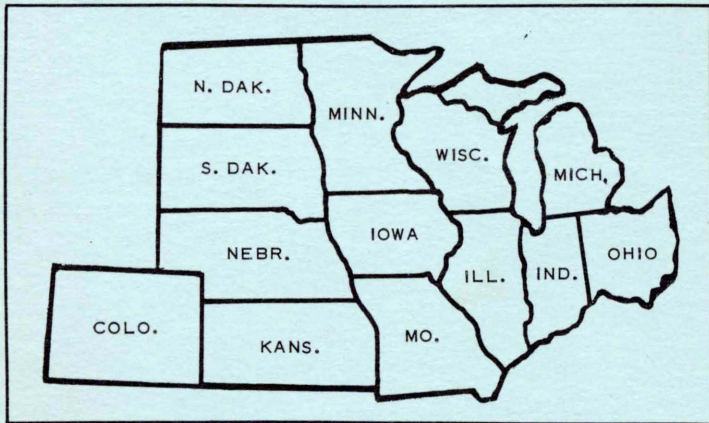


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*III Midwestern States Educational Information Project*  
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DES MOINES, IOWA



MIDWESTERN STATES EDUCATIONAL INFORMATION PROJECT



DOCUMENTATION

3-296

MIDWESTERN STATES EDUCATIONAL INFORMATION PROJECT

P. L. 89-10, TITLE V, SECTION 505

MSEIP DOCUMENTATION  
OF  
PROJECT DEVELOPMENT AND  
GENERAL SYSTEM DESIGN

REVISED, JUNE 1969

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STATE OF IOWA DEPARTMENT OF PUBLIC INSTRUCTION

DES MOINES, IOWA

**MIDWESTERN STATES EDUCATIONAL  
INFORMATION PROJECT**

P.L. 89-10, Title V, Section 505

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## FOREWORD

The pressing demand for adequate, accurate, and timely information is one of the most critical needs in administering and developing a modern educational program. New academic knowledge is unfolding in all disciplines at an unprecedented rate, thus challenging and even mandating that sophisticated information systems be adopted in administering programs for educating today's youth. An educational information system that enables administrators to cope with contemporary educational problems thus becomes an invaluable management tool.

The Midwestern States Educational Information Project (MSEIP) was a combined research effort of 13 state educational agencies (SEA's) to develop and implement an integrated information system. The organizational structure of the Project was significant in that an active working relationship was established between the Federal Government, SEA's, and local educational agencies.

The MSEIP was funded in 1966 by the U.S. Office of Education under Title V, Section 505, of the Elementary and Secondary Education Act of 1965, designed to strengthen state agencies. In directing its efforts toward the development of an integrated information system, the Project's goals reflected the need for timely, accurate information for decision making. Thus, the Project supported the theory that the establishment of such a system would satisfy decision-making informational needs and would be a powerful tool for strengthening SEA's.

Our nation has prospered proportionately to educational progress, and the future will require broadened and deepened educational programs. The rate at which our school programs improve depends largely on the support they receive, especially at the state level. SEA's have been delegated authority and responsibility for determining and improving the educational programs in their state. Therefore, SEA's must have access to information that will enable them to accomplish their functions - leadership, regulatory, and operational.

The MSEIP DOCUMENTATION is the result of the Project's original developmental effort during which chief state school

officers, SEA staff members, other educators, and technical personnel contributed to the general system design. The original publication, refined during the year of Project continuation, is here reprinted in handbook form. If the concepts of the MSEIP are to proceed, the next vital phase of development will be to establish credibility in the Project's system. This phase would involve the development of the software necessary to bring integrated concepts of this system to reality.

The MSEIP System, as here presented, is not submitted as the panacea of information systems, nor does it encompass all educational areas; but it will serve as a guide for SEA's as they revise and improve their information systems. As such development occurs, the Project's goals and objectives will continue to be achieved. The original cooperative effort among educational agencies will serve as a catalyst for new and improved information systems to meet the challenges of tomorrow.

James E. Mitchell  
Project Director

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#### MSEIP PARTICIPANTS

## Chapter 100

### 100. INTRODUCTION

#### 100.1 Purpose and Scope of Contents

The pressing demand for adequate, accurate, and timely educational information is one of the most crucial needs in the administrative management and development of America's educational program. An educational information system that can provide pertinent information, when needed, to enable the administrator to cope with the problems confronting contemporary education would be an invaluable management tool in the educational process.

Such a system has been developed through the cooperation of 13 state education agencies (SEA's). The Midwestern States Educational Information Project (MSEIP) has established, for SEA's, an integrated educational information system compatible among the states. This book, MSEIP DOCUMENTATION, documents the general system design and describes the Project.

As a whole the DOCUMENTATION serves to satisfy the interests and informational needs of three types of readers: those seeking to become acquainted with the Project, those considering the use of the MSEIP System, and those charged with its implementation. The system design is presented through general narrative for educators as system users, and in detail, with flow charts, file organization, and processing descriptions, for technical personnel. The five subsystems that make up the MSEIP System are depicted with the data being utilized, the relationships between the subsystems and the data, and the subsystem linkages. The DOCUMENTATION also gives a description of the Project and the history of its development.

#### 100.2 Description of Contents

DOCUMENTATION chapters are numbered from 100 to 1400. Sections within chapters are consistently numbered to facilitate both general reference and cross-reference needs.

Chapter 100, "Introduction," consists of the purpose and scope, and description of contents of the document. Chapter 200, "MSEIP Description," describes the Project, its organizational structure, objectives, and philosophy and rationale. The discussion of Project structure gives the participating states, committees, and personnel, and outlines their relationships and responsibilities. Project objectives are stated and general results to be expected from use of the MSEIP System are listed. The Project's philosophy and rationale is presented through description of the problem and discussion of the bases of the Project's approach to the solution.

Chapter 300, "MSEIP Development," provides a survey of Project history, developmental progress, and anticipated future.

Chapter 400, "Administrative Summary," describes the MSEIP System and its subsystem components in general terms. It includes considerations of organization, needed resources, and other aspects of implementation that need to be understood by administrators and other users of the system.

Chapter 500, "Technical Preface," provides an introduction to the subsystem chapters, 600-1000. This preface describes electronic data processing (EDP) system phases and design philosophy. It reviews the structure of the DOCUMENTATION, and discusses technically oriented items such as storage and retrieval philosophy, file structure, storage and input media considerations, and subsystem interrelationships.

The five subsystem chapters, 600-1000, present general information of the individual subsystem committees and describe the subsystems in detail. The chapter numbers follow alphabetical subsystem order: 600, Facilities; 700, Finance; 800, Instructional Programs; 900, Personnel; and 1000, Pupil. The chapters have a generally common format. Each is divided into six consistently titled sections for easy cross-reference between subsystems. For example, each subsystem data file is the second section of each subsystem chapter.

Chapter 1100, "Common Features of the Subsystems," discusses aspects of a comprehensive SEA information system that are logically the same in all subsystems, presents the multiple file linkage, and gives examples of linking ability among the subsystems.

Chapter 1200, "Program Specification Considerations," describes methods of specifying programs that must be understood before any programs can be written.

Chapter 1300, "Programming Considerations," serves an orientation and educational purpose for those who will have the responsibility of implementing an integrated information system. This includes comments on basic aspects of programming that should be considered in planning.

Chapter 1400, "Implementation Considerations," includes many tasks that an SEA should consider in the planning phases for the implementation of an integrated information system. Included in the chapter are considerations for staff organization and training, tailoring the general design, and implementation procedures. Other general information related to implementation, such as testing, transitional problems, data collection, and documentation maintenance, is also included. This final chapter is followed by a list of MSEIP participants.

In total, this DOCUMENTATION revision is the product of three and one-half years of Project activity and progress in developing an integrated educational information system. It provides a general system design to serve states in tailoring an integrated information system to fit their specific requirements.



## Chapter 200

### 200. MSEIP DESCRIPTION

#### 201. *ORGANIZATIONAL STRUCTURE*

The organizational structure of the Project was designed to perform two important functions. First, to promote and facilitate, through direct involvement, the planning, development, and implementation of an integrated educational information system. Second, to maximize communication between Project personnel and the various SEA divisions in each participating state.

To accomplish this, the Project brought together representatives from the 13 participating SEA's. These educators, through training and experience, provided expertise in the areas from which educational information is obtained. They represented the broad scope of activities, programs, and planning and development responsibilities generally reflected in SEA work.

##### 201.1 Participating States

The Project was a cooperative effort among 13 SEA's. Each state, by becoming a Project participant, made a commitment to working toward the Project's goals. However, each state retained full authority for decisions for its information system, including the operating information system at the state level, the operating systems at the local level, and the collection of information from local schools.

Participating states were: Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

The original Project proposal, written by the Project planners representing the 13 participating SEA's, established the Iowa State Department of Public Instruction as the administering agency of the Project. It has been the responsibility of the administering state to house the Central Staff and to ensure that

the Project's operations were consistent with the rules and regulations applicable under Title V of Public Law 89-10.

## 201.2 Committees

The Project encompassed several committees: the Policy Committee, Coordinating Committee, State Coordinators' Committee, Advisory Committee, and five subsystem committees. The following paragraphs describe the committees, their personnel, and purposes.

The MSEIP Policy Committee included one representative at the policy-making level from each of the 13 participating SEA's. The committee was responsible for formulating Project policies and priorities.

The MSEIP Coordinating Committee included one representative from each participating SEA who was directly responsible for data processing or statistical services in his SEA. The committee was responsible for overall coordination of the Project, establishing its activities and setting priorities for their development.

The MSEIP State Coordinators' Committee included each of the 13 participating states' coordinator. These coordinators and their secretaries were the only full time Project personnel in each participating SEA. The purpose of this committee was to enhance the exchange of ideas among the coordinators and to resolve areas of concern unique to their roles and responsibilities. The coordinators served as liaison between Central Staff and participating states, were responsible for informing their SEA's and LEA's about the Project, and for coordinating Project activities in their state.

The MSEIP Advisory Committee included the chairman of the eight other Project committees, or their appointees, and three Project consultants. The committee's purpose was to provide a focal point for communication between the committees and to advise Central Staff in development of the MSEIP System.

The work of the Project centered around five commonly recognized areas of educational information; facilities, finance, instructional programs, personnel and pupils. Each information area was a complement of the total system and each complement was referred to as a subsystem.

Five subsystem committees, one for each area of educational information, were organized. Each subsystem committee was administered by a supervisor who was a member of the Central Staff. Each participating SEA had a representative on each subsystem committee. The representatives, appointed by the chief state school officer in each state, were assigned to the subsystem committee that corresponded to their areas of endeavor within their own SEA's.

The MSEIP subsystem committees were: Facilities Subsystem Committee, Finance Subsystem Committee, Instructional Programs Subsystem Committee, Personnel Subsystem Committee, and Pupil Subsystem Committee.

Following documentation of the system, the State Coordinators' Committee and the Coordinating Committee were replaced by the Coordinating-Liaison Committee. Each state appointed representatives. The purpose of the committee was to provide administrative leadership relative to implementation in each participating state. The members were responsible for: establishing a long-range plan for implementation of the MSEIP System in their states; establishing immediate short-range plans for preparing their states' implementation programs in detail for FY (fiscal year) 1969; serving as liaison between Central Staff and the participating states; obtaining direction from the MSEIP Policy Committee, and serving as resource to Central Staff for implementation procedures.

