An operator in a Dakota with one of the new Williamson OSC-1 cameras. The transparent camera-enclosure is heated internally.

The first process after developing and printing is the preparation of a loose mosaic to check that coverage is complete.

poses as the planning of water-power development schemes, soil, mineral and oil reclamation, land development, irrigation, forestry surveys, flood control, and town planning. Aerial surveying of Canada has been going on since 1921, when the first year saw a total of only 280 square miles covered. Since then over two million square miles have been recorded.

Control of the various aircraft of the many detachments from the two squadrons is performed by the operations room at Rockcliffe. From there orders are given to the outlying stations, while weather reports from all areas are carefully watched, so that, in the event of a fine spell occurring over one of the usually treacherous areas, instructions can be issued immediately to divert a certain detachment to photograph that area while conditions permit.

Operation of the aircraft working in the northern areas is confined to a very limited period extending from about the middle of June to the end of August, while those operating in the more southerly regions can usually carry out their duties from the early part of April to well into October. No duties can be undertaken while ice and snow lie on the ground, so work is usually started early in the south and aircraft follow the retreating cold weather into the north.

The actual photographic work of the two squadrons, which in the past year have included 12 Dakotas, four long-range Lancasters, and several Mitchells, is divided into two main branches, tri-camera coverage for basic mapping, and vertical coverage for more detailed mapping. The Lancasters of 413 Squadron are normally routed to cover the work in northern and central Quebec and Baffin Land, while the Dakotas of 414 Squadron are routed to cover the areas in the Yukon, British Columbia, parts of the north shore of the St. Lawrence River and sections of the southern border.

In addition to these aircraft the ubiquitous Canso amphibian and Norseman seaplane are used for flying-in scientists and supplies to remote areas where they have to operate, in order to establish astronomical fixes before final maps can be accurately produced. These workers have to be landed at any of thirty different places on Baffin Island, Southampton Island and on Melville and Boothia Peninsulas.

Detachment Bases

All the machines of the R.C.A.F. photographic squadrons are dispatched in separate detachments, each being allotted certain areas to cover, and each being, in most cases, responsible for supplying and maintaining its own ground crews and servicing engineers. During 1948 detachments operated from the following bases: Goose Bay, Labrador; Fort Chimo, P.Q.; Bagotville, P.Q.; Rockcliffe, Ontario; Churchill, Manitoba; The Pas, Manitoba; Frobisher, Baffin Island; Yellowknife, North West Territory; Norman Wells, N.W.T.; Whitehorse, Yukon Territory; Calgary, Edmonton and Vancouver.

As already mentioned, supplies are flown in to the detachments by Cansos and seaplane Norsemen; these aircraft also serve to maintain close liaison between the outposts and Rockcliffe Air Station; they are in constant use for rushing the exposed films back to the photo establishment, where they are processed in one of the most modern air-survey photographic laboratories in existence. The film is then made up into the form of mosaics to reveal obvious omissions or possible faults in the different sections. After the coverage has been accurately checked and found perfect, instructions are given by the operations room for the detachments to move on to other positions.

The Right Way Up

It is interesting to recall that, in 1934, photographs which were taken of Akimiski Island, in James Bay, proved that the island had always appeared on previous maps upside down. Although first discovered as far back as 1869 the group had always been depicted on maps or charts as a dotted or vague sketchy outline. The beginning of the greatest advance in R.C.A.F. photographic work was shown in 1945, when the entire area of New Brunswick was surveyed. Then, in 1947, large sections of British Columbia were completed. The most important achievements in these surveys, however, was signified by the announcement, made in the middle of 1948, that two large islands, one of which measures about 85 by 75 miles and the other 20 by 10 miles, had been discovered in Foxe Basin, off the west coast of Baffin Island, north of Hudson Bay, by the crew of one of the Lancasters. The discovery of these masses of land, incidentally, added a very positive aid to northern navigation, as was actually shown when the aircraft concerned made a fix on what was thought to be an island much farther on, causing a serious error in working out the E.T.A. at the home base. Such errors will not be possible once all maps and charts are brought up to the standards laid down by I.C.A.O.

As a further example of the areas now being covered or already completed, may be mentioned the charting of the coastlines around Victoria Island, Prince of Wales Island, King William Island and the Boothia Peninsula. Of particular importance has been the entire coverage of Baffin Island, revealing on a map for the first time the many navigational hazards of its hitherto uncharted mountain ranges.

The R.C.A.F. is hard at it and will remain hard at it for a long time to come. The work is of world importance and it has to proceed at all costs, particularly at this vital time when every section of the world is either a point of defence or a point of attack in the event of war; and to this the Arctic sections of Northern Canada are indeed no exception.