



SIMOPS/OPERATIONS

Planning and Communicating for Conducting Safe SIMOPS

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INTRODUCTION

Sharing Information Maximizes Our Personal Safety

Study the project

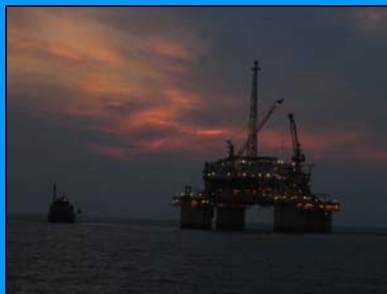
Identify SIMOPS

Meet to discuss SIMOPS

Organize the information

Plan our SIMOPS activity

Share the plan and information



Definitions:

- Vessel SIMOPS:
 - Two or more vessels operating in the same or same general area / close proximity to each other.
- Seafloor SIMOPS:
 - Working in and around hardware (trees, caissons, piles, pipelines, umbilicals, UTA's PLETS, manifolds, etc...) on the seafloor.
- Master/OIM/Officer:
 - Licensed professionals, not titles assigned to individuals, as some construction vessels may call someone an OIM when they are in actuality a Superintendent, and not a licensed OIM.

General Comments:

The Master is expressed throughout the document because it has been the author's experience that the masters are often the last people to find out about any of the decisions made by others and at the last minute they have to make decisions under pressure from others about operations involving their vessel.

The author is expressing many Master's concerns that have been shared with him over the years throughout the document.

STUDY THE CURRENT PROJECT SCHEDULE AND CREATE A SIMOPS IDENTIFICATION TABLE

Review overall project schedule for possible SIMOPS, and assign the SIMOPS a designation for tracking purposes

Project Example, Results Study 1 - Possible Work to Be Carried Out In The Area		Year 1												Year 2			
Group	Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Geology & Geophysical	Seismic	█												█			
Drilling	New Well				█						█						
	Completion							█					█				
Operations	Maintenance																
	Workover																
Construction Group	Route Surveys		█						█								
	Pipeline - Construction								█					█			
	Umbilical Lay								█						█		
	Field Development								█						█		
	Setting Floater			█													
	Floater in Place					█											
Regulatory	Other's Activities Proposed																
	Seismic Spec Shoot													█			
Possible SIMOPS Number			1		2				3	4				5	6	7	8



Table 1: Conceptual Type Schedule, Looking At Long Term Project Goals

From Schedule above create a SIMOPS identification Table

2	1																
	E - 1	April	Drilling	Drilling Vessel	Drilling	DP - Acoustic Interference	Acoustic/Navigation	Frequency Management / Vessel Movement Plans, DP LBL Array Plans	These vessels may be separated in field								
	F - 3			Supply Vessels / Crew Boats	Bringing Drilling Supplies	N/A - Propellers Causing Acoustic Noise	Navigation	Sail Plans / Date / Side to be Set Up On	These vessels are always coming and going, will use Fan Beam for DP Operations while at Drill ship								
	G - 2		Construction	Tugs	Towing Hull	N/A - Propellers Causing Acoustic Noise	Navigation	Work plans / sail plans	These vessels may be separated in field, but will be close to the Hull								
	H - 2			Anchor Handlers	Setting Mooring Lines	Acoustic Interference to Others	Acoustic/Navigation	Work plans / sail plans	This / these vessels will be running around the 12 mooring pattern								
	I - 1			Heavy Lift Barge(s)	Setting Hull, Moorings preset	DP - Acoustic Interference	Acoustic/Navigation	Frequency Management / Survey Plans / DP LBL Array Plans	These vessels may be separated in field								
	J - 2			ROV Vessel (s)	Assisting Heavy Lift Barge	Acoustic Interference to Others	Acoustic/Navigation	Frequency Management / Survey Plans / LBL - USBL Plans	These vessels may be separated in field								

Table 2: Vessel SIMOPS Identification Table

BENEFITS OF EARLY SIMOPS PLANNING

With the implementation of early planning, enough time will be allowed for significant discussion, debate, reasoning etc... to create a case for an argument to move all non essential SIMOPS. Furthermore, if the SIMOPS cannot be avoided, this early planning may give some insight as to which contractors/vessels will be more suited to work together.

