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ARKTOS Evacuation Craft: History, Capability and Future Developments

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ABSTRACT

The ARKTOS Evacuation Craft (AEC) has an extensive development history as the Watercraft Worldwide Group of companies' answer to a request from Gulf Canada Ltd. in 1981 for an amphibious evacuation craft to serve its offshore structures in the Canadian Beaufort Sea. The AEC, now certified by the US Coast Guard, is 50 ft in length and can carry 52 people or 11,000 lb of cargo through the most severe terrain (22,000 lb of cargo in calm water). The AEC has unique capabilities: it can operate in open or ice-infested water; climb from water onto ice; and maneuver through ice-rubble fields, side slopes, steep grades, and hard or soft surfaces.

KEY WORDS: Evacuation craft; amphibious; offshore; severe terrain; ice; Arctic.

INTRODUCTION

The ARKTOS Evacuation Craft (AEC) has an extensive development history as the answer from the Watercraft Worldwide Group of companies to a request in 1981 from Gulf Canada Ltd. (Gulf Canada) for an amphibious evacuation craft for its offshore structures and ships in the then burgeoning explorations in the harsh climatic conditions of the Canadian Beaufort Sea.

Gulf Canada required safe and timely emergency evacuation of workers and crew members from offshore exploration and production facilities in extreme climatic conditions: temperatures as low as -50°C; high winds; and ice-covered, rubble-field, land-fast and shear-zone waters. The resulting craft would also need to meet the many qualifications of a standard, totally enclosed lifeboat commonly in use worldwide on merchant ships and oil and gas exploration and production structures. Furthermore, this craft would have to comply with national and international regulations and standards (depending on deployment location) for the emergency systems then in use but lacking ice mobility.

To effectively meet this challenge, Watercraft Offshore Canada Ltd. (WOCL) was formed as a subsidiary of the Watercraft Group to liaise directly with Gulf Canada, other Canadian Beaufort Sea operators, and the Canadian Government.

DEVELOPMENT HISTORY

WOCL personnel began searching for possible improvements to offshore emergency evacuations by observing, recording, and studying on-board drilling and exploration activities in the Beaufort Sea. These observations allowed them to develop initial criteria for emergency evacuations and experience the harsh environmental challenges first-hand. In conjunction with field experience, WOCL researched worldwide technical publications for relevant operational data; they then visited relevant offshore operations to observe equipment that might provide useful features for a new evacuation vehicle.

Based on the publication research, compiled records study, on-site observations, and performance criteria development it was apparent that a greenfield approach was necessary to fulfill this vital safety requirement for Canadian offshore operations.