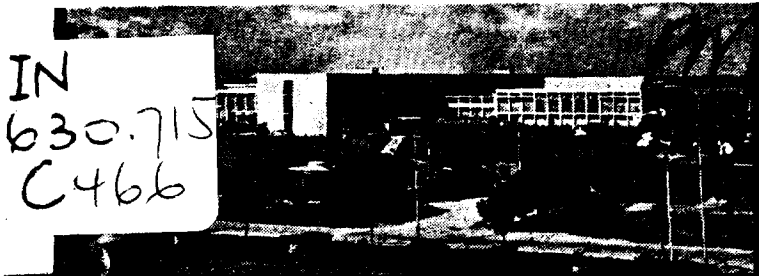


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**THE AGRICULTURAL UNIVERSITY  
AND  
COMMUNICATION  
IN A DEVELOPING SOCIETY**

**J. P. Chapman**

*U.I.D.  
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from 1958*



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**The Agricultural University**  
*and*  
**COMMUNICATION**  
**in a developing society**

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**The Agricultural University**

*and*

**COMMUNICATION**

**in a developing Society**

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**Agricultural Information Advisor**  
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**OSU/USAID Mission to India**

*Illustrations by*  
**Koshal Kumar**  
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Prepared and submitted  
to support the program of

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**INTER-INSTITUTIONAL AGRICULTURAL EDUCATION**  
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*and*

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*at*

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## Foreword

Communication is the core of successful education on all levels. The Agricultural University regardless of its location needs always to be alert to improvement in its communication processes in the development of the three phase program of resident teaching, research and extension education.

Paramount in the newly organized agricultural universities in developing countries is the need for the organization, staffing and operation of a well-planned unit on agricultural information and teaching aids. Communication of agricultural and related sciences and technology will be the primary objective of that unit.

The Ohio State University—United States Agency for International Development, through the author is hopeful that this publication will be a contribution to the program at Punjab Agricultural University with its nucleus for an excellent and functional agricultural information unit. The newly constructed press building, a press to print publications in three languages, additional modern printing equipment and a staff anxious to improve the university publications all offer great promise for effective service to the universities educational and research program. In a broader sense, it is hoped that other agricultural universities may find useful suggestions for their programs in the publication.

Wilbur B. Wood  
Group Leader  
OSU-USAID Contract Team

## **AUTHOR'S PREFACE AND ACKNOWLEDGEMENT**

Information is a product. The preparation and distribution of information are services. People perform services. The people who perform information services are called communication specialists, or simply communicators. They are professional craftsmen—artists, in a broad sense.

This book deals with the communication of information, and the organization, support and operation of university information services.

L. L. Rummell, former dean of the Ohio State University College of Agriculture and Home Economics, who helped plan the inter-institutional program of cooperation between Ohio State University and Punjab Agricultural University, says "A university campus extends to the borders of its state or nation. It belongs to all the people. Students in the classroom are most desirable, but they constitute a small percentage of the population. The institution serves its full purpose only when the results of its research and classroom education become available to all its citizens.

“The University Information Service has many tools to provide this mass education—radio, television, newspapers, posters, films and other visual aids, conferences, lectures and field demonstrations, for example. This service is the university’s adult arm reaching to millions of homes and providing educational opportunity to all those who desire it. The university thus becomes alive and vibrant, and the members of a village family can learn new technology, new living—health, nutrition, and happiness—just as do those who are enrolled in the classroom on the main campus. The university is then fulfilling its purpose and vision as planned by its founders.”

One of the leading state farm magazine editors in the United States, E. W. McMunn, of the Ohio Farmer Magazine, has been a staunch supporter of effective communication to farmers for a long time. He says, “A university is engaged in handling one basic product. That product is knowledge. It’s the business of the agricultural information service to get information from the minds of the men who know, into the minds of those who need to know. Farm information is of little value gathering dust in a file. It’s of value only when it is put to use.

“The knowledge handled by the agricultural information service is precise and often complex. Information staff members must have a broad background of training and experience. I find that the men who know what they’re talking and writing about do a better job than those who do not.

“A good administrator understands the value of a strong information service, staffed by able people. In fact, the information director is often the key person in determining whether an extension program is a success or failure. This means that the information director must enjoy the confidence of administrators and be brought into top-level discussions and planning.

“The wide distribution of knowledge is the main reason for the success of American agriculture. The agricultural information services of our Land Grant Colleges had a large part in the distribution of this information. Working hand-in-hand with them, of course, were farm magazines, newspapers, and other media of communication.

“Any university which seeks to serve agriculture must be sure its information gets into the minds of people. And, that it reaches them in a simple and understandable form. This is a task of the highest priority and one which cannot be passed over lightly.”

Experienced agricultural college and university editors throughout the United States agree with Rummell and McMunn. In the spring of 1963, the author polled 22 of the United States' most experienced and highly respected agricultural college editors for opinions which might be helpful in guiding universities in less well developed countries to build adequate and efficient information services. He added to the concensus of this survey his own experience and observations of almost 30 years as a professional communicator. He also studied publications by several able and respected authorities on communications. These are cited in the text and identified in the list of references at the end of this book.

The experience of working with members of the staff at Punjab Agricultural University, watching the growing pains and sharing the hopes, trials, achievements and disappointments of a new department have added leavening to all the earlier observations.

A big debt of gratitude is due Dr. R. Lyle Webster for his incisive and constructive suggestions. Doctor Webster was formerly chief of the USDA Office of Information, Washington, D. C., U.S.A. He is now a consultant on communications for the Ford Foundation,



New Delhi, India. Appreciation also goes to Fred I. Jones, Agricultural Editor, Ohio State University, Columbus, Ohio, and to Hadley Read, Extension Editor, University of Illinois College of Agriculture, Urbana, Illinois, U.S.A., and to L. R. Nair, Director, Indian Institute of Mass Communications, New Delhi, for their helpful suggestions concerning manuscript revisions.

Finally, sincere thanks go to colleagues on the OSU and USAID staffs, especially to W. B. Wood, Group Leader of the OSU/USAID Mission to India, for the encouragement and support necessary to produce this book.

*About the Author*

Since early in 1955, James P. Chapman has been associate editor in charge of audio-visual communications in the Extension Office of Information and Educational Aids at Ohio State University, Columbus, O. His special responsibilities have included television programs, audio-visual aids, and training. He is a graduate of the journalism school at Kansas State University, Manhattan, Kansas. He also has a master's degree in education from the same university. He was in commercial radio and television before joining OSU.

He came to India in August, 1964, to be agricultural information advisor on the OSU/USAID Contract Team at Punjab Agricultural University, Ludhiana. This book is a result of his desire to help not only PAU but other similar institutions facing the need for a communications and information service organization.

Upon completing his assignment at PAU, Mr. Chapman will return to Ohio State University, to serve as Assistant State Leader—Professional Improvement in the Ohio Extension Service.

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## CHAPTER I

### **Introduction**

#### **The Importance of Communication**

Communication is the key that unlocks the door to human relationships—to the exchange of knowledge and thought, and to understanding.

Communication is vital to progress. Ignorance is one of the chief allies of tyranny. Ignorance may result from being either un-informed or misinformed. Ignorance and illiteracy are not synonymous. A person who can read, but does not, is no better off than a person who cannot read. Literacy can open the door to knowledge, however, and thus may be a big step toward dispelling ignorance. Knowledge of truth is like a great light; it dispels the darkness of ignorance and superstition.

When mass communication is possible with an entire population, the changes and benefits of economic, social and political progress become the common inheritance of all, and not the exclusive privilege of a few.

The Educational Policies Committee of the U.S.A. (5)<sup>1</sup> sees mass communication as one of the most important social forces of the times.

*Democracy, the Foe of Ignorance*

Democracy and ignorance are completely incompatible. Thomas Jefferson, author of the American Declaration of Independence, said, "Anyone who expects to live in a democracy where the people remain uneducated is expecting something that never was, is not, and never will be".

Every nation needs to utilize every possible resource in some productive way. Human resources are most important of all. The burden of lifting any nation up to the light of modernity is far too great for only 10 to 20 per cent of the population to accomplish when that population totals nearly 500,000,000.

The mass of these human beings, as Wilbur Schramm (21) points out in his book MASS MEDIA AND NATIONAL DEVELOPMENT, "know little beyond their villages, little of science, little of modern agriculture, little of the responsibilities of nationhood. Despite their innate abilities, fine qualities, and leadership potential, they make a weak base on which to build a modern nation. Unless they change, they will have to watch technological growth from the side-lines; social change will happen *to* them, rather than their playing an active part in bringing it about; they will be a part of the relatively inert mass out of which the leaders of development in their country are trying to fashion something 'dynamic and vital'.

"Countries in a hurry cannot afford the luxury of such an inert mass. They require the active and informed cooperation of their village people as well as their city people. Their human resources are indispensable.

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1. Number in parenthesis refers to list beginning on page 77.

Therefore, they are going to have to speed the flow of information, offer education where it has never been offered before, teach literacy and technical skills very widely. This is the only way they can arouse and prepare their populace to climb the economic mountains. And the only way they can do it and keep the time table they have in mind is to make full use of modern communication.”

The language situation is one serious hurdle in the path to general literacy and subsequently to easy mass communication. The ability to use more than one language is a desirable cultural attainment. However, the inability of a total population in a given country to communicate in one common language can cause problems.

One is posed by the need for agricultural universities to produce publications in more than one language. This is one of the less critical problems, but it is time consuming and costly to publish in this manner. It requires translators, special type, and other equipment and supplies, and multiplies the actual press work involved by the number of languages. Generally, the quantity of such materials produced is relatively small. This makes the per unit cost much higher than would be the case if larger quantities were published. The attempt to cater to a multi-lingual audience is comparatively so expensive as to be a luxury.

#### *Communication Essential to Education*

An agricultural university exists primarily to promote education and advancement in agriculture. It is impossible to educate without communicating. Research is a basic product of any complete agricultural university. However, research is not justified, nor is it serving any useful purpose, unless it is interpreted and the information is communicated to people who can apply it practically. (26)

The land grant college and university system in the United States is considered the prototype of the new agricultural universities in India. These institutions were established in the U.S.A. mainly as academic schools where the sons and daughters of farmers and the poorer, less privileged families of the nation might have an opportunity to obtain a higher education. The early curricula specialized mainly in agriculture, mechanic arts, and domestic science.

### *The Land Grant University Concept*

Those administering these colleges soon discovered that the young men and women who came to them were seeking wider horizons than their fathers and grandfathers had known. They were looking for something more vital than the knowledge they could get from textbooks. So, imaginative and far-sighted leaders of these new educational institutions collaborated in the development of another new institution in the land grant system. This was the agricultural experiment station. This added research to the resources of these new colleges and universities, giving them much more to pass on to their students, and making their educational programs much more practical.

Some years later other land grant educators realized that they still were not reaching all the people who wanted and needed help. The universities were not disseminating the results of their research to the people who could apply them. This led in 1914 to establishment of the Cooperative Extension Service, a program of off-campus education emanating from the agricultural colleges and universities and supported jointly by local, state and federal funds.

This third arm of these new colleges and universities reached out to the farmer, the rural homemaker, the rural boy and girl, and to many residents of the smaller towns and villages whose interests were mainly in agriculture



and life in the rural community. Thus, the new agricultural universities in America became truly the people's universities, with program designed to assist the people in the solution of the problems they faced in their businesses and in their homes.

### *Extension Education and Communication*

This new educational endeavor, extension education, called for a new concept of communication. Many persons who needed most what the universities had to offer lacked in education. Complex technical or scientific information was of little use to them. They had difficulty understanding such information, and they found little in it they could use to solve their problems.

Consequently, extension agents in the field learned how to demonstrate the results of research, and to teach farm people how to apply such results to improve agriculture and rural living.

These educational pioneers soon found that they lacked training for such teaching. They also needed materials which were unavailable in suitable form and volume. To provide this help, the extension service added a new kind of specialist to the staff. In some states this individual was called the agricultural editor; in others, the extension editor, and the *information specialist*. He developed publications, newspaper and radio services, and teaching aids such as slides, flip charts and exhibits. The designation *communication specialist* is rather generally used now for those engaged in this kind of work. This is a more definitive term. It implies skill and training in the communication arts—the transmission of ideas, the dissemination of information.

### *Communication, Key to Success*

Teaching, administering, and research reporting, as well as the routine functions of any university all depend upon communication in some way.

An agricultural university which purposes to serve a large number of people, as a state university does, will find a competent and adequate communications organization most helpful in achieving its goals. Such a service can be as important in an institution's impact on the public as adding Ph.D. degree holders to its staff. The ultimate impact of an agricultural university on a developing society will be determined by the limitations placed by that institution on the development and utilization of effective communication.

If those who lay the foundations for these new, modern universities envision the broadest possible horizons for the future of their institutions, they will provide for a well-conceived basic information service which can grow as the university grows. The ideal objective is development of a staff of communication specialists who can and will put all their talent, skill and energy into the job of building an information service to meet the needs of the people and the university.

#### *Communication Training Greatly Needed*

The well-rounded university will incorporate into its academic program a complete curriculum in the communication arts. Adequately trained communication specialists will be needed for the important jobs which will open in this field in the future.

Communications arts education might be developed to a level of national prominence at one of the major agricultural universities in each country. Every college and university student should be required to study his language and its use until he becomes proficient in communication. Skill in communication is an important ingredient of success in every field of human endeavor. However, those who expect to make communication their basic field of occupation should take special training and have special education for it. A more elaborate discussion of this topic follows in Chapter VIII.

Dr. Wilbur Schramm (21) makes an interesting observation in this connection. He writes, "The great battles for literacy and other aspects of social development are continuing ones. The results come less often from the impact of single messages or single media than from a succession of related messages and co-operating channels. Thus radio broadcasts and group discussions may be combined in radio farm forums and school television or film may be combined with the printed word in a learning experience more effective than either of them alone.

"Essential to operation of the mass media is skilled personnel. A developing country will therefore need training programs for professional and technical staff in all media.

"Finally, phased development of the mass media calls for full use of research to determine the relative effectiveness of the various media and the differing needs of the audiences. Such information is essential if the media are to be employed efficiently in easing the process of social change and maintaining close contact between the media and their audiences, which themselves change rapidly in a developing society."

In an analysis of "Institutional Factors Limiting Progress in Less Developed Countries", Erven J. Long (15) suggests that "*Countries wishing to jump into the stream of economic progress must be willing fundamentally to alter their institutional structures.*"

The concept of the role of communication and the use of well-organized, professionally conducted information services offers much to the agricultural universities in developing countries.

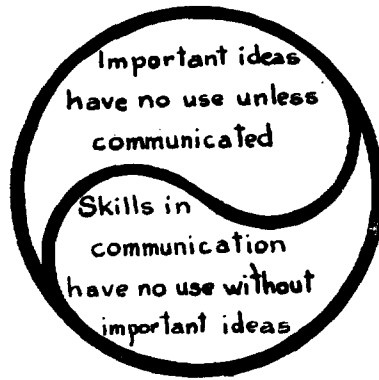
These new universities need effective communication with farmers and other rural people. To be effective requires use of communication methods which the

people can understand. If radio facilities are available, and suitable arrangements can be made to use them, this medium offers a very effective method of reaching people. It should be used to the fullest extent possible.

Direct contact by community level extension education workers can be very effective. Individuals who know agriculture and family living and want to help rural people to a better life can be key agents in this effort to communicate with them. Good visuals and other teaching aids, and training in their use, will be invaluable to extension workers in such situations.

At the same time, even though only 15 to 20 percent of the people are literate, in a total population of millions this means several hundred thousand potential readers. An investment in printing equipment, employment of a competent staff to provide complete information services, and wide distribution of publications can make a great impact on such an audience.

One of the chief objectives of the agricultural university extension education program is to reach as many rural people as possible with practically usable beneficial information.



