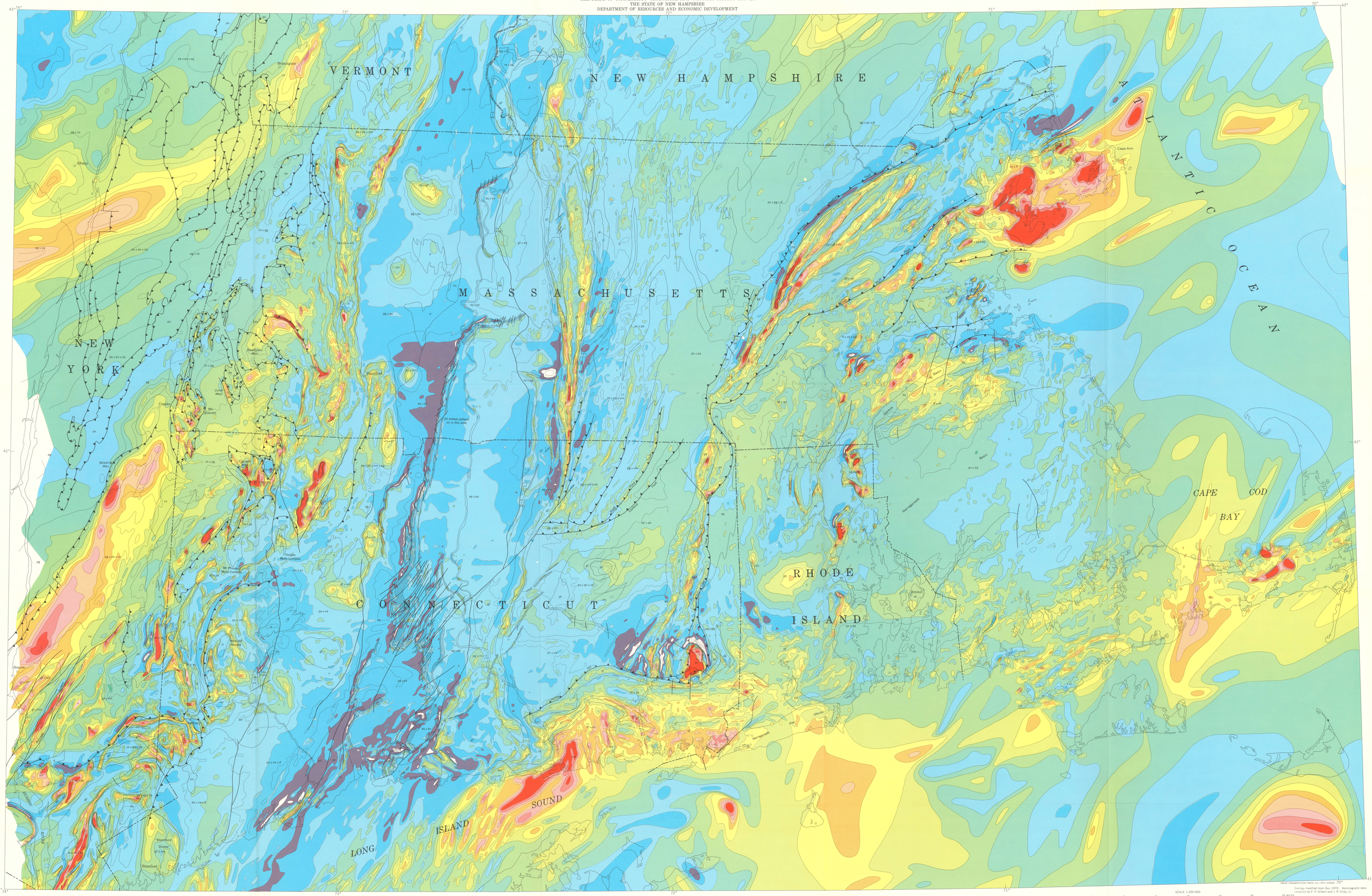
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
THE STATE OF CONNECTICUT GEOLOGICAL AND NATURAL HISTORY SURVEY
THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT

GEOPHYSICAL INVESTIGATIONS
MAP GP-906



Base from U.S. Geological Survey

Interior—Geological Survey, Reston, Va.—1977—G75[0]

Geology modified from Zen, 1972. Aeromagnetic data compiled by F. P. Gilbert and J. R. Kirby, Jr.

