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SURVEY GUIDELINES
***Evaluation of Participant
Training Program***

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NOTE

The following pages contain a description of the main steps in a systematic interviewing survey, and discuss some standards that should be maintained if reliable and useful results are to be achieved. This is not a manual on how to conduct a survey, but rather a set of guidelines against which the Training Officer and other officials concerned may judge the competence and performance of research organizations they may wish to hire for the job.

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TABLE OF CONTENTS

	<u>Page</u>
Organizing the Study	1
Suggested Outline.	3
Sampling	4
Questionnaire Construction	5
Translation.	11
Pretest.	12
Interviewer Recruiting	14
Interviewer Training	15
Conducting Interviews.	17
Editing and Coding of Data	19
Tabulation Requirements.	22
Tabular Presentation	23
Preparation of the Final Report.	28
Utilization of the Report.	31
References	32

Organizing the Study

All research projects present numerous problems to the investigator which require a variety of special skills for their solution. In addition to these, social research studies present a specific type of problem arising from the extreme interdependence of all stages and processes. Later stages in the study will be influenced, if not determined, by early steps, so it is essential that the entire survey be laid out in considerable detail before any work is actually started.

Planning this particular study involves discussions with and approval of the host government on all phases of the proposal (objectives, scope, organization, methodology and techniques); preparing basic data sheets on returned participants to determine the size and accessibility of the population; determining the most suitable organization and personnel plan for conducting the study; developing a budget for local and U. S. costs (if any) and securing funds; setting target dates and schedules for completion of various phases of the study - e.g., the hiring and training of interviewers, the field work, analysis and processing of data, etc.; planning the final report and the uses to which the results will be put.

With respect to the technical aspects of the survey, the project director should be familiar with the resources which will be available to him, and should know the advantages and limitations of these resources. For example, some types of questions cannot easily be handled by inexperienced interviewers. If available interviewers are not experienced, the questions must be formulated and arranged in a fashion different from that used with experienced interviewers. Similarly, the presence of large clerical staffs may mean that the study design can incorporate a good deal of

hand classification, hand tabulation, etc. Where clerical staffs are not available, machine processing of data must be relied on.

At the beginning of the survey it is suggested that an outline be made of the substantive problems in the study. This will be helpful in later stages in the survey, and will be particularly useful if it is constructed in the form of broad questions. Such an outline for the Survey of Returned Participants is given on the following page.

A draft of the final report may also be set up at this stage, indicating the topics to be covered in each section. Tabulations and cross-tabulations of data considered pertinent to the study should be drawn up in the form of dummy tables, thus indicating what is to be summarized quantitatively.

The need for complete and early planning of the survey cannot be over-emphasized; projects in which one stage is designed with the hope that later steps will take care of themselves are always costly and yield virtually useless information. The following sections contain an outline of the major steps in an interview survey. It is recommended that the project director become thoroughly familiar with these steps before work on the study is begun.

Suggested Outline

Survey of Returned Participants

- I. Facts about participant group; age, sex, education, etc.
- II. Pre-Departure Period
 - A. Selection - How was selection made and carried through?
 - B. Preliminary program planning - How was this done and who took part?
 - C. Pre-departure orientation - What information was participant given and how useful did he find it?
- III. Training Period
 - A. Stateside orientation - What were participants' reactions to orientation?
 - B. Training program - What kind of program did participant have, how long was it, what level was it, how was it administered, what changes were made in it and how did participant feel about it?
 - C. Personal and social experiences during training - How much free time did participant have, what kinds of activities were arranged for him, how much contact did he have with nationals of the country, how was his personal adjustment?
- IV. Post-Training Period
 - A. Utilization of training - In what areas has participant used and not used his training, and what problems has he encountered in utilizing his training?
 - B. Contact with USOM since return - How much and what kind of contact has participant had? What is the extent of follow-up activities, and what are participant's current problems and needs in relation to his job?
- V. Experience with English language, if applicable. Participants' background and training in English, current use of English.

Sampling

In essence, sampling consists of obtaining information from a portion of a larger group here referred to as the "universe", in such a way that information obtained from the small group accurately represents information which would have been obtained from the universe. While it is desirable that in this study the entire group will be contacted, wherever possible, considerations of time or cost may make a sampling procedure necessary in certain countries.

In order for a sample to be useful it must reproduce the universe in miniature - it must accurately represent the universe. Sampling theory indicates that for a sample to be representative it must be selected from the universe on the basis of chance alone - a random sample. In social research terms, every person in a given universe must have an absolutely equal chance of being picked for inclusion in the sample. This necessarily means that all human factors must be excluded from the selection process, and the sample is chosen by a thoroughly impersonal, mechanical procedure.