## 201.3 Central Staff

The MSEIP Central Staff was maintained in the SEA of the administering state (Iowa). The staff included a project director responsible for general administration; supervisory personnel responsible for subsystem development; and technical and supporting personnel for system design, publications, information services, and office routine. The Central Staff was responsible for administering Project activities as directed by the Policy and Coordinating Committees.

In FY 1966, 21 Project positions were provided: director, five subsystem supervisors, two systems analysts, three programmers, two technical writers, one information librarian, and seven clerk-secretaries.

In FY 1967 the position of administrative assistant was added, and part-time help was contracted to assist in Project activities. In FY 1968 further developmental progress resulted in reorganizing the Central Staff so that two subsystem supervisors became assistant directors; other supervisors became field representatives; the technical writers became public relations specialist and editor; and the information librarian became research materials specialist.

A reduced Central Staff during FY 1969 consisted of these positions: director, administrative assistant, four field supervisors (two serving as assistant directors), editor-technical writer, research materials specialist, and three clerk-secretaries. Operating staff during FY 1969 was director, three field supervisors, editor-technical writer and two secretaries.

## 202. *MSEIP OBJECTIVE*

The objective of the Midwestern States Educational Information Project was to develop and implement an integrated educational information system in each of the participating states.

### 202.1 Objective-related Activities

To utilize states' personnel to identify data items in each subsystem.

To utilize other materials, people, and related projects in the research process.

To research the data items collected by SEA's.

To develop common definitions for data items.

To test data items and definitions by field tests within the participating states.

To develop system linkages to integrate the subsystems.

To develop a system for collecting, processing, storing, and retrieving data.

To inform the nation of project developments through presentations, publications and the dissemination of materials.

To assist states with plans for implementation.

### 202.2 Functions of the System

Use of an integrated information system will serve various aspects of SEA's. Functions of the MSEIP System are:

To provide for much of the basic data needed for educational decision making by SEA's.

To provide for feedback of meaningful information and analysis to local districts for decision making.

To provide data for reporting to the U.S. Office of Education.

To provide compatibility of information between participating states in as far as individual state laws permit.

To lessen duplication in data collection, processing, and dissemination.

To provide data needed for research purposes.

To improve communication, cooperation, and unification among educational agencies through more efficient transmission of educational information.

To improve public image and confidence through better reporting and informing.

## 203. *MSEIP PHILOSOPHY AND RATIONALE*

### 203.1 General

In directing its efforts toward the development of an integrated educational information system, the Project recognized the need for timely, accurate information for decision making. Moreover, it recognized that the establishment of an information system to satisfy decision making needs would be a powerful tool for strengthening SEA's.

Directly concerned with the participating SEA's, the Project addressed itself to the task of determining what the informational needs of these agencies were, then applied itself to designing an information system that would meet these needs. In addition, the Project concerned itself with the needs of the USOE and those of the local educational agencies within the participating states.

### 203.2 Statement of Problem

As a Title V project concerned with strengthening SEA's, MSEIP was created to design an integrated educational information system for these agencies, and in the process, to identify: what data are to be collected; various data collection techniques; how the collected data can be interrelated; how data can be collected, processed, stored, and retrieved; how the information can be used; and how data can be updated or added.

### 203.3 Limitations

The MSEIP System was designed to be an educational tool made possible through the cooperative efforts of educational personnel in 13 midwestern states and the products of electronic technology; concerned with a basic framework related to the collection, processing, and dissemination of quantitative educational information; and a tool to be used for educational decision making based on the qualitative use of quantitative data. The system is not: a system for determining the qualitative aspects of an educational program; a self-acting or self-regulating system for the evaluation of administrative problems; or a cure-all for problems in administration of educational programs.

### 203.4 Development Considerations

In its functional and organization structure, the Project centered around the five subsystem information areas: facilities, finance, instructional programs, personnel, and pupils. Part of the Project's philosophy was that each subsystem would be capable of being integrated with any of the other four subsystems, and would be compatible among the states. Thus, the SEA's using the MSEIP System would be able to collect, process, and disseminate meaningful information throughout their areas of responsibilities. With an integrated educational information sys-

tem, the SEA's would be better prepared to fulfill the functions of the state in providing educational leadership.

The Project, through its subsystem committees and systems development activities, was directed to the following considerations in developing the system:

To provide basic information to assist in fulfilling the SEA functions of planning and development (leadership), regulatory, and operational.

To enable the system's users to make decisions about education based on adequate information, accessible and useable upon demand.

To standardize definitions and procedures among SEA's so far as individual state laws and policies permit.

To plan for integration of each subsystem with all others.

To provide the system with flexibility so that it could be revised and adapted to individual states' and local agencies' needs.

To provide for simplified methods of collecting and reporting.

To reduce multiple requests for identical data by various agencies.

To furnish data for federal reports, specialized research, and special state governmental committees.

To make it possible for the SEA's to submit information to the U.S. Office of Education as a by-product of their own operation.

### 203.5 State Education Agency Relationship

The premise of Title V funding - to strengthen SEA's - prompted examination of the SEA role early in the Project.

Education in the U.S. is the responsibility of the state, and SEA's were established to fulfill this responsibility. To accomplish this, SEA functions generally agreed to be necessary are; leadership, regulatory, and operational.

The many programs of the SEA are sometimes difficult to identify with a specific function. Although the SEA programs may appear to be separate and distinct, they are often interrelated and in many cases overlapping. Various programs develop in light of newly recognized, assigned, or enlarged responsibilities. Such additional programs are generally integrated into the existing organizational structure of the agency.

A position statement of the Council of Chief State School Officers, published in 1968, identifies the SEA as the leadership center of the state system of education; and as such, "should contribute significantly to the improvement of state and local education programs." The council views leadership activities and services as appropriately involved in several broad areas, including planning, research and evaluation, experimentation and innovation, consultation, inservice education, and public relations.

Thus, as a research-oriented project designed to develop an integrated information system for SEA's, MSEIP demonstrates the states' concern to provide leadership to better enable them to cope with increasing demands.

The need for educational information by the SEA is inherent in its objective of implementing the state educational program. The SEA must answer to the state authority that created it. In answering to this authority, it is recognized that responsibilities are delegated for the performance of certain functions through various programs and activities. However, these programs and activities require educational information for decision making in carrying out these responsibilities. Consequently, the most important function served by information is that it provides needed facts for measuring the performance of programs and activities. It is in this critical area that the MSEIP makes its contribution to strengthening these agencies.

## Chapter 300

### 300. MSEIP DEVELOPMENT

#### 301. HISTORY

In response to educational administrators' growing need for ready access to pertinent, accurate educational information, the MSEIP was conceived through the combined efforts of the chief state school officers of 13 midwestern states: Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

A proposal to develop an integrated educational information system compatible among the states, was submitted to the U.S. Office of Education, in December 1965. Under the provisions of the Elementary and Secondary Education Act of 1965 (P.L. 89-10, Title V, Section 505), the proposal was approved in January 1966.

After approval as a project, the title Midwestern States Educational Information Project (MSEIP) was established. Five Project phases were set up to guide development necessary to achieve the Project objective.

The first Project phase, "Planning and Development of the Project," included staffing and committee organization as described in Chapter 200. This Project phase was completed in June 1966 when an initial orientation conference was held for all Project personnel.

In keeping with "Policies and Procedures Governing Project Activities" prepared by the MSEIP Policy Committee, Project activity from June 1966 to June 1967 covered phases two and three. Progress during these phases, "Committee Explorations," and "Subsystem Development," was primarily through the efforts of the five subsystem committees; Facilities, Finance, Instructional Programs, Personnel, and Pupil. Each cooperating SEA was represented on each subsystem committee by a person

with background and experience in the subsystem areas, thus providing the expertise needed to resolve educational information issues.

Two activities carried out in the early development of the system were an item analysis of SEA collection forms and the development of specifications for item identification. Both activities were to help answer the basic question of what information should be regularly maintained in the five areas of educational information.

The item inventory and analysis of collection forms of the 13 SEA's identified the data they were collecting. This provided an important resource for committee work and for individual state information.

Specifications for item identification were determined to be: what information is to be collected; basic source of the information; rationale for collecting the information, and time schedule for collection of the information. Consideration was also given to information needs for local districts, state departments, USOE and other agencies.

Because the integrated information system was intended to include necessary basic data and desired and possible interrelationships, an understanding of the authority, responsibilities, programs, and activities of SEA's was needed in order to determine their basic data needs. Consequently, study was given to an analysis of SEA data item needs as reflected in operations, and those deemed necessary to fulfill responsibilities identified by the Council of Chief State School Officers. Establishment of the needs for and uses of information in SEA's was basic to development of an integrated educational information system that would be beneficial to SEA's.

Monthly subsystem meetings were dedicated to the development in each subsystem of categorized and coded data items and definitions. Data items were selected by group consensus of their necessity in serving SEA information needs. Definitions were established to facilitate compatibility and integration of the subsystems. Each subsystem developed a philosophy for its area which considered the need of SEA's for information in that area and integration with all other subsystems. Each subsystem defined objectives and established procedures for meeting them.

The year of developmental activity resulted in the MSEIP lists of data items. The lists included the categorized and coded data items and the definitions from each of the subsystems. Documentation of this work completed phase three.

Exploratory and developmental activities had then reached the point where it was appropriate to direct activities toward the evaluation of the developmental accomplishments and to incorporate them into a technical system design that would provide a structure for implementation of the system.

Conditions that prescribed redirection of activities were: the utilization of Project resources - personnel and finances - within the time limitations specified in the contract, prohibited a long and detailed study of all identifiable educational information areas; the total amount of information - the summation of committee deliberations - constructed a reasonably adequate portrayal of the SEA information need; and technical systems construction could not begin until a reasonable and practical body of information units, with the highest potential for processing, had been identified by each subsystem committee.

During the fourth Project phase, "Evaluation and Technical Development," Central Staff was organized to establish an improved framework for carrying out evaluation, technical system design, and planning for implementation. A two-branch organization was effected: the Field Development Branch, directed toward testing and refining the data items and their definitions; and the Technical Development and Operations Branch, directed toward technical systems development and internal operations. An assistant director was responsible for each branch.

The work of the fourth Project phase included field testing to evaluate the component parts of the MSEIP System, followed by revision and modification of the parts as needed, and submission for technical system development. General systems work was contracted to outside agencies. A contract with the Iowa Educational Information Center (IEIC), in Iowa City, provided systems work to achieve consistency and compatibility of data items and definitions, and to establish logical linkages throughout the system. General system design work was contracted to the ARIES Corporation of Minneapolis.

Phase four work continued into the final phase, "Further Evaluation and Documentation." The general system design was published and presented at the third annual conference in August 1968. The publication, *MSEIP DOCUMENTATION of Project Development and General System Design*, was further distributed to all states and by request to various persons, institutions, and agencies concerned with information systems.

The Project was continued by the U.S. Office of Education, under P.L. 89-10, Title V, Section 505, for FY 1969. This continuation was to assist participating states in the planning and initial conversion of present information systems to integrated information systems tailored from the MSEIP System.

