

3-D Seismic Interpretation: A Primer for Geologists

by B.S. Hart, 2000; SEPM (Society for Sedimentary Geology) Short Course Notes #50, 1731 E. 71st Street, Tulsa, OK 74136-5108; 123 pages, softbound; \$56 (\$40 for SEPM members); ISBN 1-56576-073-5

Bruce Hart's *3-D Seismic Interpretation: A Primer for Geologists* is meant to be the notes for his short course. Clearly, most of these notes refer to background information and the seismic method (76 of the 118 pages of text and figures) and not actual 3-D interpretation (only 21 of 118 pages). In addition 17 pages refer to four case studies.

The background information touches only briefly on most pertinent topics, but it does introduce the vocabulary and give adequate reference information for further study. However, I think that most industry geologists would have already had a comparable amount of exposure to these topics at university or in their corporate training program.

Most of the illustrations and figures included in the early part of the book are taken from case studies discussed in the eighth chapter so they end up seeming a little repetitious. The case studies themselves do not represent the mainstream of 3-D interpretation with three of the four studies being from small (2.7 square miles, 9 square miles, and 17.5 square miles) onshore (New York, Alabama, and Utah) 3-D surveys. The smallest had little well or velocity control. The fourth, an offshore Gulf of Mexico example has been thoroughly documented in the literature.

The actual discussion of 3-D interpretation touches on most relevant topics, but it seemed to be abbreviated from what I would expect with all the effort made to lay the groundwork through the previous background discussion. With these being course notes, it makes me wonder how much of the actual course really deals with 3-D interpretation. Of course, this is meant only to be an overview to be completed in a limited amount of time so Mr. Hart has most likely achieved that purpose. However, this book has limited usefulness as a standalone sourcebook for someone who intends to do more in the field of 3-D interpretation than be introduced to the jargon. There are much better books for this purpose included in his bibliography.

Ultimately, I'm not sure that the potential attendee/reader wouldn't get more useful information by perusing the literature and, by doing so, that potential attendee/reader could see examples and case histories more appropriate to his area of interest. As a seismic interpreter with close to 35 years of exposure to the 3-D method and who has completed 3-D interpretation projects in over a dozen basins around the world, I would recommend other more specialized publications over this one - even as a "primer for geologists".

The following are errata or incompleteness noticed while reading the book.

1. Figure 1.1 should have been updated to include the years leading up to the publication date.
2. The third paragraph of page 4 doesn't mention the AAPG / Explorer as one of the best sources of this information.

3. The third line of the second paragraph on page 15 is missing a word (unit?) following the word "sedimentary".
4. Several references are made throughout the book to the seismic line shown in Figure 4.8 where the faulting is described as a graben but the bounding faults are drawn on the seismic line as a normal fault and a reverse fault. The fault on the right should have been drawn as a normal fault dipping to the left.
5. Many of the figures, such as Figure 6.5, would have been more effective if presented in their original color rather than black-and-white copies.
6. The second paragraph on page 99 attempts to discuss the four case studies. Unfortunately poor editing resulted in the fifth sentence saying that the third case study was on the structural geology of an area in the Gulf of Mexico rather than what was the actual study in the Four Corners area of Utah.
7. No mention was made for the reason the two maps in Figure 7.9 have different depths for the same horizon.
8. The seismic line location (labeled "Fig. 7.11") shown on the map in Figure 7.12 should have been labeled "Fig.7.13".