For instance, a universe may consist of all returned participants who have been back in their home country six months. If a sample is selected which leaves out of consideration all participants living in remote parts of the the country, it will not be representative. If people are omitted because their facility with English is poor, again the sample will not be representative. Similarly, interviewers cannot be permitted to choose the individuals they will interview, since they may select friendly, articulate, well-informed people, while those are difficult to approach, who are too rich, too poor, or too busy, will not be interviewed. These biasing

factors can be avoided by selecting the sample in a systematic and mechanical way, perhaps by picking every third or fourth name from an alphabetical list.

Occasionally a sample will be very much smaller than the universe, and it may happen to be unrepresentative because of its small size. The selection of such lopsided samples may be minimized by picking a stratified random sample, which need not be larger than the unrepresentative sample. In selecting a stratified random sample, the universe is first divided into smaller groups according to one or more specific criteria on which information is available and which are relevant to the study. A universe of returned participants may be divided according to the type of job they now hold, the field of activity in which they are trained, geographic area of residence in home country, and so on. Each of these smaller or sub-groups then has a random sample drawn from it. However, it is essential that the proportion of people in each sub-group in the universe be the same as the proportion in each sub-group of the sample. If 40% of the universe is composed of participants from the field of agriculture and another 20% from industry, 40% of the sample must also consist of agriculturists and 20% must be from the field of industry.

Questionnaire Construction

The questionnaire is a basic tool for gathering information by personal interview. It serves the purposes of reminding the interviewer of the precise questions to be asked and of obtaining comparable data from all respondents.

All questions included in a questionnaire should satisfy two requirements: they should yield information useful to the goals of the study, and they should be meaningful to the respondent in ideas and in phrasing.

In respect to the first requirement, each question should meet this criterion: Will this information contribute to attaining the study objectives, namely: 1) To measure the extent to which the program objectives have been obtained: and 2) To determine how specific techniques, facilities and/or phases of the participant program influence the attainment of these objectives. To do this, it is necessary to decide at the outset exactly what information is to be sought. Here the "question outline" of the study (discussed in the preceding section on Organizing the Study) will prove helpful. The general questions in the outline may be further broken down in even greater detail. Relevant factors should be listed for each. For example, IIC deals with pre-departure orientation. In order to evaluate the orientation received by a participant, the researcher would break down the concept of "orientation" into specific categories. Instead of asking vague questions about "your orientation in general" he might work out a list of topics on which orientation could (or should) have been given. He would inquire as to whether orientation on each topic was or was not received, and then formulate questions about how useful the participant found each kind of orientation he received.

By such a process of increasingly detailed breakdowns the general questions may be translated into specific ones which relate directly to the central problems of the study. In this way it is possible to determine the precise function of each question and to avoid unnecessary ones.

The relation of the individual questions to the final report may be strengthened by the construction of dummy tables, as mentioned in Organizing the Study above.* In general, the information yielded by every question should find a place in some table of the final report. Ideally there should be no "wasted" questions in a questionnaire. It is usually not possible to achieve this goal completely, because of the requirement of having the questions make sense to the respondent. For this reason transitional or "lead-in" questions are often inserted in questionnaires. These are not essential to the purposes of the study, but they help the respondent to follow the line of questioning and may give him a chance to blow off steam on some subject.

It may be noted here that individuals who are not experienced in questionnaire construction usually tend to ask too few questions. If too much ground is covered in one question it is likely to be ambiguous and misleading to the respondent as well as awkward to ask. One bit of information per question is a good general rule, although there are times when an item can only be answered by two or three questions.

If the questions are to be meaningful to the respondent a few general rules should be observed:

1. Questions should be fairly short, usually not over twenty words. The grammar and construction should also be clear and simple. The respondent will hear the question read to him, and will not be able to go back and read the beginning if he has forgotten it.

*ICA/W will provide sets of dummy tables for standardized world-wide use.

2. Questions should be phrased in simple colloquial language, and there should be only one meaning possible. It is admittedly difficult to word a question so that it is simple enough for one respondent but does not seem to "talk down" to another. Some flaws are inevitable, but if the questions are carefully pretested these can be kept to a minimum. Word meanings should be carefully examined, since colloquial speech may add connotations to a dictionary meaning and local usage sometimes changes a meaning completely.

3. Questions should not predetermine the answer. Sometimes faulty questions stack the cards by using superlative terms - "Are you completely satisfied with your training?" Or there may be an unpleasant implication to a question: "Are you doing all you can to utilize your training?"

4. Questions should not contain implicit assumptions about the respondents' behavior or experience. If a participant is to be asked about social activities in America, for instance, it is necessary to ascertain whether he has had any experience with them, how much experience, and what kind.

5. Questions should be specific and concrete as possible. Abstract terms - truth, democracy, etc., should be avoided, since everyone has his own particular definition of them. If they must be used, include a definition of the relevant aspect of the term in question. Similarly, respondents should not be asked about topics which are completely foreign to them or about remote hypothetical "what if" situations. Such questions will not be taken seriously and may arouse hostility.