## CHAPTER II

# The Role of the Communicator

Widespread public support for the university's programs depend upon favourable impressions by the university's representatives in all public contacts. A good information service and an effective job of communicating can be vital in this relationship. An effective information service is the agency through which the university can disseminate information most widely and economically.

An understanding attitude on the part of university administration concerning what an effective information service is and how it is developed and conducted is an important factor in the successful growth of such a service.

Journalism is one of the performance areas comprising the broader field of communications arts. Journalism is a "working" profession. Writing and editing, for example, are processes dependent for their effectiveness

upon training, skill and experience in language use and the particular techniques peculiar to this work. Other jobs within the "Fourth Estate", as it is called, are equally functional.

Productive workers are essential to a successful communications effort. Translating, interpreting, or otherwise helping to communicate ideas from those who think or perform creatively to those who can benefit from any knowledge thus created enhances a man's value and strengthens his contribution to society.

The communication specialist works closely with many of the other university personnel. Because of this close association and the important contribution which the communication staff makes to the overall university program, agricultural editors in the United States favour academic rank and tenure, salaries and other considerations comparable to those accorded other professional staff of an agricultural university.(4) This includes consideration as academic equals of those who have comparable degrees in other fields.

#### *Public Relations*

The chief administrator of an agricultural university is usually a very busy man. He faces a multitude of decisions and duties daily. Many of the activities in which he engages involve an element of public relations.

Some men in such positions are experts in public relations. Others are not. But all may at times find themselves simply too burdened with other responsibilities to give such matters proper attention. Busy administrators could make effective use of a capable individual with skill in public relations.

The first man chosen to serve the university as agricultural information officer, or chief editor, would therefore be very helpful to the university administration

if he had some training and experience in this area. If this foundation communicator is also alert to the university's information service needs, he can counsel the administration on opportunities for public service, and on the requirements for growth and expansion to take advantage of such opportunities. He should not attempt to serve as personal assistant to the administrator, however, or he will not have time to run his department satisfactorily.

This first member of the communications staff should be a man who can perform well the basic information services. (13) Time will bring an increasing demand for such services. Needs will change, too, so there will be not only greater volume but more variety in the services required. This will necessitate additional staff. From time to time it will become necessary to reassign staff to duties somewhat different from those for which they were originally employed. Flexibility and adaptability are excellent attributes to look for in hiring new communications staff members.

The original, or foundation, communicator will eventually find his time largely taken by administrative duties within his department. His function then will be more that of liaison between administration, communications staff and public. He should be a member of the administrative team, and thus be in close touch with university program planning and development. He will then be able to give suitable direction to his staff in the building of good information service support for the university's work. He may actually find himself unable because of time limitations to continue with editorial or other productive work, except on special occasions. However, he must retain his contact with the production staff through regular conferences, and consultations with individual staff members. His experience and competency should be such that he can give qualified guidance and supervision to his staff in all aspects of information service.

This individual should logically be close enough to top administration to be delegated authority to make decisions on routine matters affecting the information service. He could thus expedite action in many instances, and facilitate smooth operation and uninterrupted production of public information materials.

He would relieve the top administrator of all the channelized details and procedural actions involved in the operation of the information service and communications arts department, but he would still be close enough to refer to his superior without delay any matters which did call for top level attention.

In summary, it might be said that the role of the communicator is three fold:

- 1. To perform all functions necessary to an effective information service;
- 2. To give guidance to all who need it on all matters pertaining to the development and utilization of good communications; and
- 3. To assist those who need help in their communication efforts.

It is here that a mutually helpful relationship exists between communications specialists and other university staff members. They depend upon each other and at the same time supplement each other in their total effort. The March, 1966, issue of INTERNATIONAL COMMUNIQUE (24) described this interrelationship this way:

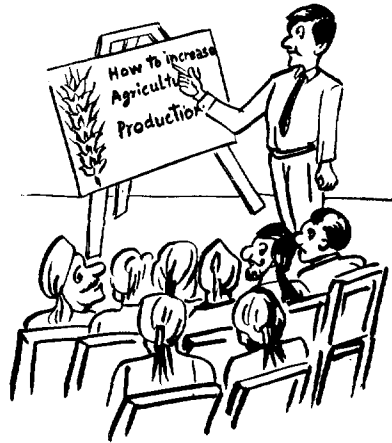
“Important ideas have no use unless communicated. Skills in communication have no use without important ideas. In practice, this means that the subject-matter specialist and the communications specialist are an indispensable working team. Each needs the other.



Together they form the 'whole truth' about the process by which knowledge moves and is used."

The 'whole truth' in this illustration is represented by an abstract design used long ago by the Chinese to show what they called the Yang-Yin principle—two complementary halves which fitted together to form a perfect whole. This is the illustration at the beginning of this chapter.

Subject-matter specialists with important ideas may have commuications skill, just as skilled communicators may also have important ideas. The resulting combination could be a very happy one in either case. However, the subject-matter specialist—communication specialist team is more common, and makes a good combination.



## CHAPTER III

### The Communications Job

The prescribed purposes of the extension education program of the land grant system of the United States include two major objectives. The first of these is to disseminate useful and practical information about agriculture, home economics, and related subjects to the people. The second is to encourage the application of this information by the people to the solution of their problems on the farm, in the home, in other occupations, and in the community.

These could be the objectives of the extension education branch of any agricultural university in any country. They also describe particularly well the general purpose of the *information service* of the agricultural university.

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Within the framework established in such a description, the communications specialists have three specific kinds of responsibilities:

1. To conduct a broad program of information dissemination in support of the university's research and extension programs.
2. To train and assist extension specialists and agents in teaching techniques.
3. To support the university's routine operations through provision of printed materials and other communication needs.

*Concept Requires Understanding*

Many persons have a more limited idea of the communication specialist's role than is embraced in the three categories above. A prevalent notion of the communicator's job is that of a supportive performer only. He is much more.

It will be highly conducive to healthy growth and most effective service if both the university administration and the communicators themselves have the same concept of the communications job. A much more congenial and understanding relationship is likely if everyone shares essentially the same expectations from the information service.

Properly viewed, the information service of a university is a dynamic, primary force in the university's total educational effort. An editor is more than a reporter, writer, broadcaster, artist or photographer for other university staff members. He is more than a publicist, although attracting favorable attention to the activities of the university and its employees is an important aspect of his service. (*Appendix III*)

The professional university communicator's primary responsibility is to develop and carry out planned programs of public education. His specialized method of communication will be his particular means of conducting his program. The raw materials with which he will work he collect will from the researcher or the extension worker, or the routine university function.

His treatment of the raw materials thus obtained will produce publications, newspaper or radio program features, photographic creations, artistic displays, exhibits, or other finished communication art forms which will help carry out the original purpose of the "land grant" idea to disseminate useful and practical information about agriculture, domestic science, and related subjects to the people, and to encourage the application of this information by the people to the solution of their problems.

The communications specialist who has this concept of his job and who goes at his work with initiative and purpose will make a dynamic and valuable contribution to his university's educational program.

### *Thinking Creatively*

If the communications specialist approaches his job as an originator and executor of information programs, he will think creatively of ways in which he can develop information materials and disseminate them to the public. The editor will seek out sources of publishable material. He will voluntarily present his "products" to mass media, or to the university information service, or to the extension educators for their use. He will approach the extension specialist and offer assistance which he believes will be helpful.

A big city daily newspaper or magazine office is a good analogy. The publishers expect their employees to find and write original material for their publications.

They plan certain features. The staff searches out the information needed and prepares the articles for the assigned purpose. They do not depend exclusively on the voluntary contributions of free-lancers or of the readers. They do not wait for someone to come in and bring work for them to do.

The communications specialists in the university should approach their jobs in the same manner, making productive use of their time and of the resources available to them. They should be imaginative. They should be creative. They should show initiative. They should develop purpose. They should apply themselves diligently. Such performance attracts suitable rewards.

### *Seeking Ways to Serve*

Some areas in which the communicator will find opportunity for activity include all the research work conducted by the university staff. Some of this will entail travel to outlying farms and demonstration plots.



Some will be available on the main campus or research farms. Extension education activities, both on campus and at numerous locations throughout the state, also provide a wealth of opportunity for information service.

Both research and extension activities provide abundant material for publications (bulletins, leaflets, reports). They also provide material for press and radio use. Exhibit builders can help the researchers and the extension education specialists to communicate to the public the results of research and techniques which will help solve problems of production.

If one looks at the communication job in this manner he readily sees many possibilities for service. The more one applies himself to his job the better both his perception and his perspective become. Soon the horizon is almost unlimited for the communicator with imagination and determination.

Carrying out the information service envisioned in such a concept would require the efforts of many capable workers. On the other hand, without such a concept, a university information service could be ineffective and unproductive regardless of how many "workers" were employed.

New universities have little original research on which to report. They may be compelled at first to depend on research done by other institutions or government agencies for basic information from which to prepare educational materials for public dissemination.

Once the source of communicable information is established, the extension workers have raw materials with which to work. Then, extension education specialists will be effective and successful to the extent that they communicate successfully. Methods of doing this include : person-to-person visitation; demonstrations of the "how-to-do-it" type; use of teaching aids such as films, slides, or illustrated lectures; preparation of releases to newspapers and radio stations; and writing special publications such as bulletins, leaflets, guides and handbooks for cultivators.

Television is another medium which communication departments in agricultural universities in developing countries will certainly want to use in the future. This medium combines sight and sound, making it possible to tell a farmer about an improved practice and show him something about it at the same time. "Pictures" are very beneficial in helping people to understand ideas. Television pictures are very much like motion pictures; the viewer sees the actions and hears the words of the performer, but on a more intimate basis. Good television camera operation gives the viewer a much better opportunity to see a demonstration than he would get from a crowd of spectators, unless he happened to be fortunate enough to stand next to the demonstrator.

While it may be years before agricultural universities in some countries have access to television facilities, it is desirable to consider the advantages of this medium and prepare to utilize it as soon as possible.

As research activity increases, agricultural university staff members will have original findings to report. They will begin to make recommendations for the cultivators, and the universities will want to publish such reports. With the development and expansion of the university research program, opportunities for publication will increase rapidly. This will necessitate a more comprehensive information service, and a larger staff of communication specialists.

### *First Things First*

First emphasis should be on the tools that can be used. These include simple but practical pictures, charts, models, or real objects in displays or demonstrations, in addition to press and radio services.

As the university develops a productive research program and actually engages in extension education work, the information service will add more highly sophisticated communication tools.

### *Starting to Grow*

Perhaps the first addition to the new staff should be a combination photographer-artist. Photographs get early priority as essentials in a good information service. Once the editor/information officer develops any volume of news releases, and begins to put out publications, or ventures into the preparation of displays and exhibits, he will find the job of taking pictures and producing graphic art big enough to justify another man on the young staff.

Also early in the development of the information service, the editor will need some kind of duplicating equipment, such as mimeographing or multilithing (offset printing)<sup>1</sup> machines and a technician to operate them. This should precede the more conventional printing department which the university will undoubtedly want to establish later.

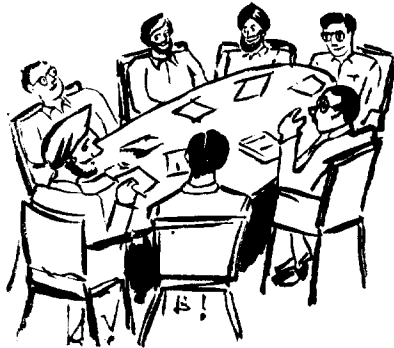
Thereafter, the growth of staff will be linked with the services added by the department. Editorial assistants will be needed as the number of publications and the output of other materials increases. Each new communication specialist should be chosen carefully to perform well defined functions, and oriented carefully to his job.

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1. Offset printing utilizes a photographic plate, or special paper mat. It can reproduce almost any kind of original copy, thus giving wide flexibility and capability in the print shop with relatively small investment of money and limited variety in actual equipment. Indian printers generally have not yet developed the use of offset processes to the extent that they have letter press printing. So far the materials turned out on most offset presses lack in quality and the processes used are relatively costly, so that it is not really practical to use this process in many cases. India's industry is missing a bet by neglecting production of a simple "office" type multilithing machine, which uses the offset process. Because of their capability, simplicity and economy, such machines would sell like hot chapattis in India.

Meanwhile, the new universities can make very effective use of mimeographs, if they will. Skillful artists, with imagination, and good mimeograph operators can turn out quite acceptable materials. They may not have the "prestige quotient" generally attached to impressive letter press products, but they are much more practical and they are adequate for the purpose.





## CHAPTER IV

### The Staff

Salary scales for university communications specialists and information service employees should compare favorably with those in industry or other areas of potential employment for top level professional performers in this field. In any society in which the individual exercises any choice in deciding where he will work, a good man will take the position which pays him the best salary, all other things being equal. Employers want to be in position to exercise some selectivity in hiring their employees. If an insitution pays salaries that attract good candidates, it can expect to hire good performers.

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*A. Minimal Information Service (Editor/Information Officer)*

As indicated earlier, the beginning information service of any university might consist of one man's performance of all the duties connected with such an operation.

This broad scope of activity and performance would require a wide range of ability, training and experience. The first editor of any agricultural university should be a man of experience. He should have a background in agriculture and education that would put him on an academic level with the university staff with which he will be working. He should have training for his job, and he should have imagination and initiative. These qualifications will be found only in a man of relatively high professional status. He will command a respectable salary, but he will be worth it. He should be rated with a salary potential equal an associate professor, at least.

University administration will be wise to exert every effort to find a man suitably qualified for this job. A compromise at this stage may permanently jeopardize the growth and effectiveness of the new university information service.

If the first addition to the staff is a photographer-artist, his duties probably will be chiefly to take pictures and process them for publications of various types, and to create simple art work for publication layout, posters, displays, signs, and teaching aids.

The mechanical duplication of informational materials will soon reach volume enough to require mimeograph and multilith equipment, if the latter is available. This will necessitate adding at least one and possibly two more new staff members. The preparation of stencils for mimeograph reproduction is an exacting job, requiring a high degree of accuracy and quality in typing. The preparation of master copy and paper plates for multilith (offset) reproduction requires similarly exacting per-

formance on the typewriter. In addition, much of the work for multilith printing involves photographic reproduction using special films and plates and training in the use of these materials.

### *B. The Complete Information Service*

The work of the information service staff will expand greatly as the volume of research and extension work increases. The department will need editors for bulletins and other publications. The university itself will need an increasing volume of special printed materials and will issue reports and other publications, such as catalogs and directories, that will require a person with experience in preparing such materials for publications.

Increased opportunity for exhibits and other educational materials will require trained artists and teaching aid designers. Photographic needs will increase. Radio program services will require the addition to the staff of a person qualified to prepare and voice radio program features.

Expanded services will demand staff additions, until the information service reaches a stage beyond which growth will be primarily adding more workers in each category to handle the increasing volume of work. The full-scale information organization would probably find some combination of the following positions, with qualifications as indicated. (*See Appendix V*)

1. Editor/Information Officer (Suggested starting salary range: Rs. 750-1200)

M.Sc. or M.A. in journalism, or equivalent degree in the College of Basic Sciences and Humanities, plus a minimum of five years' editorial experience.

- a. Knowledge of news bureau methods and procedures.

- b. Good working knowledge of typography and editorial practice.
  - c. Knowledge of and basic experience with printing machinery.
  - d. Knowledge of photography and experience with photographic equipment.
  - e. Knowledge of graphic art and at least basic skills in layout and design.
  - f. Understanding of basic radio program needs.
  - g. Personal traits and deportment acceptable to top administration.
2. Photographer-artist/head of section (Suggested starting salary range: Rs. 500-1000)
- B.Sc. or B.A. in photography and/or graphic art from an approved school, plus at least three years' practical experience.
- a. Professional competency in photography, and
  - b. Basic skills in graphic art, or vice versa.
  - c. Knowledge of and some experience in photo-process plate production for offset printing.
  - d. Good working knowledge of display and exhibit design.
  - e. Knowledge of and some experience in preparation of publication layout and illustration.
3. Mimeograph-multilith operator/technician. (Suggested salary range: Rs. 200-500)
- Diploma or certificate from approved school<sup>1</sup> in the use of such machines, plus at least three years' experience.
- a. Demonstrated skill and ability in operation and maintenance of mimeograph and multilith machines.

