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REPORT TO THE ADMINISTRATOR

L. A. Combs

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THE UNITED STATES PROGRAM OF AVIATION ASSISTANCE TO LESS-DEVELOPED COUNTRIES

JULY 1964

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Department of State
Agency For International Development
Washington, D.C.

NOTE

This report was written by Frank E. Loy at the request of the Administrator of the Agency for International Development. Mr. Loy, prior to becoming a consultant to A.I.D., served as special assistant to the Administrator of the Federal Aviation Agency and Director of the FAA's Office of Policy Development. He also served as the principal staff officer in the preparation of the January 1963 *Report to the President on U.S. International Air Transport Policies*, submitted by a special interagency Committee appointed by the President. The original report has been modified by deleting restricted material.

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PREFACE

Over the past eight year period A.I.D. and its predecessors have spent some \$200 million in aviation assistance grants and loans. The purpose of this report is to examine how effective this aviation assistance program has been, and to suggest any changes which could improve it.

A report such as this becomes particularly urgent because the aviation assistance program has recently been the subject of a variety of criticisms from generally knowledgeable and responsible sources. The principal criticisms have been as follows:

1. A.I.D.'s aviation assistance program, it is alleged, has been aimed principally at promoting the cause of large scale international aviation and enlarging the U.S. role in it, and internal air transport within the less developed countries—which could really help A.I.D.'s country-building efforts—has received strikingly little attention or funds.
2. Another charge—one which largely contradicts the prior one—is that the aviation assistance projects, and particularly the technical assistance projects, are commenced and terminated on the basis of purely economic considerations, and that A.I.D. does not weigh heavily enough the other contributions which aviation programs can make to various U.S. interests, principally the need to combat Communist blocs in the cold war, the need to support the interests of U.S. carriers and the need to support the export of U.S. aircraft and aeronautical products. This criticism comes mostly from U.S. industry and from the Federal Aviation Agency (FAA).
3. A.I.D.'s programming is criticized for being unimaginative in its use of so versatile a development tool as the airplane and for allocating resources among transport modes in an intuitive manner, without much analysis of the costs and benefits of alternate solutions to transport problems.
4. A.I.D.'s supervision of major airport construction projects is criticized because a number of them have turned out to be excessively costly or otherwise unsatisfactory.

5. Lastly, A. I. D. 's organization and staffing is criticized because, in spite of its huge commitment to transportation projects, it has no transportation economist to help shape its program, nor has it a central office with the responsibility and skill to mount a sound, imaginative program for the use of aviation in furthering U. S. interests.

In writing this Report, the author had the benefit of discussions, and total access to files and documents, in all parts of A. I. D. , particularly the four geographic bureaus. He also benefited from the views of other elements of the Agency including the Assistant Administrator for Administration, the Program Coordination Staff and the Office of Technical Cooperation and Research. Particularly helpful were conversations with Arthur R. Sherwood, Col. Raymond C. Brisach and Lester E. Gordon.

The subject matter of this report has been discussed with officials of other U. S. government agencies, including the Department of State, the FAA, the CAB, and the Department of Defense. It has also been discussed with representatives of the World Bank, ICAO, IATA, and U. S. international carriers. Mr. Frank Swayze of Pan American was particularly helpful.

U. S. aviation assistance programs and related U. S. programs were examined first hand in Iran, Nepal, Brazil, Peru, Bolivia, Syria, Lebanon, Liberia and the U. A. R. The first five of these countries were visited specifically in connection with this study.

On various trips the author has had the opportunity of discussing U. S. Aviation assistance with three particularly able civil air attaches, John Meadows in London, John Irish in Lima and Thomas Carter in Lagos, Nigeria.

Anyone writing today on U. S. civil aviation assistance programs is necessarily indebted to Hans Heymann, Jr. who has written by far the most trenchant and provocative analysis of this subject to date, entitled Civil Aviation and U. S. Foreign Aid: Purposes, Pitfalls, and Problems for U. S. Policy, The Rand Corporation, Santa Monica, California, January 1964. It must be clear to anyone familiar with Mr. Heymann's study that the author of this report has been considerably influenced by Mr. Heymann, despite some strong differences in the conclusions drawn.

The author's special gratitude goes to Robert Green, Chief of FAA's Technical Assistance Division, Office of International Aviation Affairs, for his critical comments on a draft of this Report, and to Dr. Leona Baumgartner, Assistant Administrator of A. I. D. 's Office of Technical Cooperation and Research and Mr. Robert Fordham, also of A. I. D. /TCR who have provided both encouragement and support.

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I. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. The Program as a Whole.

Over the past eight-year period, A.I.D. and its predecessors, ICA and DLF^{1/}, have spent some \$200 million in aviation assistance grants and loans. The Export-Import Bank has spent approximately an equal amount in loans and credits, almost all for the purchase of long range aircraft.

Although over forty countries shared in this assistance, a few countries received the bulk of it. The top four A.I.D. recipients, Afghanistan, Ethiopia, Chile and Pakistan account for well over one half of the A.I.D. program. Only eight countries received more than \$5 million.

2. The Program's Various Parts.

The program can be divided into five parts:

Technical assistance in the development of (i) aviation institutions and (ii) the physical ground environment needed for safe aviation.

This kind of assistance is usually provided by Civil Aviation Assistance Groups (CAAGs), almost always composed of FAA personnel, to the governmental entity responsible for civil aviation. At present there are some 23 CAAGs, whose size range from one to 20 members.

These CAAGs perform two quite distinct functions. One is to act as an advisor to the recipient country's aviation authority in developing a legal, regulatory, institutional and planning framework necessary to develop an air transport system. The other consists of installing and maintaining certain ground

^{1/} For convenience, the programs of A.I.D., ICA, DLF and other A.I.D. predecessors will hereafter simply be called the A.I.D. program.

equipment required for air navigation, communication or air traffic control. This latter kind of assistance is usually accompanied by loans or grants to buy the necessary equipment. Over \$30 million have been spent for this commodity assistance to date. It is also accompanied by a training effort--ranging from the training of one counterpart to the establishment of a school.

In fact, however, a great portion of the technical assistance effort consists simply in keeping specific, vital pieces of equipment operational. This work is concentrated at the major airports, and it is thus the users of these airports, most specifically the international air carriers, who benefit the most.

Participant Training Programs.

At present some 170 students are participating in A.I.D.-funded aviation training programs. Most of the training is done at the FAA Academy in Oklahoma City, Oklahoma. Other training is done in ICAO-operated schools and in a few regional centers in Latin America begun and initially operated with A.I.D. assistance. The skills taught include air traffic control, electronic maintenance, communication operations, meteorological skills, etc.

Construction or Improvement of Major International Jet Airports.

In dollar terms, this is by far the largest segment of the aviation program. Over a dozen of these airports have been or are being constructed with A.I.D. grants or loans.

Construction or Improvement of Smaller, Domestic Airports.

Significant projects of this type have been started in relatively few countries. The aggregate amounts of money have not been large. Each project generally costs from \$100,000 to something over \$500,000. It is clear that this kind of project is increasing in importance.

Airline Technical Assistance Projects.

The national airlines of over a half-dozen developing countries have been assisted by technical assistance programs designed to help them become sound and efficient carriers. These projects are generally done by contract with U.S. international airlines.

3. Program Trends.

Both the requirements of the less developed countries and A. I. D. 's program emphasis and methods are undergoing changes. Almost all countries with any hope of receiving international jet service now have or are getting their one jet airport, and this part of A. I. D. 's program will become decreasingly important. Concurrently, increasing attention is being paid to the improvement of domestic transportation by the construction of smaller, domestic airports.

Equally important, in most developing countries, the physical construction of the airport part of the system (i. e. , the runways, terminals, etc.) is considerably ahead of the development of institutions to operate and maintain these airports and otherwise support aviation, as well as the development of the navigation aid, landing aid, and communication part of the system. It seems clear that a balanced aviation development will in the future demand relatively increased attention to these institutional and ground environment problems.

A. I. D. 's response is shifting in two related ways. There is increased emphasis on loans as opposed to grants, and on major capital projects as opposed to technical assistance and participant training projects. In FY 1961 there were 31 A. I. D. -funded overseas CAAGs, with a total of 149 overseas positions. In FY 1964 the numbers were reduced to 23 and 117, and they will be reduced further in FY 1965. In FY 1961 A. I. D. funded the training of 265 participants from 31 countries; in the first 10 months of FY 1964 there were only 133 new participants from 15 countries.

4. U. S. Objectives.

More so than with most A. I. D. programs, the aviation program has not been limited to promoting the economic and social development of the recipient countries. The desire to improve international air transport, to gain some short-term political objective and to export U. S. goods have played a leading role.

This conclusion is clearest when the motivation is measured by dollars spent, as some of the very large projects were politically oriented. However, there is a danger of making too much of this conclusion. In most of the forty countries receiving assistance, economic and social development was the dominant or at least an important motivation.

5. The Effectiveness of the Program—Development of International Air Transport.

Without doubt, air transport to, from, and among the developing countries has improved tremendously in the last decade. All the developing countries have, in a sense, joined the international air transport system. They have specifically joined ICAO, the (international body created to promote and, to some extent, regulate international air transport), and have committed themselves to improve the transport system in specific ways. The U.S., including the U.S. assistance programs, has been by far the principal spur to this improvement. It is fair to say that this improvement represents the clearest success of U.S. aviation assistance programs. U.S. procedures, concepts and equipment dominate the aviation scene in most developing countries—with the possible exception of Africa, where the former metropolises exert the strongest influence.

6. The Effectiveness of the Program—Stimulation of U.S. Exports.

During the past eight years U.S. aircraft sales abroad including spares and parts amounted to about \$2 billion. These constituted the largest single positive item in the balance of trade during most of those years. Although only a small part of these sales were to the developing countries, these countries did purchase some 20 jet and some 40 other large aircraft.

The U.S. has also sold to these countries a modest quantity of ground equipment needed for modern aviation: navigational aids, communication equipment, landing aids, etc.

To date, probably the dominant reason for the success of the U.S. export program, particularly the aircraft part, has been the superiority of U.S. equipment and the dominance of U.S. carriers in the international air transport field. The loans and guarantees of the Ex-Im Bank and A.I.D. have however made it possible for the countries to buy U.S. equipment instead of competing European equipment, which is often offered on more favorable financing terms.

U.S. technical assistance groups were a major factor in stimulating sales of U.S.-made ground equipment, but probably a quite minor factor in the sales of aircraft.

In the next five years the developing countries will need relatively few large aircraft, a large number of utility aircraft, and a sizable amount of ground equipment. In all categories, the quality of competitive products will be higher

than in the past. It is reasonable to believe that the presence or absence of adequate export support programs in the future will play a decisive role in determining whether the U.S. exports in this field will continue to play a significant role in the U.S. balance of trade. Technical assistance personnel must be considered as a vital part of any U.S. export support program in the field of aviation ground support equipment.

7. The Effectiveness of the Program—Supporting U.S. Political Aims.

In the largest sense, the major projects heavily influenced by political purposes have been successful. U.S. political aims—such as preventing a country from becoming a Soviet satellite, aiding a friendly government in domestic difficulties, building "an island of sanity" in the midst of a difficult, hostile or corrupt government—have been achieved to a large measure.

The program has, however, uncovered serious difficulties in using aviation projects for political purposes. Really sound aviation programs are frequently slow moving, unglamorous, not very visible—and thus hard to sell. The politically popular "showcase" projects, such as jet airports and international airlines, are expensive for A.I.D., impose serious budgetary burdens on the country, frequently look every bit the white elephant they are, and often clash with commercial interests of U.S. carriers.

8. The Effectiveness of the Program—Economic and Social Development.

Most projects undertaken for economic development purposes have been sound. Their effectiveness apparently stems from three important advantages air transport has over other modes: First, although its costs per ton mile may appear high, it generally requires little initial capital expenditure. This is significant in countries where the opportunity cost of money is high. Second, the volume of traffic developing countries can generate between any two points is generally quite low. This again favors the airplane. Third, connecting several points by airplane is usually quicker—sometimes by five or ten years—than doing so by surface transport.

The conclusion that these projects have been economically sound is necessarily a subjective one, because present analytic tools are not delicate enough to measure accurately the comparative economic effect of dollars spent for aviation and those spent for other transport modes. It appears that air transport is most effective in those countries that have the least developed surface transport system. In such countries A.I.D. experience demonstrates that the airplane is economically justified not only for high value products, particularly

passengers, but also for relatively low value products such as meat, hides, dairy products, and even building materials such as cement.

The program has demonstrated that there is considerable truth to the claim that aviation is an effective agent for the social development and modernization of a country. It has given central government officials a quick, direct contact with remote areas which have proved to be valuable stabilizing influences. It has permitted private enterprise (airlines) to participate in the development process of a basic economic activity. It has given both managers and employees a feeling of participating in the scientific, technological 20th century, a feeling of brotherhood with other technicians in the mystique-filled aviation world. It is beginning to teach certain attitudes necessary for successful transition to industrialization—such as the penalties paid for ignoring preventive maintenance.

9. The Effectiveness of the Program—the International Jet Airport.

This program deserves a special evaluation because it constitutes such a major part of A. I. D. 's aviation expenditures and because it has been criticized as representing a particularly uneconomic allocation of funds.

The criticism is accurate in a limited way: by most "normal" tests, the large jet airport cannot be justified in terms of economic development. But it by no means follows that past A. I. D. concentration on these airports has been an error.

A. I. D. has satisfied the intense and totally understandable desire of the developing countries to be tied to today's international passenger transport system. In part this is a psychological need for a tie with the outside developed world. In part it is an entirely practical desire: the tourist, the businessman and the diplomat who arrive on the jet bring foreign exchange, capital and treaties necessary for the nation's well being.

It is hard to see how providing the jet airport which makes this lifeline possible can be a mistake, except in those countries (such as several in Central America) which cannot hope to obtain any long-haul service and which should continue to rely on the facilities of neighboring countries. The jet airport seems both more justifiable and more likely to bring the expected benefits than some of the other much-sought-after badges of nationhood: the central bank, the steel mill, the medical school.

This issue, fortunately, is fading out as most countries finish their one jet airport. Only in extremely rare circumstances, such as Pakistan, will these arguments justify a second jet airport.

10. Special Problems in Developing A.I.D.'s Aviation Program—A.I.D.'s Overall Attitude.

The belief is held in the aviation industry and particularly in the FAA that A.I.D. has been generally hostile toward aviation programs during the past several years. A number of A.I.D. mission chiefs share this viewpoint. The principal manifestation of this "hostility" is the termination at A.I.D./Washington's suggestion—in some instances over the strong objection of the mission director—of numerous Civil Aviation Assistance Groups.

