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SCIENTIFIC AND CULTURAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

International Co-ordination Group for the
Tsunami Warning System in the Pacific

Fourth Session

(Wellington, New Zealand, 4-7 February 1974)

SUMMARY REPORT

This document is being given a wide initial distribution to all official correspondents of the Commission. Recipients are requested to retain this copy for use at future meetings.

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1. Opening of the Session

The Session was opened by the Chairman of the Group, Dr. S. Suyehiro, who welcomed the participants and guests to the opening session and expressed his sincere thanks to the Government of New Zealand for its kind offer to host the meeting.

On behalf of the host country, Mr. F. Turnovsky, Deputy Chairman of the New Zealand National Commission for Unesco, welcomed the delegates and observers to the Victoria University of Wellington, and wished the group a successful meeting.

Dr. G. Giermann, Deputy Secretary, Intergovernmental Oceanographic Commission (also representing Unesco), then welcomed the members of the Group, the representative of the International Union of Geodesy and Geophysics (IUGG) and the observers of Mexico and Fiji in the name of the Director-General of Unesco and of the Secretary of the IOC. He expressed his wish that these two observer countries may no longer hesitate to become members of the Group, as the success of the warning system depends largely on the participation of all countries in the Pacific region. He also expressed his sincere thanks to the Government of New Zealand for its invitation, and to the New Zealand National Commission for Unesco for its close co-operation with the IOC Secretariat which helped essentially to make the meeting a successful and pleasant one. Dr. Giermann then gave a short introductory description of the aims and structure of the Commission and in particular of its ITSU International Co-ordination Group. (cf. Annex VI : List of participants.)

2. Adoption of the Agenda and Election of a Rapporteur

The Group adopted the agenda with one minor change (cf. Annex I). Dr. Giermann was elected Rapporteur. The local staff kindly agreed to assist him in this task.

3. State of Implementation of Recommendations from the 3rd Session of ICG/ITSU, held in Tokyo, May 1972

The Chairman reviewed his report (cf. Annex III) on the actions taken on the recommendations of the third session of the ICG. As the substance of the recommendations in all cases referred to other agenda items, discussion was postponed until those items were taken up. In reply to a request by the delegate of the United States, related to recommendation 5 on standardization of urgent tsunami-related information, a small ad hoc group was set up to formulate recommendations for discussion under item 9 of the agenda. Besides the recommendations, the Chairman noted two important events which had taken place during the period between the third and the fourth sessions: the fourth session of the Joint WMO/IOC Group of Experts on Telecommunication, held in Geneva, 12 - 19 December 1972; and the eighth session of the IOC Assembly, held in Paris, 5 - 7 November 1973. While it was agreed to take up matters relating to the Telecommunication Group under item 9 of the agenda, the Chairman expressed his satisfaction with the decision taken by the Assembly to continue the ICG for ITSU in its existing form. The Group agreed, however, that it might wish to reconsider its terms of reference and to introduce amendments if a need arose from discussions during the session.

4. National Reports on Current Tsunami Research and Instrumental Developments

The delegates of Canada, Japan, New Zealand, Philippines, U.S.A. and the USSR presented reviews of their reports on the national activities in their respective countries. The observers of Fiji and Mexico also made similar statements. Abstracts of these reports appear in document IOC/ITSU-IV/3 Addendum (limited

distribution). The Secretary stated that the full texts of these reports will be available, on request, from the IOC Secretariat. The Group regretted that, due to absence of members from Latin America, no national reports from this region had been received, particularly as developments in Latin America are of great importance and interest to the Group.

