

List of the scientific and personal papers of Sir George Deacon, FRS

M B Deacon

Report No. 301 1992

INSTITUTE OF OCEANOGRAPHIC SCIENCES

DEACON LABORATORY

**Wormley, Godalming,
Surrey, GU8 5UB, U.K.**

**Telephone: 0428 79 4141
Telex: 858833 OCEANS G
Telefax: 0428 79 3066**

Director: Dr. C.P. Summerhayes

Natural Environment Research Council

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Institute of Oceanographic Sciences Deacon Laboratory, Wormley, Surrey, UK**

M.B. Deacon*

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		Institute of Oceanographic Sciences Deacon Laboratory Wormley, Godalming Surrey GU8 5UB. UK	
		Telephone Wormley (0428) 684141 Telex 858833 OCEANS G. Facsimile (0428) 683066	
		Director: Colin Summerhayes DSc	
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ACKNOWLEDGEMENTS

During the arrangement of these papers I have to a large measure followed the categories established and maintained by the secretaries who looked after George Deacon's correspondence, principally Miss Irene Thomas and later Miss Sylvia Harvey, and the collection owes a great deal to their dedication and precision. The bringing together and arrangement of the collection would have been impossible without the initiative of Mrs Pauline Simpson, Head of Information Services and Dick Privett, former Librarian at the Institute of oceanographic Sciences Deacon laboratory. I am extremely grateful to them, and the continued help and support of other members of Institute staff who have helped at different times. I would also like to thank Deborah Day, archivist of the Scripps Institution of Oceanography for valuable suggestions and encouragement.

MBD

FOREWORD

The Deacon Papers now form an important cornerstone of the archives of the National Institute of oceanography/Institute of Oceanographic Sciences Deacon Laboratory and we are very grateful to Margaret Deacon for organising and cataloguing her father's papers.

The Deacon Papers identified in this Report are available for consultation to bona fide research workers, but an appointment will be necessary. The archives will remain at Wormley until 1995 after which they will be transferred with the Institute to the new Southampton Oceanography Centre.

Pauline Simpson

Head of Information Services, IOSDL

INTRODUCTION

At a meeting of the Royal Geographic Society in April 1928, following a paper by Alister Hardy (1928) on the whale research being carried out by the Discovery Committee, H R Mill, veteran of a golden age of British oceanography in the period after the Challenger expedition, welcomed his account:

not because in my restricted outlook I consider the abundance of whales in the Southern Ocean is of any importance in itself, but the whales have induced people to go out and make observations on the character of the ocean in which they live. In other words, I would use the whale simply as a bait to induce clever young men to spend their time in acquiring information as to the nature of the oceans and the movements that go on there.

Four months earlier George Deacon, later to become the first director of the National Institute of Oceanography, had begun his career in oceanography, sailing for the Antarctic as a chemist in the smaller of the Discovery Committee's ships, the RRS *William Scoresby*. He spent the next twelve years studying the distribution of salinity and temperature in the Southern Ocean and learning how this influenced the circulation of water masses in the world ocean. During world War II he worked for the Admiralty, at first on underwater sound but from 1944 as head of Group W, studying ocean waves and swell. Scientists from this unit and from Discovery Investigations formed the nucleus of the National Institute of Oceanography on its foundation in 1949. The new institute soon established, on a modest budget, an international reputation in oceanography, both for new ideas and technical innovation. At the same time Deacon was involved in the broader development of the science at both a national and international level, including the planning and preparation of early co-operative enterprises such as the International Geophysical Year of 1958-59 and the Indian Ocean Expedition of the early 1960s. After his retirement in 1971 he continued actively working in marine science, both in his own field, the circulation of the oceans with particular regard to the Antarctic water masses, and in forward planning, through membership of national and international committees, until his death in 1984.

The papers listed in the following pages reflect the different stages in George Deacon's career but the majority of them form part of the archives of an institution rather than a collection of personal papers as usually defined. Most of the collection relates to his work for Discovery Investigations, Group W and NIO, and the greater part consists of official files. He himself had independently retained relatively little in the way of personal papers and correspondence. Much of what remains is linked to his career and scientific interests so has

been added to the collection. The papers fall into two main categories, oceanographic research and scientific administration. On the scientific side are data, notes and drafts for publication from his days with the Discovery Committee onwards, together with correspondence on scientific and related topics, such as attendance at meetings etc. Administrative papers from the period when he headed Group W and the National Institute of Oceanography include files of official correspondence, relating to work in progress and to his membership of national and international committees. The importance of the collection, taken as a whole, therefore lies as much and possibly more in its documentation of the growth of an institution and the contribution of its staff to the science of oceanography at a time when both were rapidly developing, as in its reflection of the career of an individual.

Biography

George Edward Raven Deacon was born in Leicester on 21 March 1906*. He was educated at the City Boys' School where the teaching was of a high calibre and he did well in mathematics and science (and also in history). After passing the London Intermediate BSc examination in 1923 he won a scholarship to King's College, London, to study chemistry. He obtained first class honours in 1926 and spent a further year studying for a teaching diploma and carrying out research. In the autumn of 1927 he began teaching at Rochdale Technical School but was soon offered, and accepted, a post as sea-going chemist for the Discovery Committee.

The Discovery committee had been established a few years earlier to carry out research on whales in Antarctic waters, as a result of anxiety about the danger of overfishing. This prospect had already been causing concern before World War I and in 1912 an interdepartmental committee had been set up to consider ways of restricting the numbers of whales caught in the waters of the Falkland Island Dependencies. Its work was interrupted by the outbreak of war but was taken up again by another interdepartmental committee in 1917. In view of the difficulty of setting quotas in the absence of knowledge of the life cycles of the various species involved this committee recommended that a scientific expedition should be despatched to undertake research on the biology, life history and migration patterns of whales and investigate their marine environment and food resources. Nothing could be done until after the war and it was not until after 1923 that the Discovery Committee was established to organise this work. Its initial venture, between 1924 and 1927, involved setting up a laboratory near the whaling station at Grytviken in South Georgia where zoologists could study the whalers' catches and seaborne investigations in two ships, the *Discovery* originally

built for Captain Scott in 1901, and the *William Scoresby*. It was in this small vessel, designed for carrying out a programme of whale marking, with the zoologist Dilwyn John as chief scientist, that George Deacon first set sail for the Antarctic on Christmas Eve 1927. His role, as that of the other hydrologists (as marine chemists were called at the time) working for committee, was to measure the salinity of the sea and its various nutrient components. This involved collecting water samples in the *William Scoresby* round the coasts of South Georgia and analysing them either on board ship or in the shore laboratory. The principal purpose of this exercise was to measure the productivity of these waters and their ability to sustain the organisms on which the whales fed, in particular the crustacean *Euphausia superba*. However the salinity observations, combined with temperature measurements to give the density of the seawater, could be employed to throw new light on the movements of the Antarctic water masses which play such an important role in maintaining the circulation of the oceans in general. This was the field of study that Deacon was subsequently to make particularly his own, using the new data he was gathering to build on the results obtained by earlier explorers.

There followed twelve absorbing and sometimes adventurous years of travel and research into the seas on the southern hemisphere, for the committee's work had proved impossible to complete in a single expedition. This was partly because the pattern of whaling was changing as the industry became less dependent on shore-based stations, developments that reached their logical conclusion with the general introduction of pelagic whalers in the 1930s. Whaling could now be carried on in most sectors and the Discovery committee's scientific researches therefore needed to be extended further afield to cover the whole of the Southern Ocean. The old *Discovery*, built to withstand ice, was unsuitable for the long distances involved in oceanic work and was replaced in 1929 by the fully powered *RRS Discovery II*. Deacon was involved in three of her pre-war Antarctic commissions, sailing in 1930-31, under the Director of Scientific Research, Dr S W Kemp, from 1931 to 1933 with Dilwyn John as chief scientist, during which time they carried out the first winter circumnavigation of the Antarctic continent in high latitudes, and from 1935 to 1937 himself headed the scientific team on the fourth commission, when the planned work was interrupted by a voyage to the Bay of Whales on the Ross Ice Barrier to rescue the US airmen, Lincoln Ellsworth and his pilot. The observations collected during these voyages on temperature distribution and the salt content of water samples, taken at stations throughout the Antarctic and sub-Antarctic zones enabled Deacon to extend existing knowledge of the origin and distribution of Antarctic water masses and their influence on the circulation of the world ocean. Between voyages he worked on the results at the British Museum (Natural History) and at the Committee's offices, where he met Elsa Jeffries, his future wife. His findings were published in a number of scientific papers and in the series of *Discovery Reports*, the most important of these being 'The hydrology of the Southern Ocean' (1937).

For his work he was awarded a DSc from London University in 1944 was elected a Fellow of the Royal Society.

On the outbreak of war Deacon offered his services to the Admiralty and was sent to HMS Osprey at Portland to work on Asdic, helping to improve methods of submarine and mine detection (Hackmann, 1984). In 1940 the increasing difficulty of seagoing on the southern coast of England made it necessary to transfer this work to the Anti-Submarine Experimental Establishment, Fairlie, on the Firth of Clyde. There he continued research on underwater acoustics and, among other things, helped to produce instructions for use of the bathythermograph in British submarines.

In 1944 Deacon was transferred to the Admiralty Research Laboratory at Teddington to head a new section formed to study ocean waves and swell. The lack of an adequate theoretical basis in this subject had been highlighted by the need to predict conditions for Allied landings (Charnock, 1986). By applying spectrum analysis the scientists of Group W discovered a way of breaking up a wave record into its constituent components of waves of different wavelength, travelling at different speeds. They showed that swell arriving on British coasts might be generated by storms as far afield as the South Atlantic. Following this breakthrough the group began work on a number of associated problems in marine physics.

During the war there was considerable discussion among scientists and civil servants about the future provision that should be made for the study of oceanography. The Discovery committee and its work had always been seen as a temporary measure, carrying out a specific task. Britain had no research institute devoted to oceanography and only one university department; existing laboratories were devoted to marine biology and fisheries research. Scientists believed that the importance of physical oceanography to wartime needs, as well as growing awareness of its significance, both as a branch of marine science in its own right and as an essential element in promoting other aspects of the science, demonstrated the need for providing facilities for research to continue after the war was over. Some believed that the new institute ought to specialise in physical oceanography but Deacon, among others, always believed that all areas of the subject should be equally represented; his work for the discovery committee had shown him the value of an interdisciplinary approach. It was this line of thinking which was eventually followed in setting up the National Institute of Oceanography (renamed the Institute of Oceanographic Sciences in 1973) in 1949. It incorporated staff from Discovery Investigations, Group W and the Hydrographic Department. Deacon was appointed as Director. For the first few years NIO staff continued to be housed in other institutions but in 1953 it moved to its own premises, a wartime building recently vacated by the Admiralty at Wormley in Surrey.

During its first few years NIO physicists continued to concentrate on wave research and related problems. They studied beach slopes and their effect on waves, the effect of tides on wave propagation, electrical effects caused by tidal movements, the relationship between sea waves and microseisms, and how waves are generated. Meanwhile the biologists resumed the work on whales begun before the war. Following the move to Wormley, wave research continued to play an important role in the Institute's programme. New methods of measuring waves were devised which meant that records could be made on board ship or from buoys, and not only from coastally-sited wave recorders as previously. Other kinds of wave motion were investigated, from microseisms generated by standing waves, to the long waves responsible for tides and, when caused by bad weather or earthquakes, for storm surges and tsunamis. Attention was drawn to this area by the disastrous North Sea floods of 1953 and an analogue model was constructed to improve understanding of the forces involved. Air-sea interaction was studied by investigating the action of wind immediately above the water and also by studies of movements in the layer immediately below the surface. Much of this work had useful applications but the emphasis was firmly on research into basic understanding of marine processes, in the belief that this was the best way of making discoveries of practical benefit to society in general.

During the 1950's the range of work being carried out at NIO expended to cover all major branches of oceanographic research. Staff numbers grew accordingly and many important contributions were made to the science which was rapidly developing as they and workers in similar institutions in other countries took advantage of scientific and technological advances to bring to the study of the ocean an unprecedented degree of talent and resources. John Swallow's invention in the early 1950's of neutrally buoyant floats for tracking subsurface water movements showed that in oceanic water masses, instead of slow uniform movement in one direction as previously conceived, internal water movements were highly variable, both in speed, direction and duration, and gave a new impetus to the study of ocean circulation. This was aided by the chemists' work on new methods of determining salinity, by measuring electrical conductivity. Geologists looked at sedimentation processes on the continental shelf and were also involved in studies of the deep ocean floor at a time when new discoveries were leading to the acceptance of theories of sea-floor spreading and continental drift. Research in underwater acoustics enabled the Institute to make an important contribution to mapping the topography of the seabed through development of side-scan sonar or Geological Long Range Inclined Asdic (GLORIA). While work continued on the Discovery Collections and on other projects concerned with whaling, the biologists were also developing new sampling techniques and carrying out studies of productivity, paying particular attention to areas of upwelling.

Much of this work was done in collaboration with other UK scientists, either in the universities or in other institutions. However links with scientists abroad were increasingly important. In

1954 a Commonwealth Oceanographic Conference was held at the Institute. By the following year planning was already under way for the International Geophysical Year, 1958-59, to which Britain contributed in oceanographic as well as in other studies. Scientists were already becoming aware of the value of co-operation in the field as well as in scientific organisations. In the mid-1950s the Special Committee for Oceanographic Research (SCOR) was set up and a result of this was the mounting of the joint Indian Ocean Expedition in the early 1960s. Up to this time the Institute's vessel had been the *Discovery II* but her replacement, the *Discovery*, was commissioned in 1962 in time to take a major part in this work.

During these years Deacon was wholly involved in the work of running the Institute and representing it at a national and international level. He served on numerous international and national committees, including SCOR, and was a member of the British National Committee for Oceanic Research for over twenty years. He believed passionately in the importance of the subject and sought to advance it in any way he could. Recognizing that marine science and its significance both for other sciences and for many aspects of national life had been neglected, he appreciated the importance of public relations and spent much time writing articles and giving lectures to make NIO and its work known. One of the most attractive and successful results of this concern was the collaboration of Institute staff with the publisher Paul Hamly to produce *Oceans* (Deacon, 1962) an illustrated account of the different phases of the exploration of the sea. He also had strong views on how science should be organised and believed in giving members of staff as much freedom as possible to develop new ideas and new methods of investigation. The result was an extremely creative period when the Institute was at the forefront of development in many branches of oceanography. Deacon expressed considerable anxiety about the future when the National Oceanographic Council was rather summarily abolished in 1966 and NIO came under the aegis of the natural Environment Research Council. He believed that the advantage of extra funding that this made possible was outweighed by the disadvantages of reduced flexibility for scientists in developing new ideas and techniques.

Deacon was nevertheless appreciative of the opportunity to retain an office at the Institute after his retirement in 1971. He continued to be active on numerous committees and resumed work on his Antarctic data, incorporating new observations, which led to the publication of several scientific papers. He also wrote a number of articles on historical themes and was closely involved with the planning of the Second International Congress on the History of oceanography in Edinburgh in 1972. A substantial historical introduction also formed part of his book for students, *The Antarctic Circumpolar Ocean* (Deacon, 1984), but in spite of some preliminary researches he unfortunately never attempted a full-length account of the work

of the Discovery Investigations. He had enthusiastically seized the opportunity of returning to southern waters in the USCGSS Glacier in 1975 and in RRS Discovery in 1979 and continued to appreciate the intellectual stimulus of meetings both at home and abroad where modern work was discussed, as well as a visiting fellowship in Australia. He also much enjoyed the opportunity to work with students, organizing a course at the International Centre for Theoretical Physics at Trieste in 1975. This concern for the prospects of the younger generation also showed itself in his only public activity outside science, as a governor of King Edwards School Witley, an institution for which he felt great affection as well as gratitude for its positive attitude as the Institute's neighbour and landlord, and, on behalf of the Royal Society of Charterhouse School. His principal relaxations were gardening and walking, either in the local countryside or in coastal and mountain areas further afield.