After a series of questions have been made up, they should be arranged in an order which will appear logical to the respondents. This may not be the sequence which is most logical according to the study outline; often it is not. But the questions must appear organized to the respondent; a series of apparently unrelated questions will seem pointless and baffling.

There are two general forms of questions used in social research, pre-coded or check-answer, and open-ended. Each has advantages and disadvantages with respect to topic, expense, processing.

Pre-coded questions require answers of a word or two, a number, or checking one of several alternatives. ("Do you speak English? Yes____ No____ No Response____") They are easy to ask and to answer, and take little interviewing time. Summarizing is quite simple, and they are ideal for machine tabulation. On the other hand, they are often difficult to construct, since they involve a set of exhaustive, simply-phrased alternatives. Not all subjects can be boiled down in this way. In areas where straightforward matters of fact and information are being dealt with, or where opinions are known to be crystallized, check-answer questions may profitably be used.

Free-answer or open-ended questions do not structure the respondent's answer into any categories, but permit him to answer in any way he wishes. ("What kinds of things were you told about the training program before you left home?") They are useful in areas where alternatives are not clear, or where data is desired on the respondent's feelings, attitudes and reasoning. Although they are generally easy to construct, they should be well thought out and carefully phrased. They are often used following a pre-coded question in order to get at underlying reasons for a specific given

answer, and are useful in getting depth rather than breadth. An open-ended question which is broad in scope is apt to be regarded as unanswerable by the respondent; for example, "What do you think of the participant training program in general?" This type of question requires time to answer, and the interviewer must be skilled enough to transcribe the answer verbatim. Answers are difficult to classify and require a separate coding operation. Although results often give valuable insights into behavior, they may be hard to interpret and quantify.

The questionnaires for the survey of Returned Participants employ both types of questions. The majority of questions are of the pre-coded variety; approximately a quarter are open-ended.

After the questionnaire has been drafted it is important for the researcher to organize it in such a way that the respondent's anonymity is preserved. Information that is necessary to locate or identify the respondent - name, address, place of work, etc. - should be placed on the first or last page of the questionnaire so that it may be detached as soon as the interview has been completed. These pages are often destroyed and the questionnaire referred to thereafter by a number. Under no circumstances is a completed questionnaire with identifying information ever made accessible to individuals other than the interviewer and the project director.

In the Survey of Returned Participants all identifying information is contained on the first page so that it may easily be detached from the rest of the schedule. It may happen that a participant will request the interviewer to obtain books, tools, etc., for him. Such requests should be written on a separate sheet, together with the participant's name and address, and kept separate from the questionnaire.

Translation

Where questionnaires are to be translated from one language for use in another, the need for precise meanings is paramount. The central concepts of the question must be expressed in the translated version together with the appropriate connotations. Thus the principle aim of such translation is comparability of meaning rather than a literal word-for-word dictionary translation.

It is often very difficult to translate ideas and connotations accurately. A concept which is a unit in English may be expressible only by using several concepts in the other language. In cases where comparable concepts are available in both languages, one may have accompanying connotations very different from the other. For example, in the question "How do you feel about the way your program was arranged?", "feel" is used in a general sense of thoughts, opinions, or emotional set. In many languages "feeling" refers to relatively deep emotional attachments only, and would be inappropriate in this question. "Think" may carry purely intellectual overtones and be equally inappropriate.

Needless to say, translation of this sort requires individuals who are completely familiar with the language as it is spoken, not as it appears in textbooks and literary works.

Two techniques of translation have been found to give good results. In the first case a translation is made by one translator, than a "back-translation" into English is made by a second translator. This is compared with the original English version and adjustments are made accordingly. In the second method detailed notes on intended meaning are written for each question. Notes and questions are given to each of two translators, notes

only to a third. The two translations are compared and checked for bias by the third translator, and the best parts of each translation are used. In either case it is wise to determine in the pretest whether the respondents actually are interpreting the translated question as intended.

A paper is being prepared by ICA/W on the translation of the three questionnaires in the Survey of Returned Participants, and will shortly be sent out to the missions. It will be designed to aid the translators by indicating the meaning and desired connotations of key terms in the questionnaires.

Pretest

After the survey has been designed in detail, all the forms and procedures to be used are tested in a miniature study. The pretest, as this stage is called, provides an invaluable opportunity to observe how questionnaires and instructions work in the actual field situation, and, in addition, yields information on necessary changes. For instance, if it is found that answers to an open-ended question fall into a few categories, the question may be changed to a check-answer question, using the categories as alternative answers.

Pretests are conducted with the same kind of respondents as those used in the main study. Sometimes the pretest interviews are added to those obtained in the larger survey and sometimes not, depending on the study design and the changes resulting from the pretest.

