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SUBSTANTIAL NEW PROGRAMME FOR ACTION FOR THE 1980s FOR THE LEAST DEVELOPED COUNTRIES: CONTRIBUTIONS BY ORGANIZATIONS OF THE UNITED NATIONS SYSTEM

Contribution by the International Civil Aviation Organization */

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UNITED NATIONS CONFERENCE ON

THE LEAST DEVELOPED COUNTRIES

SUBSTANTIVE NEW PROGRAMME

FOR ACTION

FOR THE 1980'S

Contributed by the

INTERNATIONAL CIVIL AVIATION ORGANIZATION

May, 1981

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1.   INTRODUCTION

1.1   ICAO's role in civil aviation

        The International Civil Aviation Organization (ICAO) came into being
in 1947 as a result of a Conference held in Chicago in 1944, at which 52 nations
met to discuss the future of post-war international civil aviation.

        Delegates to the Chicago Conference were aware that the development
of air transport had brought with it international problems - the coordination
of techniques and laws, the dissemination of technical and economic information -
far beyond the ability of individual governments to solve. The need for safety
and regularity in air transport involves the necessity of building aerodromes,
of setting up navigation aids and of establishing weather reporting systems.
The standardization of operational practices for international services is of
fundamental importance, so that there may be no error caused by misunderstanding
or inexperience. The establishment of such standards, standards for rules of
the air, for air traffic control, for personnel licensing, for the design of aero-
dromes and for so many details of prime importance to air safety, all require
more than national action.

        The outcome of the conference was a Convention on International Civil
Aviation (called the "Chicago Convention") which,   its 96 articles, established
the privileges and restrictions of all Contracting States; provided for the
adoption of international standards and recommended practices regulating air
navigation; recommended the installation of navigation facilities by Member
States; and suggested the facilitation of air transport by the reduction of
customs and immigration facilities.

        The Chicago Convention provided that ICAO would be established when
26 States had ratified the Convention. This was accomplished by 1947.

        ICAO, administratively through its governing body, the Council, and
technically, through its Air Navigation Commission, has the responsibility for
the development of principles and techniques of international air navigation,
so as to promote the safe and orderly growth of international civil aviation
throughout the world. It does so by adopting - or amending as necessary -
international standards and recommended practices intended to ensure the safety,
regularity and efficiency of air navigation.

        During flight, the crew of an aircraft frequently communicates with
stations on the ground. They may seek authorization for flight manoeuvres,
obtain information necessary to avoid collision, receive an update of weather
conditions ahead, or question the operational status of navigation aids en-route
or at destination. There is a continuous invisible link between the aircraft
and the ground stations, and among the ground stations themselves. Many ground
facilities and supporting services are needed for the safe and efficient opera-
tion of aircraft. To achieve harmonious functioning of all these ground facilities
and services, international standardization is necessary.

To ensure safety, regularity and efficiency of international civil aviation operations, international standardization is essential in all matters affecting them; in the operation of aircraft, aircraft airworthiness and the numerous facilities and services required in their support such as aerodromes, telecommunications, navigational aids, meteorology, air traffic services, search and rescue, aeronautical information services, and aeronautical charts. A common understanding between the countries of the world on these matters is absolutely necessary.

ICAO presently has 147 Member States, which are divided into 9 Regions. Each Region is unique in the characteristics of air navigation requirements, because of its own geographic and demographic features. To accommodate these varying characteristics, a Regional Air Navigation Plan has been drawn up - and is continually updated - for each of the 9 Regions. Such plans require States within the Region to contribute the facilities and trained personnel necessary to implement the Air Navigation Plan in such a way that safe and dependable flight is guaranteed in or over any country of the Region.

As financial and technical resources differ widely among States in any Region, it will be appreciated that implementation of the obligatory requirements of the Chicago Convention and the respective Regional Air Navigation Plan may be uneven. To better enable States to fulfil their obligations under the Air Navigation Plan is the objective of the ICAO Technical Assistance Programme.

1.2   The ICAO Technical Assistance Programme

ICAO's technical assistance to developing countries is funded entirely from external sources, in large part by UNDP, to a growing extent by Trust Funds or Government Cost-Sharing, and in lesser part by other aid sources. Over the past 30 years ICAO has provided technical assistance to 110 countries in the form of expertise, training (fellowship, local instruction and on-the-job) and equipment.

Because the development of human resources in so complex and sophisticated technology as civil aviation is an overriding consideration, the thrust of ICAO's activities has been in training. More than 35 civil aviation training institutes have been established within the developing world itself through UNDP/ICAO assistance. A number of these centres are regional in scope; others are national. Over 60% of ICAO fellows currently attend these institutions.

