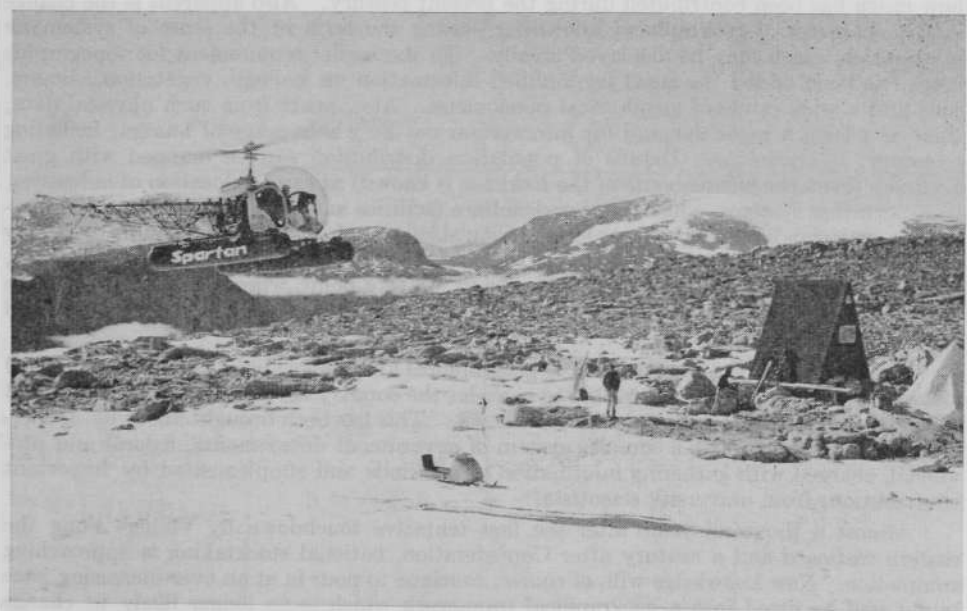


both sides of the flight line. Exact location of ground control points was still needed and here again air transport was invaluable for by this means survey teams could be moved quickly from place to place and the field season was greatly extended because shipping was no longer needed. From 1948 onward, helicopters were also used. As a result of such technological changes, most of Canada (including the Arctic Archipelago) was covered with vertical air photography, suitable for small-scale mapping, by the late 1950s. At the same time, even more rapid survey methods were being introduced utilizing such electronic distance-measuring devices as shoran and tellurimetry.

Perhaps geological surveying realized the most dramatic results from the use of helicopters and related instrumentation. It has been estimated that between 1842 and 1951 the Geological Survey mapped about 1,000,000 sq. miles of the land surface of Canada; during the next seven years about 500,000 sq. miles were mapped, largely attributable to use of helicopters. This advance has been particularly striking in the Arctic islands where access is difficult, the climate is often very severe and local bases for supply are scarce. In place of the traditional means of transport—dog team, canoe and foot—the Geological Survey in 1955 introduced to the area a carefully planned system of helicopter transport to carry personnel, instruments and supplies. Air photographs provided the needed topographic details. This experiment proved to be efficient, safe and economical and set the pattern for all later field operations in the North. The more elaborate and continuing Polar Continental Shelf Project, covering in effect the most northerly Arctic islands and including all aspects of science, depends largely on this means of transport and observation.

Even the most casual comparison of maps published 25 years ago with those now available demonstrates the notable increase of knowledge of the northern part of the country. The Canadian Shield is shown to be a maze of large and small lakes and complicated water courses where once it appeared as a more or less empty plain and a few large bodies of water, with supplementary detail along the explorers' canoe route. The shapes of land masses have changed and islands appear where none were before. Prince Charles Island in



A laden helicopter arriving at a geographers' base camp on the east coast of Baffin Island. The use of the helicopter has made possible much of the recent advance in knowledge of the physical geography of Canada's North, for by this means personnel, instruments and supplies can be transported quite readily to remote or otherwise inaccessible areas.