5. International Tsunami Information Center (ITIC) - Developments

The Director of ITIC reported on the latest developments and activities of the Center; his report is contained in document IOC/ITSU-IV/3 Addendum. In the discussion, the Chairman of the IUGG Tsunami Committee and the delegate of the USSR expressed their appreciation of the work accomplished by the Center but also felt that the collection and distribution of information material on tsunami still needs further improvement. In their opinion, ITIC should not only serve as an information and referral centre but also as a data centre. The delegate of Canada proposed that a new post of Associate Director of ITIC be established and that he be selected from a Member State (of ITSU) other than the United States, in order to make the Center more international in character. The Director of the Center and the delegate of the U.S.A. welcomed this suggestion and pointed out that a real need exists for additional assistance, because of the increasing workload. The delegate of the U.S.A. suggested that the Group should elaborate those functions of ITIC to which the rôle of the Associate Director would be related. The Secretary then informed the Group that funds were available to send two scientists, preferably from developing countries to the Center, for a period of about 6 weeks. The Group expressed its appreciation for this and suggested that the Director of ITIC should contact institutes and individual scientists, drawing their attention to the availability of funds for visiting ITIC (cf. IOC resolution VIII-24-Annex V). It was agreed that the selection of candidates be made jointly by the Chairman of ITSU and the Director of ITIC, in consultation with the Secretary of IOC. The Director of the Center also agreed to assist with the exchange of scientists between different regions. Because of the importance of the matters discussed, the Group adopted recommendation 4, (cf. Annex II), covering the most important aspects of the work of ITIC.

6. Consideration of IOC Resolution VIII-24* concerning ITSU Adopted by the Eighth Session of the IOC Assembly, Paris, 5 - 17 November 1973

The Secretary introduced IOC resolution VIII-24. Discussion of several paragraphs was deferred until the relevant agenda items were taken.

A lengthy discussion however took place on the second half of the penultimate paragraph, which requests Unesco and UNDP to provide support and assistance to the developing countries in order to enable them to set up their own national warning systems.

The delegate of the U.S.A. suggested that the Group should assist developing countries by providing an action plan, not only on how to set up a national warning system, and on how to participate in the international system, but also on how to obtain the necessary financial support. The observer of Fiji pointed out that the travel of ITIC staff members to different developing countries would facilitate the evaluation of the real needs of these countries. Governments may then be able to decide whether they should set up tide and seismic stations reporting to ITIC and/or a national warning system. The Director of ITIC will be able to advise governments on sources of international funds for such stations.

* (cf. Annex V)

The Group therefore authorized the Director of ITIC to communicate, preferably through national contacts*, with developing countries on this matter and take appropriate action. The Director was further requested to provide ITSU at its next session with an assessment of national needs of the developing countries, members of ITSU.

7. Consideration of Recommendations from the IUGG Tsunami Committee Meeting, held at Wellington, 29 January - 1 February 1974

The Chairman of the IUGG Tsunami Committee gave a short report on the results of the recent Committee Meeting (29 January - 1 February 1974) and presented the recommendations of the Committee (cf. Annex IV). The Group considered the recommendations and decided to request the Secretary, IOC, to bring recommendations 1-4 to the attention of all IOC Member States of the Commission, noting that particular emphasis should be given to recommendation 4, on numerical methods. The Chairman of the IUGG Tsunami Committee referred to resolution 3, in which attention is drawn to the New Zealand Royal Society's offer to print the proceedings of the IUGG Tsunami Committee meeting; he invited Unesco to make a financial contribution to this publication, of about US \$5,000.

8. Proposals for Further Expansion of the Tsunami Warning System

In the light of recommendation 3 of ITSU-III and IOC resolution VIII-24 which calls upon Member States to direct major efforts towards further expansion and improvement of the network of seismic and tidal stations of the Tsunami Warning System in the Pacific, the Group discussed ways and means as to how the System might be expanded. The delegate of Canada pointed out the need for a classification of tsunami observation stations, and the Group agreed that the station categories (attached to recommendation 2) should be used by ITIC for classifying all stations prior to the next ITSU meeting. The delegate of the U.S.A. made available a list of preferred sites at which tsunami observation stations should be set up. The Secretary drew attention to the fact that some of the countries for which tidal and seismic stations are proposed, are not members of ITSU; it was therefore agreed that these countries should be invited to join. Recommendation 2 (cf. Annex II) was adopted.