ICAO prides itself on the pragmatic, down-to-earth nature of its technical assistance to developing countries. Projects are designed, with Government concurrence, to increase self-reliance and to enhance the safety and efficiency of flight. More than 700 ICAO experts are expected to serve in the field for varying periods by the end of 1981, and at least 1500 training fellowships will be awarded.

Virtually all ICAO projects are intended to assist recipient countries to fulfil their obligations under the Chicago Convention and their respective Regional Air Navigation Plans, by providing the facilities and trained personnel necessary for its implementation. This is particularly true of ICAO's assistance to Least Developed Countries.

2.   Civil aviation and development

Civil aviation has developed so rapidly, from the DC-3 age to the
supersonic era in less than 50 years, that misconceptions still linger about
its contribution to economic and social development. Some feel that aviation
serves only the needs of an affluent minority, and is thus a luxury, not a
necessity. If this is so in general, it must be particularly true of civil aviation
in less developed countries.

In fact the contrary is the case. Civil aviation is now of greater
importance to many developing countries in the Third World than it is in industria-
lized countries. The reason is evident: transport and communications are so
highly developed, as an integrated system, in the West that to stifle regional
air transport within Europe and North America would be a major inconvenience
rather than a social and economic disaster. Alternative transport modes exist
in those regions that compete favourably in many instances with air over limited
distances, and are at least acceptable in terms of elapsed time over medium distances.

It is these alternatives that are rarely found, except in embryo,
in the developing world. Furthermore, to produce a road and rail system
throughout the Third World on a par even with that which existed in the West
prior to World War II would cost far more than equivalent air transport networks.
A recent study revealed that two modern regional airport developments, related
facilities and four four-engined air freighters could be obtained at the same
cost as only eighteen miles of rural African highway. In short, the capital
costs associated with the construction of surface transport systems are enormous,
and far beyond the capacity of most developing countries. The alternative, to
knit a country together socially, economically and politically, is air.

The importance of transport and communications to a region's develop-
ment was underscored by the United Nations' designation of the 1978-1988 period
as the Decade of Transport and Communications in Africa. No emphasis could be
more apt, for 20 of the world's 30 Least Developed Countries are found in Africa,
and of these 11 are landlocked, with no ready access to the sea.

3.   ICAO assistance to Least Developed Countries
          in the 1970's

3.1   General

Over the past decade, UNDP/ICAO assistance has been provided to 29
of the 30 LDC's, in a number of cases by continuous project activity throughout
the ten-year period.

This assistance has taken many forms, but most of it has been of a
basic nature, and has had as its thrust training. The reason for this emphasis
is evident; one of the obstacles to development characteristic of an LDC, as
defined by the Comprehensive New Programme of Action for the LDC's, is "an acute
scarcity of skilled personnel at all levels".

Radio navigation aids, landing aids, telecommunications and meteorological recording/transmitting devices are essential to safe, efficient flight, but these machines are worthless without trained personnel to operate and maintain them. To compound the problem, such machines are by their nature sophisticated and complex, compared with those in other technologies. They must also be highly accurate, for human lives depend on them, whether they be passengers or air crew, or both.

Selecting and training nationals of LDC's to operate and maintain such machines is a formidable task, but one that must be done if these countries are not to be cut off from the world's trade and communications routes.

The following recapitulation of ICAO assistance to LDC's in the 1970's will indicate the emphasis placed in these countries on the development of human skills.

3.2   ICAO assistance country by country

3.2.1   Afghanistan

ICAO technical assistance to this landlocked country has consisted of a large-scale project which began in 1970 and continued for 5 years. Advice and assistance to the Afghan Air Authority was given on improvements to 29 domestic airports, as well as in the areas of Aircraft Maintenance, Radio Maintenance, Flight Operations and Airline Organization and Management. The project trained Afghan pilots to fly the YAK-40, and many fellowships in various fields were awarded.

Another large-scale project, which began in 1977, sought to improve the country's radio navigational aids and aeronautical telecommunications network, in order to support anticipated increases in domestic and international air traffic. VHF omni-directional radio ranges (VOR) and visual approach slope indicators (VASIS) were procured and installed at several airports, and an Instrument Landing System was recommended for Kabul International Airport. The project terminated in 1980.

An extensive training programme is currently being implemented by ICAO under which a large number of Afghans will be trained to become pilots and aircraft maintenance engineers or technicians.

