

Dr. Fridtjof Nansen – Building progress

Update by 30th July 2016



Main milestones:

- First steel cut: 13.01.2015**
- Keel laying: 23.04.15**
- Launch of vessel: 23.12.15**
- Scheduled trial start up – ref MP5: Dockside trials 16.08.16 – Sea trials: 01.10.16**
- Scheduled Delivery – ref MP5 : 07.11.16 (Plan B: 21.11.16)**

Progress:

- Average workforce remained at 160 -170 during last period. (Steel, outfitting & piping reduced to 35 – Electricians increased to 60-70 – Accommodation & Insulation 35 – Painters 20-25) working 10-12 hrs/day 5 days/week.
 - AG's scheduled vacation period is starting August 1st, yard states that our project will have full manning and not affect progress during the period? (Learnt that subcontractors will work full time, but yard employees will work 07-14 during first 2 weeks of August, and have reduced workforce the last 2 weeks)
- High activity in all areas, but we do again notice a fall back from the planned progress in many areas this period. Difficult to monitor exact, but our estimate is that the 14 days "buffer" (7. – 21. Nov) by date is already used.
- The scheduled inclining test (13. Aug) is officially postponed by 2-4 weeks and it is our assumption that the first trial dates ("power up") will slide with at least 8-10 days from the scheduled dates.
- Yard is now putting main priority to make the "maritime" ships systems ready for commissioning and start up, thus we face a lower priority and progress on assembly of scientific equipment and areas. Not unusual at this stage to have priority for "power up", but this should be monitored closely so we don't end up with a "squeeze" on time for proper tests and trials for the scientific areas and equipment.
- **Hull Construction:** External outfitting:
 - Main jib for the main crane and the aft starboard crane (HIAB) installed week 30.
 - Unit 47 (casing) sandblasted and painted and ready for installation.
- **Piping:**
 - ISO piping completed. Minor transfer & control system piping remaining.
 - Majority of pressure testing and flushing of the various maritime systems completed - Lub oil system and main part of SW cooling is pending.

- **Propulsion and maneuvering:** Assembly and termination of auxiliary systems and components still ongoing, but the major components and systems are assembled and connected. Commissioning engineers from MaK and Ingeteam is planned for mid-August but will likely be postponed a week or more. Kongsberg Maritime engineers are on site, and have started cable termination in bridge and IAS cabinets.
- **Scientific equipment and Labs:** Low activity this period, some cabling and piping carried out, seems to be somewhat abandoned due to priority in ship technical main systems.
- **Electrical: Cable trays and cabling**
 - Cable trays: All main cable trays installed.
 - Cables pulled by date: 190.000m of a yard estimated total of 205.000m (total is revised from 165.000m from last report)
 - Terminations: 7900 cables connected by date– Estimated total of cables to be connected are 10000+.
- **Accommodation:** Furniture installation on tween and main dk progressing well. Floor covering almost completed for all accommodation. Tiling in galley and provision areas ongoing. All alleyway and corridor doors installed, cabin door installation will start week 31.
- **Sandblasting & Painting:** Tk's: 301C, 310P&S, 500P and aft deckhouse stb. completed this period. Sandblasting of PS deckhouse and forward decks areas ongoing but far after schedule. Painting in propulsion room starting this weekend.
Lot of sandblasting and paint work is remaining. This work is affecting other work activities and equipment, proper covering and cleaning is chased daily by site team.

By date: Partly “wrapped in” for sandblasting and painting of outside areas.