9. Proposal for Further Improvements in Communication including Standardization of Information Exchange and Dummy Tests

The delegate of the U.S.A. introduced the question of the use of the high frequency bands allocated by the World Administrative Radio Conference (WARC) for the transmission of oceanographic data for tsunami purposes. He drew attention to a request from the Joint WMO/IOC Group of Experts on Telecommunication (Geneva, December 1972) asking the Group to define at this session their frequency requirements. The delegate of the U.S.A. pointed out, however, that the United States does not intend to use these WARC frequency banks for tsunami purposes. The delegates of Canada and Japan made similar statements. The delegate of the USSR informed the Group that the USSR might be a potential user of the frequencies. The Secretary was requested to send cables to the USSR and other countries who have not yet responded to IOC Circular letter no. 416, asking for urgent reply (not later than 15 March 1974). The cable should contain a phrase explaining that the frequencies are for data collection purposes only. The Chairman was requested to transmit the replies immediately to the Chairman of the Telecommunication Group, as received.

*(see item 9 below)

Further discussion took place on matters concerning standardization and dummy tests. The Group expressed the strong wish that these tests be continued on a regular basis, and the results passed regularly to all members of ITSU. Recommendation 3 (cf. Annex II) was adopted.

In this connexion, the question of national contacts came up and it was found that most of the Member States have not yet designated a person to act in this capacity. The Group therefore requested the Secretary to invite Member States of the Group to nominate national contacts and urged members to raise the matter with their governments and scientific authorities.

10. Preparation of Education Material to Raise Public Awareness of the Danger of Tsunamis

The Chairman of the IUGG Tsunami Committee, Professor S.L. Soloviev and the delegate of the Soviet Union pointed out that the USSR would be glad to make available a brochure and a film on tsunami, for distribution by the IOC Secretariat. Professor Soloviev indicated his readiness to come, if invited to do so, with the film to Paris to discuss the matter further with the Secretary, IOC, and members of the Unesco Division of Visual Information. The representative of Japan said that the Japan Meteorological Agency would be willing to release a film on the famous 1933 tsunami which contains very instructive scenes on the wave and the destruction caused. The delegate of Japan was requested to make copies available to the Secretary, IOC, and ITIC. The Secretary informed the Group that the IOC Secretariat is preparing a tsunami prospectus in several languages, and that it is also planning the production of a film on tsunami warning, in which elements of national films might be incorporated.

It was the general view of the Group that ITIC should serve as a distribution centre for educational and information material and that the IOC should provide the Center with all relevant material in different languages. It was suggested that slides could be a suitable substitute for a film, if the latter cannot be made available. The Group further felt that awareness might be raised through mass media such as newspapers.

11. Other Matters

A discussion of the terms of reference of the ICG/ITSU was held under this item. The Group agreed not to recommend any changes but expressed the wish that liaison should continue to be effected with countries which are reporting to the Tsunami Warning System but are not members of the ICG. The Secretary was requested to invite additional countries such as Fiji, Mexico, Papua New Guinea, Western Samoa, etc., to join the Group. The Group confirmed that its name remains "International Co-ordination Group for the Tsunami Warning System in the Pacific" (i.e. without "International" before "Tsunami").

12. Date and Place of the fifth Session of the ICG/ITSU

The Chairman of the IUGG Tsunami Committee expressed the strong wish of his Committee to hold its future meetings and those of the ICG/ITSU together. As the IUGG Tsunami Committee will hold its next meeting with the IUGG General Assembly meeting at Grenoble, France, in August or September 1975, he invited the ITSU group to link its next session to it. The Deputy-Secretary expressed some doubts as to whether a meeting of an IOC regional body should be held at such a distance from its region, even though he agreed that a joint meeting would be highly desirable. He asked the members whether they might not wish to give preference to Latin America, in order to further involve the countries of this region in the work of the Group. The delegate of the U.S.A. strongly endorsed this view. The Group finally agreed to have the next meeting in the first quarter of 1976.

and asked the Secretary, IOC, to negotiate for a venue for the next meeting with countries in Latin America. The Secretary was strongly urged to issue a first announcement of the meeting as early as possible.

13. Adoption of the Summary Report

The draft report of the meeting and recommendations (cf. Annex II) were adopted by the Group.