During the period, ICAO provided 11 experts in the areas of Aerodrome Engineering; Aircraft Maintenance; Radio Maintenance; Flight Operations; Flight Training; Airline Organization and Management; Air Traffic Services; Electronics Engineering; Electrical Engineering and Air Law. Fellowships were awarded to 194 students in the fields of Pilot Training; Air Traffic Control; Communications Operations and Maintenance; Air Transport Economics; Aeronautical Information Services; Cartography; Aircraft Maintenance; Government Operations; Teletype Maintenance; Personnel Licensing; Avionics; Airport Fire and Rescue; Accident Investigation and Prevention; Airport Management; Airworthiness; Civil Aviation Administration; Instructional Techniques; Airline Training; Flight Operations and Aviation Medicine.

3.2.2   Bangladesh

Throughout the past decade ICAO has provided continuous assistance
to the development of civil aviation in Bangladesh, a country with almost one-
third of the total population of all 30 Least Developed Countries.

Wide-ranging assistance was given to the Department of Civil Aviation
through expertise, fellowships and equipment in the fields of Flight Operations;
Airworthiness; Airport Fire and Rescue; Air Transport Economics; Air Law; Air
Traffic Control; Aeronautical Information Services and Communications Operations.
The project was expanded to provide assistance in Aeronautical Telecommunications,
Radio Maintenance, Air Navigational Aids and Airport Lighting. Experts in the
above fields totalled 18.

Equipment procured and installed under the project included VHF
omni-directional radio ranges (VOR); Distance Measuring equipment (DME);
Instrument Landing Systems (ILS); and VHF Aerodrome Control Communications
equipment.

A civil aviation training centre created by the project offers
instruction in Communications Engineering, Air Traffic Services, Communications
Operations, Airport Fire and Rescue and Air Navigational Aids.

Fellowships have been awarded to 123 students in the fields of Air
Traffic Control; Instructional Techniques; Aircraft Search and Rescue; Com-
munications Engineering, Operations and Maintenance; Aerodrome Electrical
Engineering; Airport Management; Accident Investigation and Prevention; Air
Transport Economics; Air Law; Airport Fire and Rescue; Airworthiness; Aeronau-
tical Information Services and Flight Operations.

3.2.3   Benin

ICAO assistance to Benin has consisted exclusively of fellowship
training for 7 students in the fields of Air Law, Pilot Training and Aircraft
Engineering and Maintenance.

3.2.4   Bhutan

No ICAO technical assistance has as yet been requested.

3.2.5   Botswana

ICAO assistance to civil aviation development in Botswana consisted
of fellowship training at the beginning of the past decade, and gradually expanded
to include expertise in Telecommunications Engineering, Flight Safety, Airworthi-
ness, Flight Operations and Aerodrome Engineering. Throughout most of the decade
an ICAO expert occupied the post of Director of Civil Aviation, on OPAS status.

ICAO is currently advising and assisting the Government in the develop-
ment of a new international airport at Gaborone, critically needed by this land-
locked country to expand its communications with the outside world.

Throughout the period ICAO has provided 6 experts in the fields indicated above, and has awarded 13 fellowships in Pilot Training; Airport Management; Communications Maintenance; Airport Fire and Rescue; Air Traffic Control and Aviation Security.

3.2.6   Burundi

ICAO assistance has consisted largely of fellowship training, under which 35 awards have been made in the fields of Air Traffic Control; Airport Fire and Rescue; Airport Management; Air Navigational Aids and Aeronautical Telecommunications Maintenance; Airworthiness; Government Operations; Airport Engineering and Maintenance; Pilot Training and Communications Operations.

In 1976, an ICAO Air Traffic Services Expert assisted in the procurement and installation of aids to air navigation, and provided training to air traffic controllers.

3.2.7   Cape Verde

ICAO assistance to Cape Verde began two weeks after the country attained independence, and has continued ever since. A project which began in 1975 has sought to further the development of a civil aviation infrastructure; to organize a Flight Information Region; and to acquire and install aeronautical communications and air navigational equipment, while training local personnel to operate and maintain it.

Two experts, a Civil Aviation Adviser and a Radio Maintenance specialist, have been associated with the project since its outset, and have assisted in the procurement and installation of a modern system of VHF point-to-point communications; receiver equipment; telecommunications and radio aids; extended range VHF equipment; and Air Traffic Control consoles. This equipment, plus personnel trained to maintain and operate it, made it possible for Cape Verde to assume its new responsibilities as a centre of the Oceanic Flight Information Region in February 1980.

In 1979, the project further assisted Government through the provision of an Air Law expert to draft a National Air Code.

