

Walter Zenk: a distinguished ocean observer

by

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The oceanographer Walter Zenk grew up in the Rhineland, a part of Germany that is not particularly known for maritime traditions. He was born in Cologne on 8 April 1940, went to school in Leverkusen, and then received an education as an electrical engineer at the Technical University of Aachen. In 1966 he made the decisive move to the coast and to oceanography. He joined the Institut für Meereskunde at Kiel University to work on a doctoral thesis in physical oceanography with Günter Dietrich and as a member of Gerold Siedler's group. The 1960s were particularly exciting years in marine science in Germany, with many scientists and engineers entering oceanography from other fields, with the new research vessel Meteor being put into operation, and with electronic measurement methods developing fast. Walter Zenk was the right person at the right time, bringing in his knowledge in electrical engineering and a great dedication to his work. A Meteor cruise to the region west of Gibraltar provided the data for his doctoral thesis on topographic control and mixing processes in the Mediterranean outflow water. He received the Dr.rer.nat. from Kiel University in 1969 and has been a staff member of the Institut für Meereskunde in Kiel since that time. But this did not keep him in Kiel that much.

Working on research vessels became the most natural thing in the world for him, in later years very often as a chief scientist. The ships included the two Meteors, Alkor, Gauss, Littorina, Poseidon, Planet and Polarstern from Germany, Knorr and Thomas G. Thompson from the USA, Akademik Kurtchatov from Russia, Le Suroit from France, Discovery from Great Britain, and NO23 from China. This list indicates the involvement in international collaboration which also became part of Walter Zenk's life. It led him to the Woods Hole Oceanographic Institution as a Visiting Investigator in 1973–1974, and he strengthened his relationship with his US colleagues during five stays in Woods Hole between 1975 and 1993 and two stays at the Scripps Institution of Oceanography in San Diego in 1986 and 1989. The list of countries where Walter Zenk was a welcome partner in oceanographic projects reaches from Europe to North and South America and from South Africa to China and Japan.

His scientific interests are manifold, with one exception: out of about 90 papers which he authored or co-authored in reviewed journals and books, more than 20 are concerned with the Mediterranean Water in the North Atlantic Ocean. He is certainly one of the key experts on that topic. But there are numerous other research subjects. The structure and dynamics of ocean fronts is one of them, including studies on the polar front in the Southern Ocean and on the Cape Verde Front and the Azores Front in the subtropical North Atlantic. When many observations in the World Ocean Circulation Experiment focused on the South Atlantic in the 1990s, his studies on the deep and bottom water transports in that region brought important new results on topographic control and decadal changes in near-bottom flow. Water masses and ventilation in the subtropical gyres of the North and South Atlantic as well as the pathways of Antarctic Intermediate Water in the Atlantic and Pacific Oceans formed another set of research topics. That work also formed the basis for a study of the inter-ocean exchange around South Africa. In recent years most of his sea-going activities focused on the eastern North Atlantic, emphasizing the water mass structure and the transports that are related to the global thermohaline circulation.

However, Walter Zenk never neglected the technical expertise that had originally brought him to physical oceanography. Developing and testing new instruments, new measurement systems and new methods have always been part of his life. After working mostly with CTDs and moorings, his dearest technology project was the introduction of float measurements to Germany, well supported by Tom Rossby from the University of Rhode Island, and the development of numerous new tools for the operation of floats, including the float park.

It goes without saying that much of the above work was embedded in international projects, in particular the GARP Atlantic Tropical Experiment (GATE), the Joint Air–Sea Interaction Study (JASIN), the World Ocean Circulation Experiment (WOCE), the Cape of Good Hope Experiment (KAPEX), EUROFLOAT, GYROSCOPE and ARGO. Walter Zenk was also involved in the planning of experiment components as a member of expert committees and panels, such as the WOCE Float Programme Planning Committee and the Ocean Observation Panel for Climate (OOPC).

It is hard to imagine that Walter Zenk will just sit back in 2005 when he reaches the age of 65 (the mandatory retirement age in his home country) and forget oceanography. He will certainly continue to be active in science,

although probably with some change in pace and focus. The editor and the guest-editors of this volume have known him for a long time, and the guest editors have all worked with him on various projects and co-authored papers with him. It was always a pleasure to join Walter Zenk in scientific work because he is a scientist with excellent ideas and persistence in following up those ideas, but not at least because he is open-minded, modest and to the utmost fair in his attitudes. We were glad that so many well-known friends and colleagues were willing to contribute to this volume. In several cases the reviewers told us that they were actually too busy for review work, but that they would nevertheless do it because of the appreciation of Walter and his work. This volume is the tribute of a truly international community to a great ocean observer.