Guidelines and general direction for establishment of operational activities provided in the FY 1969 contract were aimed toward the following products: implementation accomplishments in each participating SEA; Project annual conference; publication of revised MSEIP DOCUMENTATION; in-service consulting activities, committee meetings, progress reports, newsletters, dissemination of materials, and in-service education programs.

Each participating state carried out a FY 1969 program of MSEIP activities to begin implementation of the system or parts of it. Together, the states' projects included all of the MSEIP System areas. The states' year-end reports of their activities will be combined as a publication product for FY 1969.

### 302. *MSEIP FUTURE*

Continuation of MSEIP through FY 1970 is anticipated. The tentative 1970 program is directed toward accomplishment of the development of the data control modules (described in Chapter 500) and to establish MSEIP System credibility through demonstration. Training of SEA personnel as system users and information dissemination are also written into the program. The amount of FY 1970 funding will determine the program activities. Completion of the 1970 program would terminate the Project; achievement of an operating integrated information system would then be possible for any SEA.

#### 302.1 Implementation Alternatives

Before a complicated information system can be completely operational, a great deal of planning must be done in the beginning

phases of implementation. Many alternatives will be available to state agencies in incorporating the parts of the MSEIP System into a state's present system. It may not be realistic for an SEA to implement all subsystems in total at the same time. Alternatives for incorporating subsystems may be accomplished in different ways, but the particular method used by a state should result from planning for its own needs and objectives. It is necessary, however, that a state utilize a total systems approach in implementation to assure that the pieces fit together, complete with linkages and data necessary for an integrated information system.

It is critical that plans be formulated for the entire system, with a time schedule, before conversion of any part is attempted. As long as there is a plan for the entire system, any part can be implemented without affecting any other part. Considerations for implementation are discussed in Chapter 1400.

#### 302.2 Design Adaptation to Individual SEA's

The MSEIP DOCUMENTATION describes the MSEIP System and explores it from several viewpoints. This general system design is not intended to offer the total solution for a particular SEA's educational information problems. It is a system whose parts must be individually tailored to the particular objectives of an SEA. The general system design is not intended to provide the specifications necessary to write the programs to operate the system, but it provides a structure by which states can define the specific details, or tailoring, so that complete implementation can be accomplished.

The advantage of having the general system design of the MSEIP System with detailed subsystem design complete and logically accurate before any conversion begins, is that implementation of a single subsystem, or implementation of combined subsystems, can be done without affecting the later implementation of other parts of the system. The details of each subsystem should be complete before the specification of and programs for implementation of any one subsystem can be accomplished. This is critical to assure recognition and accomplishment of necessary relationships and data linkages between subsystem files for the integrated information system.

To assist states with the initial phases of tailoring, the following steps are suggested:

Review the MSEIP general system design. When the DOCUMENTATION is received it should be carefully reviewed by various levels of decision makers at the SEA. This should include educators as well as technical personnel.

Establish time schedule for tailoring. An important step is to incorporate a time schedule for decisions to be reached.

Tailor the system. Necessary changes or modifications should be made in the MSEIP System to fulfill the objectives established for an SEA's information requirements. This step might include adding or deleting data items, changing codes, file layouts, and data linkages, and consequently, any modifications of the system design.

Document. It is critical for successful operation that all changes or modifications be documented by the individual SEA. Precise and detailed documentation will serve as the program specification which will be necessary for programming the system.

Approve design. The system design that has been tailored for a particular SEA, complete with documentation, must be approved by the top level management. Presentations should be developed to explain the system to decision makers and users.

Establish priorities. After the SEA's system design is complete and tailored to fit that SEA's needs, priorities for implementation should be established. It may not be practical, considering financial and personnel limitations, for a state to convert all subsystem areas at the same time. Therefore, priorities and a time schedule for implementation are necessary. It is likely that the time schedule would cover several years for complete implementation.

### 302.3 Administrative Support

To facilitate the continuation proposal, Project administrators redefined the role and organization of the Central Staff. During FY 1969, the Project continued certain planning and development activities and assisted states in planning implementation activities. Within the budget limitations of the new contract,

the field supervisors had primary responsibility to assist participating SEA's with implementation activities. These supervisors assisted, by request of the SEA's, in interpreting the MSEIP System and developing a plan for the realization of an integrated information system.

### 302.4 Technical Support

The plan detailing specific objectives, problems, and requirements must be developed within and by each SEA. The Project cannot be expected to make decisions for SEA's as to the details of their information systems. However, the Central Staff can assist SEA's in the analysis of system requirements, problem definition, cost estimates, listing of alternatives, and development of a plan for action considering the unique needs of a particular SEA. Through personal experience, communications among and within states, dissemination of materials, and bringing various levels of decision makers together in conferences, the Project can aid SEA's directly in the complex process of converting their present information systems to integrated information systems. The Project can contract with outside consultants (educational and technical) to provide expertise for special problems in an SEA.



## Chapter 400

### 400. ADMINISTRATIVE SUMMARY

#### 401. GENERAL

The purpose of this chapter is to offer a discussion of the MSEIP System from the nontechnical viewpoint. This chapter will discuss the MSEIP System, its linkages and its interrelations. It will describe each subsystem and consider its implementation requirements. This chapter summarizes the general system design for people whose responsibility will be the administration of the system.

The documentation of the designed system is the only obvious result of a general design project. The investigative effort that served as the foundation for the design of the MSEIP System was undertaken and accomplished through the Project's five subsystem committees made up of representatives of the participating SEA's. The five subsystems were the educational information areas of facilities, finance, instructional programs, personnel, and pupils. The developmental work that was prepared by the five subsystem committees and the MSEIP Central Staff has served as a starting point for the general system design effort of which this publication is the end product.

The MSEIP DOCUMENTATION does not delve into problems and considerations required to implement the MSEIP System on a specific piece of hardware or for a specific state. It does present a design solution intentionally structured to accommodate tailoring to the specific requirements of an implementing state.

This summary describes each part of the design in nontechnical terms and serves as an introduction to the following more technical sections of the DOCUMENTATION. The design cannot be considered specific enough to allow its implementation in a state without further investigation and detailed design efforts. Although the DOCUMENTATION presents a general design, there are some particulars concerning data items and files

that are quite detailed. The purpose of a general design is to provide the foundation and the framework for a group of systems or subsystems which, when fully implemented, will be the same logically even though particular implemented details can be different.

#### 402. DISCUSSION OF SYSTEM DIAGRAM

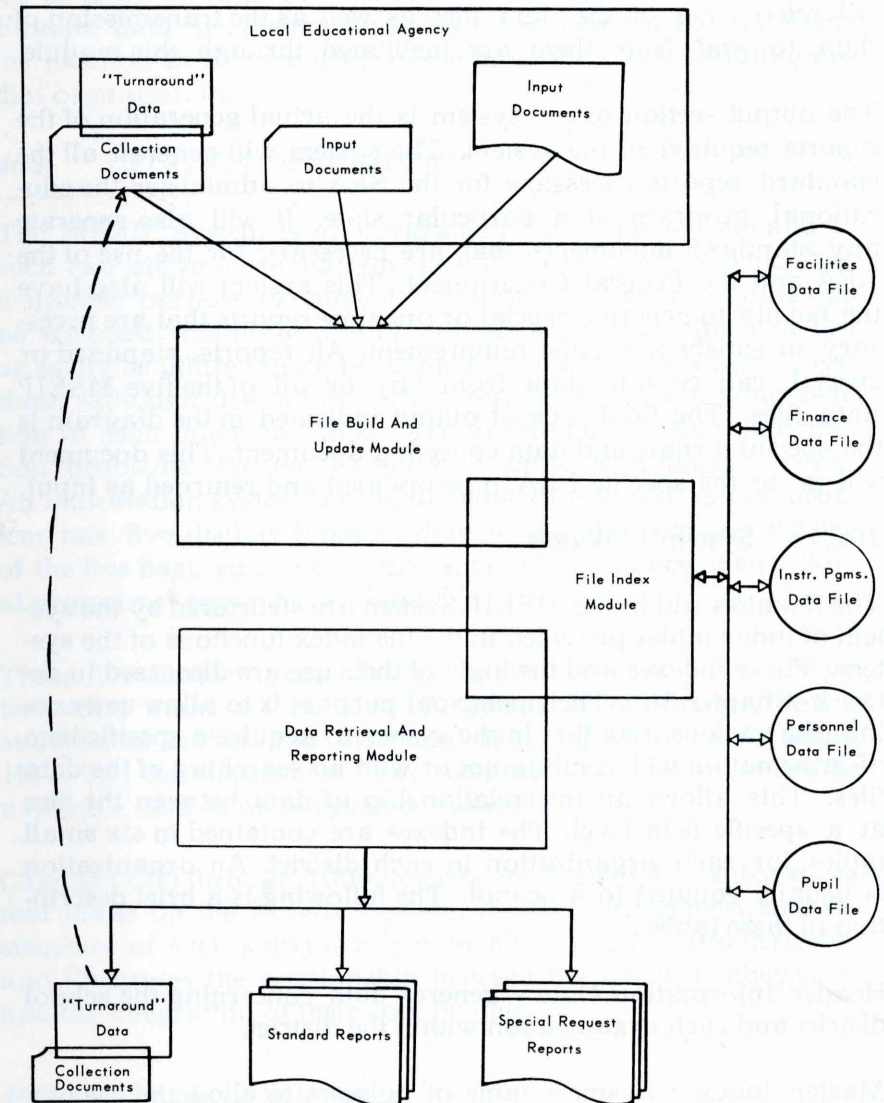
The diagram of the MSEIP System illustrates the general concept of the integrated information system. It indicates some of the basic functions of the system and shows the flow, in general, of information through the system. Figure 4-1 is the diagram for the MSEIP System. The diagram is structured in three sections: the input section, the functional part of the system, and the output section.

The input section is the LEA in the diagram. This is where the input to the system is generated. This input can be for initial file building or for the update functions of the MSEIP data files. Depending on the type of data collection devices used, the physical form of the input documents may vary. The simplest form is the punched card, which results from various input documents being keypunched at either the LEA or the SEA level. If some type of optical scanning device is available, the input documents themselves can be designed to be the input media to the computer.

A special type of input document indicated in the diagram is the turnaround data collection document. This special document, although input to the system, has initially been generated by the system itself. The document contains data already stored in the system that is to be verified and/or updated by the LEA and then returned with any corrections to the system as an input document. The media for this type of document can be the same as for any other type of document for the system.

The functional part of the system is the actual computerized part of the system - the data control modules. This includes the two major functions of the system with their supporting functions, and the five data files of the system. The first main function, that of file building and updating, stores the data in one of the five MSEIP data files. The second main function, that of data retrieval and reporting, utilizes the five data files to generate reports useful to both the LEA and the SEA in their report-

FIGURE 4-1. DIAGRAM OF MSEIP SYSTEM



ing functions to each other as well as to the Federal Government. The supporting function, the file index module, is the general set of programs and linkage tables that provides interrelationship of the various data files of the system. The file index module is used by both of the principal functions of the system.

All referencing of the data files as well as the transmission of data to and from them are facilitated through this module.

The output section of the system is the actual generation of the reports required of the system. The system will generate all the standard reports necessary for the SEA to administer the educational program of a particular state. It will also generate any standard documents that are necessary for the use of the LEA and the Federal Government. This system will also have the facility to generate special or one-time reports that are necessary to satisfy a specific requirement. All reports, standard or special, can contain data from any or all of the five MSEIP data files. The final type of output indicated in the diagram is the special turnaround data collection document. This document will go to the specific LEA to be updated and returned as input.