Early Planning Allows Clients and Operators in things such as:

- Avoiding SIMOPS
 - With early planning, there may be enough time that the construction schedule or vessel schedule can be adjusted where there will SIMOPS can be deleted
- Vessel Selection
 - The vessel can make choices of vessel depending on the type of SIMOPS that each vessel may be involved in
- Request For Proposal Details
 - The client now can lay out potential SIMOPS and ask for pertinent information during the request for proposal



DETAIL SIMOPS SCHEDULE

Task	August - Year 1				September -Year 1																			
	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Topside Activities																								
SCR Hang off - Heavy Lift Barge																								
ROV Support - SCR Hang-off																								
Umbilical Lay - Vessel 1																								
Umbilical Lay - Vessel 2																								
Array Setting For Heavy Lift Barge's DP system (Acoustic)																								
Supplies Needed																								
Route Survey																								
SIMOPS																								
Field																								
Completion																								
Drilling																								
Field Array Setting																								
ROV Support For Completion																								
Supplies																								
Crew Change - Crew Boat																								
Crew Change - Chopper																								
Route Survey																								
SIMOPS																								

Table 3: Vessel SIMOPS Identification Schedule for Pre-Construction / Construction / Operations of SIMOPS Number 3 and 4 From Table 1

A schedule similar to this one should be used in the meetings held to discuss the SIMOPS. The More advanced schedules should have the vessel names included.



MEETINGS BOTH ONSHORE AND OFFSHORE

All meetings shall be held in a manner where a truthful, non-biased discussion of each vessel should be held. By truthful, the true health of the vessel and DP system should be stated and handled by Masters and OIMs. Vessel Masters should state what type of DP system they have, number of working redundant systems, if acoustics are listed as a redundant system, then number of working beacons shall be disclosed and working depth of the pole and beacons. Furthermore, vessels should discuss how many officers will be on the bridge while the SIMOPS is being conducted (as one probably already knows this can change per vessel). Likewise, safety discussions should be held such as emergency breakaway plans. However, all of this should be discussed in detail at the time of the offshore SIMOPS meeting between vessels due to the dynamics of field conditions.

Meetings should occur at a minimum:

- *Conceptual Stage* – Project Review Meeting
- *Pre-construction stage* – Project Review Meeting
- *Construction Stage/Operations Stage* – Major Project Kick-off Meeting and Before Each SIMOPS

The Meeting Should Have Discussions Such As:

- Potential vessel set up in certain wind/sea/and currents
- Emergency procedures (break away, drift plans) during the SIMOPS if a vessel or both vessels have issues
- SIMOPS communication protocol (radio channels, phone numbers, or satellite phone dedicated to SIMOPS Operations).
- Acoustic frequency preferences
- Vessel approach methods/protocol
- Safety issues

AN UNEXPECTED VESSEL ARRIVES ON SITE

Some recommended questions to be asked by a vessel operator when one of their vessels is picked up in a hurry on a quick charter and things are flying fast for the mobilization:

- Are there other vessels in the areas?
- Are there SIMOPS plans in place?
- Can we have a look at your project's SIMOPS procedures?
- Is there a possibility of SIMOPS?
- What is the contact information for other vessels in the area?
- This is a good one, if one gets this information call the other vessels to let them know that you will be in the field.
- Can I see a project overview and where will we be working and where are others working at?
- Do you have a SIMOPS coordinator/manager?

TECHNICAL THOUGHTS / Q&A

Thought 1:

- Many vessels may claim that they are DP II, However, the only system that may be available is two GPS system, with the weak link and problem area being the antenna. On most vessels, one can safely bet that the antennas are less than 30 feet apart. Therefore, it would be safe to say that if something masks one antenna, it will mask the other. With this said, the only time that multi-path and/or masking should occur is when a vessel is too close to a structure in which this would be a SIMOPS situation. This is more than likely to occur when a smaller vessel is near a larger vessel or platform.

Thought 2:

- Along the same lines, if a vessel is in deep water and has a taught line system along with the 2 GPS systems, can the taught line actually be counted as a working part of the DP system for redundancy? Does this reduce the operational class of the DP system at the site?

Thought 3:

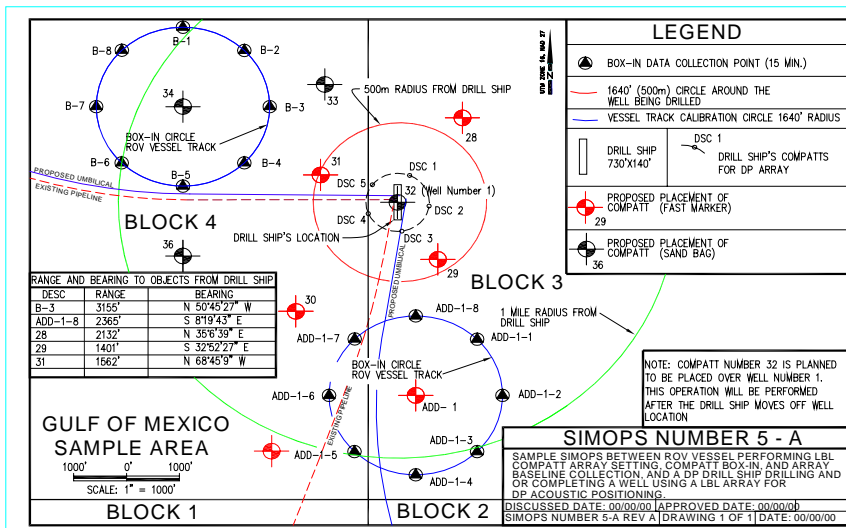
- If a vessel has a hydrophone pole and has only one beacon along with the 2 GPS beacons and is in deepwater to ultra deep water, does the 1% slant rule apply? If it does, is the DP positional footprint good enough call this one beacon set up as a redundant positional system? What if the vessel does not have compensated depth rated? These thoughts are not questioning the vessels which set out a full array, this is only questioning some of the vessels that have minimal equipment and do not have the capability of setting a full array.

CASE STUDY EXAMPLE 1: SETTING AN ACOUSTIC ARRAY, BOXING IN COMPATTS AND COLLECTING ACOUSTIC BASELINES IN THE NEAR VICINITY OF A DP DRILLSHIP

We tried to avoid this SIMOPS as best as possible. However due to a drilling schedule slip and the pipelay advancing, this work had to be performed.

This plan and sketch was created offshore

A frequency list was gathered, reviewed, checked for clashes and shared before discussions began.

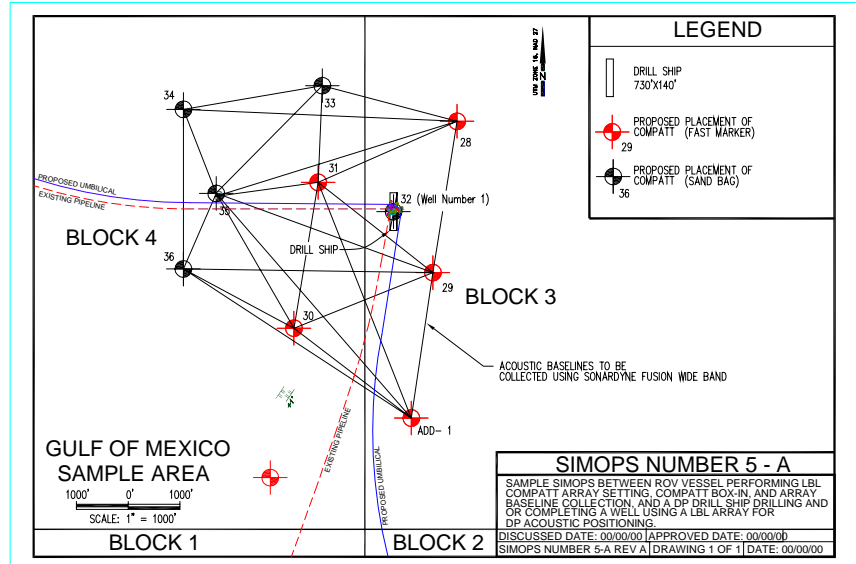


After information was gathered and the plan was created, the plan was sent to the drill ship for comments, revisions and approval.