14. Closure of the Session

The Chairman thanked the Group and the staff of the New Zealand National Commission for Unesco for their excellent co-operation and closed the meeting on Thursday afternoon, 7 February, 1974.

ANNEX I

A G E N D A

1. Opening of the session
2. Adoption of the agenda and election of a rapporteur
3. State of implementation of recommendations from the third session of ICG/ITSU, held in Tokyo, May 1972
4. National reports on current tsunami research and instrumental developments
5. International Tsunami Information Center Developments
6. Consideration of IOC resolution VIII-24 concerning ITSU, adopted by the eighth session of the IOC Assembly, Paris, 5-17 November 1973
7. Consideration of recommendations from the IUGG Tsunami Committee meeting, held in Wellington, 29 January - 1 February 1974
8. Proposals for further expansion of the Tsunami Warning System
9. Proposals for further improvements in communication including standardization of information exchange and dummy tests
10. Preparation of educational material to raise public awareness of the danger of tsunamis
11. Other matters
12. Date and place of the fifth session of the ICG/ITSU
13. Adoption of the Summary Report
14. Closure of the session

ANNEX II

RECOMMENDATIONS ADOPTED BY THE INTERNATIONAL CO-ORDINATION
GROUP FOR THE TSUNAMI WARNING SYSTEM IN THE PACIFIC
AT ITS FOURTH SESSION

Wellington, New Zealand, 4-7 February 1974

Recommendation 1 - The International Tsunami Information Center (ITIC)

The ICG for the Tsunami Warning System in the Pacific:

Considering that the ITIC has provided an effective means for co-ordinating the activities of the Tsunami Warning System and for supporting related research efforts,

Expresses its appreciation to the U.S.A. for operating the ITIC and the continued support to be provided, particularly in view of the expanded activities envisaged for the ITIC,

Noting IOC Resolution VIII-24 which invites Member States to provide all possible co-operation with the ITIC in implementing its major international tasks,

Noting also the Canadian proposal that it would be advantageous to the international community and to ITIC to select among the other participating Member States an Associate Director who would work in close co-operation with the U.S. Director in the operation of the Tsunami Warning System and the ITIC,

Endorses the view of the Tsunami Committee of IUGG that visits of scientists, particularly from countries whose Tsunami Observing and Warning Systems are still developing, to institutions of other countries are an effective way of improving experience and facilitating intercommunication of ideas for the better understanding of all aspects of tsunami research,

Recommends that the functions of the ITIC, as outlined in the Annex to this recommendation, be endorsed,

Recommends further that an Associate Director of the ITIC be selected to work with the Director at the Center.

Annex to Recommendation I

FUNCTIONS OF THE INTERNATIONAL
TSUNAMI INFORMATION CENTER

To give technical advice on all the equipment required for an effective warning system and to provide assistance in the establishment of national warning systems.

Periodic study and assessment visits should be made to developing countries in order to evaluate their instrumentation requirements, assess their performance, offer advice as appropriate, and suggest avenues for assistance.

To evaluate the performance of the Tsunami Warning System with regard to communications, data networks, the Warning Center and dissemination.

To continue the development of a co-ordinated observing system which will provide the information necessary for the issuance of effective tsunami warning to those nations wishing to receive such messages.

To maintain a data acquisition, storage and retrieval system as described below:

The ITIC is charged with acquiring and maintaining the most complete data set possible with regard to tsunamis. World Data Centre A (tsunamis) provided marigrams and seismograms for a limited set of input stations.

In order to avoid duplication of effort the ITIC should look to WDC-A (tsunamis) as a source for a subset of its data. In addition, ITIC should acquire copies of the greatest number of marigrams possible. Data records of microbarograms relating to large shallow focus earthquakes should also be collected (both for tsunamigenic and non-tsunamigenic earthquakes). T-phase data related to tsunamigenic earthquakes should be archived.

In general, seismic data should not be collected and archived except for those data utilized in actual real-time operations of the Tsunami Warning System. Requests for seismic data would be handled by referral to the appropriate World Data Centre for seismology.