#### 402.1 System Linkages

The linkages within the MSEIP System are structured by the system of index tables provided in the file index functions of the system. These indexes and the logic of their use are discussed in detail in Chapter 500. Their principal purpose is to allow entrance into the various data files in the system to acquire a specific item of information with a minimum or with no searching of the data files. This allows an interrelationship of data between the files at a specific item level. The indexes are contained in six small tables for each organization in each district. An organization is usually equated to a school. The following is a brief description of these tables:

Header Information Data - general data concerning the school district and each organization within the district.

Master Index - a small table of pointers to allow the use of a specific organization's set of indexes which are embodied in a large block of indexes.

The Specific Subsystem Indexes - Facilities, Instructional Programs, Personnel, and Pupil. There is no specific index for the

Finance Subsystem because the Finance data file is compatible with the other data files only to the organization level.

The end result of the actual processing of a specific organization's index tables is to obtain the location, in the physical data file in mass storage, of a desired piece of data. In the case of the Finance data file, the master index for an organization contains the location in mass storage of the finance records pertaining to that organization.

### 403. SYSTEM DESCRIPTION

The MSEIP System is an integrated information system and as such can utilize more than one group of data, each of which has a discrete purpose or content. Each of these groups of data can be collected, maintained and utilized separately, but can just as easily be utilized in an integrated or combined manner. These data, although distinct in each of their groups, have some relation to each other and thus have an effect on the total information problems that the system as a whole is designed to solve. An information system serving the educational information problem has five distinct types of data to handle, each serving one of the five basic educational areas; facilities, finance, instructional programs, personnel and pupil.

These five distinct types of data are the bases of the five subsystems that make up the MSEIP System. In most cases, the five subsystems collect and maintain data specific to their areas. However, the subsystems have integrated functions that use the available data in an integrated manner.

Chapters 600 through 1000 describe in detail the five subsystems that make up the MSEIP System, the data being used, and the structure of each subsystem's data file. Chapter 1100 describes and illustrates the relationship between the various subsystems and the integration of their specific data.

#### 403.1 Facilities Subsystem

The purpose of the Facilities Subsystem is to collect and maintain data which will provide a description of the physical properties of school facilities. The Facilities Subsystem will not furnish the LEA with property accounting functions but will pro-

vide data of sites, buildings, and equipment that can be used with other educational data. This subsystem allows the state a means of developing a standard method of classification and common descriptive elements to allow the useful description and identification of the school facilities of the LEA's. An additional benefit to the LEA realized through this subsystem, as with the other subsystems, is that the integrated system requires a reporting of one item of information only one time, even though it has potential use in many applications and with other data.

The construction of the Facilities data file will be a large task with the initial burden on the LEA. However, once the file has been constructed, its maintenance will impose only a minor responsibility on the LEA while providing a great amount of data for various uses. The data that will be contained in the Facilities data file will have significance to each of the other subsystems.

#### 403.2 Finance Subsystem

The Finance Subsystem has been designed with the dual objective of becoming an integral part of the MSEIP System and of introducing the technique of program-oriented accounting into an area which is traditionally fund-object oriented. The successful implementation of this subsystem, in a particular state, will require a great deal of further study and will involve considerable revision in existing methods and procedures in budgeting and in the reporting of expenditures at both the LEA and SEA level. This subsystem's records and its dimensions were designed for optimal recording and reporting at the LEA level. Great detail is possible at this level within the proposed structure and this detail can be reported in total or summary form to the SEA.

The Finance Subsystem does not try to provide an SEA with an accounting system for its internal financial processing. It is directed toward the LEA and the responsibility at that level of reporting financial situations to the state. This subsystem can be implemented at the LEA level, manually or by computer, to provide meaningful input to the SEA. The key to the successful implementation of the Finance Subsystem lies in adapting the proposed system and the existing systems to each other. The system provides a means for detail only so far as is practical at the lowest reporting level while insuring that the definitions of contents and dimensions of the coding structures are standard and consistent throughout the implementing state.

The Finance data file is structured somewhat differently than the other subsystem files. However, it has sequence and linkage compatibility to the level of organization. The Finance data file consists of five types of records; assets, liabilities, fund balance, revenue, and expenditures. The first four types of records are presented with a logic similar to that used in existing systems; however, this is intended more as a transitional measure than a final solution. The structure of the fifth type of record - expenditures - is the foundation upon which a program-oriented system such as this is built. The majority of the records on the Finance data file will be of this fifth type.

#### 403.3 Instructional Programs Subsystem

The Instructional Programs Subsystem has been designed to provide a means of gathering data concerning each course/section (class) held in each organization, in each district in a state. These data will be descriptive of each course and its contents that make up the curriculum for each of the organizations. They will further identify the teacher assigned to the course/section, as well as the number of pupils attending.

The records held in the Instructional Programs data file will be course/section records grouped by course. Initial identification of each course and its course/sections, for a particular organization, will be by a locally assigned course number. This local course number will also be equated to the standard state-assigned course numbers. The state level course numbers describe the course and identify it.

The Instructional Programs data file has been structured to be completely compatible to the other data files in the MSEIP System. The Instructional Programs index table serves as a keystone in the linking logic of the MSEIP System because it contains links (pointers) to the other index tables. The data for this file can be collected in three phases which parallel the logical sequence used in updating the file. The phases are:

Curriculum Description Phase - this phase is used to describe the contents of the curriculum of a particular organization.

Assignment Phase - in this phase, teachers are assigned to the particular course/section in the organization's curriculum. This phase, utilizing data not only from the Instructional Programs

file, but also from the Personnel data file, will facilitate the validation of the teacher assignments for the organization.

Course/Section Phase - this phase collects data concerning the number of students in each course/section as well as providing, throughout a school year, a means for dynamic updating of the course/section records in the file.

#### 403.4 Personnel Subsystem

The purpose of the Personnel Subsystem is to collect and maintain data concerning all personnel who are employed by the local school districts in a state. The data collected on these personnel by the subsystem can be divided into two sections; the professional and the nonprofessional employees. However, the subsystem promotes a more definitive separation, particularly within the group of professional employees. There are a number of common elements of data that will be logically the same for both types of personnel. These data concern identification of the employee. Some of the additional data concerning the actual assignment of the employee will also have a common logic within the two groups. The professional employees also will be represented by additional data concerning their education, experience and other professional statistics.

The Personnel data file is linked through its indexes to the other data files in the MSEIP System by the social security numbers of the personnel. For the present, only the professional personnel will be represented in the index tables. The teacher certification process can be supported by the Personnel Subsystem through the collection and maintenance of data concerning this function along with the reporting of these data in the manner necessary to support the function. The data in the Personnel files will also be used with the data in the Instructional Programs file to allow the function of teacher assignment validation.

#### 403.5 Pupil Subsystem

The Pupil Subsystem is somewhat different from the other data files in the MSEIP System because there are more pupils requiring data collection within a given state than personnel, instructional programs, and facilities combined. This mass of data creates a major storage and retrieval problem in the MSEIP System. This problem can be solved only by careful investigation

and selection of essential data items collected for each pupil. For this reason, the data to be collected for the Pupil data file are divided into two categories.

Items in the first category are essential for the calculation of state aids, transportation aids, and required statistics. These are the items necessary to meet the responsibilities charged to the SEA by the statutes of each state in the administration of that state's educational program.

The second category contains the optional Pupil items. This list provides items that should be used only as necessary to collect and store information in support of previously defined requirements.

To properly implement the Pupil Subsystem it will be necessary to institute a numeric system of pupil identification. Ideally, this would be a statewide system; however, a numbering sequence unique only to each district would serve the majority of the purposes of the subsystem. The identification of the students and the collection of the data for the first category will allow the linking of the Pupil data file to the other data files.

#### 403.6 Other Possible Subsystem Relationships

There are many other areas in the educational programs of a specific state that will be unique to that state due to its legislative requirements, its SEA structure, and other considerations. The design of the MSEIP System will not consider these unique applications; however, the data collected and maintained for the five basic educational areas will be capable of supporting these unique functions. The structure of the system anticipates the inclusion of special applications at the time of implementation within specific states. The following are examples of these kinds of applications.

School Transportation Aid and Administration - in the states that require attendance statistics for the calculation of transportation aid, this information can be gained from the Pupil data file. If transportation cost information is required relative to the maintenance of the bus fleet, etc., this information can be obtained through manipulation of the Finance data file.

Food Service for School Lunch Administration - the personnel function of this area will be handled through the Personnel Subsystem.

#### 404. CONSIDERATIONS FOR IMPLEMENTATION

##### 404.1 General

The problem that the MSEIP System was designed to solve is one of informational needs. The logical processes of collection, storing, retrieving, and reporting data, and the manipulation of the data involved in these processes are identical in any information system regardless of the field it serves, industry, education or any other. The MSEIP System is an educational information system that supports the administration of the educational programs of a state.

The educator has a leading and a controlling part to play in the implementation of this system. He must realize, however, that although the processes of the system support his areas of responsibilities, the techniques used in these processes can only be accomplished by the data processing (technical) specialists.

The implementation of the MSEIP System requires not only the knowledge and experience of the educational specialists on the SEA staff, but also requires the knowledge and experience of the data processing specialists who may be represented on the SEA staff. The educators have the knowledge and experience to define the objectives of this administrative program. The technical specialists then assure that the system processes, effectively and efficiently, support these objectives. It is important that these two types of specialists work together in the development of the specifications and the implementation of the system.

##### 404.2 Organization and Training

There are certain factors an SEA should consider in the evaluation of its organizational structure. It is recognized that data items are necessary for decision making in operating programs fulfilling the functions of SEA's. In the past, educational programs have operated autonomously. Each designed its own collection form and instructions, collected and filed data, and published the output reports that it needed. The data processing division was either nonexistent or considered in a secondary role. Its function was to produce the reports needed by an educational program upon the return of the collection form. This meant the data processing division was being used merely to

reduce the clerical effort necessary to operate an educational program. Consequently, many problems were evident: many educational programs were collecting the same data; in many instances, the educational programs were defining the same data items differently; and there was a lack of coordination between the educational programs and the data processing division.

As each SEA initiates its plan for the implementation of the MSEIP System, the operation will be more efficient and economical if the data processing division has been established in a primary role. This has several implications.

The data processing division should be an integral part of committees planning and defining educational specifications for the system.

Once the plan of implementation is initiated, a committee should be established to approve all requests within the SEA for additional data that are to be included in the system. If a special request for additional data were approved, the committee would ensure that the same steps used in the implementation of the system would be used for the special request.

The data processing division should be represented on the committee that writes all instructions and manuals. Since the data processing division has responsibility for designing all input forms, it would also have the responsibility to see that the instruction manuals correctly describe how to complete the form.

The data processing division should be responsible for the coordination of the system with the LEA's.

Perhaps the most important consideration is that the data processing division be involved in the entire planning and development of the information system needed to support the educational programs. In fact, this division becomes the major coordinator of the system, both within the SEA and among the LEA's throughout the state.