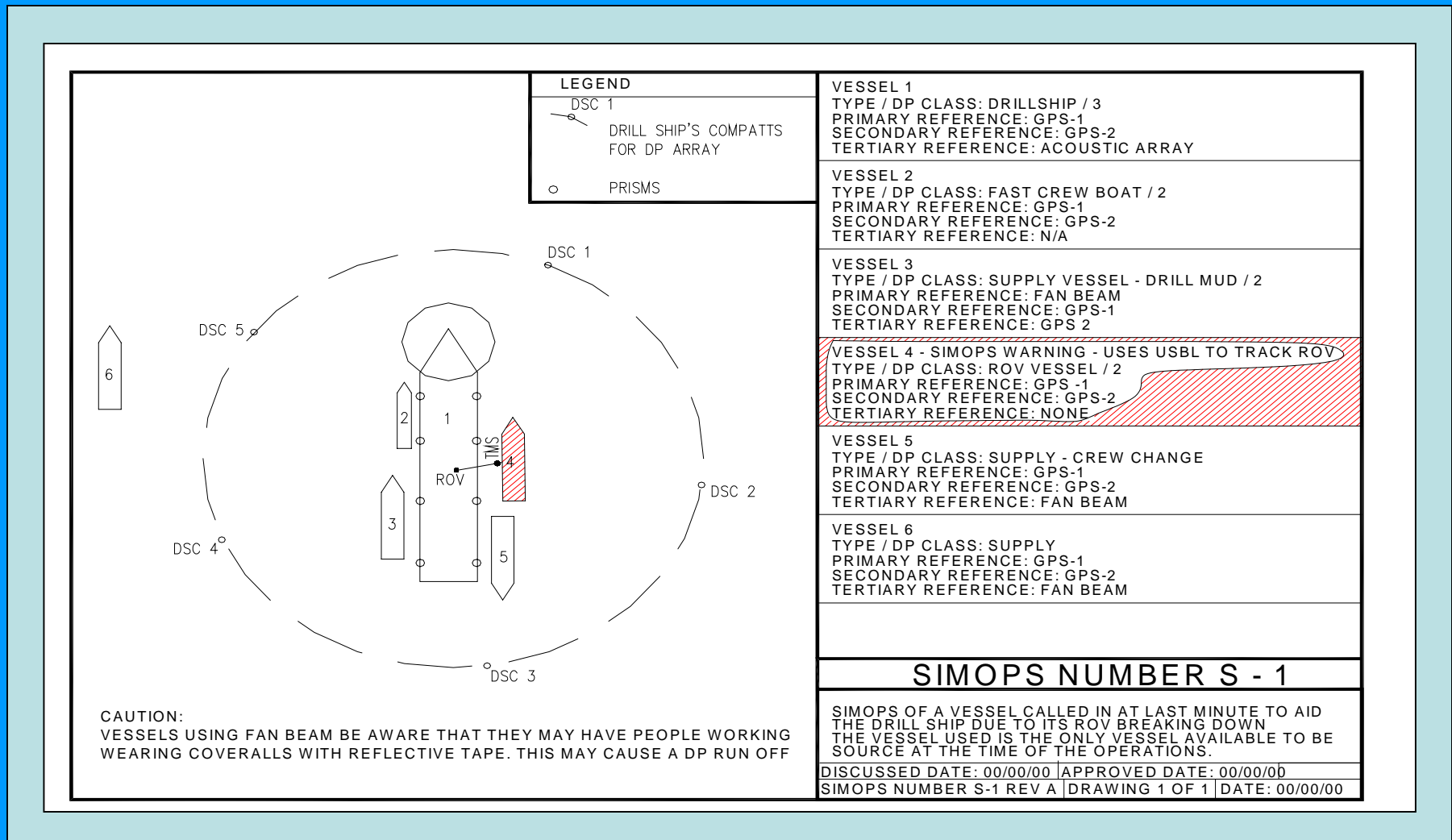
We had meeting aboard the drill ship before operations began.

Operations moved slowly and we had constant communications between both vessels

This was completed with no issues.



CASE STUDY EXAMPLE 2: SURPRISE VESSEL WORKING NEAR THE DRILLSHIP



MORE CASE STUDY EXAMPLES

- Case 3:

An AUV Survey Was Needed In And Around A Drill Ship Due To Pipeline/Flowline Route Deviations

An AUV operating in the vicinity of a Drill Ship. We began discussion weeks before hand to discuss how close we could get to the drillship. The master set the rules, and they were followed. The early on discussions allowed for better survey planning to get data that was in the restricted area.

What is great about this was at first they said no way this is going to happen, but with a little discussion, and time to prepare, it became possible.

There were some conversations held in the field shortly before the work initiated and this was due to some slight changes in the program which were not relayed to the master of the drill ship.

- Case 4:

SIMOPS at a Floating Platform, this was totally amazing

The project demanded a huge array in the area of the floating facility to all for all of the umbilical and pipeline risers to be positioned using the array. By planning ahead and using forward thinking we were able to have 2 lay vessels using LBL in the same array, while a Heavy lift ship was starting up and setting their array and had 2 other ROV vessels positioning their ROV's without anyone stepping on anybody else. This worked well because of forward planning and allowing the vessels to have some flexibility in the field to adjust accordingly to work around each other.



CONCLUSION

- Things to think about as we close this presentation
- No matter what happens, safety is most important.

- I would like to give special thanks for the clients, employers and mostly all of the vessels and crews that I have worked with over the past years. Without the knowledge that they shared with me and allowed me to gain, this paper could have never been created.
- Furthermore, the inspiration of this paper was from the time that I spent offshore working with different vessels in different parts of the world and hearing the master's and DP officers complaints and concerns, which was mostly that they are kept in the dark about all or most operations.

