

The Foxe and Committee Fold Belts extend in an east-northeast direction from southern Melville Peninsula to central Barren Island. They are composed of granitoid gneissic rocks...

The Archean rocks of the Foxe Fold Belt are correlated with the Prince Albert Group of the northwesterly adjacent Committee Fold Belt on the basis of considerable lithologic similarity...

The Penhryn Group consists of paragneiss and marble (Apc) with some quartz-mica psammite (Aapb, Aapc) and calcium-silicate gneiss (Apcg). Minor orthoquartzite (Aqc) and amphibolite (Aab) units are also present...

The Penhryn Group appears to lie unconformably on the basement complex. Tectonism has obliterated any angular discordance and unconformable relationships are inferred because of the clear lithologic contrast...

Metamorphism in the Foxe Fold Belt produced the assemblages garnet-biotite-sillimanite and cordierite-sillimanite-garnet in paragneiss and in marble, diopside-forsterite-calcite as well as scapolite and a hornite group mineral...

Polyplyase structures indicating numerous episodes of deformation of the basement complex, the Prince Albert Group and the Penhryn Group exist throughout the two fold belts...

The basement complex overlies basal orthoquartzite (Aqc) of the Penhryn Group along much of the exposed contact. Marble (Aapb) with minor paragneiss (Aapc) and calcium silicate gneiss (Apcg) lie against the orthoquartzite and are followed to the south in an overturned, apparently homoclinal succession...

In numerous places gneissic bodies of the basement complex can be seen to lie on and possibly within the Penhryn Group. Such relationships suggest either the presence of large allochthonous nappes or smaller scale locally overturned folds and thrust faults...

Available results of radiometric analyses indicate formation of the basement complex prior to 2500 Ma ago, with some events occurring possibly as long as 2900 Ma ago (R.K. Manless, personal communication, 1976). Acid volcanic rocks of the Prince Albert Group on the west side of Melville Peninsula have yielded a preliminary...

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Fairbridge, W.F. 1970. Diabase Dyke Swarms. In Geology and Economic Minerals of Canada. Geological Survey of Canada, Economic Geology Report Number One, pp. 131-134.

Frisch, T. 1974. Geological Studies in the Prince Albert Hills, Western Melville Peninsula, District of Franklin. Geological Survey of Canada, Paper 74-1A, pp. 163-164.

Heywood, W.M. 1967. Geological Notes. Northeastern District of Keenatin and Southern Melville Peninsula, District of Franklin, Northwest Territories (Parts of 45, 47, 56, 57). Geological Survey of Canada, Paper 66-40.

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Oukilich, A.V., Gordon, T.M., Henderson, J.R., Reesor, J.E., Hutcheon, I.E. and Turay, M. 1977a. 1:50,000 Geological Maps. Geological Survey of Canada, Open Files 453-463.

Oukilich, A.V., Gordon, T.M., Henderson, J.R., Reesor, J.E. and Hutcheon, I.E. 1977b. Geology of the Barrow River Map Area, Melville Peninsula, District of Franklin. Geological Survey of Canada, Paper 77-1A, pp. 213-215.

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Reesor, J.E., LeCheminant, A.N., Henderson, J.R. 1975. Geology of the Penhryn Group Metamorphic Complex, Melville Peninsula, District of Franklin. Geological Survey of Canada, Paper 75-1A, pp. 349-351.

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1975a. Volcanic Rocks of the Prince Albert Group, Melville Peninsula (Part 1). District of Franklin. Geological Survey of Canada, Paper 75-1A, pp. 359-361.

1975b. Gneiss Distinctions in the Hayes River Region. Magnetic and Geochronological Parameters. Geological Survey of Canada, Paper 75-1B, pp. 89-96.

DESCRIPTIVE NOTES

Map-area 46 0/10 is underlain by the basement complex in its northern two-thirds and the Penhryn Group in the south. The complex is composed mainly of layered gneiss (Agn), outcrops of foliated grandiorite (Agg), and in marble, diopside-forsterite-calcite as well as scapolite and a hornite group mineral...

The basement complex overlies basal orthoquartzite (Aqc) of the Penhryn Group along much of the exposed contact. Marble (Aapb) with minor paragneiss (Aapc) and calcium silicate gneiss (Apcg) lie against the orthoquartzite and are followed to the south in an overturned, apparently homoclinal succession...

In all but a few outcrops, the basement complex is parallel to bedding. Megare evidence suggests that the trend of early Penhryn structures may have been northerly. The effects of this folding episode on the Penhryn Group remain problematical, but may have resulted in some of the observed discontinuity of units described above.