One of the most important goals of the pretest is the determination of weaknesses in the questionnaire. Questions which are unclear to respondents, which are awkwardly worded, loaded or ambiguous can be pin-pointed on the pretest. (Experiments with alternative wordings of questions will no doubt have been explored before the questionnaire was set up, but such informal

discussions cannot substitute for a pretest.) Less obvious defects such as excessive length and jerky or illogical sequences of questions may also be spotted.

Along with the questionnaire there should be a set of instructions developed for the use of interviewers. Almost all questions need some explanation about the terms used in the question, the type of information desired, how it should be recorded, whether it should be asked of all respondents or only of some, and so on. Inadequacies in these instructions will become apparent once the interviewers are sent into the field. It is usual in a pretest to use the best and most experienced interviewers available. They should, however, be put through a short training program before being sent into the field. (See section on Interviewer Training below.) Their task is more complicated than that of interviewers in the main study, since they must not only record answers but also be alert for points at which the interview "doesn't go." Places where the respondent stops, or asks for clarification, or seems not to understand, should be noted, since these provide data for revision of the questionnaire. Interviewers usually have impressions about the workings of a questionnaire and their ideas on the subject are often valuable.

In the Survey of Returned Participants, there is less need than usual to conduct such a full-scale pretest. However, two or three test interviews should be obtained in each country after the questionnaires have been translated. Difficulties arising from the translation of questions can be adjusted before the large survey begins; further problems connected with the content of the questions should be referred to ICA/W. The test

interviews should be identified and kept separate from the survey interviews, since they may or may not be included in the main study.

Interviewer Recruiting

The ideal interviewer is honest, intelligent, sensitive, tactful, able to follow instructions, to think on his feet, to withstand rebuffs and to command respect. Such paragons are sometimes difficult to come by, and it is usually wise to rely on the experienced staff of a local organization if one exists. In areas where interviewers must be recruited, a few general rules will make the selection easier.

Interviewers should naturally speak fluently the same languages as their respondents. Insofar as possible dialect should also be matched. Where members of different ethnic, national or religious groups are included in the study, interviewers should be chosen who are also members of these groups. Similarly, interviewers should not possess social status, caste or prestige which is much higher or much lower than that of their respondents. It is usually easier for a respondent to develop rapport with an interviewer of similar background than with a stranger. This is sometimes true for professional groups, notably doctors, but to a lesser extent.

Work in certain occupations provides a good background for interviewing. Teachers, librarians, and social workers are accustomed to talking to people and may be quite familiar with local conditions. Mature graduate students in sociology and psychology are useful, as are people with experience in newspaper reporting, personnel or market research interviewing.

There are types of people who should be avoided in recruiting interviewers if the situation will allow it. People who have the reputation of

being cranks, or who have marked physical peculiarities do not make good interviewers, nor do political office-holders, government workers, religious workers, or anyone who is known to have strong political or religious affiliations. Individuals currently connected with newspapers are likely to arouse suspicion. Salesmen and persons of obviously foreign appearance should also be avoided.

Interviewer Training

Personal interviews are a prime means of collecting research data in the social sciences and are considered to be the most appropriate approach for conducting this survey. Since these data must be standardized and comparable, the interviewing process must be controlled to insure that all interviews are conducted in the same way.

All interviewers must participate in an interviewer training program before they are sent into the field, whether they are experienced members of a local research organization or inexperienced individuals hired for this study. The training program permits interviewers to become familiar with the questionnaire and the interviewer instructions, and it allows the supervisor to observe the ability and technique of each interviewer. The interviewers act as representatives of the study, vis-a-vis the public, and it is important that ample time and effort be devoted to their training.

Training programs usually take at least one week, and may take longer, depending on the number of interviewers and the complexity of the questionnaire.

The first day of a training program is usually devoted to a general discussion of the study as a whole, the questionnaire and the interviewer instructions. Interviewers should have a clear idea of the purpose of the

study, its scope and sponsorship, since they must be able to answer any questions respondents or the public may have. It is also helpful to give the interviewers a description of the kinds of tabulations and information which may be expected to come out of the study.

The questionnaire must be gone over question by question, referring to the interviewer instructions at each necessary point. The interviewers should be encouraged to ask questions and clarify their own misunderstandings concerning the schedule and instructions.

Usually after the first session, the interviewers are allowed to take their material home and study the instructions thoroughly. The second (and perhaps the third) training session consists in practice interviewing among the interviewers themselves, with each person acting once as a respondent and once as an interviewer. The supervisor should observe these interviews closely, since they provide a good indication of the interviewer's ability. The other interviewers should also be permitted to observe these interviews as an aid to their training, since many common interviewing errors will be clearly demonstrated during such a practice interview. Sometimes written tests on the instructions are given. The supervisor may also take the role of an unusually difficult respondent and observe the ways in which each interviewer handles a situation. Finally, each interviewer may conduct a practice interview with a respondent similar to those who will be interviewed in the study. These practice interviews cannot be considered as part of the survey, however, and should be discarded or kept only as part of the interviewer's file. This questionnaire should be gone over in detail by the supervisor and the interviewer so that any errors, omissions, or problems can be discussed.