This hostility is largely fictional, but A.I.D. program planners do harbor certain widely-held attitudes toward aviation which influence A.I.D.'s decision making and are easily confused with hostility. One is a strong fear that aviation programs—more than others—keep growing endlessly, each phase feeding a new one. The second is an irritated reaction to the hard, somewhat pushy, "we're a special case" line of the aviation industry, particularly the FAA.

These attitudes, however, played only a secondary role in the termination of Civil Aviation Assistance Groups. Their terminations are better explained by A.I.D.'s desire to concentrate its efforts and avoid scattering its energies. A.I.D. has sought to terminate projects when they have operated for a reasonable period, over objections that the period must be longer and—to be candid—that many aviation assistance projects should be continued indefinitely.

One of the basic questions facing A.I.D. is whether these technical assistance projects should be considered long term or indefinite, or, on the other hand, fixed, medium-term programs.

11. Special Problems in Developing A.I.D.'s Aviation Program—the Economics of Transportation Decision Making.

The problem is how to improve the allocation of funds (i) between a country's transportation sector and other sectors, and (ii) among the various transport modes.

At present this is done in A.I.D. by a process which could be called intelligently intuitive rather than economically rational. While this allocation problem is difficult, other agencies such as the World Bank have shown that certain measures, such as comparative cost/benefit ratios, can be usefully applied.

A.I.D. gets little help from the feasibility or general transportation surveys it buys. These are engineering-oriented reports which rarely discuss the

economic consequences of transportation projects and do not propose any alternatives. They generally aim for a "balanced growth of all modes", and seldom ask if the transport needs served by a proposed road could more economically be served by aviation, or vice versa.

The contract with the Brookings Institution for research on the relationship between transportation and development, seems well designed to shed light on some of these basic questions. However, it will be several years before this effort will bear much fruit, and one of the serious problems to be considered is how any findings or suggestions can be woven into the A.I.D. programming process.

12. Special Problems of Developing A.I.D. 's Aviation Program—Development Loans versus Technical Assistance Grants.

The character of the aviation program is seriously affected by the relative ease with which loan funds can be obtained and the difficulty of getting grant funds. One consequence is that the total aviation program is larger than it would otherwise be. There are several instances of small projects which in the past would have been grant requests but which were converted into loan applications, and in the process were considerably enlarged to make for a more attractive "loan package".

Another consequence is that the relatively easy projects—the building of a runway, the purchase of a beacon—are being pursued, and the harder projects—the building of a Department of Civil Aviation, the training of personnel—are being deferred.

13. Special Problems of Developing A.I.D. 's Aviation Program—Countering Soviet Bloc Aviation Threats.

A.I.D. has on several occasions been called upon to fund an aviation program designed to preempt (or neutralize) Communist aviation expansion. This issue will undoubtedly arise again in the future.

In the past, every time such a project was suggested, its prompt and rational consideration was hampered by (i) the absence of any agreement among federal departments and agencies involved as to the basic policies to be applied, (ii) the absence of any source of funds other than A.I.D. 's, even though other agencies had by far the stronger interests, and (iii) absence of adequate machinery both for the staff work and decision making.

Some of these problems should be resolved by the President's designation of one person, the Secretary of State, as policy leader in the field of international aviation, by creation of the Committee on International Aviation Policy (which includes the Administrator of A. I. D.), and by the basic policy paper on this subject recently prepared by the Department of State. The problems of the source of funds and providing adequate staff work for the Administrator of A. I. D. remain.

In the past, the two basic questions raised by bloc aviation expansion—the damage which it would cause, and the likelihood that U. S. action can prevent it—have frequently been assumed rather than demonstrated. If substantial A. I. D. funds are involved in a particular case, A. I. D. must be certain they are asked and answered.

Both these questions depend greatly on the nature of the communist action. Generally, a proposed communist aviation assistance program is much more serious than an expansion of communist air services, and the likelihood of our being able to do something about it is similarly greater.

14. The Problem of Implementing A. I. D. 's Aviation Projects.

Implementing A. I. D. aviation projects, has generally been less troublesome than programming projects. But some problems have developed.

One concerns the design, contract administration and construction supervision responsibilities involved in building major jet airports. These are difficult and complicated jobs, and several have been rather spectacularly botched. The trouble has developed in airports built with loan funds, and seems to stem from A. I. D. 's position (inherited from DLF) that once a major loan project has been agreed on, the responsibility for preparing designs and specifications, and for supervising construction rests with the borrower and its engineering advisor, and that A. I. D. 's supervision will be quite minimal. It is striking that major airports constructed with grant funds, where the architectural and engineering contract administration and construction supervision was done for A. I. D. directly, either by a U. S. military service, the FAA, or a private firm, were completed with little delay or other problems.

In the technical assistance area, the question has arisen whether it is desirable to substitute aid from our allies or from ICAO for direct U. S. aid. It obviously conserves A. I. D. funds, and is in accord with our overall policy of increasing the assistance contribution of our allies. But it loses for the U. S. ancillary advantages such as support of our export program and expansion of U. S. international aviation influences. Where these factors seem particularly important, the U. S. should spend the money for a direct aviation

assistance program, and seek to channel the aid of our allies and of ICAO elsewhere.

15. A. I. D. Organization and Staffing.

A. I. D. Washington has on its rolls not a single individual with specific responsibility for transportation who is a transportation economist (or any other kind of economist) nor any individual who is an aviation specialist. Each geographical bureau has several persons in transportation slots, but all of these are engineers with a strictly engineering approach to transport problems, or narrow specialists such as retired airline pilots.

The transportation position in TCR is now filled by transportation operations specialist, with no particular aviation background. While this position is soon to be filled by a transportation economist, past experience with this position, and the attitude of the geographical bureaus toward TCR, makes it quite unlikely that anyone operating from TCR will be effective in developing transportation programs for the Agency.

Good transportation economists are hard to find, and any plan that calls for the hiring of more than two or three is unrealistic.

Aviation programs, even large ones such as the construction or improvement of numerous airports, are frequently developed by the mission without the help of any aviation specialist, although these will be used in their implementation. A. I. D. /Washington does not have any aviation specialist who can counsel the mission in this task.

RECOMMENDATIONS

1. A.I.D.'s Program—An Emphasis on Technical Assistance.

A.I.D.'s aviation program should increase its emphasis on institutional and technical assistance (including the training of local technicians) as contrasted with an emphasis on major capital projects. The assistance contemplated comprises principally advice and help with the development of a government aviation organization, and a physical ground environment—communication, air traffic control, and navigational aid networks—necessary for safe and efficient aviation.

The ability of most developing countries to use aviation facilities is quite clearly limited by the absence of a necessary institutional and ground environment and by the scarcity of trained personnel. This is true not only of planned facilities but existing ones. There are innumerable examples of airports, navigational aids and landing aids used only to a fraction of their potential, or totally unused, because these elements are absent.

The presence of a technical assistance group should also help the country, and thus the A.I.D. mission, produce an aviation development plan which can serve to rationalize future A.I.D. aviation programs. In a number of countries, the absence of such a plan has catapulted A.I.D. into larger aviation programs than were sound or necessary.

A technical assistance group would furthermore be of great value in helping U.S. manufacturers sell their aeronautical products, particularly ground equipment. These technical assistance programs need not be large, and they can be effected without any increase in the overall cost of the aviation program because the projects are not costly and their cost could be recovered by slight adjustments in expenditures for airports and other capital equipment and facilities.

2. A.I.D.'s Program—An Emphasis on Domestic Transport.

A.I.D. should concentrate its efforts on that part of the air transportation system which, in terms of dollars expended, has received the least attention to date: the development of domestic air transport systems.

These systems must be kept relatively unsophisticated and cheap. This is necessary not only because of obvious budget limitations, but also because they will be operated by a thin layer of qualified personnel. They can be kept relatively unsophisticated and cheap because they need not be designed for a U.S.-type passenger pattern—highly paid businessmen and affluent vacationers seeking to save a few hours or a day by using the airplane in lieu of a readily

available surface alternative. In developing countries one of the airplane's chief uses will be to make the relatively few, scarce administrators and technicians more mobile and to open up entirely inaccessible areas. Similarly, the system must be designed to carry not only high-value cargo, as is the case in the U.S., but all cargo which can be carried economically by air because of the inadequate surface transport system.

While this does not mean that the construction of jet airports which link the developing country with the rest of the world should be halted, or that the present facilities for international jet travel should not be improved, but that the previous preoccupation with these kinds of projects should be lessened. A. I. D. should not take upon itself a program of funding the commitments of less developed countries to provide the extensive ground facilities required by the various ICAO Regional Plans.

3. A. I. D. Staffing.

A. I. D. must improve its capability to develop useful transportation programs and to make the changes in program emphasis recommended herein. It must place into responsible line positions persons whose special responsibility and talent is in transportation and who either are economists or at least think like economists.

Specifically, the Administrator should direct each Assistant Administrator for a geographic bureau to designate one senior person on his staff as the bureau's Transport Planning Officer.

The organizational location of this officer will vary from bureau to bureau, but the important thing is that he have responsibility for both capital development and technical assistance projects.

The creation of this position would in large measure overcome the present anomaly which finds A. I. D. deeply engaged in transportation programs with virtually no specialists (other than engineers) specifically responsible for these programs. These positions would establish in each bureau a focus of responsibility for assuring that the transport programs of the Bureau, both capital development and technical assistance, evidence some consistency of approach, some professional soundness. They would also provide a repository of information and experience about past projects, consultants and contractors, and a point of contact with research and academic experts as well as relevant private corporations and government agencies, such as the FAA, BPR and the CAB.

At present, each bureau has one or more persons with transport responsibilities, but this arrangement is unsatisfactory for numerous reasons. First, no person has responsibility for transportation as a whole. Sometimes the principal transportation man is situated at a Capital Development desk (e.g., Africa), sometimes at an Industrial Development desk (Latin America) sometimes in a Technical Support Office. Second, most persons with responsibility for thinking about transportation are engineers who approach the problem from an engineer's point of view. There is a lot of thinking about projects, their cost and engineering feasibility. There is little thinking about a transportation program for a country or about the relative cost/benefit ratios of various modes.

This should be contrasted with, say, the World Bank which commences no transport project without a rather careful, formal analysis by an economist.

Ideally, a transportation economist would be recruited for each of the four bureaus. A.I.D.'s level of commitment to transportation would certainly warrant this staffing. But these professionals are hard to find and hire; and the need is not equally great in all four bureaus. Therefore, it probably suffices if transportation economists are recruited to fill these positions in the two bureaus having the largest programs: NESAC and Latin America. In the Far East and Africa Regions, the need is not so great, and the task of transport programming officer could be undertaken as an additional assignment by a senior official in the bureaus.

Because of the difficulty of finding competent transportation economists, it is probably naive to aim for a senior, creative, renowned name with a long list of publications to his credit. A younger person either with academic training in economics including some transportation economics, or with active exposure to problems in transportation economics, would be quite adequate, if he were really able. Technical understanding of the various transport modes is desirable, but definitely not the prime need.

This recommendation obviously rejects the suggestion that there be established in TCR or anywhere else a central transportation office whose resources could be drawn on by all the Agency. That simply is not the way this Agency is organized. The power to determine programs, to hire consultants, to order surveys, to make demands of the missions lies with the geographic bureaus. The infusion of new talent should go where the power and responsibility lie. And that talent should be first channeled to those bureaus that require the most help.

Nevertheless, the present position of Director for Transportation in TCR should remain. However, it should be filled by a transportation economist. It appears that this change is already in the works.

Although, as stated, the person operating from this position is not able to do the programming of the geographic bureaus, he can be valuable to the Agency. He can monitor research efforts, such as the Brookings contract, establish ways whereby the results of such efforts find their way into the programs, attend institutes and conventions, develop a library of relevant materials, help with professional recruitment, and generally be the contact between the Agency and the academic and foundation community and industry.

4. A.I.D.'s Aviation Expertise.

Even with this increased and reoriented competence in transportation, A.I.D. needs one person on its Washington staff who understands in some depth both the institutional and technical problems of building an aviation system in a less developed country. Such a person should be recruited promptly.

It is important that this person have broad experience in dealing with the institutional and physical environment in which aviation operates (as contrasted with airline operation experience). It would be best if he could be recruited as a direct-hire for A.I.D. But there are not many sources from which such a specialist could be recruited. If it proved too difficult to find one, there is no reason why A.I.D. should not take one of the experts it is now funding at the FAA and move him to A.I.D. for a minimum of 2 years, during which time he would be responsible to A.I.D. and not the FAA. Such a person would be subject to some suspicion by A.I.D. program personnel as a man with divided loyalties whose principal interest was the FAA's program rather than A.I.D.'s. But the problem is not serious; with the proper personnel selection and time, this suspicion can be overcome.

It is hard to know where to locate this person in A.I.D. At the beginning, it is probably best if he were situated in TCR, working with the Director of Transportation. If this proves an inadequate spot from which to operate, the Agency can make a change.

5. Establishment of an A.I.D. Transportation Council.

Strengthening the staffs of the geographic bureaus and TCR, however important, will not provide the Agency with an organizational vehicle needed (i) to give the Administrator a channel through which he can give effective policy

guidance (for example, policy suggestions contained in this report), (ii) to permit each geographic bureau to benefit from the experience of other bureaus and (iii) to establish a formal channel through which A.I.D. can tap the resources and views of the various federal transportation agencies, private industry, trade associations, and the academic community. At the moment, the only time these groups are called upon is when A.I.D. needs immediate manpower or advice. There is now no effort to use these groups for continuing programming assistance, to keep abreast of technological advances, or otherwise.

For this reason, the Administrator should establish an A.I.D. Transportation Committee, whose members would be the four Transportation Programming Officers, a representative from A.I.D.'s Program Coordination Staff, and the Transportation Director and aviation specialist from TCR. The group would also have observers or associate members from the Department of State, Office of Aviation Affairs, the Maritime Administration, the BPR, the FAA, the CAB, the World Bank, and any other federal agency interested. Some meetings would be of the full group, some only of the members themselves. From a protocol point of view it may be desirable to have this group chaired by the Assistant Administrator, TCR, but the real leadership and staff work must come from the Transportation Director, TCR.

This may appear to be just one more committee to take up time and substitute for decision-making in the normal course of administration. The purpose is just the opposite. Decision making must remain in the geographic bureaus, and the aim of these recommendations is precisely to strengthen the bureaus' ability to develop sound programs, not to develop a central transportation office. As a consequence, however, transportation has no focus in the Agency where a consistent Agency-wide transportation policy can be discussed, developed, and its implementation problems compared. Nor is there an office which can connect A.I.D. transportation decision makers to the governmental agencies, corporations, etc., with interest in A.I.D.'s transportation work. A formal group such as this can supply this focus.