Over the 6-year life of the project extensive local training has been conducted, and 39 fellowships have been awarded in the fields of Air Traffic Control; Communications Operations and Maintenance; Radio Maintenance; Pilot Training; Airport Fire and Rescue; Air Transport; Aircraft Engineering and Maintenance; Aeronautical Information Services and Aviation Medicine.

3.2.8   Central African Republic

Throughout the 1971-75 period, ICAO assistance comprised a fellowship training programme. From 1976 to 1979 experts in Air Transport Economics and Aerodrome Engineering were added, to assist in the reorganization of the Directorate of Civil Aviation and the national airline; to expand and improve Bangui International Airport as well as domestic aerodromes; and to meet training requirements at technical and management levels.

Unfortunately, little of lasting value was accomplished by the latter project because of the disturbed internal situation. However, during the life of the project, which terminated in 1979, fellowship training was provided to 21 students in the fields of Pilot Training; Aeronautical Meteorology; Communications Maintenance, Air Transport Economics and Aviation Security.

3.2.9   Chad

ICAO assistance during the 70's consisted of the award of 14 fellowships in the fields of Air Traffic Control; Flight Engineering; Communications Maintenance; Pilot Training; Air Law and Airport Fire and Rescue.

3.2.10   Comoros

Minimal assistance has been provided by ICAO to Comoros. In 1979 a project was launched with an Electronics Engineer, to assist in the procurement and installation of badly-needed aids to navigation, and to train national personnel to operate and maintain them. However, after a year these services were provided through bilateral funding.

Two fellowships were awarded during this period, in Air Traffic Control and Communications Maintenance.

3.2.11   Ethiopia

Until 1978, ICAO assistance to Ethiopia comprised fellowship training, although advice in their respective fields was provided during 1973 by experts in Electronics Engineering, Communications Operations and Teletypewriter Maintenance.

In 1978, a Flight Calibration Consultant coordinated a survey of the flight calibration requirements for radio navigational aids in Ethiopia and four neighbouring countries. In 1979, a project was launched to assist Government in achieving self-reliance in the maintenance and operation of air navigation facilities and services within the national borders, and to establish a programme for basic and intermediate training in crically needed aviation disciplines. An ICAO Air Transport Economist assisted in the formulation of policies for the expansion of civil aviation as a tool for economic development, and an Air Law expert helped to draft a National Air Code.

Through these projects, 119 fellowships were awarded in the fields of Personnel Licensing; Airworthiness; Aeronautical Information Services; Air Traffic Control; Aircraft Search and Rescue; Accident Investigation and Prevention; Government Operations; Communications Maintenance; Airport Engineering and Maintenance; Airport Fire and Rescue; Civil Aviation Administration; Flight Operations; Instructional Techniques; Airport Administration and Pilot Training.

ICAO also worked closely with the African Civil Aviation Commission (AFCAC) to establish the Ethiopian Airlines training centre as a multinational training centre for anglophone African students in the fields of pilot training and aircraft maintenance. Under a UNDP-funded regional project which began in 1979, ICAO has provided a Chief Pilot Instructor, a Ground Pilot Instructor and

an Aircraft Maintenance Engineer to improve and update the centre's curricula
in these areas; to provide training aircraft for the pilot school; and to procure
and install modern instructional equipment for Aircraft Maintenance courses.

3.2.12   Gambia

ICAO assistance to the Gambia has consisted of 7 fellowship awards
in the fields of Air Traffic Control, Civil Aviation Administration and Aviation
Security.

3.2.13   Guinea

Large-scale assistance has been provided to Guinea through ICAO since
1975 to upgrade the country's radio navigational aids in order to encourage the
expansion of air traffic and to ensure the safety and efficiency of domestic and
international aviation. ICAO has provided experts in Radio Maintenance and
Electronics, to obtain the necessary equipment and to train national personnel
to operate and maintain it.

Extensive equipment has been procured and installed through the
project over the past 6 years, including VHF omni-directional radio ranges
(VOR), visual approach slope indicators (VASIS), single-side band transmitters
to permit communications with Dakar, a VHF link with Freetown, and an Instrument
Landing System (ILS) at Conakry International Airport. These improvements have
reduced the diversion of aircraft from Conakry because of bad weather by more than
80 per cent, and have greatly improved the reliability and frequency of domestic
air operations.

Many nationals have been trained locally by project personnel, and
71 fellowships have been awarded in the fields of Aeronautical Telecommunications;
Air Traffic Control; Communications Operations and Maintenance; Flight Operations;
Airport Fire and Rescue; Civil Aviation Administration; Air Transport Economics;
Aircraft Maintenance and Air Transport.

