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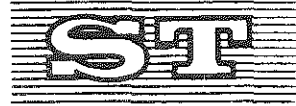
STATISTICAL COMMISSION
Fifteenth session
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PROPOSALS FOR INTERNATIONAL RECOMMENDATIONS FOR A SYSTEM
OF INDUSTRIAL STATISTICS

Report of the Secretary-General

1. The attached document (ST/STAT/17) was prepared in response to a request made by the Commission at its thirteenth session. In accordance with the wishes of the Commission, the document does not consider construction statistics.^{1/} It has been circulated to selected national statistical offices and regional organizations for comments; the most important of the comments received are summarized in document E/CN.3/367.
2. The Conference of European Statisticians is organizing a meeting of its Working Group on Industrial Statistics, to be held in December 1967, at which the attached document will be discussed. The report of the meeting will be available to members of the Commission during the session as a background paper.

^{1/} Construction statistics are dealt with in document E/CN.3/369.



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INTERNATIONAL RECOMMENDATIONS
FOR A
SYSTEM OF INDUSTRIAL STATISTICS

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1. This paper is in two parts. Part one in its present form is directed to the members of the Statistical Commission and sets out briefly the background to the proposals made in part two and attempts to explain the approach taken. Part two contains the proposed international recommendations which, amended according to the comments of the Commission, and together with a suitably adapted version of part one, might eventually be published.

PART ONE

Introduction

2. At the thirteenth session of the Statistical Commission, held in 1965, a resolution was passed which, in part, requested the Secretary-General "to develop recommendations for annual and more frequent industrial inquiries".^{1/} The passing of this resolution was preceded by a discussion of the progress made in carrying out the 1963 World Programme of Basic Industrial Statistics. The Commission felt that "taking all the difficulties into account, the next world programme of basic industrial statistics should be considered for recommendation for 1973. At the same time, emphasis was given to the need, in both the industrialized countries and those countries which are in the process of industrializing, for annual and more frequent data. It was pointed out that the success of the 1963 World Programme furnished an excellent basis for developing more frequent inquiries. It was felt that it would be useful to discuss, in regional seminars and working groups,^{2/} the appropriate scope, coverage and content of annual and

^{1/} Official Records of the Economic and Social Council, Thirty-ninth Session, Supplement No. 13, para. 61.

^{2/} This was done in the following meetings: (a) The ECLA meeting "Latin American Seminar on Industrial Statistics" held in Quito, 6-16 December 1966; (b) The ECA meeting "Working Group of Experts on Industrial Statistics" held in Addis Ababa, 12-17 December 1966; and (c) The ECAFE meeting "Seminar on Industrial Statistics" held in Bangkok, 12-21 June 1967.

more frequent inquiries. The importance of annual inquiries was stressed from many points of view, not the least of which was the possibility of maintaining a corps of highly trained personnel for such inquiries. It was not, of course, intended to discourage the conduct of basic inquiries in 1968 by countries which operate on a five-year schedule or by countries which did not participate in the 1963 World Programme".^{3/}

3. This paper is a response to the request of the thirteenth Statistical Commission, that international recommendations be developed for annual and more frequent industrial inquiries. These recommendations are contained in part two of this paper. However, for reasons which are explained in the following paragraphs of this introduction, it was felt that these recommendations should not be limited to merely supplementing the present international recommendations with further proposals dealing only with annual and more frequent than annual inquiries. Consequently part two of this paper attempts to set out recommendations for a broader system of industrial statistics.

4. This system embraces the basic inquiries, the annual inquiries and the more frequent than annual inquiries. The industrial sectors considered (the scope of the industrial inquiries) are the mining, manufacturing, electricity, gas and steam, and water. The construction sector is not considered here.^{4/} This system also confines itself to regular industrial inquiries, that is to say, occasional or irregular inquiries into a specialized subject are not dealt with. It also limits itself to the statistics appropriate to the establishment (or similar units) as the statistical unit, so that enterprise statistics are not dealt with.

^{3/} Op.cit. in foot-note 1, para. 60.

^{4/} In accordance with the recommendations of the Statistical Commission, the construction sector has been dealt with separately (see ST/STAT/16).

5. The international recommendations currently in use were published in 1960.^{5/} They dealt mainly with the basic (infrequent) census, although there were some recommendations for annual inquiries. However the main thrust in the campaign to improve industrial statistics was the infrequent inquiry. The implied relationship between the inquiries of varying frequency was that the comprehensive basic inquiries served as a framework for the annual and the monthly/quarterly inquiries.^{6/} The basic inquiries would provide a directory or list of statistical units, data on the kind of activity and size of the statistical units, a framework for sample surveys and weights for the different indexes of the sectors covered. The annual inquiries would be used to update the information obtained in the infrequent inquiry and at the same time would serve as basis for the organization of monthly/quarterly inquiries. The monthly/quarterly inquiries would in turn provide data for updating through indexes and calculating provisional annual figures.

6. Even in the case of countries with a fairly sophisticated statistical system the above-described view of the links between the inquiries may not be tenable. Although some of these countries do emphasize the basic (infrequent)

^{5/} International Recommendations in Basic Industrial Statistics (United Nations publication, Sales No.: 60.XVII.8).

^{6/} For example "the inquiries that are recommended in the 1963 World Programme will furnish an excellent framework and base for gathering and compiling annual and more current data on industrial units. That is to say, these comprehensive inquiries will serve to identify the industrial units in a country and, with adequate provision for keeping this list of units up-to-date, will provide a directory from which industrial units may be drawn for subsequent annual and monthly or quarterly inquiries. The data from the comprehensive inquiry will also provide a base from which to measure changes in the activities of the various segments of industry and to make estimates from the annual and monthly or quarterly surveys" (SP/STAT/SER.M/17/Rev.1/Add.1, para. 6).

inquiry, others put the major emphasis on annual inquiries. Indeed it might be argued that when the annual inquiry is sufficiently comprehensive, in terms of the field covered and the items of data gathered, the so-called "basic" inquiry will be unnecessary.

7. In the case of a country which is developing the statistics for its industrial sector, it is not clear that the most appropriate approach is to begin with a basic inquiry, follow this up by establishing annual inquiries and finally move on to producing monthly/quarterly statistics. However the decision to first develop the international recommendations for basic inquiries and the very nature of the 1963 World Programme, which involved a substantial number of countries with little or no experience of industrial inquiries in a large basic inquiry, seemed to imply that this was the approach advocated for all countries. Perhaps the crucial problem is that insufficient attention has been paid to producing recommendations which distinguish between countries with a developed system of industrial statistics and the needs of countries which are only beginning to develop their statistical system.^{7/}

8. Consequently, it is necessary to produce international recommendations suitable for countries which are in the process of developing their system of industrial statistics as well as for those countries which already have a developed system. In addition, at least for the former group of countries, it is

^{7/} Statistical Series for the Use of Less Developed Countries in Programmes of Economic and Social Development (United Nations publication, Sales No.: 59.XVII.10). It recognized that the "less developed countries" or what more accurately should have been termed the statistically less developed countries could only aim at a limited statistical programme but it paid little, if any, attention to the practical problems of developing even the most rudimentary statistical system and the extent to which these problems must modify the recommendations made.

insufficient to simply describe a set of objectives, that is, an elementary system as it will appear when in operation. It is also necessary for the recommendations to take account of the difficulties of the process of building up that system. This is one reason why the system of industrial statistics as a whole^{8/} must be considered, even though this does mean reconsideration and reassessment of recommendations previously made.

9. An additional consideration, and perhaps the most powerful argument of all in favour of a comprehensive approach to the whole of the recommendations for the statistics of the industrial sector, is the importance and value of a clearly integrated system of industrial statistics.

10. Almost all countries now use economic planning of one form or another as the foundation of or, at least, as a very important aid in their economic policy. In one sense this makes the need for, and the uses of, statistics much clearer. The quantitative picture is vital for formulating, implementing and assessing the progress of economic development plans. Just as it is vital that a plan should be coherent and integrated, so the statistics which support it must be coherent and integrated. It is moreover only through an integrated system of industrial (and other) statistics that it is possible to obtain comprehensive data of the maximum reliability, comparability and continuity. Inquiries of different frequencies and coverage need to be related to one another with regard to the statistical unit used, the units covered, the classifications used, the items of data gathered and the definitions of these items, and the methods and organizational arrangements to be utilized.

11. Attention must also be paid to the experiences of the 1963 World Programme. At the time of the thirteenth Statistical Commission (in 1965), on the basis of

^{8/} As described in para. 4 of this paper.

the number of countries participating, which was the only information available, the Programme was judged to be a success (see the quotation in paragraph 2 of this paper). However, using the more complete evidence which has since emerged and the published results as guides, the detailed assessment of at least one regional commission^{9/} indicates that in some areas, particularly for countries which do not have a developed statistical system, the inquiries which constituted the Programme were less successful than at first thought. For example in Latin America it was judged that "In the light of the experience gained by the statistical offices in the different operational stages of the industrial censuses (organization, preparation of questionnaires and materials, training of personnel, industrial directory, enumeration, revision, editing, tabulation and publication), it is manifest that the census programme was a decisive step forward in improving industrial statistics in the region. On the other hand, the practical results, even allowing for the fact that complete information is not yet available, seem to have been more limited. If the programme is measured against the published data on the structure and activity of the industrial sector ... it is clear that for some countries the cost and effort involved bear no relation to the results so far obtained".^{10/} Generally the major problems were practical ones, some of which, in some countries, resulted from undertaking overambitious inquiries in terms of scope and the items of data included. In addition, to again quote the

9/ See Experience of the Latin American Countries in Carrying out the 1963 Programme of Industrial Censuses (ST/ECLA/Conf.24/L.2, dated 10 September 1966).

10/ Op. cit., p. 53.

paper from the Latin American Seminar, "All the various problems encountered in some of the countries during the enumeration stemmed from those countries' desire that the enumeration should be complete, direct and simultaneous; complete in the sense that all the units included in the scope of the inquiry should be listed, direct in the sense that the information collected should be obtained through interviews by the enumerators and simultaneous in the sense that the enumeration should be carried out at the same time throughout the whole country and in as short a period as possible". Of particular importance in hampering the success of the programme were the lack of experience or tradition in industrial inquiries, the absence of statistical personnel with experience in this field, the difficulties of the respondents because of either ignorance or unfamiliarity or the lack of adequate records and accounts, and the absence of a complete and reliable directory for any part of the scope or coverage of the inquiries.

12. Of course it is not intended to suggest that the infrequent inquiries which represented the participation of most countries in the 1963 World Programme are without value as part of an integrated statistical system. They were of great practical importance, and the experience gained from undertaking them is invaluable, but this experience should not simply be allowed to waste away until time comes for the 1973 Programme. Of greater importance than the next basic census is the need to develop viable, and in many countries therefore limited, annual inquiries in the meantime. This does not involve ignoring the 1963 experience, but building on it while at the same time recognizing that in specific and practical ways the actual results of the 1963 inquiries in many countries are limited as bases or frameworks for annual inquiries.

13. There are additional reasons for reassessing the present recommendations for basic statistics and inquiries. For example, there is the development of proposals for revising the System of National Accounts which has implications for industrial statistics, for example in the definitions of certain items of data and in defining the boundaries of what should be considered part of production. And, in conjunction with SNA revisions, the International Standard Industrial Classification has been revised, with some changes, particularly with respect to ancillary units, which affect the present international recommendations for industrial statistics. Also, the work done on compiling and publishing three editions of "The Growth of World Industry"^{11/} (ST/STAT/SER.P) indicates that some additional items of data might be added to the present recommendations. Finally there are the separate recommendations being formulated to cover statistics of the construction industry which, when the existing recommendations were formulated, was seen as part of the industrial sector.

14. In producing recommendations for an integrated system of industrial statistics which is also adaptable to the needs of the many statistically less developed countries, it is necessary to devise an approach which takes account of the many practical problems associated with building up a statistical system.