These organizational recommendations should be evaluated, in part, by noting some alternative suggestions which have been rejected. One is the creation of a special aviation advisor to the Administrator, or some similar aviation position. This would probably help the development of an aviation program, but it would surely set back the effort to treat transportation as a whole. It would be quite unfortunate.

Also rejected is the suggestion to raise the level of aviation assistance by singling it out for special budgetary and organizational treatment, along the lines of the public safety program of the Agency. Any basic deviation from the regular manner by which the Agency develops its program should be justified by a quite urgent need. Such need has not been demonstrated. For the same

reason, we rejected the suggestion that a transportation specialist be set up somewhere high in the Agency, whose programming responsibilities would cut across geographic lines.

6. The Work of the Transportation Council.

The Administrator should direct the Committee to make the first item of its business the further consideration and implementation of this study, and to report to him within 60 days on the following matters, in the light of this study.

(i) A review of all proposed terminations or substantial cutbacks of aviation assistance programs proposed for FY 1965-1967, to determine if the terminations or cutbacks are sound. In doing this, the Council should consider these factors, among others: Is there any risk that the usefulness of any major aviation facilities, either provided in the past or to be provided by the U.S., would be seriously endangered by this cutback; is there any likelihood that the country might purchase from the U.S. in the near future a considerable amount of aviation equipment; what kind of results can be expected in the future from continuation of the program, distinguishing to the extent possible between improvements to the international air transportation system and the internal transport system of the country; are there any military or political reasons why it is particularly desirable to maintain a strong U.S. influence in the civil aviation sector of the country?

(ii) A review of the major new aviation assistance projects (either loan or grant) contemplated or suggested by the missions in the next several years, to establish whether there exists or whether there are plans for an adequate survey or analysis of the transportation needs of the country and the costs and benefits of the proposed project.

If it develops that the proposed survey or analysis is not adequate, then the Council should take the lead in developing the form of such a survey and selecting the survey organization or team. Adequate guidelines for making such a survey can be found in Heymann, Civil Aviation and Foreign Aid: Purposes, Pitfalls and Problems, at pages 78-82. The ground rules of the survey, the instructions to the survey team, the make-up of the team itself and the team's report can presumably serve as something of a model for subsequent surveys.

(iii) A review of the A.I.D. - FAA relationship in terms of the issues raised in Recommendation 7.

- (iv) A review of the recommendations on the construction of aviation facilities made in Recommendation 8.
- (v) A review of the recommendations on the implementation of technical assistance projects contained in Recommendation 9.
- (vi) A review of the soundness and potential usefulness of the Brookings Institute transport research project. While this project seems both sound and potentially helpful, it has never been critically examined by A.I.D. personnel charged with making transportation policy and programming decisions. Both Brookings and the A.I.D. personnel involved would benefit from such an examination.

7. A.I.D.'s Relations with the FAA.

Because A.I.D.'s aviation talent will be quite limited, even after the foregoing recommendations have been put into effect, A.I.D. must make increasing use of the aviation talents to be found elsewhere. The prime source will be the FAA. A.I.D. should make increasing use of the FAA, not only in carrying out projects (which it does at present) but also in planning programs. This seems sound despite the fact that the FAA concern is almost exclusively with aviation for its own sake, rather than the development of emerging nations. However, FAA's usefulness to A.I.D. will be increased if A.I.D. will be more vigilant in assuring (a) that FAA personnel tailor their approach to the needs and resources of less developed countries, and (b) that the FAA pursue personnel and procurement policies which permit it to be responsive to A.I.D.

Specifically, the A.I.D. Transportation Committee should review with the FAA representatives the following aspects of the A.I.D.-FAA relationship:

- An analysis of the specific procedures A.I.D. should install to assure prompt and effective FAA participation in the development of aviation programs;
- an analysis of the FAA procedures in selecting technicians to serve on Civil Aviation Assistance Groups, particularly the chiefs of such groups;
- an analysis of the FAA procurement processes for A.I.D.-funded projects, how to minimize delays therein, and how to avoid "gold plating" of systems and equipment intended for less developed countries;

- an analysis of the possibility of the FAA's funding a number of technical assistance positions which concern themselves solely with the problem of installing and maintaining navigational and landing aids at international airports in developing countries which have no other aviation assistance program and whose airport is served by U.S. carriers or heavily used by U.S. passengers. Since the FAA now stations technicians overseas in its International Field Offices to assure the safe operation overseas of U.S. carriers, it seems only a small policy change to add these technicians to the FAA for similar safety reasons. If such a program is limited to countries where A.I.D. has no aviation assistance program, the chances of conflict are slight. The advantage to A.I.D. is that it would reduce pressure on it to continue a Civil Aviation Assistance Group after it decided that, from an economic development standpoint, such group is no longer warranted;
- an analysis of special training or indoctrination which should be given to FAA technicians going overseas for A.I.D., in addition to the present standard language and familiarization program, in order to assure that the FAA personnel pursue low-cost, simple solutions to the aviation needs of developing countries;
- an analysis to determine if any development is warranted in new aircraft or aviation ground equipment specially designed for the developing countries; (this recommendation is made in spite of the conclusion, discussed infra, that neither new aircraft nor other new equipment offers solutions to the basic aviation assistance problems, and that reliance on them tends to mislead us. Nevertheless, the problem deserves further inquiry).
- an analysis of the training programs at the FAA Academy, including the reason for the steadily mounting tuition costs and the extent to which the Academy successfully adapts courses for foreign students.

8. Implementation of Aviation Assistance Projects—Airport Construction.

When a major jet airport is built with A.I.D. help, or any other large, complicated aviation facility is constructed, excessive reliance on the engineering advisor to the recipient country's government, in lieu of direct supervision, should be avoided. The project should be under the supervision of a full-time technician, responsible directly to the U.S. Mission. Whether he is direct-hire or under contract is not important. This should be as true of A.I.D. loan

projects as A.I.D. grants. This technician can be in addition to or in lieu of the recipient country's engineering advisor.

When a small, simple airport (or airports) is being built, the problem is different: How to keep the job as uncomplicated as it should be. A.I.D. should profit from its successful experience, which shows that the job can be easily accomplished without any independent contracting firm, and can be kept simple by using a single U.S. airport engineer (either from the FAA or from some private source), assisted by recipient country and A.I.D. mission engineering talent.

9. Implementation of Aviation Assistance Projects—Technical Assistance.

The manner in which A.I.D. implements aviation technical assistance projects is essentially sound and should be continued. This means continued reliance on U.S. carriers for airline assistance programs and the FAA primarily for other assistance programs.

There have been a number of instances involving an architect-engineering advisor on an airport project which has expanded its work to include planning and advice in communications, navigation, etc. This generally is an unfortunate extension of responsibility into an area where the engineering advisor has no particular expertise.

A.I.D. should continue to encourage other nations to share in the assistance burden—including aviation assistance. This extends to assistance from international organizations, which in the case of aviation, is ICAO. But because U.S. aviation assistance is motivated by a multiplicity of objectives, some of which are set back if others give the assistance, U.S. aviation assistance programs should be preferred over ICAO programs when there is specific likelihood that the country will become a good customer of U.S. aeronautical products or when there is some other strong political or commercial reason why the U.S. should continue to advise the aviation authorities of the foreign country.

II. THE PROGRAM, PRESENT AND PAST—DESCRIPTION

Over the eight year period covering fiscal 1956 to 1963 the U.S. provided about \$400 million of civil aviation assistance to more than 40 developing countries. Of that sum, about one half was in the form of Export-Import Bank loans or guarantees. The rest came in the form of development grants or loans from A.I.D. and its predecessors, ICA and DLF. Attached hereto as Annex 1 is an effort to show this assistance program in tabular form.^{2/}

The EX-IM Bank portion has almost all been used to purchase long range aircraft, including some 20 jet aircraft. These loans are relatively "hard"—i.e. their terms are only slightly better than commercial terms. Interest is usually at 5-3/4 per cent, and the repayment period (for jet aircraft loans) is seven years.

The A.I.D. program has been more varied. It can best be described by breaking it into its various parts:

A. Technical assistance in the development of (i) basic aviation institutions and (ii) the physical ground environment needed for safe and efficient modern aviation.

The U.S. has provided this form of assistance for over 15 years, almost always by the establishment of a Civil Aviation Assistance Group (CAAG). These consist of 1 to 20 technicians, almost all of whom are employees of the FAA. These groups serve under a participating agency service agreement with the FAA dating back to the mid 50's. (For the past two years there have been repeated but unsuccessful efforts to sign a new agreement.) At various times there have been such groups in some forty countries. At present there are 30

^{2/} It is rather striking that the World Bank's aviation assistance to developing countries has been limited to a \$5.6 million loan to India for jet aircraft. As a matter of fact, although the Bank's loans for transport projects have exceeded \$2.5 billion, only some \$57 million (2%) have gone for aviation projects.

such groups in operation, comprising a total 148 positions. (Included in these figures are a Regional Aviation Assistance Group located in Panama, which is designed to provide a pool of technical talent for all of Latin America, and a special CENTO group located in Iran, Pakistan and Turkey.)

These CAAGs perform two rather distinct functions. In the first one, the CAAGs provide the country's aviation authority with basic advice and assistance in the regulation and promotion of civil aviation. This involves drafting statutes and regulations for the use of air space, for the certification of pilots and aircraft, for the economic regulation of air transport activity, etc; development of long range plans for the construction and improvement of ground facilities such as airports and communication and navigational equipment; and planning for the training of the personnel necessary to make this entire transport sector work. The U.S. technician works with the country's director of civil aviation, its planning and development organizations, and its minister of finance.

The second function involves assistance in providing the country with the ground environment necessary for safe, efficient air transport. This includes the procurement and installation of navigational aids (such as VORs, NDBs), air traffic control aids (such as radars), air-to-ground and point-to-point communication systems, landing and approach aids, etc. ; the planning and design of airports; the supervision of the operation and maintenance of such equipment and facilities, and frequently—to be honest—actually doing the maintenance; and training of personnel to operate and maintain the equipment, either on the job or in small training centers started and initially managed by the CAAG.

The total dollar value of electronic, communication and other equipment given by A.I.D. as part of these technical assistance projects is in the neighborhood of \$32 million. Annual A.I.D. obligations for this equipment dropped sharply between 1961 and 1963, from \$4.7 million to \$1.7 million.

The CAAGs probably have been more active in the technical assistance portion of this job than in the civil aviation advisory portion.

Obviously these two functions are not totally separate; each CAAG involves both to some extent. But they are different, require somewhat different advisors, and in the past have served somewhat different U.S. interests. A broad-gauge CAAG chief, such as the one recently in Chile, will in practice be extraordinarily effective in influencing all phases of civil aviation, whatever his personal specialty may be.

B. Participant Training Programs.

Since the end of WW II the aviation capability of the developing countries has been significantly increased by A.I.D.-funded programs which provide technical training both in the U.S. and in third countries. These programs have trained several thousand nationals of DCs in such fields as air traffic control, electronic maintenance, meteorology, communications, etc. The number of participants reached a peak in 1961 and has dropped sharply since then:

Number of Foreign Nationals in A.I.D.-Funded Aviation Participant Training Projects in the U.S. ^{3/}		
FY 1956 - 160	FY 1959 - 356	FY 1962 - 326
1957 - 269	1960 - 368	1963 - 230
1958 - 288	1961 - 414	1964 - 170

In 1961 participants for 45 countries took part; in 1964 only 19 countries are represented.

The cost of the 1962 program was about \$550,000; in 1963, \$675,000. (The increase is attributable to higher tuition costs.)

The period of training ranges from 6 to 18 months. The U.S. training takes place principally at the FAA Academy in Oklahoma City, which is without any question, the outstanding aeronautical training center of its kind in the world. The end of the course for many students is an on-the-scene examination of U.S. methods of air traffic control, etc., at operating FAA installations.

These training programs produce generally able and qualified local aviation specialists. In remarkably many countries these trainees today form the core of the nation's aviation capability. The program is beset, however, with some relatively minor difficulties. The most serious, perhaps, is the high percentage of trainees who, once they have been trained in a valuable skill, particularly electronic equipment maintenance, leave government service and find their way to better paying jobs. In a recent study in Peru it was found that almost one-half of the trainees had left the country's aviation establishment.

^{3/} The numbers include all students in attendance during the fiscal year. Students whose training takes place in 2 years are thus counted twice. The figure for 1964 is an estimate.

Another problem now emerging is that the early training groups exhausted the supply of English-speaking native talent, and current students have a great language difficulty. A third problem seems to be that the FAA courses, adaptations of courses intended for FAA personnel, are not always ideally designed for foreign students. The language difficulty and the lack of security clearances of the students, and the differing nature and volume of air traffic are among the principal reasons why the courses must be considered separately.

There is also a little bit of A.I.D. -funded training in third countries, which is done mostly in schools operated by ICAO.

C. Construction or Improvement of Major International Jet Airports.

In dollar terms, this has been by far the largest A.I.D. program. One airport of this type has been constructed in many less developed countries, such as Afghanistan, Laos, Chile, Greece, Iran, Vietnam, Liberia, Saudi Arabia, Pakistan, Tunisia, Nicaragua, Bolivia, El Salvador, and Ceylon.

These projects may run from \$1 million to \$8 million each, and in one or two cases even more. They require relatively sophisticated design and, because the construction quality criteria are more rigid than is usually known in the countries, close supervision to assure adherence to the design and specifications.

D. Construction or Improvement of Smaller, Domestic Airports.

A.I.D. has also assisted in the construction or improvement of a few smaller, domestic airports to provide internal transportation. This part of the program has been remarkably small, but is clearly becoming more important. For example, now that construction of major international airports in Peru, Bolivia, and Brazil is completed (or almost so), the attention of both the countries and the A.I.D. missions is turning to smaller domestic airports. This program in Peru over the next five years may well reach \$30 million (though not all financed by the U. S.).

These projects seldom cost more than \$1 million each and are relatively simple and uncomplicated.

E. Technical Assistance Programs to National Airlines.

A.I.D. has made technical assistance grants to aid the national airlines of Pakistan, Thailand, Turkey, Ethiopia, Afghanistan, Guinea, Bolivia and Indonesia. The total cost of these programs has been something less than \$20 million. Assistance to airlines of Iran, Nepal, and possible Nigeria is now being considered. These assistance programs have been carried out under contract with U.S. international airlines, except Indonesia, which is receiving assistance from Lockheed, and Bolivia, which is being helped by a U.S. local service carrier. The programs have run from \$.8 million to \$4.7 million each, the latter being the amount paid Pan Am for the Pakistan program.

In the past, these have been grant programs. The programs now under consideration (particularly Iran) are technical assistance loans.

A.I.D. has also assisted airlines in the acquisition of aircraft and training simulators, and in some instances (e.g. Bolivia) it has provided plain budgetary support over a period of several years. These programs are not large.