For this reason, the data processing division must have a primary role, rather than a secondary one. This is more a matter of reorganization of the structure within the SEA than within the data processing division itself. The data processing division should be more familiar with the system than any other single

organization within the SEA. It is, therefore, logical that one of the data processing division's functions should be the coordination of the system throughout the SEA. To accomplish this coordination, the data processing division should fill the positions listed in section 1401 with competent personnel. The people in these positions should serve as the coordinators between the data processing division, the SEA, and the LEA's.

#### 404.3 Resource Considerations

People, time, and money are the necessary resources for the implementation of any new system. An SEA should not attempt to implement the MSEIP System until a great deal of preplanning for the system has been done and the proper resources allocated.

The needed resources for implementation can be determined only as the system specifications are defined in each SEA. The amount of preplanning will favorably influence the length of time and the money needed for implementation by reducing or eliminating the tasks necessary to specifically tailor the system to its needs. Chapter 1400, "Implementation Considerations," presents a detailed discussion of these tasks. SEA's should perform the prescribed steps in the design of the entire system before they attempt to embark on the collection of data for any part of the new system.

The cost for implementing the system may be divided into two parts, developmental and operational. The developmental costs will be approximately the same whether an SEA implements the system at one time or in phases, since the entire design should be complete before data are collected. However, implementing the system in phases would give a time spread for the operational costs (writing programs and manuals, pilot testing, etc.). The primary difference between implementing the system in total or in phases is in the allocation of personnel. The more phases of the system that are implemented at one time, the larger the staff, system analysts and programmers, must be. Several factors determine the operating costs of the system. These factors include the number of data items collected, the frequency of collection, the degree of accuracy desired, and the type and frequency of output requests. It is with respect to these factors that an SEA should manipulate the available resources - people, time, and money - to gain maximum benefit.

#### 404.4 Committee Use

The organization of the SEA and its channels of communication have an important relationship in the implementation of an integrated information system. A committee comprised of educators and technical specialists is necessary to develop the specifications for the entire system. This committee, and similar committees established as needed, must be made up of permanent, full time personnel whose efforts are applied to the implementation of the system. These key personnel must first describe the SEA and its functions. The description of functions, objectives, and activities must be done in great detail since the system's efficiency and effectiveness will depend largely on the accuracy of the description of the problems to be solved.

The committee, or committees, should control decisions regarding data item collection, forms design, and writing of instruction manuals. The committees must effectively utilize the staff members throughout the SEA in developing the specifications for the system.

## Chapter 500

### 500. *TECHNICAL PREFACE*

The previous chapters have described the MSEIP System for the administrator and nontechnical person; the Technical Preface introduces the technical aspects of the system. This preface serves three functions: it provides a technical introduction to the subsystems which are described in detail in Chapters 600 through 1000; it provides some of the definitions and design philosophy of the MSEIP System and describes the structure of the DOCUMENTATION; and it provides descriptions of technical items that are common to the five subsystems. This description pertains primarily to data storage philosophies and processing techniques. Thus, the chapter describes the DOCUMENTATION structure, the mechanics of the development of the MSEIP System and philosophy of the design development.

### 501. *EDP SYSTEM PHASE*

The development of a system such as the MSEIP System can be structured in three phases from the general design through the final programming and implementation. The DOCUMENTATION represents the first of these three phases, the general design.

General Design - the product of a general design is a design document that describes the various parts of the system in general terms, illustrates the system and its operation through various flow charts and describes the data upon which it is to function and the reports that it is to produce. However, the design of a system even at the general level is more than this. It also includes extensive investigation into the necessity for the system, including information needed and problems the system is to solve. The new system may be a replacement for an existing system or may be an extension to solve some ever-increasing information problems which only an automated system can solve.

In the case of the MSEIP general system design, the detailed investigation into the requirements of the system and the information processing problems it must solve were accomplished, in



the main, by the subsystem committees. A great amount of this investigation involved the definition and description of data items, the coordination of data needs between the states, and consideration of unique information needs of the various states.

A general design first describes the complete system in general terms. The design displays the relationship of the various functions the system performs and the interrelationships of the data it must utilize. The system is then separated into its functional parts. Each of these parts is described in detail including the special data for each function.

The five subsystems of the MSEIP System utilize their own specialized data as well as data of the other subsystems. The following five chapters, 600 through 1000, describe in detail each of the five MSEIP subsystems. Chapter 1100 describes common features of the subsystems and indicates the linkages among subsystems through sample reports. The general design of a system serves as the system's general blueprint in which some details may be modified while the overall purpose will be the same and with standard results.

Program Specification - the second phase in the development of a system specifies the computer programs that will accomplish the functions described for each subsystem. This publication, MSEIP DOCUMENTATION, does not go into the specification of particular programs because the MSEIP System must be tailored to the specific requirements of each state in which it is implemented. Tailoring is accomplished in the specification and development of the actual programs that will operate as the system.

The program specification contains detailed descriptions of the functions to be accomplished by a program. Included in the program specification is the logic within the program to accomplish these functions, and the exact formats of the data the program is to utilize and to generate. A subsystem will consist of more than one program since each subsystem performs several functions in its specific area. Each program of a subsystem can accomplish more than one function, but it is usually neither effective nor efficient to expect one program to accomplish all the functions of a subsystem. A subsystem is divided into programs in much the same manner that the total system is divided into subsystems. Chapter 1200 examines the contents of a program specification in considerable detail.

Programming and Implementation - the third and final step in the development of a system; this is the programming (coding) and implementation of the programs that make up the system. The coding of the programs and the program checkout are only one phase of program implementation. To be completely implemented, a program must function with other programs as a system. To insure that the programs do function correctly is a concern of all three phases of the system's development. The general design describes how the system operates as a whole and how the subsystems and their programs function separately and together to provide all the functions of the system. The program specification reflects the relationship between the program being specified and other programs in the subsystem as well as with the system as a whole. The coding of the specific programs in the subsystem, as directed by the program specification, must also consider the interface requirements of the subsystem as a whole and any unique requirements that the total system places upon it.

The specific hardware upon which the system is being implemented must be considered in coding the programs. The programming languages to be used and the programming techniques to follow will also affect the development of the programs. Chapter 1300 explores various considerations of programming the MSEIP System and its parts.

Chapter 1400 discusses other considerations involved with the actual implementation of the MSEIP System. These considerations are in areas other than the actual computer programs and their implementation.

As the development of a system progresses through the previously mentioned three phases, it is important that any logic developed in a phase be left intact in the development of the subsequent phase. Although each phase may require changes in some minor details of a previous phase, due to the more explicit development within a phase, the overall logic must remain the same as developed in the general design.

### 501.1 Design Philosophy

The MSEIP goal in developing this general design was to provide an integrated educational information system that meets the general requirements of each of the 13 participating states and can be tailored to fit their specific problems. The design

philosophy of the MSEIP System was developed to solve two important and distinct problems. The first problem is logical and involves the actual information processing problems that the system is to solve. The second problem is physical and pertains to the structure of the system, its subsystems, and its programs.

The Logical Problem - this is actually a group of problems that describe the purpose of the total system. The principal problem is that of information flow and usage from the LEA through an SEA and on up to the U.S. Office of Education. The first step taken by MSEIP in the solution of this problem was to develop five committees made up of representatives from the 13 participating states. Each committee was concerned with a particular educational area or subsystem: facilities, finance, instructional programs, personnel, or pupils.

The subsystem committees' first duty was to develop the rationale and purpose of their particular subsystem. This process also served to develop some description of the basic functions of these subsystems for any SEA. A second task was the identification and definition of data items to be collected and utilized by the various subsystems. These data item lists and definitions served as the foundation for the development of the various data files that form the data file of the MSEIP System. This collection of data items and definitions also indicates what data items are necessary to serve the various subsystems.

The logic of the MSEIP System was further developed so that each subsystem would serve the specific purposes of its area and would support integrated functions involving the other subsystems. This process involves the collection of data that is usually specific to a subsystem and makes it easily available to another subsystem. This technique serves another purpose in that it allows the originating agency, the LEA, to provide a specific data item only once, even though the item may be necessary for a number of distinct functions in more than one subsystem.

The Physical Problem - the MSEIP System design provides a model that supports the functions of any one of the 13 participating SEA's. Although each of the 13 states has a number of problems that are logically the same, such as reporting to the Federal Government, each of the states has some unique requirements to place upon an information system. These unique requirements could be the result of local legislation, the direction

in which the educational program for a particular SEA has developed, or just the prerogative of the state in administering its own functions.

A system developed uniquely for each of the 13 SEA's would provide all the functions required for each state; however, this would involve great expense and duplication of effort. Individual system development would also promote diversity in the structures and formats of data which should logically be the same among the states. The use of standard definitions and formats among the states serves an effective purpose in allowing the states to work together for the benefit of their individual programs and makes it possible for them to provide compatible information to the Federal Government. The development of a general system applicable to any of the 13 states also distributes developmental costs over a wider base.

The MSEIP System has been designed so that a basic function within a particular subsystem stands alone and is enclosed by its own logic. This allows tailoring of a specific function with little or no effect on the rest of the functions of the subsystem. In addition to unique problems, each state also may have unique hardware with which to implement the system. This is one of the reasons that this system design does not include exact program specifications or coding, although the design will be detailed enough to allow an easy transposition of program specifications for specific hardware. There will be several points within this system design in which two logically different methods of processing, serial and random, will be described in those few instances to show where the particular type of storage device, if available in a particular hardware configuration, could be most effectively utilized.

## 501.2 Technical Content

The structure of the MSEIP DOCUMENTATION is basically standard. The beginning chapters give a general description of the MSEIP, the purpose of the system, and outlines the DOCUMENTATION. Chapter 400, "Administrative Summary," provides a description of the whole system, its purpose, the functions it will serve, and other pertinent data in terms that are appropriate to administrators and other nontechnical people involved in the use of the system.

Chapters 500 through 1400 present the system and its subsystems, including technical terms, and technical considerations for the system's implementation. Chapters 600 through 1000 are the descriptions of the five subsystems that make up the MSEIP System. Each of these five chapters is structured in comparable sections.

The first section of each subsystem chapter provides an introduction and some general comments on the rationale and organization of the subsystem being described. It also includes any general design modifications that were made upon the original design considerations developed by the five subsystem committees. These modifications may have been made necessary through either logical or physical considerations developed when the system design progressed as an integrated unit.

The second section includes subsystem category definitions and describes the data file and its layouts which are the principal concern of the data utilization functions of the subsystem.

The third section describes the details of the file construction and any related considerations. The fourth section presents a sample output report that could result from the subsystem. The fifth section describes the multiple file uses available to the subsystem and illustrates the available linkage between the particular subsystem and the other four subsystems within the total system.

The sixth section of each subsystem chapter contains the descriptions of the data records in the subsystem's data file. These descriptions are the definitions of the data items and code structures within the data records. The data items are listed and described on a chart in the order in which they could reside in the data record. The complete definitions of the data items contained in the data record(s) are listed alphabetically. All extensive lists of codes are listed separately from the definitions of the data items to which they pertain.

Chapter 1100 describes storage considerations, updating and maintenance functions, and the subsystem linkage techniques that are common to all five subsystems. This chapter also illustrates some of the relationships between the subsystems through sample reports. Chapters 1200 and 1300 describe the general contents of a program specification of the programs that

will implement the system as well as the other considerations involved with the development of these programs. Chapter 1400 discusses the problems involved in general implementation, particularly in the areas of manual procedures.