15. In countries with as yet few, or no regular industrial inquiries it is doubtful, as indicated in paragraph 7, if the best approach is to begin with an attempt to carry out a basic census of the industrial sector. The practical difficulties are usually too great. Nevertheless, as already mentioned, this seems to be the implication of the present international recommendations. Moreover

^{11/} Note that the first edition in this series was entitled Patterns of Industrial Growth, 1938-1958 (United Nations publication, Sales No.: 57.XVII.6).

the 1963 World Programme, valuable as it was, may have reinforced this view. For many countries the inquiries by which they were to participate in the World Programme should have been seen as the beginning of a series of annual inquiries rather than a basic inquiry to be repeated ten years later.

16. The alternative approach involves a somewhat different emphasis and a clear order of priority between inquiries of differing frequencies. Rather than having the basic (infrequent) census as the corner-stone of the system of inquiries with the annual and the monthly, quarterly inquiries as progressively more limited versions of the basic inquiry, the annual inquiry should be the core of the system, with the basic (infrequent) census regarded as an extended version of the annual inquiry, and the monthly/quarterly inquiry regarded as a limited version of the annual.

17. While the major reason for the shift of emphasis from that implied by the previous recommendations is the difficulties faced by countries which are in the process of developing their industrial statistics, the approach outlined is also an accurate reflection of how a number of countries with developed systems of industrial statistics view their industrial inquiries. These countries are in fact responding to the increased need for extensive annual data; a need which will of course be reinforced by the revised SNA. However this suggested change of emphasis, if accepted, does have practical consequences of particular relevance for countries which as yet do not have much in the way of industrial statistics. If annual inquiries are accepted as the backbone of the system, then of particular practical importance is that a core of statistical personnel would be in continuous contact with industrial inquiries, for only in this way will the necessary experience be gained. The respondents also, that is, the (larger) industrial establishments will become regularly acquainted with the requirements

of industrial inquiries. In addition annual inquiries would exert irresistible pressure upon the statistical and budgetary authorities for keeping up to date a directory or list of establishments. Of course this need not and probably would not be a directory covering all establishments in the industrial sector. Only those establishments included in the annual inquiry need be included in the directory, which might be restricted to large establishments.

Organization of part two

18. Part two of the paper is in three chapters. Chapter I first attempts to explain the purposes of the international recommendations, defines the components and limits of the "system" referred to in the title to the paper, and sets out the links between the annual, basic and monthly/quarterly inquiries. Then it moves on to consider the scope, coverage, frequency, reference period of the inquiries and the statistical, reporting and tabulating units to be used, ending with a discussion of the treatment of ancillary units and secondary activities. Chapter II contains two tables listing the items of data recommended for gathering and the statistics recommended for publishing. Separate recommendations are made for, on the one hand, countries with developed industrial statistics and, on the other hand, countries in the process of developing, or just beginning to develop, their industrial statistics. Chapter III contains the definitions of the items of data recommended for collection and statistics recommended for publication.

PART TWO

I. PURPOSE, SCOPE, COVERAGE, AND UNITS TO BE USED

A. Purpose of the international recommendations

19. The international recommendations are presented in two versions, one applicable to countries with developed industrial statistics, and the other applicable to countries which are beginning to develop or are in the process of developing their industrial statistics. This dual approach to international recommendations for industrial statistics was suggested in various regional meetings in which annual and more frequent statistics and the results of the 1963 World Programme were discussed.

20. In the case of most countries falling in the first of the above categories conformity with the international recommendations is likely to require only slight if any adjustment to the national statistical programmes for the industrial sector. Indeed in the case of some countries in this category their national programme might be much more extensive and detailed than that contained in the recommendations. The aim here is mainly to standardize what already exists. For these countries the recommendations might be taken as a minimum standard to be met as far as data of international interest are concerned. Of course the situation in each country differs, and this might mean modifications to the international recommendations when they are applied; however it is hoped these modifications will be minor and minimal.

21. In the case of the remaining countries, that is, those beginning to develop or in the process of developing their industrial statistics, the situation is rather different. For these countries the recommendations have been drawn up with an eye to the minimum data which is feasible to collect and which is needed to meet the demands of economic and statistical analysis and economic planning. Of

course in most of these countries it is not a matter of simply adapting an existing system to an internationally recommended system. In the majority of cases it is a question of developing the rather meagre statistics that exist, and some guidance is given as to the most advantageous way in which a system of industrial statistics might be evolved. The recommendations provide some guidance as to the kind of priorities which are most likely to minimize the practical problems and at the same time provide the most essential data. These priorities concern the order in which inquiries of various frequencies might be developed in addition to the priority to be given to particular items of data in the system.

B. Limits of the recommendations

22. It is first necessary to outline the components and limits of the system dealt with here, in terms of the type of inquiry, frequency, coverage and the statistical unit used because the system described is not completely comprehensive and does not include in its structure all industrial statistics.

(a) The inquiries included are basic, annual and monthly/quarterly inquiries of a regular nature. That is ad hoc inquiries, taken occasionally or at irregular intervals are not dealt with. Neither are inquiries, which may be regular or occasional, into specialized aspects of the industrial sector such as the total stock of fixed assets or wage rates;

(b) The industrial sector is defined as the mining, manufacturing, electricity, gas and steam, and water sectors (ISIC 1, 2, 3, 51 and 521).^{12/} The construction sector, which in previous recommendations was considered to be within the scope of the term industrial, has been dealt with in a separate paper. This is in accordance with the recommendations of the Statistical Commission.^{13/} Moreover it should be noted that in setting up a system of inquiries covering the other sectors of the economy an approach somewhat different to the one described in the following pages may be necessary;

^{12/} In the proposed revised ISIC, which will be put before the Statistical Commission in 1968, this will change to 2, 3, and 4.

^{13/} A separate paper is to be presented to the Statistical Commission setting out recommendations for statistics of the construction industry (see ST/STAT/16).

(c) Finally, the establishment (or similar units) is the only statistical unit dealt with. The data considered are those appropriate for gathering when the establishment is used as the statistical unit. Enterprise-type data, particularly financial statistics, are not included in the system described.

23. In brief these recommendations deal with annual, basic and monthly/quarterly inquiries of a regular nature, concerning the industrial sector, using the establishment (or similar units) as the statistical unit and gathering establishment-type data.

C. Priorities of inquiries of varying frequency

24. The various inquiries should be viewed in the following light. The annual inquiry should be regarded as the core of the system, with the basic (infrequent) inquiry as an extended version of the annual inquiry and the monthly/quarterly inquiry as a limited version of the annual. This approach may be useful for all countries regardless of the stage of their statistical development. For those countries in the process of developing their industrial statistics it indicates a clear priority to establishing an annual inquiry.

25. This suggested approach is an attempt to set priorities which take into account the practical difficulties of undertaking statistical inquiries which proved so important for many countries in the 1963 World Programme.

26. In these recommendations much emphasis has been placed on the need for integrating the inquiries of various frequencies so that the data produced by each inquiry should supplement the data produced by the others. In order that the results should clearly supplement each other the inquiries need to be based on consistent concepts and definitions. To achieve this, special attention must be paid to scope and coverage, the statistical unit used, the classifications used, the reference period, the items of data to be gathered and their definitions.

D. Scope and coverage of the various inquiries

27. The scope of the industrial sector for the purposes of the data dealt with in these recommendations is all establishments located within the geographical boundaries of the country and engaged primarily in mining, manufacturing, and the production of electricity, gas and steam, and water (ISIC 1, 2, 3, 51 and 521).^{14/}

28. The coverage of the data relating to the various sectors will vary depending on the frequency with which they are required, the difficulty of obtaining them, the alternative sources of data and of course, most important, the resources available to the statistical authorities.

29. In all cases the coverage recommended may be attained by a complete enumeration of the relevant establishments or by using sampling techniques. The method of enumeration chosen will depend on the circumstances in each country. These circumstances differ, and it is not possible to make international recommendations on this question.^{15/}

1. The annual inquiry

30. All countries, regardless of the stage of development of their statistics, have a limit to the resources available for conducting inquiries. In the countries with developed statistics the annual inquiry in the mining, manufacturing,

^{14/} In the proposed revised ISIC, which will be put before the Statistical Commission in 1968, this will change to 2, 3 and 4.

^{15/} For a lengthy discussion of the problems involved see Studies in Methods: Industrial Censuses and Related Inquiries (United Nations publication, Sales No.: 53.XVII.11) and the papers presented to the Regional Seminars on Industrial Statistics held in 1962 and 1966. However there may be some possibility of, and value in, making recommendations on such questions as enumeration methods and standardizing the size distinction between "larger" and "smaller" units, at the regional or subregional level. The Statistical Commission may wish to make recommendations to this effect to the various regional economic commissions.

gas and steam, and water sectors should cover all the larger industrial establishments. Also, in those countries where the smaller establishments account for a substantial share in production, the more important items of data, for example, the number of persons engaged, should be collected for all establishments. In the case of units classified to the electricity-producing industry most items of data should be collected for the larger establishments, except for the quantity of electricity generated which should relate to all establishments.

31. In countries which are in the process of developing their industrial statistics the annual inquiry should begin by covering the larger establishments in branches of industry which either at present make a significant contribution to the economy or have a significant part to play in the future development of the economy. Again if industries of this nature contain many smaller establishments responsible for a substantial proportion of output then these smaller establishments should be covered.

32. The emphasis in the annual inquiry is on obtaining reliable estimates for, in the most part, fairly broad categories of industrial activity, with reliable figures for narrower categories of industry which are of strategic significance in terms of economic growth. In addition some estimates of the industrial activities of important regions of the country may be necessary.

2. The basic (infrequent) inquiry

33. More establishments should be covered in the basic inquiry than in the annual inquiry. In this sense the coverage of the basic inquiry will be an extension of the coverage in the annual inquiry. Of course the degree to which the coverage is extended will depend on the resources available. However if a successful annual inquiry has been conducted for several years then it will be

easier to extend the coverage and approach that required for a basic inquiry.

34. In countries with a developed statistical system a basic inquiry conducted every ten (or five) years should cover all establishments.

35. "All establishments" means, in principle, all those establishments which were engaged, at any time during the inquiry period (that is, the period to which the data relate) in the production of goods or services for sale or exchange. However, the very small units which are not in operation at the end of the inquiry period or at the time of enumeration would normally be excluded.

36. It should also be noted that, if the coverage is to conform with the requirements of the revised SNA, the term "all establishments" should include certain household units. The revised SNA recommends (a) that small or household units producing primary products entirely for own consumption (as well, of course, as those producing partly or entirely for sale or exchange) should be included in the field of coverage. This mainly concerns products from agriculture, forestry, fishing and hunting, but also includes mining and quarrying; and (b) that small or household units producing non-primary (that is, manufactured) products should be included in the field of coverage if their main non-primary economic activity is production of goods or services for sale or exchange. In those countries where such activities are significant they could be covered by occasional ad hoc inquiries. Moreover in any published results the activities of such household units should be shown separately from the rest of the industrial sector.

37. For countries in the process of developing their industrial statistics a basic inquiry should be undertaken every ten years. However the extension of coverage from those establishments which are covered annually to the remaining, usually smaller, establishments should be undertaken with caution, particularly

in the case of those branches of industry with many smaller establishments and which are not of strategic importance in economic growth. Given limited resources this caution in extending the coverage is necessary because of the many practical difficulties of enumerating small establishments and to ensure that the decennial basic inquiry does not disrupt the annual inquiries in the years immediately following it.

3. The monthly or quarterly inquiry

38. The coverage of the monthly or quarterly inquiries is necessarily more restricted than the coverage of the annual inquiry. Even in countries with a highly developed statistical system it would be difficult, because of the high cost, to justify covering the smaller establishments monthly or quarterly. The international recommendations do not recommend any coverage of the smaller establishments in monthly or quarterly inquiries. Even here, however, as in the case of annual surveys, some reservations may be necessary. If in a particularly important industry the smaller establishments are significant then they may have to be included in the coverage, usually by sampling. However this, as usual, will depend on the resources available.

