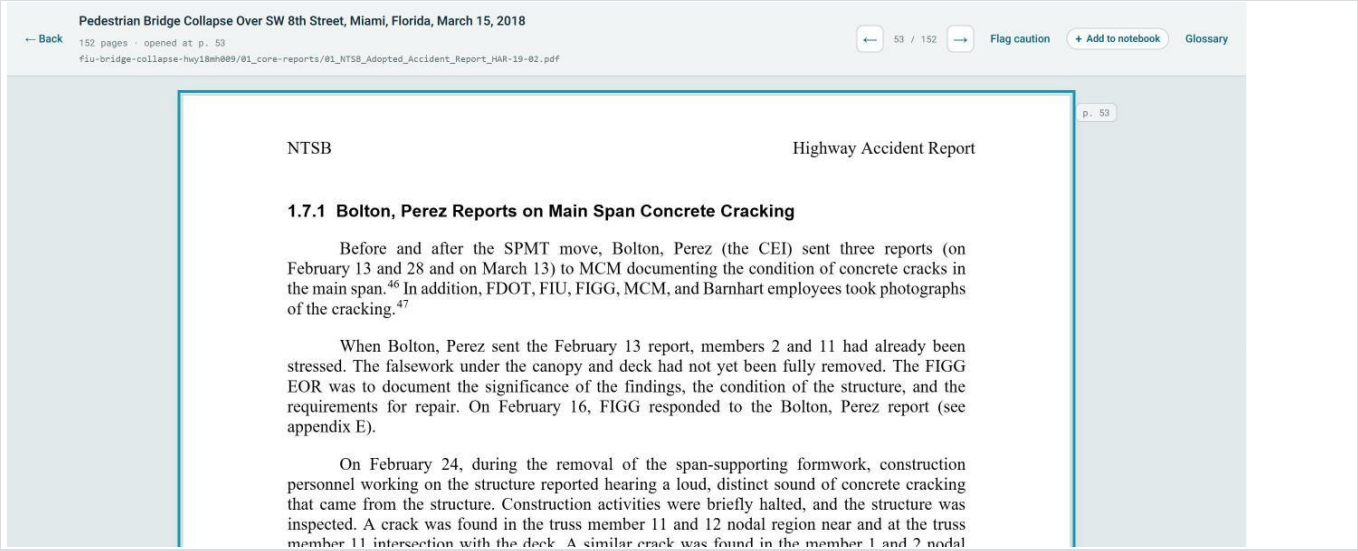
Each answer carries a citation that opens the source document at the page it came from. When the record does not hold the answer, the system tells him. It does not invent one.

> "That saves just hours a day, being able to ask a question, then find that document in your ton of documents and have it bring up the page and highlight the text. Then you can either agree with it or disagree with it and move on, or go deeper."
>
> Raymond Thompson

> "The legal challenges to experts' use of AI that have drawn a lot of attention are things experts have put into testimony, and then it's been found out that it's been hallucinated. A

KnowledgeXpert® is a registered trademark of Bear Creek AI, Inc.

> hallucinated fact or a hallucinated reference.”
>
> Raymond Thompson

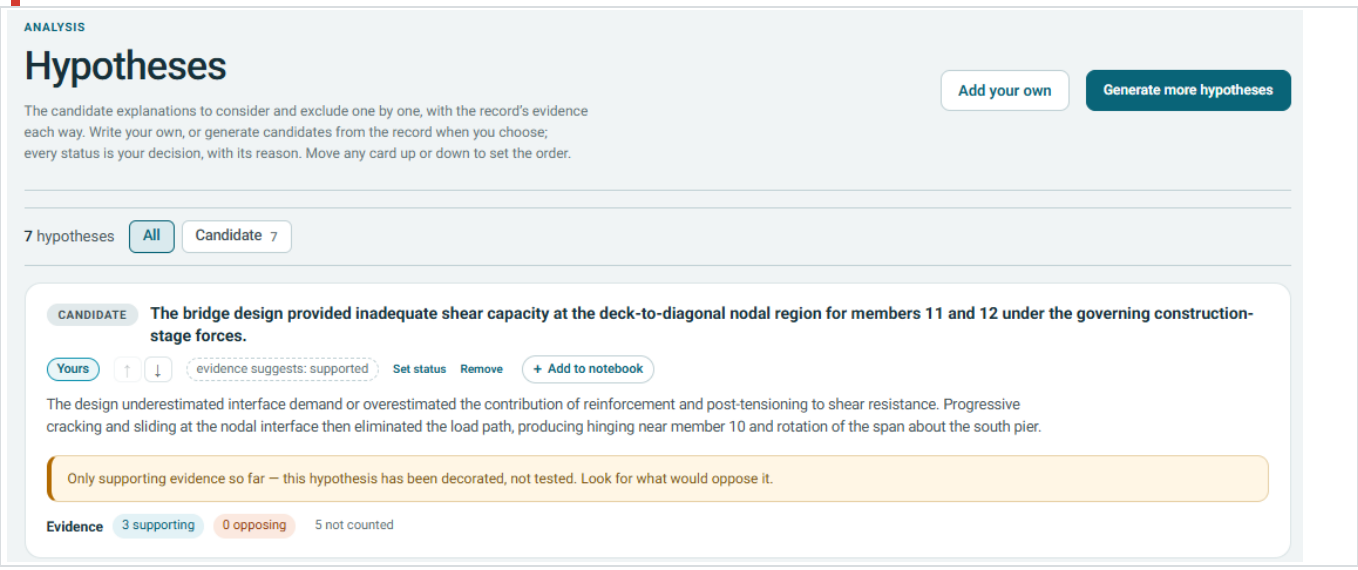


WHAT HE SEES A citation opens the source document at the cited page, here page 53 of the NTSB accident report, ready to check or add to his notebook.

