

# UNITED NATIONS

## GENERAL ASSEMBLY



Distr.  
LIMITED

A/AC.105/C.1/L.14  
1 April 1966

ORIGINAL: ENGLISH

COMMITTEE ON THE PEACEFUL USES  
OF OUTER SPACE  
Scientific and Technical Sub-Committee  
Fourth session

### SUGGESTIONS FOR PROGRAMMES OF EDUCATION AND TRAINING OF SPECIALISTS IN THE PEACEFUL USES OF OUTER SPACE TO ASSIST THE DEVELOPING COUNTRIES

#### Note by the Secretariat

In its resolution 2130 (XX) the General Assembly requested "the Committee on the Peaceful Uses of Outer Space, in co-operation with the Secretary-General and making use of the available resources of the Secretariat and in consultation with the specialized agencies and in co-operation with COSPAR, to prepare and consider during its next session suggestions for programmes of education and training of specialists in the peaceful uses of outer space to assist the developing countries, and to report to the twenty-first session of the General Assembly".

The attached paper on space education and training is intended to provide a basis for discussion at the fourth session of the Scientific and Technical Sub-Committee. The recommendations of the Sub-Committee on this matter will be taken up by the Committee on the Peaceful Uses of Outer Space at the forthcoming session and a report thereon will be submitted to the General Assembly's twenty-first session to be convened in September 1966.

1. The question of space education and training was raised in the First Committee of the United Nations General Assembly when the latter considered the Outer Space Committee's report on its work in 1965. In the resolution (2130 (XX)) unanimously adopted on 21 December 1965, the General Assembly supported the Outer Space Committee's request that the Secretary-General disseminate information received from Member States on needs and facilities for education and training in space-related subjects and noted with appreciation that by establishing educational and

training programmes certain Member States had contributed to the goals laid down by the Outer Space Committee in its report, and urged other States to take similar steps.

2. The resolution took a further step and specifically requested the Outer Space Committee, in co-operation with the Secretary-General and making use of the available resources of the Secretariat and in consultation with the specialized agencies and in co-operation with COSPAR, to prepare and consider during its next session suggestions for programmes of education and training of specialists in the peaceful uses of outer space to assist the developing countries. The Outer Space Committee is requested to report to the General Assembly on the subject at the Assembly's twenty-first session to be convened in September 1966.

3. At the same time the Administrative Committee on Co-ordination of the United Nations and the specialized agencies noted that the question of training is one of the most important facing the United Nations family in the space field and referred to the possibility of a modest programme under the aegis of the Outer Space Committee designed to support and, where appropriate, supplement existing programmes. Training is, the ACC pointed out, of direct, practical concern to many countries, particularly in areas such as communications where space technology is already being applied on an increasing scale.

4. It should be noted also that the Working Group of the Whole of the Outer Space Committee which recently recommended the holding of a space conference in 1967, has included among the topics to be considered at the conference the possibility of establishing programmes for the training of specialists in the peaceful uses of outer space for the benefit of the developing countries.

5. Outline of a possible programme. The present paper attempts to outline in preliminary and general terms the form a programme under the aegis of the Outer Space Committee might take, if the necessary funds can be made available.

6. The suggestions made are based on the principle that training activities undertaken under the auspices of the Outer Space Committee should be so designed as to avoid the duplication of programmes at present being carried out by States or by individual specialized agencies or international institutions. The object should be to encourage the development of existing programmes, to draw attention to and, where possible, fill existing gaps, and to furnish a centre for

co-ordinating and aiding programmes which cannot be effectively carried out without the support of the Committee and the interested Members of the United Nations family. The Outer Space Committee, through its Scientific and Technical Sub-Committee, is in a position to provide such a centre at the governmental level while the inter-agency working group of ACC on space programmes and activities could offer a channel for related inter-secretariat consultations.

7. Three distinct types of measures could be envisaged in order to develop education and training:

- (1) the compilation and dissemination of information
- (2) fellowships and travel grants
- (3) organization of seminars.

8. Compilation of information. Arrangements for the centralization and dissemination of information can play an important part in the encouragement and development of programmes of education and training. A report on training opportunities of the kind mentioned in paragraph 1 above could be of great value to countries seeking assistance as a source of detailed information on the resources available on a bilateral, regional and international basis. It could also be used as a factual basis for planning various activities and for the selection of institutions in which to place fellows for training. Information on training facilities in a number of countries was circulated in annex IV of the Scientific and Technical Sub-Committee's third report (A/AC.105/20/Add.1) and in document A/AC.105/28, issued in August 1965. A revised report, document A/AC.105/C.1/L.11, incorporating the most recent information received from Member States and including information on the training opportunities made available through the specialized agencies, has been submitted to the Scientific and Technical Sub-Committee.

9. The Sub-Committee may wish to consider the possibilities of improving the existing arrangements for centralizing and disseminating information and increasing the usefulness of the reports issued. In particular, consideration might be given to the possibility of developing the present Outer Space Committee reports on education and training facilities into a comprehensive international directory of training facilities. Funds have been allocated by the United Nations Publications Board for the publication of such a directory, which could be, if issued in 1967, a useful element in the documentation of the proposed space conference.