These programs have been, on the whole, extraordinarily successful. One of the outstanding programs has been Pan Am's assistance to Pakistan International Airlines. Since this program began, PIA has more than quadrupled its revenue passenger miles and multiplied its cargo ton miles more than 12-fold; it has replaced its piston aircraft with modern turbo-jet and turbo-prop types on both international and domestic schedules; it has become a vital and reliable passenger and cargo link between East and West Pakistan, and today transports all first and second class mail between these two areas; it has increased its work force from 2,200 to over 7,000, while steadily increasing employee productivity from 9,020 available miles flown per employee in 1956 to 12,607 in 1962. All non-Pakistani employees have been phased out.

The program must be considered a success: It has greatly improved domestic transport; it has earned foreign exchange in a rather successful far-flung international operation; it has trained and employed thousands of skilled workers; it has provided the country with an efficient, modern, highly technical business operation in which the country takes obvious and justified pride. And the U.S. participation in this success story is generally acknowledged.

TWA's help to Ethiopian Airlines must be considered a parallel success story. This is the oldest airline assistance program, having started some 17 years ago. It has provided this isolated mountainous country with a transport network which for the first time connects the hinterland with the major population centers. It has given Ethiopia a life line to the West via EAL's Cairo-Athens-Frankfurt route. And although, unlike Pakistan, it started with virtually no

trained native employees, it is today run without great reliance on foreign personnel except for pilots. Even there progress has been good; 45 of EAL's 65 pilots (including all DC-3 pilots) are Ethiopians.

It is crucial to the success of these assistance projects that the relationship between the U.S. airline personnel and the native airline management be well defined. It appears that the greatest success has been achieved when the U.S. personnel has actually started out by taking over responsibility short of the top one or two positions. Thus, the U.S. technician would serve as maintenance manager or traffic manager, with one or more local counterparts looking on. Then, before the end of the contract period, the local management takes charge, with the U.S. technicians acting as advisers. This is only possible if the local airline president is comfortable under such arrangement. But, at least in those instances where the shortcomings of the local line are quite massive, it seems to work much more satisfactorily than a system in which the U.S. management acts from the beginning solely in an advisory role.

III. THE PROGRAM PRESENT AND PAST—AN EVALUATION IN TERMS OF THE U.S. OBJECTIVES

A. The Test of Motivation.

Now that we have briefly described this multi-faceted program of aviation assistance, the question arises what the U.S. has tried to achieve by it. The question is crucial in evaluating whether the program has been a success.

The pat answer is that this program has sought to achieve what all A.I.D. programs seek: The stimulation of development in order to maintain free, non-communist societies all over the world. (See, e. g., MO 1000.1, par. II B.) That answer, however, is not entirely honest. The fact is that the aviation assistance programs have been motivated by at least four major U.S. objectives:

1. Promoting the economic and political development of the aided countries.
2. Furthering the cause of international civil aviation, and enhancing the U. S. role in it.
3. Achieving short-run political objectives.
4. Promoting the export of U. S. aircraft and other aeronautical equipment.

Recently Hans Heymann of the Rand Corporation completed an extensive analysis of the U.S. civil aviation assistance programs which was largely focused on this question of motivation.^{4/} Mr. Heymann concludes that, while it is difficult to rank these various influences in order of importance—almost always more than one is involved in a particular decision—the last three have motivated the U.S. far more frequently and intensively than the first.

He puts it even more boldly: "It is probably fair to say that no U.S. aviation assistance project was ever decided upon as a result of an analysis of priorities among the various internal economic needs of a country or on the

^{4/} Heymann, Civil Aviation and U.S. Foreign A.I.D.: Purposes, Pitfalls and Problems for U.S. Policy, The Rand Corporation, Santa Monica, California, January 1964.

basis of some other rational consideration of efficient alternatives for allocating aid resources among countries or activities so as to maximize the developmental benefits." ^{5/}

Mr. Heymann's evaluation of the relative importance of the various motivations appears correct. Even the rather categorical quoted statement is largely correct - though not the implication that in this regard the aviation assistance program differs so greatly from most other A.I.D. programs. Mr. Heymann goes on to conclude that as a consequence of this mixture of motivations, the U.S. civil aviation assistance program has been - from A.I.D.'s point of view - something of a mistake. Perhaps the only way we can deal with this overall conclusion is to analyze separately how well we have achieved each of the specific objectives we have set up for ourselves.

B. Furthering the Cause of International Aviation and Enhancing the U.S. Role in It.

Without any doubt, our efforts in this direction have been a smashing success. In the last 10 or 15 years the air transport system to, from and among the developing countries has developed from a slow, unsafe, unreliable, irregular—and sometimes impossible—one, to one which is acceptable if not ideal. All of the DCs are reachable by scheduled international air transport, many of them by jet. Their international airports are generally adequate or about to be made so. The navigational aids, air traffic control and communications systems needed for safe and regular flights, while far below U.S. standards, are incredibly improved over 10 years ago. The capitals of some less accessible countries, which to date have been skipped in the improvement program, such as Kathmandu or Quito or La Paz, are now receiving attention.

It must be quickly noted, that this evaluation is strictly a "layman's" one; no U.S. aviation official worth his wings, nor any ICAO technician or representative of an international carrier, would agree with this relatively complacent evaluation.

In one sense these people are right. Flying among Latin American countries, for example, is not as safe or reliable as it is in the U.S. nor is it as safe and reliable as we know it could be with more concentrated and intensive effort. The absence of adequate navigational aids, communications, landing aids, alternate airports, weather forecasting, etc., is easily apparent to even the most casual observer. A discussion with the pilots that fly it there quickly

^{5/} Heymann, op. cit., p. 20.

convinces one that the absence of adequate ground environment puts great pressure on the cockpit crew of these aircraft. Some accidents have occurred which probably can be traced to this very pressure, or even more directly to the absence of an adequate ground environment. Of course this discussion applies in varying degrees to almost all parts of the Middle East, Southeast Asia or Africa.

There is another test which can be employed by representatives of the international carriers or the FAA to show how inadequate is the international air transport system in the LDCs. That is to show how little these countries have done to implement their part of the applicable ICAO Regional Plans.

These Plans set forth the minimum ground equipment required in each member nation, in order to establish a satisfactory world air transport system. Each country participated in the drawing up of these Plans and agreed to provide the facilities required on its soil. The Plans are there—but the implementation is sadly lacking.

From an aviation-man's point of view, so long as ICAO Regional Plans are grossly unfulfilled in the LDCs, it is hypocrisy to talk of a "relatively satisfactory" ground environment.

Yet, from a different viewpoint, air transport in these countries works. It is possible to fly into Buenos Aires even though the Argentinians have limited weather forecasting and have difficulty in keeping their ILS on the air. It is possible to fly into La Paz even though at present one must use piston aircraft rather than jets, and to rely on an airline-provided air traffic control system to do it.

International air transport in backward countries is backward. It is less safe than in the U.S. It is frequently inconvenient—the way to get from Rio to La Paz is via Lima; it's difficult to get from Nairobi to Lagos; in Kathmandu you can only land in the daytime—but then life in these countries generally is less safe, less convenient, less perfect than it might be. When viewed in the context of the development level of these countries as a whole, international air transport does not seem to have been overlooked.

This "satisfactory" development of international air transport is—to an incredible degree—the consequence of U.S. efforts. The airlines of Great Britain's former colonies, notably India, Nigeria, and parts of East Africa, have received considerable help from the mother country. France has helped its former African colonies, both with their joint international airline (Air Afrique) and with ground equipment necessary for safe operations through the jointly owned ASECNA). ICAO, as suggested, has contributed some technical assistance.

But it is the U.S. that has expended by far the greatest effort, and predictably enough this has given a U.S. look to international air transport. Air traffic controllers all over the world speak English; the navigational system approved by ICAO is that promoted by the U.S.; many of the highly placed civil aviation technicians in the LDCs have been to school in the U.S., use U.S. procedures, publications and manuals; an FAA air transport rating is required to fly in the Iranian national airline; the design requirements of local airports from Thailand to Argentina are determined by FAA criteria.

At the risk of sounding chauvinistic, all this is good. International air transport differs in one important respect from other economic activities helped by A.I.D.: Its various parts must be compatible if the system is to work. On a flight from India to Brazil via the Sudan and Nigeria, at each spot the basic ground rules, the communication equipment, the navigation aids must be, if not the same, at least not incompatible. World standardization is thus crucial, and standardization based on the U.S. model is without doubt good for air transport. There is no question that the U.S. domestically has given more thought and spent more money in tussling with these problems than has any other nation. These efforts give it a capacity for leadership which others do not have.

The U.S. dominance was not achieved solely or even primarily because of A.I.D. programs. The quality of U.S. aircraft and ground equipment, the success and managerial skill of U.S. airlines, the extensive overseas activities and foreign-national training programs of the U.S. Air Force, the worldwide safety activities of the FAA, and perhaps most important, the overwhelming importance of the U.S. as a market for air passenger transport must be considered the principal reasons for this made-in-America look in international air transport.

But, in the developing countries, it was A.I.D. that played the decisive role. It financed the construction of airports; it funded the installation of navigational aids, landing aids, communication systems; trained air traffic controllers, communicators, maintenance men, etc. Most important, however, it sent overseas aviation technicians to work with aviation authorities in the development of a transport system. The result has been an extension of the international air transport system to these countries. While this extension is still crude and inadequate, it is headed in the right direction and appears to be successfully linking these countries with the developed part of the world.

C. Achieving Short-Run Political Results.

The U.S. has undertaken aviation assistance programs for a variety of political reasons: To prevent the exclusion of U.S. influence in a remote country;

to assure that a basic, sensitive segment of a country's economy did not fall under Soviet domination; to provide a bargaining tool in a presidential negotiation; to aid a friendly government in some domestic difficulty; to win the support of a wavering neutral.

Some of the largest U. S. aviation programs have been heavily motivated by political considerations—as, for example, most of the Afghanistan and Ethiopia programs.

In the broadest sense these programs have been quite successful. Afghanistan, in spite of its geographical location, has avoided a Soviet-satellite position. Ethiopia has been able to show other African countries how far it has developed with U. S. assistance. Yet, successes have produced—along with results—considerable frictions with the recipient countries, and a common feeling in A. I. D. (and Mr. Heymann) that aviation projects are not especially suitable to promote U. S. political aims.

This issue—whether and when it is sound for the U. S. to use aid in this manner—is perhaps one of the dreariest facing A. I. D. It is dreary not because it is unimportant. Rather, because, while the general principle (the "whether") is easy to state, it is hard to talk meaningfully about the "when".

The basic policy is clear. A. I. D. is an instrument of U. S. foreign policy,^{6/} but its particular responsibility is quite specific. It is to support U. S. foreign policy by aiding the growth of emerging countries into politically stable, economically sound societies, and to make the primary instrument of such growth long range development assistance based upon sound plans and programs.^{7/}

Clearly, pursuing any short term political objective must be considered a deviation from this principal effort. The basic ground rules governing such deviation were laid down by the President: "Where aviation assistance proposals are proposed for political or national security reasons, they must be subjected to the same rigorous justification that applies to other projects competing for scarce resources."^{8/}

A great deal of effort could be spent in trying to elaborate on this formulation. It would be fruitless. A more useful approach is to look at several

^{6/} A. I. D. Manual Order 1000.1 (II) (B).

^{7/} Foreign Assistance Act of 1961, Sec. 102.

^{8/} Statement on International Air Transport Policy, The White House, April 24, 1963, page 14.

aviation assistance projects undertaken, or at least considered, principally for political purposes, to see (i) in what way and to what extent they could be considered successful, and (ii) whether they are in fact as unsuitable as some contend.

First, let us look at Afghanistan.^{9/}

When, in 1955, the Soviet Union made its first dramatic \$100 million credit offer to Afghanistan, a quick and equally dramatic U.S. countermove appeared to be called for. Afghanistan, being landlocked, treacherously mountainous, and totally devoid of railroads, is a classic case of a country that needs air transportation. Thus it seemed both politically expedient and economically logical for the United States Government to propose an ambitious scheme aimed at propelling Afghanistan from the era of the camel caravan into the jet age. A \$15 million aid agreement was signed in June 1956, under which Afghanistan was promised a full-blown international jet airport at Kandahar, a handful of smaller domestic airports, a complete airways communication and navigation system, a functioning national airline of their own, to be equipped with "modern" aircraft, all complete with trained personnel, organization, depots, and ancillaries. And all this was to be put in place within three years, with the help of a technical and airline management team furnished by Pan American Airways.

How striking were the results? For the first nine months after the signing of the agreement, nothing at all happened. This time was simply consumed in organizing the project and recruiting personnel. When the first American technicians arrived in Afghanistan in April 1957, they encountered the familiar phenomenon of a total absence of local resources and human skills necessary to conduct and support a complex undertaking. Remarkable progress was made in the remaining two years, despite the difficulties, but the achievements necessarily fell far short of the original glowing promise. Aviation development in an underdeveloped country simply cannot be a "quick impact" activity. Airplanes and airfields can be furnished relatively quickly, but these represent only the foliage of the tree. The trunk and roots of aviation, the aeronautical training, the navigational and meteorological skills, the concepts, the rules

^{9/} The following account is largely based on the summary as found in Heymann, op. cit., pages 25-26. The story of Kandahar airport has been told so often, and seems so unlikely to be repeated ever again, that perhaps it should be allowed to rest in peace rather than retold. But no evaluation of A.I.D.'s aviation program could be complete without reference to it because it probably has set back aviation programs in A.I.D. more than any other project. To most A.I.D. program officers it demonstrates exactly what is wrong with most aviation programs: the unending costs, the casual relevance to economic development, and the time lag between conception and completion.

and procedures must be nursed along slowly and carefully over many years. This fact soon became apparent in Afghanistan and the whole nature of the project gradually changed from a hasty "spectacular" to a much more deliberate, systematic, cooperative venture between the United States and the Afghan government. Little could be done about the decision to build a first class international jet airport in a traffic-thin region, ^{10/} but in other respects the objectives were gradually redefined, the time horizon was extended from three years to six years, and the price tag went up from \$15 million to a more realistic \$50 million. The earlier disappointment over the failure to realize the original promises is beginning to fade, and in time, the Afghans will be able to point with satisfaction to the transformation that will have been wrought in their air transport position. The results, however, will have been achieved not with drama and fanfare, but through patience, persistence, and slow but steady forward movement.