39. In the monthly and quarterly inquiries the emphasis is on providing estimates which are reliable enough to indicate movements in certain items which are available annually on a more accurate basis. Thus the monthly/quarterly coverage may have to be adjusted in each branch of industry to meet the special circumstances of individual industries.

40. The pressing practical problem in the monthly/quarterly inquiries is to restrict in some way the number of statistical units to be enumerated.^{16/} The

^{16/} This is also a pressure for using the enterprise rather than the establishment as the statistical, or at least the reporting, unit in monthly/quarterly inquiries (see also para. 53).

techniques by which this restriction is accomplished will necessarily differ according to the characteristics of the particular branch of industry being dealt with. For example where a major share of output is produced by a few units, as in the steel or sugar refining industries, then almost all units can be covered and enumerated. At the other extreme, in baking or brick production for example, a large number of small units tend to produce a major part of a particular product and sampling techniques should be used. Only by using sampling techniques is it possible to cover many establishments by enumerating a few. However there are industries which fall between these two extremes, the units are on the one hand too many to enumerate completely and on the other hand too few for the satisfactory utilization of sampling. In this case it is possible to enumerate, and thereby cover, all units above a given size. The size cut off in each industry should be set low enough to ensure that a sufficiently large proportion, say 60 or 70 per cent, of total production is covered.

E. Reference period

41. In both the annual and the basic inquiries the data compiled should, in general, relate to a twelve-month period. Because of this there are few if any problems as far as the reference period is concerned in integrating data from annual and basic inquiries. This twelve-month period should for preference be the calendar year. However where data are more readily available for particular units on a fiscal year basis it may be necessary to accept data on that basis. If a fiscal year different from the calendar year is the normal accounting period for most statistical units, then the data may be compiled on a fiscal rather than a calendar year basis. There are advantages if all units can submit returns covering an identical twelve-month period, particularly in

integrating the annual data with the monthly/quarterly data.

42. For the monthly or quarterly inquiries the reference period will usually be the calendar month or the calendar quarter (three months: January-March, April-June and so on).

43. It should be noted that if it is intended that monthly or quarterly data are to be aggregated to provide annual figures thereby avoiding the need to collect the same data annually, there may be a number of difficulties. Even if the scope, coverage, statistical unit and data definitions are the same in monthly/quarterly and annual inquiries the reference period may still cause problems. If the units in the annual inquiry report for a varying twelve-month period (that is, some for the calendar year and others for a fiscal year) then to integrate the short period and annual data may even require a unit-by-unit aggregation of monthly/quarterly data. One solution to this is, as mentioned in paragraph 41, to collect annual returns for all establishments for an identical twelve-month period.

F. The statistical, reporting and tabulating unit

44. The statistical unit is the entity for which the required items of data are to be gathered. The reporting unit is the unit from which the data are gathered. The tabulating unit is the entity for which the required statistics are to be compiled.

45. For the inquiries and data dealt with in these recommendations the statistical unit should ideally be the establishment. In the case of the monthly/quarterly data however, particularly that concerning output, there may be some reservations attached to this recommendation (see paragraph 53).

46. The reporting unit may or may not be the establishment. When the enterprise and the establishment are identical then the situation is clear. In the

case of multi-establishment enterprises however, the reporting unit may be the enterprise which makes a separate return for each separate establishment, or each establishment may make a return for itself.

47. The establishment (or a close approximation of it) is recommended as the statistical and tabulating unit because it is the most detailed unit for which the range of data required is available. The data gathered, in order to be analytically useful, need to be grouped according to kind of activity, geographic area and size for example, and this is facilitated by the use of the establishment unit.

48. The establishment in the industrial sector can be defined ideally as an economic unit which engages, under a single ownership or control, in one, or predominantly one, kind of economic activity at a single physical location - for example, a mine, factory or workshop. This ideal concept of the establishment is applicable in many of the situations which are encountered in industrial inquiries, particularly in the manufacturing sector.

49. In practice however, the ideal concept of the establishment cannot always be strictly employed. The ideal establishment may be part of a legal entity (enterprise) which engages in more than one kind of activity at a single location. Moreover the organization and record-keeping practices of the enterprise may be such that data in respect of the outputs and coupled inputs of the different classes of activity cannot be separately compiled. In these instances, it will be necessary to utilize the local unit, that is, all the economic activities carried on at a single location under a single ownership or control, as the statistical unit.

50. Thus the organizational and record-keeping practices of producing units and the consequent limitations on the availability of data must be taken into account in defining the establishment for the purposes of practical use. The establishment

is therefore defined in operational terms as: the combination of activities and resources directed by a single owning or controlling entity toward the production of the most homogeneous group of goods and services, usually at one location, but sometimes over a wider area, for which separate records are available that can provide data concerning employment, labour remuneration, census value added and expenditure on fixed capital.

51. Tying the subdivision of the multi-unit legal entity into establishments or local units to the availability of records results, in most cases, in establishments and local units which are in practice the same thing. In other words the records maintained usually do not permit the gathering of the required data on a more homogeneous group of productive activities than that carried out by the legal entity at separate locations. This results in establishments which often embrace a range of related activities. (In some cases also records may be so organized that the local units and establishments which it is practical to delineate cover activities and resources located at two or more sites that are close to one another.) The combination of activities usually included in the establishments which it is practicable to delineate, determines the class of activities that it is feasible to include in the most detailed headings of a scheme of industrial classification. The detailed headings of the industrial classification thus furnish a means of defining the admissible range of activities that may be combined within a local unit if it is to be considered an establishment. If the local unit engages in other types of activities to a significant extent, efforts should be made to subdivide it in order to obtain a statistical unit that is comparable to the establishments delineated in most instances.

52. In the case of manufacturing, the general discussion in the previous paragraph indicates the practical problems faced and the most appropriate solution.

In the case of mining, the definition of location should be such that it includes the collection of wells, shafts or pits of the legal entity that tap a single field. Any ore processing or beneficiating plants located at the mine site should be included as a part of the statistical unit. In the case of producers of electricity, gas, steam and water the statistical unit should be defined to embrace the producing plant and its associated distribution system - including for the electricity industry, the transformer stations.

53. In the case of monthly/quarterly inquiries for data which are to be used as basic indicators in an index of industrial production, there is a particular problem. For the collection of data on the output of particular goods the statistical unit used may be the technical unit or an aggregation of technical units. The technical unit is defined as a section or department of the establishment which engages directly in the production of a class of the goods made by the establishment or in a stage in the production of these goods. If the production data are obtained from the enterprise as the reporting unit, then the figures may relate to an aggregation of technical units. Alternatively an establishment producing the good as a secondary activity may submit data for its technical unit. Obviously if the index of industrial production combines weights derived from classifying establishments to industries and basic indicators (that is, quantities of goods produced) reflecting a classification of goods and services, there will be problems in relating the resulting index to output data derived from an annual inquiry. If possible therefore the establishment should be used as the statistical unit in monthly and quarterly inquiries for all items of data as there are positive advantages in doing so, particularly from the point of view of integrating the monthly/quarterly statistics and annual statistics.

G. Ancillary units

54. An ancillary unit can be generally defined as one providing current goods and services exclusively for the use of the parent producing unit(s) which do not become an integral part of the output of these units.

55. The clearest example of an ancillary unit is a central administrative office. Other examples of ancillary units are warehouses, garages, repair shops, or electric power plants, which serve their parent units only. As a general rule, if the ancillary activities are carried on for the benefit of a single statistical unit, these activities as well as the resources involved in the activities, should be included as an integral part of the activities and resources of the parent statistical unit.

56. Where ancillary activities are organized in support of two or more statistical units of a multi-unit enterprise, they constitute a central ancillary unit. If separate records are available for this kind of unit yielding the items of data required, then it can be treated as a separate unit but it would generally be classified to the same category of the industrial classification as the major unit(s) which it serves. Similarly a large separately located ancillary unit for which the appropriate data can be gathered, might be treated as a separate statistical unit even though it serves only one parent unit and would generally be classified to the same category of the industrial classification as its parent unit. However in both cases (that is, the central ancillary unit and the large, separately located ancillary unit), there is nothing to preclude their assignment to categories based on their own activity for the purpose of supplementary tabulations.

57. There are exceptions to the general rule of treating ancillary activities as an integral part of the parent unit served. If the ancillary activity is

large and is significant in the economy and separate data are available then it should be treated as a separate statistical unit and classified to its own activity (for all purposes and not simply for supplementary tabulations). This is mainly necessary when the activity to which the parent unit is classified is radically different (for example falls in a different division of the ISIC) from the activity to which the ancillary unit would be classified if treated as a separate unit. In the context of industrial statistics examples of such units mostly fall into two categories, they are either (a) engaged in an industrial activity that is ancillary to a non-industrial enterprise (for example, a railways repair shop or an agricultural equipment repair station), or (b) engaged in a non-industrial activity that is ancillary to an industrial enterprise (for example, a sales branch, a transportation unit).

H. Secondary activities

58. Secondary activities are those activities, carried on by an establishment, which do not fall into the same category of the industrial classification system as the major activities of the establishment and which cannot be considered ancillary activities.

59. It is of some importance to clearly distinguish secondary activities from ancillary activities (and units). This is because they are to be treated in different ways. Ancillary activities should be treated as separate units and, more important, classified to their own activity only in certain circumstances (see paragraphs 56 and 57). On the other hand activities which are termed secondary should always be treated as separate units and classified to their own activity if the necessary data are available. (The necessary data are those mentioned in paragraph 50.) In other words, when the establishment is being used as the statistical unit, secondary activities exist only because the data are not

available to separate them out into distinct establishments. Of course it follows from this that if separate data are not available and secondary activities do exist, then they will be dealt with as part of the establishment in exactly the same way as the main activity.

60. The distinction between secondary activities and ancillary activities is usually clear but some border-line cases exist and some examples might be useful.

61. Ancillary activities are defined (see paragraph 54) as providing current goods and services, exclusively for the use of the parent producing unit(s), which do not become an integral part of the output of those units. This definition leads into the examples of secondary activities.

62. First, the production of goods, or works done, for a "parent" unit which are mainly part of fixed capital formation are secondary and not ancillary activities. The major example of this is own-account construction work. It should be noted that the ISIC (1968 revision) classifies own-account construction, for which data are available to identify a separate unit, to the construction industry.

63. Second, activities involving the production of goods which become an integral part of the output of the "parent" unit are secondary and not ancillary activities. One fairly common example of this is the making of boxes, tin cans or the like by a sector of the unit as packaging for its own products. Other examples resulting from vertical integration of the organization or production, are sawmilling combined with tree-felling, clay pits combined with brick works and the production of synthetic fibres combined with a textile mill.

64. Third, activities which in all other respects are ancillary but which involve the sale of part of their output to units other than the "parent" unit are secondary and not ancillary activities (see paragraph 55).

65. Finally, there are the most obvious kind of secondary activities involving the production for sale of goods which do not fall into the same category of the industrial classification as the major activity of the establishment. Examples of this, at the ISIC (1958) major group level of detail, are the production of electrical machinery combined with the production of machinery other than electrical and the manufacture of bakery products in combination with the manufacture of chocolate confectionery. This kind of secondary activity can be regarded as the consequence of horizontal integration of the organization of production. Of course the degree to which secondary activities of this kind exist will be a function of the level of detail of the industrial classification system which is being used; the more detailed the classification, the more likely that secondary activities will occur.

II. ITEMS OF DATA TO BE GATHERED AND STATISTICS TO BE PUBLISHED

66. The following tables contain the recommendations for the items of data to be gathered, classified and published on an internationally comparable basis for basic (infrequent), annual and monthly or quarterly industrial inquiries. A number of the items listed for classification (and publication) only are derived from other items recommended for gathering.