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1. The Northern Regional Institute of Printing Technology, Allahabad, U.P., offers such training.

4. Offset photoprocess platemaker (Suggested starting salary range: Rs. 350-750)

Diploma or certificate from approved school plus at least three years' experience.

- a. Demonstrated skill and ability in production of quality photo plates for offset printing.

5. Media specialists (Suggested starting salary range, a through f: Rs. 500-1000)

B.Sc. or B.A. in suitable curriculum, plus at least five years' experience in medium for which employed. Other qualifications vary according to medium.

- a. Research publications editor  
Journalism degree with strong minors in social, biological, and physical sciences. Experience in both technical writing and editing. Demonstrated high capability in both.

- b. Extension publications editor  
Journalism degree with strong minors in social, biological, and physical sciences. Experience and demonstrated high capability in lay-language writing and editing.

- c. Periodical editor  
Similar to above, plus experience in feature and/or magazine writing and publication experience.

- d. Current press editor  
Similar to above, plus news bureau experience.

- e. Radio editor  
Similar to current press, plus thorough knowledge of the use and maintenance of tape recording equipment, understanding of and familiarity with radio programming

techniques and procedures, and voice quality suitable for radio broadcasting. Proficiency in speaking local language absolutely essential.

f. University publications editor

Similar to a or b above, with practical experience in commercial publishing or comparable establishment and knowledge of book publishing. Requirements for educational background in biological and physical sciences might be relaxed. Qualifications in editing and writing might be comparably stronger.

g. Exhibits technician (Suggested starting salary range: Rs. 350-750)

Diploma or certificate from approved institution indicating acceptable training in graphic art and design, plus practical experience in display and exhibit production. Demonstrated skill in poster making, sign painting and lettering, layout, and the use of a wide variety of production tools and materials.

h. Teaching aids technicians (Suggested starting salary range: Rs. 350-750)

(1) Audio

Similar to e, but with less experience, and not requiring comparable voice quality and radio programming knowledge.

(2) Visual

Equivalent to g as minimum. Preferably approaching, but not necessarily required to have, the qualifications of the graphic artist described under 2 above.

6. Public relations director (Starting salary range: Rs. 600-1100)

Similar to 1, but with less experience in editorial and other specific media practice, and perhaps more in news bureau methods and procedures, plus actual experience in public relations work.

7. Public functions co-ordinator (Starting salary range: Rs. 500-1000)

This post might very well be filled by appointing some member of the university staff or faculty. The person so named should evidence some particular talent for organizing and conducting such affairs. He could do this by serving on university committees for various public functions. He should be the "expediter" type, capable of careful attention to detail and thorough follow-through.

8. Supportive and clerical staff (Starting salary range: Rs. 200-500)

It is highly important that those responsible for hiring supportive staff for the university keep in mind that information service work deals almost exclusively with the use of language. It is the business of communication. Those employed, even at the lower levels, must be able to read and write better than the average citizen.

Machine operators must be intelligent mechanics, trained to work with the equipment they are to use, and capable of understanding and following instructions.

Typists must be fast and accurate. They, too, must be capable of understanding and following instructions, neat in habits of work, and proud of their abilities.

All such employees should have at least a basic school education, plus trade or vocational school diploma, with average or better academic records throughout. Their education should include training in the use of the common national language, plus special dialects or sectional languages necessary for communication where they will be employed.

9. University press staff

- a. The press manager should be well-trained and experienced in both the operation of all essential equipment in a printing establishment and the management of personnel. He should understand work programming, or production scheduling, and should be capable of detailed follow-through. (Suggested starting salary range: Rs. 500-1000)
- b. The shop foreman should also be experienced in personnel supervision, all print shop operations, production scheduling, and follow-through. (Suggested starting salary range: Rs. 350-750)
- c. All machine operators and technicians should have a minimum of two years' experience and show competency in the skills for which they are employed. (Suggested starting salary range: Rs. 200-500)

In each case, provisions should be made for employees in the department to advance on the basis of experience, professional improvement, additional academic work, and tenure. It should be possible for all staff members to qualify for promotions, with accompanying increases in pay.

To obtain maximum production and to maintain good personnel relations, a good incentive bonus plan might be instituted for all production workers.



## *Selection*

Communications experts in *agricultural* information need special background in the field of agriculture. In countries where a high percentage of the population is rural and farm oriented, one might expect to find many young men with such a background available for employment in almost every field. On the contrary, boys from the farm in such countries constitute a minor proportion of candidates for admission to institutions of higher education, and particularly for training in such career fields as journalism.

This means that most of those who are presently employed as editors or audio-visual communicators in agricultural information services have come into the work from some other employment. Some of these may be career employees in some form of government service. They may have inadequate background and training for agricultural information work. Unless they have unusual skills and dedication, such individuals make poor timber for the construction of strong, efficient and productive information services.

University officials face an arduous task in recruiting good staff members for their information services. Staffing the early organizations will call for bringing into this new field some experienced communicators from the newspaper, magazine, or radio field, or from other professional journalistic positions. These individuals will have to organize and direct the development of the information service and training programs to prepare new candidates for employment in this field.

### *In-Service Training and Professional Improvement*

It is essential for these universities to conduct a program of in-service training and professional improvement for the employees they have, or can find, who are gifted in the talents necessary for employment in this field.

If some person already on the university faculty would be interested in shifting to information service work, provided he received orientation and special in-service training, the universities might find suitable staff for a beginning in this way.

Later, it would be desirable to provide some special training periodically for employees brought in from the commercial field or from other government service posts to help them improve their capabilities and qualify for promotion. This would result in direct improvement of the quality of the work turned out by the information service.

#### *Outside Training Desirable*

It would be a great advantage to those employed in Indian agricultural university information services to spend time also with university information departments in other countries. This could be done on study tours of two or three months, or up to six months; or, if the staff members could qualify for advanced study toward masters' or doctors' degrees, they might go under the U.S.A.I.D. participant training program, or some comparable arrangement to other countries. Grants available through foundations interested in promoting such educational experiences for candidates from developing countries might support such studies also.

It should be understood that any staff member traveling to another country on such an arrangement would be doing so to prepare himself to do a better job for his university, and not to convert the trip into a first step toward emigration. India *needs* these people, and they can make a significant contribution to the future development of their country if they will dedicate themselves to that objective.

One problem in recruiting qualified personnel for work in the communication arts in agricultural univer-

sities lies in the fact that a man well-qualified for such work usually is also well-qualified to do a good many other things, whereas the opposite is not always true. Unless a man has the specialized education and training necessary for work in communication arts, he is not qualified for such a job, regardless of how well-prepared he may be for some other kind of work.

Universities will find it difficult to keep well-prepared and capable persons on their communication staffs. Other employers invariably find such talent useful, too.

The need for training in this field is great. Chapter VIII offers a suggested plan for meeting this need.



## CHAPTER V

### Operation

Operating a good university information service costs money. This realization must precede any attempt to set up such a department. The equipment needed for effective performance of the information service functions is specialized, and some of it is relatively costly. Supplies and materials are used with impressive regularity as the press and other production units go into operation. Practical acceptance of this fact makes possible the realization that the institution must provide in an organized way for these expenditures.

The communications arts staff can supply the information needed to develop a fiscal plan for the information services. In fixing budgetary procedures, it is important to keep in mind that actual needs and day-to-day costs of operating such a department will change from time to time. In all probability they will increase each year. If for no other reason, some years they will be higher because of increases in the salaries of the employees.

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Regardless of variables, the matter of finance and operational support for the information service is as important as that of any other part of a university.

Equipment, supplies and materials should be selected judiciously. The institution should purchase only those items which are needed and recommended by experienced staff or advisors. When the items are needed, however, the institution should provide them promptly.

#### *Meeting Obligations Promptly*

The university administration should establish early a procedure for handling the fiscal affairs of the information service. This should include a pattern for billing, receiving, and paying, and the business of the department should be handled promptly. This is important at all times and particularly so in the early years of such an operation, when the institution will find it more practical to have printing done by outside (commercial) firms. Customers who pay promptly can usually get preferential treatment in terms of better work and faster service.

Such a practice establishes a reputation for responsibility. This gains a prestige which would be difficult to obtain in any other way.

#### *Travel*

Travel allowances will be essential in the budget for the information service. It will gradually increase as the staff grows and the services expand. Proper coverage of the university's news producing activities will mean that the editor, and especially the press, radio, and publications specialists, when they are in position, will average one or two days a week in travel. Suitable allowances will be determined readily enough once the information specialists begin working. In the planning stage, it is less important to establish an exact figure for

such an item than it is to realize that travel is necessary. Plans should be made to take care of this need as it arises.

### *Expendable Supplies*

Supplies and materials needed for proper performance of the information services will also vary depending upon the nature and scope of the operation. At first, the needs will be rather small; but they will expand surprisingly fast as the services develop. Paper, inks, art supplies, photo supplies, radio tapes, cardboard mailing boxes, stationery, adhesive gum, pencils, and a multitude of other such items run into money, and they are expendable.

The purchasing department will have to procure these supplies and materials regularly. Quantities will remain a question for a time, but, it will be possible to establish some pattern of demand, so that the university can obtain these items when needed. The information service department should not be forced to suspend production while waiting for replacements of these items.

### *Revolving Funds*

Costs of production may be recoverable, at least partially, on such items as "for sale" publications, and printing supplies for the various departments of the university not directly engaged in public information services. In such cases, proceeds might very well go into a revolving fund designated for printing. The money so obtained will go to the university finance office as all funds should be accounted for to one such office of the university.

They should be ear-marked for the printing fund and usable for that purpose only. In the case of supplies for other university departments, the funds would

simply be transferred on the books of the comptroller's office from the department for which the job is done to the credit of the printing department.

### *Printing Budget*

The amount of money needed for the support of printing activities otherwise should be based upon the anticipated needs for publications and other printing, as projected by the editor from indications of authors.

As the research and extension staffs begin to produce publishable manuscripts, it will be desirable to have a procedure for filing intentions to publish and giving the information service some guidance in determining probable needs for this kind of work. In this way, the editor and press manager can calculate probable expenditures and plan budgetary requirements in advance so the university administration can set up allocations for these outlays in their annual budget plans.

### *Unbudgeted Publications*

In some instances in these new universities, the press manager, or the publications editor, may not know what to do about manuscripts submitted for publication for which no funds have been budgeted, especially if one of the university's upper level administrators makes the request. It would therefore be advisable for the university to have a publications advisory committee to rule on all such requests. This committee's decisions should be final.

A few instances of firm and responsible action will put real character into the publications procedure of a university, and will promote more thoughtful and far-sighted planning in the preparation of manuscripts for publication.

### *Non-Scheduled Rush Jobs*

Another problem that involves time, manpower and equipment schedules is that of someone asking for rush jobs for special needs. This puts the production crew in an extremely awkward position each time it happens. A well-organized and operated shop has its work scheduled in advance and each worker has his assignments in connection with each job. Usually, the person in charge of a given kind of work such as art and design, or composition, or machine operation, has each job on a calendar with a promised delivery date. When someone requests a special rush job, he disrupts the work schedule.



**"SHALL I RUSH this job before I  
rush the job I'm rushing now?"**

One solution to this problem would be for the administrative officer of the information service, and those responsible for graphic art and printing, to reserve time in their work schedules to allow for hurry-up



jobs. This is a managerial maneuver which, after some experience, becomes more or less a part of an individual's time budgeting effort. He learns to allow a little time in each day's or week's program for emergencies. This solution is not entirely satisfactory, however.

The advisory committee might suggest a policy for handling this problem. If such jobs interfere with regularly scheduled work, or make overtime work necessary, it might be possible to charge the overtime to the department responsible.

### *Overtime and Incentives*

Despite every effort to avert them, problems will arise from the necessity for working overtime. A capable man in the position of either the department chairman or the press manager can avert some of the difficulty arising from rush jobs and overtime. Most employees respond favourably to treatment as co-workers—as members of the team. While they may be unresponsive to what seems to them to be arbitrary orders, they will usually respond in good spirit if they are treated fairly and given explanations or reasonable justification for extraordinary demands. This is a matter of morale, which a good supervisor or administrator can handle.

A regular weekly staff meeting provides opportunity for the supervisory staff to outline the work schedule in advance. The department chairman and other supervisors may also use this occasion to review the production of the past week, to commend staff members for good work, and to suggest possibilities for improvement in future performance.

### *Operating Costs*

Operational expenses in the print shop will depend upon the volume and nature of the work turned out. A beginning department, as suggested earlier, could

operate with one offset machine, and the supplementary equipment needed for composition, plate making and photo-process work, plus a small automatically fed letter press, a limited quantity and variety of type, a paper cutter, folding machine, stitcher, proof press, and the necessary make-up tables and other work surfaces.

Supplies for such an operation would then be largely plates (both metal and paper) for the offset machine and process film for plate making, and the paper used for the various publications. Other miscellaneous supplies would include wire for the stitching machine, special ribbons for the typewriter used to prepare the paper masters for the offset machine, special "phototype" for display and headings, reproducible pencils for special art work on paper plates, proof paper, adhesive gum, any special items needed for preparing photo-plates, such as chemicals, lights, washing and drying equipment, and knives and tape for stripping-in or other techniques in plate making. A modest beginning budget for such supplies would be Rs. 1,500 a year.

#### *Publication Illustrations*

When publications include photographs, the cost for illustrations enters into the budget. Film and print paper for the original pictures will be a sizable item from the beginning. Halftone and zinc plate blocks are produced on the basis of so much per square inch (or centimeter), with a minimum rate for any size up to a specified number of squares. Thus, the more and the bigger the blocks, the higher the cost of illustrating printed publications.

#### *Audio-Visual Aids*

Potentially, one of the most effective of all communications arts in a new agricultural university is the area of audio-visual aids. This is true especially when a large proportion of the public can neither read nor

write and often speaks a language different from that commonly used in university-level communication. These specialized teaching aids lend themselves to personal presentations before either large or small groups. Properly employed, they can support visually, and thus strengthen the spoken word, giving it much greater impact.

As the extension education field program develops and subject-matter specialists visit local groups or individual farmers to discuss the improved techniques and practices developed by university researchers, they will find extremely helpful such visual devices as greatly enlarged pictures, working models, outline drawings on flip charts, felt board build-ups, and portable displays.

The beginning information service should include production of suitable teaching aids and displays for extension education workers to use. The same artist who produces illustrations for the offset plates can produce such visual aids<sup>1</sup>.

Materials needed for this work include drawing paper, pencils, inks, paints of several colors illustration board of different weights and colors, adhesive gum, miscellaneous nails, screws, and other fasteners, hinges, sheet-board and plywood of different thicknesses, lighting fixtures, and a number of small miscellaneous items peculiar to visual aid fabrication, plus a variety of tools. Such supplies and materials will cost around Rs. 4,500 a year with provision for replacing expendable items.

Visual aids production will expand eventually to include colored slides and filmstrips, and eventually motion picture film. However, when projection equip-

- 
1. This particular section of the information service could make an invaluable contribution to the university's program of classroom instruction also by giving training in teaching methods and help in the development of audio-visual aids to the academic faculty.

ment is both scarce and undependable, it is advisable to use other teaching aids. Village level workers and others with community programs will find these aids much more practicable in a few years than they are now. When these items become available, the budget will need revision to include the cost of 35-mm. slide color film and processing, essential art work, projectors and accessories, and eventually 16-mm. motion picture films. These items are substantial. Moreover, their production will require skilled communications specialists who will be relatively costly additions to the staff.