3. You write the hypothesis. The software tests it.

The hypothesis list starts empty. He writes his own, and the software sorts the record into evidence that supports, opposes or is neutral to each one. Support with nothing tested against it is called out as decorated, not tested.

> “Daubert and Frye want you to use the scientific method: a hypothesis, testing the hypothesis, then conclusions or opinions. We don’t ask AI to create the hypothesis, which would be similar to creating an opinion. But AI can do a great job analyzing your hypothesis and telling you if it sucks or not.”
>
> Raymond Thompson



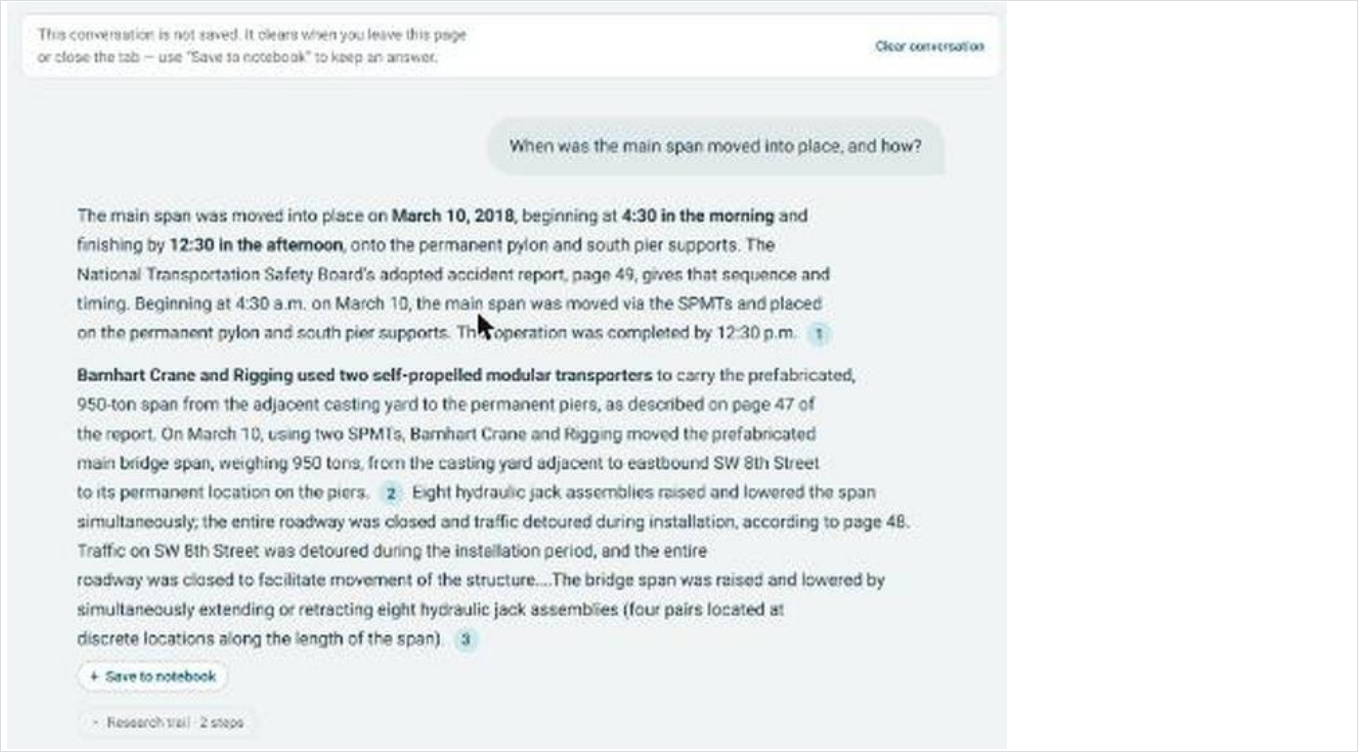
WHAT HE SEES Each hypothesis with the evidence counted for and against it. Support with nothing tested against it is flagged as decorated, not tested.

KnowledgeXpert® is a registered trademark of Bear Creek AI, Inc.

4. Keep what is pertinent, whether or not it supports you

Case chat reads only the case files, and it does not persist by default. If he wants to keep a chat discussion or answer, he saves it to a case notebook. Everything saved still points to its source. The test for what to keep is the one that applies to any case file: whatever is pertinent stays, including findings that do not support his opinion. What to keep is the expert's ethical call, not the software's, much like a discussion with a colleague about a case.