It is extremely important to instruct interviewers to ask each question exactly as it is worded. Comparable results depend on each respondent being subjected to the same stimulus, and cannot be achieved unless all respondents are asked the same questions.

Also, interviewers should be instructed to write out answers to open-ended questions exactly as they are spoken. If answers are not clear, the interviewer may use probe questions to get more detail. In no case should an interviewer be permitted to record what he thought the respondent meant or what the respondent should have said. Verbatim recording can sometimes be facilitated by training the interviewer to use the first person in recording answers: "I think..." rather than "The respondent thinks..."

Conducting Interviews

When interviewers go into the field they should take with them definite assignments and a schedule stating when they are to return to the office, how many interviews should be collected in a day, etc. Time and expense records are usually kept by the interviewer and checked against the assignments by the interviewing supervisor. In countries where it is possible to have one central field office, interviewers should come into the office every few days to turn in their material and to be advised on new assignments or changes in procedure. In other countries where the respondents are widely scattered it may be necessary to set up more than one field office or to arrange for supervisors to visit the interviewers on a regular schedule.

When conducting interviews the interviewer's dress and manner should be such as to inspire confidence in the respondent and create a cooperative atmosphere. Neat, conservative dress is recommended, since

the interviewer cannot appear too prosperous or too poor. The interviewer should be a "good listener", possessing whatever attributes make up this role in a given country.

An interviewer should carry a letter of introduction from the study office, giving his name and the purpose of the study, and this should be shown to the respondent. Some people will want to speak to the study office directly, and they can be given the name of a responsible person in the office who will answer their questions.

The interviewer during the interview, should not talk too much and should never reveal his own opinions on a question. Privacy is important and the interviewer may have to come back at another time if other people are present on the first call. It is not necessary for the respondent to be completely idle during the interview. If he is working alone on a routine task he may be quite willing to talk to someone and will give a good interview.

The respondent should be encouraged to ask any questions he wishes about the study, and these should be courteously answered. In cases where the interviewer senses doubts or reservations on the part of a respondent it is worth taking a little extra time to settle them. A steamroller interview technique invariably produces brief, stereotyped and/or false answers. Interviewers should know enough about the study to be able to explain in great detail how a respondent's anonymity will be preserved. When dealing with extremely suspicious people, completed interviews are sometimes placed in envelopes which the respondent seals and mails to the office.

Ideally, all persons included in the study should be interviewed. This goal is rarely achieved, but wherever possible considerable effort should be made to interview all selected respondents. This usually imposes some inconvenience on the interviewing staff. For instance, some participants will not be found on the first visit, and the interviewer will have to make return visits or "call-backs" at any time when the respondent is likely to be available. Standardly, three such call-backs are made before efforts to reach a respondent are abandoned.

Editing and Coding of Data

Editing of completed interviews is done to insure that the data obtained are complete and accurate, and that any inconsistent and incomprehensible information is corrected. The editing should be done while the field work is still in progress and interviewers are available to clear up problems. Editing is sometimes combined with quality checks on the work of each interviewer. This can be done if there are comparatively few interviews which are conducted at a leisurely pace, but if there is a heavy interviewing schedule it is better to assign one person to editing and another to supervising the interviewers. When interviewers are well-trained and conscientious the editor's job is mainly the correction of clerical recording errors, but he should be sufficiently familiar with the questionnaire to be able to spot omission, conflicting answers and evidence of interviewer laxity.

The coding operation is fundamentally a summarizing device in which many individual responses to a given question are classified into a small number of general categories. The complexity of the procedure depends on the type of question being coded and the manner in which the data will be analyzed.

Fixed-answer or closed-ended questions may be regarded as pre-coded, since relevant categories are presented directly on the questionnaire - Yes, No, No Response; Always, Sometimes, Never, etc. When dealing with large numbers of questionnaires it is useful to replace such verbal categories with numbers. (When tabulation is to be done by machine this replacement is essential, since only numbers can be punched and tabulated.) "Yes", may thus be indicated by 1, "No" by 2, "No Response" by 3. These numbers may be assigned in advance and printed on the questionnaire so that the interviewer may circle or check the number of particular response. When numbers are used, they should be standardized throughout the questionnaire. If "Yes" is given the number 1, all "Yes" answers in the questionnaire should be indicated by a 1, and so on for all answers.

Such a numbering procedure has been followed on the three questionnaires provided by ICA/W. In the case of the pre-coded questions, each alternative answer has a number in front of it, and these numbers can be punched on cards.

During the coding of fixed-answer questions it is sometimes necessary to add one or two more categories to the list of alternative answers. This is particularly true when a miscellaneous "other" category is included in the original list of alternative answers. "Other" should contain no more than about 10 per cent of all responses. If it does, new substantive categories should be constructed and added to the list of answers. Often two or three new categories will reduce "other" to 10%; it is unnecessary to attempt to eliminate "other" completely.