10. Direct assistance. Parallel to such indirect measures to develop education and training programmes, there is need for a direct programme of limited scope to supplement existing activities. In the present circumstances any programme of this kind must, of course, be modest in size. It should also be as flexible as administrative considerations permit so that the funds available can be applied in the areas in which they can produce the maximum effect. At the present stage two forms of action would appear to merit particular attention: the development of a programme of fellowships and travel grants, and the organization of, or provision of assistance to, a small number of seminars or training courses. The measures envisaged would require a relatively small outlay of funds with a fairly high return, and could be employed flexibly, with a minimum of administrative overheads, to support existing programmes. They could also constitute a useful practical response to the Outer Space Committee's call for assistance to increase the value of TERLS, the internationally sponsored sounding rocket launching site in India, as a training centre.

11. Fellowships and travel grants. It is suggested that a joint fellowship fund of \$50,000 should be established under the aegis of the Outer Space Committee to assist scientists and technicians from the developing countries to obtain education and training abroad.

12. Candidates would submit their applications through their national Governments to the Secretary-General, stating their qualifications and chosen course and place of study. Applications would be reviewed by a fellowship committee, appointed by the Secretary-General with the participation of the interested specialized agencies, and a selection made in accordance with criteria designed to ensure the maximum benefits to the developing countries and to international co-operation in space science and technology. In this connexion, the fellowship committee could help to guarantee the success of the programme by ensuring that fellows attend well-established and recognized courses where they will receive systematic theoretical and practical instruction.

13. The Sub-Committee may like to consider the working out of details on the principles that might be followed in the selection process or to attempt a demarcation of the subject areas in which assistance should be given. The overriding objectives would be to help lessen the gap between the "space" and

"non-space" countries, to meet the needs of the international scientific community and to contribute to the fulfilment of international co-operative programmes. Special attention might well be given to the provision of the training needed to enable the developing countries to take advantage of the practical applications of space technology, particularly in telecommunications and meteorology. In the communications field, for example, ITU has, it is understood, a large number of requests from various non-space countries for fellowships and opportunities for education and training in space communications techniques.

14. Besides providing fellowships in the strict sense, the fund could be used, subject to the approval of the fellowship committee, to award travel grants to enable qualified scientists and technicians to attend training courses and seminars organized on a regional or international basis. Travel grants of this kind would be an effective means of promoting full utilization of the training potentialities of internationally sponsored sounding rocket facilities and other internationally supported facilities in, for example, the communications and meteorological fields. Here again the criteria to be applied in awarding grants would need to be worked out in detail in the light of practical possibilities and the general objectives stated earlier.

15. Seminars and training courses. It is further suggested that similar financial provision should be made for the organization of, or provision of assistance to, seminars or training courses in space and space-related subjects. In organizing training courses or seminars, care would of course have to be taken to avoid duplication of subject matter and to ensure that topics selected are of direct, practical interest. In this connexion it is noted that ITU has already conducted two seminars on space communication techniques, one in Japan and one in the United Kingdom, and that a third is to be held in Washington. Under a Special Fund project, ITU is also in the process of establishing a training and research centre in space telecommunications techniques of Ahmedabad. WMO has indicated that as far as the topics of seminars are concerned its immediate interest is twofold: (i) in training technical personnel to man such facilities as APT receiving stations, communication satellite ground transmitting and receiving stations, satellite/conventional communication interface facilities, weather observing stations with satellite interrogation capabilities, and (ii) the organization of regular training seminars in various parts of the world on the

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interpretation and use of meteorological satellite data. The Sub-Committee may wish to explore the opportunities for joint sponsorship of such activities as well as the possibility of organizing or supporting training courses in other areas where additional effort is needed to support or supplement existing programmes. UNESCO is assisting the International Astronomical Union in the planning of a series of international summer schools for the training of young astronomers. If funds are available, it may be useful to explore the opportunities for financial support of such activities as well as the possibility of organizing or supporting training courses in other areas where additional effort is needed to support or supplement existing programmes.

16. A possible pilot programme. As was noted in paragraph 2, the General Assembly has requested the Outer Space Committee to prepare and consider suggestions for programmes of education and training of specialists in the peaceful uses of outer space.

17. The Sub-Committee may wish to consider the preparation of a paper for presentation to the Outer Space Committee in September suggesting a small pilot programme which could be undertaken with the support of the Outer Space Committee in early 1967. The results of the pilot programme would provide a basis for discussion of programmes of education and training at the space conference to be held in the latter half of the year.

18. It is suggested that such a pilot programme might call for Outer Space Committee support for a seminar or training course in a field directly related to the practical applications of space techniques. In view of the topics suggested for consideration at the proposed 1967 space conference, a seminar of this kind could provide a useful example of the potential value of committee assistance.

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