3.2.14   Haiti

Beginning in 1974, an ICAO Electronics Engineer and a Financial
Analyst assisted Government in identifying its responsibilities for the regula-
tion and control of civil aviation activities. A full-scale project to this
end was 'launched in 1978, led by an Electronics Engineer and assisted by Air
Traffic Services Planning and Training Experts.

Under the project, a programme has been formulated to restructure
the national civil aviation organization and to define its manpower and training
requirements. The ATS Planning Expert has advised Government on the organization
and control of its airspace and on the establishment of a Flight Information
Centre. Training courses have been conducted for Air Traffic Controllers. The
Electronics Engineer has identified requirements for navigation aids and communi-
cations equipment needed to implement the Regional Air Navigation Plan.

Fellowships have been awarded to 27 students in the fields of Air Traffic Control; Aircraft Maintenance; Air Transport Economics; Advanced Electronics; Communications Maintenance; Aeronautical Information Services; Air Transport and Flight Operations.

3.2.15   Lao

In 1974, ICAO provided an Air Traffic Services Planning expert to advise Government on the organization, administration and implementation of its airspace, and to train national counterparts. The expert continued his work through 1975, at which time the project was suspended because of changing political circumstances. It has not been resumed.

Fellowships were awarded to 84 students during the past decade in the fields of Radio Maintenance; Air Traffic Control; Airport Management; Communications Operations and Maintenance; Aircraft Search and Rescue; Aeronautical Information Services; Airport Fire and Rescue; Instructional Techniques; Flight Operations and Airport Management.

3.2.16   Lesotho

A wide variety of assistance was provided by ICAO during the past decade. Up until 1976, advice and assistance was given by experts in Airworthiness, Air Law and Airline Management and Operations. During 1976, ICAO experts filled the posts of Assistant Director of Civil Aviation and General Manager of Lesotho Airways, on OPAS status.

In 1977, Government initiated plans to construct a new international airport at Maseru, and ICAO assistance in this effort was provided by an Aerodrome Engineer, to be joined beginning in 1978 and continuing to this time by experts in Electro-Mechanical Engineering, Electronics Engineering, Airport Architecture and Manpower and Training. Concurrently, operational assistance to the Directorate of Civil Aviation and the national airline was provided by Airworthiness, Air Traffic Control and Aircraft Maintenance Experts.

The ICAO Airport team assisted Government in the design of the new international airport and in the preparation of tender documents. Funding for the airport was obtained in 1980.

During the decade, fellowships were awarded to 45 students in the fields of Pilot Training; Radio Maintenance; Air Traffic Control; Airport Fire and Rescue; Civil Aviation Administration; Airworthiness; Communications Maintenance; Flight Operations; Aircraft Maintenance; Aeronautical Information Services and Aviation Security.

3.2.17   Malawi

Diverse assistance was provided by ICAO throughout the past decade, with the major emphasis on fellowship training. ICAO experts on OPAS status served as Director of Civil Aviation and Senior Operations Adviser from 1974 to 1977, and an Airport Fire and Rescue expert offered advice and instruction during 1973.

Fellowships were awarded to 111 students in the fields of Air Traffic Control; Telecommunications Engineering; Communications Operations and Maintenance; Airworthiness; Civil Aviation Administration; Aeronautical Information Services; Airport Management; Airport Fire and Rescue; Aerodrome Engineering and Maintenance and Aviation Security.

3.2.18   Maldives

In 1976, an ICAO Task Force consisting of an Aerodrome Engineer and an Operations Adviser assessed the feasibility of a new international airport at Hulule, and made positive recommendations for its construction. Over the next 4 years, an ICAO project offered assistance and advice to Government in funding, design and construction of the new airport, which is now nearing completion.

During this period the ICAO project, made up of a Civil Aviation Adviser and experts in Air Traffic Control, Electronics Engineering, Airport Fire and Rescue, Aerodrome Engineering, Aeronautical Information Services, Flight Operations and Ground Handling, also provided advice and assistance intended to ensure the orderly development of a sound civil aviation administration and infrastructure in the Maldives.

Fellowships were awarded under the project to 46 students in the fields of Air Traffic Control; Air Traffic Services; Airport Fire and Rescue; Aviation Security; Aeronautical Information Services; Aviation Medicine; Communications Operations and Maintenance; Flight Operations; Aircraft Search and Rescue; Airport Management; Air Transport; Instructional Techniques and Aerodrome Engineering and Maintenance.

