

January 2010

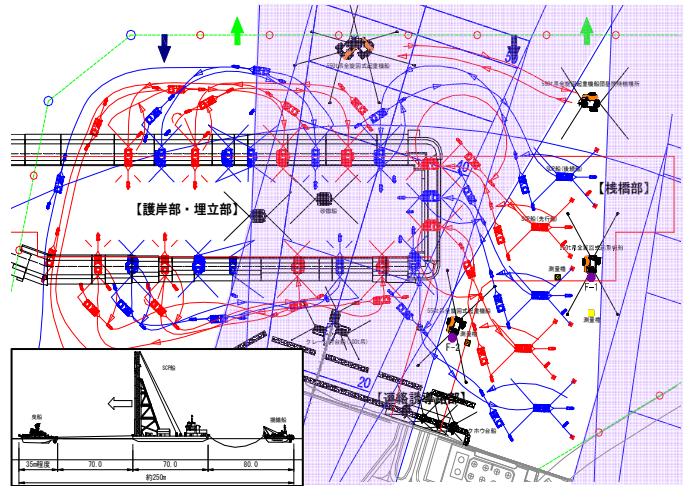
Tokyo International Airport (HANEDA Airport)
HANEDA Airport Construction Office

<http://www.pa.ktr.mlit.go.jp/haneda>

MEASURES AGAINST HEIGHT LIMITS

As mentioned in the previous report No.8, D-runway has to be constructed under severe height limits. Due to this height limits, large and tall working vessels, such as sand compaction pile (SCP) vessels, sand drain vessels and steel pile driving vessels and so on, have to move dynamically everyday between outside and inside of the height restriction alleviation area (purple color area of the figure, night only area) that starts after 20:45 and finishes before 07:45 for 11 hours.

Although this unique movement of vessels and nighttime construction work have to be done in a limited time of 11 hours with other many working vessels, it is not so easy to move large and tall vessels everyday in safe and sure way. For example, 13 SCP vessels, which are approximately 70m's long, 30m's wide and 80m's tall, have to move at the same time in a congested water area for seabed soil improvement by constructing sand piles into seabed. So the movement of vessels must be a carefully orchestrated one in terms of speed, precision and safety.



ORCHESTRATED DAILY MOVEMENT

SCP vessels are equipped with anchoring wires of 4 directions of more than 250m's long each. By anchoring wires and position adjustment with the GPS, vessels can be set at the precise position in the sea. However, SCP vessels have to work very closely each other due to area limitation in this project, and the space between neighboring 2 vessels becomes less than 200m's long, that means anchoring wires of neighboring vessels cross each other in the sea.

To resolve this problem, under "The Vessel Safety and Control Center" of JV, SCP vessels are divided into 2 groups (a red group and a blue group of the figure). One group moves at first to each designated position after 20:45, and it takes about 45 to 60 minutes for anchoring and positioning. After completion of anchoring of the first group, then the second group moves into each designated position between 2 SCP vessels of the first group. On going out of the restriction alleviation area by 07:45, the second group moves at first at around 06:00, because anchoring wires of the second group cross over wires of the first group. After de-anchoring of the second group, then the first group moves and all vessels go out of the area by 07:15. Last 30 minutes to 07:45 is a safety time. The vessel's movement is as follows.

- 20:45: SCP vessels of the first group start moving and anchoring.
- After 45 to 60 minutes, anchoring and positioning adjustment completes for work.
- 21:30-21:45: SCP vessels of the second group start moving and anchoring for work.
- 06:00: SCP vessels of the second group start de-anchoring and going out.
- 06:30: SCP vessels of the first group start de-anchoring and going out.
- 07:15: All SCP vessels complete going out of the height restriction alleviation area.
- 07:45: Operational restriction of the airport finishes.
- Soil improvement work continues in the no height restriction area in daytime.

Thus, soil improvement work by SCP started on April 25, 2007 and completed on December 12, 2007 by constructing about 70,000 sand piles into seabed day and night. (To be continued)



Nighttime Work



Daytime Work