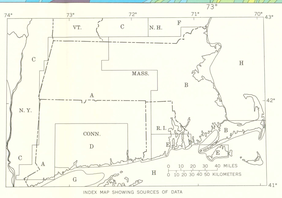
SOURCES OF DATA

All data used as source of aeromagnetic data for areas A and B are from U.S. Geological Survey Geophysical Investigation maps. Data for areas C, D, E, and F are from U.S. Geological Survey Open-File Reports, area G from Heirtzler,[1971],and area H from Taylor, Zietz, and Dennis, (1968).

Total intensity magnetic surveys by the U.S. Geological Survey and U.S. Naval Oceanographic Office with flight elevation and spacing are listed below:

U.S. Geological Survey
- A. 500 feet above ground, ½ mile
- B. 400 feet above ground, ½ mile
- C. 500 feet above ground, 1 mile
- D. 500 feet above ground, ½ mile
- E. 400 feet above ground, ½ mile
- F. 2200 feet barometric, 2 mile
- G. Shipborne Survey, Heirtzler, 1971

U.S. Naval Oceanographic Office
- H. 500 feet to 2500 feet above ground, 5 miles



INDEX MAP SHOWING SOURCES OF DATA

EXPLANATION

Symbols show generalized lithology and are combined where two or more lithologic types occur within the same belt

- im –Mafic and ultramafic intrusive rocks; diorite, gabbro, peridotite, dunite and serpentinized equivalents
- if –Felsic intrusive rocks; mainly granite, quartz monzonite and granodiorite
- ztf –Strongly foliated, generally linsated intrusive granitic gneiss
- gf –Felsic gneiss; layered biotite-quartz-plagioclase gneiss with variable amounts of hornblende-biotite-quartz-plagioclase gneiss and amphibolite
- sq –Quartz-rich sandstone, feldspathic sandstone, gray wacke, arkose with interbedded shale, and their metamorphic equivalents
- vx –Mixed mafic and felsic volcanic rocks and their metamorphic equivalents
- vm –Mafic volcanic rocks; basalt and andesite, greenstone and amphibolite in appropriate metamorphic zones
- vf –Felsic volcanic rocks; rhyolite and rhyolite porphyry
- pc –Pelite mixed with significant amount of carbonate, and its metamorphic equivalent
- pl –Interbedded calcareous shale and sandstone and their metamorphic equivalents, calcareous schist and quartzite, calc-silicate rocks
- pg –Black carbonaceous shale and feldspathic sandstone; graphitic, sulfidic slate, phyllite, and schist and graphitic feldspathic quartzite
- pv –Red, purple, maroon, green, gray shale and sandstone; metamorphic equivalents generally in rusty-gray, manganese-rich, commonly magnetite-rich pelitic schist and quartzite in middle and high metamorphic grades
- ps –Gray shale and sandstone; metamorphic equivalents generally interbedded non-rusty weathering manganese-rich phyllite, schist and quartzite
- pu –Undivided shale and sandstone and their metamorphic equivalents
- cx –Carbonate rocks; limestone, dolostone, and impure varieties of both; includes marble and diopside-tremolite-phlogopite-bearing calc-silicate rocks at higher metamorphic grades—also includes quartz-rich sandstone and feldspathic sandstone and their metamorphic equivalents

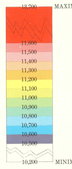
Contact

Normal fault

Thrust fault—Sawteeth on upper plate

MAGNETIC CONTOURS

Showing total intensity magnetic field of the earth in gammas relative to arbitrary datum. Main magnetic field of the earth from Fabiano and Peddie (1969) has been removed. Contour interval 50 & 100 gammas. Dashed where inferred



SCALE 1:250 000

0 5 10 15 20 25 MILES

0 5 10 15 20 25 30 35 KILOMETERS

GEOLOGIC INTERPRETATION OF AN AEROMAGNETIC MAP OF SOUTHERN NEW ENGLAND

By David S. Harwood and Isidore Zietz

1976

REFERENCES CITED

Fabiano, E. B., and Peddie, N. W., 1969, Grid values of total magnetic intensity IGRF-1965: U.S. ESSA Tech. Rept. C&GS 30, 55 p.

Heirtzler, J. R., 1971, Magnetic anomalies measured at sea, (*in* The Sea V4. Pt. 1, New York, Wiley-Interscience Publishers, p. 85–128

Taylor, P. T., Zietz, Isidore and Dennis, L. S., 1968, Geologic implications of aeromagnetic data for the eastern continental margin of the United States, Geophysics, V. 33, No. 5, p. 755–780

For sale by Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202