3.2.19   Mali

ICAO assistance to Mali has comprised long-term fellowship training. During the past decade, awards were made to 27 students for extended (4-year) courses in Pilot Training; and in Aircraft Engineering and Maintenance; Personnel Licensing; Telecommunications; Air Traffic Control; Air Transport Economics; Air Law; Aviation Security; Airport Fire and Rescue and Flight Operations.

3.2.20   Nepal

ICAO assistance and advice has been given to this mountainous, land-locked country for almost 20 years. Over the past decade, a wide variety of expertise and training has been provided in the context of Government's long-term Civil Aviation Development Plan. Aviation legislation (a National Air Code) was drafted by the project's Air Law expert and promulgated by Government. Instrument flight rules and departure procedures were drawn up by the Flight Operations expert, and their adoption made possible the first night operations in the Kathmandu Valley.

A local training centre was established by the project and instruction was provided to national students in Communications Operations, Fire Fighting, Air Traffic Control and Aviation Security.

Expertise provided under the project has included a Civil Aviation Adviser and specialists in Air Traffic Services, Flight Operations, Airworthiness, Electronics Engineering, Air Transport Economics, Fire Fighting, Communications Operations and Aviation Security.

In addition to the local training provided, fellowships have been awarded to 153 students in the fields of Communications Operations and Maintenance; Pilot Training; Communications Engineering; Personnel Licensing; Aviation Medicine; Airworthiness; Air Traffic Control; Air Law; Airport Fire and Rescue; Civil Aviation Administration; Air Transport Economics; Instructional Techniques; Aerodrome Engineering and Maintenance; Aeronautical Information Services; Airline Training; Airport Administration; Aircraft Search and Rescue and Air Transport.

3.2.21   Niger

A two-year project in 1976-77 included an ICAO Civil Aviation Adviser, who reviewed the staff establishment of the Civil Aviation Department in terms of its manpower and training requirements, and made recommendations which were accepted by Government. Advice was also given on a new National Air Code.

In addition, fellowships were awarded throughout the past decade to 11 students in the fields of Air Transport Economics; Air Law; Telecommunications; Air Traffic Control; Air Transport; Pilot Training; Aircraft Maintenance, Communications Maintenance and Aviation Security.

3.2.22   Rwanda

Two projects were implemented by ICAO throughout the 1970's. In the first, which took place in 1973-74, a Civil Aviation Adviser assisted in the reorganization of the General Directorate of Civil Aviation, the preparation of a National Air Code and an assessment of manpower and training requirements. In the second project, from 1975 to 1976, an Air Transport Economist assisted in the establishment of a policy on the development of the commercial operations of Air Rwanda.

Throughout the decade, 22 fellowships were awarded in Air Traffic Control; Aeronautical Information Services; Airport Management; Air Transport Economics; Airline Management; Fire and Rescue and Airworthiness.

3.2.23   Samoa

ICAO assistance has been limited to 2 fellowships in Airport Administration and to the provision of a consultancy to conduct a feasibility study on the development of a new airport.

3.2.24   Somalia

Extensive assistance has been provided by ICAO since the beginning of the past decade. A long-term project, which continues today, began in 1973 to establish a local training institute, with priority given to the formation of radio maintenance technicians. Expert/instructors in this field conducted classroom and laboratory training, while developing counterpart and assistant instructors.

Training equipment has been acquired through the project, and permanent quarters for the school have been established at Mogadishu Airport. Radio Maintenance and Radio Electronics Instructor posts have been assigned to the project since its beginning.

Running concurrently with the above project has been another, whose objectives are to develop the country's airports and to improve the equipment and personnel needed to operate and maintain them. Over the project's life, 13 experts in various disciplines have provided advice and assistance, and equipment in the form of radio navigational aids and aeronautical communications has been procured and installed.

Fellowships have been awarded to 88 students in the fields of Airworthiness; Air Transport Economics; Fire and Rescue; Radio Maintenance; Teletype Operations; Aeronautical Information Services; Air Traffic Control; Flight Operations; Personnel Licensing; Communications Operations and Maintenance; Aeronautical Meteorology; Aircraft Maintenance; Accident Investigation and Prevention; Aerodrome Administration and Aviation Security.

3.2.25   Sudan

A number of ICAO projects have been in effect during the past 10 years. In one, a Civil Aviation Adviser, later joined by experts in Aerodrome Engineering and Aeronautical Information Services, offered advice and assistance in reorganizing the Civil Aviation Department, defining its training requirements and implementing them through fellowships; surveying the needs for improvement in the country's domestic airport infrastructure, preparing designs for such improvements, and training national aerodrome engineers; and reorganizing and improving the quality of aeronautical information services. During this period, two Telecommunications experts were assigned on OPAS status to assist Government in this area.