A system for the cataloguing and storing of non-standard data (as for example, from a scientific experiment of short duration) should be developed and maintained.

A data storage and retrieval system should be established which includes not only the above mentioned raw and processed data but also information on the library and all other available data.

To encourage a visiting scientist programme by providing facilities at ITIC and arranging for exchange of scientists among countries.

To publish a Newsletter on a regular basis and distribute it to interested individuals and institutions.

To publish and disseminate appropriate compilations of tsunami information or data. Such publications may include regional tsunami catalogues and yearly summaries of tsunamis.

To maintain a library of publications related to tsunamis.

Recommendation 2 - Expansion of the Tsunami Warning System

The ICG for the Tsunami Warning System in the Pacific:

Recognizing that additional seismograph and tide stations are needed to provide better geographical coverage for earlier detection of tsunamis, including their magnitude and propagation rates and more accurate earthquake epicentre determinations,

Having considered the lists of seismograph and tide stations submitted by the ITIC and Member States,

Provides the priority lists of seismograph and tide stations contained in the Annex to this recommendation for consideration for establishment by Member States;

Requests the Secretariat to transmit these lists of stations to the appropriate Member States inviting them to establish such stations as part of the Tsunami Warning System and to indicate if technical, and, in the case of developing countries, financial assistance would be required to do so;

Desiring to clarify the rôle of each station in the Tsunami Warning System from an international point of view;

Recommends that the four categories listed in the Annex to this recommendation be adopted for use within the Tsunami Warning System;

Requests Member States to inform the Director of the ITIC how each of their existing or future (including those proposed in the Annex to this recommendation) stations should be categorized.

Annex to Recommendation 2

PROPOSED TIDE AND SEISMOGRAPH STATIONS FOR THE TSUNAMI WARNING SYSTEM

Tide Stations - First Priority

1. Amchitka, Alaska
2. Salina Cruz, Mexico
3. La Libertad, Ecuador
4. Aparri, Philippines
5. Iwo Jima, Volcano Island
6. Iturup, Kuril Islands
7. Petropavlovsk, Kamchatka
8. Christmas Island
9. Socorro Island - MEXICO
10. Guadalupe Island - MEXICO

Tide Stations - Second Priority

1. Trinity Island (Sitkinak I.), Alaska
2. Yakataga, Alaska
3. Puntarenas, Costa Rica
4. Buenaventura, Colombia
5. Talara, Peru
6. Chimbote, Peru
7. La Serena, Chile
8. Onkotan, Kuril Islands
9. Komandorski Island (USSR)
10. Pitcairn Island

Seismograph Stations - First Priority

1. Tacubaya, Mexico
2. Antofagasta, Chile
3. Petropavlovsk, Kamchatka

Seismograph Stations - Second Priority

1. Galapagos Islands
2. Sombrero, Chile
3. Minamitorishima
4. Port Moresby, Papua New Guinea

CATEGORIES OF STATIONS OF THE TSUNAMI WARNING SYSTEM

1. Stations which automatically report data in real time, utilizing existing or future communication systems. The station can be interrogated either nationally or internationally.
2. The same as above, with the exception that interrogation is only possible within the national network.
3. Stations which require observers to transmit data or messages.
4. Stations which are operated only during expected tsunami activity.

Recommendation 3 - Wave Reporting Procedures

The ICG for the Tsunami Warning System in the Pacific:

Recognizing that internationally agreed upon wave reporting procedures are required,

Having considered the "Wave Reporting Procedures for Tide Observers in the Tsunami Warning System" issued by the U.S. Department of Commerce (Publication 30-3, revised June 1970), and comments made by Member States,

Desiring to clarify the reporting procedures for Tsunami waves,

Recommends that sections 4, 5, 6 and 7 of U.S. Department of Commerce Publication 30-3, revised June 1970, be adopted for international use

Requests the Secretary, IOC, to arrange that these sections be issued as a special document, in the working languages of the Commission, and made available to all Member States of ITSU,

Realizing that in the case of automatic announcing stations, special data transmission procedures may be required,

Requests Member States to inform the Director ITIC how the automatic interrogation can be made and how the associated messages can be interpreted.