67. For inquiries of each frequency a distinction is made between items of data that might be gathered for all units (both the larger and the smaller units) and those that might be gathered for the larger units only. Within each of these categories each item of data is indicated as being of first priority (noted in the table by "1"), or second priority (noted by "2"). If nothing is shown against the item in a particular column then it is not recommended for gathering or publication.

68. The choice of the items of data listed and the priorities given is based on a consideration of the relative usefulness of, or the need for, the statistics of which the item is part (or the whole) and the cost and difficulties of gathering the items.

69. No recommendation has been made for a cut-off point to distinguish between the "larger" and "smaller" units. Circumstances are different in each country and it is not possible to settle on a suitable distinction which is internationally useful. In addition circumstances differ between industries and the appropriate distinction between the larger and smaller units may need to be adjusted to the characteristics of the units in each industry.

70. In some industries, in some countries, the coverage attained by covering the larger units only may not be sufficient, in which case the smaller units might also have to be enumerated to attain satisfactory coverage. Of course different

techniques will almost certainly have to be used to enumerate on the one hand the larger units and on the other hand the smaller units. The recommendations given in the table distinguishing between all units and the larger units are therefore made in the realization that, in some industries, for a few items of data, although the recommendation is for larger units only, it may be necessary to extend this coverage.

A. Data to be gathered and published by countries
with developed industrial statistics

71. The table in this section contains recommendations for countries with fairly well-developed industrial statistics.

72. The column headings 8 through 11 in the table need some explanation. If the kind-of-activity classification recommended in columns 8 through 10 is to provide an adequate basis for international analysis of the data, the industrial classification used should be convertible to the ISIC (International Standard Industrial Classification of All Economic Activities^{17/}). The more detailed is the classification employed the more useful are the published statistics. The level of detail at which the data are shown, however, will depend in any particular case on the number of units falling within each industrial category, the legal limitations on disclosure of data concerning individual units, and whether sampling techniques are used that limit the possibility of making reliable estimates for the narrowly defined industrial categories.

73. The classifications according to size and kind of activity in basic inquiries, recommended in column 11, involve showing each size class of the

^{17/} United Nations publication, Sales No.: 58.XVII.7.

statistical unit within each industry. The industry classification should, as mentioned above, be convertible to the ISIC; the level of detail shown may, however, have to be curtailed in view of the dimension added by the introduction of a size classification.

74. Certain other characteristics of the statistical unit are recommended for gathering. These are the type of ownership, the type of legal organization and the type of economic organization. Although the table does not set out any international recommendations for classification of the data by these characteristics, they are of course available for this purpose. The usual types of classification, for a few items of data (for example, number of units, number of engaged and possibly value added), will probably be by kind of activity and type of ownership, by kind of activity and type of legal organization, by kind of activity and type of economic organization, and by kind of activity and region. The major reason these have not been included in the table is because they are less relevant than the kind-of-activity and size classifications for purposes of international comparisons.

Table 1. Data to be gathered and published.^{1/} For countries with developed industrial statistics
 Scope: Mining, manufacturing, electricity, gas and steam, and water (ISIC 1, 2, 3, 51 and 521)
 Statistical unit: Establishment (or similar units)

Items of data	Statistics to be gathered in						Statistics to be classified according to kind of activity in			Statistics to be classified according to size and kind of activity in basic inquiries	
	Basic inquiries		Annual inquiries		Monthly or quarterly inquiries ^{2/}		Basic inquiries	Annual inquiries	Monthly or quarterly inquiries ^{3/}		
	For all	Only for larger	For all	Only for larger	For all	Only for larger					
1	2	3	4	5	6	7	8	9	10	11	
A. Statistical unit											
1. Kind of activity (industry)	1		2	1							
2. Type of ownership	1			2							
3. Type of legal organization	1										
4. Type of economic organization		1									
5. Number of statistical units							1	1		1	
B. Employment											
1. Total number of persons engaged during a single period of the inquiry period ^{4/} distinguishing	1 ^{5/}		2 ^{6/}	1			1	1			
(a) Number of working proprietors	1						1				
(b) Number of unpaid family workers	1						1				
(c) Number of employees distinguishing:	1			1		1	1	1	1		
(i) Operatives	1			1		2	1	1	2		
(ii) Other employees	1			1		2	1	1	2		
2. Number of employees engaged during several periods of the inquiry period* distinguishing		1		1			1	2			
(a) Operatives*		1		1			1	1			
(b) Other employees*		1		1			1	2			
3. Number of man-hours worked by operatives		1		1		2 ^{7/}	1	1	2		
4. Average number of employees engaged during the inquiry period ^{8/} distinguishing:							1	1		1	
(a) Operatives							1	1		2	
(b) Other employees							1	1			
5. Average number of persons engaged during the inquiry period ^{9/}							1	1		1	
C. Compensation of employees											
1. Wages and salaries paid to employees during the inquiry period ^{4/} distinguishing payments to	1		2	1		1	1	1	1	2	
(a) Operatives	1			1		2	1	1	2	2	
(b) Other employees	1			1		2	1	1	2		
2. Employers' contributions to social security, pension and similar schemes in respect of their employees	2	1		1			1	1			
D. Fixed assets											
1. Total cost of new fixed assets acquired from others or produced on own account during the inquiry period distinguishing:	1			1			1	1		2	
(a) Building, improvements to land and other construction work		1		1			1	1			
(b) Transport equipment		1		1			1	1			
(c) Machinery and other equipment		1		1			1	1			

Items of data	Statistics to be gathered in						Statistics to be classified according to kind of activity in			Statistics to be classified according to size and kind of activity in basic inquiries
	Basic inquiries		Annual inquiries		Monthly or quarterly ^{2/} inquiries		Basic inquiries	Annual inquiries	Monthly or quarterly inquiries ^{2/}	
	For all	Only for larger	For all	Only for larger	For all	Only for larger				
	Statistical units						8	9	10	
1	2	3	4	5	6	7	8	9	10	11
2. Total cost of used fixed assets acquired during the inquiry period* distinguishing		1		1			1	1		
(a) Building and other construction work*		1		1			1	1		
(b) Transport equipment*		1		1			1	1		
(c) Machinery and other equipment*		1		1			1	1		
(d) Land*		1		1			1	1		
3. Total value of sales during the inquiry period of fixed assets used by the statistical unit* distinguishing		1		1			1	1		
(a) Building and other construction work*		1		1			1	1		
(b) Transport equipment*		1		1			1	1		
(c) Machinery and other equipment*		1		1			1	1		
(d) Land*		1		1			1	1		
4. Gross additions to fixed assets during the inquiry period <u>10/</u> distinguishing							1	1		
(a) Building, improvements to land and other construction work							1	1		
(b) Transport equipment							1	1		
(c) Machinery and other equipment							1	1		
(d) Land							1	1		
E. Capacity of power equipment in use and in reserve, installed as of a given date during the inquiry year <u>11/</u>							1			2
1. Prime movers, distinguishing those not driving electric generators from others <u>11/</u>		1					1			
2. Electric motors, distinguishing those driven by purchased electricity from others <u>11/</u>		1					1			
3. Generators		1					1			
F. Value of stocks at the beginning and end of the inquiry period										
1. Raw materials, fuels, supplies etc. (including goods ordinarily to be sold in the same condition as received) of which:	2	1		1			1	1		
(a) Value and quantity of individually important goods						2			2	
2. Work in process <u>12/</u>		1		1			1	1		
3. Finished goods produced <u>13/</u> of which:	2	1		1		2	1	1	2	
(a) Value and quantity of individually important products						1			1	
3. Electricity										
1. Quantity and cost of electricity purchased	1			1		1 <u>14/</u>	1	1	1	
2. Quantity of electricity generated	1		1 <u>15/</u>	1		2				
3. Quantity and value of electricity sold to others		1		1		2 <u>14/</u>				
4. Quantity of electricity consumed							1 <u>16/</u>	1 <u>16/</u>	2 <u>16/</u>	2

Items of data 1	Statistics to be gathered in						Statistics to be classified according to kind of activity in			Statistics to be classified according to size and kind of activity in basic inquiries 11
	Basic inquiries		Annual inquiries		Monthly or quarterly ^{2/} inquiries		Basic inquiries	Annual inquiries	Monthly or quarterly ^{2/} inquiries	
	For all	Only for larger	For all	Only for larger	For all	Only for larger				
	2	3	4	5	6	7	8	9	10	
H. <u>Cost of goods received or consumed and payments for industrial services rendered during the inquiry period . .</u>	1			1			1	1		
1. Cost of raw materials, supplies, components etc. . . of which	1			1			1	1		
(a) Quantity and cost of individually important materials.	2	1		1		1 17/	1	1	1 18/	
2. Quantity and value of fuels received or consumed . . distinguishing:	2	1		1			1	1		
(a) Coal		1					1			
(b) Petroleum products		1					1			
(c) Natural gas.		1					1			
(d) Wood		1					1			
(e) All other fuels		1					1			
3. Cost of goods to be sold in the same condition as received		1		1			1	1		
4. Cost of contract and commission work done by others during the inquiry period		1		1			1	1		
5. Cost of repair and maintenance work done by others during the inquiry period		1		1			1	2		
I. <u>Total quantity of energy (electricity and fuels) received or consumed (G. 1. + H. 2.)</u>							1			
J. <u>Cost of non-industrial services rendered by others to the unit during the inquiry period 19/</u>		2		2			2	2		
K. <u>Indirect taxes and subsidies</u>				2						
L. <u>Value of goods shipped or produced and receipts for industrial services rendered to others during the inquiry period</u>	1			1		2 20/	1	1	2	
1. Value of all products of which:		1		1			1	1		
(a) Quantity and value of individually important products.	2	1		1		1 21/	1	1	18/	
2. Value of goods shipped in the same condition as received.		1		1			1	1		
3. Receipts for industrial work done or services rendered to others		1		1			1	1		
M. <u>Receipts for non-industrial services rendered to others (i.e. other economic activities not included under L. 3.).</u>		2		2			2	2		
N. <u>Gross output^{22/} during the inquiry period</u>							1	1	1	
O. <u>Value added^{22/}</u>							1	1	1	
P. <u>Orders^{23/}</u>										
1. Net new orders received						1			1	
2. Unfilled orders at the end of the inquiry period . .						1			1	

FOOTNOTES TO TABLE 1

- 1/ For international purposes all the data for the items to be gathered, except those marked with an asterisk, should be published. In the case of those items of data to be classified (as shown under columns 8 to 11) they should be published according to the classification suggested. Some derived items of data (B. 4. (a) and (b); D. 4. (a), (b), (c) and (d); G. 4; I; N; and O) are also included in the list and these are marked only under the "to be classified" columns (i.e. 8 to 11). In addition to the classification suggested in the headings to the table, other classifications are available, that is, by type of ownership, by type of legal organization, by type of economic organization and by region (see para. 74 of the paper).
- 2/ In the monthly and quarterly inquiries the major importance of most items of data, other than the data on the individually important products produced, which is important information in itself, is their contribution to the calculation of indexes of production and employment. Consequently various items will have a differing importance as indicators in various industries. While the usual basic indicator, apart from the products produced, is the quantities of materials used, other indicators, such as man-hours worked and electricity consumed etc., may be important in certain industries. Therefore the items recommended and the priorities given for these items might vary according to the national circumstances.
- 3/ In the monthly or quarterly inquiries the classification by kind of activity of the statistical units and items of data gathered should usually be the same as in the annual inquiry. Consequently no information concerning kind of activity (item A. 1.) is recommended for gathering in monthly and quarterly inquiries.
- 4/ Homeworkers (and payments to homeworkers) are not included in the table. If they are important both the numbers involved and the payments made to them should be enumerated as separate items in the context of "Employment" (item B) and "Compensation of employees" (item C). The data should however be available separately; then they can be dealt with in the way most appropriate to the use being made of the statistics, that is, payments to homeworkers can be treated either as part of "Compensation of employees" or as part of the "Cost of contract and commission work done by others" (item H. 4.).
- 5/ The sum of items (a), (b), and (c) under B. 1.
- 6/ A priority of one should be given to this item of data in those countries where the smaller establishments have a considerable share in industrial activity.
- 7/ This item has a priority of one for those branches of activity where it is used for the calculation of index numbers of industrial production.
- 8/ Computed from "Number of employees engaged during several specified periods of the inquiry period" (item B. 2.).