> "For the last three years I've been checking ChatGPT against our knowledge base answers, and it's always throwing in unsolicited comments and opinions, no matter how much you try to tell it not to. When my chat chain gets subpoenaed, what's going to be in it are the things pertinent to my analysis and opinions, and not things that are not pertinent."
>
> Raymond Thompson



WHAT HE SEES Case chat answers only from the case files, with numbered citations. Nothing is kept by default; what is pertinent to the case goes to his notebook.

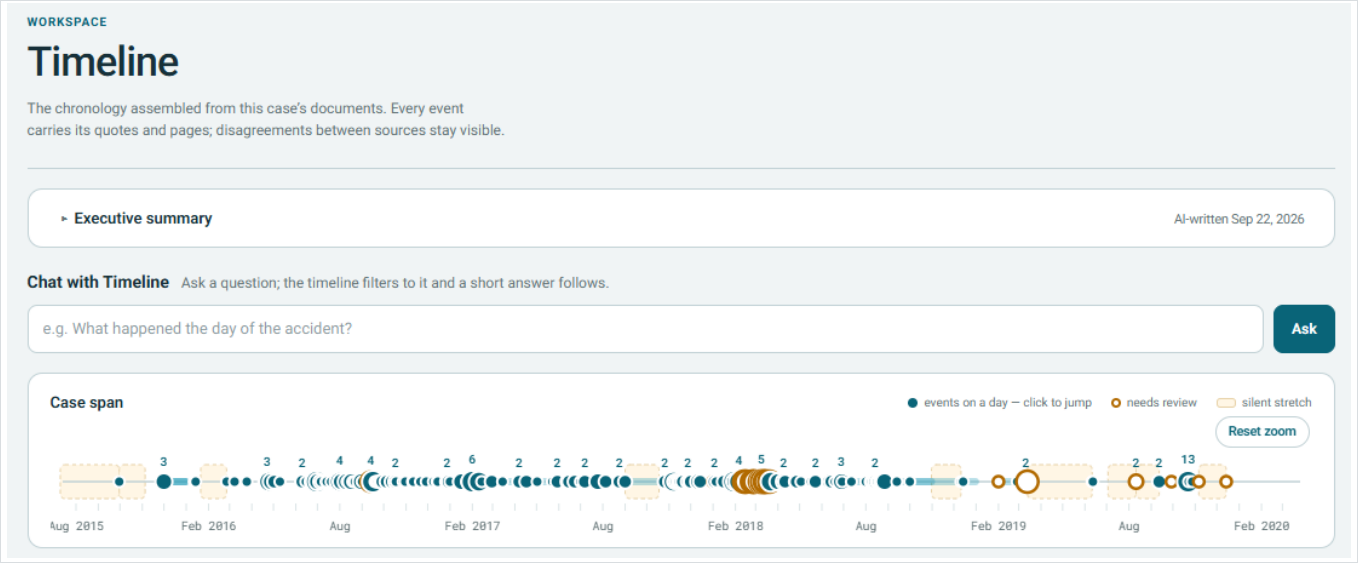
5. Spend the time on depth, not volume

The organizing work is where he says the hours go: finding dates, reconciling documents copied under different names, tracing who said what. The timeline rings dates that conflict, and likely duplicates are listed for his review rather than merged.

> "It takes away a lot of the nibbling time. Now I can really concentrate on the important parts, which are the analysis. I can go deeper. I can spend more time making sure I haven't made any mistakes, because that's what ruins a client relationship. That's what ruins a career."
>
> Raymond Thompson

KnowledgeXpert® is a registered trademark of Bear Creek AI, Inc.

> “You better have good experts, whether they use AI or not. It just makes a good expert better.”
>
> Raymond Thompson



WHAT HE SEES The timeline is built from the documents themselves. Dates that disagree between sources are ringed and listed for review; here, 73 need a look.

FOR FIRM LEADERS

Five questions to ask before AI touches a case file

1. Can it show me the exact page behind every fact it gives me?
2. When the record is silent, does it say so, or does it fill the gap?
3. Who writes the hypotheses, and does it surface the evidence against them?
4. What is saved by default, and does it let me keep everything pertinent, including what cuts against my opinion?
5. Is each case walled off from the open web and from my other matters?

If a tool cannot answer all five plainly, it is not ready for a matter that may end up in a deposition.

ABOUT RAYMOND

Raymond Thompson, PhD, PE, is a forensic engineer and expert witness based in Birmingham, Alabama, and a Fellow of the National Academy of Forensic Engineering, ASM International and the American Welding Society. He founded his firm about 26 years ago; its engineers, including two PhDs, are in litigation daily, primarily product liability with insurance work alongside. He has used KnowledgeXpert since its early chat versions and helped shape its forensic workbench.

Test it on a closed case you know cold.

Register for a 7-day free trial: https://app.bearcreek.com/start/forensics

KnowledgeXpert® is a registered trademark of Bear Creek AI, Inc.