



**DYNAMIC POSITIONING CONFERENCE**  
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**BASICS OF DP**

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**How We Chose A DP Vessel:  
Discoverer Enterprise**

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## Discoverer Enterprise

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Though we have extensive DP drilling experience dating back to the mid seventies with the Discoverer Seven Seas and the Discoverer 534 we had little recent design or construction experience with DP drilling vessels until the Discoverer Enterprise. This was our first encounter with DP Classes. We based our approach on our experience and on risk benefit decisions

- The current safety record of DP drilling is excellent. This industry record was achieved with vessels from 1970's onwards that were equivalent to the Class 1 or Class 2 of today. For our vessels, the Discoverer Seven seas and the Discoverer 534, there has been continuous refinement of the equipment, training and operations. These two vessels have achieved records of many years between disconnects due to DP issues.
- DP Classes do not directly represent classes of safety, this is often misunderstood. They only represent a Classification Society/Regulatory body prescriptive approach to safety. The Class concept is silent on important issues for the DP MODU application. The silence about the ability of a DP drilling vessel to disconnect has certainly contributed to much confusion about the credibility and merit of the Class concept for drilling vessels.
  - The ability to disconnect has been a vital part of the safety record of DP drilling vessels. Disconnect from the BOP can turn a technical DP problem into a commercial problem. Though it has been used infrequently it is a vital feature when there are serious vessel station keeping problems, whether from technical problems or extreme environment. This ability must be provided and planned for no matter what DP Class a vessel has. Many other DP applications do not enjoy a way to terminate operations so quickly when they have a DP problem, and we think that this greatly influenced the DP Class concept. Example of that is a DP pipelay, or DP crane or DP diving vessel.
  - Common equipment failures exist in every DP Class with resulting position keeping problems. Class 3 is often misunderstood as a "total" reliability fix, but it is not. See the conference paper by

Doug Philips for a set of example of equipment failures that would have had serious consequences for any DP Class vessel.

Transocean approached the vessel design with experience and understanding of the technical issues. The resulting design yielded a DP Class 2.X for the Discoverer Enterprise. Many reliability related enhancements have been provided over the Class 2 requirements, because these have value to our mission.

The reduced environmental rating of the vessel, the added complexity of equipment (reduced reliability), the cost, and the poor reliability experience of the few DP Class 3 vessels in service, were some of the reasons we did not invest in Class 3.

Our primary concerns are

- Protect personnel
- Protect environment
- Prevent damage to equipment or the vessel

These are all effectively served by diligent attention to well known reliability techniques during the project, including use of DP Class 2.

Training and experience is also critical to successful and safe DP operations.