- 9/ Defined as the sum of the "average number of employees" plus the "number of working proprietors" and the "number of family workers" during a single period of the inquiry period (items B. 4. plus B. 1. (a) plus B. 1. (b)). If the average number of employees other than operatives (item B. 4. (b)) is not available annually, then the number during a single period (item B. 1. (c) (ii)) can be used instead.
- 10/ The sum of the cost of new fixed assets and the cost of used fixed assets less the value of sales of fixed assets used by the unit (items D. 1. plus D. 2. less D. 3.).
- 11/ The capacity of installed power equipment is equivalent to either the sum of the "capacity of prime movers not driving electric generators" and the "capacity of all electric motors" or the sum of the "capacity of all prime movers" and the "capacity of electric motors driven by purchased electricity". Because of the difficulty of distinguishing the electric motors driven by purchased electricity, the first method of computation is often preferred. If this approach is used it is not necessary to distinguish electric motors by source of energy.
- 12/ This item is not relevant for the mining and electricity industries.
- 13/ This item is usually not relevant for the units in the electricity industry.
- 14/ It may be necessary to collect only the quantity of the electricity purchased and sold in monthly or quarterly inquiries.
- 15/ In the case of the smaller establishments, this item need be gathered only from those units which are classified to the electricity industry.
- 16/ For the larger establishments this item will be derived by adding the quantity purchased and the quantity generated and deducting the quantity sold to others (items G. 1. plus G. 2. less G. 3.). For the smaller establishments the quantity sold may be assumed as negligible and the consumption is simply taken as the quantity purchased plus the quantity generated (items G. 1. plus G. 2.).
- 17/ This priority applies only to the receipt or consumption of the quantity of those important materials which are needed for the calculation of index numbers of industrial production. In addition the value of goods received or consumed might be gathered if it is needed for index numbers of wholesale prices.
- 18/ Whether it is necessary to classify this item according to kind of activity will depend on how the data are collected and used to calculate the indexes of industrial production.
- 19/ The items selected for gathering should be chosen from payments for insurance, publicity and advertising, other professional services and communication expenses. The items selected should, of course, be those available for the individual establishment.

- 20/ For those branches of industry in which "orders received" are an important indicator, data concerning shipments are recommended for gathering with a priority of one.
- 21/ This priority applies only to the quantity of those products which are needed for the calculation of index numbers of industrial production. In addition the value of the products might be gathered if required for compiling price indexes.
- 22/ For the purpose of industrial statistics these items include industrial activity only, that is, it excludes item M.
- 23/ This item should be gathered for selected branches of industry only.
- * Indicates that data for this item need not be published for international purposes.

B. Data to be gathered and published by countries beginning to develop their industrial statistics

75. The table in this section contains recommendations for countries which are beginning to develop, or are in the process of developing, their industrial statistics. Of course all countries will eventually aim at adopting the more comprehensive recommendations listed in table 1, but an interim set of objectives is necessary. This interim set is a modified and shortened version of the more comprehensive recommendations.

76. The recommendations in the following table contain fewer items of data than those in table 1, and some items are recommended for gathering less frequently or with a lower priority. For example, as can be seen by comparing the tables, table 2 omits the items "Employers' contributions to social security, pension and similar schemes in respect of their employees"; "Total cost of used fixed assets"; "Total value of sales of fixed assets"; "Capacity of power equipment"; "Total quantity of energy consumed in coal equivalent"; "Cost of non-industrial services rendered by others"; "Indirect taxes and subsidies"; and "Receipts for non-industrial services rendered by others". These less ambitious recommendations for the countries concerned are an attempt to take account of their limited resources and the difficulties involved in gathering the data.

77. The explanations given for the headings of columns 8 through 11 in table 1 (see paragraphs 72 and 73) also apply in the case of table 2.

78. As in the case of table 1 (see paragraph 74) certain characteristics of the statistical unit, additional to those mentioned in the headings of columns 8 through 11, are available for classification of the data. These are the type of ownership and the regional location of the unit.

Table 2. Data to be gathered and published: ^{1/} For countries beginning to develop, or in the process of developing, their industrial statistics
 Scope Mining, manufacturing, electricity, gas and steam, and water (ISIC 1, 2, 3, 51 and 521)
 Statistical unit. Establishment (or similar units)

Items of data	Statistics to be gathered in						Statistics to be classified according to kind of activity in			Statistics to be classified according to size and kind of activity in basic inquiries	
	Basic inquiries		Annual inquiries		Monthly or quarterly inquiries ^{2/}		Basic inquiries	Annual inquiries	Monthly or quarterly inquiries ^{2/}		
	For all	Only for larger	For all	Only for larger	For all	Only for larger					
	Statistical units						8	9	10		11
1	2	3	4	5	6	7	8	9	10	11	
A. Statistical unit											
1. Kind of activity (industry)	1		2	1							
2. Type of ownership		1									
3. Number of statistical units							1	1		1	
B. Employment											
1. Total number of persons engaged during a single period of the inquiry period distinguishing:	1		2	1			1	1			
(a) Working proprietors and unpaid family workers.	1						1				
(b) Employees.	1					1	1		1		
2. Number of employees engaged during several periods of the inquiry period ^{3/} distinguishing:		1		1							
(a) Operatives*		1		2							
(b) Other employees*		1		2							
3. Number of man-hours worked by operatives		1		2		2 1/2	1	2		2	
4. Average number of employees engaged during the inquiry period ^{2/} distinguishing:							1	1			1
(a) Operatives							1	2			2
(b) Other employees							1	2			
C. Wages and salaries											
1. Wages and salaries paid to employees during the inquiry period distinguishing:	1			1			1	1			2
(a) Operatives	1			2			1	2			2
(b) Other employees	1			2			1	2			
D. Fixed assets											
1. Total cost of new fixed assets acquired from others or produced on own account during the inquiry period distinguishing:	1			1			1	1			2
(a) Building, improvement to land and other construction work		1		2			1	2			
(b) Transport equipment		1		2			1	2			
(c) Machinery and other equipment		1		2			1	2			
E. Value of stocks at the beginning and end of the inquiry period											
1. Raw materials, fuels, supplies and so on (including goods ordinarily to be sold in the same condition as received)		1		2			1	2			
2. Work in process ^{6/}		2					2				
3. Finished goods produced ^{7/}		1		2			1	2			
F. Electricity											
1. Quantity and cost of electricity purchased	2	1		1			1	1			
2. Quantity of electricity generated	2	1	1 8/	1			1	1			
3. Quantity and value of electricity sold to others		1		1			1	1			
4. Quantity of electricity consumed							1 9/	1 9/			2

Items of data	Statistics to be gathered in						Statistics to be classified according to kind of activity in			Statistics to be classified according to size and kind of activity in basic inquiries
	Basic inquiries		Annual inquiries		Monthly or quarterly inquiries ^{2/}		Basic inquiries	Annual inquiries	Monthly or quarterly inquiries ^{2/}	
	For all	Only for larger	For all	Only for larger	For all	Only for larger				
Statistical units							8	9	10	11
1	2	3	4	5	6	7	8	9	10	11
G. <u>Cost of goods received or consumed and payments for industrial services rendered during the inquiry period</u>	1			1			1	1		
1. Cost of raw materials, supplies, components, etc. of which.		1		2			1	2		
(a) Quantity and cost of individually important materials						1 10/			11/	
2. Quantity and value of fuels received or consumed		1		2			1	2		
3. Cost of goods to be sold in the same condition as received		2					2			
4. Cost of contract and commission work done by others during the inquiry period		2					2			
5. Cost of repair and maintenance work done by others during the inquiry period		2					2			
H. <u>Value of goods shipped or produced and receipts for industrial services rendered to others during the inquiry period</u>	1			1			1	1		
1. Value of all products of which.		1		2			1	2		
(a) Quantity and value of individually important products		2		2		1 12/	2	2	11/	
2. Value of goods shipped in the same condition as received		2		2			2	2		
3. Receipts for industrial work done or services rendered to others		2		2			2	2		
I. <u>Gross output during the inquiry period</u>							1	1		1
J. <u>Value added</u>							1	1		1

FOOTNOTES TO TABLE 2

- 1/ For international purposes all the data for the items to be gathered, except those marked with an asterisk, should be published. In the case of those items of data to be classified (as shown under columns 8 to 11) they should be published according to the classification suggested. Some derived items of data (B. 4. (a) and (b); F. 4; I; and J) are also included in the list, and these are marked only under the "to be classified" columns (that is, 8 to 11). In addition to the classifications suggested in the headings to the table other classifications are available, that is, by type of ownership, and by region.
- 2/ In the monthly and quarterly inquiries the major importance of most items of data, other than the data on the individually important products produced which is important information in itself, is in their contribution to the calculation of indexes of production and employment. Consequently various items will have a differing importance as indicators in various industries. While the usual basic indicator, apart from the products produced, is the quantities of materials used, other indicators, such as man-hours worked and electricity consumed etc., may be important in certain industries. Therefore the items recommended and the priorities given for these items might vary according to the national circumstances.
- 3/ In the monthly or quarterly inquiries the classification by kind of activity of the statistical units and items of data should usually be the same as in the annual inquiry. Consequently no information concerning kind of activity (item A. 1.) is recommended for gathering in monthly and quarterly inquiries.
- 4/ This item is recommended for monthly/quarterly inquiries only if the data are used in calculating index numbers of industrial production.
- 5/ Computed from "number of employees engaged during several periods of the inquiry period" (item B. 2.).
- 6/ This item is not relevant for units in the mining and electricity industries.
- 7/ This item is usually not relevant for units in the electricity industry.
- 8/ In the case of the smaller establishments this item need be gathered only from those units which are classified to the electricity industry.
- 9/ For the larger establishments this item is derived by adding the quantity purchased and the quantity generated and deducting the quantity sold to others (item F. 1. plus F. 2. less F. 3.). For the smaller establishments in basic inquiries the quantity sold may be assumed as negligible and the consumption is simply taken as the quantity purchased plus the quantity generated (item F. 1. plus F. 2.).
- 10/ This recommendation is only for the receipt or consumption of those materials which are needed for the calculation of index numbers of industrial production.

- 11/ Whether it is necessary to classify this item according to kind of activity will depend on how the data are collected and used for the calculation of index numbers of industrial production.
- 12/ This recommendation is only for those products which are needed for the calculation of index numbers of industrial production.
- * Indicates that data for this item need not be published for international purposes.

C. Inquiry descriptions to be published by all countries

79. To enable the users of the published statistics to evaluate their comparability - both with the statistics from other inquiries in the same country and with the statistics of other countries - and to assess their reliability, the following information should be published:

(a) A description of the scope of the inquiry (that is, which industrial and other activities were included in the field of inquiry) and definitions of the various statistical units in terms of which the field of inquiry was defined and the items of data were gathered.

(b) A description of the coverage of the survey (that is, whether industrial units of all sizes were included and so on).

(c) A description of the methods of covering the field of inquiry - whether by direct collection (by mail or by field enumeration), administrative reports, or sampling (including a description of the sample design used and estimates of probable sampling errors). This description might also include an evaluation of the completeness of coverage attained.

(d) The operational definitions of the items of data gathered, perhaps in the form of copies of the questionnaires, and the basic instructions used. The definitions of the statistics that have been compiled in addition to these items of data should be given. Also a description of the prices used for the values enumerated.

(e) The extent and treatment of any non-response including:

(i) The number and the importance of known units failing to respond to the questionnaire together with, if possible, some of the key characteristics of those non-respondents - that is, their kind of activity and size particularly. Also, whether estimates for these non-respondents have been included in the published data.