In 1975 an ICAO project sought to create a local training institute for Air Traffic Controllers, through the assignment of ICAO experts in this field. Training equipment and a language laboratory were procured under the project; Government constructed the necessary classroom facilities; counterpart instructors were trained; and students, after English-language instruction had been given, were trained and licensed in Air Traffic Control.

An Aeronautical Telecommunications project began in 1977 to improve domestic facilities and particularly to upgrade those at Khartoum International Airport, though the procurement and installation of an Instrument Landing System.

Altogether, 12 ICAO experts served in the various projects, and 145 fellowships were awarded in Airport Management; Instructional Techniques, Fire and Rescue; Airworthiness; Air Transport Economics; Accident Investigation and Prevention; Air Traffic Control; Radio Engineering; Avionics; Telecommunications; Search and Rescue; Flight Operations; Air Law; Airport Engineering; Communications Operations and Maintenance; Aeronautical Information Services; Airport Engineering and Maintenance; Air Transport and Civil Aviation Administration.

3.2.26   Uganda

Training through fellowships was provided throughout most of the
past decade. In 1979, a short-term project acquired tools, equipment and spares
to rehabilitate war-damaged or destroyed telecommunications and navigational
aids, fire and rescue vehicles, meteorological equipment and control tower faci-
lities at Entebbe Airport, with repairs and installations carried out by an ICAO
Engineer.

In 1980, a project began to rehabilitate and strengthen the manage-
ment, technical and operational capabilities of civil aviation and air transport
in Uganda, through the assistance of Airworthiness, Electronics and Aircraft
Engineers and an Aeronautical Information Services expert. Work in this project
is behind schedule because of continued civil unrest, difficulties in transport
and an almost total absence of communications.

Throughout most of the decade, UNDP regional funding and ICAO assis-
tance established and maintained the East African Flying School at Soroti, Uganda,
at which students from the former East African Community (Kenya, Tanzania and Uganda)
were trained to become pilots and aircraft maintenance technicians. Two of the
three countries thus assisted are LDC's.

Fellowships were awarded to 76 students in the fields of Fire and Rescue;
Air Transport Economics; Air Traffic Control; Communications Maintenance; Civil
Aviation Administration; Accident Investigation and Prevention; Aeronautical
Information Services; Air Law; Air Transport; Aerodrome Administration; Aviation
Medicine; Flight Operations; Search and Rescue and Aviation Security.

3.2.27   United Republic of Tanzania

Fellowships were offered throughout the past decade, and two projects
involving experts were conducted. The first, which began in 1976 and ended in
1979, consisted of an Airport Management expert, who advised Government on manpower
and training requirements in the country's airport administrations; an Air Transport
Economist, who made forecasts of air traffic and assessed the viability of the
Dar-Es-Salaam International Airport Development Plan; and a Fire and Rescue expert,
who set up and conducted a local training programme for Airport Firemen.

The second project began in 1979 and is still operational. Its objective
is to upgrade the civil aviation infrastructure in the fields of air transport,
flight operations, telecommunications and airworthiness. Five experts in these
fields are provided, four of whom are on OPAS status. An Aerodrome Engineer (OPAS)
was added to the project in 1980.

As noted above, Tanzanian students were also trained as pilots and
aircraft maintenance technicians in the East African Flying School at Soroti,
Uganda.

Fellowships were awarded to 74 students in the fields of Fire and
Rescue; Air Law; Air Transport; Aerodrome Maintenance; Civil Aviation Administra-
tion; Personnel Licensing; Airworthiness; Communications Maintenance; Accident
Investigation and Prevention; Aviation Security; Instructional Techniques and
Air Traffic Control.

3.2.28   Upper Volta

An Air Transport Economist was provided during 1974 to advise
Government on improvements in the services offered by the national airline.
Other ICAO assistance comprised fellowships, of which 15 were awarded in
the fields of Aeronautical Meteorology; Aircraft Engineering and Maintenance;
Fire and Rescue; Airline Management and Pilot Training.

3.2.29   Yemen Arab Republic

Large-scale ICAO assistance was continuous throughout the past
decade. Advice and assistance in many areas of civil aviation were provided
by experts in Flight Operations; Airworthiness; Air Traffic Services; Fire
And Rescue; Airline Operations; Electronics Engineering; Aerodrome Engineering;
Airport Management; Radio Maintenance; Air Transport Economics; English and
Mathematics Instruction; Electro-Mechanical Engineering; Search and Rescue and
Civil Engineering.