Another project which looks economically quite unjustifiable is the recent conversion of Ethiopian Airlines' international operations to jet service. The U.S. motivation for supporting this conversion with DLF and EX-IM loans was in large part political. Before the introduction of the new Boeing 720s, the international operations of EAL were conducted by DC-6 aircraft at a considerable profit which was used to subsidize domestic services. The change turned this operation into a losing one, which not only is unable to subsidize the internal operations, but will have a hard time earning enough to permit repayment of the loans. ^{11/}

Presumably the Emperor and his government are pleased by the aircraft. (The Emperor used one of the aircraft to attend the funeral of President Kennedy

^{10/} One question about which there is much speculation is why the airport had to be quite so expensive. The cost of the airport is probably double what it need have been. Its terminal can handle as much traffic as London, its ramp area can handle simultaneously a whole squadron of jets, it boasts three high-speed turnoffs and a taxiway running the full length of the runway. All this for a half dozen operations per day. The explanation is difficult to pin down. Afghanistan was clearly promised a first class jet airport. The ICAO technicians who submitted the first designs apparently whetted the Afghan appetite by defining first class in terms of U.S. airports. From that point forward, the Afghans held out for the whole package.

^{11/} There is some dispute about this interpretation. One of the arguments made to support the change is that competition forced EAL to match the jet services of other carriers. As a matter of fact, however, since the airport at Addis was improved to permit 720 service, both United Arab Airways and Sudan Airways now come into Addis with other jets, and EAL's competitive worries seem to have increased by reason of the jets.

and also to transport him to Morocco while he sought to mediate the Morocco-Algeria border dispute. The new aircraft alone represent an investment of well over \$30 million. In addition, jet operation has required a new airport at Addis Ababa, improvements at three other airports, and new and more complicated air navigation and communication equipment, all of which are again aided by a DLF loan. A further cost is the setback in the "Africanization" of the airline; whereas a majority of the pilots on piston aircraft are Ethiopians, only one of the jet pilots is Ethiopian.

It would seem that the project has both serious internal diseconomies (the worsened financial condition of the airline) and external diseconomies (the difficulty of expanding domestic services because of this financial condition, and the use for this purpose of a big chunk of Ethiopia's limited borrowing capability).

Another project without much economic merit was the proposal of the Bolivian government, to convert the airport at Santa Cruz (Bolivia's third city, located in the lowlands east of the Andes) into a jet airport. Fortunately this was killed by the efforts of USAID, after consultations "at the highest level". The long haul traffic generating potential of Santa Cruz matches that of Kandahar.

The conclusion one derives from examining these and other examples, as Mr. Heymann has observed, is that aviation assistance is an awkward and unhappy tool to use for political results. The clamor of the political leadership in the aided countries is not generally for air transport itself. Rather it is for showcase projects, highly visible and quite spectacular. More modest efforts to build internal transportation, to use simple equipment and unluxurious facilities, have none of these qualities. This means that aviation projects undertaken for political purposes, more so perhaps, than many other projects, have a built-in likelihood of involving serious uneconomic use of funds.

Moreover, these showcase projects have a tendency to be more complex than the country can handle, to take too long to implement, and eventually to reveal their white elephant character to the embarrassment of both the giver and the receiver.

However, the very essence of a politically oriented project is that it strike a responsive chord in the recipient country. There is no doubt that aviation projects have great political appeal. They are, in the minds

of the less developed countries of the world, a prestigious way to leap into the twentieth century. Political demands for aviation projects will be with us again.

What A.I.D. thus needs is a way of culling from politically inspired and by definition uneconomic projects those that are merely unsound from those that are impossibly foolish. The following considerations should help this selection process:

1. Projects aimed at improving domestic transport are the least objectionable, even though their priority position be below that of some other country projects. Transport service is almost always needed, and a few years time will cure almost any overcapacity. There will probably be little actual waste.
2. Construction of an international jet airport, whatever an economist might think, seems a tolerable "luxury" for almost all developing countries. It should not be opposed strenuously when there is great political clamor for it. The airport is today's portal for tourists (with their foreign exchange), businessmen, diplomats, and all those whose presence is important to the country's dignity as a nation, prestige and pocketbook. The precise economic value of such an airport may be hard to measure. But it seems a not totally unreasonable investment. (This is not true in areas such as Central America, where the size of the countries, their proximity, and their low traffic generation potential make it unlikely that more than one or two would ever get more than very casual air service.)

The U.S. effort should be not to oppose the construction of these airports as such, but to limit their size, complexity and cost. If there is a lesson in Kandahar, it is not that international airports are frequently uneconomic investments (we knew that when we entered upon the project) but that unless the limits of the project are kept reasonable and are agreed upon early, the project can well result in an open-ended commitment to build a white elephant which will be a disappointment to everyone.

3. The least attractive form of political assistance is unfortunately one that has the greatest political appeal—an airline assistance program which will catapult the country into long-haul international operations. The basic objection is that this does very little for the country's transport needs; it doesn't open up any remote areas; it doesn't help the public administrators, technicians and businessmen to travel about the country. Moreover, it is very difficult to earn any money operating long-haul international services from a hub which has weak traffic generating potential. Even advanced countries such as the Netherlands and Belgium have learned this. Thus, there is a strong risk that the service will be a drain on the national budget (although it is a way

of earning foreign exchange). The example of a relatively successful Pakistan International Airline in no way lessens the basic truth of these generalizations.

The addition of these high-cost international carriers (and these carriers appear to be quite high cost) furthermore detracts from the U.S. goal of an efficient international air transport system. It adds new carriers to a field which doesn't really need them and makes the goal of a rationally balanced supply and demand at the lowest possible cost more difficult to achieve.

Last, but not unimportant, it generally creates quite direct competition with U.S. carriers. Doing this with A.I.D. funds obviously has its problems.

D. Promoting the Export of U.S. Aircraft and Other Aeronautical Equipment.

During the past seven years U.S. aircraft sales abroad amounted to about \$1.9 billion. In most of these years these sales constituted the largest single positive item in our balance of trade. A not insignificant part of these sales was made to less developed countries. This included approximately 20 long range jet aircraft, and 40 other major transport aircraft (twin engine jet, turbo-prop and large piston), plus numerous helicopters and smaller aircraft. EX-IM Bank loans financed most of these sales. While hardly any aircraft were financed by A.I.D. programs directly, the indirect effect of A.I.D. is quite substantial: First, most developing countries could not operate any fleet of large aircraft without the electronic equipment and technical assistance of the type provided by A.I.D. Perhaps the most obvious examples are the programs of technical assistance to the national airlines of these countries. Second and less obvious is the influence toward purchase of American aircraft stemming from the presence of on-the-scene aviation advisors, funded by A.I.D. The importance of these advisors is hard to measure. Almost surely some sales of American aircraft were made because of the "Americanization" of the local aviation authorities through the influence of these advisors. But, it is unlikely that the number is much larger than it would have been without the presence of these advisors. A good portion of the aircraft would undoubtedly have been sold on the basis of their quality and the sales efforts of their manufacturers.

A considerably more important relationship exists between the presence of U.S. advisors and the sale of U.S. ground environment equipment, such as VORs, beacons, communication equipment, ASRs, and Instrument Landing Systems. This equipment is almost always purchased by the country itself (rather than by an airline), and it is the kind of purchase in which there is perhaps more deference to technical assistance experts than in the purchase of aircraft.

In the past seven years a considerable amount of this equipment was sold by the U.S. to developing countries. There is every reason to believe that in making these sales the presence of American personnel was crucial.

In all, we can conclude that while the total purchases of aircraft and aeronautical equipment by less developed countries has not been great to date, it has not been insignificant and is growing, and the U.S. aviation assistance program has been successful in directing a substantial part of these purchases to the U.S.

One additional point deserves mention, although it raises issues much broader than aviation assistance. It is clear that the U.S. has lost and may continue to lose export sales of aeronautical ground equipment because of the gap between the lending terms of the Export-Import Bank and the "last resort" lending concept of A.I.D. In Peru, for example, a Dutch firm with government backing sold to Peru considerable aeronautical ground equipment. Although the precise terms of the loan are not known, they apparently involve a repayment period of over five years, and the loan in all ways qualifies as "aid" under DAC definitions. Yet clearly, the loan is much harder than A.I.D.'s loans; its terms fall conveniently between A.I.D.'s and EX-IM's. While one cannot really talk of a pattern, this is not by any means the only instance of this type.

E. Promoting the Economic and Political Development of the LDCs.

There is no doubt that the aviation assistance given by the U.S. (with relatively few exceptions, such as the excess capital invested in Kandahar) has been of substantial assistance to the economy of the receiving country. The difficult question is whether, considering the cost of these programs, the benefit has been great enough.

It is impossible to answer this question with any assurance. First, as indicated, most of the aviation projects were motivated, at least in large part, by quite non-economic factors. Second, while the economic impact of all the major programs was considered, there was no effort to measure this impact in any meaningful way.

A great deal of effort could be expended in attempting to determine whether the cost/benefit ratio of some of these projects was positive or negative. This seems an arid exercise, and would not yield very sure answers. It was not attempted.

Instead, an effort was made to determine in a number of instances what alternatives to a particular aviation project were considered and rejected—and, in a few instances, whether aviation projects were ever seriously considered as alternatives for other transportation projects. The honest answer is that the problem was seldom if ever considered in these terms. Someone decided that a new airport was needed, that an airline needed help, that some technical assistance would improve needed transport. The costs were considered rather fully, the need was quite apparent, the decision was made. While this method of allocating transport funds may not be intellectually satisfying, the decisions which have been made seem sound. That is, when the actual aviation projects are compared to possible alternate uses of transport funds, the allocations made in the past do not seem unreasonable.

IV. SOME SPECIFIC PROBLEM AREAS

Thus far we have sought to describe the program, to find the motivations which have shaped it, and to evaluate the results in terms of these motivations. This review and evaluation discloses some problems which now face A.I.D. Our focus shifts to them.

A. A.I.D.'s Over-attitude and the Problem of Concentration.

U.S. aviation interests, particularly but not solely the FAA, believe that there exists in A.I.D. an antagonism toward aviation programs. The principal "evidence" of this is the closing of a large number of CAAGs during the past two years, sometimes over the strong objections of the receiving country and the local A.I.D. mission.

There is no evidence that A.I.D.'s top management today harbors any basic hostility toward aviation programs. In the field there exists a good deal of enthusiasm for them. But the aviation industry belief is nevertheless not entirely imaginary. The termination by Washington of some of the technical assistance programs supported by the mission, particularly where major aviation capital development projects were in the mill—e.g., Chile—gives some coloration of truth to this belief. A.I.D. mission directors are aware of this and several have stated their belief that in recent years at least, if not now, aviation projects have not been favorably considered in Washington.

The "antagonism" to aviation projects appears to have two sources. First, previous administrations of A.I.D. came to the conclusion that the aviation technical assistance programs, the CAAGs, were self-perpetuating groups, more interested in the development of aviation per se and in the program of the FAA than in the country development efforts of A.I.D. These programs tended to hang on too long, and ended up as peripheral appendages to the main A.I.D. effort. Thus, when A.I.D. in 1961 made a determined effort to focus the A.I.D. program, to concentrate rather than scatter, CAAGs were frequently used as an example of unfortunate scatteration. The accelerated phasing out of the CAAGs followed.

The second explanation of the "antagonism" is the great fear, held very widely in the Agency, that aviation programs, more than others, tend to grow uncontrollably once started. A small airport project leads to a request for a CAAG, which leads to a request for electronic ground equipment, which permits more sophisticated aircraft, and thereafter come larger airports to accept such aircraft, more sophisticated electronic devices, and larger CAAGs. The cycle is endless.

Neither of these concerns - the need to concentrate effort and the fear of continuously expanding projects - is without substance. The FAA is an aggressive and able promoter of aviation interests. Its interest in maintaining the CAAGs is different from that of A.I.D. Its technicians occasionally do have difficulty in tailoring programs in developing countries to the limited resources available to those countries and to its A.I.D. mission. Aviation is an insatiable beast, which savors each morsel as the appetizer for the next course.

A.I.D.'s reaction to these concerns, however—to eliminate or phase out technical assistance programs and participant training programs, without particularly decreasing the over-all aviation commitment of the Agency—seems inappropriate. There is no really good reason why A.I.D., with sound management and strong program control, should not be able to obtain the kind of program it wants; one with time and cost limits that suit the country's needs, as A.I.D. sees those needs. While the FAA will not cease being an energetic, sometimes pushy, sometimes parochial spokesman for aviation, its energies could be put to much better use than at present if A.I.D.'s direction were stronger and surer.

In order to give this surer direction, A.I.D. needs most of all some in-house talent. But it also needs to change its basic attitude about aviation assistance: If this assistance is to be successful, its center must be technical assistance programs of modest size but relatively long duration. A.I.D. has learned from the original Afghanistan experience; its programs no longer propose to remake a country's aviation system in three years. But it may not have learned enough; it has just expanded the time period to five or six years. While technical assistance programs need not be permanent, like similar programs in agriculture or public administration they must be considered as fairly long term efforts.

Perhaps the problem is the doctrine of concentration. But the purpose of this doctrine, after all, is to maximize the impact of A.I.D.'s efforts. Quite small aviation programs have had quite an impact. When the issue is a small technical assistance program which requires little administrative supervision by the A.I.D. mission, which with little money builds local competence in a basic transportation medium, and which has the ancillary advantage of helping the U.S. effort to sell abroad, the benefits of terminating it for purposes of

concentration seem to be outweighed by its costs. At least, it would seem that such a program should not be terminated on concentration grounds if the mission director determines that it constitutes a sound use of scarce grant funds.

We must add a note about a technical assistance program which A.I.D. should cut off. Occasionally, after several years, a CAAG changes character and ends up spending most of its energies in maintaining navigational and landing aids or other equipment at the country's major international airport. This is an important service for the U.S. and other flag carriers who use the airport and for the country, but it is a job without end and it is in no sense developmental. When aviation assistance has been reduced to this, A.I.D. should get out. But if the FAA wishes to continue to render this service, can justify it under its own standards, and can get funding from Congress, there seems no reason why A.I.D. should not support its efforts to do so.

The justification for the U.S. taking on such a job would presumably have to be the safety of U.S. international aviation operations. It is thus identical with the purpose of the FAA's International Field Offices, located around the world, which inspect the flight operations of U.S. carriers. Of course, maintaining ground equipment at foreign airports would benefit not only U.S. but also foreign flag operations, but that difference need not deter the U.S. There is, as a matter of fact, a precedent for precisely this sort of transfer of functions from A.I.D. to FAA. In Manila, in the late 1950's, the FAA funded an air traffic control advisor after A.I.D. had decided his services no longer warranted A.I.D. support.

This proposal can be challenged as dividing the aviation assistance program among several agencies. But this is not really an accurate description if we limit this transfer of functions to those countries where A.I.D. no longer wants an aviation assistance program, and if the program is limited to installing and maintaining facilities at international airports used by U.S. carriers. It will surely reduce the pressure on A.I.D. to continue indefinitely assistance programs which have lost their developmental character.