Coding of free-answer or open-ended questions is a somewhat more complicated process. A small number of completed interviews, usually 10 per

cent of the total, is selected at random. All answers to a given question are examined and a number of categories are set up into which these answers can be fitted. The selection of categories depends both on the kinds of answers given and the purposes and subject-matter of the study. Sometimes answers which are clearly irrelevant to the study are not coded in detail but lumped together in an "Other" category. They cannot be discarded entirely, since all answers must be accounted for in the final presentation.

As an example, if the question is asked, "How did you first hear about the participant training program?" The answers may be coded roughly into the following categories:

1. Heard about it from a friend
2. Heard about it from a supervisor
3. Read about it in a Ministry bulletin
4. Heard about it from an American technician
5. Other, specify
6. Don't remember
7. No response

After a set of categories has been constructed it is tested on another small group of questionnaires and adjusted, if necessary. If one category contains half or more of the answers it is probably too broad and should be broken down. "Other" is a residual category and should not contain more than about 10 per cent of the responses, nor should it be confused with "Don't Remember" and "No Response."

When the final form of the code is adopted, numbers can be assigned to the categories for convenience in processing, as was done with pre-coded

answers. As the answers are read by the coder, the number of the appropriate category may be entered on a code sheet or punched on a card.

Occasionally an open-ended answer cannot be fitted into a single category and the same answer must be coded in two or more categories (multiple coding). Such responses may be coded in the standard fashion, but they present special problems in analysis and tabular presentation, and in general multiple coding should be kept to a minimum.

Tabulation Requirements

After the data are collected they must be organized, counted and tabulated in preparation for the final report. Before this stage is reached it is important to have devised systematic procedures to be followed and to have acquired sufficient clerical help to carry them through.

Forms are necessary on which data can be transcribed in numerical form, leaving space for totals, averages, percentages, and so on. These will be used in drawing up the final tables, and so must be plainly labelled. If data is to be tabulated by hand it should be transferred onto small cards which are easy to count and sort. (Hand tabulation should be systematically carried out or it is apt to be a lengthy and expensive process. See Parten, Mildred B., Surveys, Polls and Samples. N. Y. 1950, Chapter XV.) By the time the report is begun all necessary data should be organized into substantially final form. The report writer should never be expected to go back to the questionnaires to find results.

Machine tabulation maybe used to replace some of the clerical tabulation, but a certain amount of hand work is necessary even when machines are used. Machine tabulations cannot be used as they come from the machine, and rough tables must be drawn up as an intermediate step between the machine

tabulations and the final tables which appear in the report. Machine tabulation is a rapid method of processing large amounts of data or complicated data. It requires specialized personnel and equipment. Data which is to be handled by machine must first be coded by assigning numbers to each answer. These numbers are punched on a card, and the tabulations are obtained by running cards through a tabulating machine.

Where IBM cards are used, one or more cards are punched for each individual questionnaire. Each card contains 80 columns and usually one column is devoted to a question, thus a card can contain answers to no more than 80 questions. Within each column there is space for 12 punches - 1 through 9, 0, X and Y. The number of a given answer is punched out of the card in the appropriate column, so that the holes in a card represent answers in an interview. Identifying information (study number, case number and card number) is also punched, in addition to answers.

Instructions must, of course, be written for punching and verifying cards and for running them through the machines. (Basic instructions for this study will be provided later by ICA/W.)

Tabular Presentation

Tables which are presented in the final report are usually summaries selected especially to emphasize some significant relationships. These relationships should be indicated in the headings, together with sufficient information to allow the table to be understood without an accompanying text. The title should specify the precise kind of data presented in the table, together with appropriate background information such as the time period covered by the data, and the location in which the data were collected (e.g., "Utilization of Training of Brazilian Participants, 1951-1954,

by Field of Activity"). Column headings and stubs (headings along the left side of the table) should likewise be clear and specific. Although the construction of concise unambiguous titles is a fine art, it may often be simplified by the use of subtitles and footnotes.

Complete data should be given in each table. The total number of cases must appear as well as the proportions of No Responses and Don't Knows.

Numerical data are often converted into percentages when they are presented in a table. Percentages have the advantage of displaying relations between numbers and they are particularly useful when two or more numerical series are to be compared. There are, however, certain instances in which they should be used with caution.

When the total number of cases is less than 100, the use of percentages may confuse the reader. The percentage may be considerably larger than the figure on which it is based: e.g., 5 is 50% of 10. In this instance the use of a percentage is absurd as well as misleading; it would be much clearer to state the relationship in terms of a ratio, a fraction or the original numbers.

Another common error is over-precision in calculating percentages. In most social research 18% is as accurate as 18.3%. General statistical practice recommends that percentages be carried to one decimal place only where the total number of cases exceeds 10,000. For all smaller samples rounding to the decimal is quite adequate.