The papers

George Deacon was not the sort of person who generally retained letters and other papers in a methodical kind of way. When he died most of his working papers were in his office at the Institute of Oceanographic Sciences where he had continued to work following his retirement. He had also retained many of the files from his days as director, along with a considerable number of papers relating to his pre-war and wartime work, some of the items from the records of Discovery Investigations also held at IOS. At home there was very little in the way of archival material. While he did preserve a number of individual items which seemed to him of lasting interest, or which recorded something he particularly wished to remember, Deacon did not ordinarily keep personal letters. Some, especially the more recent unfiled scientific correspondence, as well as scientific papers, survived because he actually disliked throwing things away and would wait until the volume of accumulated paperwork made it necessary to have a major clear out. His official correspondence and other papers received both as director of NIO, and before that as head of Group W, were filed, in NIO days by his secretary Miss Irene Thomas, and later by her successor, Miss Sylvia Harvey, and so largely escaped these periodic turnouts. For this reason, as stated earlier, the bulk of the papers relates to his career as a working scientist and administrator. Even here, the record is incomplete. In 1940 he lost all the books and papers in his office at Portland when it was destroyed by a bomb and in 1974 he destroyed a large number of files, feeling that they contained little of significance to succeeding generations, so that some series in the collection are incomplete (see appendix). Unfortunately some of these contained correspondence of considerable historical interest.

The collection therefore consists almost entirely of papers in Deacon's office or otherwise associated with him at the Institute of Oceanographic Sciences at the time of his death.

Deacon died unexpectedly and the collection at present reflects this suddenness, containing some items borrowed from other IOS holdings, notably SOME Discovery Committee files and data. These items have been left with his papers at the Committee's records at IOS are otherwise at present uncatalogued. The collection also contains several smaller collections of papers relating to the work of other oceanographers, some of which were already in Deacon's possession while others were added by colleagues after his death for safe keeping and because of their relevance to the events leading up to the foundation of NIO. Some further files and correspondence, used in the preparation of the Royal Society memoir (Charnock, 1985) were added in 1991.

Deacon wrote little about his own experiences except for a biographical essay written shortly before his death, in response to the Royal Society's request to Fellows to make notes to assist the writers of their obituaries (GERD A1/4). As well as information about his career and opinions, this piece gives a succinct account of the origins and work of Discovery Investigations, Group W and NIO. He never kept a diary of events, except briefly on the Glacier, and letters written to his parents while in the Antarctic have not survived, though those to the Discovery Office while he was chief scientist on the 4th commission of Discovery II, 1935-37, were in his possession and have been included in the collection. Letters written to his wife and daughter have been retained by the latter.

This collection therefore consists mainly of scientific and administrative papers reflecting the different stages in Deacon's career, firstly as a member of staff of the Discovery Investigations, then working for the Admiralty during World War II, from 1949 to 1971 as director of NIO and finally in retirement working again on Southern Ocean data. It has been divided into sections which, except for the first and last, are in roughly chronological order. The first (A) has been used to collect together surviving papers and correspondence of a personal and biographical nature. The second (B) contains papers relating to the Discovery Committee and Deacon's scientific work in its employ. Sections C and D, mainly files of correspondence with some associated papers, cover the work of NIO and its predecessor, Group W at the Admiralty Research Laboratory. Of the four following sections, G and H document NIO's participation in national and international scientific affairs through Deacon's membership of committees such as SCOR, while E and F cover relations with central government bodies. These sections are chiefly made up of committee papers and correspondence. The three sections J, K and L cover Deacon's own publications, participation in scientific societies and conferences, and other activities such as overseas visits. The final section contains papers of other scientists which for different reasons have become attached to the collection. A more detailed description of the contents follows below.

The above arrangement was adopted as an attempt to make a reasonably clear and comprehensive division of the documents found, and to ensure their survival as part of a defined collection. It was difficult to make the organization entirely consistent but the intention was to assist the user as far as possible and also to allow for the possibility of material being either added or transferred to other collections if this should become appropriate in the future. In section C the files from Group W and the early years of NIO follow more or less their original sequence. However the filing system created by Miss Thomas for Deacon's official papers after the move to Wormley (see notes on section D) has not been used in the present catalogue though her groupings and file names have kept as far as possible. These files form a major part of section A, and most of sections D to L. In general each entry in the list refers to an individual file, unless otherwise stated; however where files grew too large for a single cover, subdivisions have been treated as separate entities for purposes of numbering. Where files had been left undivided and become unmanageably large, subdivision was carried out during cataloguing.

Section A – Personal and Biographical Papers

This section has been employed to gather together correspondence and other items of a more directly personal and biographical nature than are found in the remainder of the collection, though even here the emphasis is very much on Deacon's career, almost all the material, including correspondence, relating to his oceanographic interests. The small amount of biographical papers from his early years, such as examination papers and certificates, job testimonials, identify cards etc. form group A1/1, while A1/2 contains miscellaneous printed items of biographical interest, mainly either press cuttings mentioning Deacon or ephemera such as dinner menus retained as mementoes of specific occasions. Most of this subsection is otherwise made up of engagement diaries, his Glacier diary, a few notebooks and passports. However, it seemed appropriate to inset at this point the three official files relating to Deacon's career and other correspondence, used by Charnock (1985) in his memoir. The official files are his personnel file with Discovery Investigations and two Natural Environment Research Council files, relating to his employment as Director of NIO from 1965-1971, after the Institute was taken over by NERC, and research fellowships after retirement. The last mentioned also contains documents relating to Deacon's employment in the Royal Naval Scientific Service from 1947 onwards.

Most of the remainder of section A consists of correspondence. Subsection A/2 contains unfiled letters on scientific topics. These have been arranged in date order, with an additional folder containing copies of replies. He kept a considerable number of Christmas cards and postcards from colleagues and the birthday card made for him by his shipmates in the

Discovery in 1979. The only personal correspondence which he kept systematically were letters of congratulation he received on his election as FRS in 1944 (of which it appears that only a part has survived), and on the award of his CBE and knighthood. He also kept letters of condolence on the death of his wife in 1966; I have retained these, with letters he wrote to my mother and myself. The rest of section A is made up of files of personal correspondence received as director of NIO, letters of recommendation for other scientists, a few files of correspondence with individual scientists, correspondence on awards and the accompanying certificates, presscuttings and photographs. These include a collection of snapshots taken by Deacon and others during the Discovery Investigations commissions (see also section M: Herdman).

Section B – Discovery Investigations

Section B contains mainly physical and chemical data collected during the voyages of the *Discovery II* and William Scoresby and work by Deacon and others upon it. Other items relating to the work of Discovery Investigations found with his papers have also been included. Subsection 1 consists of Deacon's notes and calculations on data from individual stations (5 folders) which formed the basis for his Discovery Reports. Associated with this are a number of volumes of chemical workings. Subsection 2 contains data collected mainly on discovery Investigations voyages, which he made use of; some of these (especially items B2/3-7) are official records so should probably form part of the Discovery collection, also held at IOS. B/3 consists of drafts of papers, reports and lectures, mainly by Deacon but also by other members of staff, and B/4 of rough notes and workings. Subsection 5 contains copies of official reports of discovery Investigations work, and of the colonial Office reports which led to its setting up. The whole of subsection 6 consists of official papers of the Discovery Committee, including three personnel files, of Stanley Kemp, Deacon himself and Elsa Jeffries, his future wife, and three on the Committee's operations which Deacon had in his office at the time of his death, but which if circumstances permit should at some future date be replaced in IOS's Discovery Committee holdings. The folder of papers collected by N A Mackintosh about the future of the Committee and its work in the 1940s were removed from official files by him so are included here instead of with other papers of his in section M. Papers about the award of the Polar Medal to staff also include official correspondence, but appear not to have been attached to a file.

Section C – work for the Admiralty and early years of NIO

Not a great deal has survived on the work on underwater sound in which Deacon was engaged between 1939 and 1944. These papers have therefore been grouped together (C/1),

although very diverse in character. More information about wartime oceanographical work in the firth of Clyde can be found in the papers of D J Matthews (Section M/1). Most of the papers in this section are from the work of Group W but they also cover the early years of NIO, while still based at Teddington. This is because the filing system begun with Group W in the mid 1940s was continued until NIO's move to Wormley in the early 1950s. Files from the new system then adopted for the director's papers are to be found in sections D onwards (with some in section A). The principal difference is that whereas later sections deal only with certain aspects of the Institute's work, and even as a record of events as seen from the director's office are not complete, the files in this section represent the complete archive for the group/institute and give a comprehensive picture of the work going on at this interesting stage in the Institute's development and in the years immediately preceding it. They are more fully described below.

Subsection C2 contains miscellaneous documents relating to research into wave forecasting and related topics at ARL and elsewhere, during and just after World War II. It includes items such as the notes made by the original field parties in 1944 and a report on the similar work being undertaken at Scripps. The following subsection contains drafts and final versions of ARL internal reports, either about the work of Group W or relating to it. Subsection C4 contains reports by other branches of the Admiralty and from other organizations and institutions, both at home and abroad, where similar or related work was being carried out. A separate subsection, C5, is made up of technical details of apparatus, some of it from overseas.

The most substantial and informative record of the activities of Group W and NIO at ARL is to be found in the general correspondence files, dating from 1944 to 1952. These contain not only letters and memoranda but also plans, details of apparatus etc. and give a very comprehensive picture of the work going on. The original bulky files have been subdivided into folders for individual years. I have grouped with these general correspondence received by Deacon and 3 folders containing miscellaneous correspondence which had not been attached to any file. In addition to these general files in C6 there was also (subsection C7) a large file on contracts for apparatus, subdivided for conservation reasons, and 56 files, C8, on specific topics. These are very variable in content, some having only one or two items, and deal with either individual instruments or fields of study, usually described in the file heading (in one or two cases a description of contents has been supplied). In the Group W/NIO filing system documents were not physically attached to the file and especially the larger files had got out of sequence, but this has been restored as far as possible.

This section is principally composed of official correspondence files, relating to George Deacon's work as director of NIO between 1953 and 1971 (see previous section for NIO records before this date) and the scientific work carried out by the Institute during these years. The first subsection has been used to gather together a series of files (D1/8-11) and miscellaneous papers dealing with the formation of NIO and its subsequent development. To these have been added some reports on aspects of work at NIO submitted by members of staff at various dates and correspondence and papers relating to a joint Treasury/Admiralty inspection of NIO in 1960-61.

Subsection D2 contains agendas, minutes and appears of the meetings of the executive committee of the National Oceanographic Council from 1949 to 1952. There are also a few minutes of its ship subcommittee, as of its successor, the NERC NIO committee. The remainder of the subsections contain correspondence about the Institute's administration and scientific work emanating from the director's office. The day files contain carbon copies of typewritten letters sent by GERD, arranged in chronological order from 1953 to 1971. The original files have mostly been subdivided for greater ease in handling. The listing is not entirely in chronological order as there were two sets of papers. Where there is more than one file for a year the contents are not duplicated.

These are followed by several series of files dealing with NIO's relations with other organisations and visits and talks by staff but the principal subsection (D8) contains 111 files arranged by subject. This system was devised as part of a more general filing system by Miss Irene Thomas, Deacon's secretary during the early years at Wormley, and was based on topics of oceanographic research as outlined in Sverdrup, Johnson and Fleming's classic textbook *The Oceans*, most dealing with a single scientific or technical aspect. However some files deal with the work of individual scientists, conferences and cruises (in particular D8/31 on work done off Bermuda in the late 1950s). Subsection D11 contains an incomplete run of files on cruises of *Discovery II* and her successor *Discovery* from the mid-1950s to the mid-1960s.

The final subsection (D12) deals with the contribution of NIO to the planning and execution of the International Geophysical Year, 1957-58. As such it has been placed in this section, since though a strong argument could equally well have been made for placing for at least some of the files in section H (Deacon's membership of international committees). Such a subdivision of the papers seemed inadvisable. The files cover correspondence from 1953 to 1959 on the role of NIO, correspondence with the organising committee and the secretary general (G Laclavère) on working groups, and correspondence on participation by other

Commonwealth countries. Further information on the British role in the IGY is contained in section G (5).

Sections E and F

Section E contains files relating to the work of the Natural Environment Research Council which took over control of the National Institute of Oceanography from the National Oceanographic Council in 1966. These are mainly minutes of council meetings and committee papers, and as such will be duplicated elsewhere. However there is a strong argument for retaining them in this collection for ease of access because if it is viewed in the wider sense of an important source of the history of the institution, they form an essential tool in this process. They are also an important source for the progress of marine research elsewhere in the UK in the 1960s and '70s. The minutes of NERC council meetings run from 1965 to 1973 (with a few gaps) and obviously cover not only marine science. Of more direct interest to oceanographers are papers of the Oceanography and Fisheries Committee, 1965-69, and its subcommittee on international oceanographic affairs between 1966 and 1981. There are also a few papers from other committees.

Section F has been used to gather together papers documenting NIO's relations with other government departments. The principal items in this section are a comprehensive series of papers and correspondence relating to the Ministry of Agriculture and Fisheries Advisory Committee on Oceanographic and meteorological Research between 1952 and 1971, including work on North Sea floods, and papers from the Ministry of Defence (Air Ministry) Meteorological Research Committee.

Section G

An important aspect of the work of Deacon and of other members of NIO staff revolved around membership of committees responsible for organizing different aspects of marine science both at the national and international level. This section deals with the work of national committees and section H with participation in international committees and the two need to be considered as complementary. International co-operation became increasingly important in oceanography during the 1950s and 1960s. The more conventional methods of conferences, visits and exchanges of workers came to be supplemented by joint research programmes of which the International Geophysical Year was the first. Much of this activity was organized through international scientific organizations such as SCOR, described in greater detail in section H. These mostly came under the umbrella of the International Council of Scientific Unions (ICSU) and each had a corresponding national committee which during the

period under consideration was administered by the Royal Society. For a useful guide to the various international organizations dealing with marine science in this period, their status and

relationships to each other, see Laughton (1990). These British national committees are dealt with in the first part of section G.

This British National Committee for Oceanic Research was created to act as the organizing body of SCOR (see section H) at the national level. As such it was concerned with the contribution of British scientists and institutions, including NIO/IOS, to international programmes in marine research, participation in which played an increasingly important part in the research effort of individual laboratories from the early 1960s onwards. The papers contain files of general correspondence and papers from the period when Deacon was a member and chairman of the committee, 1959 to 1982, together with a number of files relating to the activities of subcommittees and working groups, mainly on aspects of the Indian Ocean Expedition.

Prior to the establishment of BNCOR, British oceanography's national and international relations had been dealt with by the oceanography subcommittee of the British National Committee of the International Union for Geodesy and Geophysics. During the 1940s this subcommittee played an important role in discussions about the proposed post-war national oceanographic institute (see papers of J N Carruthers in section M). Deacon was chairman of the committee from 1950 to 1955 and this connection, through Professor Proudman who was the committee's chairman in the 1940s, must be the explanation for the presence here of papers and correspondence deriving both from Proudman's chairmanship, and from the previous chairman in the 1930s, Professor Sydney Chapman, as well as Deacon's correspondence and papers as a member of the subcommittee from 1953 to 1982.

Deacon was member of a number of other British national committees. The most significant bodies of papers are from the Committee for the International Geophysical Year, between 1953 and 1960, and its successor, the National Committee for Co-operation in Geophysics, 1957-1969. He was a member of the British National Committee on Antarctic Research from 1959 to 1981 but unfortunately these records are incomplete, some including early correspondence having probably been destroyed in 1974. Also in this part of section G are correspondence and papers dealing with the work of the Royal Society's UNESCO committee from 1955 to 1964.

The second part of section G contains papers from other national committees. NIO/IOS usually had a representative on the Joint Committee for Ordinary Diplomas in Nautical Science and its subcommittees. Deacon was a strong believer in the importance of oceanography to

navigation and vice versa, as his active participation in the affairs of the Royal Institute of Navigation shows (see section K). These files, covering the years 1965 to 1979, however contained mostly duplicated papers and have been heavily weeded. The role of the Joint Committee was

educational; the other committees here, such as the NATO science briefing committee, and the British National Committee on ocean Engineering, on which Deacon was the Royal Society representative, like those in part 1, were mostly concerned about the role of British science and politics with regard to the international sphere.

Section H

As the scientific and material investment in international joint programmes increased from the late 1950s onwards so the role of governmental and non-governmental organisations in marine science grew in importance. Deacon, and other members of NIO staff, participated directly in the work of these bodies and through membership of committees and conferences in their planning and decisions. Intergovernmental organisations included UNESCO, NATO and ICES. Non-governmental organisations, such as IUGG, IAPSO, SCOR and SCAR, were subdivisions of ICSU (the International Council of Scientific Unions).

The UNESCO International Advisory Committee on Marine Sciences played an important role in encouraging international co-operation in marine science in the 1950s, culminating in the first International Oceanographic congress in New York in 1959. From 1960 this work was taken over by the Intergovernmental Oceanographic commission (IOC) (Wooster, 1990). A full set of correspondence and papers survives for Deacon's participation in the work of IACOMS from 1952 to 1960. For the work of IOC there is correspondence for the years 1961-63 and for the 1970s only.