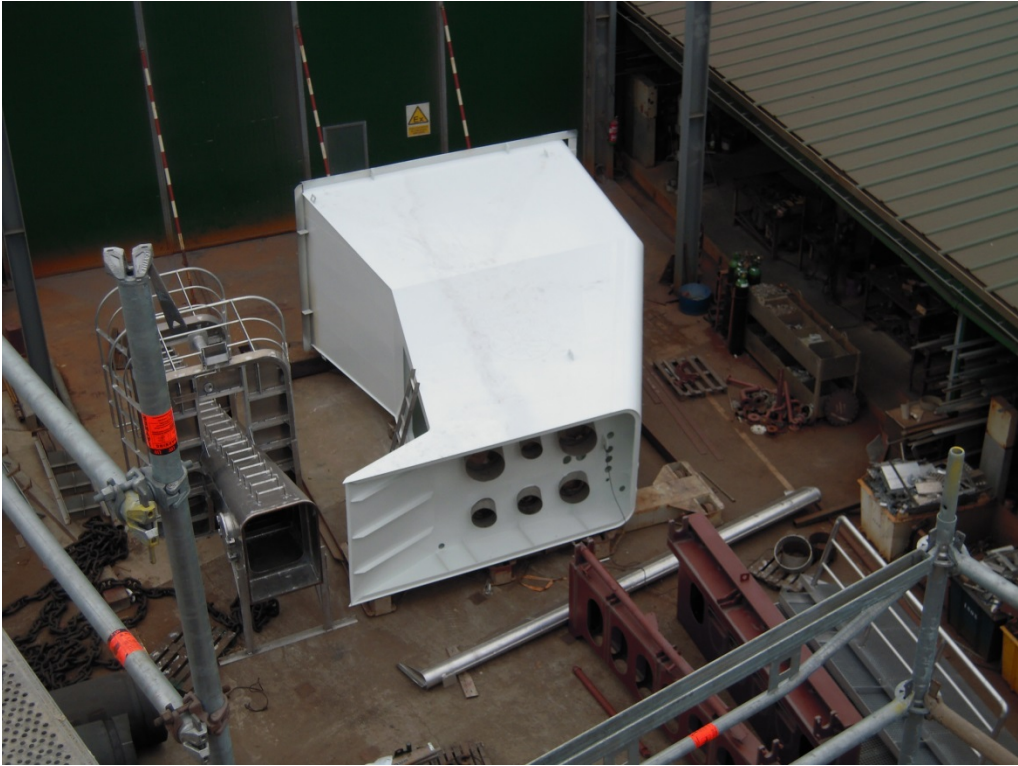




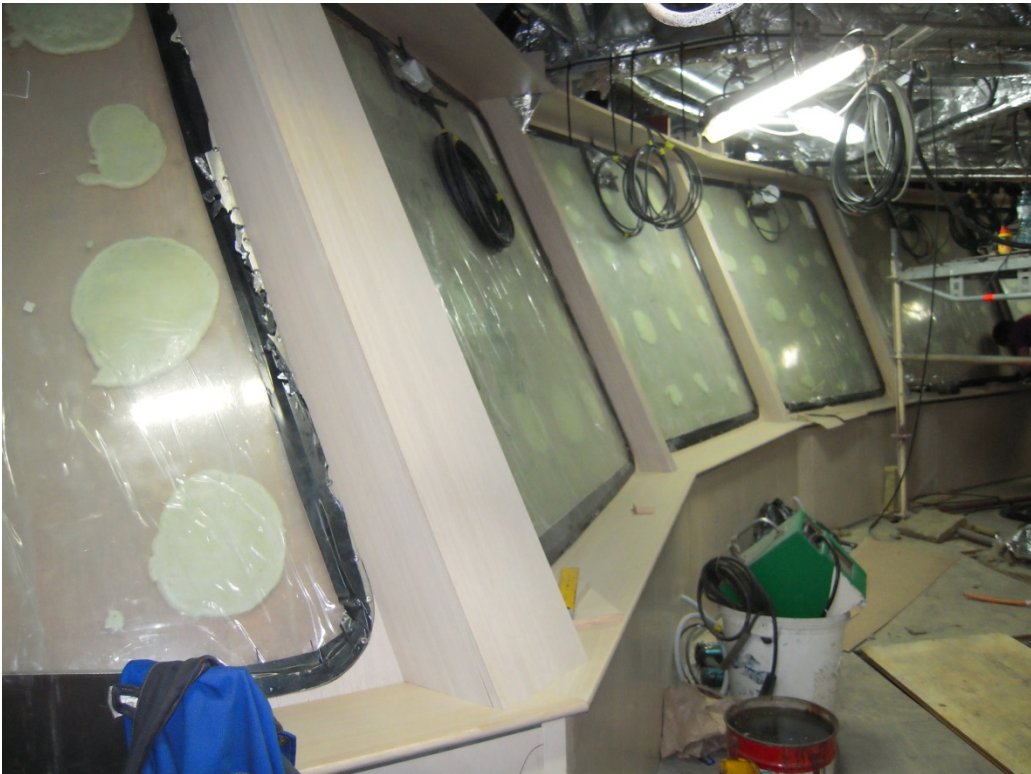
Main Crane - installation in progress



Funnel (BL 47) finally ready go on board



Wooden work on bridge ongoing



Furniture installation on Tween and Main deck



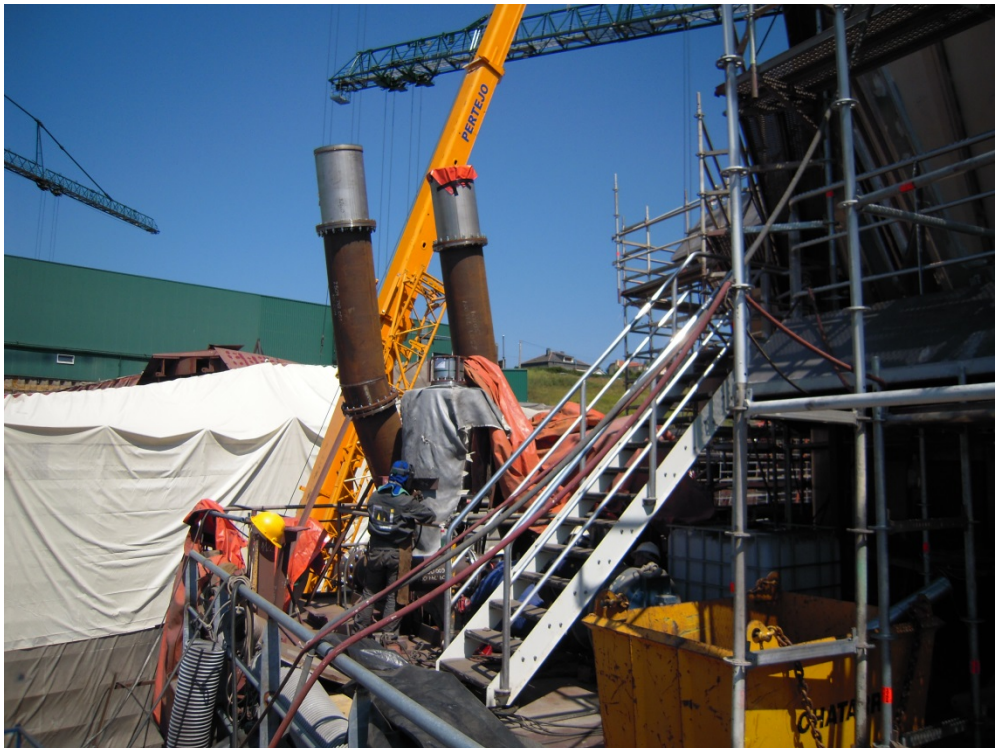
Flooring in corridors and messroom.



Tiling in provision area



Upper part of exhaust pipes in progress



Termination in IAS (Integrated Alarm System) cabinets



Painting in propulsion room



Sandblasting of anti roll tank



Labs (CTD) – not much activity last period



No cables to scientific winches yet.