ANNEX III

REPORT OF THE CHAIRMAN ON ACTIONS TAKEN ON THE RECOMMENDATIONS
OF THE THIRD SESSION OF THE ICG FOR ITSU AND ON
IMPORTANT EVENTS SINCE THE LAST SESSION

Recommendation No. 1 - Continuation of the function and
activities of ITIC

The United States, host country of the ITIC, has reported that although internal organizational changes in the operation of the ITIC have taken place since the last ICG meeting, activities of the ITIC have been carried on without interruption.

Canada has suggested that in addition to the exchange and promotion of research and technical development on tsunami matters, it would be advantageous to the international community and to ITIC to select among the participating members an Associate Director who would work in close co-operation with the U.S. Director in the operation of the Tsunami Warning System in the Pacific and the International Tsunami Information Center.

Japan has also corresponded with the IOC Secretariat, pointing out that there have been no visiting scientists to ITIC since 1969 from other countries prone to Tsunami and inquiring if Unesco could provide some financial support to visiting scientists to ITIC. Unesco responded that there could be some possibility to give financial support to one or two specialists from ITSU developing countries so that they may build up their own national Tsunami Warning System as part of the International System in the Pacific area.

Recommendation No. 2 - Announcement of the functions and main activities
of ITIC by the ITIC Newsletter

The ITIC Newsletter dated 15 June 1972 contained organizational information and activities of the ITIC. In this letter, it is clearly stated that: "It is important to note that with the changes which have been made, there has been no essential change in the operational aspect of ITIC. With the proposed changes which will be occurring over the period of the next year, no changes are planned which will in any way degrade the warning system. In fact, we can realistically look forward to the improvements which result from the new arrangement."

Recommendation No. 3 - Expansion of the Tsunami Warning System

The only known response to this recommendation came from Canada, considering the tidal stations at Langara Island and Tofino as the Canadian key stations. The Chairman has been informed that the United States is also preparing a statement listing proposed stations in terms of priorities and believes that other member countries will submit their reports at this meeting.

Recommendation No. 4 - Improvement in the telecommunication system in
the Pacific Area, especially between Japan,
the United States and the Soviet Union

Arrangements were completed between Japan, the United States, and the Soviet Union as per the Japanese proposal at the time of the previous meeting, and the message relay by Automatic Data Editing and Switching (ADESS) at the Japan Meteorological Agency (JMA) started on 1 October 1972. Since the start of this

operation seismic and tidal data were actually relayed automatically between Tokyo, Honolulu, Palmer, Khabarovsk and Washington at the times of 23 earthquakes, in addition to the regular dummy tests.

Canada has reported that tsunami data at Langara Island can be transmitted via the teletype network to the Honolulu Warning Centre.

Recommendation No. 5 - Standardization of urgent tsunami-related information

Canada supplies tsunami data in the format agreed upon by Member States but would prefer to report heights or elevations in reference to chart datum as computed for each particular area. In addition, centimetres are preferred to report the wave heights.

The United States is proposing a small sub-committee at this meeting to deal with the problem and subsequently make recommendations for approval by the Group. The Chairman hopes that a final adjustment will be accomplished during the present meeting.

Recommendation No. 6 - Continuation of dummy tests and exchange of actual tsunami warnings between Honolulu, Tokyo and Khabarovsk

As reported in connexion with Recommendation No. 4, tsunami dummy tests are now exchanged on a monthly basis between Tokyo, Honolulu and Khabarovsk telecommunication system.

Canada suggests that this dummy test should be extended to all stations reporting to the Tsunami Warning Centre and that results should be disseminated and made available to participants with the least time delay. Because of the importance of such tests, the Chairman wishes that this matter be discussed at this meeting.