Of the ICSU committees, SCOR (the Scientific, originally Special, Committee on Oceanographic Research) is best represented, with correspondence and papers from its origins in the mid-1950s to 1981, and is a major source, together with the papers of other founder members (Roger Revelle, Anton Brun) for the establishment of this important body (Wolff, 1990). Unfortunately a file of correspondence with the Bureau of ICSU which might have thrown light on Deacon's relations with SCOR's predecessor, the Joint Committee on Oceanography, was among the files destroyed in 1974. There are two files on the work of the International Association of Physical Oceanographers (IAPO, later IAPSO), 1956-67, together with others dealing with meetings of its parent body the IUGG (International Union of Geodesy and Geophysics), 1956-63, and two on the work of SCAR (Scientific Committee on Antarctic Research), 1967-81. Charnock (1985) describes Deacon as 'a pillar of the NATO Sub-Committee on Oceanographic Research', for which there are papers from 1959 to 1978.

Section J

The remainder of the collection consists of more personal material, relating to Deacon's own work and publications and to his participation in the work of scientific societies, conferences etc. Most of these are from his time at NIO/IOS except for the first two parts of Section J, which consists of notes, drafts and correspondence on publications, which derive from earlier work.

In the days before xerox machines scientists relied on extensive note taking to keep a record of the books and papers they had made use of in their research. Deacon kept meticulous notes of his scientific reading. He also kept his student lecture notes for many years but destroyed all but one set (lectures in inorganic chemistry) which was rescued by the author. When he began his career in oceanography there was little tradition in the United Kingdom of work in physical oceanography. The important advances being made at the time were principally due to the work of Scandinavian and German scientists. Deacon taught himself German so that he could read the literature available in that language and made a translation of one of the most important texts, Albert Defant's *Dynamische Ozeanographie*.

Except for work on Discovery Investigations results in the 1930s in section B, most of the collections of notes on specific topics are from Deacon's retirement and reflect his new research on the Antarctic water masses and his interest in the history of oceanography. There are manuscript drafts and typescripts of publications from the 1930s onwards, and master files of reprints (for a list of publications see Charnock, 1985). The most substantial remains are drafts and notes compiled during the writing of *The Antarctic Circumpolar Ocean* which came out just before Deacon's death in the autumn of 1984. Files of correspondence about publications and lectures run from the early 1950s but are incomplete for the late 1970s and 1980s.

Sections K and L

Deacon was an active member of a number of scientific societies. He was elected a Fellow of the Royal Society in 1944 and served on a number of committees. Papers from the society's own committees are included in section K; those from the British national committees which it administered are in section G. The other societies whose affairs he was particularly involved in were the (Royal) Institute of Navigation, of which he was president from 1961-64, and the Royal Geographical Society (vice-president). Some of the papers concerning his work for the latter were among the files destroyed in 1974 (see appendix).

Section L also reflects Deacon's interest in the wider worlds of science and education. It contains files dealing with his attendance at scientific conferences from the 1950s onwards, and also for the history of oceanography congresses held in 1966, 1972 and 1980; the most detailed

information is for the 1972 meeting which he helped to organize. There are also files for some overseas visits. At various times Deacon served as external examiner for all the oceanography departments of UK universities, and for the Open University. He was also on a number of advisory boards for institutions in this country and overseas and for the journal Interdisciplinary Science Reviews. His interest in students and young people was reflected in his direction of a course on physics of the ocean and atmosphere at Trieste in 1975 and his many years of service as school governor at King Edwards School, Witley, and at Charterhouse (as the Royal Society representative).

Section M

Section M contains records of other scientists which for different reasons came to form part of George Deacon's papers.

DONALD JOHN MATTHEWS (1873-1956)

Matthews had worked as a physical oceanographer for the Marine Biological Association before World War I. He came back into oceanography in the 1920s through the agency of G Herbert Fowler (M B Deacon, 1984) and worked on the physical properties of sea water and their influence on underwater acoustics for the Admiralty between the wars. Deacon acquired his scientific papers after Matthew's death in 1956, probably by purchase from his widow. They cover Matthews' work mainly between 1921 and the end of World War II.

NEIL ALISON MACKINTOSH (1900-1974)

N A Mackintosh worked for the discovery Committee from the start of its scientific investigations in the 1920s until its work was taken over in 1949 by the National Institute of Oceanography, of which he became deputy director, having succeeded Stanley Kemp as scientific director of the Discovery work in the late 1930s. Mackintosh's personal papers are at the Scott Polar Research Institute in Cambridge. The papers here comprise a folder of notes made by him, together with supporting documents, as a record of events in the formation of the Discovery committee (see also B6/6). This item is an accretion to the collection, having been added by library staff at IOS while the papers were being sorted to ensure safe keeping.

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JAMES NORMAN CURRUTHERS (1895-1973)

This is also true of this collection of papers made by J N Carruthers who joined NIO as assistant director in 1952. Before the war he had worked on physical oceanography for the

Fisheries Laboratory at Lowestoft; during it he was at the oceanography branch of the Admiralty Hydrographic Department. Some of the papers relate to Carruthers' fisheries work, in particular there is a run of correspondence between him and leading marine scientists at home and overseas on some proposals for work by ICES in 1938-39. The other papers of particular interest to the present collection concern various proposals made during the 1940s for an oceanographic institute to be set up after the war, in which Carruthers played an important part. Two meetings of the oceanography subcommittee of the British National Committee for Geodesy and Geophysics were held to discuss this idea in 1944. Carruthers kept copies of the memoranda produced by various scientists promoting the idea, and comments by the committee members and their correspondence with him over the memoranda and the minutes of the meetings, for which he was responsible, enabling us to see in some detail how ideas developed. He was undoubtedly prompted in this by his own keen interest in the history of oceanography.

ROBERT BERESFORM SEYMOUR SEWELL (1880-1964)

Seymour Sewell had served as surgeon naturalist on the Indian navy's ship *Investigator* in the early 1900s. He was later invited to head the scientific team on the John Murray Expedition to the Indian Ocean in the *Mabahiss* in 1933-34. The collection contains the original station log plus some chemical records from the expedition, some correspondence between Seymour Sewell and Deacon in 1961-63 and letters about the proposed commemorative meeting in 1984, preparations that Deacon assisted though he did not attend the meeting, together with copies of the typescript of the narrative of the voyage and photographs (see Rice, 1986).

HENRY FRANCEYS PORTER HERDMAN (1901-1967)

Herdman joined the Discovery Investigations in its early days and sailed with the *Discovery* in 1925. He later joined the staff of NIO. Originally employed as a scientist, he made the building, equipment and running of oceanographic vessels his speciality. The collection consists entirely of glass negatives and photographic prints. The glass negatives appear to be entirely from the *Discovery's* voyage and are mainly of Antarctic scenery. The snapshots include many pictures taken during later voyages, with others (unidentified) either of family or taken at ports of call.

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SUMMARY

GERD.A Personal and Biographical Papers

1. Biographical papers (2 boxes)
2. Unfiled personal scientific correspondence on awards (11 folders)

3. Letters of congratulation and correspondence on awards (5 files, 3 folders)
4. Personal correspondence files [NIO] (10 files)
5. Letters of recommendation (4 files)
6. Letters and papers of Wilbert M Chapman, Van Camp Foundation, California (2 folders)
7. Certificates of awards, election to societies etc. (9 items)
8. Press cuttings (4 folders)
9. Photographs and slides (3 boxes)
10. Tapes (2 items)

GERD.B Work on Antarctic water masses for the Discovery Committee, 1927 – 1939

1. Notes and calculations on data from individual stations by GERD (9 items)
2. Data collected during Discovery Investigation voyages (14 items)
3. Drafts of papers, articles etc. by GERD and others (16 items)
4. Rough notes and workings on Discovery Investigations stations (7 folders)
5. Official reports (36 items)
6. Official files (7 items)
7. Official and semi-official correspondence (5 folders)
8. Duplicated copies of official documents and minutes of the Discovery Committee (6 folders)

GERD.C Physical Oceanography in Admiralty establishments during World War II and the birth of NIO, 1939 – 1952

1. Work at Admiralty Experimental Establishments, Portland and Fairlie, 1940 – 44 (14 items)
2. Work at Admiralty Research Laboratory, Group W and NIO, 1944-52 (23 items)
3. Admiralty Research Laboratory Internal Reports – Group W and other sections (15 items)
4. Scientific and technical reports etc. from other branches of the Admiralty and external organizations (26 items)

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5. Reports and descriptions of apparatus (18 items)
6. Group W/NIO: General correspondence and unfiled items 1943-52 (15 folders)
7. Group W/NIO:
8. Group W/NIO: Correspondence by topic 1944 – 1953 (56 folders)

GERD.D National Institute of Oceanography, 1949 – 1971

1. Miscellaneous files, reports and papers on the foundation and work of the National Institute of Oceanography (7 folders)
2. National Institute of Oceanography Executive Committee (20 files)
3. Registers of letters, etc. Director's office (19 items)
4. Director's day files (letters sent), 1953 – 71 (15 files)
5. Secret and Confidential files, 1950 – 71 (3 files)
6. External relations (8 files)
7. Correspondence with other organisations (7 files)
8. Correspondence and papers arranged by topic (110 files, 5 folders)
9. Papers and reports relating to work at NIO (4 files)
10. Correspondence on talks, papers and meetings involving NIO personnel (18 files).
11. Ships: cruises by *RRS Discovery II* and *Discovery* (11 files, 2 folders)
12. International Geophysical Year, 1957-58: preparation, operations and results (17 files)

GERD. E Natural Environment Research Council

1. NERC Council meetings (75 files, incomplete)
2. NERC Oceanography and Fisheries Committee (18 files)
3. Oceanography and Fisheries Committee Advisory Sub-committee on International Oceanographic Affairs: papers, 1966-81 (13 files)
4. Oceanography and Fisheries Committee: reports and correspondence (3 files)
5. Ships (2 files)
6. Marine Forum (1 file)
7. Antarctic Committee: papers and correspondence (10 files)
8. Other committees (6 files)
9. Discussion meetings (4 files)

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GERD.F Relations with Government Departments

1. Ministry of Agriculture, Fisheries and Food Advisory Committee on Oceanographic and Meteorological Research (15 files, 2 folders)
2. Department of Scientific and Industrial Research/Ministry of Technology (3 files)

3. Ministry of Defence (3 files)

GERD.G

National Committee

(Organised by the Royal society)

1. British National Committee for Oceanic Research (18 files)
2. British National Committee for Geodesy and Geophysics (IUGG) (15 files, 3 folders)
3. British National Committee for Geodesy and Geophysics, Subcommittee for Physical Oceanography (Physical Sciences for the Ocean Subcommittee) (3 files)
4. British National Committee for Geodesy and Geophysics, Meteorology Subcommittee (4 files)
5. British National Committee for the International Geophysical year (15 files)
6. British National Committee for Co-operation in Geophysics (4 files)
7. British National Committee for the International Council of Scientific Unions (ICSU)(2 files)
8. British National Committee on Antarctic Research (4 files)
9. British National Committee for the Global Atmospheric Research Programme (1 file)
10. British National Committee for the History of Science, Medicine and Technology (2 files)
11. Royal Society UNESCO Committee, Marine Sciences Panel (6 files) (Other National Committees)
12. Department of Education and Science NATO Science Briefing Committee (4 files)
13. Joint Committee for Ordinary National Diplomas in Nautical Science (8 files)
14. British National Committee on Ocean Engineering (Royal Society Representative) (4 files)
15. Parliamentary Group on World Government: Committee on Seabed Resources (1 file)
16. South Atlantic Fisheries Committee (1 file)
17. Committee on International Scientific Co-operation/Committee on Overseas Scientific Relations (2 files)

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GERD. H

International Committees

1. UNESCO International Advisory Committee on Marine Sciences (10 files, 3 folders)
2. Intergovernmental Oceanographic Commission (5 files)

3. Scientific Committee on Oceanographic Research (20 files, 2 folders)
4. International Association of Physical Oceanographers (1 file, 1 folder)
5. International Union of Geodesy and Geophysics (5 files)
6. Scientific Committee on Antarctic Research (2 files)
7. International Council for the Exploration of the Sea (1 file)
8. NATO Sub-committee on Oceanographic Research (12 files, 1 folder)

GERD.J Scientific notes, lectures and publications

1. Lecture notes (1 folder)
2. Manuscript notes and translations by GERD of publications on marine science by others (34 items)
3. Collections of notes and papers on specific topics (8 folders, 3 notebooks)
4. Manuscript drafts of publications etc. (5 folders, 5 notebooks)
5. Typed drafts of publications etc. (7 folders)
6. *The Antarctic Circumpolar Ocean*, 1984 (8 volumes, 4 folders)
7. Correspondence on publications (4 files, 2 folders)
8. Contributions to books etc. (13 files)
9. Book reviews (2 files, 1 folder)
10. Correspondence on lectures etc. (10 files)
11. Obituaries (2 files)
12. Correspondence on reprints (1 file, 1 folder)
13. Papers, reviews and talks (12 files)
14. Publications (6 files)

GERD.K Societies

1. Royal Society (26 files)
2. Antarctic Club (1 file)
3. British Association for the Advancement of Science (2 files)
4. British Sub Aqua Club (2 files)
5. Challenger Society (1 file)
6. English Speaking Union (1 file)
7. Royal Institute of Navigation (13 files)

8. Royal Astronomical Society (1 file)
9. Royal Geographic Society (4 files)
10. Royal Society of Edinburgh (1 file)
11. Royal Society of New Zealand (1 file)
12. Royal Academy of Sciences of Sweden (1 file)

GERD.L. Conferences, visits and education

1. Scientific conferences (11 files, 4 folders)
2. History of Oceanography Congresses (6 files)
3. Visits overseas (4 files, 1 folder)
4. External examiner (5 files, 1 notebook)
5. Advisory Boards (25 files)
6. Summer Schools (2 files, 2 folders)
7. School Governorships – correspondence (3 files)

GERD.M Papers of other Scientists

1. Scientific papers of D J Matthews, 1914-48 (22 items)
2. N A Mackintosh (1 folder)
3. J N Carruthers (2 boxes)
4. R B Seymour Sewell (8 items inc *Mabahiss* material)
5. Photographic prints and negatives of H F P Herdman (13 items)

GERD. N Data (2 boxes)

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
SECTION A : PERSONAL AND BIOGRAPHICAL PAPERS		
1	GERD A1	Biographical Papers
	GERD A1/1	Official documents (folder)

	A1/2	Miscellaneous articles and papers of biographical interest (folder)
	A1/3	Diary, USCGS Glacier, 26 Jan – 14 Feb 1975 (exercise book)
	A1/4 1 – 2	Biographical notes for Royal Society (ms, pp. 10-18, & Xerox of typescript, 23pp.)
	A1/5 1-2	Pocket diaries, 1927, 1971
2	A1/6	Office diaries, 1953-83 (31 items)
	A1/7	Address book, 1930s
	A1/8	Notebook containing addresses, c. 1944
	A1/9	2 notebooks containing records of payments received
	A1/10	Passports (6 items)
1	A1/11	Discovery Committee File PF 27: appointment of Mr G E R Deacon as hydrologist, 1927-47
	A1/12	Letters to and from GERD about his post with the Discovery Committee (probably from the above), 1930-47 (folder; 59 items)
	A1/13	NERC file: Sir George Deacon, FRS. Director NIO, 1965-79
	A1/14	NERC file: research grants for retired senior staff – Sir George Deacon, 1947-79
	A1/15	Letters received by Professor H C Charnock with information for his biographical memoir of GERD, 1985 (folder; 29 items)
3	GERD A2	Unfiled personal scientific correspondence
	A2/1	Letters received, 1920 to 1950s (folder)
	A2/2	Letters received, 1960s (folder)
	A2/3	Letters received, 1970s (folder)
	A2/4	Letters received, 1980 (folder)
	A2/5	Letters received, 1981 (folder)
	A2/6	Letters received, 1982 (folder)
	A2/7	Letters received, 1983 (folder)
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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
3	A2/8	Letters received, 1984 (folder)
	A2/9	Letters received, n.d. (folder)