### 501.3 Figures and Charts

Throughout this DOCUMENTATION, two types of displays are used, the figure and the chart. Most of these are contained in the last sections of the various chapters.

Some of the figures used are flow charts. Such figures are used to represent the logic flow of a program function being described. These figures can be either at a general, overall level or can depict logic at a more detailed level. The flow chart figures follow standard flow chart conventions, with some deviation for greater clarity.

Charts are of a standard format and are used primarily to depict the contents of the data files of the various subsystems. These charts are of particular usefulness to the programmer. On each chart the data group depicted is identified. If more data fields are described than can fit on a single page, the data field descriptions overflow onto as many pages as necessary. Each data field is described by items arranged in columns. The following are the descriptions of each column that is repeated for each data field:

Field Number - this is a sequential number assigned to this specific data field to position it on the chart and to place its position in a data file, if that is the type of data being described.

Data Item Name - this is the alphanumeric name assigned to the particular data field which will be used by all programs that reference this data field.

Size Digit/Character - this item indicates the actual size of the data field in digits if numeric, or characters if alphanumeric.

Type - this item indicates the type of data contained in the data field - alphabetic (A), numeric (N), or alphanumeric (A/N).

CHART 5-1. SAMPLE DATA ITEM CHART

FIELD NO.	DATA ITEMS	SIZE DIG/CHAR	TYPE A,N A/N
1	County-District Code	7	N
2	School (Organization) Code	3	N
3	Internal Pupil Sequence Number	5	N
4	Sex	1	N

**502. STORAGE AND RETRIEVAL PHILOSOPHY**

One of the basic purposes of the MSEIP System is the collection and storage of data for specific purposes. The philosophies implemented in connection with the stored data and their subsequent retrieval dictate the system's design and its ultimate implementation. The logical structure of the files is very important when considering the techniques for retrieving the data. The physical media on which the data are entered into the system and on which they are stored with the system will affect the logic of their storage as well as the effectiveness of their usage. The actual techniques utilized in data retrieval can be extremely specific or remain rather general depending on the currentness and rapidity of their retrieval requirements.

**502.1 File Structure**

The data files that comprise the data bank for the MSEIP System are logically separated into five main files - one for each of the subsystems in the MSEIP System. However, these five files actually may be many more physical files. The determination of physical files is dictated by the logic of the computer and software used to implement the system.

The five files of the system are sequenced by school district and by organization within school district. The specific ordering of each file is described in detail in its associated subsystem chapter.

The five files are interrelated. This interrelation varies in depth between the files and is expressed in the index-linking logic that

is the basis of the MSEIP System's data storage and retrieval philosophy. This index logic will be explained in more detail in section 504.2.

**502.2 Storage Media Considerations**

The physical media on which the data will be stored can be of two types:

**Mass Storage Media** - the mass storage devices are normally referred to as random storage devices because the media do not dictate a sequence of storage or retrieval actions on the data they store. These devices are normally disk files or magnetic drums; however, there are variations that utilize magnetic cards or short strips of magnetic tape. The main feature of these devices is the ability to hold a large amount of data while allowing the retrieval of a single data item without processing all data items of the file.

**Serial Storage Media** - this type of storage media is magnetic tape that is held on large reels and processed serially. To obtain a specific item of a data file stored on a magnetic tape requires the processing (or passing) of all items until the desired item is attained. Magnetic tape and its handler are a less expensive storage device than a disk file or drum. However, the retrieval of data on magnetic tape using a random or selective technique is extremely slow compared to a disk or drum. When serially processing a complete file (all or most items) the newer magnetic tape handlers can process as fast or faster than most disk files.

The MSEIP System's data storage and retrieval concept will function most effectively and efficiently in an environment of mass storage media, because an integrated system using a number of data files usually requires references between data files that are random and not in the same detail sequence. The MSEIP System's file philosophy does not negate the possibility of a system that utilizes only magnetic tape for data file storage. However, certain data would have to be duplicated between the various files and overall processing would be less efficient. The system of serial data files would not attain the degree of integration that is possible in a mass storage environment.

### 502.3 Input Media Considerations

In the majority of the implementations of the MSEIP System, input data to the system will be converted into machine readable form through the use of punched cards. Therefore, it will be very important that the documents used to collect the data from the local school districts be designed specifically for ease of keypunching.

In some instances, the data collected will result in such quantities that keypunching could be prohibitive. This will be particularly evident when the MSEIP System's data files are being initially constructed. There are several techniques that can be utilized that will allow the data collection documents to be the actual input media. Two commonly used methods are:

Mark-Sense Cards and Sheets - this is the technique of placing a mark in a specific position (or box) that denotes an item of information. The mark can be read by a device connected to a computer or one that transfers the information to a punched card or magnetic tape. The design of a data collection document that utilizes mark-sensing is critical because each possible position on the document can be a data position. The mark-sense technique has been used for a number of years in the automation of test scoring. Mark-sense data collection media have some limitations, particularly in the collection of alphabetic data.

Optical Character Recognition (OCR) - the OCR device actually reads the characters (alphabetic and numeric) on the data collection document and transmits them to the computer system. Most OCR devices require that the readable documents be typed and with specific type fonts. The design of the document is extremely important and the persons filling out the documents must be very careful because the characters must be precisely placed. These devices are quite expensive; however, in a system requiring large volumes of input data they easily pay for themselves.

Once the MSEIP System's data files have been constructed and the system begins to function, documents containing various items of data that reside in the data files can be generated. These data will be of the type that does not require re-initiation, only proofing and updating. These generated documents will be sent to the reporting districts for any changes indicated on the docu-

ments. These changes will result in the new input to the system and will be used to update the data fields. This type of document, generated by the system and then used as input to the system, is commonly called a "turnaround document." Turnaround documents can use any of the mentioned methods of input media - punched cards, mark-sense documents, or OCR documents.

### 503. GENERAL SYSTEM FUNCTIONS

The basic purpose of the MSEIP System is to collect, store, and report data concerning the educational program in a state. This purpose can be accomplished through two rather broad and generalized data processing functions - file maintenance and report generation. These two general functions are structured from a number of simple decision and processing functions.

Most of the processing that is accomplished in each of the five subsystems is logically the same. Thus, the processing for each subsystem can be accomplished by a common set of data control modules. This set of modules can be structured into a more specific set for any one of the five subsystems through the use of control parameters. These parameters can be introduced to the system on control cards or on the individual input or update documents themselves.

All data files and documents, both input and output, are described to the processing modules in data dictionaries. These dictionaries describe all the items in the files and record essential information as to location, position, size, etc. The data control modules that accomplish the processing for each of the subsystems utilize the dictionaries to find the data they will process. This technique allows the System to be quite dynamic in structure.

#### 503.1 Data Control Modules

The data control modules would be logically the same for any state implementing the MSEIP System. They involve the programming that provides the data integration (linking), data file maintenance, and data reporting functions for the system. The three data control modules are called: the Data Index/Linkage Module, the Data File Maintenance Module, and the Data File Module.

The processing functions provided to the system by these modules would be available through the use of the modules as an individual program package as well as through the ability for application programs to utilize these modular functions on a "call" basis. The following is a brief listing of the general functions that would be provided by each of the modules:

#### The Data Index/Linkage Module

Index Table Maintenance - maintain (add, delete, change) data items and pointers in the index tables as the MSEIP data files are being updated, to properly maintain the integration and accessibility of the data files.

Linkage Trace - trace through the linkages in the index table based on any of the index criteria.

Data Retrieve - obtain the data records and header data indicated by the linkage trace function.

Control - provide all control functions necessary to allow the three modules to operate together.

User Service - provide all linkage logic to allow applications programs to "call" for the available processing functions.

#### The Data File Maintenance Module

Independent Update - provide the ability to update any of the system data files based on the data dictionaries that describe each file utilized in the system.

User Update Functions - provide any of the update functions - add, delete, change - to any requesting application programs.

Index Table Update - along with its file update functions this module would initiate any required index table update through the Index/Linkage module.

#### The Data Report Module

Data Extraction - extract data from any combination of the system data files based on various logical and mathematical criteria.

Format - format report lines and pages, inserting data obtained via the data extracting function. Control of page numbering and control breaking on selected data would also be provided.

Summary - summary lines at any desired levels can be requested.

User Calculations - this module would allow the insertion of user specified calculations into the line format functions. This feature will allow some tailoring of this module to reflect specific applications.

Subroutines are the small programs used to produce the functional structures that are the MSEIP subsystems. These subroutines are so constructed that they can function alone or with several other subroutines. Thus, they are the actual building blocks of the MSEIP System. The following are brief descriptions of the basic functional subroutines of the data control modules.

Index Handler - this subroutine retrieves a storage location from a specific index based on a key (one of the index fields). It searches any of the indexes and indicates a "not found" condition if the key is not in a specific index.

Data Handler - this subroutine obtains a data record from storage based on a location obtained from an index. The data handler also places a record into storage in the location specified to it.

Location Finder - this subroutine finds a location in storage for a data record in one of the MSEIP System's five data files. It also updates the appropriate indexes to reflect the additional record.

Record Interrogator - this subroutine obtains a specific data field from a record that has been obtained from a data file via the data handler.

Field Update - this subroutine allows a specific field, in a record obtained via the data handler, to be changed, deleted, or added. This subroutine modifies any program counters necessary if the record is of variable length.

Data Decisions - this subroutine allows a number of decisions to be made concerning a specific piece of data. These decisions

would be match or no-match decisions, and in the case of numeric data, equal, less than, or greater than. This subroutine will act as a switch in the logic of a process based on the decisions that are allowed in a specific situation.

**Record Search** - this subroutine searches the data records of a specified data file for a specific data condition. It utilizes the indexes as well as the actual data records in the search. Specified data conditions follow the logic of the data decision subroutine.

**Report Generator** - this subroutine is much larger and more complex than those previously described. It generates a report from one or more data files using the linking logic of the indexes. The format of the report to be generated is specified via control parameters.

This brief listing of subroutines should not be considered complete or exact. It provides examples of the parts of a generalized processing system. Precise specification of those subroutines would require knowledge of the hardware and software on which the system is to be implemented.

### 503.2 Processing Logic Example

To better illustrate the technique of building and processing a subsystem from the subroutines, a rather simple design for the Personnel Subsystem follows. This example is basically a file update and report process, and would be accomplished for the other four subsystems by the same set of programs.

Figure 5-1 (A) illustrates the use of the initial decision process to determine which of the five subsystems is to be processed. The file origination program and the update program are actually the same program because the function of the file building consists of the add operation of the update function. This illustration would use the record interrogator subroutine to obtain the first parameter and the data decision subroutine to determine the value of the parameter, that is, the subsystem to process.