The project also played a leading role in the planning and develop-
ment of Hodeidah International Airport. Under ICAO's Civil Aviation Purchasing
Service (CAPS), the Organization issued and evaluated tenders for construction
of the airport, and served as Engineer, overseeing all aspects of construction
while it was being built. The new airport opened in 1979, on schedule and within
the cost parameters laid down.

Fellowships were awarded to 243 students in the fields of Electro-
Mechanical Engineering; Air Traffic Control; Accident Investigation and
Prevention; Aircraft Maintenance; Avionics; Personnel Licensing; Air Transport
Economics; Airworthiness; Airport Management; Flight Operations; Pilot Training;
Fire and Rescue; Civil Aviation Administration; Communications Operations and
Maintenance; Search and Rescue and Air Transport.

3.2.30   Yemen, People's Democratic Republic

Widespread and continuing assistance was offered by ICAO over a broad
spectrum of civil aviation activities during the past decade until 1976, by experts
in Civil Aviation Administration, Air Traffic Services, Radio Maintenance, Aero-
nautical Meteorology, Fire and Rescue, Airworthiness, and Flight Operations, with
extensive local training conducted in Air Traffic Control and Radio Maintenance.

In 1977 a new project began with the aim of strengthening the country's
aeronautical telecommunications services, and adding instruction in Pilot Training
to the Civil Aviation School established by the preceding ICAO project. Flying
Instructors, Air Traffic Control Instructors and Radio Maintenance Instructors
made up the expert component. Radio technicians were trained to operate the
radiocommunications at Aden International Airport, and courses in pilot training
were offered.

Fellowships were awarded to 99 students in the fields of Avionics;
Aircraft Maintenance; Communications Operations and Maintenance; Flight Operations;
Pilot Training; Air Transport Economics; Air Traffic Control; Aeronautical Meteoro-
logy; Fire and Rescue; Accident Investigation and Prevention; Flight Engineering;

Civil Aviation Administration; Aeronautical Information Services; Search and Rescue; Aviation Medicine and Airworthiness.

4.   Programme for the 1980's

Early in 1980, ICAO decided that the best way to plan its technical assistance programme for the 1980's would be to send teams of civil aviation specialists to countries willing to receive them, in order to identify with the Governments concerned their requirements for assistance to civil aviation development during the 1982-86 UNDP funding cycle.

Accordingly, throughout 1980 discussions were held, directly or by correspondence, with more than 100 Governments, and detailed plans were made for missions consisting of ICAO staff and/or consultants whose experience in civil aviation differed according to the anticipated needs of the individual countries.

Thus, mission planning was tailored to the anticipated requirements of individual countries, and the size of the planning teams ranged from one to six persons, while the duration of missions varied from a few days to several weeks. All mission costs were borne by ICAO, out of its AOSC reserves.

In a few LDC's, future requirements for assistance to civil aviation had already been identified by Governments and communicated to UNDP and ICAO. Planning missions to these countries were therefore not necessary. Two LDC's indicated that their national priorities in the 1980's did not call for the development of civil aviation, and they were therefore omitted from ICAO's planning mission programme. More than 20 LDC's remained, and all of them will have been visited by mid-1981 for the purpose of defining future requirements for ICAO assistance.

What form such assistance may take for the LDC group as a whole cannot be characterized in a few words, for even in these countries civil aviation development has been subject to wide variation in the past, as will be seen from the description of ICAO activities in LDC's throughout the 1970's. In about one-third of the LDC's, relatively extensive long-term assistance has already been provided. In the others, assistance has ranged from none to minimal to moderate.

However, it is evident that no LDC has even approached the point of self-reliance in civil aviation, or will do so over the short or medium term. All suffer, some most acutely, from a shortage of skilled personnel in the more than 100 civil aviation specializations. None has the full range of equipment and facilities required to satisfy its obligations under the Regional Air Navigation Plan. Even those LDC's which have made relative progress in manpower and equipment requirements lack the experience required to mold these elements into a cohesive whole. This is not surprising, when it is considered that very few of these countries have been masters of their own affairs for more than two decades, and that almost none of them, under colonialist regimes, were involved in the managerial or technical aspects of civil aviation.

The new decade will therefore see continuing and widespread require-
ments among LDC's for the development of skilled personnel, the acquisition of
vital equipment, and expertise in certain critical areas of operations. The
scale and cost of assistance in these areas will be limited only by the capacity
of the LDC's to absorb it, and by the availability of funding.