



FIVE DECADES OF COOPERATION AND COMMITMENT TO SCIENCE AND ENVIRONMENTAL PROTECTION

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The First Antarctic Expedition of Araon (2010/2011)

The First Antarctic Expedition of *Araon* (2010/2011)

Information Paper Submitted by the Republic of Korea

The earlier versions that are relevant to the present document were submitted to the XXX ATCM (IP 45) and XXXI ATCM (IP 38) as information papers by the Republic of Korea. Korean ice-breaker, *Araon*, was delivered to the ship operator, Korea Polar Research Institute (KOPRI), after the ship-building was finished on 2 November 2009.

Araon, a 7,487 ton ice-breaking research vessel, can accommodate up to 85 persons (25 crew and 60 researchers) and load up to 31 TEU (20ft container). It can operate for around 70 days (20,000 nautical miles) without additional supply.

To support Korean polar science programme, *Araon* sailed to the Arctic in July and August 2010, and headed to the Antarctic in October 2010, and returned in May 2011.

Araon departed its home port, Incheon for the Antarctic expedition of 2010/2011, on 10th October and returned after around 7 month's of duty. *Araon*'s main mission was to support the CEE (Comprehensive Environmental Evaluation) for the construction of the Jang Bogo Antarctic Research Station, and to conduct research activities as well as logistic support to the King Sejong station.

On 28th October, *Araon* docked at Wellington in New Zealand (NZ) after an 18 day's cruise from Incheon; there was a welcoming ceremony hosted by the NZ government. About 80 visitors, including the NZ Minister of Research, Science and Technology, Hon Dr Wayne Mapp, came to celebrate its first visit, and looked around *Araon*'s facilities and research equipment.

On 15th November, *Araon* encountered sea-ice for the first time this season, and reached Punta Arenas on 26th November. INACH ([Instituto Antártico Chileno](#)) gave a welcoming ceremony to celebrate its first arrival to the Chilean port. The regional government, Chilean navy & port authorities joined the ceremony, while the Chilean navy military band played in honor of *Araon*'s visit. Following the ceremony, participants looked around *Araon*'s facilities and research equipment.

On 30th November, *Araon* embarked on logistics resupply mission to the King Sejong station. For this year's logistics operation, *Araon* shared her cargo space with our neighbourhood stations of Russia, China and Chile, and 4 German researchers also boarded *Araon* for transport to the Dallmann laboratory.

After that, *Araon* focused on research efforts in the Weddell sea, Amundsen Sea and other areas in the south-west Antarctic. For this 2010/2011 Antarctic expedition, *Araon* conducted 8 major research projects. In the Bransfield and the Weddell sea, 3 research projects were carried out with 19 researchers onboard for 17 days. The following took place: i) "Antarctic marine geological survey"; ii) "monitoring of abrupt environmental change in the ice shelf system and reconstruction of Quaternary deglaciation history in West Antarctica"; and iii) "Constructing polar monitoring network system: studies on characteristics of submarine active tectonic processes and marine environmental changes".

In the Amundsen sea, *Araon* conducted for 18 days an acoustic survey, trap installation, sea ice coring, etc. for iv) "sea ice zone in Amundsen sea as a model system to observe global warming and its impacts"; v) "southern ocean and the ecosystem as a reactor of climate gases"; and vi) "a survey study for planning an atmospheric observation system".

Araon reached Terra Nova Bay on 2nd February and started vii) supporting the CEE for & construction of the Jang Bogo Antarctic Research Station by conducting sea mapping; long-term monitoring of movement and mass balance of glaciers; snow pits; geological survey for construction; monitoring for ocean and coastal ecosystem, etc. When *Araon* returned to Christ Church for refuelling, loading and unloading equipment an Earthquake (6.3 magnitude) occurred on 22nd February. At that time *Araon* was going to unload equipments, and passengers were about to disembark, but work immediately stopped. Fortunately, *Araon* was not damaged by the earthquake. For the last mission, *Araon* moved to the Antarctic mid-ocean ridge and carried out viii) "a survey study for planning a polar atmospheric observation system."

After finishing the missions, *Araon* returned to Christ Church on 15th March 2011, and finally came back to Incheon on 13 May 2011.

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