(ii) The extent of the non-response to particular questions for which no estimates have been or could be made.

(f) A description of the industrial and other classifications used.

(g) A measure of the extent to which the data shown for each published industrial classification heading relate to activities that, had they been separately reportable, would have been classified to other headings of the classification. One such measure is the homogeneity ratio. This is the ratio of the "value of output, by the units classified to the industry heading indicated, of products and services that are properly classifiable to that heading" to the "total value of output of the same units".

80. Special care should be taken to ensure the comparability of the data over time in order that valid time series can be established. It is therefore necessary to take adequate steps to ensure comparability where changes occur in (a) classification; (b) scope and coverage; and (c) standards and methods used. Of course this does not exhaust the factors which might affect comparability; there are for example changes in the number of working days and changes in prices and so on. If significant changes do occur, then comparability should be maintained by arranging for the items of data in question to be published for one period by both methods. And in the case of time series, the chain index method may be applied.

III. DEFINITIONS OF THE STATISTICS TO BE PUBLISHED AND THE ITEMS
OF DATA TO BE GATHERED

81. In this chapter, summary definitions are given of all items of data recommended for collection and publication in chapter II together with those additional items of data derived from this basic system which are recommended there for tabulation and publication.

A. The statistical unit

1. Kind of activity (industry)

82. The classification of the statistical unit by kind of activity is determined according to the principal class of goods produced or handled or services rendered. Ideally, the principal products or services of the unit should be ascertained by reference to the value added in the various activities. In practice, however, it is rarely possible to obtain the information for individual products or services; and it is necessary to adopt some other criterion which may be expected to give approximately the same results. It is recommended, therefore, that, as far as possible, the major kind of activity, or class of activities, of the unit should be determined by the gross revenue of the establishment attributable to the products or services associated with these activities. In cases where it is clear that this principle is not applicable the major activities of the establishment should be ascertained from the proportion of employment in these activities.

83. In those cases where a national industrial classification system differing from the ISIC (International Standard Industrial Classification^{18/}) is in use, then

^{18/} Ibid. (footnote 17). Also note that a revised version of the ISIC is to be put before the Statistical Commission in 1968.

this national system should be convertible to the ISIC at the major group (two-digit) level at least.

84. It might also be noted that in the monthly or quarterly inquiries the classification by kind of activity of the statistical units and the items of data gathered can usually be the same as in the annual inquiry. Consequently no information concerning kind of activity (item A. 1) is recommended for gathering in monthly or quarterly inquiries.

2. Type of ownership

85. This item is designed to distinguish between privately owned units and the various forms of publicly owned units. The categories of publicly owned units should conform to the main divisions of public ownership in each country but should normally differentiate between central government ownership, ownership by state governments and ownership by local authorities. The main categories of public ownership and of joint private and public ownership should be distinguished where these are important. The general criteria for classification should be the existence of effective control by the sector or authority concerned rather than formal participation in ownership.

3. Type of legal organization

86. This item should be defined in terms of the legal form of the legal entity which owns the unit directly, and the categories utilized should reflect the laws and customs of the countries. The minimum classification might distinguish between individual proprietorship, partnerships, corporations and co-operatives with further breakdowns, for example, of partnerships into limited liability partnerships and unlimited liability partnerships, or of co-operatives into incorporated co-operatives and unincorporated co-operatives, introduced on the basis of national circumstances and requirements.

4. Type of economic organization

87. This item is intended to indicate simply whether the unit is the sole establishment of the enterprise of immediate ownership or is part of a multi-unit enterprise. The classification should distinguish as a minimum between single-unit enterprises and multi-unit enterprises. Multi-unit enterprises might be divided into classes according to the number of their constituent statistical units, if further detail is required on this aspect of the industrial structure.

88. In order to identify the enterprise to which the unit belongs, the name of the enterprise of immediate ownership and the address of its central office should be requested. Similarly, the central office of the legal entity, or the statistical unit itself, might be asked whether the firm is owned or controlled by another legal entity, and if so to supply the name and address of the central office of that legal entity. For control or operational purposes it is also useful to request from the central offices enumerated, a list of subsidiary legal entities, establishments and other statistical units utilized.

5. Number of statistical units

89. The distribution of the number of statistical units according to kind of activity (industry) and size provides an important indication of the structure of industry. There are some alternative methods of counting the number of units. The alternatives are:

(a) The number of statistical units making returns;

(b) The number of statistical units to which the published data relate (this would be those under (a) plus any units for which estimates are made);

(c) The number of statistical units active any time (or at a particular date) during the inquiry period falling within the scope and coverage of the inquiry (this may not be available and may or may not be the same as the number under (b));

(d) The number of statistical units in existence which, if available, would include both active and inactive units.

90. The most meaningful figure, when all the data obtained from an industrial inquiry are published together, is clearly the number of statistical units to which the data relate (that is, item (b) in paragraph 89). There may also be some interest in the other counts listed above.

6. Location

91. The physical location of the statistical unit should be defined by the site of the plant rather than by the mailing address. The geographical classification employed in the tabulations should normally distinguish between major economic regions or administrative divisions.

92. It is also important for operational purposes to obtain the recognized address to which written communications may be sent. This may be the same as the physical location of the unit, or the address of a separately located central office. It should be the address to which any queries concerning the establishment can be referred.

7. Size

93. The size of the unit should be primarily defined in terms of the average number of persons engaged in the unit during the inquiry period (item B. 5 in table 1, see paragraph 111). The size classification should consist of at least the following classes (or of combinations of these classes) of persons engaged: 1-4, 5-9, 10-19, 20-49, 50-99, 100-199, 200-499, 500-999 and 1,000 and over; and it is possible to develop any further breakdown within this framework; unless, of course, as noted in paragraph 72, publication of the data at this level of detail is not possible.

94. A definition of size based on numbers engaged is recommended because of its simplicity, its general applicability and its usefulness. It is recognized, however, that other criteria of size, such as value added or gross receipts may also be of

interest for particular purposes, either alone or in conjunction with the recommended criterion. It may also be useful to provide supplementary size classifications for highly seasonal industries in terms of numbers engaged at a period of peak activity rather than in terms of the average over the inquiry period. In addition it should be noted that for the smaller units, in view of the usual absence of records, their size might best be defined as the "total number of persons engaged" during a short period near the end of the reference period.

B. Employment

1. Total number of persons engaged during a single period of the inquiry period

95. The number of persons engaged by the statistical unit should be defined as the total number of persons who work in or for the unit, including working proprietors and active business partners and unpaid family workers.^{19/} The enumeration should relate to the number of persons engaged during a specified period of time, such as a pay period or calendar week rather than on a specified day. The total should include persons on short-term leave such as sick leave, annual leave or vacations and also persons on strike; it should exclude persons on indefinite leave, military leave or on pension.

^{19/} In countries where the number of homeworkers is significant they should also be enumerated but shown separately. The same applies to payments to homeworkers (which would be dealt with under "compensation of employees"). Homeworkers are persons employed by the statistical unit (usually on a piece-work basis) who perform the work in their own home. The data for homeworkers should be separately available so that payments to homeworkers can be treated either as part of wages and salaries, and thereby included in the value added of the unit for which they work, or as part of the cost of contract and commission work done by others, and thereby excluded from the value added of the unit. The correct treatment will be determined by how the industrial (and other) data are used in making national accounts estimates.

96. In basic inquiries, the figures shown for the total number of persons engaged in each of the main status groups should normally distinguish between male and female. A distinction between adults and juveniles based on the laws and customs of each country might also be introduced.

97. Each status group should be defined as follows:

(a) Number of working proprietors

98. All individual proprietors and partners who are actively engaged in this capacity in the work of the statistical unit. It should exclude silent or inactive partners and members of a proprietor's family unless they participate actively in the work of the establishment. (This category is not applicable to any incorporated or similar enterprise the ownership of which is represented by equity shares.)

(b) Number of unpaid family workers

99. All persons living in the household of any of the proprietors of the owning enterprise and working in the statistical unit without regular pay (that is, without an agreed amount to be paid for work done) for at least one-third of the working time normal to that unit.

100. It should be noted that in some countries it may not be possible to distinguish between "unpaid family workers" and "working proprietors".

101. In addition some countries may find it convenient to specify an absolute minimum time a family member must work in the business (for example, fifteen hours per week) before he is counted as an "unpaid family worker".

(c) Employees

102. All persons are included who do work in the statistical unit for which they receive pay, and persons working away from the unit when paid by and under the control of the unit - for example, sales representatives, travelling engineering representatives, travelling maintenance and repair personnel. (It may be difficult

to determine whether or not sales representatives are employees.) Also included are salaried managers and directors of incorporated enterprises except when paid solely for their attendance at board of directors' meetings. The category "employees" is intended to include all persons engaged other than working proprietors and unpaid family workers.

103. The employee data should, if possible, distinguish between operatives and other employees. The object of the subdivision is to identify those employees most directly associated with the productive, as opposed to the overhead activities of the unit. The precision with which this distinction can be made depends on the nature of employment and payroll records available for most units - that is, the detail of these records and their similarity from one unit to another.

(i) Operatives

104. All employees are included who are directly engaged in the production or related activities of the unit including any clerical or working supervisory personnel whose function is to record or expedite any step in the production process. Examples are persons engaged in fabricating, processing or assembling; shop messengers, stokers and shop-cleaning personnel, warehousemen, packers, repairmen, shop testing and record-keeping personnel, and inspectors. Employees of a similar type engaged in activities ancillary to the main activity of the unit should also be considered operatives as are persons engaged in truck driving, repair and maintenance and so on. (This category will not be applicable to the central administrative office of a multi-unit enterprise.)

105. In basic inquiries it is suggested that the following further distinctions may be made for the types of units cited:

(a) For all units, operatives wholly engaged in own-account construction work might be shown separately;

(b) For units engaged in mining activities, underground workers might be

shown separately from other operatives. The determination of what constitutes an underground worker should be made according to the laws of each country;

(c) For units engaged in the production of gas, electricity or steam, operatives directly engaged in the plant where electricity, gas or steam is produced might be shown separately from other operatives.

106. In addition to the above distinctions, it may be useful for any type of statistical unit, to subdivide operatives according to narrower functional categories (for example, fabrication personnel, processing and assembling personnel, transportation and warehousing personnel, repair and maintenance personnel). If this is done, it is important to limit the categories to those that can be defined precisely and clearly in terms of the usually available employment records.

(ii) Other employees

107. All employees other than operatives as defined above. This category will include administrative, technical and clerical personnel such as salaried managers and directors, laboratory and research workers, clerks, typists, watchmen, bookkeepers, administrative supervisors, salesmen and the like.

2. Number of employees engaged during several periods of the inquiry period

108. Operatives and other employees are defined as above. The number of time periods for which these figures are requested will vary with the known seasonality pattern of each industry. In general, a time period (calendar week or payroll period) centred in each quarter is suggested.

3. Number of man-hours worked by operatives during the inquiry period

109. This is defined as the total number of hours actually spent by operatives at work, including waiting time. Overtime is included and calculated in terms of actual hours spent at work and not the time paid for. Since it is hours worked rather than hours paid for that are wanted, time spent on vacation, casual or sick leave should be excluded.

4. Average number of employees engaged during the inquiry period

110. The average number of employees (and the corresponding averages for operatives and other employees) is defined as the arithmetic average of the number of employees engaged during several specified periods during the year.

5. Average number of persons engaged during the inquiry period

111. This serves as the size criterion for the unit (see paragraph 93). It is defined as the average number of employees (calculated as indicated in paragraph 110), plus the number of working proprietors and number of family workers during a single period of the inquiry period. If the average number of employees is not available then the "total number of engaged during a single period" should serve as the size criterion.