Outsize	A2/10	Drafts and copies of letters mainly by GERD (folder)
	A2/11	Postcards and Christmas cards, including 6 Discovery Investigations cards, signed by members of staff (folder)
	A2/12	Birthday card, Cruise 100, Station 10,000. Signed by scientific staff & crew RRS Discovery, 1979
4	GERD A3	Letters of congratulation and correspondence of awards
	A3/1	Letters and telegrams of congratulations on election as FRS, 1944 (folder)
	A3/2	Letters of congratulation on receipt of CBE, 1954
	A3/3	Royal Society Royal Medal, 1969
	A3/4	Letters of congratulation on receipt of Royal Medal, 1969 (folder)
	A3/5	DSc from University of Leicester, 1970
	A3/6	Correspondence on award of knighthood, 1971
	A3/7	Letters of congratulation on knighthood, 1971 (folder)
	A3/8 1-2	Manley-Bendall Medal, 1971, with album of photos
	GERD A4	Personal correspondence files (NIO)
	A4/1	Personal correspondence, 1953-61
	A4/2	Personal correspondence, 1962-67
	A4/3	Personal correspondence, 1968-70
	A4/4	Personal correspondence, 1970-76
	A4/5	Personal correspondence, 1976-81
	A4/6	Correspondence with Dr J W S Marr, and obituary, 1954-67 (file & loose papers)
	A4/7	Correspondence with Dr C H Mortimer, 1954-65
	A4/8	Correspondence on awards to Dr A B Wood, and obituary, 1956-65
	A4/9	Correspondence on the history of oceanography, 1963-67

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
5	A4/10	Correspondence on proposed participation in Eltanin Cruise 50, 1970-71
6	GERD A5	Letters of Recommendation

	A5/1	Letters of recommendation, 1953-69
	A5/2	Letters of recommendation, 1970-76
	A5/3	Letters of recommendation, 1976-83
	A5/4	Correspondence on candidates proposed for election as FRS
10	GERD A6	Letters and papers of Wilbert M Chapman, Van Camp Foundation, California
	A6/1-16	Mainly copies of papers on marine fisheries policy, sent by WMC to GERD, 1962-66 (2 folders)
7	GERD A7	Certificates of awards, election to societies etc.
	A7/1	Senior Oxford Local Examination, 1921
	A7/2	University of London Intermediate Examination, 1923
	A7/3	BSc, University of London, 1927
Outsize	A7/4	University of London Teaching Diploma, 1927
	A7/5	Election as Fellow of the Royal Geographical Society, 1933
	A7/6	Doctor of Science, University of London, 1937
7	A7/7	Election as Fellow of the Royal Society, 1944
	A7/8	Election to the Institute of Navigation, 1956
	A7/9	Election as Fellow of the Royal Society of Edinburgh, 1956
	A7/10	Election to the Swedish Royal Academy of Sciences, 1957
	A7/11	Honorary Doctorate of Science, Liverpool University, 1961
	A7/12	Russian certificate, 1967
	A7/13	Award of Royal Society Royal Medal, 1969
	A7/14	Award of Institute of Navigation bronze medal, 1970
	A7/15	US Antarctic Service Medal, 1975
	A7/16	Royal Institute of Navigation honorary membership, 1978

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
7	A7/17	Certificates from the Royal Society recording service on committees, 1982 (2 items)
	A7/18	NATO : certificate of appreciation, n.d.

	GERD A8	Press Cuttings
	A8/1	Newspaper cuttings (folder)
	A8/2	Press cuttings and articles on the work of Discovery Investigations and NIO (folder)
	A8/3	Press cuttings on marine science (file + folder)
8	GERD A9	Photographs and slides
	A9/1	Photographs of GERD and groups in which he appears (folder)
	A9/2	Photographs of other individuals and groups (folder)
	A9/3	Photographs of places, including NIO (folder)
	A9/4 1-2	Photographs of gear and apparatus (2 folders)
	A9/5	Photographs of ships (folder)
	A9/6	Views, including Antarctic scenery (folder + 2 outsize items)
	A9/7	Data (folder)
8	A9/8	Photographs taken during work on the Chesil Beach, 1948 (folder)
	A9/9	Royal Society Conversazione, 1964 – NIO exhibit (folder)
	A9/10	International Summer College at Nathiagali, Pakistan 1976 (album)
10	A9/11	Antarctic snapshots by GERD and others, 1920s-1930s
	A9/12	Family photographs (in folder with A9/11)
9	A9/13	Glass negatives of photographs taken on Discovery Investigations voyages (10 boxes + 1 packet)
	A9/14	Box of glass lantern slides showing work on board ship (Bill Dunkle)
	A9/15	Tilt graticule plates (1 box)
	A9/16	Sea-sled negatives (1 envelope)

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
1	GERD A10	Tapes
	A10/1	NATO. Talk on aims/objectives of oceanography by Deacon, Mossby and others

**SECTION B: WORK ON ANTARCTIC WATER MASSES FOR THE DISCOVERY COMMITTEE
1927-1939**

11	GERD B1	Notes and calculations on data from individual stations by GERD
	B1/1-5	Notes on stations, 845 to 2350 (5 folders)
	B1/6	Notes of values for stations 842 to 1184 (large notebook)
	B1/7	Record of temperature values, stations 210 to 426 (clip folder)
	B1/8	Salinity values, stations 805 to 2062 (notebook)
	B1/9	Chemical calculations for stations 2040 to 2062 (Antarctic Intermediate Current) 1937, and for stations 1312 to 1320 (large notebook)
12	GERD B2	Data collected during Discovery Investigation voyages
	B2/1	Observations between stations, 1928 (printed format; part used)
Outsize	B2/2	Ocean Currents, <i>RRS Discovery II</i> , 1930-34 (folio; part used)
12	B2/3	PH Book I. Stations 1188-1336, 1933-34 (notebook)
	B2/4	PH Book 2. <i>Discovery II</i> , Stations 1338-1519, 1934-35 (notebook)
	B2/5	PH Book 3. Stations 1521-1589, 1935 (notebook)
Outsize	B2/6-7	Thermograph traces, <i>Discovery II</i> , 1935-37 and 1937-39 [No record Dec 1935-Sept 1936] (2 boxes)
12	B2/8	Repeated cruises south of Cape Town (0° line), April 1938-March 1939. Stations 2311-2603, values for temperature, salinity etc. (notebook).
	B2/9	Temperature, salinity and oxygen values, April 1938-March 1939 (notebook)
Outsize	B2/10	Index to lantern slides (folio)
12	B2/11	Statistical data for repeated cruises south of Cape Town, A J Clowes (folder)

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
12	B2/12	Repeated cruises south of Cape Town. Phosphate and silicate data, A J Clowes (folder).

B2/13	FIDS salinity determinations at Hope Bay, 1945 (6pp; copy of ms & typed lists)
B2/14	Material for Weddell drift sections, 1920s to 1970s (not by GERD) (folder)
GERD B3	Drafts of papers, articles etc. by GERD and others
B3/1	The distribution of pressure in the Southern Ocean. For conference of the International Association for Oceanography, Edinburgh, 1936 (typescript, 8pp.)
B3/2	The water movements of the Southern Ocean and their bearing on the oceanography of the Atlantic, Pacific and Indian Oceans (ms, 2pp, incomplete)
B3/3	How is the Antarctic convergence formed? (English version, corrected typescript, 5pp)
B3/4	The effect of Antarctic currents on oceanic circulation (typescript, 6pp)
B3/5	The surface, deep and bottom currents of the Southern Ocean. Contribution to the International Geography Congress, Amsterdam, 1938 (carbon copy, 5pp)
B3/6	Oceanic circulation in the Southern Hemisphere (carbon copy, 5pp)
B3/7	The movements of Antarctic surface and bottom water (corrected typescript, 4pp)
B3/8	The seasonal and annual changes in the hydrology of the surface water near South Georgia (ms, 45pp + loose sheets)
B3/9	The hydrology of the Falkland Islands and Patagonian shelf (ms, 24pp + notes and references)
B3/10-11	Two articles on the 4 th commission of Discovery II, 1935-37; probably those prepared by GERD for issue to the press in 1937 (corrected typescript, 2pp, 5pp)
B3/12	Text of a lecture on the work of Discovery Investigations by H F P Herdman, c. 1936 (typescript, 14pp + list of slides)
B3/13	Report on whale marking at South Georgia, 20 Nov 1935 to 19 Jan 1936 by H F P Herdman (ms, 14+2pp + 14 sheets data and graph)

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
12	B3/14	T J Hart, Notes on the data concerning the Anomuran Centolla-crab <i>Lithodes antarcticus</i> Jacquinot & Lucas, obtained during trawling surveys of the Patagonian

continental shelf, 1927-32 (duplicated typescript; 2 copies – not published)

13	GERD B3/15	Commander Carey's Ice Theory (folder of data)
	B3/16	A theory of ice conditiona and meteorology in the Antarctic, by Commander Cary (Captain) Discovery II. (typescript (2 copies) & correspondence, 5 items, 1933.
	GERD B4/1-7	Rough notes and workings on Discovery Investigations stations with miscellaneous observations on southern waters (7 folders)
	GERD B5	Official Reports
Outsize	B5/1	Reports on the work of <i>RRS William Scoresby</i> (nos. 1-24) 1926-50, and of the marine Station at south Georgia (nos.6-7 only) (typescript copies in clasp file)
Outsize	B5/2	Discovery Reports Nos. 21-27 (duplicated typescript + plates in clasp file)
14	B5/3	Colonial Office Reports on whaling and the protection of whales, 1911-15 (3 items)
	GERD B6	Official files
	B6/1	Discovery Committee Personnel File CPF5. Stanley Kemp, Director of Research, 1924-45
	B6/2	Discovery Committee File No. 2547. Proposed additional vessel for "Discovery" expedition, 1927-28
	B6/3	Discovery Committee Personnel File CPF17. Miss E Jeffries, 1928-38
	B6/4	Discovery Committee File on Committee's Interview with Secretary of State, 1933
	B6/5	Discovery Committee - Policy, 1933-37
	B6/6	Folder of official correspondence and loose papers, mainly dated 1945-48, dealing with the future of the Discovery Committee, removed from official files by N A Mackintosh (see also Section M)
	B6/7	Staff. Polar Medal. Official letters and papers relating to award of the Polar Medal to staff of Discovery Investigations, up to 1941 (folder).

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
15	GERD B7	Official and semi-official correspondence
	B7/1	Correspondence on the Southern Oscillation between

Sir Gilbert Walker, President of the Royal Meteorological Society, S W Kemp, GERD and others, 1925-34 (folder)

B7/2	Letters from S W Kemp and his successor N A Mackintosh, to GERD as Chief Scientist on the 4 th commission of RRS <i>Discovery II</i> , 1935-37 (36 letters + telegrams; folder)
B7/3	Letters from GERD, Leonard Hill (Captain) and members of the scientific staff of RRS <i>Discovery II</i> , to S W Kemp and N A Mackintosh with copies of some of their replies, 1935-37 (54 items; folder)
B7/4	Two letters from J A Edgell (Hydrographer) to N A Mackintosh, (Discovery Investigations) 1937, with results of observations by HMS <i>Endeavour</i> in the Arabian Sea, Bay of Bengal and Tasman Sea (folder)
B7/5	Station record compiled by GERD of the observations made by HMS <i>Endeavour</i> , 1937 (with B7/4)
GERD B8	Duplicated copies of official documents and minutes of the Discovery Committee (These papers are mainly duplicates from the set of Discovery committee papers at the Scott Polar Research Institute)
B8/1 1-10	Reports relating to the work and future of the Committee (1940s)
B8/2	Typed copies of correspondence, 1944-45, on the future of the Discovery Committee (folder)
B8/3	Minutes of the Discovery Committee, 1944 (copies, folder)
B8/4	Discovery Committee scientific subcommittee minutes, 1927-29 (incomplete, folder)
B8/5	Scientific subcommittee minutes, 26 Nov 1947 (folder)
B8/6	Discovery Committee scientific subcommittee minutes and agendas, 1948-March 1949

SECTION C : PHYSICAL OCEANOGRAPHY IN ADMIRALTY ESTABLISHMENTS DURING WORLD WAR II AND THE BIRTH OF NIO, 1939 – 1952

16	GERD C1	Work at Admiralty Experimental Establishments, Portland and Fairlie, 1940-44
	C1/1	Certificate for GERD to proceed on board HMS <i>Kingfisher</i> for trials, 1940

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
16	C1/2	Notebook containing observations with hydrophones, 1940

C1/3	Ms draft by GERD of instructions on the use of Asdic recorder, with miscellaneous data on temperature and other conditions in the Clyde sea area; observations on conditions likely to affect ~Asdic on the American coast (foolscap volume + loose sheets)
C1/4	Ms notes by GERD on observations, calculations and data relating to the velocity of sound in sea water; the bathythermograph; the thermocline (foolscap volume)
C1/5	HM Anti-Submarine Experimental Establishment Fairlie: Internal Report No. 154, 1943 : Preliminary report on the effect of temperature gradients on the accuracy of depth measurement by Asdic apparatus. By GERD and H Wood.
C1/6	Comments on Secret British Report "Asdic area trials" by GERD and H Wood, by Lyman Spitzer, 1943 (typescript, 4pp)
C1/7	Two preliminary drafts by GERD of a handbook on the use of the bathythermograph in British submarines, 1944 (duplicated typescript with ms corrections by GERD)
C1/8	HMA/SEE Fairlie, Internal report no. 174. : Recent developments in the study of the effect of water conditions on Asdic performance and their applications to submarine and antisubmarine warfare, by GERD\, 1944, with Photostat of comments by Lyman Spitzer, Columbia University
C1/9	HMA/SEE Fairlie. Internal report No.245 : Wave measurement by inverted echo sounder, 1945.
C1/10	Envelope containing prints of sonar traces, addressed ty Dr H Wood, Fairlie
C1/11	Ms by GERD of comments on a paper on CO2 by H W Harvey, and a review of contents of the <i>Journal of Marine Research</i> for 1941 (7pp + 10pp)
C1/12	Admiralty instructions for using deep-water echo sounding gear in HM Ships <i>Challenger</i> , <i>Ormonde</i> and <i>Adventure</i> , 1933. Copy No. 8 (text + blueprints)
C1/13	Instructions for maintenance of the Husun Admiralty echo-sounder issued by Henry Hughes & Son (typescript and blueprints in folder)
C1/14	Temporary handbook of instructions for operating inverted echo-sounding set. Copy No. 4 (typescript)

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BOX	REFERENCE	DESCRIPTION
17	GERD C2	Work at Admiralty Research Laboratory, Group W and

NIO, 1944-52

C2/1	Record book of Padstow party, Aug to Sept 1944 (ms notebook)
C2/2	Record of pitch and roll experiments on Sprayville, 1945 (ms notebook)
C2/3	Report on activities of experimental party at Padstow, by N F Barber, with annotations by GERD, 1944 (ms, 6pp)
C2/4	Report on aneroid pressure unit with covering letter from W M Cotsworth to GERD, 1946 (ms, 2 + 7pp)
C2/5	Naval Meteorological Branch Memo 112/42. Forecasting of sea and swell (9pp)
C2/6	Wave measuring by T F Gaskell, 1944 (typescript, 7pp)
C2/7	Scripps Institution Wave Project, 1944. With report by John C Crowell, Captain A C, Swell Forecast Section, Admiralty, of meeting held at Scripps, 22 Nov 1944 (typescript, 3 + 1pp)
C2/8	Synopses of documents relating to pressure waves from explosions and suspense gear for U-boats, 1945 (typescript, 2 + 2pp)
C2/9	Air Ministry Meteorological Research Committee Agenda, 3 Oct 1946 (typescript, 1p)
C2/10	GERD. The properties of coastal waves (typescript, 3pp) n.d.
C2/11	N F Barber. Theories of coastal waves (typescript, 3pp) n.d.
C2/12	N F Barber. Ocean waves and surf, 1948 (typescript, 2pp)
C2/13	Western European Region Meteorological Committee Sea and Swell Working party 1 st meeting. 14 Nov 1950. Agenda and notes (3pp)
C2/14	Institution of Civil Engineers, Committee on Wave Pressure, 15 Nov 1950. Minutes (2pp)
C2/15	Bibliography on waves (annotated typescript, 4pp)
C2/16	List of Group W drawaings at ARL, 1953 (Photostat, 6pp)
C2/17	Memo from GERD to Director of Scientific Research and Experiment, Admiralty, describing wave measuring trials in HMS <i>Tremadoc Bay</i> and HMS <i>Seneschal</i> (typescript, 4pp) n.d.
C2/18	Text figures for reports on waves and swell

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BOX	REFERENCE	DESCRIPTION
17	C2/19	Summaries of 25 recently written unpublished reports by German marine scientists, by J N Carruthers, 1946

C2/20-22	Notes and calculations on tidal streams, by J B Rogers, 1949-50 (2 notebooks and file)
C2/23	Notebook containing rough data from electrodes Ushant to Plymouth, c. 1952-54, by GERD and others.
GERD C3	Admiralty Research Laboratory Internal Reports – Group W and other sections
C3/1	The use of an inverted echo sounder for recording waves, by C H Mortimer, 1944
C3/2	Echo sounding wave recorders I. Improvements in transmission.
C3/3	Wave recording with echo sounders II. Recording with DC instruments, 1945.
C3/4	Simultaneous frequency analyses of waves and ship movement, 1945.
C3/5	Statistical survey of wave characteristics at Perranporth for the year Sept 1945-Aug 1946, 1946 (with 4 loose ms graphs; annotated by GERD)
C3/6	A simple frequency analyser with measures phase, 1948 (with loose graph)
C3/7	Water motions leading to reduced pressure on the sea bed, by N F Barber, 1948
C3/8	The detection of “Schnorkel” by hydrophone, 1945
C3/9	Interim report of a 50ft vertical-line hydrophone (CHICKWEED), 1945
C3/10	Basic research for the Navy, 1951
C3/11	The propagation of sound in mud, 1952
C3/12	Detection by an echo method of small objects buried in mud, 1952
C3/13	The performance of underwater TV equipment with particular reference to its application to mine countermeasures in British coastal waters, 1952
C3/14	Observations on the variation of period and amplitude of swell from distant storms (ms of ARL/R0/103.41W, corrected by GERD, notebook)

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
17	C3/15	Relation between sea and ship movement (ms for ARL/103/40/N5, 10 pp)

Scientific and technical reports etc. from other branches of the Admiralty and external organizations.

