

## **I** Project Chariot, a nuclear excavation project in Northern Alaska

**G. E. Gilbert**

In the mid-1950's, American nuclear scientists, especially those at the Livermore Nuclear Laboratory as well as many within the Atomic Energy Commission, were extremely interested in initiating a variety of projects involving underground nuclear detonations ostensibly to promote peaceful uses of atomic energy. This interest resulted in the establishment in 1957 of a program entitled Project Plowshare (or PNE, Peaceful Uses of Nuclear Explosives). It was reported (Ogle) that if successful this program would counteract the fear of nuclear detonations, at least to some extent. Also, it might keep nuclear explosive design and experimental work continuing during a moratorium or test ban period. About a dozen specific projects were established within Project Plowshare including the excavation of a channel through the reef at Kapingamarangi (an atoll in the Caroline Islands), a sea-level Panama Canal and the excavation of a harbor along the northwest coast of Alaska. The latter project was entitled Project Chariot. Of all the Plowshare Projects, Project Chariot became the closest to fruition. The objective was to create a harbor for the shipment of natural resources in the area and, in the process, develop a better understanding of the use of nuclear energy for large excavation projects. An outstanding feature of Project Chariot was the conduction of approximately 50 in-depth physical and biological studies of the terrestrial, coastal, oceanic and atmospheric components of the study area. As a result, the Project Chariot study area could possibly be the most deeply and widely studied sizeable area in the biosphere. Collectively these studies would have provided an excellent baseline to evaluate the impact of the use of nuclear detonations for excavation and cratering projects.