### *Procurement*

Provision of supplies and equipment for any institution as big as a university is a considerable job. Procurement of the materials for a print shop, and the other production units of the office of information involves not only acquaintance with the "trade" (the sources of supply, both wholesale and retail) but a specialized knowledge of the products needed. The head of the information service should be qualified to prepare orders and transmit them to the university



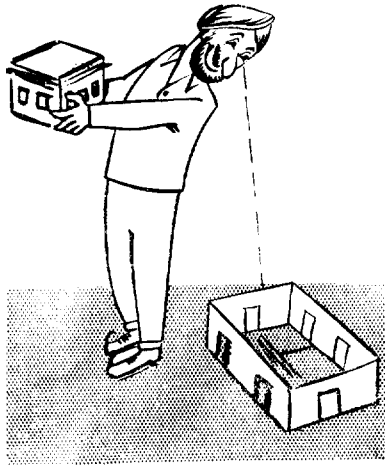
purchasing office for processing. He will base his requests on the stipulations and specifications of his section chiefs—the press manager, chief artist, head photographer, radio editor, and others.

Some one member of the purchasing office staff will probably process most of the requisitions and purchase orders sent in from the information service office. He will thus become familiar with many of the terms, the materials, the equipment specifications and descriptions, and with the companies which supply these items. He will, therefore, be able to handle such orders efficiently.

When there is more than one supplier of a given item and the policy of the university requires a bidding procedure on such transactions, the member of the purchasing office staff assigned to the information service account will be extremely helpful in obtaining the necessary quotations and following through on purchase orders. This procedure should be organized carefully so that the information service office receives satisfactory handling of its orders.

#### *Depreciation*

It is wise to calculate the need for replacements and new equipment on a planned basis. All machinery will depreciate gradually. It is sound business practice to allow for this and plan budgets accordingly. Then, after 10 years or so, when a machine is no longer serviceable, does not perform satisfactorily, or has become obsolete, the institution can replace it without upsetting the operational budget of the department.



## CHAPTER VI

# Housing

Those interested in and responsible for the development of an efficient and adequate information service will realize that such a service is built by people. People require certain tools and accessories for proper performance of their work. Suitable accommodations and facilities are essential for the proper functioning of the information service.

Space accommodations for a functional department such as the information service require careful planning. Only someone who understands the nature of the activities and services involved can suggest the most satisfactory arrangement of space and utilities needed.

The chief editor/department head will have practical suggestions on space requirements and other needs of his staff. Agreement in advance on plans for housing and other accommodations will result in a much more satisfactory situation than would be likely otherwise.

If the university proceeds on a growth and development program in which the beginning department consists of a minimal staff and the services suggested on page 23, it would be practical to assign space in an existing building until the requirements of the staff reach proportions that call for a separate building.

#### *Advance Planning Advisable*

It is desirable to anticipate and include these needs in early thought and planning stages of university development. It is unwise to wait until the need is critical to start planning for such accommodations. By the time the staff and the services performed reach a size that requires both the special space and equipment peculiar to the activities of an information service, the department should have a place to operate and the facilities to do an effective job.

Figure 1 suggests a possible structure to house the information services and communication arts staff. Not every university should have a structure exactly like this. Perhaps *no* university would want a structure *exactly* like this; but, every institution which expects its information service to operate efficiently and do an adequate job in communication should make some provision for officing the staff and meeting their information service production needs that would include most of the provisions embodied in these plans. (See pp. 48-49)

#### *Need for Meeting Facility*

Every agricultural university will have many occasions when it will need a public meeting and exhibition hall. In a carefully planned facility, where the communication arts staff can erect and maintain good educational exhibits and the university can conduct public meetings in which such materials are effective tools, the impact is unquestionably much greater than in haphazard, poorly organized and prepared programs conducted in unsuitable surroundings.

Building plans should incorporate provisions for expansion. If the university adds instruction in communication arts to its academic program, the staff will need office space and classrooms for teaching. Having the teaching activity close to the actual production and service facilities will make possible much better use of such facilities for "laboratory" practice by the students. It will help also to bring about better co-ordination between student instruction and in-service training activities of the extension education staff. It is expedient to have closely related staff and activities housed together.

In the plans suggested, offices and classrooms for the communications arts teaching faculty could occupy a floor directly above the two side wings.

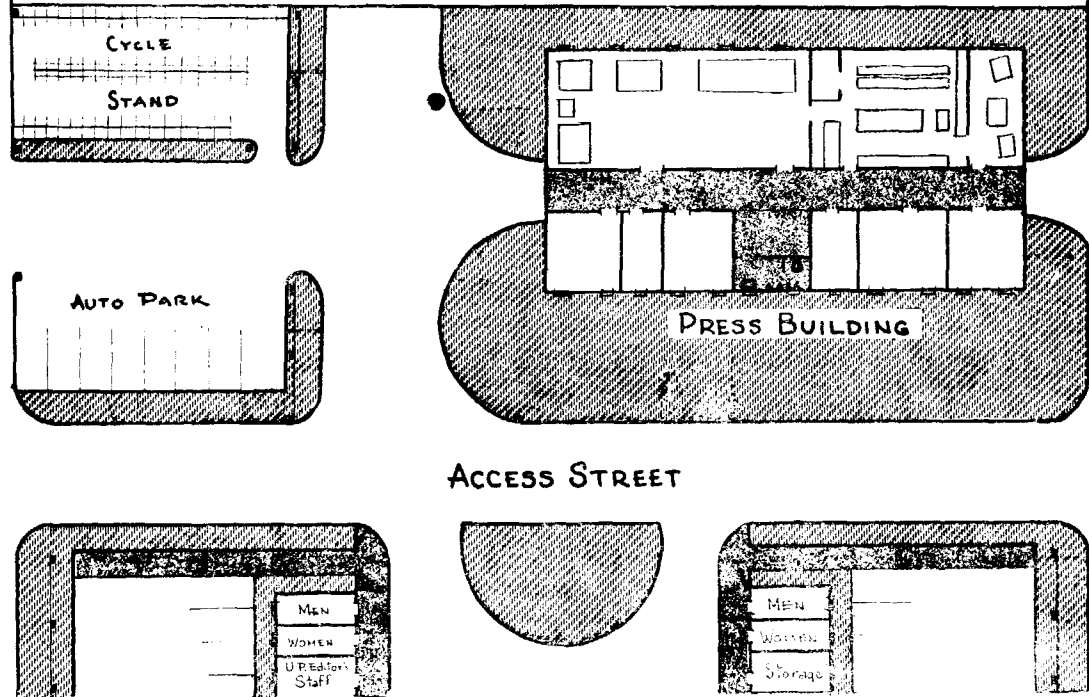
### *Printing Establishment*

The university press, with its heavy equipment, its need for storage of bulky paper stock and other supplies, and the variety of supplementary services performed, should have a ground floor location. This might be in another building, separated from the main communication arts center by a service road or access street. This would keep the noise and vibration caused by the presses and the type composing and casting machines apart from the offices and the classrooms.

If those planning the communication arts center preferred to include the press facility in the main structure and house all information services in one building, the press and other production facilities, such as the graphic arts, audio-visual services, exhibit construction, and similar work, could be allocated space on the ground floor. The editorial staff and its supplementary offices could then be located on the next floor in one wing, and the teaching staff with its classrooms on the next floor of the other wing. More floors could be added if needed.



PLAN FOR UNIVERSITY COMMUNICATION ARTS & INFORMATION CENTER  
SCALE: 1/16" = 1'  
J. P. CHAPMAN, OSU-USAID



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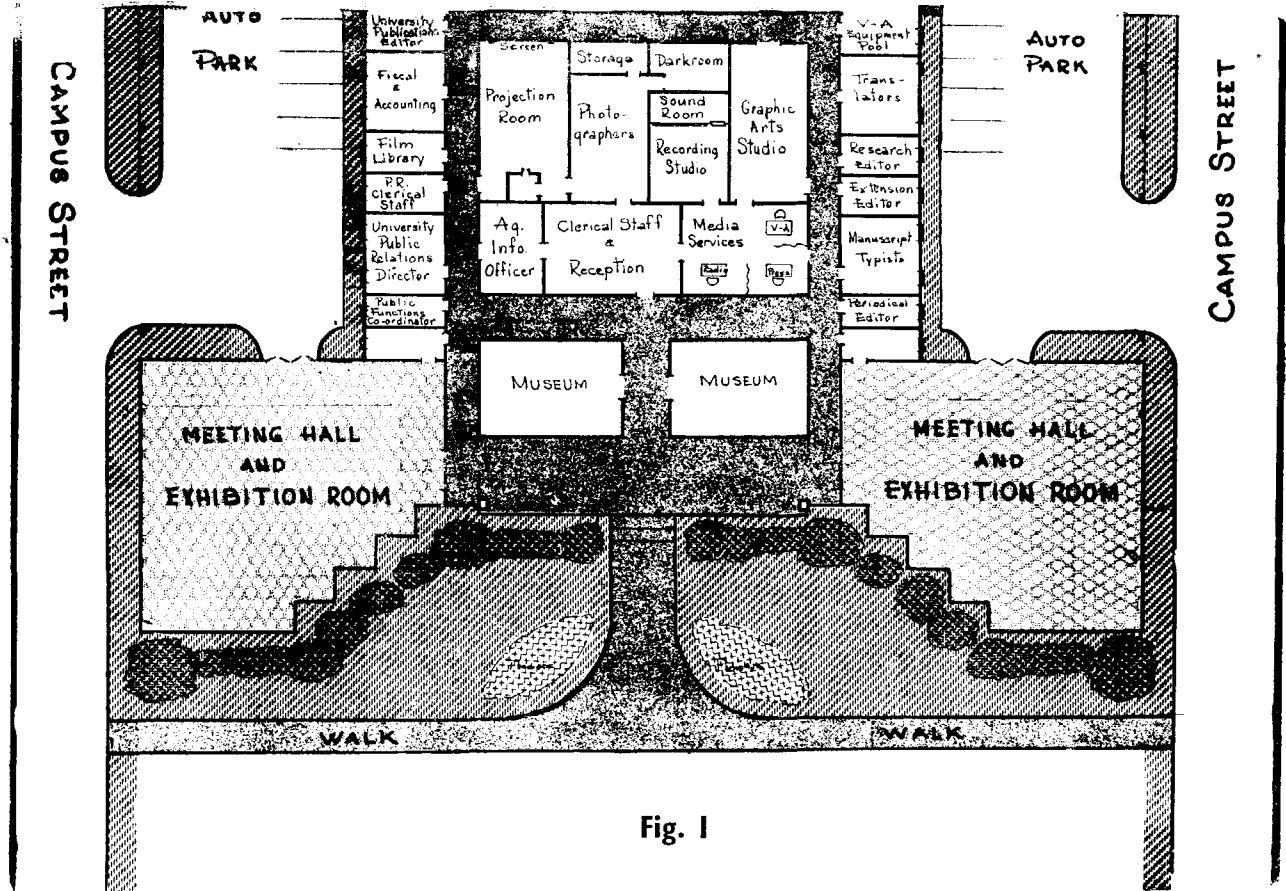


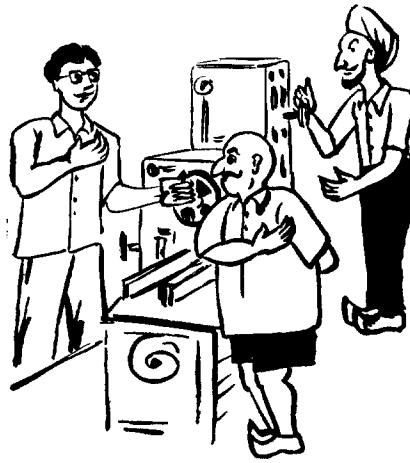
Fig. 1

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Many variations are possible, depending upon the needs of the staff, the funds available, and the imagination of those planning the building. It would seem desirable at this point only to suggest that in all probability those responsible will want to provide for the needs outlined here:

1. Suitable office space for
  - a. Information officer/chief editor/head of department
  - b. Media editors (press, radio-television, visual aids)
  - c. Research publications editor
  - d. Extension publications editor
  - e. Language editors/translators
  - f. Manuscript typists
  - g. Clerical staff
  - h. Press manager
  - i. Proof readers
  - j. University public relations director
  - k. University publications editor
  - l. Publications distribution officer
  - m. Fiscal and accounting officer
2. Graphic arts studio and exhibit production facility
3. Recording studio (for making radio tapes, audio-visual presentation commentaries, motion picture sound tracks, etc.)
4. Photographic laboratory (darkroom and storage, plus staging area for photographic productions)
5. Projection room (for testing audio-visual productions and other small audience presentations)
6. Suitable facilities for photo-process plating making
7. Adequate space for type composition, both handset and mechanical

8. Adequate space for make-ready, proofing, and other intermediate operations in press facilities
9. Adequate space for printing presses and accessory equipment
10. Adequate storage for paper stock, office supplies, and other daily needs of the department.



## CHAPTER VII

# Equipment

Everyone in a working profession such as the communication arts produces some tangible work. This means that every member of the staff needs not only space, but the particular equipment requisite to the performance of his specialized job. It is difficult to imagine, for example, that members of the editorial staff could do their work well without reasonable proficiency on a typewriter. Each such staff member should have a typewriter, therefore, or access to one when he needs it.

Each staff member will need a desk suited to his particular work. Those who do layout work, or who need large table surfaces for some other reason, will require larger desks than those who do all of their work on typewriters. Some will need drafting tables. Some will need more than one table or desk. Some will need special lights, but all should have good light. All should have other requisites for comfortable, productive work—heat in cold weather, cooling in hot weather, and so on.

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Much of the furniture and equipment needed for an information department is like that used in any office. However, some other items needed by communication specialists will be more or less specific in their use. In some cases, developing countries will not have some of these items available except through purchase abroad. If such purchases involve foreign exchange which is limited, the information service may have to operate without these articles. If the administration is sincerely interested in the development of an adequate information service and understands the essentiality of these items to the proper performance of the information service job, it may be able to get the necessary sanctions to obtain this equipment and supplies. If university officials cannot make such arrangements, it would be better to do without such equipment. It is wasteful to acquire specialized equipment for which there is no possibility of getting service or component replacements. Such machines are bound to need service and replacement of parts if they are used. This is unavoidable. If they are not used there is no point in having them.

Demand for such equipment will bring about indigenous production in the course of time, but until a country has industries which turn out acceptable products of this type, the information services in the new agricultural universities may have to improvise and substitute.

Following is a list of equipment which is highly desirable for the proper functioning of the information service:<sup>1</sup>

Suitable desk and chair for each member of the staff.

Typewriter for each editor, translator, secretary and stenographer.

Modern filing facilities for all working editors and clerical staff.

- 
1. In each instance, communications specialists should specify needs and stipulate items desired.

Miscellaneous office supplies commonly used (staplers, rulers, pencils and other such items).

At least one special typewriter for preparing copy for multilith reproduction. Special ribbon required. Also, it should allow justification of lines to produce straight margins.

At least one double-lens reflex camera with electronic flash equipment for black and white pictures mainly, for news releases and publication illustrations.

One 35-mm. single lens reflex (SLR) camera with electronic flash equipment to make colored slides for teaching purposes.

One 35-mm. camera (SLR not required) for general slide production.

One photo-process camera, complete with lighting equipment and accessories for production of photo-plates for offset printing.

One photo-type composing machine to prepare copy for reproduction in offset plates.

One professional photographic enlarger and supplementary equipment for all sizes of negatives from 35-mm. up.

One slide duplicator, or copying attachment for SLR camera.

Developing tanks and trays (commercial size and quality).

Photo print washer, commercial.

Photo print drier, commercial.

All photographic supplies required.

Drawing tables and instruments for each member of the graphic arts section.