- C4/1 Hydrographic Department Report: Near-bottom currents of the North Sea, by J N Carruthers, 1940.
- C4/2 Naval Meteorological Branch Memo: Water mass convergences in the Southern hemisphere and their meteorological importance, 1943 (4pp)
- C4/3 Hydrographic Department: Pamphlet on the main characteristics of sea water, 1943.
- C4/4 War Office: Memorandum on photography for beach gradient determination by the wave velocity method for operation "Overlord", 1944
- C4/5 Scripps Institution of Oceanography: Report on depth determination from aerial photographs of explosion waves, 1944 (loose plates)
- C4/6 Ministry of Supply: Interim reports from the Cambridge group of SRI on wave mechanics, 1945 (typescripts + loose plates and diagrams)
- C4/7 DMWD [Miscellaneous Weapons Department]: Lily and clover Floating Airfields. Report on trials to September 1945.
- C4/8 Admiralty Signal Establishment: the screening efficiency of flexible (braided) concentric cables, by H V Scott, 1947
- C4/9 Hydrographic Department, Tidal Branch: The analysis of 24 heights or rates at lunar hourly intervals, 1947
- C4/10 Admiralty Mining Establishment: UEP preliminary experiments on a simple form of ship detector for guarding a channel, 1947
- C4/11 Ministry of Supply: The physical effects of atomic bombs Part I. Damage to ships by underwater explosions of atomic bombs, by W. G. Penney, 1948
- C4/12 New York Academy of Sciences, Section of Oceanography, La Jolla, California by C S Wright, British Joint Services Mission 1948 (typescript, 2pp)
- C4/13 Report on a visit to Scripps Institution of Oceanography, La Jolla, California by C S Wright, British Joint Services Mission 1948 (typescript, 2pp)
- C4/14 St Louis University, USA: Research programme on short-period microseisms, 1948 (offprint, 10pp)

mine beam field of a destroyer, 1948

	C4/16	Department of Scientific and Industrial Research, Geophysical Conference, Christchurch, Dec 1948: Coastal earth potential and tidal currents in Cook Strait. Part I by C J Banwell. Part II by B H Olssen (typescript)
	C4/17	Dominion Observatory, Wellington, New Zealand: some associations of New Zealand microseisms with cold fronts, by W M Jones, c. 1949 (typescript, 6pp)
	C4/18	Pacific Oceanography Group: Notes on the behaviour of fresh water entering the sea, by J P Tully, c. 1950
18	C4/19	Admiralty Mining Establishment: The possibility of detecting wake homing torpedoes using a towed UEP detector system, 1950
	C4/20	Admiralty Mining Establishment: Swell in its relation to the performance of pressure mines, 1950
	C4/21	International Association of Scientific Hydrology Commission of Snow and Ice. Presidential address by J M Wordie: "The Ross Barrier and the Shackleton Ice-shelf", 1951 (typescript, 15pp)
	C4/22	Marconi: Report on sound velocity gradient meter, 1951
	C4/23 1-6	Copies of papers given at the Geophysical Conference, Wellington 1950-51: <ol style="list-style-type: none"> 1. Internal waves, by N F Barber 2. Wave refraction diagrams, by J K A Waters 3. Surface temperature patterns for 1950 in New Zealand waters, by G F Russell 4. Some features of wave records obtained at Greymouth, by R A Wooding 5. An occasional 40-day cycle in atmospheric pressures in the South Pacific, by W M Jones 6. The salinity programme of the oceanographic observatory, by D M Garner (typescript)
	C4/24	International Committee on the Nomenclature of ocean Bottom Features: Interim report by J D H Wiseman, 1951 (typescript, 4pp)
	C4/25	English translation of "The wind's influence on the flow of water through the Straits of Dover" by Klaus Wyrski, 1952
	C4/26	Microseismic storm tracking, by M H Gilmore, US Navy Geophysicist, 1951-52 (typescript + plates, 21pp)

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
19	GERD C5	Reports and descriptions of apparatus

C5/1	Beschrijving van de Registreerende peilschaal Smitt. Ministerie van Marine, Netherlands, 1940 (bound typescript, with plans and photos + covering letter from Hydrographic Department and reprint, in Dutch) See C5/2.
C5/2	De Vries Smitt Automatic Tide Gauge. English instructions for use (typescript, 7pp+2 photos and 2 figures with forwarding letter from the Hydrographic Department, 1945)
C5/3	The resistance bridge wave recorder. Mine Design Department SS. Informal report No. 1308. 1945 (typescript. 12pp + 6 figures)
C5/4	Novel scratch recorders for aeronautical research. Translation of paper by Heinrick Freise, 1945 (18pp + 7pp figures)
C5/5	N J Johnson : Notes on a visit to ARL to discuss Meteorological Office requirements for an instrument to measure sea disturbance from a ship at sea, 1946 (typescript, 1p)
C5/6	Swell recorders in India, 1946 (typescript, 2pp)
C5/7 1-3	Kurzbeschreibung des DVL-Seegangsmessgerätes SM4 - Gebrauchsanweisung und Eichkurve. W Fangerow, Travemünde, 1946 (short description of wave recorder SM4; 3 copies)
C5/8	Gas-filled vertical position indicator, by A O Hunter, 1947 (typescript, 10pp)
C5/9	A constant level apparatus. British Non-Ferrous Metals Research Association Technical memorandum 54, 1948 (3pp)
C5/10	Canadian equipment for the measurement of atmospheric noise, by F Horner, 1948 (typescript, 5pp)
C5/11	Guide to the operation and maintenance of oceanographic equipment by N A Mackintosh and H F P Herdman, 1949 (typescript)
C5/12	High resolution recording with soot by Kenneth R Eldredge, 1949 (typescript, 5pp + 2plates)
C5/13	Roberts radio current meter. Description and instructions for use; Roberts radio buoy (typescript, 16 +2pp + 4 photos)
C5/14	Wireless set No. 88 Types A & B. War Office, 1948 (printed)
C5/15	Use of air photographs (printed; pp 5-21 only)
C5/16	Hydrostatic pressure indicator. US Waterways Experiment Station, Mississippi River Commission, n.d. (11 figures)

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
19	C5/17	Plans and photographs of compressor unit etc. at Stokes Bay

(5 leaves)

C5/18 Loose plans including figures for Admiralty report on wave recording with echo sounder, 1945 (see C3/3) and sensitive pressure unit, 1948

GERD C6 Group W/NIO: General correspondence and unfiled items 1943-52

C6/1 General correspondence, 1943-44 (folder)

C6/2 General correspondence, 1945 (folder)

C6/3 General correspondence, 1946 (folder)

C6/4 General correspondence , 1947 (folder)

C6/5 General correspondence, 1948 (folder)

C6/6 General correspondence, 1949 (folder)

C6/7 General correspondence, 1950 (folder)

C6/8 General correspondence, 1951 (folder)

C6/9 General correspondence, 1952 (folder)

C6/10 Unfiled letters to and from GERD and other members of Group W, mainly on wave research, 1944-52 (folder)

C6/11 Letter from Arthur E Maxwell, Scripps Institution of Oceanography, 11 Jan 1951 to Edward Bullard, National Physical Laboratory, on a new sound source for deep sea work and bottom temperature measurements made during the Mid-Pacific Expedition (Autograph, 5pp + 9 photos of data and apparatus)

C6/12 GERD Personal correspondence file (folder)

C6/13 General correspondence on physical oceanography, 1944-52

C6/14 Correspondence on hydrographic and related equipment, 1944-52

C6/15 Unfiled correspondence and copies of replies, 1951-53 (folder)

GERD C7 Group W/NIO: Correspondence on contracts, 1946-1952

C7/1 1946 – 1949 (folder)

C7/2 1950 (folder)

C7/3 1951 – 1952 (folder)

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BOX REFERENCE DESCRIPTION

21 **GERD C8 Group W/NIO : Correspondence by topic, 1944 – 1953**

C8/1	Measurement of salinity by two electrodes etc. 1944-51
C8/2	Request for loan of reversing thermometers; Bermuda Biological Station, 1951.
C8/3	Request for translation of paper by P L Kapitsa on "The formation of sea waves by wind". 1949
C8/4	Correspondence with Kelvin & Hughes, 1950
C8/5	Proposal for measuring heat flow by E C Bullard, 1950
C8/6	Note by GERD on intention to study internal waves, 1946, and correspondence between N F Barber and Prof B Haurwitz, New York, 1948
C8/7	Wind drift currents, 1949
C8/8	Application to use King George VI reservoir for experimental work, 1950
C8/9	Wind stress on water, 1950
C8/10	Tide gauges, 1950
C8/11	Signalling current meter (Roberts radio current meter) 1944-47
C8/12	Hose-pipe recorders, 1948-50
C8/13	File Labelled Discovery II, containing 2 letters on underwater compass and vertical log current meter, 1950
C8/14	Electrode velometer, 1946-53
C8/15	Barber current meter, 1950
C8/16	Form and character of waves in deep water, 1944-49
C8/17	Transformation of waves entering shallow water, 1945-52
C8/18	Form and character of waves in moving water, 1944-52
C8/19	Waves on beaches, 1944-49
C8/20	Height of breakers and depths of breaking, 1944-49
C8/21	Beach gradients, 1944-50
C8/22	Correspondence etc. on beach gradient and sand ripples, 1945-49
C8/23	Rip currents, 1949-50

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
21	C8/24	Long waves, 1949-52

C8/25	Accelerometer buoy, 1944-45
C8/26	Pressure recorders, 1944-51
C8/27	Float recorders, 1944
C8/28	Resistance wire recorders, 1944-45
C8/29	Echo wave-height recorders (inverted echo sounder), 1944-53
C8/30	Visual recording – fixed poles, 1945
C8/31	Pitch and roll recorders, 1945-48
C8/32	Aerial photographs. Altimeters, 1945-52
C8/33	Stereophotographic methods, 1944-45
C8/34	Wave photography. Cameras etc. 1944-45
C8/35	Two electrodes in earth's field. Shipborne wave recorder, 1944-52
C8/36	Measurement from aircraft carriers, 1944-45
C8/37	Radio buoy wave recorder, 1944-49
C8/38	Wave measurement reports, 1944-50
C8/39	Liverpool wave recorder and tidal stream predictions, 1945-51
C8/40	Instruments and apparatus, 1945-52
C8/41	Technical data, 1945
C8/42	Technical data, 1946
C8/43	Technical data, 1947
C8/44	Technical data, 1948-52
C8/45	Auto-correlation, 1951-52
C8/46	Sea conditions and ship motion, 1945-50
C8/47	Generation of waves, 1945-53
C8/48	Waves and microseisms, 1945-51
C8/49	Effect of sea conditions on underwater measurements, 1945-51
C8/50	Effect of sea conditions on echo ranges, 1944-52

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
23	C8/51	Errors in Asdic depth determination, 1944-45

C8/52	Use of the bathythermograph in surface vessels, 1944-52
C8/53	Thermal wakes, 1945-50
C8/54	Electrical earth currents, 1946-52
C8/55	Use of bathythermograph – handbook, 1944
C8/56	Atmospheric turbulence 1950-52

SECTION D: NATIONAL INSTITUTE OF OCEANOGRAPHY, 1949 – 1971

GERD D1 Miscellaneous files, reports and papers on the foundation and work of the National Institute of Oceanography

D1/1	Papers collected by GERD on the development of oceanography in the UK in general and on the origins of NIO in particular (folder)
D1/2	Papers collected by GERD on NIO in the years 1967-71 (folder)
D1/3	Correspondence, minutes etc. on the foundation and early work of NIO, c. 1944-52, collected by GERD (folder)
D1/4	Miscellaneous reports and papers on work done at NIO (folder)
D1/5	Reports and papers by NIO staff, 1950s & 1960s (folder)
D1/6	Reports on work at NIO, c. 1960 (folder)
D1/7	Papers relating to the Treasury/Admiralty inspection of NIO, 1960-61 (folder)
D1/8	History of NIO, 1953-66
D1/9	Fight for marine science, 1959-64
D1/10	Fight for marine science, 1965-70
D1/11	Demise of NOC and constitution of MERC, 1965

GERD D2 National Institute of Oceanography Executive Committee

D2/1-5	NIO Executive Committee meetings, 1949 (minutes & papers)
D2/6-9	NIO Executive Committee, 1950
D2/10-13	NIO Executive Committee, 1951

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
26	D2/14-17	NIO Executive Committee, 1952

	D2/18	National Oceanographic Council: Ship subcommittee minutes, 1959-62
	D2/19	Natural Environment Research Council/NIO Committee: correspondence & minutes, 1966-68
	D2/20	National Institute of Oceanography/Institute of Oceanographic Sciences Executive Committee: minutes, 1971-75 (incomplete)
	GERD D3	Registers of letters, etc. Directors office
Outsize	D3/1-9	Registers of letters received and sent, 1953-1972
26	D3/10-17	Receipt and despatch numbers, 1953-1972
	D3/18	Meetings post book, 1960-63
	D3/19	Meetings post book, 1964-65
27	GERD D4	Director's day files (letters sent), 1953-71
	D4/1	Day files, 1953-55
	D4/2	Day files, 1956-57
	D4/3	Day files, 1958-59
	D4/4	Day files, 1960-61
	D4/5	Day files, 1962-63
	D4/6	Day files, 1964-65
	D4/7	Day files, 1966-67
	D4/8	Day files, 1961
	D4/9	Day files, 1962
28	D4/10	Day files, 1963
	D4/11	Day files, 1964-65
	D4/12	Day files, 1968
	D4/13	Day files, 1970
	D4/14	Day files, 1971
	D4/15	Day files, 1971

D5/1 1950 – 1958

D5/2 1958 – 66

D5/3 1968 – 71

GERD D6 External Relations

29 D6/1 Correspondence on advisory, examination and appointment boards, 1953-68

D6/2 Correspondence about visits to NIO, and by NIO staff elsewhere, 1953-55

D6/3 1956 – 58

D6/4 1959 – 60

D6/5 1961 – 62

D6/6 1963 – 64

D6/7 1965 – 67

D6/8 Additional items, 1954 – 60

30 **GERD D7 Correspondence with other organizations**

D7/1 Commonwealth co-operation in oceanographic research, 1954-64

D7/3 Correspondence with South African scientists, 1963-69 (some earlier items included)

D7/4 Correspondence with the UK Scientific Mission, later Office of the Scientific Attaché, British Embassy, Washington, 1959-65

D7/5 Natural Environment Research Council, 1966-67

D7/6 Natural Environment Research Council, 1971-73

D7/7 British Antarctic Survey, 1967-80

GERD D8 Correspondence and papers arranged by topic

D8/1 Economic benefits (of oceanography), 1966-67

D8/2 Folder titled 'General scientific logbook'. Contains data from 1952 and letters to GERD and other NIO staff from L H N Cooper (MBA, Plymouth)