Recommendation No. 7 - Collection of educational material designed to arouse public awareness of the danger of tsunami and also the protective action

The ITIC, which is designated to receive copies of such educational material, has received only those submitted by the United States. Canada has mentioned that any educational material or bibliographies on tsunami will be provided if and when such material becomes available. The Chairman believes that the Soviet Union has made an excellent educational film on tsunami warning with English narration and would like to request the Soviet Union to provide the ITIC with one copy.

Important Events since the last session of ITSU

1. The Fourth Session of the Joint WMO/IOC Group of Experts on Telecommunication, (ITEL) 12 - 19 December 1972, Geneva.

ITSU was invited to send one expert to the meeting, and Mr. M. Spaeth, telecommunication expert of National Oceanic and Atmospheric Administration (NOAA), U.S.A., attended the meeting as the ITSU representative. The summary report of the meeting was sent to ITSU Member States and the Director of ITIC from the IOC Secretariat on 5 February 1973. The IOC Secretariat suggests that the problem of the reservation of radio-frequencies for tsunami warning purposes will be again discussed and certain actions will be taken by ITSU at this meeting.

According to Mr. Spaeth's report to the Chairman, ITEL agreed that 250 Hz at the lower edge of each of the 6 frequency bands allocated by WARC in 1967 should be reserved for the narrow band transmission of tsunami warnings and tsunami data. On the whole, ITEL impressed him as being sympathetic to the needs of the Tsunami Warning System. However, he further suggests, in order to preserve channels in the six WARC frequency bands, that it would seem advisable for TWS to begin making firm plans for the utilization of the available channels.

2. Restructuring the Intergovernmental Oceanographic Commission

The Chairman received a letter from Dr. N.J. Campbell, Canadian member of the ad hoc Working Group on Rationalizing the Structure of the Commission, asking for his comments on the proposals concerning the above matter. The Chairman replied to him with the help of Dr. Pickard, ITSU Vice-Chairman, explaining the raison d'être and its importance of ITSU by letter of 26 September 1972, a copy of which was sent to each Member State. ITSU's views were strongly seconded by Dr. Soloviev, Chairman of IUGG Tsunami Committee. The Chairman is very pleased to inform you of the continuation of ITSU as a subsidiary body of IOC, decided by the eighth session of the IOC Assembly.

ANNEX IV

RECOMMENDATIONS AND RESOLUTIONS ADOPTED BY THE
IUGG TSUNAMI COMMITTEE MEETING

Wellington, 29 January - 1 February 1974

I. Recommendations by the IUGG Tsunami Committee to the International Co-ordination Group for the Tsunami Warning System.

The IUGG Tsunami Committee at its meeting on 1 February 1974 in Wellington recommended:

1. That bottom mounted tide gauges should be installed in the deep ocean to provide information to increase our knowledge of tsunami behaviour to permit improved prediction techniques.
2. That simple land-based instruments be installed to ensure records of tsunamis, such instruments being designed to have adequate range for water levels for likely tsunamis and with recording components located above the reach of tsunamis or able to continue recording even if inundated.
3. That microbarograph and ionospheric sounding data be collected in association with tide or tsunami gauge and seismograph records for tsunamis to permit further investigation of the practicality of using atmospheric motions resulting from surface motions to provide additional information for the TWS.
4. Recognizing that numerical methods are now at the stage in which it would be possible to provide useful wave time histories on an ocean-wide basis in the Pacific and that calculations for a modest number of potential sources (about 15) would provide sufficient information to permit local effect calculations anywhere in the Pacific, that such calculations be made, including the selection of representative sources, calculations of normalized height wave histories over the entire Pacific, numerical evaluation of response factors for key tide stations for rapid normalization of oceanic propagation codes, and provision of standardized local shelf and harbour oscillation codes to member countries to be used for calculation of local effects, particularly flooding.
5. That the use of commercial satellite communication facilities be considered for the TWS until government operated satellites are available or as well as these.
6. That, where pertinent, existing warning systems be expanded to include the natural hazard of tsunamis.
7. That the visits of tsunami scientists, particularly from countries whose tsunami observing and warning systems are still developing, to other institutions, should continue to be encouraged as a very effective means for improving experience and facilitating intercommunication of ideas for the better understanding of all aspects of tsunami research.

