

# INTERNATIONAL GEOLOGIC-GEOPHYSICAL ATLASES OF INDIAN , ATLANTIC AND PACIFIC OCEANS

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1. Atlases compiled under the aegis of Intergovernment oceanographic commission ( IOC ) of UNESCO .

At first Geologic-geophysical atlas of Indian ocean was compiled . It was published for purpose of generalization of results of International Indian ocean expedition (1959-1965 years ) . Geologic-geophysical atlases of Indian ocean received favourable responses of scientific world , stimulated an idea to create analogous atlases for Atlantic and Pacific oceans . Geologic-geophysical atlas of Atlantic ocean , issued at 1989-1990 , became the following one in this series .

Completion of long years working on creation of series geologic-geophysical atlases of World ocean is atlas of Pacific ocean .

Structure of the atlases is defined approximately same , as in atlas of Indian ocean , with small differences reflecting degree of learning of the oceans .

2. General characteristic of atlases .

Volume ( quantity of print sheets , pages ) .

Amount of the maps of type scales .

Double-side print , 2 languages ( Russian and English ) , middle paintness .

Organizations of USSR and Russia , foreign organizations and authors were taking part in creation of atlases .

Specific of the works over these atlases in comparison with analogues map compiling works .

3. Main sections of the atlases

Geologic and geophysical data are presented in atlases on the maps compound in following number of sections :

Atlas of Indian ocean – 9 main sections , atlas of Atlantic ocean – 11 , atlas of Pacific ocean – 13 .

In the atlases the photographs of the ships placed , which took part in research of the oceans and the tables with characteristic of these ships . In Atlas of Indian ocean every section is opened by explanatory text , describing character of placed data , methods of compiling and some elements of the maps . In atlases of Atlantic and Pacific oceans a large section is dedicated to development of new research technics . Projection by Mercator is accepted for main sections of the maps in all atlases .

The maps of sea bottom relief are main sections of the atlases . Structure of sea bottom relief is reflected on barimetric maps and profiles of bottom . Picture of bottom relief is given by isobaths across 500 metres , what lets to receive correct notion about difference between separate areas and their morphological features . Ensuring by initial data on the lines of measuring tackes of research ships is shown .

Various scales of relief crossing are used . Usage of various sets of color for reflection of relief

in general , areas of detail research and shelf zone – manner used at first time in atlas of Indian ocean and used in subsequent two atlases .

4. Geophysics is presented in the atlases most completely : series of the maps of magnetic fields of all oceans and areas of detail research , depicted either by profiles of magnetic anomalies drawn along ship's routs , or by isolines ; the maps of anomalies of gravity in free air with isolines across 25 mGal and in well investigated polygons across 10 mGal ; series of the maps of anomalies of gravity on data of satellite altimetry ; the maps of heights of ocean surface with isolines on satellite data ; seismic maps where geophysical spreading of epicentres of earthquakes is reflected and mechanisms of seats , sections of seismic-focal zones are shown , three-dimensional diagrams of Wadati-Beniof zone are drawn .

Section of maps of geothermal data is characterised by the values of warm flow in various parts of the ocean , what is indicator of degree of its study .

The map of deep structure of earth's crust ,where speed (in km/sec) in various layers and capacity of the layers ( in km ) are shown . Table of fact results and measuring of various parameters on every station . Capacity of sedimentary case ( depicted by isolines ) reflects difference in distribution of sedimentary cover on ocean's bottom .

Section "Columns of drills of deepwater boring" contents main data on structure of sedimentary case .

Section of the maps of data on precipitation reflects composition , distribution and speed of accumulation of precipitation on the ocean's bottom , material-genetic and granulometric composition of precipitation , zonality of processes of precipitation's accumulation .

In all atlases the maps of large regions and regions of detail investigations in scales from 1 : 0,2 Mln up to 1 : 6 Mln are placed . In final section of every atlas is placed a list of sources used by authors by compiling of the maps .

Many scientific organizations and private authors took part in preparing of the maps on base of international collaboration .

The maps differ by high informativity and profundity of contents . Important feature of these atlases is placing of initial data which let to a reader to give his own interpretation of this data .

These atlases are useful documents for future investigations of the World ocean .