



VARIATIONS IN THE DISTRIBUTION AND CONTROL OF SYN-RIFT DEFORMATION IN THE GULF OF CORINTH, GREECE

A.M. Goodliffe (1), J.R. Weiss (1), B. Taylor (1), M. Sachpazi (2), A. Hirn (3), A. Stefatos (4), and M. Laigle (3)

(1) SOEST, University of Hawaii, (2) National Observatory of Athens, (3) Institut de Physique du Globe de Paris, (4) University of Patras (amg@hawaii.edu)

In July of 2001 the R/V Maurice Ewing collected a network of 50 multi-channel seismic lines in the Gulf of Corinth. The data, collected using a 138 litre tuned airgun array, a 50 m shot interval, and a long streamer (6-km streamer, 25 m receiver interval for the first half of the survey; 3-km streamer, 12.5 m receiver interval for the second half of the survey), provide the first in-depth look at the variation and distribution along strike of faulting in the submarine portion of the asymmetric Corinth Rift.

In the west of the survey area, south of Eratini, the syn-rift sediments and underlying basement are tilted to the north above large south dipping faults. The subaerial north-dipping Heliki fault is not imaged offshore in our profiles.

Between Eratini and the Pangalos Peninsula, syn-rift sediments record accommodation by collapse, with the majority of faults soling out at the base of, or within the syn-rift section. Sediment deformation is focused by the intersection of basement rider blocks with the underlying detachment surface and the overlying syn-rift sediments. South-dipping faults in the northern hanging wall maintain an important role, significantly offsetting basement and maintaining scarps on the seafloor.

Between the Pangalos and Perahora Peninsulas the syn-rift sediments becomes less deformed above basement blocks riding on a detachment. Roll-over of the northern

hanging wall into the basin is achieved with only small amounts of deformation on infrequent south dipping faults.