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My name is Kenichi Nakanishi. I am working for the Chiba refinery of Kyokuto Petroleum Industries, Ltd. where the No. 1 Tokyo Bay Base of PAJ is located. Last year, I took part in the "skill-up" exercise for a large oil recovery system that was held at that base from the 11th to the 13th of May. Today, I would like to say a few words about the experience.

The exercise was carried out on the sea under the command of **Captain Kjellsen** on both the 12th and the 13th. It consisted of practice in items that we were told was on Basic Training Level 1, such as vertical deployment of the Uni-Boom, maneuver in J formation, left-handed 180 degree turns, Uni-Boom retrieving and stowing, deployment and retrieving of the Transrec 250 large oil skimming system. There were two vessels involved in the exercise: *Shin-Nichi-Maru* and *Narita-Maru*. The *Shin-Nichi-Maru* is in the 698-ton class and served as the mother ship carrying the Transrec system, Uni-Boom, and Uni-Bag. The *Narita-Maru* is in the 240-ton class and served as the tugboat for deployment of the Uni-Boom.

On both the 12th and the 13th, we enjoyed clear skies with winds and waves that were not strong or high enough to have a significant effect on the exercise.

The program for the morning of the 12th comprised training in the equipment under the direction of **Capt. Kjellsen**. On the afternoon of the 12th and the 13th, there was training for commanders as well. We were drilled in not only manipulation of the Transrec system and Uni-Boom per se but also the major portions of commander's training, namely, maintaining J-formation of the Uni-Boom through skillful operation of both vessels and executing 180-degree left turns without breaking the J-formation. Prompt skimming of oil spills depends largely on the ability to execute turning actions without losing a neat J formation of the Uni-Boom.

The 180-degree left turn had to be executed while holding both vessels at speeds ranging from 0.5 to 1 knot and keeping the angle between the Uni-Boom's cross-bridle rope and the hull at 90 degrees. I had a picture of how it was to be done in my mind, but the actual turn did not go as well. However, I think the second run went a little more smoothly than the first. Instruction in the use of equipment such as the Transrec system and Uni-Boom can be provided on land to a certain extent, but this is not true of the commander's training, which has to be implemented on the sea.

It was indeed a precious experience.

I must add that, perhaps carried away with enthusiasm, we sailed out of the bounds of the prescribed exercise zone on the 13th. Getting back in bounds gave us the chance to experience a right-handed 180-degree turn, which was not in the original program. I understand that this type of turn corresponds with Level 2 of Basic Training. Although this was a notch above the 180-degree left turn, we were allowed to take up the challenge being advised by **Capt. Kjellsen**. With the help of the outstanding navigational expertise of the veteran skippers of both the *Shin-Nichi-Maru* and *Naritamaru*, we made the right turn. I am grateful to both of them for giving us this wonderful extra experience.

We also encountered some trouble during the exercise. The chief incidents on the 12th were entanglement of the cross-bridle net in the gap between the reel drum and Uni-Boom during extension, the snagging of the net on protuberances on the side of the ship, and the cutting of the cross-bridle rope, probably due to excessive tension when taking in the Uni-Boom. The chief one on the 13th was the difficulty encountered when we began deploying the Transrec's skimmer and tried to operate by remote control. The remote control system stopped functioning because the cord was pulled strongly and the connection became poor, perhaps due to the improper position of the cord on the deck, and we immediately switched to operation on the Transrec system side panel.

Transceivers were used for communication between the training leader and the operators of the Uni-Boom and Transrec system. There were no earphones or headphones, and the loud sound of the power pack impeded direct contact with the operators. This drove home to us the need for relay personnel with transceivers.

Naturally, the point is to acquire skills through repeated exercise. The occurrence of trouble and incidents during the exercise motivates reviews and repeated practice, with a commensurate improvement in skills. As such, I think they will serve us in good stead in the actual event.

In sum, we encountered some minor difficulties, but I recall that **Capt. Kjellsen** and the system supervisors rated the exercise a success as a first effort.

Exercise of this type is absolutely necessary, and I hope that more of us can experience it over the coming years.