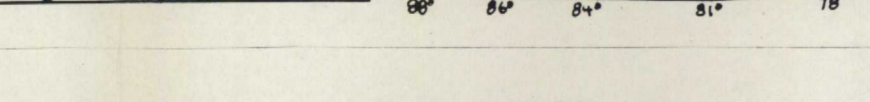
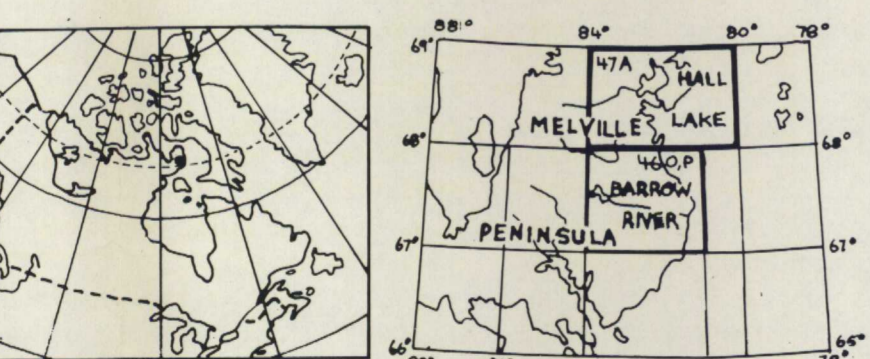
Later episodes of folding produced prominent meso- and megascopic folds that impose an east-northeast structural grain on the Foxe Fold Belt. Tight to nearly isoclinal, recumbent structures are followed by later nearly coaxial, more open, upright to overturned folds. These later folds can often be observed to have deformed earlier structures.

In numerous places gneissic bodies of the basement complex can be seen to lie on and possibly within the Penhryn Group. Such relationships suggest either the presence of large allochthonous nappes or smaller scale locally overturned folds and thrust faults. The time of movement of the basement masses is uncertain but they are folded about northeasterly trending axes, they are presumed to have been emplaced during the early deformation of the Penhryn Group.

North to northeasterly trending broad transverse flexures alter the plunges of pre-existing folds. Few mesoscopic structures associated with this phase were observed. It may be related to syn- and post-tectonic plutonic intrusion. Steeply dipping fractures and faults, many with northerly and northeasterly trends are evidence of the last major phase of deformation. Most fault displacements appear to be left lateral and east-side-up. Minor evidence of east-west faulting that may have affected Late Proterozoic diabase dykes (Hd) has been observed.

Metamorphism is believed to have accompanied all phases of deformation up to the late northeasterly trending open folding. It possibly reached its zenith during the preceding northeasterly-trending isoclinal phase, but mineral recrystallization outlasted much of the penetrative deformation. Retrogressive metamorphism may have accompanied latest folding episodes or been post-tectonic. Contact metamorphic aureoles are likely present around post-tectonic granitic plutons (Ag).

Massive and foliated plutonic rocks (Ag1, Ag2, Ag3, Ag4), chiefly of hornblende and biotite grandiorite, quartz monzonite and granite intrude the basement complex and the Penhryn Group. Foliated plutonic rocks, except where they have intruded the Penhryn Group are assigned to the complex. Where intrusive into the group (Ag) they are considered to be pre- or syn-tectonic to the main phases of deformation. Common local generation of pegmatite and leucocratic granitic rock (Ag) is believed to be coeval with deformation also. Massive, orthoquartzite (Aqc) and marble (Aapb) invaded the Penhryn Group after cessation of deformation.



LEGEND

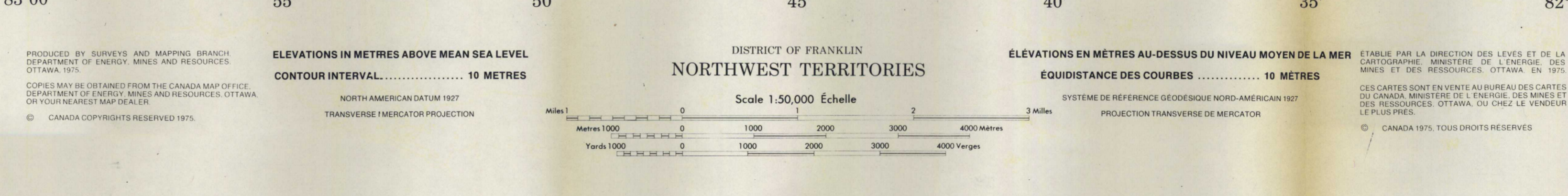
- PHANEROZOIC PALAEZOIC: OSc Buff and light grey dolomite. UNCONFORMITY: Hd Brown weathering, dark green to black, fine to medium grained pyroxene diabase. INTRUSIVE CONTACT: Ag Orange and buff weathering, white, tan and grey, massive and foliated, medium to coarse grained, biotite and hornblende equivalents...

LITHOLOGIC AND STRUCTURAL DATA SHOWN IS THAT OBTAINED IN THE FIELD AUGMENTED BY ONLY LIMITED INTERPRETATION. NO ATTEMPT HAS BEEN MADE TO EXTEND LITHOLOGIC UNITS TO CONSTRUCT AN INTEGRATED STRATIGRAPHIC AND STRUCTURAL MODEL...