BOX REFERENCE DESCRIPTION

30 D8/3 Density of sea water, 1953-67

	D8/4	Thermal properties of sea water, 1959
	D8/5	Colligative and other properties of sea water, 1968
	D8/6	Properties of sea ice, 1956-62
	D8/7	Transmission of sound [deep scattering layer] , 1953
	D8/8	The heat budget of the oceans, 1954-62
31	D8/9	Subsurface distribution of temperature and salinity, 1952-68
	D8/10	Chemistry of sea water, 1954-68
	D8/11	Chemistry – miscellaneous, 1957-69
	D8/12	Dissolved gases in sea water, 1953-67
	D8/13	Apparatus for analysis of sea water, 1953-67
	D8/14	Organisms and the composition of sea water, 1957-67
	D8/15	The sea as a biological environment, 1954-59
	D8/16	Populations of the sea, 1961-63
	D8/17	Observations and collections at sea (instruments and methods) – general, 1953-68
	D8/18	General information on NIO research ships, 1953-64
	D8/19	Advice to outside bodies on research ships, 1953-64
	D8/20	Torrey Canyon, 1967-68
	D8/21	Winches, 1960
	D8/22	Sonic soundings (echo sounders), 1952-70
	D8/23	Fish detection, 1951-67
	D8/24	Thumper, 1963-64
	D8/25	Temperature measurements, 1953-70
	D8/26	Water-sampling devices, 1955-61
	D8/27	Treatment and analysis of serial observations, 1967
	D8/28	Observations of tides, 1957-64
	D8/29	Deep-sea anchoring, 1956-57

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
32	D8/30	Drift methods, 1953-64

	D8/31	Bermuda trials, 1958-60
	D8/32	Flow methods (measurement of flow in liquids and turbulent flow), 1953-59
	D8/33.1	Current meters, 1953-70
	D8/33.2	Current meters – Kelvin Hughes (folder)
	D8/34	Wave recordings, 1968-70
	D8/35	Airborne sea and swell recorders, 1957-62
33	D8/36	Long-wave recorders, 1955-70
	D8/37	Tide recorders, 1953-58
	D8/38	Depth recorders (pressure-operated), 1953-61
	D8/39	Underwater TV, 1953-59
	D8/40	Buoys, 1953-68
	D8/41	Institut für Meereskunde, Kiel : Symposium on anchored buoys, June 1963
	D8/42	Microbarographs, 1954
	D8/43	Underwater photography, 1956-58
	D8/44	Outside enquiries about NIO underwater camera, 1956-57
	D8/45	Underwater photography – publications and talks by Dr A S Laughton, 1956-58
	D8/46	Underwater cables, 1956
	D8/47	Wave forecasting, 1956-57
	D8/48	Seismograph, 1957-60
	D8/49	Acoustic telemetering, 1960-79
	D8/50	IOC joint meeting on telecommunication, 1963, and Maritime World Administrative Radio Conference, 1967
	D8/51	International Telemetering Conference, 1963
34	D8/52	Gravimeter observations, 1959
	D8/53	Integrating irradiance meter, 1961-62

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
34	D8/54	Dynamics of ocean currents, 1954-60; Friction, 1954-62

	D8/55	Drafts of papers and reports on work done at NIO by N P Fofonoff, 1955-56
	D8/56	Wind profiles near the sea surface, 1953-62
	D8/57	Thermodynamics of ocean currents, 1953-55
	D8/58	Dispersal of radioactive waste and other effluents, 1954-60
	D8/59	Oil pollution, Torrey Canyon, 1968-70
	D8/60	Waves and tides, 1953-68
	D8/61	Surface waves, 1954-66
	D8/62 1-2	Electronic tidal analogue model of North Sea, 1957 (file & folder)
	D8/63	Tides, 1955-56
35	D8/64	Effect of wind on tidal currents in the Dover Strait (St Margaret's Bay – Sangatte), 1953-54
	D8/65	Effect of wind on tidal currents in the Dover Strait (wind data), 1953-54
	D8/66	Effect of wind on tidal currents in the Dover Strait (correspondence with overseas organizations), 1953-54
	D8/67	Effect of wind on tidal currents in the Dover Strait (tide-gauge records), 1953-54
	D8/68	Effect of wind on tidal currents in the Dover Strait (temperature and salinity data), 1953-54
	D8/69	Effect of wind on tidal currents in the Dover Strait, Aldeburgh – Domburg cable experiments, 1953-54; and observations on tidal currents in the Humber, 1955
	D8/70	Effect of waves on beaches, 1953-59
	D8/71	Hydrodynamics : effect of waves on ships, 1953-68
	D8/72	Effect of waves on ships (ship stabilization), 1961-68
	D8/73	Hovercraft Committee, 1965
	D8/74	Froude committee working panel on ship behaviour at sea, 1967
	D8/75 1-2	Rip currents. File of correspondence and folder of press cuttings, 1954-55

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
35	D8/76	Beach cusps, 1954-56

	D8/77	Wave generation, 1955
	D8/78	Sea clutter, 1955
	D8/79	Waves in particular areas, 1954-65
	D8/80	Wave statistics, 1955-62
	D8/81	Changes in sea level, 1957-62
36	D8/82	Wave refraction and record analysis, 1961-66
	D8/83	General – maps (correspondence on charts and atlases), 1956-67
	D8/84	The South Atlantic Ocean, 1953-65
	D8/85 1-2	Adjacent seas of the North Atlantic Ocean, 1953-63 (file of correspondence & report in folder)
	D8/86	The North Atlantic Ocean, 1955-66
	D8/87	The Indian Ocean, 1956-57
	D8/88	The South Pacific Ocean, 1957
	D8/89	Correspondence and papers on biological topics, including phosphorescence, 1958-60
	D8/90	Organic production in the sea, 1953-63
	D8/91	Correspondence on mineral resources and tracers, 1954. 1960
	D8/92	Sea floor in particular areas, 1965
	D8/93	Turbidity currents, 1962
	D8/94-95	Microseisms. File of correspondence & folder of charts, 1952-70
	D8/96	Seismic study, 1960
	D8/97	General biology, 1953-65
	D8/98	General chemistry, 1964
	D8/99	General mathematics, 1955
	D8/100	General meteorology, 1953-63
37	D8/101	Sodium content of coastal rain, 1960
	D8/102	Data recording and analysis, 1954-64

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
37	D8/103	Fourier analysis, 1953-61

D8/104	Correlation analysis, 1953-59
D8/105	Curve follower, 1953-58
D8/106	Equipment and materials, 1953-58
D8/107	Analysis by digital methods, 1957-60
D8/108	General electrical and electronic engineering, 1953-68
D8/109	Electrical and electronic components, 1952-62
D8/110	General mechanical engineering, 1957-61
D8/111	Instruments and equipment other than oceanographic, 1954-70
GERD D9	Papers and Reports relating to work at NIO
D9/1	Miscellaneous papers on work at NIO and elsewhere in the 1950s & 1960s (folder)
D9/2	Cruise reports, 1957-71 (folder)
D9/3	Reports by NIO groups for annual reports, 1968-70 (folder)
D9/4	Submissions by departments on various aspects of work at NIO, 1970 (folder)
GERD D10	Correspondence on talks, papers and meetings involving NIO personnel
D10/1	Preparation of papers, 1953-67
D10/2	Talks by GERD and other staff members, 1953
D10/3	Talks by GERD and other staff members, 1954
D10/4	Talks by GERD and other staff members, 1955
D10/5	Talks by GERD and other staff members, 1956
D10/6	Talks by GERD and other staff members, 1957
D10/7	Talks by GERD and other staff members, 1958
D10/8	Talks by GERD and other staff members, 1959
D10/9	Talks by GERD and other staff members, 1960
D10/10	Talks by GERD and other staff members, 1961
D10/11	Talks by GERD and other staff members, 1962

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
39	D10/12	Talks by GERD and other staff members, 1963

D10/13	Talks by GERD and other staff members, 1964
D10/14	Talks by GERD and other staff members, 1965
D10/15	Talks by GERD and other staff members, 1967
D10/16	Contributions to discussions by NIO personnel, 1953-55
D10/17	NIO discussion meeting on wave recording, 1961
D10/18	Drafts of papers by NIO staff, c. 1970 (folder)

40	GERD D11	<i>Ships: cruises by RRS <i>Discovery II</i> and <i>Discovery</i></i>
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D11/1	1952 – 54
D11/2	1955
D11/3	1956
D11/4	1957
D11/5	1958
D11/6	1959
D11/7	1960
D11/8	1961
D11/9	1962
D11/10	1963
D11/11	1964
D11/12	1968
D11/13	<i>Discovery II</i> replacement, c. 1960

41	GERD D12	<i>International Geophysical Year, 1957-58: preparation, operations and results</i>
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D12/1	Correspondence, 1953-54
D12/2	Correspondence, 1955
D12/3	Correspondence, 1956
D12/4	Correspondence, 1957
D12/5	Correspondence, 1958

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
41	D12/6	Correspondence, 1959

	D12/7	Papers relating to planning and equipment (folder)
	D12/8	CSAGI Working Group meeting, Brussels, 8-10 Sept 1955. Correspondence and minutes. (Draft report of long-wave and sea-level subcommittee by GERD and list of names, ms, 8pp attached)
42	D12/9	Canadian participation; Oceanography Working Group meeting, Washington, 2 March 1956: correspondence and papers
	D12/10-11	CSAGI International Working Group meeting. Göteborg, 15-17 January 1957: correspondence and papers (file and folder)
	D12/12	US Technical Panel, and IGY Manual, 1955-58
	D12/13	Correspondence with G Laclavère, Secretary General, IUGG, 1956-59
	D12/14	Letter from World Data Center about IGY results, 1960
	D12/15	Canadian participation (proposal by H.B. Hachey)
	D12/16	South Africa: correspondence, 1956-57
	D12/17	New Zealand: correspondence, 1955-58

SECTION E: NATURAL ENVIRONMENT RESEARCH COUNCIL

43-51	GERD E1	NERC Council Meetings
	E1/1	Minutes of meetings 2-17, 1965-67
	E1/2-71	Minutes and agendas of meetings 1-74 (54,57, 65 missing), 1965-73
	E1/72-75	Informal council meetings, 1970-73
	GERD E2	NERC Oceanography and Fisheries Committee
52-54	E2/1-17	Agendas for meetings 1-17, 1965-69
54	E2/18	Minutes of meetings 1-9
	GERD E3	Oceanography and Fisheries Committee Advisory Subcommittee on International Oceanographic Affairs : Papers, 1966-81
	E3/1	First meeting
	E3/2	Second meeting
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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
54	E3/3	Third meeting

	E3/4	Fourth meeting: unconfirmed minutes
	E3/5	Fourth meeting: agenda
	E3/6	Fifth meeting
55	E3/7	Sixth meeting
	E3/8	Correspondence and papers, 1971-74
	E3/9	Agendas, 1974-76
56	E3/10	Correspondence and papers, 1975
	E3/11	Minutes and correspondence, 1976-81
	E3/12	Agendas, 1979
	E3/13	Agenda. 1981
57	GERD E4	Oceanography and Fisheries Committee: reports and correspondence
	E4/1	Correspondence, 1965-67
	E4/2	Report of Aberdeen visiting group, 1966-67
	E4/3	Working group on underwater acoustics, 1969
	GERD E5	Ships
	E5/1	John Murray Planning Committee, 6 th meeting, 1967
	E5/2	Research Vessels Committee, 7 th meeting, 1968
	GERD E6	Marine Forum
	E6/1	1971
	GERD E7	Antarctic Committee: Papers and correspondence
	E7/1-6	Meetings 1-6, 1967-68
58	E7/7	7 th meeting, 1969
	E7/8	8 th meeting, 1969
	E7/9	9 th meeting, 1970
	E7/10	Correspondence, 1967-70

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
	GERD E8	Other committees

58	E8/1-5	Geology and Geophysics Committee: papers, 1967-69
59	E8/6	British Antarctic Survey Marine Life Sciences Advisory Panel: Papers, 1979-82

GERD E9

Discussion Meetings

E9/1	Seafloor studies, 1967
E9/2	Antarctic research, 1968
E9/3	Joint meeting of the Antarctic Committee and OFC Working Group on Biological Resources, 1969
E9/4	Physical geography, 1970

SECTION F: RELATIONS WITH GOVERNMENT DEPARTMENTS

60	GERD F1	Ministry of Agriculture, Fisheries and Food Advisory Committee on Oceanographic and Meteorological Research
	F1/1	Correspondence, 1952-67
	F1/2	Correspondence (including Flood Committee), 1954-67
	F1/3	Correspondence (Flood Committee), 1968-71
	F1/4	Flood Committee minutes, 1954-69
	F1/5	Agendas, 1954-55
	F1/6	Agendas, 1956-57
	F1/7	Agendas, 1958-59
61	F1/8	Agendas, 1960-61
	F1/9	Agendas, 1962-63
	F1/10	Agendas, 1964-65
	F1/11	Agendas, 1966-67
	F1/12	Reports on tidal observations (folder)
62	F1/13	Flood Committee agendas, 1968-71
	F1/14	Mean Sea Level Subcommittee: correspondence, 1958-67

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<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
62	F1/15	Mean Sea Level Subcommittee: agendas, 1958-67

- F1/16 Mean Sea Level Subcommittee: minutes, 1958-67
- F1/17 Correspondence on International Eel Expedition, 1978 (folder)

**GERD F2 Department of Scientific and Industrial Research/
Ministry of Technology**

- F2/1 DSIR Meteorology Panel Research Grants Committee: agendas & correspondence, 1960
- F2/2 DSIR Research Grants Committee, Ocean ography Panel of the Geology and Geophysics Subcommittee: minutes, 1963
- F2/3 Ministry of Technology: correspondence, 1967

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GERD F3 Ministry of Defence

- F3/1 MOD (Air Ministry) Meteorological Research Committee, Instruments and Physical Subcommittee: agenda and minutes, 1959-64
- F3/2 MOD (Air Force Department) Meteorological Research Committee, Synoptic, Dynamical and Climatological Subcommittee: minutes and agendas, 1959-64
- F3/3 MOD (Air Force Department) Meteorological Research Committee, Research Grants Subcommittee, 1960-67

SECTION G : NATIONAL COMMITTEES

Parts 1-11: Organised through the Royal Society

64 **GERD G1 British National Committee for Oceanic Research**

- G1/1 Correspondence, 1959-69
- G1/2 Correspondence, 1966-69
- G1/3 Correspondence, 1970-75

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- G1/4 Correspondence, 1976-81
- G1/5 Correspondence and papers, 1979-82
- G1/6 Minutes, 1960-84
- G1/7 Agendas, 1959-65
- G1/8 Agendas, 1966-70
- G1/9 Agendas, 1971-75

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
66	G1/10	Agendas, 1976-79
	G1/11	Indian Ocean Subcommittee, 1960-65
	G1/12	Royal Society discussion meeting on 'Needs for expansion in Marine Science' (national contribution to International Indian Ocean Expedition), 1960-61
67	G1/13	Indian Ocean Geology and Geophysical Working Group, 1960-61
	G1/14	Indian Ocean Chemical Working Group, 1961
	G1/15	Indian Ocean Biological Working Group, 1961
	G1/16	Indian Ocean Meteorological Working Group, 1961-63
	G1/17	Law of the Sea Group, 1971-81
	G1/18	Subcommittee on Marine Pollution, 1976-82
68	GERD G2	British National Committee for Geodesy and Geophysics (IUGG) 1933-1940 (Prof. S Chapman, Chairman)
	G2/1	Union finances: correspondence & papers, 1936-37
	G2/2	Correspondence and appears on election of officers, 1936
	G2/3	Reports for presentation at general assemblies: correspondence & papers, 1933-35
	G2/4	Circulation of minutes: correspondence & papers, 1938-39
	G2/5	Union procedure, 1933
	G2/6	Subcommittee on Union policy: correspondence & papers, 1937
	G2/7	Resolutions passed at IUGG meetings at Lisbon, 1933, and Edinburgh, 1936
	G2/8	Correspondence on Royal Society membership of IUGG, 1928-1933
	G2/9 1-3	Correspondence on statutes and matters arising from the Lisbon meeting, 1933-39 (3 folders)
	G2/10	Correspondence on British vote at general assemblies, 1933
	G2/11	Geodetic work in the British Empire: correspondence, 1935-40
69		British National Committee for Geodesy and Geophysics (IUGG) 1943 - 49 (Prof. J Proudman, Chairman)
	G2/12	Letters from General Secretary, 1943-48