Miscellaneous art and design tools and accessories (scissors, knives, straight-edges, brushes, scales, curves, etc.).

35-mm. slide and filmstrip projectors.

16-mm. motion picture projectors.

Projection screens.

Flannel boards, or felt boards.

Opaque projectors.

Overhead projectors.

A mobile van or other vehicle for transporting portable exhibits and audio-visual equipment to rural areas. Should be supplied with a power generator for use in areas lacking electric service.

One broadcast quality tape recording machine, preferably completely portable, but adaptable to electric line operation if suitable service is available. Should meet standard broadcast requirements.

One or more ordinary tape recorders for production of audio-aids for teaching purposes.

Record players.

Lectern-type public address systems (transistorized and battery powered).

Field PA system incorporated into mobile unit.



Portable transistorized megaphones.

Recording tapes.

Tape de-magnetizer (eraser).

Tape editing equipment.

Motion picture film servicing equipment.

### *Equipping the Press*

The most costly step in terms of total investment for the new university information service will be equipping the print shop. The initial outlay for such items as printing presses, typesetting machinery and their accessories will be substantial. Here, again, it will be necessary to remember that service and replacement parts will most certainly be required. Moreover, as indicated in the discussion of costs of operation, supplies and materials are recurrent items in the operational budget of the department which amount to a sizable sum in a year's time.

The following list of items considered essential to a good university printing establishment is a composite based upon recommendations of several experienced and reliable individuals, including a committee named by the University Grants Commission (23) for the express purpose of compiling such a list.

1. An offset press suitable for beginning operations that will take up to 11 x 17 inches paper. Cost: Approx. Rs. 15,000
2. An offset press of next larger sheet capacity (17 x 23) to be added as production work increases Rs. 20,000
3. One medium size automatic platen press Rs. 20,000 up
4. One job press, hand fed (9 x 12) about Rs. 5,000

5. One automatic cylinder press (25 x 37)	Rs. 65,000 up
6. One linotype machine with standard type matrices	Rs. 98,000 up
7. One monotype keyboard and casting unit	Rs. 95,000 to 1,00,000
8. Type fonts and furniture for hand composition and makeup (In- clude English, Hindi and regional language, plus metal for monotype)	Rs. 50,000
9. Make-up (make-ready) tables @ Rs. 250 each	Four Rs. 1,000
10. Proof press	Rs. 750 up
11. Paper cutting machine	Rs. 3,000
12. Stitching machine	Rs. 1,500
13. Folding machine	Rs. 15,000
14. Punching machine	Rs. 500
15. Perforating machine	Rs. 500 up
16. Ruling machine (disc)	Rs. 8,000 up
17. Addressograph, complete with racks and plates	Rs. 8,000
18. Mimeograph (cyclostyle) machines each	Rs. 2,000
19. Bookbinding equipment approximately	Rs. 1,000
20. Varnishing machine (for coating covers, etc.)	approx. Rs. 400

Prices listed here are at best only approximations. An institution interested in purchasing such items as these will need to obtain names of dealers handling them (*see Appendix VIII*) and then inquire what prices prevail at the time.



## CHAPTER VIII

# Communication Arts Education

Attention is called earlier to the need for education in the communication arts for agricultural information service workers. This chapter explores some possibilities for such training, and suggests a program of instruction for a college or school of communication arts offering a bachelor of arts degree.

Graduates of such a school would be eminently qualified for information service jobs not only in agricultural universities but as agricultural information officers in all government services, as newspaper and radio reporters and editors, and as information and public relations officers for every type of business, industry or government agency.

Doctor Schramm (21) observes: "Trained persons are needed in a great variety of communication fields—information and development field officers, news personnel, broadcast and film engineers, printers, maintenance personnel, technicians, and others. This need is almost as universal in the developing countries as the need for capital, and the supply of trained persons usually runs far behind the provisions of channels.

"Ultimately any nation wants to train its own communication personnel, although it may still want to send some of its promising people abroad for experience. But it may be a long time before many developing countries have a sufficient supply of training institutions: schools of journalism, professional training for publishing, technical schools for broadcast and film engineers and technicians, a school for printing, and perhaps a center for advanced training and research in mass communication such as India is about to set up." (16)

Schramm writes further, "Increasingly in the economically well-developed countries, training has come to be conducted in the school of journalism. This is based on the belief that the essence of an enlightened profession is to have educated, ethically responsible men in it. Therefore, if the most essential craft training (in reporting, editing and the like) can be combined with a broad course of college or university study, and this experience set in a perspective of the history of human communication, freedom of speech and of the press, and the ethics and responsibilities of the communication profession, this would seem to be the basis for truly professional education. In most schools of journalism, the technical and professional work takes up 25% or less of the total curriculum. Sometimes it comes as a graduate year following four years of broad college study. In any case, the major part of the student's time is devoted to history, science, literature, and other subjects that will help him write with understanding of the world he lives in.

“We have been talking mostly about journalism training, because this aspect of communication training is more highly developed than others. However, it is only one of several important fields in which developing countries need trained communication personnel.”

#### *A Communication Arts Degree Program*

The suggested curriculum beginning on page 62 would provide an adequate basis for a bachelor of arts degree in communications with a special background suited to agricultural information service. By substituting courses the curriculum could be altered to give a background for home science information work. Similarly, students interested in science writing or technical writing in some other field could very well prepare themselves for such work by electing courses from other curricula which would give them the necessary background. (12)

There is no educational shortcut that will give a man the background, preparation and training needed for fully qualified performance in the communications field. Those who cut short the preparation automatically also cut short the qualifications of the person in preparation.

The curriculum suggested for this degree program draws on courses offered in several other disciplines in the university. Such interdisciplinary registrations normally cause no serious problems, if the registrar and the various college deans have their systems of recording enrolment and class schedules properly worked out and co-ordinated. The main problem involved in this case would be that of assuring that such departments existed and offered course work suitable to meet the needs of this particular course of study.

This is only one of several curricula which might lead to bachelors' degrees in the School of Communication Arts. For example, the school might also offer degree programs in languages and literature, in speech,

in audio-visual aids, in art (graphics: drawing and painting) and design. Each area would actually offer, therefore, more courses than would be required for a general degree in communication arts.

In the process of locating and engaging satisfactory teachers for such courses it might be necessary to make some adjustments, substitutions, or alterations in the curriculum suggested. Any such changes should be recognized as temporary, and something comparable to the suggested curriculum should be established as soon as possible.

**Suggested Curriculum  
for the degree**

**BACHELOR OF COMMUNICATION ARTS**

**First Year**

**1st term (trimester, or quarter)**

<i>Area</i>	<i>Course</i>	<i>Credit Hours</i>
Language	Punjabi I	3
Written Communication	Composition I	3
Physical Science	Chemistry I	4
Social Science	Sociology I	3
	Physical Education and N.C.C.	..
		13

**2nd term**

Language	Punjabi II	3
Written Communication	Newsriting	2
Physical Science	Chemistry II	4
Social Science	Psychology I	3
	Electives	2
	Physical Education and N.C.C.	..
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**3rd term**

Oral Communication	Oral Communication I	3
Written Communication	Reporting Practice I	2
Biological Science	Botany I	3
Social Science	Economics I	3
	Electives	2
	Physical Education and N.C.C.	..
		<hr/> 13 <hr/>

**Second Year****1st term**

Oral Communication	Oral Communication II	3
Written Communication	Reporting Practice II	2
Language	Modern Foreign Language I	3
Graphic Communication	Typography and Printing	3
	Electives	2
	Physical Education and N.C.C.	..
		<hr/> 13 <hr/>

**2nd term**

Language	Modern Foreign Language II	3
Oral Communication	Oral Communication III	2
Biological Science	Zoology I	3
Social Science	Social Problems Survey	3
	Electives	2
	Physical Education and N.C.C.	..
		<hr/>
		13
		<hr/>

**3rd term**

Language	Indian Literature I	3
Written Communication	Mass Media Methods	2
Written Communication	Editing and Copyreading	3
Physical Science	Geology I	3
Philosophy	Ethics	3
	Physical Education and N.C.C.	..
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		14
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**Third Year****1st term**

Language	Indian Literature II	3
Written Communication	Publications I	3
Oral Communication	Radio Announcing (or elective)	2
Social Science	History of India and SE Asia	3
	Electives	2
		<hr/>
		13
		<hr/>



**2nd term**

Language	Foreign Language Literature I	3
Written Communication	Advanced Writing I	3
Written Communication	Publications II	2
Oral Communication	News casting (or elective)	2
Social Science	World History	3
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		13
		<hr/>

**3rd term**

Language	Foreign Language Literature II	3
Written Communication	Advanced Writing II	3
Social Science	Governments of the World	3
Physical Science	World Regional Geography	3
	Electives	2
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		14
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**Fourth Year****1st term**

Written Communication	Feature Writing I	3
Oral Communication	Interviews, Panels & Forums (or elective)	3
Social Science	Economic System of the World	3
	Electives	4
		<hr/>
		13
		<hr/>

**2nd term**

Written Communication	Feature Writing II	3
Social Science	Economic Geography	3
	Electives	7
		<hr/>
		13
		<hr/>

**3rd term**

Language	Language and Communication	2
Written Communication	Magazine Writing	3
	Electives	8
		<hr/>
		13
		<hr/>
Total Credit Hours		159
		<hr/>

This curriculum is based on the trimester as the unit term. It is suited to the quarter system also. If the university uses the semester plan, it will be necessary to re-evaluate courses and revise the number of credit hours per term so that the total work suggested for 12 terms may be covered in eight.

**COURSE GROUPING BY AREAS****Language and Literature***Electives*

Punjabi I & II	Books and Men I & II
Modern Foreign Language I & II	(World Classics)
Indian Literature I & II	Folklore and Literature
Foreign Language Literature I	Humanities, I, II, III, & IV
& II	(Culture by Periods)
Language and Communication	

## Written Communication

Composition I  
News Writing  
Reporting Practice I & II  
Mass Media Methods  
Editing and Copyreading  
Publications I & II  
Advanced Writing I & II\*  
Feature Writing I & II  
Magazine Writing

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### *Electives*

Narrative Writing  
Short Story  
Principles of Advertising  
Advertising Copy and Layout  
Promotions and Campaigns  
The Novel  
Book Publishing  
Interpreting Contemporary  
Affairs  
Formation of Public Opinion  
Newspaper Management  
Magazine Production  
Play Writing

\*Includes Column Writing  
and Editorial Writing  
with agricultural or home  
science bias.

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## Miscellaneous

Physical Education and N.C.C.

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## Biological Science

Botany I  
Zoology I

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### *Electives*

Entomology  
Forestry

## Oral Communication

Oral Communication I\*  
Oral Communication II  
Oral Communication III

Radio Announcing  
Newscasting  
Interviews, Panels

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### *Electives*

Debate  
Drama  
Pageantry  
Story Telling  
Speech Therapy  
Use of Electronic Sound Devices

\* OC I is primarily oratorical  
practice for voice development;  
OC II is primarily extemporane-  
ous and "after-dinner"  
speaking; and  
OC III is a study of special  
techniques in oral communi-  
cation:

Illustrated talks, demonstrations,  
discussions, conferences, drama-  
tic interpretation, parliamen-  
tary procedure, puppetry and  
pageantry.

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## Social Science

Sociology I  
Psychology I  
Economics I  
Social Problems Survey  
Ethics  
History of India & SE Asia  
World History  
Governments of the World  
Economic Systems of the World  
Economic Geography

**Graphic Communication**  
Typography and Printing

Chalkboards  
Projectuals  
Models

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*Electives*

Photography I & II  
Printing Production  
Press Management  
Design and Layout  
Posters and Displays  
Exhibits Practice  
Presentation Techniques  
Flip charts  
Flannelgraphs

**Physical Science**

Chemistry I & II  
Geology I  
World Regional Geography

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*Electives*

Meteorology  
Astronomy I  
Man's Physical World

*A Flexible Program*

The best possible preparation in the communications arts includes studies which will provide the student a broad education in the basic sciences and humanities, plus specialized courses which will prepare the candidate for a professional working career. The suggested curriculum gives a strong basic program in courses essential to such preparation, yet allows flexibility in selection of electives to give the student opportunity to build in his area of special interest.

Some classes will be largely lecture and/or recitation, but many will involve the extensive exercise of skills and techniques learned. Writing and speaking courses, particularly, will require far more hours of outside preparation than the student will ever spend in the classroom. Studies in biological, physical and social sciences may prove to be less time consuming for the student, although they will require extensive reading outside the classroom, too.

### *Curriculum Requires Student Effort*

This study program for a degree in communication arts is geared to the concept that academic achievement is the responsibility of the student. He must exert himself to learn. A student who studies a writing course, for example, will write, and write, and write, and write, until his instructor feels he has learned to do so to the best of his ability. Scholastic recognition is a reward for personal academic achievement by the student, and it comes only after completion of work of acceptable quality. He will never accomplish this by sitting and listening, or reading and memorizing.

### *Language Use is Basic*

Reading, writing, and conversational proficiency in both Hindi and English would be absolutely pre-requisite to admission to this curriculum if it were offered at Punjab Agricultural University, or any other such institution in India where English is the basic medium of instruction. Students having special higher secondary school credits in Punjabi (in other states in *their* local languages) might apply to take an examination which, if passed with average or better grades, would allow them advanced credit in Punjabi I. In such a case, they might elect to take some other course in the language sequence, or a free elective from one of the other disciplines approved for this curriculum.

The suggested courses in the languages and literature provide the students with a functional knowledge of the languages chosen. It is highly desirable to know at least one language other than that commonly spoken in one's own country. These courses are intended, therefore, to take the students from the very elementary understanding of a foreign language, its grammatical peculiarities and vocabulary, through a simple conversational capability. In addition, the students study the literature of the people whose language they have learned.

If students are not interested in taking the three courses in oral communication specifically recommended for prospective radio journalists and performers, or if they do not have suitable voices or meet other requirements prescribed for such courses, they may elect to take courses from the electives offered in either written or graphic communications as their specialized areas.

### *Practical Experience Highly Desirable*

Students will benefit from practical experience. Instructors may be able to arrange with potential employers, government agencies, private industry, or others to take students for summer employment. Perhaps it will be possible to work out an arrangement under which students may go to some industry or other employer and work for one trimester as a part of their regular academic program. In such cases the curriculum could be adjusted and certain courses eliminated, and equivalent credit allowed for the work experience.

Another possibility for practical experience is development of student publications. All students could be required to write, edit, or otherwise participate in the actual production of student newspapers, journals, and other publications. The more advanced students could be employed in the production of university publications, or in other information services, such as the University News Bureau. This would provide opportunity for practical experience and at the same time allow students needing financial assistance an opportunity to earn as they learn.

### *Post-Graduate Study Offers Good Alternative*

Many persons with native talent for communications work do not have an opportunity to specialize in such courses where they do their undergraduate work. In such cases, if students have good general academic backgrounds, bachelors' degrees in some area of the

basic sciences and humanities, and can meet whatever requirements the School of Post-Graduate Studies may prescribe for admission to work toward a master's degree in the university offering Communication Arts degrees, it should be possible for those interested in careers in this field to qualify in this way.

The Indian Institute of Mass Communication (16) is organized to provide training of this character. Admissions are allocated mainly to candidates deputed by agencies or departments of the Union government. Each state is allowed to send deputees, also, but there is not space enough in the institute in its present location to accommodate one from each state at the same time. It will be a rather slow process, therefore, to build up any number of potential agricultural information service workers in this way.

The prospect would be much more promising if somewhere in this part of the world some progressive university seized upon the opportunity to pioneer in this field by establishing a full-fledged School of Communication Arts.

	I
	II
	III
	IV
	V
	VI
	VII
	<u>VIII</u>
CHAPTER	<u>IX</u>

## SUMMARY

The purpose of this book is to guide those interested in and responsible for the planning, development and operation of agricultural university information services. This communication job involves utilization of specially trained human talent and skills. It also involves a broad understanding of human relationships, social and economic needs and values, and all the resources essential to agriculture and its related activities.

