Conclusion: the book is a mine of information, but you sure have to dig for it.

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Theorie der linearen Operatoren im Hilbert-Raum. By N. I. Achieser and I. M. Glasmann. Berlin, Akademie-Verlag, 1954. 13+369 pp. 28.00 DM.

The book under review is a translation from the Russian. The original version was published in 1950; a detailed review of it (by Mackey) appears in vol. 13 of Mathematical Reviews. There are by now well over a dozen books one of whose chief purposes is to introduce the reader to the concepts and methods of operator theory in Hilbert space; in the last five or six years they have been appearing at the rate of slightly more than one a year. In view of these facts, a detailed, discursive review of still another contribution to the expository literature of the subject does not seem necessary. What follows is a list of the standard topics that are treated, a brief description of some of the special topics that the authors chose to include, and an appraisal of the didactic value of the book.

Standard topics: definition of Hilbert space, subspaces, bases, linear functionals and their representation, bounded operators, projections, unitary operators, unbounded operators, spectrum, resolvent, graph, the spectral theorem for not necessarily bounded self-adjoint operators and for unitary operators, defect indices, Cayley transforms, extensions of symmetric operators. Comments: infinite-dimensionality is built into the definition of Hilbert space; separability is not part of the definition, but is usually assumed; weak convergence is treated from the sequential point of view only.

Special topics: completely continuous normal operators; Neumark's generalized extension theory for symmetric operators; Krein's generalized resolvents; differential operators. The spectral theory of completely continuous normal operators is treated in detail before the more general spectral representations are attacked; it is made to serve, quite effectively, as a psychological stepping stone. This occurs in a chapter in the main body of the book. The Neumark-Krein theory and differential operators appear in two appendices. The first appendix states and proves Neumark's theorem on positive operator measures (they are compressions of spectral measures) and Neumark's extension theorem for symmetric operators (they are compressions of self-adjoint operators). The same appendix presents Krein's representation theorem for the generalized resolvents of symmetric operators with defect index (1, 1) (in terms of analytic