

Interactive comment on “Drilling cores on the sea floor with the remote-controlled sea-floor drilling rig MeBo” by T. Freudenthal and G. Wefer

T. Freudenthal and G. Wefer

freuden@marum.de

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We thank both anonymous referees for their valuable comments. In order to address the comments we have inserted a new chapter 6 “MeBo operations” and revised the manuscript:

Comments by Referee 1: “As a general comment I suggest to describe some of the operations, when MeBo was used. Certainly a table of the expeditions, locations, drill results would be informative” A description of different MeBo applications and results is provided within the new chapter 6 “MeBo operations”. We have added Table 3 that provides an overview on all expeditions conducted so far with MeBo.

C187

“The authors have difficulties with the proper use of metric units. This cannot be accepted in an international chapter. . . “ We agree that metric and international accepted (SI) units should be used wherever practical

“Page 348, line 10: please explain the Acronym MeBo. . .” We have added an explanation of the Acronym MeBo both in the abstract and at its first mention in the text .

“Page 349, line 22: Obviously, an application on MARS is far beyond the operations of MeBo in the terrestrial ocean . . . “ In order to avoid the misinterpretation that we would think MeBo could be used on MARS we have deleted the related sentences and references

“Page 349, line 25: . . . What are the relatively inexpensive methods? What is the disadvantage . . .” With the term “relatively inexpensive conventional methods” we refer to vibracores, gravity cores and piston cores discussed within the first chapter. We have clarified this in the revised version

“Page 352, lines 23 and 25: what is meant with “20”? Do the authors refer to feet?? Please stay away from any ancient or imperial units . . .” 20’ refers to 20 foot and is a standard term used for international shipping containers. These are normed by the International Organization for Standardization. Therefore we use the trading name and added the metric units in brackets.

“Page 353, lines 5/6: sentence grammatically corrupted” Corrected in revised version

“Page 353, line 11. A 3000V pump? That sounds strange” An explanation, why such high voltage is used, is added

“Page 353, line 24: sub-surface (instead of sub-bottom)” Page 353, lines 25: grammatically misleading” Both corrected in revised version

“Page 353, last sentence: Why is no second clamp needed for MeBo?” A second clamp (rotating chuck) is indeed needed. We changed the term for clarification

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“Page 356, line 23 don’t use API units . . .” The API standard is the only existing standard that allows comparison of measurements conducted with different gamma ray logging tools. “[The total counting rate] will be influenced by the size and efficiency of the detector used. For this reason , some calibration standards have been established by the API, and all total intensity GR logs are now recorded in API units” (Ellis and Singer, Well Logging for Earth Scientists, p.271, 2007). We added an explanation in the revised version

“Fig 1: I do not see A, C or D in the picture” We have modified the figure in order to improve the view on the containerized system.

Comments by Referee 2: “I did not find a summary table for key specification and capabilities of the MeBo system” Table is added (new table 1)

“Maybe there could also be either a figure or another table describing the contents of the six containers. . .” We have modified Fig. 1 and added a paragraph in the new chapter 6 “MeBo operations” explaining the functionality of each container

“What are the requirements for the vessel. . .” The vessel requirements are described in the new chapter 6 “MeBo operations”

“Are there particular benefits that would justify using MeBo instead of other systems even if actual operating costs are comparable?” Advantages of the MeBo in some circumstances compared to drilling vessels are discussed in the new chapter 6 “MeBo operations”.

“What is the need of servicing the unit while at seas? What limits the actual drilling times at seas?” These questions are discussed in the new chapter 6 “MeBo operations”

“[The abstract should be reorganized]” We have reorganized the abstract according to the suggestions of Referee 2

“Page 351, line 16: Please clarify the [ROV] use for energy supply. . .” The role of the ROV for energy supply is clarified in the revised manuscript

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“Page 352, line 4: [replace “reliable” by “proven”]; line 5: [replace “specifications” by “requirements”]” Done

“Page 353, line 3: the MeBo is about 6.6 m tall. . .” We have added an explanation for transport size (transport without lifting beam)

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