unit (Kfs+Plg+Qtz+Grt+Ky/Sill+Bt), metapelite from the Podhradska unit (Bt+Grt+Qtz+Plg+Kfs+Sill/Ky±St) and one sample from the granulitic body at the eastern border of the Podhradska unit (Grt+Kfs+Plg+Qtz+Ky+Bt). The PT-paths were determined on the basis of the succession of mineral assemblages and zoning of the minerals.

On the basis of the structural observations correlated with the PT estimates we propose two major thrust-zones to have originated at in the deep lower crustal levels. The sheet of amphibolites whith eclogite relics indicates the thrusting of the lower crustal Raabs unit over the middle-crustal Varied group. The second major thrust marked by Ky-Kfs granulites brings the lower crustal Podhradska unit over the foreland basement units of the Moravian zone. These thrusts were later reworked under the mid-crustal conditions. Our structural observations are consistent with the results of numerical modelling of structural evolution of the continental wedge by Beaumont et al. (2000). In agreement with their numerical model P3, which involves inherited weak lower crustal horizon, we put the first pro-wedge thrust at the bottom of the Raabs unit. This thrusting is connected with extreme deformation of the eastern part of the Varied unit and steep folding of remote eastern part of this unit. Subsequently, a new pro-wedge thrust develops at the lower crust level and the whole sequence is thrust over the Brunovistulian foreland. This thrusting is accompanied with gravitational sliding of hangingwall Varied group and vertical gravitational collapse of steep fabrics.

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Syn- and Post-Sedimentary Tectonics of the Most Basin (Ohře Rift, Czech Republic); Insights from Reflection-Seismic Data

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The Most Basin located in the Ohře Rift (Eger Graben) Zone in NW Bohemia, is a relict of the largest sedimentary basin of this Cenozoic extensional province. During the syn-rift filling of the basin by volcanics and sediments during late Oligocene-early Miocene, the basin geometry was controlled by E-W (WSW-ENE) -striking normal faults, arranged in an en-echelon pattern, due to oblique NNE-SSW extension (Rajchl and Uličný 2000). In the present-day topography, it is difficult to recognize this syn-depositional fault system, because (1) the E-W fault system was strongly overprinted by younger NE-SW fault systems (e.g. Krušné hory Fault system) formed under later NW-SE extension (Adamovič and Coubal 1999, Rajchl and Uličný 2000) and (2) thick accumulation of peat is likely to have accommodated much of the brittle deformation. In spite of the abundance of borehole data and extensive open-cast coal mines, precise localization of many syn-rift tectonic features, and unequivocal discrimination of syn- and post-depositional activity of individual structures has commonly been difficult.

To clarify the problem of expression of syn- versus post-depositional tectonic deformation in the architecture of the present-day basin fill, 2-D reflection-seismic data acquired in early 1980 (Jihlavec and Novák 1986) were reprocessed and reinterpreted. The reflection-seismic lines 21/81, 22/81 and 68/83 are located in the central, deepest depocentre of the Most Basin.

The interpretation of the seismic data confirmed synsedimentary activity of small-displacement normal faults, active during the intitial phase of basin opening and largely covered occurred under coal seam. Upward propagation of these normal faults was mostly accommodated in the coal seam, resulting in its local flexure. During the early stage of basin evolution, a low-relief (c. 100 m total relief) extensional horst structure separated the depocentre into two shallow grabens. This tectonic style corresponds to models of oblique extension (McClay and White 1995) and is in agreement with the interpretation of early basin geometry by Rajchl and Uličný (2000). The architecture of clastics overlying the main coal seam suggests, however, that in a later stage of basin filling, subsidence was controlled by major basin-bounding faults located outside the margins of the seismic profiles. Within the basin, the geometry of clastic infill was controlled predominantly by compaction of thick accumulation of peat, corresponding to the main seam. The profile 21/81 helped to precisely localize a synsedimentary transfer zone which bounded the central depocentre from NE. This syn-depositional structure was characterised by relatively low subsidence resulting in reduction of thickness of the coal seam and underlying deposits.

Onlap of lacustrine clays on the surface of the main coal seam close to the present-day Krušné Hory Fault Zone (KHFZ) suggests a relatively flat synsedimentary relief of NW-margin

of the Most Basin, (probably due to gently inclined relay ramps), and confirms that the KHFZ is generally a post-depositional feature which probably developed by hard linkage of earlier, en-echélon, E-W normal faults.

All three seismic reflection profiles show a number of strike-slip faults expressed as flower structures of minor vertical displacements, commonly younger than the Oligo-Miocene deposits, but suggesting also significant strike-slip deformation prior to the basin filling.

The most pronounced tectonic feature in the reflection-seismic profiles is the deformation of the whole basin fill at the margin of the KHFZ. The flexure of the preserved basin fill, accompanied with an array of secondary normal faults in the coal seam and the clastics, is interpreted as due to forced folding caused by a propagation of a major normal fault in the rigid crystalline basement. The sedimentary package above the fault zone is fractured by an array of secondary, synthetic normal faults in the folded zone, which splay off the master fault and mostly die out upward (cf. analogue models by Schlische et al., 2002, for closely similar examples). Immediately above the hinge zone of the flexure, a fan-like array of both synthetic and antithetic faults occurs. The kinematic interpretation of this fan, which could be related to the bending of the clastic package during forced folding, is complicated by the occurrence of a minor vertical fault coinciding with the bend and possibly evolving upward into a flower structure. The exact succession of deformation events in this zone should be addressed by analogue modelling. The age of the basin-fill deformation at the KHFZ is Late Miocene to post-Miocene; exact timing cannot be assessed from the seismic data.

The present interpretation of reflection-seismic data allowed to separate distinct styles of pre- and post-depositional tectonic deformation in the Most Basin. Future efforts should focus on the nature of the transition between the styles of syn- and post-depositonal faulting, and, above all, on the dynamic causes of the uplift of the Krušné Hory Mountains which led to significant modification of the original, syn-rift architecture of the Ohře Rift.

Acknowledgements

This research was financially supported by the Ministry of Environment of the Czech republic, contract No. OG-13/02.

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Large-Scale Stratigraphic Geometries in a Rift-Margin, Lacustrine Delta System Influenced by Peat Compaction: Comparison of Field and Reflection Seismic Data (the Miocene Bilina Delta, Ohře Rift, Czech Republic)

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The stratigraphic geometry of depositional systems is generally thought of as a product of the interplay of basin-floor subsidence, base-level changes, and sediment supply. The subsidence of basin floor is generally implicitly regarded as mainly tectonic and isostatic in origin, but it can be significantly modified by migration of ductile substrate such as salt, and by compaction. In depositional systems with strongly compactible and migrating substrates, the feedback between sediment supply, loading and compaction/migration of the substratum leads to creation of local to regional accommodation and, at the same time, may have a strong influence on the resulting stratal geometries. In coal-bearing basins, syndepositional compaction of peat plays a significant, but as yet not fully explored, role in the behaviour of depositional systems and the resulting stratigraphic geometries.

The early Miocene Bílina Delta is package of a fluvio-deltaic clastics deposited at the southeastern margin of the Most