C. Compensation of employees

1. Wages and salaries paid to employees during the inquiry period

112. This includes all payments, whether in cash or in kind, made by the employer during the inquiry period in connexion with the work done, to all persons included in the count of employees.^{20/} It includes all cash payments, bonuses, cost-of-living or dearness allowances and wages paid during periods of vacation and sick leave; taxes and social insurance contributions and the like, payable by the employee but deducted by the employer; and payments in kind. Lay-off payments or compensation for unemployment, are included except where such payments are made from trust or other special funds set up expressly for this purpose - that is, payments which are not made by the employer. Social insurance and pension contributions and the like payable by the employer are excluded from wages and salaries but treated as a separate part of compensation of employees.

^{20/} The situation with respect to homeworkers is dealt with in the foot-note to para. 95.

113. Wages and salary payments in kind are defined as the cost to the employer of those goods and services furnished to employees free of charge or at markedly reduced cost which are clearly and primarily of benefit to the employees as consumers. The item thus includes free issues of food, beverages and tobacco and clothing (except uniforms for civilians as these are not usually worn off-duty). Also included is the imputed gross rent of dwellings provided free or at a reduced rent to employees. However, expenditures by employers which are of benefit to them as well as their employees (for example, on the amenities of the place of work, medical examinations, sports and other recreational facilities, travelling, entertainment and similar outlays by employees in connexion with the business) are not part of compensation of employees.

2. Employers' contributions to social security, pension and similar schemes in respect of their employees

114. This covers payments made by the employer on behalf of his employees which are normally considered in national accounting practice to form part of employees' income but not of wages and salaries. Examples are employers' contributions to social security schemes and pension funds. The sum of this item and the preceding item should represent essentially the total direct cost to the employer of the labour employed. Excluded are such items as family allowances not paid directly by the employer, travelling and other expenditure incurred for business purposes and reimbursed by the employer, and pension payments to retired employees.

D. Fixed assets

1. Scope of the data

115. The data relating to expenditures on fixed assets should include the value of all physical assets - those expected to have a productive life of more than one year that are intended for use by the statistical unit (buildings, machinery,

equipment and vehicles). Included are major additions, alterations and improvements to existing fixed assets that extend their normal economic life or raise their productivity. Also included is the value of fixed assets made by the statistical unit's own labour for its own use and additions and improvements to fixed assets carried out by the unit's own personnel. Titles to wealth and expenditures for repair and maintenance are excluded.

2. Valuation

116. Fixed assets acquired from others should be valued at the full cost incurred - that is, at the delivered price plus the cost of installation, including any necessary fees and taxes, but excluding financing costs. Fixed assets produced by the statistical unit for its own use should be valued at the cost of all work put in place and any overhead costs allocable to this work should also be included. Fixed assets produced by one unit of a multi-unit enterprise for the use of another unit of the same enterprise should be valued by the receiving unit as though purchased from outside the enterprise. Where capital accounts are maintained, the values requested should be those attributed to the fixed assets (excluding financing costs) for posting to these accounts, regardless of the source of those assets. Used fixed assets sold during the inquiry period should be valued at the actual amount realized.

3. The time at which an expenditure for fixed assets takes place

117. The expenditures required are those for fixed assets during the inquiry period. Where capital accounts are maintained, it is suggested that expenditures for fixed assets posted to these accounts during the inquiry period be requested. The full cost of the fixed asset should be posted to the capital accounts only at the time the asset is completed and delivered to the control of the purchasing enterprise and/or the statistical unit. That is, progress payments made against

fixed assets on order should not be posted to the capital accounts and the expenditures reported should relate to the total value of those fixed assets the control of which was acquired during the inquiry period. Uncompleted capital assets (heavy machinery, structures and other forms of construction) should be included in inventories and not in fixed assets. Where the purchaser makes progress payments during the course of the construction of these items, the progress payments would be recorded as his financial claim on (a trade advance to) the producer of the good.

4. The distinction between new and used fixed assets

118. New fixed assets include all those that have not been previously used in the country. Thus, newly imported fixed assets are considered as new whether or not used before they were imported. Used fixed assets include all those that have been previously used within the country.

5. The distinction between different types of fixed assets

119. (a) Building, improvement to land and other construction work

Finished residential buildings and other buildings, such as factories, warehouses, office buildings, stores, restaurants and so on are included; so are completed new constructions, such as permanent ways of railroads or roads, streets, car parking facilities and the like, as well as major alterations and improvements. Excluded is the value of land before improvement. Land improvements are included.

(b) Transport equipment

Finished ships, motor vehicles, aircraft, railway and tramway rolling stock, tractors for road haulage, carts and wagons and major alterations and improvements of existing transport equipment.

(c) Machinery and other equipment

Power generating machinery, office machinery, equipment and furniture, metal

working machinery, mining, construction and other industrial machinery; cranes, fork-lift equipment and the like, durable containers; equipment and instruments used by professional men; and any other machinery and equipment and major renovations and alterations in these types of machinery and equipment.

6. Gross additions to fixed assets

120. This item is defined as the sum of the cost of new and used fixed assets acquired during the inquiry period less the value of sales of fixed assets during that period.

E. Capacity of power equipment installed (in use and in reserve) as of a given date during the inquiry period

121. The alternative methods of computing the total capacity of power equipment installed (both in use and in reserve) are (a) the sum of the "capacity of prime movers not driving electric generators" and the "capacity of all electric motors", or (b) the sum of the "capacity of all prime movers, except those driving vehicles" and the "capacity of electric motors driven by purchased electricity". These two methods give similar but not identical results.

122. In practice, obtaining total installed capacity by the second method - that is, summing "capacity of all prime movers, except those driving vehicles" and "capacity of electric motors driven by purchased electricity" - has some disadvantages. The difficulty is not only that electric motors may be run by purchased electricity at some times and by self-generated current at others, but that, in some cases, they may be run by a mixture of self-generated and purchased current. The first method of computation is therefore preferred.

1. Prime movers, distinguishing those not driving electric generators from others

123. All prime movers, mobile or stationary, that are installed as of the reference date, except those used to drive vehicles, are included, as well as internal combustion engines, steam engines, water wheels, turbines and so on. The classification

of prime movers into those driving electric generators and those driving machinery other than electric generators should be based on the situation as of the reference date. If the capacity of prime movers driving machinery other than electric generators is insignificant, data may be compiled on the installed capacity of prime movers driving electric generators only.

124. The capacity should be measured in terms of the rated horsepower - that is, the horsepower indicated by the manufacturer.

2. Electric motors, distinguishing those driven by purchased electricity from others

125. All motors installed as of the reference date and used in connexion with the production activities of the statistical unit are included, as well as the motors used for driving machine tools and other equipment used in fabricating, assembling or conveying, even though the motor is built into the machine; motors driving exhaust fans or air conditioning equipment in the works proper, and so on. Excluded are desk fans, non-industrial refrigerating equipment, office air conditioners and the like. The classification of electric motors into those driven by purchased electricity and those driven by self-produced electricity should be based on the situation as of the reference date. If the "capacity of installed power equipment" is computed as the sum of the "capacity of prime movers not driving electric generators" and the "capacity of all electric motors", it would not be necessary to identify the electric motors by source of energy used.

126. The capacity should be measured in terms of the rated horsepower - that is, the horsepower indicated by the manufacturer.

127. It may often be advisable to limit reporting of electric motors to those above a specified capacity, for example, to those of more than one horsepower.

3. Generators

128. This item should be defined as the rated capacity (in kilowatts or kilovolt

amperes) of all generators installed as of the reference date.

F. Value of stocks at the beginning and end of the inquiry period

129. The data should comprise the value of all inventories owned by the enterprise and held by, or under the control of, the statistical unit (at the unit itself, in ancillary warehouses or other warehouses). The value of stocks is to be reported for the beginning and end of the inquiry period.

1. Raw materials, fuels, supplies and so on, (including goods ordinarily to be sold in the same condition as purchased)

130. All raw materials, components and so on that enter into the product: fuels and containers, repair, maintenance, office and other consumable supplies, and materials owned by the unit but held by others for processing are included. If data on the construction of fixed assets for own use are gathered for the unit in question, the value of stocks of raw materials and so on for use in each construction should be included here. Also included is the value of stocks of goods to be sold in the same condition as purchased. Excluded are all materials owned by others, but held by the statistical unit for processing.

131. In principle, inventories should be valued at current replacement cost, based on market prices at the reference dates. These prices include any duties and taxes payable by the purchaser and exclude rebates and discounts given by the purchaser.

132. For the mining and public utility industries, this category should exclude fuels produced by the statistical unit. For the multi-unit enterprise, the stocks owned by the enterprise but not earmarked or allocated to a specific subsidiary unit should be reported as stocks of the central administrative office.

133. It may be useful to request separate reporting of the stocks of "goods ordinarily sold in the same condition as purchased". In addition, for certain inquiries, data on the stocks of individually important goods might be collected.

2. Work in process

134. This item should include the value of all goods and materials that have entered the production process, but that are not ready for shipment as of the reference dates. It should include work in process on own-account construction of fixed assets and work in process on heavy capital goods such as ships and heavy machinery irrespective of the arrangements for finishing this work.

135. Generally an imputed market valuation of the work should be adopted, including an imputed margin for overhead costs and profits as well as the cost of materials consumed and labour used. Where accounting records show this category separately, the book value should be requested.

3. Finished goods

136. This should include all goods made by the respondent unit that are ready for shipment as of the reference dates. Included are finished goods held by another unit that were processed by that unit from raw materials controlled and owned by the respondent unit. Excluded are finished goods held by the unit that were made from materials owned by others.

137. Where systematic accounts are maintained, the book values should be requested. Otherwise, the valuation should be at market prices in terms of the prices at which goods have been shipped immediately prior to the reference dates, excluding any rebates or discounts given. (For inclusion or exclusion of indirect taxes, see paragraph 173.)

138. For the mining and utility industries, the stocks of fuels produced by the statistical unit should be included here.

G. Electricity

1. Quantity and cost of electricity purchased

139. Quantity (in kilowatt hours) and total cost of all electricity purchased by

the unit during the inquiry period are included.

140. In principle the electricity obtained from an ancillary power plant treated as a separate statistical unit should be valued as though obtained at the commercial rate normal to the area, but in practice it may be necessary to accept the book value of electricity obtained from such ancillary power plants.

2. Quantity of electricity generated

141. The quantity (in kilowatt hours) of electricity generated by the unit, both for own use and for sale to others, during the inquiry period is included.

3. Quantity and value of electricity sold to others

142. The quantity (in kilowatt hours) and the total sales value of electricity sold by the unit during the inquiry period are included.

143. In principle, the electricity supplied to other units of an enterprise by an ancillary power plant treated as a separate statistical unit should be valued at the commercial rate normal to the area, but in practice it may be necessary to accept the book value of this power.

4. Quantity of electricity consumed

144. The quantity of electricity consumed is defined for the larger units as the sum of the quantity of electricity purchased and generated less the quantity of electricity sold to others. It is not suggested that data on the quantity and the value of electricity sold to others be gathered for the smaller units, and for them the quantity consumed is assumed to be equal to the sum of the quantity purchased and generated.

H. Cost of goods received or consumed and payments for industrial services rendered during the inquiry period

1. Received (purchased) (alternate)

145. Included here are all commodities (excluding fixed assets) delivered to the control of the statistical unit during the inquiry period. The time of receipt or

purchase should be related to the definition of inventories in the sense that goods should be considered as received at the time such goods are entered in the inventory account of the statistical unit. Alternatively, goods may be considered as received when the statistical unit has acquired effective control (or right to use) the goods in question. For the single unit enterprise this definition coincides with the time of acquisition of title or the time of invoicing.

146. The valuation of commodities received should be at the delivered value (laid down cost) at the statistical unit - including the purchase price, all transport and other charges, and duties, taxes or other levies, and excluding discounts, rebates and so on allowed to the purchaser. The goods received by the statistical unit from other units of the same enterprise should be valued as if purchased - that is, at market prices. In practice, it will usually be necessary to accept the values posted to the books of the unit.