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
69	G2/13	Letters from Royal Society, 1943-48
	G2/14	Miscellaneous correspondence, 1943-49
	G2/15	Agendas, 1954-57
	G2/16	Agendas, 1958-60
	GERD G3	British National Committee for Geodesy and Geophysics, Subcommittee for Physical Oceanography (Physical Sciences of the Ocean Subcommittee)
	G3/1	Correspondence and papers, 1953-79
70	G3/2	Minutes, 1952-82
	G3/3	Agendas, 1953-82
	GERD G4	British National Committee for Geodesy and Geophysics, Meteorology Subcommittee
	G4/1	Minutes, 1953-66
	G4/2	Agendas, 1953-76
	G4/3	Correspondence and circulars, 1954-75
	G4/4	Meteorology and Atmospheric Physics Subcommittee, 1973
71	GERD G5	British National Committee for the International Geophysical Year
	G5/1	Correspondence and papers, 1953-54
	G5/2	Correspondence, 1955
	G5/3	Correspondence, 1956
	G5/4	Correspondence, 1957
	G5/5	Correspondence, 1958
	G5/6	Correspondence, 1959
	G5/7	Correspondence, 1960
	G5/8	Minutes, 1954-58
72	G5/9	Agendas, 1955
	G5/10	Agendas, 1956
	G5/11	Agendas, 1957

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
72	G5/12	Agendas, 1958
	G5/13	Antarctic Subcommittee, 1957-58
	G5/14	Analysis Subcommittee, 1958-59
	G5/15	Royal Society Soirée Committee (results of the IGY), 1957
73	GERD G6	British National Committee for Co-operation in Geophysics
	G6/1	Correspondence and papers on oceanographic work at Halley Bay, 1957-65
	G6/2	Correspondence, 1961-69
	G6/3	Minutes, 1961-66
	G6/4	Agendas, to 1966
	GERD G7	British National Committee for the International Council of Scientific Unions (ICSU)
	G7/1	Minutes, 1953-79
	G7/2	Agendas, 1974-78
	GERD G8	British National Committee on Antarctic Research
	G8/1	Agendas, 1958-61
74	G8/2	Correspondence, 1972-81
	G8/3	Minutes, 1974-82
	G8/4	Agendas, 1974-82
	GERD G9	British National Committee for the Global Atmospheric Research Programme
	G9/1	Papers, 1973-74
	GERD G10	British National Committee for the History of Science, Medicine and Technology
	G10/1	Papers, 1975-78
	G10/2	Papers, 1979-82
	GERD G11	Royal Society UNESCO Committee (Marine Sciences Panel)
	G11/1	Correspondence, 1958-66
75	G11/2	Agendas, 1959-64

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
75	G11/3	Minutes, 1959-64
	G11/4	Agendas and minutes, 1963-65
	G11/5	Minutes and correspondence, 1955-65
	G11/6	Minutes, 1960-64
Parts 12-17: Other National Committee		
76	GERD G12	Department of Education and Science NATO Science Briefing Committee
	G12/1	Papers, 1971-73
	G12/2	Papers, 1973-74
	G12/3	Papers, 1975
	G12/4	Papers, 1976-77
77	GERD G13	Joint Committee for Ordinary National Diplomas in Nautical Science
	G13/1	Minutes and papers, 1965
	G13/2	Minutes and papers, 1966-67
	G13/3	Minutes and papers, 1968-71
	G13/5	Papers, 1974
	G13/6	Papers, 1975-77
	G13/7	Examinations subcommittee, 1966-69
	G13/8	Standing subcommittee, 1970-73
78	GERD G14	British National Committee on Ocean Engineering (Royal Society representative)
	G14/1	Papers, 1970-71
	G14/2	Papers, 1972-73
	G14/3	Papers, 1974-75
	G14/4	Papers, 1980-82

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
78	GERD G15	Parliamentary Group on World Government : Committee on seabed resources
	G15/1	Correspondence and papers, 1969-75
	GERD G16	South Atlantic Fisheries Committee
	G16/1	Papers, 1977-80
79	GERD G17	Committee on International Scientific Cooperation/Committee on Overseas Scientific Relations
	G17/1	CISC Working Group on Oceanography: correspondence & papers, 1961-66
	G17/2	COSR Oceanographic Research Committee: correspondence & papers, 1967

SECTION H : INTERNATIONAL COMMITTEES

	GERD H1	UNESCO International Advisory Committee on Marine Sciences
	H1/1	Correspondence, 1952-61 (3 folders)
	H1/2	Proposed International Research Vessel: correspondence, 1955-60
	H1/3	UNESCO fellowships, 1956-61
	H1/4	IACOMS meeting, Tokyo, 24-26 October 1955
	H1/5	IACOMS meeting, Lima, 22-24 October 1956 (1 st session)
	H1/6	IACOMS meeting, Stockholm, 10-12 April 1957
80	H1/7	IACOMS meeting, Bangkok, 15-18 November 1957 (2 nd session)
	H1/8	UNESCO consultants' meeting, Paris, 22-23 Sept 1958
	H1/9	3 rd IACOMS session, Paris, 24-30 September 1958
	H1/10	4 th IACOMS session, New York, 14-18 Sept 1959
	H1/11	5 th IACOMS session, Copenhagen, 8-9 July 1960
	GERD H2	Intergovernmental Oceanographic Commission
	H2/1	Intergovernmental conference on international oceanographic research and training vessels, Copenhagen, 1960

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
81	H2/2	IOC: correspondence & papers, 1961-62
	H2/3	IOC: correspondence & papers, 1963
	H2/4	2 nd International Oceanographic Congress, Moscow, 30 May-9 June 1966
	H2/5	IOC: correspondence & papers, 1971-79
82	GERD H3	Scientific Committee on Oceanographic Research
	H3/1	ICSU Special Committee on Deep-Sea Research
	H3/2	SCOR: correspondence & papers, 1956-58
	H3/4	SCOR: correspondence & papers, 1959-67
	H3/5	SCOR: correspondence & papers, 1976-81
83	H3/6	First SCOR meeting. Woods Hole, 28-30 August 1957
	H3/7	SCOR second meeting, Paris, September 1958
	H3/8	SCOR Executive Board and third meeting, New York, 1959
	H3/9	SCOR fourth meeting, Helsinki, 1960 and executive meeting, Paris, April 1961
	H3/10	SCOR/ICSU General Assembly, London, September 1961
	H3/11	SCOR fifth meeting, Monaco, November 1961
	H3/12	SCOR Executive meeting, Halifax and Paris, 1962
	H3/13	Meeting of UNESCO Office of Oceanography and SCOR Executive, April 1962
	H3/14	SCOR Executive and sixth meeting, Halifax, 1963
	H3/15	SCOR Executive , Paris, 1963
	H3/16	SCOR Executive, Paris, 1964
	H3/17	SCOR seventh meeting, Hamburg, 1964
	H3/18	SCOR eighth meeting, Rome, 1966
84	H3/19	SCOR: correspondence on the Indian Ocean Expedition, 1957-67
	H3/20	SCOR/SCAR Polar Oceans conference, McGill University, 1974 (folder)

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
85	H3/21	SCOR/SCAR Polar Oceans conference, 1974: correspondence & papers
	H3/22	Papers relating to SCOR Southern Ocean workshop and other meetings, 1977 (folder)
	GERD H4	International Association of Physical Oceanographers
	H4/1	IAPO: correspondence, 1956-67
	H4/2	Recommendations by IAPO to IACOMS meeting in Lima, 1956 (folder)
86	GERD H5	International Union of Geodesy and Geophysics
	H5/1	IUGG Council, Paris, 1956
	H5/2	IUGG 11 th General Assembly, Toronto, 1957
	H5/3	IUGG Bureau and CSAGI, Moscow, 1958
	H5/4	IUGG 12 th General Assembly, Helsinki, 1960
	H5/5	IUGG 13 th General Assembly, Berkeley, 1963
	GERD H6	Scientific Committee on Antarctic Research
	H6/1	SCAR Working Group on Oceanography: correspondence & papers, 1967-81
	H6/2	BIOMASS: correspondence & papers, 1977-80
	GERD H7	International Council for the Exploration of the Sea
	H7/1	Correspondence and papers on hydrographic work, 1959-67
87	GERD H8	NATO Subcommittee on Oceanographic Research
	H8/1	Correspondence and papers, 1959-61
	H8/2	Meetings: correspondence & papers, 1959-63
	H8/3	Correspondence and minutes of meetings, 1959-67
	H8/4	Correspondence and papers, 1962-63
	H8/5	Correspondence and papers, 1963-67
	H8/6	Correspondence and papers, 1964-66
	H8/7	Correspondence and papers, 1965-66 (folder)
	H8/8	Correspondence and papers, 1970-71; 1978

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
89	H8/9	Agendas and minutes, 1971
	H8/10	Agendas and minutes, 1972
	H8/11	Correspondence, 1972-76
	H8/12	Agendas and minutes, 1973-74
	H8/13	Panel on Marine Science: correspondence & papers, 1974-75

SECTION J: SCIENTIFIC NOTES, LECTURES AND PUBLICATIONS

90	GERD J1	Lecture notes
	J1/1	Notes on lectures in inorganic chemistry, Kings College London, c. 1925
	GERD J2/1	Manuscript notes and translations by GERD of publications on marine science by others
	J2/1	*Dynamical Oceanography* English translation by GERD of A Defant's <i>Dynamische Ozeanographie</i> (1929) sections 1-8 (notebook)
90-91	J2/2-34	Notebooks and folders containing notes by GERD on the contents of scientific reports and papers by other authors
91	GERD J3	Collections of notes and papers on specific topics
	J3/1	Defant's "Troposphere" (folder)
	J3/2	Captain Cook and his astronomers (folder)
	J3/3	Tides (folder)
	J3/4	Matthew Fontaine Maury Meiklejohn (folder)
	J3/5	Oceanography on Scott's last expedition (folder)
	J3/6	Changes in the properties of Antarctic Intermediate Water with latitude (folder)
92	J3/7	Seasonal and annual variations in water temperature and salinity near South Georgia, 1925-27 (folder)
	J3/8	Pollution (notebook)
	J3/9	Notes on the history of oceanography (folder)
	J3/10	Zonation and water movements (notebook)
	J3/11	Southern Ocean circulation (notebook)

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
92	GERD J4	Manuscript drafts of publications, etc
	J4/1	1930s (folder)
	J4/2	1940s – 1960s (folder)
	J4/3	1970s – 1980s (folder)
	J4/4	Marine research – the work of the National Institute of Oceanography (notebook)
92	J4/5	The Weddell Gyre (notebook)
	J4/6-7	Polar oceanography (2 notebooks)
	J4/8	Rough notes and drafts (folder)
	J4/9	Drafts of talks (notebook)
	J4/10	<i>Modern Concepts of Oceanography</i> , 1982 (folder)
	GERD J5	Typed drafts of publications, etc
	J5/1	Unpublished reports, 1940s-1980s (folder)
	J5/2	Lectures and addresses (folder)
93	J5/3	Typescripts of papers, 1940s & 1960s (folder)
	J5/4	Typescripts of papers, 1970s & 1960s (folder)
	J5/6	Marked proofs (folder)
	J5/7	Typescripts of talks by others (folder)
94	GERD J6	The Antarctic Circumpolar Ocean, 1984
	J6/1-7	Drafts of text (7 notebooks)
	J6/8	Data (1 volume)
	J6/9-11	Collected notes (3 folders)
	J6/12	Miscellaneous data (folder)
95	GERD J7	Correspondence on publications
	J7/1	1953 – 1959
	J7/2	1960 – 1968
	J7/3	1969 – 1970
	J7/4	1970 - 1977

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
95	J7/5	Unfiled correspondence, 1960s (folder)
	J7/6	Correspondence on the Antarctic Circumpolar Ocean, 1982-84 (folder)
96	GERD J8	Contributions to books, etc.
	J8/1	<i>The Sea</i> , 1957-66
	J8/2	<i>Discovery II in the Antarctic</i> (Foreword 1959-63)
	J8/3	<i>Science Survey II</i> , 1961
	J8/4	Oceans, 1960-66
	J8/5	<i>Encyclopaedic Dictionary of Physics</i> , 1960-66
	J8/6	<i>Penguin Science Survey</i> (1963), 1961-66
	J8/7	FIDS book on Antarctic Research, 1961-66
	J8/8	Science and Humanity, 1964-65
	J8/9	Encyclopaedia of Earth Sciences, 1965
	J8/10	Central Office of Information, 1967
	J8/11	Department of Education and Science, Growing Points in Science, 1971
	J8/12	Correspondence on books and journals: editorial advisory boards, 1970-83
	J8/13	Invitations for contributions not taken up
97	GERD J9	Book reviews
	J9/1	Correspondence, 1955-69
	J9/2	Correspondence, 1968-81
	J9/3	Drafts and proofs (folder)
	GERD J10	Correspondence on lectures, etc
	J10/1	"Marine Physics", James Forrest lecture to Institution of Civil Engineers, 1956
	J10/2	"Marine Research – the work of NIO", Royal Society of Edinburgh, 1957
	J10/3	"Oceanography in the IGY", Oxford University Extension lecture, 1957

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
97	J10/4	Talk on IGY to Instruments, Electronics and Automation conference, 1958
	J10/5	Christmas lecture at Royal Institution, 1959: "The sea and its problems"
	J10/6	British Association Symposium on the IGY, 1960
	J10/7	University of London extension lectures: results of the IGY, 1960
	J10/8	"Review of recent advances in physical oceanography". Royal Institution of Naval Architects, 1963
	J10/9	Talks: general correspondence, 1966-80
98	J10/10	Thomas Lowe Gray lecture, 1968-69
	GERD J11	Obituaries
	J11/1	General correspondence, 1953-80
	J11/2	Texts of obituaries and notes (folder)
	J11/3	Draft and notes for obituary of E C Bullard (folder)
	GERD J12	Correspondence on reprints
	J12/1	Requests for reprints, 1953-64
	J12/2	Requests for reprints (folder)
99	GERD J13	Papers, reviews and talks (folders of typescripts and correspondence)
	J13/1	1968
	J13/2	1969
	J13/4	1969 - 70
	J13/4	1970
	J13/5	1971
	J13/6	1972
	J13/7	1973
	J13/8	1974
	J13/9	1975
	J13/10	1976

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
99	J13/11	1977
	J13/11	1978

GERD J14 Publications

Outsize	J14/1-3	Master files of publications (clasp files)
100	J14/4	Spare copies of publications (folder)
	J14/5	Manuscripts of publications (folder)
	J14/6	Newspaper articles (folder)

SECTION K : SOCIETIES

101 **GERD K1 Royal Society**

	K1/1	General correspondence, 1949-64
	K1/2	General correspondence, 1970-71
	K1/3	General correspondence, 1971-79
	K1/4	Royal Society Tercentenary, 1960
	K1/5	James Cook subcommittee, 1968-69
	K1/6	Discussion meeting on seafloor development, 1975-76
	K1/7	Library committee, 1966-72

102	K1/8	Browne Research Fund: agendas, etc. 1953-64
	K1/9	Browne Research Fund: minutes, 1953-63
	K1/10	Browne Research Fund: minutes, 1970-74
	K1/11	John Murray Studentship: correspondence, 1953-67
	K1/12	John Murray Studentship: agendas, 1954-64
	K1/13	John Murray Studentship: minutes, 1960-64
	K1/14	John Murray Studentship: minutes, 1971-74
	K1/15	Biological Expeditions Committee: minutes, 1954-62
	K1/16	Biological Expeditions Committee: agendas, 1954-62
	K1/17	Biological Expeditions Committee: correspondence, 1959-63

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
102	K1/18	Pacific Science Committee: minutes, 1953-62
	K1/19	Pacific Science Committee: agendas, 1954-62
	K1/20	Pacific Science Committee: correspondence, 1958-66
	K1/21	Physical Sciences Research Committee, 1961-67
103	K1/22	Southern Zone Research Committee: agendas, 1956-65
	K1/24	Southern Zone Research Committee: correspondence, 1956-66
	K1/25	Southern Zone Research Committee: minutes, 1970-76
	K1/26	Southern Zone Research Committee: papers, 1979-81
104	GERD K2	Antarctic Club
	K2/1	Correspondence and papers, 1956-78
	GERD K3	British Association for the Advancement of Science
	K3/1	Seismological Committee, 1954-70
	K3/2	Correspondence and papers, 1957-75
	GERD K4	British Sub-Aqua Club
	K4/1	Correspondence, 1955-72
	K4/2	Duke of Edinburgh Prize committee, 1966-85
	GERD K5	Challenger Society
	K5/1	Correspondence and papers, 1956-76
	GERD K6	English Speaking Union
	K6/1	Scientists' teas, 1959-63
	GERD K7	Royal Institute of Navigation
	K7/1	Agendas, 1953-57
	K7/2	Council minutes, 1953-57
	K7/3	Correspondence, 1953-57
105	K7/4	General correspondence, 1953-59
	K7/5	Council papers, 1972-82