II. Resolutions of the IUGG Tsunami Committee.

1. It was resolved that the "Catalogue of Pacific Tsunamis" prepared by D. Cox (U.S.A.), K. Ida (Japan) and S.L. Soloviev (USSR) should be published and the Committee recommends that IUGG seek ways and means to publish the Catalogue.

2. It was resolved that, considering the importance of the ITIC for tsunami research, the attention of the Intergovernmental Oceanographic Commission should be drawn to the need for ITIC to be adequately staffed, in particular so that it may be able to collect marigrams, associated seismograms and relevant descriptive data and observations.
3. It was resolved that the attention of ICG/ITSU be drawn to the fact that the Royal Society of New Zealand has offered to arrange for the publication of the papers presented at the IUGG Tsunami Committee Meeting, Wellington, and that early publication would be facilitated if financial support could be secured through external sources such as IOC.

ANNEX V

RESOLUTION VIII-24

TSUNAMI WARNING SYSTEM IN THE PACIFIC (ITSU)
(adopted by the eighth session of the IOC
Assembly, Unesco, Paris, 5-17 November 1973)

The Intergovernmental Oceanographic Commission,

Noting with appreciation the actions undertaken by the third session of ITSU and the fourth session of the Joint WMO/IOC Group of Experts on Telecommunication (ITEL) and the Secretary on questions concerning requirements for use of the allocated HF radio frequencies for transmission of tsunami data and warnings as well as on preparation of the educational material on tsunami as requested in resolution VII-28,

Noting also with appreciation the offer of the Government of New Zealand to host the fourth session of ITSU,

Welcomes the addition of Peru and Thailand to the ICG on ITSU;

Approves the summary report and recommendations of the third session of the ICG for ITSU (document IOC/ITSU-III/3) and agrees that major efforts of the participating Member States should be directed towards:

- (a) expansion and improvement of the network of seismic and tidal stations of the Tsunami Warning System in the Pacific;
- (b) development and improvement of telecommunication systems for exchange of tsunami data and warnings;
- (c) provision of assistance through Unesco and other sources, to the participating developing countries in creating their own national warning systems;
- (d) exchange of information on research and technical developments on tsunami as well as exchange of scientific and technical personnel particularly through the International Tsunami Information Centre (ITIC);
- (e) in close co-operation with the Tsunami Committee of the International Union of Geodesy and Geophysics (IUGG) study methods for forecasting parameters of tsunamis;

Invites Member States to provide all possible co-operation with the ITIC in implementing its major international tasks as outlined in Recommendation 1 of ITSU-III;

Reconfirms its resolutions IV-6 and VII-28 in which the Commission requested:

Unesco to consider furnishing support to individual scientists to visit ITIC for purposes of co-operative tsunami research and training in the operation of the Tsunami Warning System in the Pacific;

Unesco and UNDP to provide support and assistance when requested, to the developing countries in setting up their own national warning systems;

Requests the Director-General of Unesco to provide support in preparation and publication of educational material on tsunamis.

ANNEX VI

LIST OF PARTICIPANTS/LISTE DES PARTICIPANTES/
LISTA DE PARTICIPANTS/СПИСОК УЧАСТНИКОВ

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CHINA (People's Republic of)
CHINE (République populaire de)
CHINA (República Popular de)
КИТАЙ (Народная Республика)

Not represented

ECUADOR/EQUATEUR/ЭКВАДОР

Not represented

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Not represented

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Not represented

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THAILAND/THAILANDE/
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Not represented

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ORGANIZATION/ORGANISATION/ORGANIZACIONE/ОРГАНИЗАЦИЯ

INTERNATIONAL UNION OF GEODESY AND
GEOPHYSICS/UNION GEODESIQUE ET GEO-
PHYSIQUE INTERNATIONALE/UNION INTER-
NACIONAL DE GEODESIA Y GEOFISICA/
МЕЖДУНАРОДНЫЙ СОЮЗ ГЕОДЕЗИИ И
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REPRESENTANT DE L'UNESCO ET DE LA COI/
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