Chapter I is a discourse on the nature and importance of communication and its relationship to the agricultural university. Wide dissemination of knowledge is vitally important in a developing society. Nations trying to shorten the time span required to move from a position of inadequacy and ineffectiveness in many aspects of social, political and economic life to a position of relative equality with the more advanced countries find effective communication with all their people highly essential. All human resources must be channeled into productive effort if a nation is to make fastest possible progress.

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Agricultural universities are designed to help the people in their efforts to improve. To do this they must communicate with the people. This is the function of a good information service. It provides the channels through which the university may disseminate to the people the knowledge gained through research and study.

The role of the communicator in the new agricultural university information service is the subject of the second chapter. This is followed in Chapter III by some specifics with respect to the communications job. Here are the objectives and responsibilities of communicators, and some suggestions concerning how they may most effectively approach their jobs. This chapter also indicates the pattern found by experienced agricultural information service workers to be most practical for getting such a service on its way.

Chapter IV outlines the qualifications and training needed for the various communications specialists. It is important to realize that while some individuals may be born with a talent for communicating, many others are not. Certainly the latter, and most of the former will benefit from training in the use of this talent. Therefore, in selecting individual staff members it is necessary to examine background, training, and experience to find persons who are best qualified for these important jobs.

It is desirable to provide some opportunity for personal and professional improvement through in-service training or time-off-for-study plans. It may be found advisable to arrange for study tours to other countries where the communications staff may observe information services performed by similar institutions under established programs in experienced hands.

Chapter V gives suggestions for the operation of the information service, stressing the importance of a well-

conceived plan for financial support and fiscal management by the university officials. It is critically important that those responsible for such aspects of university operation realize the relatively heavy investment a full-scale information service requires. Also important is the understanding that materials and supplies for a university printing establishment and an audio-visual department are not only relatively costly in the first place, but that they need replacement and service. These are both rather significant budget items.

Housing and equipment, the subjects of Chapters VI and VII, both require considerable thought and planning by university officials and the communications staff. The suggestions offered are intended for practical guidance only, and not as the "last word" or the "only possible way" of meeting the information service needs. If they prompt careful thought and planning on the part of those who read this book in their effort to inform themselves before proceeding with their specific developmental plans they will have served a very useful purpose. In fact, they will have accomplished all they are expected to accomplish.

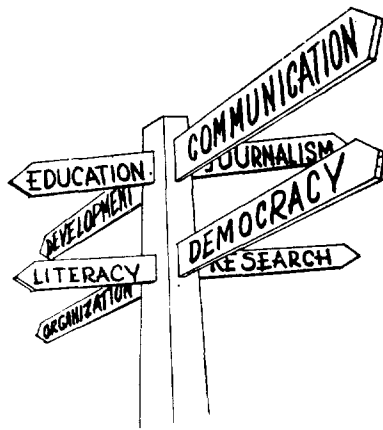
Chapter VIII treats in detail the broad needs for education and training in the communication arts.

The references cited in the list beginning on page 77 give those interested in reading further on this subject a cross section of the literature available. This list is far from exhaustive. However, the reader will find in some of these sources extensions of many of the thoughts incorporated in this book. In others, they will find discourses on related subjects.

Finally, the appendices beginning on page 83 give a number of working organizations and other practical operational information from existing agricultural university information services. Here, too, are some suggested plans which may prove helpful to those considering such organizations.

The list of dealers and distributors supplying printing and related equipment and supplies in India will be most helpful to those wanting to get information about such articles. Those who have no such reference list literally waste weeks of valuable time trying to get such information.

It is the sincere hope of those responsible for this publication that it not only will provide the inspiration and guidance needed to set up and conduct an adequate and effective information service for those interested in doing so, but also that it will be helpful in the practical day-to-day operation of such services.



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## THE APPENDICES

A basic pattern normally evolves from experience in the organization and administration of a professional institution. This happens in information service work.

The appendices which follow include several variations on such a basic organization pattern. The latter will be seen in the positions which recur from one organization to another and are common to all.

Those which occur in only one, or very few, of the flow charts represent positions or services which are added to the basic organization to fit special conditions or needs in some particular situation.

The plans cited here are intended only to be helpful to those planning information services in agricultural universities. Those making such plans will, of course, establish their own versions of the basic communication organization. They will also add to that those other positions which they consider essential to the service they wish to provide to their particular public.

There is nothing sacred about any such organization or plan except to the individual who suffers the birth pangs of bringing it into being. To anyone else such a plan is most valuable if it is flexible and adaptable to conditions and needs which vary from one institution, or from one segment of society, to another.

The examples which follow provide ample variety to suit almost any possible situation.

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## Appendix I

### Proposed Staff Organization for Agricultural Information Office in Jordan

The University of Illinois Extension Editor and his colleagues studied the situation in Jordan before making suggestions to be included in a contract between the University of Illinois, U.S.A.I.D. and the Government of Jordan. This is a verbatim copy of the organization proposed. The suggestions were made specifically to suit the needs and situation in Jordan. It was not a proposal for a university information service.

Some of the suggestions might be quite suitable to a university information organization. No doubt, some would be quite suitable for other countries, but not all would apply equally well in all situations. Administrators should consider all points carefully before either adopting or discarding them.

Any given institution would probably find most suitable an adaptation in which they pooled some points from this proposal with some from other sources.

*The Author*

## I. Administration

### A. Functions

1. Coordinate all information service and training activities of the office.
2. In cooperation with the RDD Director and others, establish staff and operational policies and procedures.
3. Serve as information liaison with RDD Director, Minister of Agriculture, Research Director, and with all other groups and institutions served by the office.
4. Serve as liaison with all media channels.
5. Administer distribution of publications and other information materials.
6. Administer translation unit if such a unit is deemed necessary.

### B. Staff

1. Director, Agricultural Information Office.
2. Secretarial Staff (pool).
3. Distribution Clerk.

## II. Publications Section

### A. Functions

1. Help write, edit, and produce all extension publications, leaflets, reference units, and other extension printed and mimeographed materials.
2. Edit and produce research publications for the Division of Agricultural Research.
3. Assist with the editorial production of agricultural teaching materials for the Ministry of Education.
4. Service the publications needs of the various institutions of the Ministry of Education.

### B. Staff

1. Publications Editor.
2. Assistant Publications Editors if and when needed.

### III. Mass Media Section

#### A. Functions

1. Develop and maintain continuous service of programs and materials for the Hashemite Broadcasting Service.
2. Initiate press services for newspapers and other publications which are distributed to farmers.

#### B. Staff

1. Mass Media Editor.
2. Assistants if and when needed.

### IV. Visual Aids Section

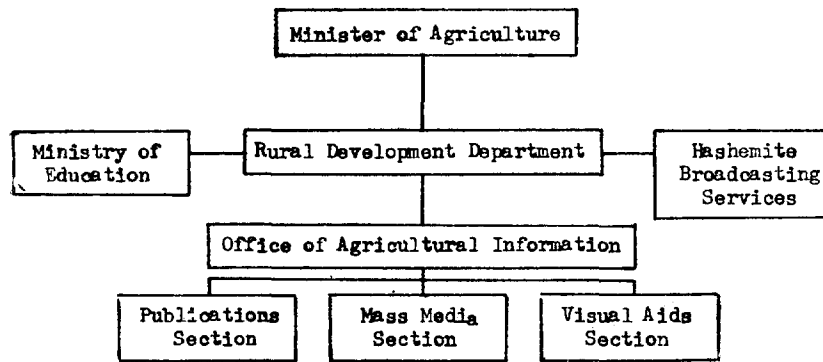
#### A. Functions

1. Produce photography, art, and other visual materials for the national and field staff of the RDD.
2. Service the visual education needs of other divisions of the Ministry of Agriculture and the Agricultural Education Department of the Ministry of Education.
3. Produce educational exhibits for RDD and other divisions of the Ministry of Agriculture.

#### B. Staff

1. Visual Aids Specialist (Head of Section).
2. Photographer if funds available.
3. Artist if funds available.

## ORGANIZATIONAL PLAN



### *The "Training" Function of the Agricultural Information Office*

1. It should be recognized that the Agricultural Information Office has two primary functions: (1) The development and production of information materials and services, and (2) the training of extension workers and other agricultural leaders in the effective use of information methods.
2. This training function must be the responsibility of the total staff of the agricultural information office under the direction and coordination of the director or head.
3. The training should include the sponsorship of both formal and informal workshops and seminars for extension and other workers and the preparation and production of training materials for use by these workers. It should include all areas of information work—writing, speaking, photography, exhibits, displays, and all other forms of visual aids. In addition, there should

be considerable on-the-job personal-contact training of extension workers by the staff of the agricultural information office.

4. In general, the training functions of the office might take as much as 25 to 30 per cent of the staff time.

## Appendix II

This is a brief description of the organization and functions of the staff of the Department of Extension Teaching and Information at Cornell University College of Agriculture, Ithaca, N.Y., U.S.A. This is one of the largest and best agricultural information services in the United States. This is saying a good bit, for there are many excellent agricultural communication set-ups in the United States land grant college and university system.

One of the main reasons for including this information about the Cornell University department is that while it is a large and very good department, including academic instruction in agricultural journalism and communications arts as well as the usual "services" performed by such a department, it was not given its present organizational form until almost a half century after the university set up its first information service. This is to say that even the best of the land grant school departments started small and grew as their universities grew and the demand for their services increased.

Another very important reason for including this report on the Cornell operation is to show the nature of the services performed by the various sections of the department.

*The Author*

## **DEPARTMENT OF EXTENSION TEACHING AND INFORMATION**

**1966**

### **Organization**

The Cornell University Board of Trustees created the Department of Extension Teaching and Information as a joint department for the Colleges of Agriculture and Home Economics in 1945. Its basic purpose is to coordinate the various communication activities of the colleges, many of which operated for nearly 50 years as separate units. Today the department includes press, radio, television, visual aids, and publications sections, and courses in journalism and public speaking.

Members of the department are engaged in teaching, extension, and research. Their efforts in these three areas are directed toward helping others communicate more effectively. Research and other educational information is disseminated through the mass media of communications, a function basic to the successful execution of the colleges' responsibilities in the conduct of their programs and policies. The department works closely with the deans, directors, and co-ordinators of the Colleges of Agriculture and Home Economics and all departments.

### **Resident Teaching**

The department offers 15 courses in communications. During the 1965-66 academic year, 930 students were registered in these courses. Approximately 40 undergraduates have chosen agricultural journalism as their major field of study.

Enrollment in the department's courses has grown and the curriculum has been revised in recent years,



reflecting changing interests and needs of students. Students today are receiving an increasing amount of training in the theories of communication as well as techniques. In the past decade, an annual average of 750 students took course work in the department. The most recent three-year average totalled 900 per year.

### **Extension Activities**

Each section plays an important role in interpreting the results of research in many ways to many audiences—the department's principal extension function. In addition, it works closely with county extension agents, preparing materials for their use and providing training in communication skills essential to carry out their programs in New York State.

The Press Section supplies news material from the colleges to 85 daily newspapers and approximately 350 weekly newspapers in the state. It also prepares items for national and regional publications, including many farm, trade and consumer magazines, and wire services. This section also provides press coverage for special on-campus meetings related to agriculture and home economics. Staff members in this section prepare releases for use by extension agents, primarily for newspapers and the Farm and Home News magazines in 56 counties. They also carry out communications training programs with these agents.

The combined Television-Radio Section provides information and material to extension agents and directly to television and radio stations throughout the state. Items for use on radio are supplied to the majority of agents. Radio news briefs go twice weekly to more than 100 stations. In 1965, more than 3,200 tape recordings were sent to 25 stations.

The department assists 125 extension agents with regularly scheduled television shows over commercial

and educational stations, and its specialists provide both with visual materials, including photographs, slides, art work and film clips. In cooperation with specialists from other departments, this section produces television non-credit short courses in which farmers and home-makers enroll.

A new Television Film Center was created in the department in 1962. This Center produces educational films primarily for television stations. Secondary uses through the film library include schools, civic clubs, extension agents and others. All of the state's 29 TV stations use some of the productions from the Center and 14 use regular features each month.

The Visual Aids Section produces all types of photographic work and exhibits for the Colleges. Members of the staff are also skilled illustrators and trained in other phases of art production. The number of black and white negatives produced by the department's photographers amounts to approximately 3,000 per year and in 1965 reached 48,000. During 1965, five major motion pictures were produced and 13,417 photographic prints were made, plus 13,476 Kodachrome slides, 22 exhibits, and scores of posters, charts, and graphs. Much of the work done by this section, including the making of slide sets and motion pictures, is used for resident teaching and research as well as extension activities.

The Publications Section edits and prepares for publication research, extension, and general publications of the colleges. The number of new and revised printed publications totals approximately 150 each year and range in size from leaflets to books. The editors and illustrators work closely with the authors in preparing the manuscripts, making illustrations, and designing publications.

The Distribution Section maintains several services essential to the extension activities of the colleges. It handles official mailings of the productions of other sections, operates a film library with more than 1,000 motion pictures shown more than 15,000 times, to a total of 615,000 persons. In addition the library has more than 200 slide series and lends projectors for classroom and extension work. Mailing lists with 60,000 names and an addressograph service are also maintained by this section of the department for the use of the two colleges. The Mailing Room keeps a stock of about 1,000 different publications and distributes more than 2,000,000 copies of Extension and Experiment Station publications annually. The newest series of publications involves international agricultural development.

The Communications Training Committee of the department plans and conducts extension short courses in communication. In its training programs, the committee uses experienced personnel from several departments and from the extension service field staff.

In recent years the department has produced several communication training publications. Among these are the printed ETI Series:

1. How to Improve Your Circular Letters
2. Speaking of Television for County Extension Workers
3. Television Workshops for Extension Workers
4. Do's and Don'ts of County News Layout
5. Speaking of Color for Extension Publications
6. Notes for the Guidance of Authors of Extension Bulletins
7. How to Make Your Extension Television Programs More Effective
8. Make Agricultural Journalism Your Career
9. Successful Communications Through Coordination
10. May We Help You?

11. TV Handbook for Extension Workers
12. Working with the Press
13. Television and the Communication Process as Related to the Extension Program
14. An Evaluation of County Agent Radio Programs
15. Writing and Producing Newsletters.

### **Research**

The Department has conducted communication surveys over the years, but a formal program of communication research was started in 1960 supported by funds from federal, state and industry sources. Studies so far have included publications and television.

Published reports on these projects are:

*Communications Research Bulletin* 1, "Attention and Retention Values of Color," October, 1960.

*Communications Research Bulletin* 2, "Readership of Agricultural Publications in Relation to Length," February, 1962.

*Communications Research Bulletin* 3, "Recognition and Recall Values of Color," October, 1962.

*Communications Research Bulletin* 4, "Informational Needs of an Industrial Audience," November, 1963.

*Communications Research Bulletin* 5, "Audience Evaluation of Films Produced For Television," August, 1964.

*Communications Research Bulletin* 6, "Distribution of Sales Publications Through Super Markets," March, 1966.