An important problem in table construction is that arising in cross-tabulations. These are tables in which two or more factors are presented or run against each other; for example, field of activity and utilization of training. In which direction should the percentages be run, vertically

or horizontally? Are the figures in the columns to be compared or the figures in the rows?

The person constructing the table must first make a decision as to which of the two factors he will consider to be a cause of the other, and which the effect. (It is not a question of which one really is the cause, but only of which he will consider the cause.) The effect variable, sometimes called the dependent variable, is the factor which the writer is explaining - the one in which he is primarily interested.

The causal or independent variable is not being explained but is taken more or less for granted. It is assumed that the causal variable is not influenced by the effect variable; on the other hand, the effect variable may be influenced by the causal variable.

Utilization of training may be regarded as a composite resulting from a large number of experiences and qualifications in the individuals' past. Utilization of training is thus a product or effect of other factors in the background. One such background factor is field of activity, which in this example can be considered the causal variable. To put it another way, field of activity must be the causal variable since it cannot be affected by utilization of training; utilization of training is the effect variable since it can be affected by field of activity.

In cross-tabulations it is a rule that percentages should be computed in the direction of the causal variable. Thus the location in the table of the field of activity, the causal variable, will determine the direction in which the percentages will run. If field of activity is placed at the top of the table, utilization of training will appear at the left, and the percentages will add down the columns. If it is more convenient to put

field of activity in the left-hand stubs the percentages must add across the page.

It is often helpful to study published cross-tabulations before constructing one. If the percentages add downwards to 100% the reader may assume that the column heading contains the causal variable and the stubs at the left the effect variable. If the percentages add across the rows, the causal variable will be found at the left and the effect in the column headings.

Either variable may be placed in either position in the table, and typographical convenience often determines their location. It is recommended, however, that a specific format be used consistently throughout a series of cross-tabulations.

Table titles should reflect the distinction between cause and effect variables. In general, the effect variable is mentioned first, then the word "by" and the causal variable. "Utilization of training by field of activity," for instance.

As indicated under Editing and Coding above, answers which have been multiple coded must be carefully presented in tables to avoid confusing the reader. In these cases an answer has been coded under two or more categories, and for purposes of data analysis this means that one respondent gave more than one answer. The total number of answers will thus be greater than the total number of cases. Also, since percentages are always calculated using the number of cases as a base, the percent figures for such a distribution will total more than 100. Tables in which this occurs should always carry an explanatory footnote stating that percentages add to more than 100% because some respondents gave more than one answer.

In general, multiple coding should be used only rarely. Tables in which percentages add to more than 100% confuse more than they clarify, and an alternative method of coding provides more meaningful results.

Numerical data need not always be presented in the form of a table. Occasionally such graphic devices as graphs, bar charts and pie charts may appropriately be used, and if well executed, add a good deal to the visual appeal of a report.

Line graphs are particularly useful where a change over a period of time is to be reported. A fairly large number of variables can be clearly shown on a graph, using broken, dotted and colored lines. But since graphs always imply movement or change, they should not be used where static relationships are described. In instances of the latter sort it is preferable to use bar charts, in which numerical values are represented by the length of horizontal or vertical bars. Bar charts are generally good for presenting comparisons of sizes or amounts within a time period.

Individuals making up graphs or bar charts should always **make sure** that the scales appearing along the side begin with zero and run up, in equal intervals, to the highest figure appearing in the chart. Sometimes it appears more economical to start the vertical axis at 50, say, rather than at zero. This technique exaggerates small differences and is not statistically legitimate. It is often used by those who wish to mislead their readers without actually lying, and is associated with dishonest manipulation of data.

In general all graphic material should be kept as clear and simple as possible. Three-dimensional charts, perspective graphs, or charts

drawn on logarithmic coordinates are often visually attractive, but they require a good deal of careful interpretation and are easily misunderstood by the average reader.

Preparation of the Final Report

The preparation of the report is the final stages of the research, and its purpose is to convey in an interesting and readable manner the whole result of the study in detail, arranged so as to enable each reader to comprehend the data and to determine for himself the validity of the conclusions. To do this well is no easy task. The basic outline of the report should have been prepared at the study planning stage and this general outline should be filled in by increasingly detailed outlines. If this is done in sufficient detail there should be no problems in organizing the material.

Reports generally consist of three main sections: the prefatory material, the text of the report, and a supplementary section containing appendices, bibliography, etc. The first section contains the table of contents, list of tables and charts, the preface, and often, a brief one-or-two-page summary of the major findings.

At the beginning of the second section, the purposes and problems of the survey are completely explained. Following this is a description of the time and place of the study, and a general statement of the organization, materials and procedures used. (Detailed methodological information may be included in an appendix.) Basic material of this kind is sometimes omitted or scattered through the report by writers who are overly fascinated by their findings. But since findings are meaningless without a context, a framework for the results should be provided early in the report.

