Half-Day Thrust Tectonics Symposium

The North American Explorationists usual dinner meeting will be replaced by a half-day symposium on thrust tectonics. The forum will be at the Westchase Hilton. Five noteworthy speakers will present topics related to worldwide thrust tectonic research and exploration. The meeting cost is $35, which includes a catered lunch, posters and demonstrations during the afternoon social break, and a book of abstracts.

THRUSTFEST '98 SPEAKER ABSTRACTS
Symposium Introductory Comments by:
James G. Buchanan, Conoco Inc., Houston, TX

Structural Geometry of the Taconic-Acadian Thrust System in the Cambro-Ordovician of Western Newfoundland
by Mark Cooper, PanCanadian Petroleum Limited, Calgary, Alberta, Canada

The Humber zone is the most external zone of the Appalachian orogenic belt in Western Newfoundland and records multiphase deformation of the Cambro-Ordovician passive margin and Ordovician to Devonian foreland basins by Taconic, Salinic and Acadian orogenic events.

The recent phase of exploration well drilling in western Newfoundland has provided new evidence for structural and stratigraphic models of the region. The first well drilled supported the hypothesis that the Round Head thrust had an earlier extensional history prior to the Acadian compressional inversion that created the present-day structural high of the Port au Port peninsula. The Port au Port #1 well penetrates the footwall of the Round Head thrust which has a significantly thinner Middle Ordovician section than in the hanging wall of the fault. The structure tested by the well is a small antcline caused by a footwall shortcut fault from the Round Head thrust. The second well was drilled some 40km to the NE to test the triangle zone discussed by previous workers in the area. This well demonstrates that the frontal monocline at the western edge of the triangle zone is elevated by a stack of imbricate thrusts composed of rocks of the Taconic allochthon. The age and facies of these imbricates suggest that they may have originated from the along strike equivalents of the Cow Head group which is exposed at outcrop some 130 km to the NE. Some of the elevation of the triangle zone is also due to inversion of basement involved extensional faults which have uplifted the Cambro-Ordovician carbonate platform. The third well was drilled in 1996 to test the up-plunge portion of the structure penetrated by the first well.

The structural model developed in the Port au Port area with the aid of these wells has been extended throughout the Humber zone in Western Newfoundland. The changes in structural style can be illustrated by a suite of regional cross-sections that show that prospective trap geometries are only developed in the southern part of the trend.

The reservoir model developed from these wells invokes exposure and karsting of platform carbonates on extensional fault footwalls during the Middle Ordovician. These structurally high fault footwalls became the foci of the dolomitizing and mineralizing fluids that utilized the major faults as fluid conduits.