## Professional Personnel

### *Press Section*

\*LeRoy M. Carl, Asst. Prof. and Head of this Section  
Robert J. Ames, Assoc. Prof.—News Services to  
County Agents  
Yong Kim, Press Information Specialist  
Miss Katherine E. Barnes, Press Information  
Specialist  
Mrs. Eleanor Foster, Press Information Specialist  
Owen VanBuskirk, Special Writer  
Claude Walbert, Special Writer

### *Visual Aids Section*

\*Elmer S. Phillips, Professor and Head of this  
Section  
Richard G. Turner, VA Specialist—Motion Picture  
Producer  
George A. Lavris, VA Technologist—Photographer  
John W. Church, VA Specialist—Photographer  
Charles W. Hurlbut, VA Technologist—Art Studio  
Edward Coyle, Illustrator  
  
Lester H. Baldwin, Illustrator

### *Television-Radio Section and TV Film Center*

James E. Lawrence, Assoc. Prof. and Head of this  
Section  
\*Louis W. Kaiser, Assoc. Prof.—Radio  
Gustav (Skip) Landen, TV Film Specialist—TV Pro-  
ducer  
David S. Glidden, TV Film Specialist—Scriptwriter  
William C. Miller, TV Film Specialist  
David Nurmi, Radio Specialist

*\*These faculty members also teach courses in their special  
fields of interest.*

### *Publications Section*

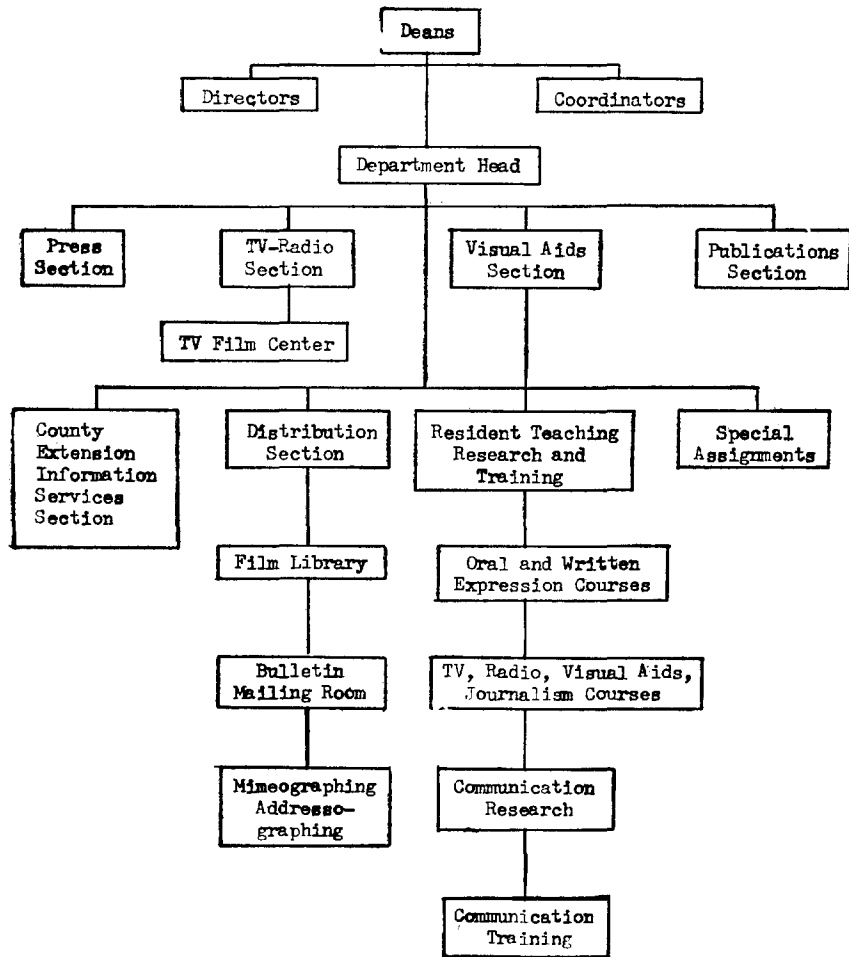
Miss Dorothy C. Chase, Research Editor  
Miss Louise Boyle, Agricultural Extension Publications Editor  
James K. Estes, Graphic Designer  
James A. Mason, Graphic Designer  
Mrs. Patricia Short, Home Economics Publications Editor

### *Faculty Resident Teaching Staff*

Chester H. Freeman, Assoc. Prof.  
Russell D. Martin, Assoc. Prof.  
Charles C. Russell, Assoc. Prof.  
William B. Ward, Professor and Head of Department  
Mrs. Emilie T. Hall, Asst. Prof. and Home Economics Editor  
Ronald Campbell, Asst. Prof.  
Francis A. Lueder, Teaching Associate  
Mrs. Natalie G. O'Connor, Instructor

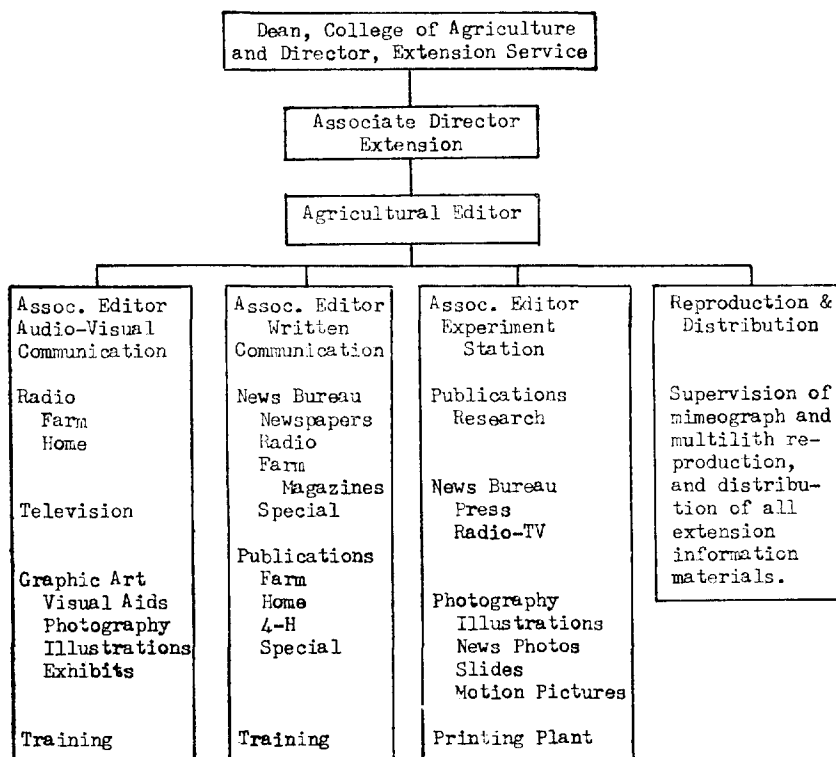
<b>Course Number</b>	<b>Course Title</b>	<b>Enrollment</b>
		<b>1964-65</b>
100	Oral and Written Expression (3 hours per term, throughout the year, primarily for two-year students)	.. 173
301	Oral and Written Expression	.. 274
302	Oral and Written Expression (Second year)	.. 58
401	Advanced Oral Expression	.. 5
215	Introduction to Mass Media	.. 99
315	News Writing	.. 20
312	Agricultural Advertising and Promotion	73
313	Writing for Magazines	.. 35
310H	Publication: The Arts of Writing and Printing	-- 14

220	Radio Broadcasting and Telecasting ..	65
422	Television Production and Programming	21
430	Photography ..	31
431	Visual Aids: Their Scope, Preparation and Use ..	38
495	Undergraduate Research ..	4
501	International Communication ..	20
	Total ..	<hr/> 930



### Appendix III

The Ohio State University, where the author is employed, has a medium sized agricultural information service staff. The organization looks like this:



The staff at The Ohio State University includes the top information service administrative officer, called the agricultural editor; one associate editor in charge of audio-visual communications; one in charge of written communications; and one in charge at the Ohio Agricultural Experiment Station in Wooster, 90 miles from Columbus where the OSU main campus is located; a supervisor for the mechanical reproduction and distribution unit which includes a half dozen technicians and a clerical staff in the mailing room; and an assistant



editor for each of the following: farm radio, home economics radio, television, visual aids, and home economics publications.

In addition, the staff includes two technical assistants in graphic arts and visual aids, one photographer, and four editorial assistants—one each for farm radio, home economics radio, television, and the news bureau. A student, employed part-time, cares for the film library.

The office at OSU employs six women secretaries, clerks, and typists.

At the experiment station in Wooster, besides the associate editor, the editorial and printing department has one assistant editor working on public relations and news bureau assignments, two photographers, a press manager, and several technicians and office workers.

The entire professional information service staff at Ohio State totals 15, with about a dozen technicians, a half-dozen assistants, and an office and clerical staff of 12 to 15. Each professional staff member is a "working member" in that he or she writes, edits, prepares broadcast script and presents programs either on radio or television or does other similarly productive work. Each is also to some degree an administrator in that he or she supervises the work of one or more assistants, technicians, or clerical helpers.

The agricultural editor has a large amount of administrative responsibility, plus a quite heavy load of writing and editing duties. The associate editors and the supervisor of the duplicating and distribution facility all have considerable administrative responsibility, too, delegated to them by the agricultural editor to whom they are directly responsible.

All staff members are specially trained and highly qualified for their work. Even the technicians have

bachelors' degrees in their particular fields. Some of the assistant editors have masters' degrees, as do all the associate editors and the agricultural editor.

*OSU Extension Information Guidelines*

1. This project has two primary responsibilities:
  - a. To conduct a state-wide information program in support of extension objectives;
  - b. To assist other extension workers in their teaching efforts.
2. Editors and technical assistants are professional extension workers. As such, they are expected to prepare and carry out their own plans of work within the framework of the Information Project's objectives and goals.
  - a. Because of their part-time employment by the College Dean's Office, the technical assistants must perform other duties and functions which are not self-determined according to this concept of professionalism.
3. All personnel assigned to this project are employees of the University, College, and U. S. Department of Agriculture as well as the Ohio Co-operative Extension Service. Under the present organizational structure, they should *expect* to be called upon to perform tasks which are not entirely extension obligations.
  - a. Many College activities such as Career Days and Short Courses are now considered within the scope of our extension work.
  - b. Providing informational support to USDA and other federal programs is a part of an extension worker's job. This includes visits of the Secretary of Agriculture or other federal officials to Ohio. All such assistance, of course, should be conducted within the educational concept of Extension work.

4. An extension editor is more than a reporter, broadcaster, writer, editor, artist, or photographer *for* other extension staff members. Each editor has an educational information program of his own. He is expected to carry it out. To do so, he must put his own program *ahead* of the numerous and varied requests made of him by other extension staff members.
  - a. Every request for assistance must be evaluated on this basis. Ask yourself these questions:
    - (1) If I do this, will it benefit my own program? Will it help me accomplish my goals and objectives?
    - (2) Is this a proper job for me to do? Can the agent or specialist do it better himself? Should he? Is there a better, more suitable, or more efficient place to have it done? For example, a request for photographic assistance: Should the OSU Photography Department do it? Should it be done by OAES photographers? Should the agent or specialist take his own pictures? Could a newspaper or other professional photographer take the pictures? Similar questions can be asked about requests for special magazine feature articles, special radio or television broadcasts, tapes, or films, slides, etc.
    - (3) If I do this, will it interfere with my own planned work schedule? *Don't be afraid to turn down requests as long as you can justify your refusal.*
- . The Extension Information Project is not obligated to provide exclusive service to any publication, radio station, television station, farm organization, or other extension staff member. Every request for exclusive or special assistance should be evaluated by the criteria above, *plus*

- a. Can I do this job so that it will serve more people?
  - b. Will these slides, or this news article, or this radio tape be useful to others, too?
  - c. Can I justify limiting my efforts and time to this request in view of the many other extension needs for special service?
6. Sometimes it is desirable to provide exclusive service to a magazine, newspaper, radio or TV station, farm organization, or extension staff member. When this decision has been made, the exclusive nature of the assignment must be honored. There should be a clear understanding, however, that once an exclusive story is released or a special tape is prepared, the subject matter becomes available for general dissemination. First reports of new research are the prerogatives of the research worker and the research institution concerned.
7. Personnel of this project will work as a team. Specialization does not replace the obligation to contribute to the accomplishment of project objectives and goals in any way possible. All editors are news reporters; all editors are photographers; all editors should be familiar with visual aids equipment; all editors should be able to advise other extension workers about informational resources available.

Prepared by Fred I. Jones  
October 12, 1963.

*(Mr. Jones is agricultural editor and head of the Extension Office of Information and Educational Aids at Ohio State University.)*

## Appendix IV

The information service at the University of Nevada in the U.S.A. is an example of an extremely small operation by contrast with that at Cornell, Illinois, Wisconsin, or even Ohio. The Nevada staff consists of three professional communications specialists. The Charman of the department is designated as the agricultural editor. The other two members are called simply information specialists.

Such titles of course do not reveal the nature of the work these specialists do. Actually, there is probably considerable overlapping in their performance of various kinds of work, because more than one does writing and editing, all do some photography, and all may from time to time share in other duties.

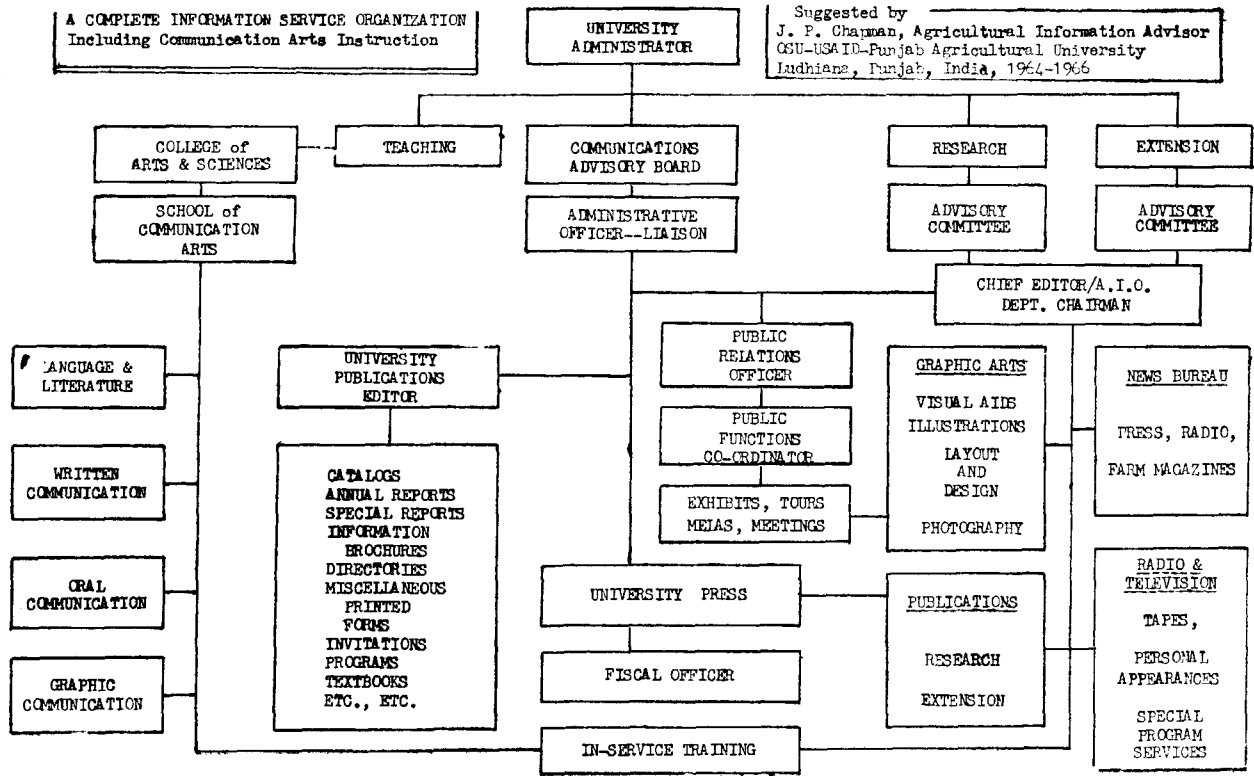
But, the sum of their efforts is that they produce teaching aids for their extension specialists, some radio program materials, some publications, and some newspaper and farm magazine releases. In this instance, as in the case of other states having relatively small staffs in communications work, the agricultural editor and the university administration have agreed on the essential information services and those which the university should and can provide, and the staffs are employed for those services.