Following the introductory section of the text is the presentation of the data along with interpretations, conclusions and recommendations. Here the original statement of the purpose and problem should govern the organization of the findings. Every fact, table or chart should relate to a specific aspect of the main problem as it was stated in the preceding section. Needless to say, these connections should be made explicit to the reader.

If this plan is followed, some data which is peripheral to the main purpose of the study will have to be omitted from the text and relegated to the appendices. Such data are generally in tabular form, and often consists of large multi-variate cross-tabulations. Brief descriptions of this material may appear in the text where relevant, but it is undesirable to cram every available table into the main body of the report.*

Questions may arise concerning the interpretation and evaluation of data included in the text. Relations between variables which show 80 or 90 per cent of the cases on one side are obviously important, but it is often difficult to decide how much weight should be given to less clear-out relationships. In general, questions on which all respondents are about equally divided can be regarded as inconclusive, and categories which contain a third or fewer of the total group of respondents are not likely to be useful. No hard and fast rules can be made on this subject, and it is important to emphasize that decisions relating to interpretation and evaluation of data depend very largely on the nature of the

*Tables which are included in the text should be accompanied by explanations. Not all of the relationships in each table need to be described, but the important ones should be discussed in the text. This usually requires a paragraph or two - a sentence is rarely sufficient.

study. There are areas in which the absence of a relationship is as important a finding as a highly positive relationship, and numerous weak relationships running in the same direction are, under certain circumstances, more useful than a single clear-out one.

It is sometimes unfortunately true that essential data yield stubbornly inconclusive results. When this occurs the writer has no choice but to include them in the report and explain that they cannot be used as bases for generalizations. There will undoubtedly be good data to compensate for a weakness in one area.

The individual drawing conclusions and making generalizations from the findings should bear in mind that he is able to speak only for the universe or population investigated in the study. For instance, if the universe consisted of returned Indian participants, generalizations may not be extended to returned Asian participants nor to Indian participants still in training abroad. If a sample was used the writer may extend his conclusions to the universe, provided the sample was a random one. If the sample was not random, it is not possible to generalize beyond the group of individuals actually interviewed.

Suggestions for improvement should also be included in this section. For purposes of this study, they might be kept general in nature, and simply point out areas in which action is needed and may be taken. A method for developing detailed action recommendations is outlined in the next section.

The last section of the report should be viewed as a technical supplement. One appendix should contain a very detailed description of the organization and procedures of the study. A copy of all instructions, form letters,

questionnaires, etc., is included here. Information on sample selection and translation procedures should also appear. Detailed or unsummarized tabular material should be organized in another appendix. If foreign or technical words and abbreviations are used in the report a glossary should be attached.

Utilization of the Report

One of the important purposes of the Survey of Returned Participants is the pin-pointing of areas in the training program where improvements should be made. It is not sufficient only to locate such areas and describe them in the report. The report should serve as a point of departure for constructing specific plans for improvement. Action recommendations on the part of USOM and the host government may be developed along the lines described below.

A draft of the final report, including general suggestions for improvement, may be circulated through all technical divisions in USOM and sent to the appropriate officials in the host government. After a brief interval, one or more meetings may be held, at which the findings of the report are discussed and interpreted to all officials involved. It will be necessary for the study director or the researcher to be present at the meetings, in order to explain any aspects of the study that may come under discussion.

The training officer should then prepare action recommendations on each point which deals with the ICA aspects of the training program, and the host government officials may prepare similar recommendations on any points which concern them. In the final stage these recommendations may be exchanged, and discussed with all officials concerned. In their final form the action recommendations should be added to the draft report as a separate section. The complete report may be printed (perhaps using local facilities) and distributed as USOM sees fit, reserving about one hundred copies for the use of ICA Washington.

References

Two general references are:

Parten, Mildred, Surveys, Polls, and Samples. New York: Harper, 1950

Goode, William J. and Paul K. Hatt, Methods in Social Research. New York: McGraw Hill, 1952.

Both books discuss the various states in a survey. Goode and Hatt use a comparatively theoretical approach, while Parten includes a good deal of practical "how-to-do-it" information.

Following are a few books dealing with specific aspects of surveys:

Sampling and elementary statistical procedures - Wallis, W. Allen and Harry V. Roberts, Statistics, A New Approach. Glencoe, Ill.: Free Press, 1956.

Questionnaire construction - Jahoda, Marie, Morton Deutsch and Stuart W. Cook, Research Methods in Social Relations. New York: Dryden Press, Vol. 2, Chapter 12.

Types of questions and question wording - Payne, Stanley L., The Art of Asking Questions. Princeton University Press, 1951.

Interviewing - National Opinion Research Center, Interviewing for NORC. University of Denver, 1946.

Tabular presentation - Walker, Helen M. and Walter M. Durost, Statistical Tables, Their Structure and Use. Columbia University, 1936.