2. Consumed (alternate)

147. This includes all those commodities owned by the unit which have entered into the production process of the statistical unit during the reference period.

148. Valuation of the commodities consumed should, in principle, be at the delivered value (laid down cost) at the statistical unit, at the time the consumption takes place, of commodities identical to those consumed. This principle of pricing ensures that charges for these expenses will be equivalent to the cost of replacing these commodities at the time these items are consumed. All the costs involved in delivery to the establishment should be included, for example, distribution and transport margins and commodity taxes in addition to the price of the commodity at the establishment where it was produced. In applying this principle in practice, the value of the commodities consumed would be estimated by using an average price over a period of time. The valuation might be accomplished,

for example, by taking the average price of the commodity over each month and applying this price to the quantity consumed during the same month. In many cases, however, time periods longer than one month will have to be accepted. Where accounting records show this category, the book value should be requested.

149. Whether data are obtained on a consumed or a received (purchased) basis, the figures should distinguish between the following categories:

3. Cost of raw materials, supplies, components and so on

150. This includes all raw materials, components and so on that are physically incorporated in the products. Also included are all auxiliary materials (lubricants, water, packaging materials, small tools, parts, materials for repairs and maintenance and so on) and office supplies. If data on the construction of fixed assets for own use are gathered for the unit in question, the value of raw materials and so on obtained for use in such construction should be included here. If figures of the cost of goods sold in the same condition as purchased are not gathered separately, these figures should also be included here.

151. The quantity and cost of individually important materials should normally be collected to provide supplementary detail in basic and annual inquiries. In the more frequent inquiries the detail can be limited to those commodities required for the preparation of index numbers of production or price indexes.

152. Where quantity and value of individually important materials are requested on a received basis, it may be desirable to request also the quantity of certain materials consumed, if it is known that stocks of these materials tend to fluctuate widely.

153. In some cases - where the statistical unit's range of activities encompasses several successive manufacturing stages - it may be useful to request, separately, the quantity of selected important intermediate products (products produced by the

statistical unit itself) consumed during the inquiry period. These data are particularly useful if the commodities in question are the final products marketed by many other individual statistical units or are the purchased raw materials of many other statistical units.

4. Quantity and value of fuels received or consumed

154. This includes all fuels received or consumed by the statistical unit (including gasoline and other fuels for vehicles) except those that directly enter the product (these should be reported as raw materials). In basic inquiries, in order to make possible the estimation of total energy consumption, figures should be obtained for both the total value of all fuels received or consumed and the value and quantity of individually important fuels. Consumption figures for individual fuels should for this reason include the quantities of fuel consumed by the statistical unit out of its own production.

155. For the mining industry this category should include only the fuels that are not produced for sale by the statistical unit.

5. Cost of goods to be sold in the same condition as purchased

156. This includes only those goods, not normally consumed in the statistical unit, that are purchased expressly for resale.

6. Cost of contract and commission work done by others during the inquiry period

157. This covers the total cost to the unit for contract and commission work, done by others during the inquiry period, on materials owned by the statistical unit. The cost (at book value) of all similar work carried out by other statistical units of the same enterprise should be included.

7. Cost of repair and maintenance work done by others during the inquiry period

158. This covers the total cost to the unit of repair and maintenance services provided by others during the inquiry period. The cost (at book value) of all

repair and maintenance carried out by an ancillary repair and maintenance group which has been treated as an independent statistical unit should be included.

I. Total quantity of energy (electricity and fuels) received or consumed

159. This item refers to the total energy equivalent (in calories) of all fuels and purchased electricity consumed by the unit in the course of the inquiry period recorded in items G. 1. and H. 2. in table 1. The calorific value of each fuel should be estimated independently for each country and should be that obtained under ideal conditions, that is, as measured by the complete combustion of an average grade of the fuel in a "bomb calorimeter". In those cases where fuels consumed are reported in value terms, only an approximate estimate of their calorific value can be obtained by applying the average cost per calorie of those fuels which are reported in both quantity and value terms.

J. Cost of non-industrial services rendered by others to the unit during the inquiry period

160. This item should be defined to include the cost of all services purchased from non-industrial units which are paid for by the unit and are reflected in the ex-factory value of its production during the inquiry period. It includes payments for advertising, accounting, insurance, communication, legal and similar services made by the unit, and payments of gross rent other than payments of rent for the use of land.

K. Indirect taxes and subsidies

161. Indirect taxes and subsidies should be reported separately. Indirect taxes should be defined to include all taxes incidental to the production or sale of goods and non-factor services by the unit which are chargeable to the expenses of production. These will normally include excise taxes, sales taxes, motor vehicle duties, local rates, fees for business licenses and stamp duties. Subsidies should

be defined as all current grants made to the unit by general government whether or not relative to the level of production activity or sales. Transfers for investment purposes or to cover damage or other losses to capital should be excluded.

L. Value of goods shipped or produced and receipts for industrial services rendered to others during the inquiry period

1. Shipped (alternate)

162. The value of all goods shipped from the unit during the inquiry period (that is, all goods, the control of which was relinquished during the inquiry period) as well as the value of all services rendered to others during that period should be calculated.

163. The valuation of goods shipped should be at the ex-factory, mine and so on price, excluding any charges for transportation or delivery and any discounts, rebates and so on allowed to the buyer. Where the statistical unit provides transportation for its own goods, the "ex-unit price" will be the price at the point where the unit's own personnel relinquish responsibility for the goods. Services rendered should be valued at the charges made. In principle, shipments or services rendered to other units within the same enterprise should be valued as though sold, but in practice it may be necessary to accept the book value of such transfers.

2. Produced for shipment (alternate)

164. This should be defined to include all goods that have been completed by the statistical unit during the inquiry period for shipment or sale to other units - that is, whether actually shipped during the inquiry period or entered into stock. Intermediate goods to be consumed within the same unit are excluded. Also included is the value of all services rendered to other units during the inquiry period.

165. Valuation of the goods produced should, in principle, be at the ex-unit price (see paragraph 163 above) prevailing at the time the goods were completed. In

practice, however, the value of the goods produced would generally be estimated by using an average market price. Services rendered to others should be valued at the charges made.

3. Value of all products

166. Figures should be obtained both for the total value of goods shipped or produced and for the quantity and value of individually important goods. Where the output for individually important products is obtained on a shipment basis, it may be desirable to obtain, in addition to quantity and value of shipments, the quantity of individually important products produced during the inquiry period if it is known that stocks of these products tend to fluctuate widely.

167. Where the statistical unit's range of activities encompasses several successive manufacturing stages, it may be useful to collect supplementary information on the total quantity of selected important intermediate products produced during the inquiry period. That is, including the quantity consumed within the same statistical unit. These data are particularly useful if the intermediate products in question are the final products of many other statistical units.

4. The value of goods shipped in the same condition as received

168. The sales value, ex-statistical unit of all goods shipped during the inquiry period in the same condition as received. It should be noted that these data include the value of sales or shipments of goods normally consumed by the statistical unit as well as the value of sales or shipments of goods bought expressly for resale.

5. Receipts for industrial work done for, or services rendered to, others

169. This item includes the receipts, other than those arising from the shipment of goods, for work done or services of an industrial nature rendered to others - such as contract or commission work done for other units on their materials, repair and maintenance work, installation, research and development, construction and

installation work. The value reported should be the total cost charged to customers for the work or service performed.

M. Receipts for non-industrial services rendered to others

170. This item should include all receipts of the unit from the provision to others of non-factor services of a non-industrial nature.

N. Gross output during the inquiry period

171. For the larger statistical units in annual and basic inquiries - those for which all the required items of data are gathered - the value of gross output is computed in one of two ways. The method chosen depends on whether output is measured on a "shipped" or a "produced" basis.

(a) If data are gathered on a "shipped" basis, the value of gross output is equal to the "value of all products of the unit" plus the "value of work in process and finished goods in stock at the end of the inquiry period" less the "value of work in process and finished goods in stock at the beginning of the inquiry period" plus the "value of goods shipped in the same condition as received" plus the "receipts for industrial work done or services rendered to others" plus the "value of electricity sold" plus the "value of fixed assets produced by the unit for its own use". (It should be noted that this last item is not recommended for separate collection. However in basic inquiries certain countries may wish to divide the cost of new fixed assets (item D. 1.) in table 1) into those acquired from others and those produced for own use.)

(b) If data are gathered on a "produced" basis, the value of gross output is equal to the "value of all products of the unit" plus the "value of work in process at the end of the inquiry period" less the "value of work in process at the beginning of the inquiry period" plus the "value of goods shipped in the same condition as received" plus the "receipts for industrial work done or services rendered to others" plus the "value of electricity sold" plus the "value of fixed assets produced by the unit for its own use". (For this last item see the note above under (a).)

172. For the smaller units in basic inquiries, since the only item of data pertaining to output that is recommended for gathering with first priority is the "value of goods shipped or produced and receipts for services rendered", these are assumed to be equal to the value of gross output. However the item "stocks of finished goods produced" is given second priority and if it is in fact collected and the "value of shipments" rather than the "value of goods produced" is collected,

then the stock change figure and the shipments figure might be used together to calculate gross output in the manner described above in paragraph 171 (a).

173. Whether the value of gross output reflects a market price or a factor cost valuation of output depends on the treatment of indirect taxes (for example, excise, sales and turnover taxes) and direct subsidies. If a market price valuation is desired, all such taxes should be included in the value of the unit's shipments or production, and the value of any direct subsidies received excluded; for a factor cost valuation indirect taxes are excluded and all direct subsidies received included.

O. Value added

174. For the larger statistical units in annual and basic inquiries the value added during the inquiry year is computed in one of two ways. The method chosen depends on whether input data are gathered on a "received" or a "consumed" basis.

(a) If input data are gathered on a "received" basis, the value added is equal to the "value of gross output" less the following items: "cost of raw materials, supplies, etc."; "cost of fuels"; "cost of goods to be sold in the same condition as received"; "cost of contract and commission work done by others"; "cost of repair and maintenance done by others"; and "cost of electricity purchased" - this result being corrected for changes in stocks of "raw materials, fuels, etc." by adding the value of these stocks at the end of the inquiry period and subtracting their value at the beginning of the inquiry period.

(b) If input data are gathered on a "consumed" basis, correction for changes in stocks of raw materials, fuels and so on is not necessary.

175. For the smaller statistical unit in basic inquiries, if only items with a priority of 1 are collected, the value added figure will be estimated as the gross output (calculated as described in paragraph 172) less the "cost of goods received or consumed and payments for industrial services rendered" less the "cost of electricity purchased". If the cost of goods received (rather than the cost of those consumed) is collected, it can be corrected for changes in stocks only if the latter item, which has a priority of 2, is collected.

176. As in the case of the value of gross output, the value added can be calculated on either a "market price" or a "factor cost" basis. The factor cost is recommended for all tabulations.

177. It should be noted that the value added as defined above (which might be termed "census value added") is not the same thing as the contribution to the gross domestic product. The census value added is not net relative to the economy as a whole, but is only net relative to the agricultural and industrial sectors of the economy. In order to derive the contribution to the gross domestic product from the census value added it is necessary to deduct the "cost of non-industrial services rendered by others" from the latter figure. The item "cost of non-industrial services" is recommended for gathering with a priority of 2 by the larger units in annual and basic inquiries.

178. The above-described methods (paragraphs 171 to 177) of deriving the gross output and the value added apply in detail only when the items gathered are those recommended in table 1. In the case of the recommendations in table 2, which omit certain items of data contained in table 1 and give a lower priority to other items, while the same general method of deriving the gross output and value added applies, the actual calculation will have to be based on those items of data actually collected.

P. Orders

179. In selected branches of industry, information on orders might be collected in the more frequent than annual inquiries.

1. Net new orders received

180. This item is defined as the current value of all new orders received during the inquiry period less the value of orders filled and cancellations during the period.

2. Unfilled orders at the end of the inquiry period

181. This item is defined as the current value of all orders outstanding at the end of the inquiry period.