One state does not feel compelled to maintain a large staff of communications experts and provide an exhaustive information service merely because some other institution is doing so. This sort of thing is generally geared to needs and to the resources available to support the program desired.

Efficiency is a key work in organizing and maintaining such a service. This applies to personnel as well as fuctions. Every effort is made to avoid taking on or retaining any non-essential individual or service.

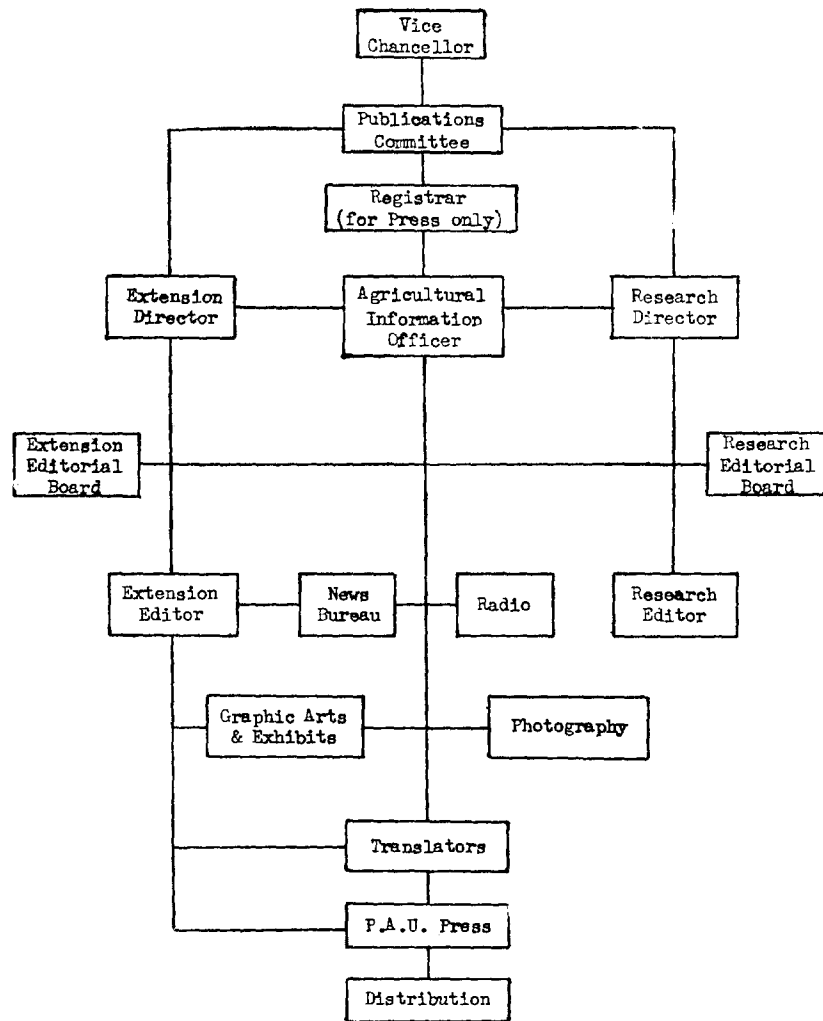
**A COMPLETE INFORMATION SERVICE ORGANIZATION  
Including Communication Arts Instruction**

Suggested by  
J. P. Chapman, Agricultural Information Advisor  
CSU-USAID-Punjab Agricultural University  
Ludhiana, Punjab, India, 1964-1966



Appendix VI

Present P.A.U. Information Organization



## Appendix VII

Preparatory to the writing of this manual the author visited four of the other agricultural universities in India. He talked to both American (USAID/University Contract) advisors and the Indian staffs regarding their plans for developing information services at their respective institutions. Some were some time away from a real need for such a service. Others were getting close, and some were actually at the point where they should be doing some of the early stage information work.

The staff of the University of Agricultural Sciences at Bangalore had done some planning on a proposed information division. They had delineated the organization and functions for a beginning operation. Their organizational chart showed the dean as the top level officer.

They had outlined the duties of the individual editors and the committees involved in the work of the division as follows:

### *Publications Council*

- a. Will consider the annual programme of work
- b. Will approve estimates of financial requirement.
- c. Will ensure implementation of the programme

### *Technical Committee*

- a. Will draft the annual programme of work
- b. Will prepare the financial estimates
- c. Will draw up a calendar of action
- d. Will report the progress of work

### *Chief Editor*

Will be the officer in charge of the publicity work in the university, under the Administrative Officer. He will exercise control over the artist, photographer, press, etc.

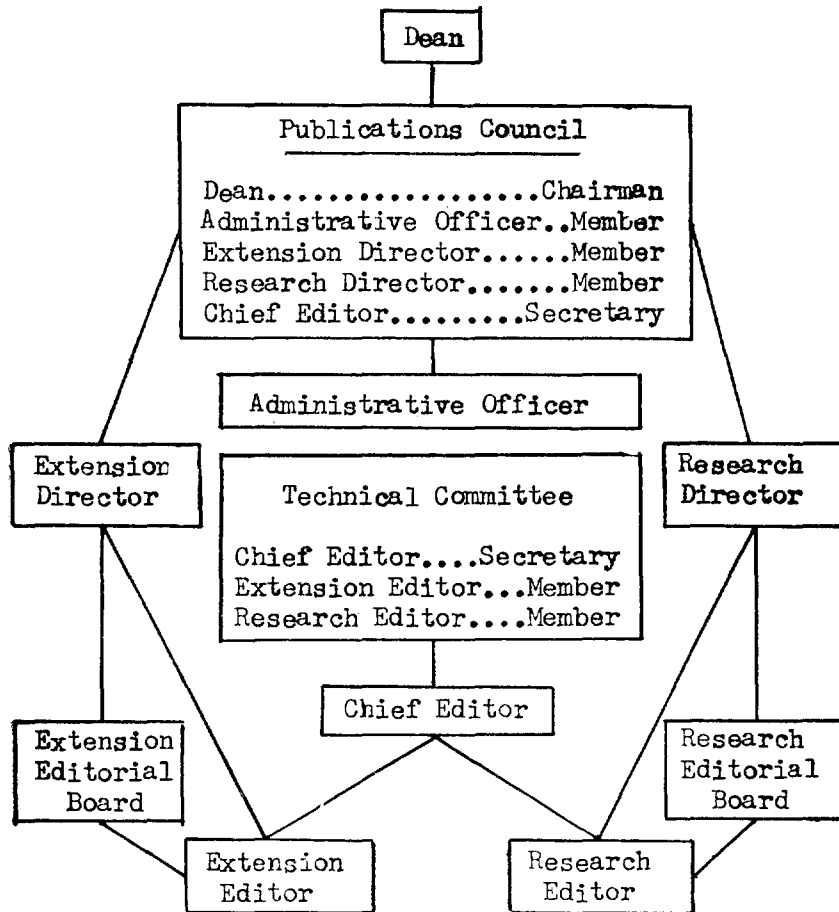


*Extension Editor*

Will be the officer under the Director of Extension to collect and select extension material for publication, process the material, design various publicity material and when ready to utilize them. He will co-operate with the Chief Editor on all technical matters.

*Research Editor*

Will be the officer under the Director of Research to collect and select material for publication, process them and when ready to utilize them. He will co-operate With the Chief Editor on all technical matters.



In describing the work of the department, the University administrators had outlined five general areas of activity: (1) Public relations material covering the functions, programmes, accomplishments of the University for the information of the governing bodies, legislative bodies, financing agencies and general public; (2) Academic material including calendar, incentive schemes, examinations, results, vacations, etc., for the information of the student population and teaching faculty; (3) Research material consisting of technical programmes, project reports, scientific papers, and compilations for the purpose of record, inter-change of findings and support of extension work; (4) Extension education material such as booklets, folders, pamphlets, charts, processed research findings for the use of extension personnel as well as the farming community; and (5) General publications like text-books, original works, and commercial issues.

## Appendix VIII-A

### Dealers and Distributors of Printing Equipment and Supplies in India

M. G. Kamath, Director, Farm Information Unit, Directorate of Extension, Ministry of Food and Agriculture, New Delhi, prepared this list.

*Letter Press Printing Machines, Paper Cutting Machines, Stitching and Binding Machines, Automatic Folding Machines, Offset Printing Machines, and Print Shop Accessories.*

1. M/s. Graphic Machinery & Appliances (P) Ltd.  
3, Chittaranjan Avenue, Calcutta-13.
2. Indo-Europa Trading Co.,  
1390, Chandni Chowk, Delhi-6
3. Standard Type Foundry,  
Chowri Bazar, Delhi
4. Linotype Machinery Ltd.  
14, Madan Street, Calcutta-13
5. M/s. J. Mahabeer & Co., (P) Ltd.,  
Netaji Subash Marg, Delhi-6
6. M/s. Manubhai Sons & Co.,  
Chowri Bazar, Delhi
7. Eurasia Trading Co.,  
Chowri Bazar, Delhi
8. Vickers India (P) Ltd.,  
Killick Bldg.,  
Home Street, Bombay-1
9. Standard Type Foundry (P) Ltd.,  
Sachdeva Mansion,  
4/5B, Asaf Ali Rd., New Delhi
10. Indo-European Machinery Co.,  
(P) Ltd.,  
Chandni Chowk, Delhi-6
11. Monotype Corporation Ltd.,  
8, Church Street, Bangalore
12. M/s. Express Printing Service.,  
Rattan Building,  
Prof. Manekroaj Rd., Baroda-1
13. M/s. East Asiatic Co. (India) (P) Ltd.,  
Asaf Ali Road, New Delhi
14. M/s. Beekay Industries (India)  
Agra Road, Aligarh, U.P.

*Paper*

1. M/s. Banerjee (P) Co.,  
Banarjee Building,  
Asaf Ali Road, New Delhi
2. M/s. Delhi Paper Trading Co.,  
685, Chilta Gate,  
Chowri Bazar, Delhi-6
3. M/s. Dhoomimal Ram Chand  
8A, Connaught Place,  
New Delhi-1
4. M/s. Jai Dayal Kapoor & Sons (P)  
Ltd.,  
Chowri Bazar, Delhi-6
5. M/s. Janta Paper Mart  
2573, Chowri Bazar, Delhi-6
6. Mohan Lal-Harkishan Lal  
Chowri Bazar, Delhi-6
7. Oriental Paper Co.  
Paperganj, New Delhi-1
8. Ram Nath & Sons  
Chowri Bazar, Delhi-6
9. U.P. Paper Corporation (P) Ltd.,  
902, Chowri Bazar Delhi-6
10. Eurasia Trading Co.,  
Chowri Bazar, Delhi-6

*Offset and Letter Press Inks*

1. M/s. Standard Type Foundry  
Chowri Bazar, Delhi-6
2. M/s. Modern Printer's Store  
Chowri Bazar, Delhi-6
3. M/s. Eurasia Trading Co.,  
Chowri Bazar, Delhi-6
4. J. Mahabeer & Sons (P) Ltd.,  
Netaji Subash Road, Delhi-6
5. M/s. Ram Lal Kapur & Sons (P) Ltd.,  
Nai Sarak, Delhi-6
6. M/s. Raghubar Dayal Pannu Lal  
Chowri Bazar, Delhi-6
7. M/s. Printers' Emporium  
5402, Basti Harphool Singh,  
Delhi

*Accessory Supplies, including dampening covers, rubber blankets, solvents, chemicals and zinc plates.*

1. M/s. Process Chemical Co.,  
5112, Sirkiwalan, Delhi-6

2. M/s. Raka Trading Co.,  
5054, Sirkawalan, Delhi-6
3. M/s. Photo Goods Service  
Katra Baryan, Fatehpuri, Delhi
4. Alpha Trading Co.,  
3, Rafi Ahmed Kidwai Road,  
Calcutta-13
5. M/s. K. N. Seal & Co.,  
63, Ganesh Chandra Avenue  
Calcutta-13
6. M/s. Gunvantray & Co.,  
Crescent Chambers, Tamarind Lane,  
Bombay
7. M/s. Scientific Supplies Corporation  
Metro Bldg., Mori Gate, Delhi-6
8. M/s. Chemical de-universal  
Phatak Habash Khan, Delhi
9. Delhi Scientific Works  
Ajmeri Gate, Delhi

*Photo Process Film, Dark Room Equipment  
& Supplies*

1. KODAK, Ltd.,  
Kodak House, Netaji Subash Rd.,  
Delhi

2. OR WO Films Pvt. Ltd.,  
188, Asaf Ali Road, New Delhi
3. M/s. Allied Photographics Ltd.,  
22A, Asif Ali Road, New Delhi

*Type & Type Casting Machinery*

1. M/s. Monotype Corporation Ltd.,  
8., Church Street, Bangalore
2. M/s. Standard Type Foundry  
Chowri Bazar, Delhi-6
3. M/s. Kamla Type & Machinery Co.,  
1686, Sohanganj, Sabzi Mandi,  
Delhi-6

*Composing Machines for Photographic  
Reproduction*

1. M/s. IBM World Trade Corporation  
Childrens Book Trust Bldg.  
4, Bahadur Shah Zafar,  
New Delhi-1
2. M/s. Printers' House Pvt. Ltd.,  
Scindia House, Connaught Place,  
New Delhi-1

*Mimeographing and Duplicating Equipment*

1. M/s. Roneo  
Bombay Life Building,  
Connaught Circus, New Delhi-1
2. Gestetner Duplicators Pvt. Ltd.,  
9, Scindia House, Connaught Circus,  
New Delhi-1
3. Shourie Duplicators (P) Ltd.,  
2, Nazafgarh Road,  
New Delhi-15

*Adhesive Gum (also called rubber solution, rubber cement, and gum paste)*

1. M/s. Calmin (P) Ltd.,  
210, Lady Jamshedji Road,  
Bombay-16  
(This company manufactures  
a quality product under the name  
"Camel Gum Paste".)
2. M/s. Weldon Inks  
Pusa Road, Delhi-5
3. M/s. Gripex India, Ltd.,  
8, Netaji Subash Road,  
Calcutta-1

## Appendix VIII-B

### Firms Specializing in Materials and Supplies for Offset Printing

Dr. C. S. S. Rao, Joint Director of Information for the Package Programme, Directorate of Extension, Ministry of Food and Agriculture, New Delhi, and Dr. R. Lyle Webster, Acting Team Leader, IADP, Ford Foundation, New Delhi, provided this list.

1. M/s. Monotype Corporation Ltd., Printing Machinery Sales, 8, Church Street, Bangalore. (Lithotex Equipment Catalogs)
2. M/s. Alpha Trading Corporation, 3 Rafi Ahmad Kidwai Rd., Calcutta 13. (Printing presses, cameras, and spare parts)
3. M/s. Linotype Machinery Ltd., 14, Madan Street, Calcutta 13.
4. M/s. Photo Goods Service, Katara Baryan, Fatehpuri, Delhi 6.
5. M/s. Eurasia Trading Co., Printers, Providers, Chowri Bazar, Delhi 6. (Printing inks and chemicals)
6. M/s. Standard Type Foundary, Chowri Bazar, Delhi 6. (Inks)
7. M/s. Modern Printing Stores, 2420 Chowri Bazar, Delhi 6.
8. M/s. Process Chemical Co., Sirkiwala, Delhi 6.
9. M/s. Printing Material Stores, 4041, Charkhewala, Delhi 6.

10. M/s. Indo-European Trading Co., Chandni Chowk, Delhi 6.
11. M/s. Indo-European Machinery Co., 1390 Chandni Chowk, Delhi 6.
12. M/s. Standard Type Foundry (P) Ltd., Asaf Ali Rd., New Delhi.
13. M/s. J. Mahabeer & Co., Ltd., Netaji Subhash Marg, Daryaganj, Delhi. (Ink)
14. M/s. Raghbir Dayal Bansilal, Chowri Baza Delhi 6. (Inks)

समाप्तम्