Figure 5-1 (B) illustrates use of the record interrogator and index handler to determine if the second parameter (district and/or organization number) is new and not in the index. The data decision subroutine decides if this is an add operation;

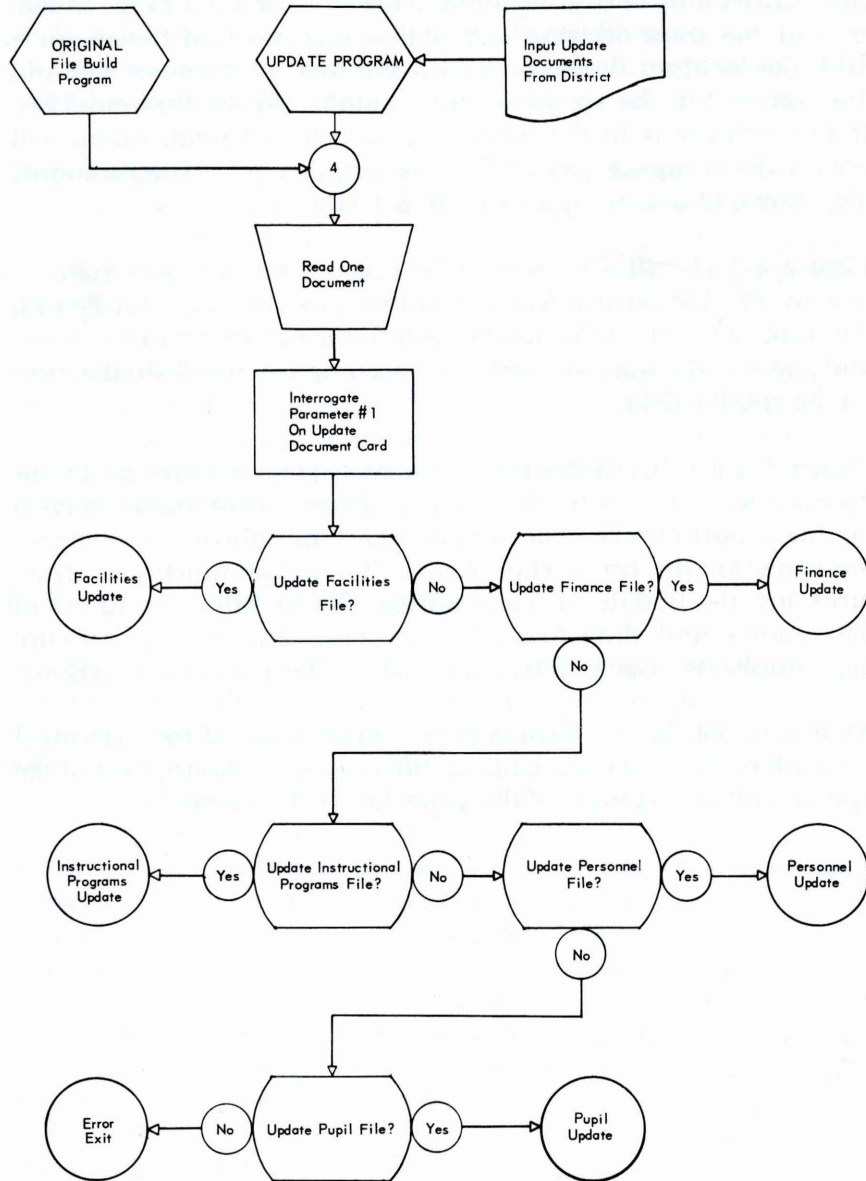
if it is, the location finder and data handler subroutines will add the record to the file and update the indexes. If the district and/or organization is not new, the record interrogator and index handler subroutines are used to determine if the third parameter (social security number) is in the indexes for the specific district and/or organization. If the number is not in the indexes and the data decision subroutine specifies that the action is add, the location finder and data handler subroutines will add the record for the social security number to the Personnel file. If the number is in the index, the data handler subroutine will obtain the complete record for that number from the Personnel file, shown at beginning of Figure 5-1 (C).

Figure 5-1 (C) illustrates use of the record interrogator subroutine to get the parameters (including possible data for fields), the data decision subroutine to determine the action to be taken, and the file update subroutine to accomplish the desired action on the specific field.

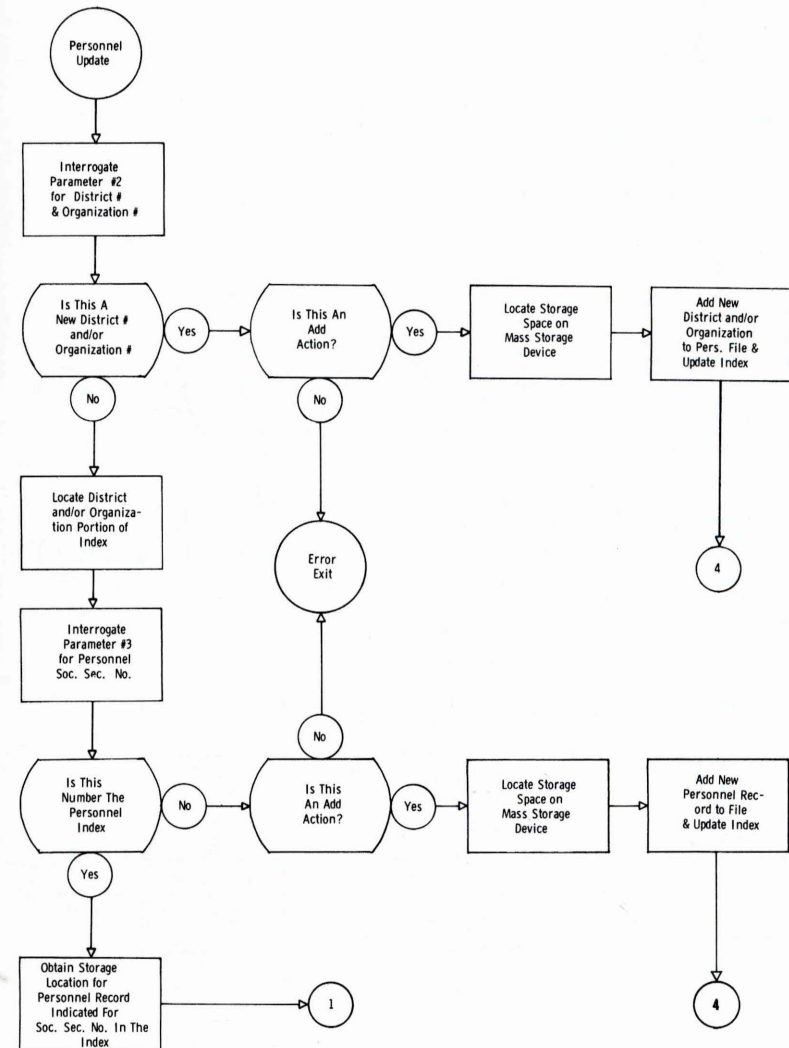
Figure 5-1 (D) illustrates uses of the record interrogator and data decision subroutines to determine if there is a continuation card for these parameters. The report generator subroutine prepares the items for the transaction report. The actual functional structures for the update of the historical file and the closing out of the reports and data files have not been detailed here because they duplicate much that appeared in the previous functions.

Although the figure illustrates the basic logic of the Personnel Subsystem, there would be little difference in a description of the update and report logic of the other four subsystems.

FIGURE 5-1 (A). FILE ORIGATION AND UPDATE CYCLE

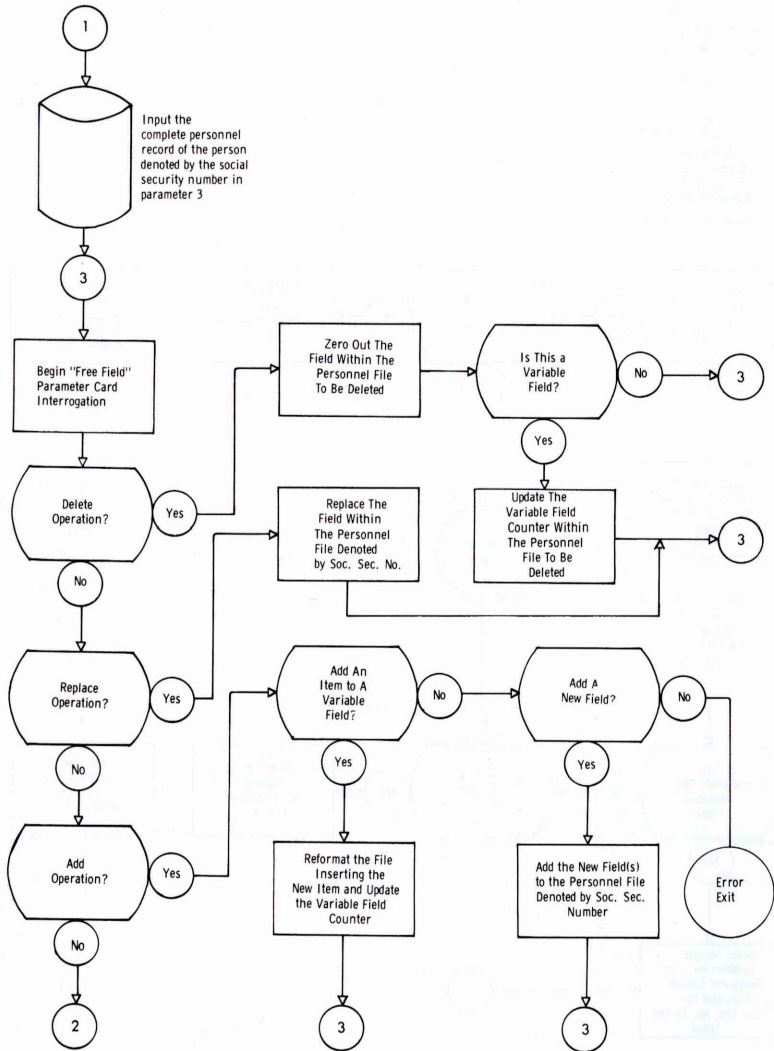


(FIGURE 5-1 (B). FILE ORIGATION AND UPDATE CYCLE. CONTINUED)

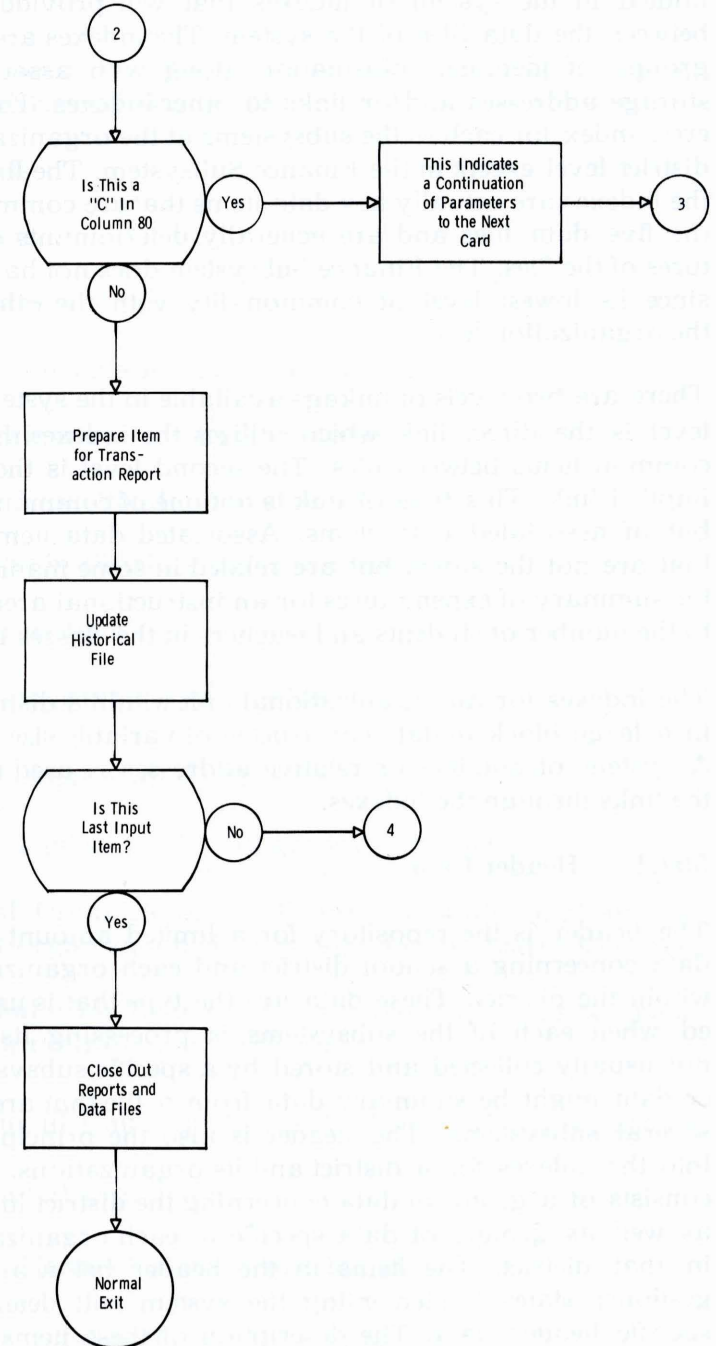




(FIGURE 5-1 (C). FILE ORIGINATION AND UPDATE CYCLE, CONTINUED)