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
105	K7/6	Executive committee: minutes, 1953-55
	K7/7	Finance committee, 1953-57
	K7/8	Technical committee, 1953-57
	K7/9	Membership and fellowship committee, 1953-57
	K7/10	Educational subcommittee, 1969-78
	K7/11	Duke of Edinburgh Lecture on "Navigation and the science of the sea". 1961
	K7/12	Presidential address, 1962
	K7/13	Presidential address, 1964
106	GERD K8	Royal Astronomical Society
	K8/1	Correspondence and papers, 1955-75
	GERD K9	Royal Geographical Society
	K9/1	Research committee etc. 1953-59
	K9/2	Council papers, 1965-70
	K9/3	Finance and general purposes committee, 1965-70
	K9/4	General correspondence, 1965-73
	GERD K10	Royal Society of Edinburgh
	K10/1	Correspondence, 1956-72
	GERD K11/1	Royal Society of New Zealand
	K11/1	Correspondence and papers, 1964-67
	GERD K12	Royal Academy of Sciences of Sweden
	K12/1	Correspondence, 1958-75

SECTION L: CONFERENCES, VISITS AND EDUCATION

107	GERD L1	Scientific Conferences
	L1/1	8 th Pacific Science Congress, 1953
	L1/2 1-2	Commonwealth Oceanographic Conference, 1954 (file & folder of papers)

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
107	L1/3	National Academy of Sciences Deep Sea Research Symposium, Washington, 1956
	L1/4	9 th Pacific Science Congress, 1957
	L1/5	International Oceanographic Congress, New York, 1959
	L1/6	National Academy of Sciences Conference on Ocean Wave Spectra, 1961
	L1/7	10 th Pacific Science Congress, 1961
	L1/8	11 th Pacific Science Congress, 1966
108	L1/9	General correspondence, 1972-75
	L1/10	Joint Oceanographic Assembly, Edinburgh, 1976 (folder)
	L1/11	Joint Oceanographic Assembly, 1976 (folder)
	L1/12	Wave dynamics and radio probing of the ocean surface, Miami Beach, 1981
	L1/13	Krill symposium, University of North Carolina, 1982 (folder)
	L1/14	Joint Oceanographic Assembly, Halifax, 1982
	GERD L2	History of Oceanography Congresses
	L2/1	1 st International Congress on the History of Oceanography, Monaco, 1966
109	L2/2	ICHO 2, Edinburgh 1972: organizing committee papers
	L2/3	ICHO 2: correspondence, 1967-74
	L2/4	ICHO 2: correspondence on accepted papers
	L2/5	ICHO 2: correspondence on papers declined or withdrawn
	L2/6	ICHO 3, Woods Hole, 1980
110	GERD L3	Visits Overseas
	L3/1	Woods Hole, 1954
	L3/2	South Africa, 1970 (folder)
	L3/3	Turkey, 1973
	L3/4	Weddell Sea Oceanographic Expedition, 1975
	L3/5	Senior Queen's Fellowship, Australia, 1981

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
110	GERD L4	External Examiner
	L4/1	Liverpool University, 1962-72
	L4/2	University of Southampton, 1966-78
	L4/3	University of Wales, 1970-79
	L4/4	University College, Swansea, 1970-80
	L4/5	Notes on student projects, Swansea (notebook)
	L4/6	Open University, 1978-81
111	GERD L5	Advisory Boards
	L5/1	Centre for Marine Affairs (Scripps), 1970-73
	L5/2	Centre Internationale d'Histoire de l'Océanographie (Monaco), 1969-75
	L5/3	University of Gothenburg Oceanographic Institution, 1972
	L5/4	Hebrew University of Jerusalem, 1966-74
	L5/5	Hydraulic Research Board, 1958-60
	L5/6 1-5	Hydraulics Research Station, 1967-69 (5 files)
	L5/7	<i>Interdisciplinary Science Reviews</i> , 1977-82
	L5/8	International Centre for Theoretical Physics, Trieste, 1977
	L5/9	Liverpool Observatory and Tidal Institute: correspondence, 1952-60
112	L5/10	Liverpool Observatory and Tidal Institute: minutes, 1953-60
	L5/11	Liverpool Observatory and Tidal Institute: agendas, 1955-60
	L5/12	Liverpool Observatory and Tidal Institute: correspondence, 1960-69
	L5/13	Liverpool Observatory and Tidal Institute: minutes, 1960-69
	L5/14	University of Liverpool: agendas, 1960-69
	L5/15-19	NERC Institute of Coastal Oceanography and Tides: advisory committee papers, 1971-73 (5 files)
113	L5/20	Musée Oceanographique, Monaco, 1968-69
	L5/21	Scott Polar Research Institute, 1974-81

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
113	GERD L6	Summer Schools
	L6/1	Physics of the oceans and atmosphere, International Centre for Theoretical Physics, Trieste (1975): correspondence, 1974-81
114	L6/2	Physics of the oceans and atmosphere, 1975: texts
113	L6/3	International College on Physics and Contemporary Needs, Nathiagali, Pakistan, 1976
	L6/4	Lecture notes and overheads, c.1975 (folder)
115	GERD L7	School Governorships – correspondence
	L7/1	King Edward's School, Witley, 1957-67
	L7/2	King Edward's School, Witley, 1968-81
	L7/3	Charterhouse, 1959-78

SECTION M: PAPERS OF OTHER SCIENTISTS

116	GERD M1	Scientific papers of D J Matthews, 1914-48
	M1/1	Miscellaneous correspondence and papers, 1914-46 (folder)
	M1/2	Calculations, data and drafts of papers (ms volume)
	M1/3	S/M L6. 1p calculations, 1921 (notebook)
	M1/4	Rough book – observations made on S/M L6, 1921 (notebook)
	M1/5	Notes for papers, c.1926 (notebook)
	M1/6	Geophysical prospecting. Papers relating to a cruise planned for May 1939 (file)
	M1/7	Correspondence with J Proudman and J A Edgell 1938, 1944-46 (folder)
	M1/8	Reciprocal tables (3 leaves)
	M1/9	Observations in Loch Goil, 1944-45 (ms volume)
	M1/10	Loch Goil 2. Observations, 1944-45 (notebook)
	M1/11	O ₂ observations, HMS <i>Loring</i> , 1944 (notebook)
117	M1/12	Challenger Society papers, 1946-48 (folder)
	M1/13	Abstracts 1. File of notes on scientific papers

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
117	M1/14	Abstracts 2. Notes on papers
	M1/15	Abstracts 4. Notes on papers
	M1/16	Notes on papers (notebook & loose papers)
	M1/17	Notes on papers (ms volume)
	M1/18	Notes on papers (file)
	M1/19	Oceanography. File of notes
	M1/20	Conductivity tables (notebook)
	M1/21	Scientific notes and miscellaneous, c. 1931 (A-Z notebook)
	M1/22	Reprint of paper on salinity and temperature of the Irish Channel and waters south of Ireland, 1913
118	GERD M2	N A Mackintosh
	M2/1	Record of events in the formation of the Discovery Collections (folder of notes by NAM and supporting documents)
	GERD M3	J N Carruthers
	M3/1	Correspondence and papers of JNC, Hans Petersson, E S Russell, S W Kemp, Johan Hjort and others on proposed hydrographic-biological work by ICES, 1938-39 (37 items, including some copies made by JNC)
	M3/2	Memoranda on proposals for oceanographic research in the UK and the setting up of a research institute after World War II 1942-48 (9 items)
	M3/3	National Committee for Geodesy and Geophysics oceanography subcommittee. Meeting of 26 May 1944 to discuss proposals for an oceanographic institute: first draft of minutes; first drafts corrected by committee members; confirmed minutes; report of subcommittee; appendix A (work of the proposed institute) comments by the committee on memo by J R Lumby. Minutes of the meeting of 29 September 1949 (23 items)
	M3/4	Rough notes by JNC on meeting of 26 May 1944, proposals for oceanographic research after the war, etc (18 leaves)
	M3/5	copies of letters from the Hydrographer and JNC about arrangements for oceanographic work after World War II, 1942-52 (3 items)
	M3/6	Letters, reprints and ms notes concerning response by JNC and co-authors to comments on a paper of theirs by J A Gulland of Lowestoft, 1951-52 (6 items)

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
120	M3/7	Royal Society report on scientific research after the war, c. 1944 (2 copies)
	M3/8	Letters to JNC from members of the subcommittee, May to July 1944 (15 items)
	M3/9	Copies of J B Tait's memorandum of 16 April 1942
	M3/10	Copies of Professor Proudman's memo of 1 December 1943
	M3/11	Copies of JNC's memo to the Hydrographer on the above, 17 January 1944
	M3/12	Minutes of the meeting of the subcommittee, 1 March 1944
	M3/13	Copies of GERD's memo tables at the meeting of 1.3.44
	M3/14	Copies of J R Lumby's memo tables at meeting of 26.5.44
	M3/15	Comments on J R Lumby's memo tabled at meeting of 26.5.44
	M3/16	Papers relating to the subcommittee of Proudman, Goldsborough and JNC on the work of the proposed institute, June 1944
	M3/17	Copies of observations by J D H Wiseman, 7 August 1944
119	GERD M4	R B Seymour Sewell
	M4/1	John Murray Expedition: <i>Mabahiss</i> station log. 1933-34
	M4/2	John Murray Expedition: nitrate and nitrite values, 1933-34
	M4/3	John Murray Expedition: pH data, 1933-34
	M4/4	Correspondence on <i>Mabahiss</i> data, 1961-63 and on proposed commemorative meeting, 1982 (folder)
	M4/5	Thermometer certificates and list of thermometers on loan
	M4/6	John Murray Expedition, 1933-34. Copies of photographs
	M4/7	Narrative of the <i>Mabahiss</i> , 1933-34 (xerox of typescript with author's corrections)
Outsize	M4/8	Station record, 1933-34 (loose sheets)
	GERD M5	Photographic prints and negatives by H F P Herdman
10	M5/1-3	Snapshots taken during Discovery Investigations voyages, 1920s-1930s (3 boxes)
	M5/4	Glass negatives - general

<i>BOX</i>	<i>REFERENCE</i>	<i>DESCRIPTION</i>
10	M5/5	South Georgia, 1926-27
	M5/6	South Orkneys, 1926-27
	M5/7	South Shetlands, 1926-27
	M5/8	Melchior Harbour, Anvers Island, etc. 1926-27
	M5/9	Bouvet Island
	M5/10-13	Glass negatives (ships and vies)

SECTION N: MISCELLANEOUS

	GERD N	Miscellaneous data
Outside 4	N/1	Unsorted data (1 box)
Outside 5	N/2	Unsorted data (1 box)

BIBLIOGRAPHY

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APPENDIX

Papers missing from the collection

1. FILES DESTROYED IN 1974

The following list summarizes the papers destroyed by Deacon in August 1974. They related to his work for societies, committees and institutions, and participation in meetings, some of which are also represented in the surviving papers. The list was compiled by Miss Sylvia Harvey, who included as much information as she was about to obtain. While many of these items contained information which may be duplicated elsewhere, some may be considered as irreplaceable. The loss of the ICSU correspondence (1955-74) is particularly to be regretted.

British Hydromechanics Research Association

Cambridge University – Geology and Geophysics Committee, 1959-71

Conferences: Problems of Antarctica; IERE, September 1966; IOC, 1959;
Oceanology International, 1969

Council for National Academic Awards, 1966-71

David Davies Memorial Institute for International Studies

Hydraulics Research Station

Industrial and Trade Fairs Ltd.

ICSU: agendas, 1955-73; correspondence, 1955-74; minutes, 1961-74

IUGG and IAPO assemblies

Marine Biological Association: council, 1956-59, 1966-69, 1970-73

Marine Society

Maritime Meteorology

(Ministry of Defence) Meteorological Research Committee: instruments and physical subcommittee, 1959-70; hydrology committee, 1968; ICOT preparatory group C; oceanography and fisheries committee; marine forum, 1971; underwater applied physics; West Hoe site committee

Parliamentary Group for World Government: committee on sea bed resources, 1967-68

Royal Astronomical Society – Geophysical Committee, 1955-67

Royal Geographical Society: education committee, 1965-70; expeditions committee, 1965-73; library and maps committee, 1965-70; publications committee, 1965-66; research committee, 1965-70; officers' committee; medals and awards; minutes

Royal Institute of Navigation: council agendas and minutes; finance committee; general correspondence, 1961-73; technical committee; lecture; members and fellowship committee; officers' meetings.

Royal Meteorological Society

Royal Society: expeditions committee, **19670-72**; Leverhulme scholarship committee, 1966-70; marine pollution committee; Maurice Hill Research Fund; Smithson Research Fund committee, 1966-73

Royal Society – British National Committees: Antarctic Research, 1958-73. Antarctic working group discussion, Antarctic symposium, 1966; Geology and Geophysics, atmospheric sciences panel, Halley Bay; oceanographic Research, general scientific framework, meeting on ocean currents

Scientific Committee for Antarctic Research: working groups on oceanography

Ship Hydrodynamics/Structures Liaison Group

Society of Underwater Technology: journal

UNESCO: IOC, 1964-70: IOC co-ordination group for the Southern Ocean, 1968-73

University of Wales: Cardiff; University College of North Wales (Bangor) – external examiner, 1967-70

White Fish Authority: research and development committee, 1962-73

2. PAPERS OMITTED FROM THE COLLECTION

A number of items without direct relevance to the topic were not included in the collection. These were mainly minutes of Royal Society committees of which Deacon was not a member, also papers relating to the marine Chemists' Discussion Group, 1971-79.

Files in G10 (British National Committee for the History of Science, Medicine and Technology) and G13 (Joint Committee for Diplomas in Nautical Science), which mainly contained grant applications etc., were extensively weeded.

National Oceanographic Library Archive
Scientific and personal papers of Sir George Deacon
Supplementary list

VISITOR USE

NB: Boxes 10-12, number sequence not used

<u>Box</u>	<u>Brief Description</u>
1.	Antarctic, Southern Ocean – Deep water plots, diagrams, charts & drawings. (RRS <i>Discovery II</i> Commissions 1930s) Added item in canvas holder: Thermograph data sheets, 20 January 1930-16 December 1938; 9 January-19 March 1939-(equipment methods to gather data- Thermograph Negretti and Zambra No.650\ X715) locations include Grytviken, Port Stanley, Capetown, Vindication Island, Gough Island...
2.	Miscellaneous Antarctic material/data including distribution of krill and surface demarcation of the Southern Ocean. Diagrams, charts, drawings, correspondence, data. (RRS <i>Discovery II</i> Commissions 1930s)
3.	Southern Ocean – vertical Antarctic profiles – charts drawings, Diagrams (RRS <i>Discovery II</i> Commissions 1930s)
4.	Southern Ocean – Antarctic section. Data sheets, charts, vertical profiles. (RRS <i>Discovery II</i> Commissions 1930s) 1ST BOX See also BOX 8
5.	George Deacon papers (Reprints) (1 of 2 boxes)
6.	George Deacon papers (Reprints) (2 of 2 boxes)
7.	Southern Ocean – Antarctic. 0 degree line and 90 degree line Drawings, profiles. Salinity and temperature – original drawings (plates) for George Deacon Hydrology paper. “ The Hydrology of the Southern Ocean, <i>Discovery Reports</i> , 15, (1937), pp.1-124” (RRS <i>Discovery II</i> Commissions 1930s)
8.	Southern Ocean – Antarctic Section. Data sheets – charts, vertical profiles (RRS <i>Discovery II</i> Commissions 1930s) 2nd BOX See also BOX 4
9	Thermograph data sheets, 1955 and 1961 (area -for verification) RRS <i>Discovery II</i>
9.	Southern Ocean – Antarctic. Profiles, salinity, temperature etc.

Drawings, diagrams, charts - RRS *William Scoresby* 1930s

Thermograph data sheets RRS John Biscoe, October 1964-April 1965
South Georgia to Southampton. Thermographs, Negretti and Zambra
No.6/W/1344Y

Stored at end of main Deacon Archive sequence

One copy held with the Deacon Archive, and a second copy for visitor use