B. Countering Soviet Bloc Aviation Expansion.

Since 1956 the Soviet Union and some of its satellites have expanded their "commercial" air service to new nations and new continents. There is every reason to believe that they will continue this expansion. There is also the likelihood that the Soviet Union will seek to expand its influence in the aviation

system of various countries by offering them aviation assistance programs.^{12/} One of the reactions to this threat which the U.S. will surely consider is the possibility of using A.I.D.-funded aviation programs to prevent such expansion.

In the past A.I.D. has opposed most efforts to use its funds for such purposes because it believed (i) that the aviation officials of the U.S. had a parochial view of the danger of these aviation expansion activities and (ii) that it was unlikely that a U.S. aviation assistance program could be effective in preventing such expansion.

Today these views seem to be held even more strongly because of two widely-held beliefs: first, that Soviet efforts to supply aircraft and technical assistance programs to developing countries have been a total flop; and second, that U.S. negotiations for a bilateral air service agreement with the USSR make it fruitless to try to dissuade other nations from establishing similar air relationships with the Communist Bloc.

The question is whether A.I.D. is justified in its general lack of enthusiasm for A.I.D.-funded U.S. efforts to preempt such expansion. In answering this question it is useful to distinguish between these two quite different Soviet actions—the expansion of their commercial route network and their efforts at aviation assistance.

Expansion of Soviet Bloc Air Routes

Aeroflot, the Soviet carrier, today serves such Asian and African points as Djakarta, Delhi, Kabul, Ankara, Cairo, Algiers, Rabat, Bamako, Conakry, Accra, and Khartoum. The Czechoslovak carrier, CSA, serves many of the same points, and perhaps a half dozen others. There is no service to the Western Hemisphere except Aeroflot's irregular service to Havana which is generally routed via Conakry but occasionally goes the northern route via Murmansk. There is some evidence that the Soviets are seeking new routes in Africa and they also have approached some Latin American countries, notably Brazil.

It is clear that most of these routes are, in commercial terms, unprofitable. The frequency of service offered on them is strikingly limited, usually once a week. Western carriers have found three times a week to be a minimum schedule for economic service.

^{12/} Red China, in spite of its recent bilateral air service agreement with Somalia, has no capacity at present to engage in similar efforts, and this section will deal only with the Soviet Union itself and its European satellites.

Two conclusions emerge from examining this sparse, limited-service network. One is that the Soviet Union is not really much of a factor in international air transport, by any measure. The other is that the objectives of this Soviet expansion are political rather than economic or commercial.

Precisely what are the Soviet objectives? We can only guess, but the best judgment seems to be that the Soviets see other major nations operating an international air transport network and believe that the USSR's position as a world power requires a similar Soviet network.

There are undoubtedly other objectives, such as improving transport to countries or areas with which the Soviet Union has political or economic ties. Whether, in addition, the opportunity for espionage and subversion afforded by direct air services to a new nation is a significant factor is not clear. There is some advantage to direct access which can help keep undetected the arrivals and departures of Soviet agents. There is also obvious opportunity for espionage and subversion whenever any Soviet technicians are stationed in a developing country, but aviation technicians are certainly not the only ones or even the most useful ones in this enterprise. Compare, for example, the possibilities of mischief which could be attained by technicians in the field of communications, education or public information.

While the possibilities of espionage and subversion can be easily exaggerated, experience has shown that the absence of landing or transit rights can seriously handicap Soviet efforts to promote the revolutionary or subversive efforts of local regimes. Supplying Cuba by air from the Soviet Union has been made much more difficult by the Soviet inability to get certain air transit rights, and while this has not fundamentally changed the situation, it has undoubtedly been troublesome to the USSR. Similarly, there is good reason to believe that the Soviet Union was hindered in its attempt to provide arms to Gizenga forces in the Congo, in 1960, because it had no transit rights across the Sudan.

As the Soviet Union obtains more transit and traffic rights, the withholding of a particular one becomes less valuable to the U.S. because it becomes easier to circumvent the country which refuses to grant the rights.

Soviet Assistance to Less Developed Countries.

There are three important things to note about Soviet aviation assistance. First, the efforts have been very limited. The Soviet Union has provided IL-18 aircraft (roughly similar to the Lockheed Electra) together with flight crews and maintenance personnel to Ghana, Guinea and Mali. It has constructed a jet airport at Kabul, Afghanistan, has helped build one at Conakry, Guinea, and is

building one near San'a in Yemen. It has sold some older piston aircraft to Mali, Cuba and Cambodia, on favorable terms. Czechoslovakia has given both airline and ground environment technical assistance to Mali and Guinea. The latter country terminated this program before it was finished.

Second, there is no case of a friendly or neutral government being subverted or won by the USSR after or by reason of an aviation assistance program. The decision to accept Soviet assistance in all cases was the result of preexisting, strong political desire to be friendly with the Soviet Union.

Third, even from an aviation point of view, Soviet aviation assistance cannot be considered a success. Guinea has asked the U.S. to supplant the Soviet Bloc in providing technical management assistance to its airline. Ghana is understandably dismayed by the incredibly low utilization it gets from eight IL-18s it has purchased and reportedly has offered to return the aircraft to the USSR.

Implications for A.I.D.

The Department of State in a classified memo by the Coordinator of Aviation Affairs has recently analyzed the implications for the U.S. of continued Communist aviation expansion. It would do limited good to duplicate this effort, and it is difficult to generalize about A.I.D.'s correct response when it is asked to contribute funds to stop either a route expansion or a proposed assistance program

The above discussion should not be read to mean that it is never worthwhile to try to stop such expansion. However hard it may be to prove harm, there is something disquieting about the thought of Aeroflot gamboling about Latin America. The correct response of A.I.D. obviously depends on many circumstances. But the above should help A.I.D. evaluate the risk, and should enable it to determine how far it is willing to deviate from its longer-range programs to help stop such expansion.

One additional note about the complications which would flow from the signing of a U.S.-USSR bilateral air service agreement. A quite respectable argument can be made that even though it may be desirable for the U.S., a powerful, stable nation with considerable traffic potential, to exchange air service with the USSR, it does not follow that such exchange is desirable or safe for politically unsettled, developing countries, quite subject to subversion. On a recent trip the author tried to gauge the reaction of foreign government officials to such argument. The result was not encouraging. The distinction is understood, but no one was willing to acknowledge that Soviet air service could lead to subversion, certainly not subversion which would be more troublesome than present Soviet efforts.

C. A.I.D. Relations With the FAA.

A.I.D. Missions in the field have generally a high regard for the technical competence of FAA personnel, and the relations between them are comfortable. In Washington, however, the FAA is considered a rather aggressive special interest pleader which can be useful in carrying out a specific project but which should not be relied upon either to shape an over-all aviation policy or the aviation program of a particular country.

The FAA, on the other hand, considers A.I.D. to be uninformed about both the potential benefits and the costs of aviation programs, and unnecessarily difficult to work with.

The net result is that A.I.D., which has so little transportation competence of its own, gets less assistance from the FAA than one might imagine. The problem is to find a way by which the FAA can be made more useful to A.I.D.

The truth is that the FAA is a special pleader for aviation. It is more interested in advancing aviation as such than in developing a particular new nation. It will always be quite sensitive to the needs of U.S. international carriers and U.S. manufacturers. It does have a tendency to try to develop the aviation system of developing countries in the image of the U.S. system.

It flows from this that the objectives and character of U.S. assistance efforts overseas would be seriously confused if the FAA were to shape the assistance program, and even more so if it were to carry it out under its own direction and budget. However, while FAA has considered this alternative, it has never seriously suggested it and such a shift of responsibility is not the issue.

The issue is how A.I.D. can use the vast FAA capability and competence in putting together sound aviation programs despite the differing interests of the FAA. Three steps are indicated:

First, there is no reason why the FAA should not participate routinely in A.I.D./Washington's evaluation of aviation programs recommended by the country missions. As a matter of fact, Section 802 of the Federal Aviation Act of 1958 would seem frequently to require it: "The Secretary of State shall advise the Administrator [of the FAA] . . . and consult with the Administrator . . . concerning the negotiations of any agreement with foreign governments for the establishment or development of air navigation . . . services."

Second, FAA should participate with A.I.D./ Washington in trying to find new, imaginative and simple ways of using aviation in the development process. This includes the airplane both in its transportation function and non-transportation function—such as agricultural application and surveying.

Third, the FAA should be a participant, though probably not a leader, in any survey teams sent to investigate the likelihood of success of new aviation programs.

The key to this greater participation lies not in any basic change in the FAA (which is not likely to occur), but in the designation of strong and competent A.I.D. transportation program officers in the four geographic bureaus. These are needed to set up the bureaucratic channels necessary for greater use of the FAA technical talent. More important, their existence and own expertise should give A.I.D. confidence to call on the FAA without feeling that it thereby puts itself completely at the mercy of the FAA because it has no one on its staff to judge the advice and recommendations it receives.

When we turn from programming to program execution, the role of the FAA is somewhat clearer. In the U.S. there is no private equivalent to the basic job of the FAA: the development of a legal and institutional framework and the development, operation and maintenance of a ground environment necessary for aviation. (The FAA certainly has no monopoly of talent in designing and operating airports, though it has experience in both.) To the extent that these tasks need doing in the developing countries, the FAA is the logical agency to do them. This has generally been recognized by A.I.D., and there seems to be no reason to change this policy in spite of the 1963 amendment to Section 621(a) of the Foreign Assistance Act, which requires A.I.D. to use private sources to the maximum extent possible in its technical assistance programs.

A.I.D. does harbor several complaints about the FAA's implementation of A.I.D. programs. The ones most frequently heard concern the time lag between an A.I.D. request for FAA technicians and the arrival of the technicians in the country; the time lag in obtaining equipment which, as a practical matter, must be procured through the FAA; and the inability of FAA technicians to "think small enough" in planning ground environment systems for the developing countries.

All these complaints have some merit. While the FAA personnel have been generally able, they have been frequently slow in arriving on the spot.

Delays in delivery of needed ground equipment have been annoying, and frequently embarrassing. Solving this problem is complex, in part because the FAA orders some of its more complex equipment only very infrequently, in order to get a better price for a large order.

Neither of these problems, however, is serious, and both could be lessened by some positive A.I.D. action, as suggested below. The problem of the FAA technician who cannot adjust his thinking downward to the smaller needs of a poor country is a much more basic problem, and the problem is real. But, it should not be too serious because it can easily be cured by stronger A.I.D. supervision in the mission and in Washington. There is no evidence that it is more serious with the FAA than it would be with any other U.S. technical assistance group—such as a manufacturer. It is not universal; one can certainly find FAA technicians who are fully aware of the differences in the rules of the game ("they wouldn't like this airport in New Jersey, but that's all we can afford here and that's all we need here"). The problem can certainly be helped by

- more control over the FAA's process of selecting personnel (as suggested below);
- closer relations with those in FAA who are responsible for guiding FAA's technical assistance efforts (at present relations are practically non-existent);
- better programming by A.I.D., with the help of transportation program officers and better surveys, which will define more closely what kind of assistance the technicians should provide;
- possibly A.I.D.-FAA financial efforts to develop cheaper and less sophisticated equipment for air navigation, traffic control and communications.

The striking thing is that there has been no concentrated effort by A.I.D. to solve these problems with FAA. No one has sat down with the FAA and, over a protracted period, worked out the various steps needed to make the FAA more responsive to A.I.D.'s needs. The FAA will not be able to solve these problems by itself; the heaviest pressures on it are to organize itself according to its own domestic needs.

An example of this is the current FAA proposal to change personnel policies applicable to foreign assignments. The aim of the FAA apparently is to spread foreign assignments around as much as possible and make them a step in the training and maturing of potential FAA leaders. This is an entirely worthy aim, but it has some unhappy consequences for A.I.D. For one thing, it would prevent any FAA technician who has served overseas from serving a second tour of duty, at least for a long time. This means that CAAG chiefs would not have had recent overseas experience. It would also make impossible the building up of a pool of FAA technicians who have demonstrated not only the technical but also the personal competence necessary for successful aviation assistance service; it would probably result in a higher number of technicians whose term of duty had to be cut short by A.I.D. because of unsuitability; it would make the prompt filling of

vacancies even harder; and it would make it more difficult for an A.I.D. mission director to check in any meaningful way the personnel the FAA proposes to send to his country. (In the past, the missions have frequently been able to make inquiries of previous foreign posts at which the FAA technicians served.)

Another example of the FAA primary concern with domestic needs is its complex procurement program. Except in unusual cases, procurement in support of CAAGs is fitted into the pattern in such a way as to upset as little as possible the much larger domestic needs.

These are complicated issues, and there are reasons and explanations for all FAA procedures. What arrangement A.I.D. should work out with FAA is hard to assess. What is clear, though, is that A.I.D. has a considerable stake in the outcome. And yet there is no one in A.I.D. with the responsibility to protect its interests in this regard.

D. The Place of Allies and of ICAO in the Aviation Assistance Program.

A.I.D. is faced with a basic contradiction. On the one hand, it is the announced U.S. objective to increase the share of foreign aid costs which other advanced nations bear. On the other hand, many of the benefits we seek from aviation assistance programs can be realized only if the U.S. furnishes such programs.

This dilemma is surely not limited to aviation; but it may be more difficult in aviation because the ancillary or non-economic benefits of U.S. technical assistance, such as the stimulus to U.S. aeronautical exports and the ability to shape international aviation in the U.S. image, have been such major factors in the U.S. aviation assistance program.

There can be no question that U.S. presence, in the form of technical aviation advisors, can be very significant in determining what country is going to sell the aeronautical equipment to the developing countries. A recent example in Chile, involving the purchase of navigational equipment (called VOR's), demonstrated clearly that no commercial attache or other general export promoter could provide the service that was provided by the A.I.D. -funded aviation specialist.

Chile is particularly instructive because it is a country in which the U.S. has made major development loan commitments, including two large airports. It seems clear that without the presence of an aviation technical advisor, there is no assurance that simply by making such loans the U.S. will be able to export any equipment not directly a part of such loans.

Another vexation is the pattern of third-country aid. We described earlier, in Chapter III D, the Dutch loan to Peru for Dutch aeronautical equipment. One problem is the loan's terms, which may be somewhat softer than Ex-Im loans but which put much greater foreign exchange and budget burdens on the recipient country than any A.I.D. loan. Another problem with that loan is that it provides the country with very little help in maintaining and operating the equipment. The problem is so serious that the U.S. CAAG in Peru is now considering sending one of its three technicians to the Netherlands to familiarize himself with the equipment to be delivered, so that he can train Peruvians to use and maintain it.