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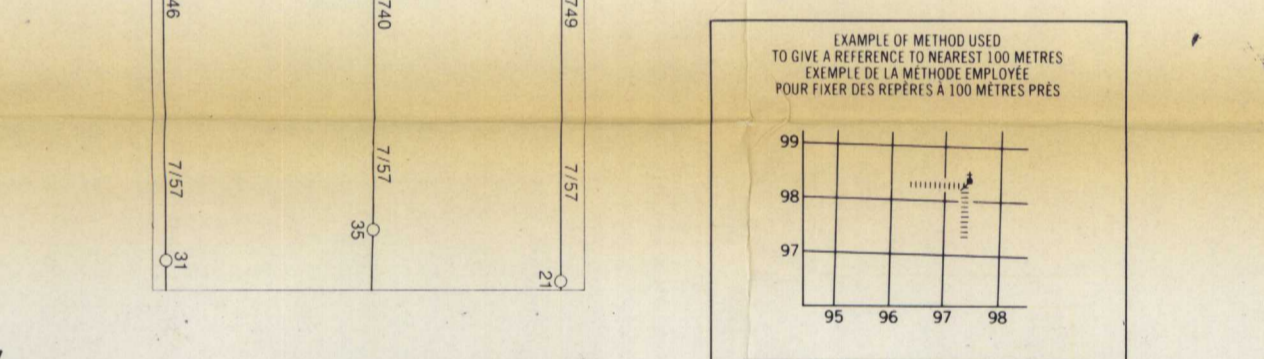
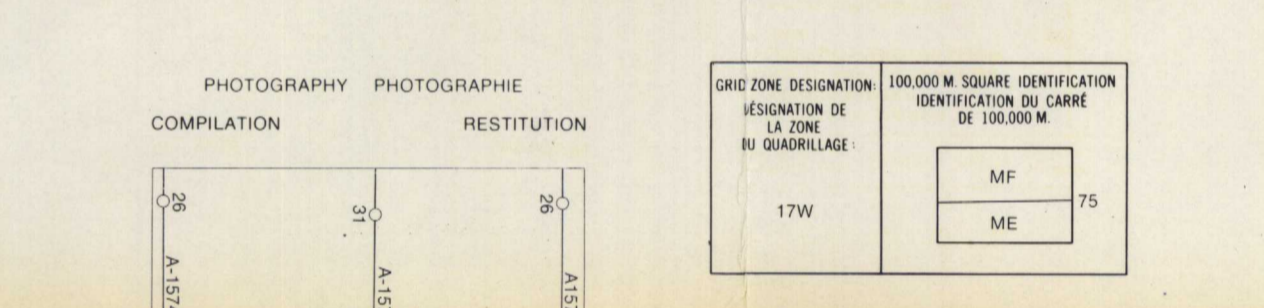
CANADA



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Table with 4 columns: Military users refer to this map as, Series, A 701, 46-0/10, 1:50,000, Edition 1, 1978.

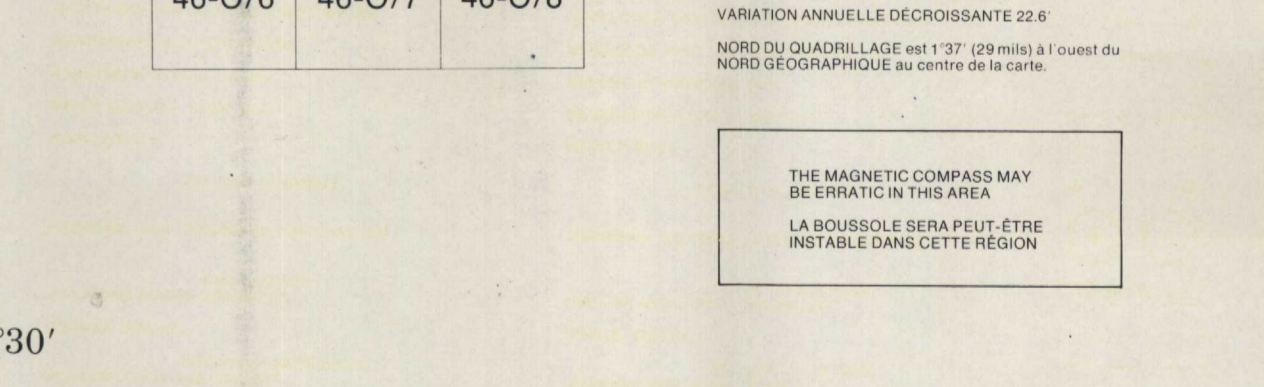
Legend - Légende. Tables listing symbols for roads and related features, landmarks, drainage, relief, and boundaries. Includes French and English descriptions.



ONE THOUSAND METRE TRANSVERSE MERCATOR GRID ZONE 17 QUADRILLAGE DE MILLE METRES UNIVERSEL TRANSVERSE DE MERCATOR

The 1975 MAGNETIC BEARING is 43°22' (771 mils) WEST OF GRID NORTH. ANNUAL CHANGE DECREASES 2.2 m. GRID NORTH is 1°27' (209 mils) WEST OF TRUE NORTH for centre of map.

THE MAGNETIC COMPASS MAY BE USED FOR ORIENTATION. LA BOUSOLE SE PEUT ÊTRE INSTAURÉE DANS CETTE RÉGION.



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