These considerations and vexations must clearly not outweigh the basic effort of the U.S. to get other nations to increase their share of the assistance burden. But they should influence A.I.D.'s decision where and when to press for such sharing. It seems in the interests of the U.S. to press for a U.S. technical assistance program, as opposed to a program by one of our Allies, whenever

- it is likely that the country will purchase over the next few years a substantial quantity of aeronautical equipment and that the presence or absence of a U.S. technical assistance group will have considerable influence in the purchase decision;
- there is an exceptionally strong commercial or political reason why the U.S. wants to be the dominant influence in that country's aviation organization. These reasons could include the interests of U.S. carriers, military considerations, and the U.S. interest in building a sound international air transport system.

The difficulty with these guidelines is that they will make it hard to remember what is the rule and what is the exception; a U.S. technical assistance group can give to the U.S. some export advantage or other commercial or political benefit in almost every developing country. But these advantages and benefits must change the basic rule only when they are exceptionally strong and important.

The Special Role of ICAO

ICAO is a UN specialized agency which also conducts technical assistance programs. The question is when is it to the advantage of the U.S. to try to substitute an ICAO program for a similar U.S. program.

The principal advantage is financial. Since the U.S. pays only about 40% of ICAO's budget, and since ICAO technical assistance personnel are paid less than equivalent U.S. personnel, the cost to the U.S. is less.

The disadvantages are several. The first one arises because U.S. technicians are hardly ever part of any ICAO technical assistance group (explainable by the wage differential). The technicians come mostly from Western Europe and the British Commonwealth, and these groups must be considered in many ways as technical assistance granted by our allies. Thus, whatever advantage may accrue from "influencing" a foreign country's aviation organization, accrues to them.

The second disadvantage is that ICAO personnel cannot do as well as U.S. personnel the various jobs of a technical assistance group. This is not a reflection on the ability of ICAO technicians but rather stems from the total absence of a backup organization such as the FAA. An ICAO technician in the field is on his own. If he doesn't know something, he does not have an entire aviation organization to turn to for advice. This may not be too serious in the area of general aeronautical advice and planning, but is a handicap when trying to design, install and maintain a particular navigation, communication or air traffic control system. It may sound jingoistic, but it is probably true that a U.S. technical assistance group is generally more valuable to the country than an ICAO group.

The third disadvantage is that ICAO has not budgeted any funds to provide equipment and facilities together with its technical assistance. This means either that the country must buy its own (which always requires foreign exchange), or that some other donor, such as the U.S., must be found, or that the technical assistance effort results in a lot of plans and talk but no modern aviation system.

In a number of instances, the U.S. has provided equipment which has been installed under ICAO supervision according to plans it developed. U.S. technicians object to this mixing. It has several disadvantages. It may mean that the U.S. is the biggest aid donor, with no voice or influence. It has resulted in several cases of U.S.-donated equipment lying around unused for a long time. It is not an ideal set up, but on balance it is a satisfactory way of sharing the assistance burden except in those unusual instances referred to earlier when U.S. influence is particularly important.

The mixing of U.S. and ICAO aid does, however, become a problem if both the U.S. and ICAO provide technical personnel with the intention of dividing the aviation advisory job. In the few instances where this has been tried, it has resulted in deep professional antagonism and hostility which has set back the country's total assistance program and has damaged the image of both the U.S. and ICAO aid programs. It should be avoided if at all possible.

E. The Relationship Between U.S. Foreign Assistance Objectives and U.S. Air Transport Objectives.

The fundamental statement of U.S. international air transport objectives is found in the President's statement of April 24, 1963:

to develop and maintain an expanding, economically and technologically efficient international air transport system best adapted to the growing transportation needs of the Free World, and to assure air carriers of the United States a fair and equal opportunity to compete in world aviation markets. . . wherever a substantial need for air transportation develops.^{13/}

This formulation—which was the subject of lengthy and careful consideration by all the governmental agencies concerned with international air transport—is not the platitude it first appears. That can perhaps best be seen by considering alternate formulations which have been considered at various times—such as "assuring U.S. aviation leadership in all parts of the world", or expanding that mysterious thing called "U.S. aviation presence" into every corner of the globe, by expanding U.S. route systems and in other ways.

As long as the U.S. sticks to the above formulation of its air transport objectives, there need be no basic clash between these objectives and the objectives of a U.S. aviation assistance program.

This statement affects U.S. assistance to less developed countries in two ways. On the one hand, it recognized that under certain circumstances—when there exists an ability to generate or attract traffic, a potential ability to mount a satisfactory operation, etc.—there is room in international transport for some service by a developing country. Consequently, the statement permits the U.S. to help a country such as Pakistan develop an international airline capability, even though it was obvious that the carrier would end up in competition with U.S. carriers on some routes.

On the other hand, and more important, this formulation gives the U.S. a policy framework for dealing with the discouraging spectacle of numerous small, developing countries scrambling to put their flags on the sides of large jet aircraft, then generally putting these aircraft onto the prestigious and relatively profitable North Atlantic route.

^{13/} Statement on International Air Transport Policy, The White House April 24, 1963.

The problem usually arises in this manner. A U.S. carrier wants the right to serve the principal city in X, a less developed country. Generally the traffic between X and the U.S. is small, not enough to warrant the service. However, the traffic which X could add to an existing or planned route serving other points in the same area may make the difference between a profitable and unprofitable route. Furthermore, X may look attractive to the U.S. carrier because of its long-range traffic potential.

First-class commercial air service would undoubtedly be a blessing to X, and it should welcome the service with enthusiasm. Instead, X almost always seeks to extract a price for granting the commercial rights to the U.S. carrier. It knows that these rights are a thing of value, and that they are usually granted in bilateral agreements which give reciprocal rights, i. e. permit X to serve the same route to the U.S. Such route would hardly ever be direct to the U.S. It would rely on traffic stops in western Europe, Japan, or other traffic-rich intermediate stops.

A pattern of such bilaterals which would catapult less developed nations into big league international air service, runs counter to both U.S. air transport and A.I.D. objectives. It would add another operator to a route already adequately served or, in the case of the North Atlantic, already overcrowded. Furthermore the new operator would most likely be an inefficient one (if for no other reason than the low traffic generating ability of its home base), anxious to protect his position by various restrictive arrangements (pooling, capacity limitations, etc.) and by high fares.

At the same time, it would plunge the country into an aviation activity that would drain heavily its ability to raise or borrow capital and its technical and a managerial manpower.

It must thus be a major U.S. objective—from both points of view—to dissuade underdeveloped countries from this unproductive course. This is difficult. Once a country gains some aviation capability, its nationalistic pride, its desire to be leader among the emerging nations, its desire to earn foreign exchange, the desire of its Air Force to operate large, jet aircraft, etc. all press toward an international service.

There is some hope that the impressive arguments against such a prestige operation will fall on more favorable ears today than in past years. In a recent CAB study of air transport in Africa, the Board's staff states:

The climate in Africa today is not one of every new country demanding jet equipment and airfields. The economically sound operations, and the small airlines which have been contained

on an internal and regional basis are enjoying reasonable success and are persisting on a modest basis. African governments seem to appreciate more and more the wisdom of economically sound operations. For this reason, the climate is more favorable in African countries for appropriate assistance from the United States.^{14/}

This change in attitude may be, in large measure, the result of unfortunate experiences with international operations by a number of countries. Ghana and Guinea have harvested more grief than prestige with their Soviet-aided operations. Ethiopia, which has had long-haul international operations for a long time, has found that changing from modest piston aircraft to jets is accompanied by many costs, running from operational losses to hidden costs such as the reversal of the process by which native personnel replaced foreigners in the operation and maintenance of the aircraft.

It is not the function of this paper to discuss the various arguments which can be marshalled against a long-haul international operation by such a carrier.^{15/} The point has already been made: It should be U.S. policy to dissuade countries from entering this adventure in almost all cases.

The most likely clash between U.S. air transport objectives and A.I.D. objectives arises from a related though different situation. It is frequently suggested that A.I.D. offer aviation technical assistance to an underdeveloped country to induce it to forego an unnecessary international service or to permit a U.S. service desired on either commercial or political grounds. The problem arises when the proposed technical assistance program is not justified by normal A.I.D. criteria or priorities.

It is quite likely that civil aviation assistance is not a satisfactory bargaining device in these negotiations.

This is clearly true if the transaction is a simple trade, a quid pro quo in which the U.S. carriers and the U.S.-backed international air transport policy gain by the elimination of an unnecessary and inefficient carrier. The trade is likely to be both ineffective and objectionable, for a number of reasons.

^{14/} Air Transportation in Africa, Staff Study of the Civil Aeronautics Board, January, 1964

^{15/} Some of these arguments have been briefly but persuasively stated in Heymann, op. cit., pp. 34 to 36.

- It would be objectionable to the developing countries who would see it as new colonialism, naked dollar diplomacy; it would tarnish seriously the image of our foreign assistance effort.
- It would be objectionable to segments of the U.S. public and the Congress who would question the propriety of using foreign aid to promote the commercial interests of a particular U.S. carrier.
- It might be objectionable to U.S. international carriers who have traditionally feared all trades of commercial air transport rights for other, political benefits in the belief that the game can be turned around and that the U.S. will trade away its carriers' interests for some political benefit of importance to the U.S.
- It would be ineffective because aviation assistance programs have a limited life, whereas the commercial traffic rights have an indefinite life. When the assistance program is concluded, it may be necessary to trade for the commercial rights all over again.

The fact remains, however, that A.I.D. will be faced with uneconomic grandiose ambitions of international service by emerging countries with existing airlines. It is not enough to chide and oppose, as a parent would chide a stubborn youth. That won't douse the ambition. There will be many willing to fan the ambition, including U.S. aircraft manufacturers who will say—and be completely right—that if we don't support this ambition with loans for aircraft, etc. somebody else will. At such a time A.I.D. must be prepared to suggest an alternate program which will satisfy the need to be modern, the need to join that international club of advanced technology. The best plan is to divert the country's ambition from long-haul international system to a domestic one, even though this means, by definition of the dilemma, a domestic aviation program which is larger, more expensive, or has a higher priority than is justifiable from a sound development point of view. In other words, it's going to require at times a recasting of our priority scheme to take account of a particular irrationality on the part of the recipient country to prevent or at least postpone an even greater irrationality.

F. Implementing Aviation Assistance Projects.

A.I.D. has fewer difficulties implementing aviation projects than developing sound programs. But there are several problems which deserve attention.

1. Major Airport Construction Projects.

The building of a major jet airport is difficult; in a distressing number of A.I.D. financed projects, it has appeared even more difficult than it need be.

In the case of Pudahuel airport, Santiago, Chile, after 15 months of construction no firm set of plans seemed to exist. In that same case, after 81% of the contract time had elapsed, only 4% of the work had been done.

Similar if less severe difficulties were experienced at Athens and at El Alto airport in La Paz. Great difficulties developed in the course of improving the airport at Addis Ababa into a jet airport, some of which were handled in what can only be called a mysterious manner. For example, when it became obvious that unexpected soil conditions were causing serious technical problems, the mission summoned a soil expert on temporary duty. His report, however, was never requested by the mission or furnished it. This apparently was because it believed that no one would know what to do with it, and furthermore that the problem really belonged in the laps of the Ethiopian government (the borrower) and its engineering advisor.

The present system of planning and supervising the construction of a major airport aided by a U.S. development loan is as follows: Once A.I.D. and the recipient country agree on the desirability of constructing the airport, the borrower employs an engineering firm to prepare plans and specifications (M.O. 1221.1). These plans and specifications are then reviewed by the mission engineering staff and, generally but not always, the FAA in Washington.

Thereafter the borrower lets a contract for the airport's construction, which contract must provide for an engineering firm to furnish supervision and inspection during construction. This firm generally will be an American one. (M.O. 1221.1 and 1312.1).

This construction supervision firm is employed by the borrower, but psychologically it must serve two masters. It understandably is much concerned about its relations with the U.S., through which its next contract will probably come. This position makes it somewhat unhappy. The A.I.D. mission is also unhappy because it is quite at the mercy of the engineering firm. It does not have the staff to monitor the project nor the technical skills to deal with many of the decisions which must be made during the construction period.

The basic problem is A.I.D.'s theory that constructing this airport is the borrower's responsibility, and that A.I.D. personnel should not exert any influence on it. A.I.D.'s job is to pay out the proceeds when the certified work progress statements are presented to it. A.I.D.'s attitude was correctly described by a General Accounting Office Report as follows:^{16/}

^{16/} GAO Exit Conference Report, Review of Civil Aviation in Ethiopia, May 23, 1963.

"A.I.D. appears to have taken a very passive role once the loan agreements were finalized. It was explained that A.I.D. does not have a supervisory role for programs financed by loans as in the case of technical assistance grants. A.I.D. informed us that they believe A.I.D. assistance is not required because the funds have been turned over to the host government after the host government has satisfied certain conditions including indicating a capability to prudently expend the funds in accordance with the agreement. Consequently, although the Mission has technicians assigned who are qualified in the many different fields in which activities are carried out, it apparently has never felt that an expert in civil aviation should be available to advise on the largest single undertaking of U.S. aid. GAO cannot agree with the premise that A.I.D. supervision is not needed because the difference between assistance grants and loans is merely in method of financing and does not diminish the United States Government responsibility toward the developing nation. The A.I.D. programs and objectives are unchanged by the method of financing."

The trouble with the A.I.D. position is that regardless of any theory, the airport is a U.S. project. The U.S. makes it known that the project is financed with U.S. aid by a plaque we insist on and by other publicity; the U.S. approves the plans; the U.S. participates in the selection of the construction supervision firm. It is a U.S. baby, and if things go wrong—and they frequently seem to—the U.S. will be blamed and will in all probability be required to pay for any shortfalls or deficiencies which develop.

It is interesting to note that this is not the way programs of like kind are administered when grant money is involved. In Monrovia, Liberia, for example, the mission set up a one man CAAG to act as contract and construction supervisor. This man acted as resident engineer, and was so designated in the contract. The project went well; it was completed on schedule.

Similarly, when A.I.D. financed the rehabilitation of Vientiane Airport in Laos, with grant money, the Laos mission had available to it a one man CAAG responsible for the project. The actual supervision of the construction was done for the U.S. by the Navy's Bureau of Docks. The construction was done by local firms.

In Nepal, the U.S. has contributed the equivalent of \$1.5 million in U.S.-owned foreign currency to finance a cross runway at Kathmandu. Though the engineering firm in actual charge of construction seems quite competent, the mission refused to go ahead with the project until it had been assured of the services of an airport specialist on its staff with certain defined supervisory responsibility and authority.

The grant programs, with direct U.S. supervision, have generally gone better than the loan programs in which the U.S. supervision is slight or non-existent. The distinction makes little sense, as the GAO report pointed out, particularly in view of the soft terms of A.I.D. development loans. A.I.D.'s position should be reviewed.

2. Small Domestic Airport Construction Projects.

These are simple and generally unsophisticated projects. Their cost may range from one hundred thousand dollars to half a million for each construction or improvement program. A.I.D. budgetary requirements will frequently dictate that these be constructed with the help of loans rather than grants. The question is whether the normal loan procedures described above, should be applied to these projects.

Most frequently the interjection of an American engineering advisor—whether under contract to the borrower or the U.S. government—will needlessly complicate and undoubtedly increase the cost of a program of developing and improving these airports. Sometimes there just isn't any choice. However, in most instances it appears that the method used to construct the smaller airports at Cochabamba and Santa Cruz, Bolivia, might be copied.

There the mission borrowed an FAA airport engineer from the Regional Aviation Assistance Group who prepared the airport design and specifications, cost estimates and feasibility study. The feasibility study, it must be admitted, was a vague document, but it satisfied both the mission and A.I.D./Washington. The construction was done by a local firm and supervised by an exceptionally competent engineer of the Bolivian government (more specifically the state owned airline) and the mission engineering staff.

These two airports were built with grant funds. They were built with considerable dispatch, little fuss and not much money. The mission director and the chief of the mission engineering staff believe that they could have one or two projects of this nature in progress at all times, with very little drain on their energies and time. This seems a sound solution for airports built with loan funds as well—provided that all factors are present which were present in this case: a competent mission engineering staff, an FAA airport engineer, and, most important, competence on the side of the receiving country. The system has worked so well that it deserves to be used again, and the appropriate A.I.D. manuals should be amended to permit it.

3. Projects for the Installation of Aviation Ground Equipment.

We have already discussed both the importance of these projects and some of the problems that accompany them. One question which has not been considered in detail, however, is whether this kind of technical assistance, now usually but not always provided by the FAA, could not be provided as well by a manufacturer of equipment, an engineering consultant or some other aviation oriented private firm. This question becomes crucial in view of the 1963 amendment of Section 621 of the Foreign Assistance Act of 1961:

"In providing technical assistance under this Act, the head of any such agency or such officer shall utilize, to the fullest extent practicable, goods and professional and other services from private enterprise on a contract basis. In such fields as education, health, housing, or agriculture, the facilities and resources of other Federal agencies shall be utilized when such facilities are particularly or uniquely suitable for technical assistance, are not competitive with private enterprise, and can be made available without interfering unduly with domestic programs."

Both the A.I.D. experience and the logic of the situation favor using the FAA. First, the problem always is greater than installing some equipment, and training personnel in its operation and maintenance—both of which services could be obtained from equipment manufacturers. The problem is one of setting up the whole system, selecting the equipment, establishing permanent training centers, assisting government agencies with their organization and staffing for current operations and future planning, etc. Most equipment manufacturers do not have the personnel, the experience, or the incentive to do this broader job.

Private engineering firms occasionally seek these jobs, but they also have some difficulty getting qualified personnel with appropriate experience. The reason is simple: they do not do this work in the U.S.

Ethiopia is among A.I.D.'s most recent experiences using an engineering firm in this sort of project. All the reports from A.I.D. officials, the Regional Civil Air Attaché, and the GAO make it clear that the arrangement is not working out entirely satisfactorily. The record is replete with inadequate supervision and workmanship, infeasible specifications, too sophisticated equipment

installed in some cases, outmoded equipment in other instances, particularly as to navaid equipment. For example, printed circuits and transistors, two important developments in minimizing maintenance problems, are actually prohibited by the specifications. The personnel of the private contractor does not appear to have been up to the job.

Except in those cases where the project is very limited, involving only the installation of equipment and limited training of operating and maintenance personnel, it would seem both desirable and possible under section 621 to give this assignment to the FAA, which would have the responsibility were the problem to arise in the United States.

4. Technical Assistance Programs for National Airlines.

One problem is the selection of the airline. There is a recent A.I.D. memorandum which sets forth the criteria governing the selection of these airlines. The memorandum seems sound and there is no need to open this issue again.

These programs in the past have been grant programs. There is no reason why increasingly they cannot be turned into technical assistance loan programs. Such a program is now being contemplated in Iran. If the U.S. at some future time finds itself able to respond to the request of Nepal there is no reason why that program could not also be a loan program. Similarly the present program in Bolivia will undoubtedly be the subject of a request for extension. Such an extension might also be in the form of a loan. Once some of these airlines have been launched, they can be potentially break even propositions. A technical assistance program can add to their earning potential just as the acquisition of a new piece of capital equipment can. Consequently loans seem in order for these programs when ever feasible.

APPENDIX

MAJOR U.S. A.I.D. GRANTS AND LOANS TO LESS DEVELOPED COUNTRIES
BY COUNTRY AND TYPE OF AID (a) (f)

DOLLAR COMMITMENTS FY 1956-1963
(Thousands of Dollars)

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) (c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES (d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>AFGHANISTAN</u>				TOTAL AID	52,419
49,094	- Contract with Pan Am for management of Ariana Afghan Airlines.	700	- Purchase 1 Douglas long-range piston aircraft.		
	- Construction of International Airport at Kandahar.	2,625	- Assistance to Ariana Afghan Airlines.		
	- Domestic airport construction.				
	- Establish airways system.				
<u>ARGENTINA</u>				TOTAL AID	1,775
1,159	- Establish Aeronautical Training Center.			500	- Purchase of 29 small aircraft.

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See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>ARGENTINA</u> (continued)					
	- Training in maintenance of ground facilities, airport planning, communications, etc.			116	- Parts
<u>BOLIVIA</u>				TOTAL AID	5,294
194	- Civil Aviation Assistance.	5,100	- Construction of International Airport at La Paz.		
<u>BRAZIL</u>				TOTAL AID	52,197
194	- Civil Aviation Assistance.	5,100	- Construction of International Airport at La Paz.	48,941	- Purchase aircraft: 3 Lockheed and 8 Douglas long-range piston; 4 Convair piston: 2 Boeing and 2 Douglas long-range jet aircraft.
3,196	- Develop demonstration airway between Rio and Sao Paulo.			62	- Purchase of small airplane.
	- Improve airways system elsewhere.				
	- Meteorological Training Center.				

See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>CEYLON</u>				TOTAL AID	3,369
169	- Airport Development & Surveys.	3,200	- Construction of Colombo International Airport.		
<u>CHILE</u>				TOTAL AID	14,718
718	- Establish civil avia- tion organization and nation wide airways system.	14,000	- Construction of Padahuel and Concep- cion jet airports.		
<u>COLOMBIA</u>				TOTAL AID	10,411
527	- Establish and maintain domestic airways system.			9,520	- Purchase of 2 Boeing long-range aircraft.
				170	- Purchase of communi- cations equipment.
				31	- Purchase of 3 small aircraft.
				163	- Replacement of engines.

See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>ECUADOR</u>			TOTAL AID 3,857		
245	- Establish national airways system and train personnel.			3,295	- Improvements at Quito and Guayaquil airports, including navigational equipment.
				216	- Purchase of 1 F-27.
				101	- Purchase of 14 small aircraft.
<u>EL SALVADOR</u>			TOTAL AID 5,210		
		2,400	- Modernization of San Salvador International Airport.	2,650	- Airport Improvements.
				107	- Purchase of 20 small airplanes.
				53	- Purchase of 1 small plane.
<u>ETHIOPIA</u>			TOTAL AID 61,720		
1,567	- National Airline Training Program, involving contract with TWA to train Ethiopians in airline operations.	23,350	- Construction of 4 major and 22 minor airports and facilities, and spare parts for jet aircraft.	36,725	- Purchase of Boeing long-range jet aircraft and spare parts; airline training program.

See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>ETHIOPIA</u> (continued)					
	78 - Airport Engineering Assistance.				
<u>GREECE</u>				TOTAL AID	1,569
1,569	Modernization of Athens International Airport.				
<u>HAITI</u>				TOTAL AID	2,800
		2,800	Airport Construction.		
<u>INDIA</u>				TOTAL AID	13,197
997	Provide aeronautical ground aids, communications and meteorological facilities (FAA).			12,200	Purchase of 3 Boeing long-range jet aircraft.

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See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>INDONESIA</u>				TOTAL AID	16,118
1,322	- Training of Garuda Indonesian Airways in maintenance of aircraft (contract with Lockheed).			14,281	- Purchase of 3 Lockheed turboprop and 13 Convair piston aircraft.
515	- Improve aeronautical administration and ground facilities (FAA).				
<u>IRAN</u>				TOTAL AID	1,846
1,846	- Develop airways (FAA); assist Iranian Airline.				
<u>ISRAEL</u>				TOTAL AID	27,519
22	- Expand Lod International Airport to jet standards.	1,111	- Modernization of Lod International Airport.	24,886	- Purchase of 5 Boeing long-range jet aircraft.
				1,500	- Purchase of navigational and communications equipment.

See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>IVORY COAST</u>				TOTAL AID	11,310
				11,310 - Two Douglas jet air- craft.	
<u>KOREA</u>				TOTAL AID	1,476
1,476 - Establish airways system and aid civil aviation organization.					
<u>LAOS</u>				TOTAL AID	3,205
2,719 - Rehabilitation of Vientiane Airport.					
486 - Assist air transport.					
<u>LEBANON</u>				TOTAL AID	2,329
2,329 - Aeronautical facilities, including Beirut Inter- national Airport.					

See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>LIBERIA</u>				TOTAL AID	1,565
1,565	Modernization of Roberts Field.				
<u>NICARAGUA</u>				TOTAL AID	1,273
27	Develop Civil Aviation.	1,000	Improve Las Mercedes Airport.		
<u>NEPAL</u>				TOTAL AID	901
901	Improve ground facilities.				
<u>PAKISTAN</u>				TOTAL AID	41,093
4,558	Training of Pakistani International Airlines personnel, and assistance with airline development.	3,915	Modernization of Karachi International Airport to accommodate jet traffic.	17,586	Purchase of 1 Lockheed long-range piston aircraft and 2 Boeing long-range jet aircraft.
5,107	Provide facilities and training for ground facilities including air traffic control.	4,300	Modernization of Dacca International Airport to accommodate jet traffic.	3,527	Purchase of Helicopters and spare parts from United Aircraft Co.

See footnotes at end of table.

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AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>PAKISTAN</u> (continued)					
		2,100	Improvement in Air-ports and airways.		
<u>PERU</u>					
				TOTAL AID	1,456
336	Miscellaneous			1,090*-	Purchase of 32 small aircraft.
<u>PHILIPPINES</u>					
				TOTAL AID	5,208
130	Provide air navigation equipment and training.			5,000	Enlargement of Manila International Airport.
				78	Purchase of 3 small planes.
<u>SAUDI ARABIA</u>					
				TOTAL AID	4,064
4,064	Civil Air Terminal at Dharan.				

See footnotes at end of table.

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AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>SYRIA</u>				TOTAL AID	1,076
1,076	Airways Communica- tions, etc.				
<u>CHINA (Taiwan)</u>				TOTAL AID	1,843
1,843	Provide ground facilities and services.				
<u>THAILAND</u>				TOTAL AID	4,793
1,663	Assist development of of Thai Airways Co. Maintain feasibility survey.	3,130	Develop and operate airways system. Im- prove aeronautical ground and meteoro- logical facilities.		
<u>TUNISIA</u>				TOTAL AID	5,283
33	Planning for Tunis jet airport.	5,250	Construction of El Aouina jet airport, Tunis.		

See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) (c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>TURKEY</u>				TOTAL AID	6,142
2,187	- Modernizing Turkish State Airlines (contract with Pan Am).				
3,955	- Provide organization and train staff to operate and maintain civil aviation system.				
<u>UAR (Egypt)</u>				TOTAL AID	2,107
2,107	- Establish modern airways system.				
<u>VENEZUELA</u>				TOTAL AID	4,976
				1,400	- Purchase 5 Fairchild twin-engine.
				3,576	- Purchase of jet aircraft and parts.

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See footnotes at end of table.

AID GRANT ASSISTANCE ^(b)		DEVELOPMENT LOANS (AID AND DLF) ^(c)		EXPORT-IMPORT BANK LOANS AND GUARANTEES ^(d)	
Amount	Purpose	Amount	Purpose	Amount	Purpose
<u>VIETNAM</u>				TOTAL AID	8,566
4,471	- Construction of modern jet runway.				
4,095	- Develop airways system.				
<u>CENTO</u>				TOTAL AID	4,251
4,230	- Develop Karachi-Tehran Ankara airways.				
21	- Miscellaneous				
<u>REGIONAL</u>				TOTAL AID	883
883					
<u>OTHER COUNTRIES</u>				TOTAL AID	4,106
3,468 ^(e)				638	
TOTAL	117,224	74,981		199,722	GRAND TOTAL 391,927

See footnotes at end of table.

FOOTNOTES:

- (a) Includes only dollar-financed projects. Excludes loans and grants to developed countries. Principal developed countries receiving aviation aid from the EXIM Bank include Australia, Spain, France, Italy, Japan and the UK. "Major" aid recipients include all underdeveloped countries to which U.S. grants and loans amounted to more than \$1 million over the eight year period. Other aid recipients are lumped at the foot of the table.
- (b) Includes grants for technical services, commodities, contract services and participant training, whether designated as development grants, supporting assistance, development assistance or otherwise. Somewhat under \$50 million of the total was spent by the Federal Aviation Agency under reimbursable arrangement with A.I.D. and its predecessors.
- (c) With the exception of the Afghan loan, these are all long term, low-interest loans repayable in local currency. The Afghanistan loan for the Douglas aircraft is 5 years at 5-3/4%.
- (d) The amounts in this column include both loans and credits and medium term guarantees to financial institutions financing the export. The Bank considers these relatively interchangeable arrangements. It does not include all credits for small, utility aircraft, nor loans and credits for ground communication equipment which may be used by aircraft. The Bank's terms for aircraft loans are generally seven years at an interest rate of 5-3/4%. Medium term guarantees, except for jet aircraft, are for a maximum term of five years. Jet aircraft guarantees are for a seven-year term.
- (e) Includes Mexico, Paraguay, Costa Rica, Cuba, Honduras, Nicaragua, Panama, Jordan, Syria, Nepal and Cambodia.
- (f) In addition to the dollar amounts listed, the U.S. granted or loaned U.S.-owned foreign currency to a number of countries including Indonesia, Pakistan, Iran, Thailand, U.A.R., China and Ceylon. The largest amount, over \$3 million in local currency equivalents went to Pakistan. The only other sizable amount is Iran's 2.5 million in local currency (rial) equivalents.

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SOURCES:

Congressional Record – Senate, March 28, 1962, pp. 4789-4793

SOURCES: (continued)

Development Loan Fund, List of Approved Loan Agreement and Commitments as of January 31, 1961, Washington, D.C., May 1961

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