(FIGURE 5-1 (D). FILE ORIGINATION AND UPDATE CYCLE, CONTINUED)



## 504. SYSTEM LINKAGES

The cross-file referencing ability of the MSEIP System is embodied in the system of indexes that will provide the linkage between the data files of the system. The indexes are essentially groups of identifier information along with associated mass storage addresses and/or links to other indexes. There is a discrete index for each of the subsystems at the organization within district level except in the Finance Subsystem. The links used by the indexes are actually key data items that are common between the five data files and are generally determinants of the structures of the files. The Finance Subsystem does not have an index since its lowest level of commonality with the other files is at the organization level.

There are two levels of linkage available in the system. The first level is the direct link which utilizes the indexes that form the common items between files. The second level is the indirect or implied link. This type of link is not one of common data items but of associated data items. Associated data items are those that are not the same, but are related in some manner, such as the summary of expenditures for an instructional area compared to the number of students and teachers in the classes in this area.

The indexes for an organizational unit within a district are held in a large block of data constructed of variable size sub-blocks. A system of pointers or relative addresses is used to "thread" the links through the indexes.

### 504.1 Header Data

The header is the repository for a limited amount of pertinent data concerning a school district and each organizational unit within the district. These data are the type that is usually needed when each of the subsystems is processing its files, but is not usually collected and stored by a specific subsystem. Header data might be summary data from a file that are needed by several subsystems. The header is also the principal entrance into the indexes for a district and its organizations. The header consists of a group of data concerning the district in composite, as well as groups of data specific to each organizational unit in that district. The items in the header below are only suggestions; states implementing the system will determine their specific header data. The description of these items will not be

as definitive as the descriptions of the data files in later sections because exact specifications of the header data and index items are dependent on implementation requirements. See Figure 5-2.

District Header - the information in this portion of the header pertains to the district as a whole:

District Code -

County Code -

District Name -

Superintendent's Name - last name and initials

Assessed Valuation - tax base of district

Population Base - total population of district

Square Miles in District - total size of district

School Census Data -

District Organization - type of district

Total Staff - total of all staff members in the district

Number of Pupils - total of all grades in district

Number of Organizations in District - this also indicates the number of organization data groups in this district's header.

Organizational Unit Header - this group of data items is repeated for each organization in the district.

Organizational Unit Identification Code - identification unit code

Organizational Unit Name -

Principal's Name - last name and initials

Total Staff - total staff of organizational unit

Total Pupils by Grade -

Site and Building Numbers - see section 606.2

Organization Unit Type - see section 706.1

Days in Session -

Contract Period -

Master Index Pointer - the pointer to (relative location of) this organization's master index which is the entrance to its complete set of indexes.

FIGURE 5-2. HEADER DATA

DISTRICT CODE COUNTY CODE DISTRICT NAME SUPERINTENDENT'S NAME ASSESSED VALUATION POPULATION BASE SQUARE MILES IN DISTRICT SCHOOL CENSUS DATA DISTRICT ORGANIZATION TOTAL STAFF NUMBER OF PUPILS NO. OF ORGANIZATIONS IN DISTRICT
ORGANIZATIONAL UNIT IDENT. CODE ORGANIZATIONAL UNIT NAME PRINCIPAL'S NAME TOTAL STAFF TOTAL PUPILS BY GRADE SITE AND BUILDING NUMBERS ORGANIZATION UNIT TYPE DAYS IN SESSION CONTRACT PERIOD MASTER INDEX POINTER
ORGANIZATIONAL UNIT IDENT. CODE ORGANIZATIONAL UNIT NAME PRINCIPAL'S NAME

## 504.2 The Indexes

There is a set of indexes - a master index and four subsystem indexes - for each organizational unit in each district. One important purpose of the indexes is to facilitate the attainment of a desired data record from mass storage with only a minimum of searching, if any, required of the data in mass storage. This ability also follows linking between the mass data files. Figure 5-3 details each of the indexes and illustrates the linking ability between the indexes.

Master Index - this index is the entrance to the four subsystem indexes. Its pointers include the beginning of each of these four indexes in the block of indexes.

District Code -

Organizational Unit Identification Code -

Index Storage Location - the storage address at which the block of four subsystem indexes is stored in mass storage.

Finance File Storage Location - the storage address of this organization's finance records in mass storage (Finance file).

Instructional Programs Pointer - relative location of the beginning of this index in the block of indexes.

Facilities Pointer - relative location of the beginning of this index in the block of indexes.

Personnel Pointer - relative location of the beginning of this index in the block of indexes.

Pupil Pointer - relative location of the beginning of this index in the block of indexes.

Instructional Programs Index - this is the principal index in the logic of the linkage between the other three subsystem indexes since it has links (pointers) to each of the others. The following group of items is repeated for each of the local course numbers and section numbers (classes) that is used by the particular organizational unit.

Instructional Area Code - see section 806.3

Local Course Number - assigned by the district

Section Number - actual class/section number, assigned by the district.

Record Storage Location - the address in mass storage of the detail record concerning this local course/section.

Space Number Pointer - relative address of this space number and its record storage location address in the Facilities Index.

Pupil Internal Sequence Number Ranges - these are two relative locations in the Pupil Index that are the upper and lower limits of the ranges in which the internal pupil sequence numbers of the pupils in this course/section fall.

Social Security Number Pointer - the relative location in the Personnel Index of the items concerning the instructor of this course/section.

Facilities Index - this index is the means of acquiring the records concerning each defined space in the organization's building(s). The following pair of items is repeated for each space in the organizational unit:

Space Number - this is a unique four-digit number that identifies a space. For a complete definition of space code, see section 606.2.

Record Storage Location - the address at which the record concerning this space is stored in mass storage.

Personnel Index - this index contains a group of items for each of the certified personnel in an organizational unit.

Social Security Number -

Record Storage Location - the address at which the record for this particular person is stored in mass storage (Personnel file).

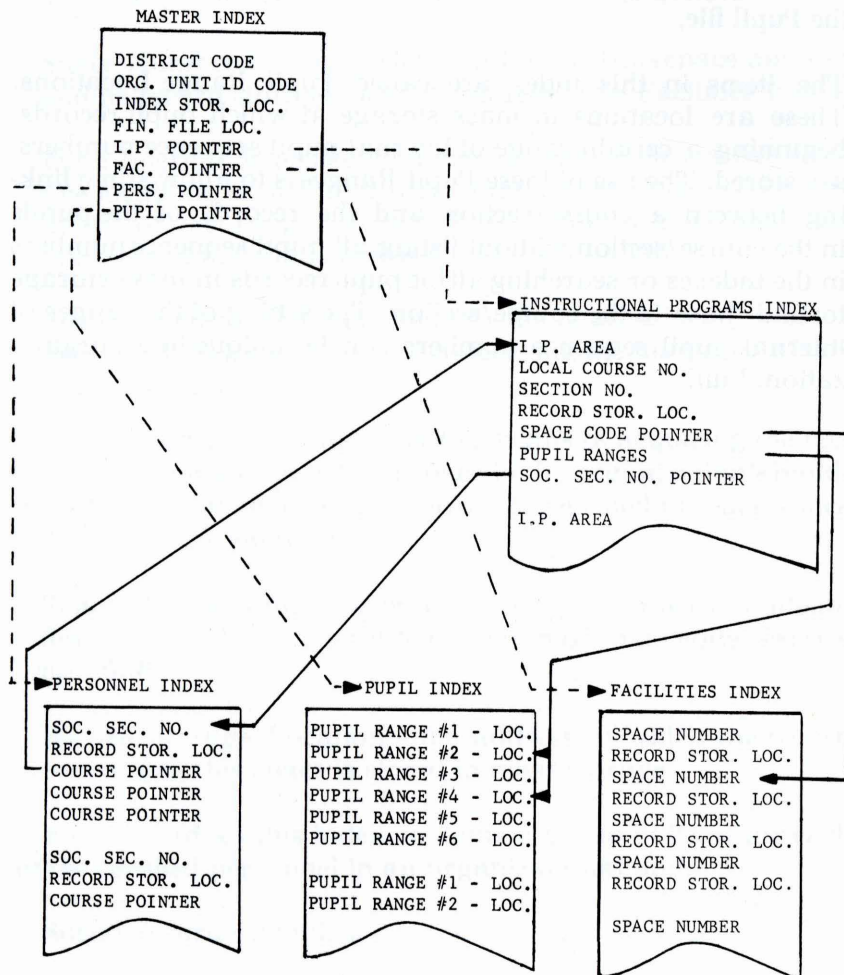
Course Pointer - the relative location in the Instructional Programs Index of the items concerning one of the course/

sections that this person teaches. There is a course pointer for each course/section with which the person is involved.

Pupil Index - this index assumes that the pupils in the organization all have internal pupil sequence numbers assigned and in a manner somewhat chronological to age/grade. Section 1003.2 describes in detail the internal pupil sequence number and its assignment methods. This index also assumes that individual data concerning the pupils is collected and stored in the Pupil file.

The items in this index are called Pupil Range Locations. These are locations in mass storage at which pupil records, beginning a certain range of internal pupil sequence numbers, are stored. The use of these Pupil Ranges is to allow some linking between a course/section and the records of the pupils in the course/section without listing all pupil sequence numbers in the indexes or searching all the pupil records in mass storage to find those in the course/section. The setting of the ranges of internal pupil sequence numbers can be unique to an organizational unit.

FIGURE 5-3. INDEXES AND LINKING CAPABILITIES



## Chapter 600

### 600. FACILITIES SUBSYSTEM

#### 601. FACILITIES SUBSYSTEM COMMITTEE

The MSEIP Facilities Subsystem was concerned primarily with information about the physical properties of school facilities. Thus, it defined and interpreted specific data needed by local, state, and national agencies about sites, buildings, and equipment.

It was believed by the Facilities Subsystem Committee that SEA's have inadequate data available about school facilities that are in use by the local school districts. In addition, existing data are not recorded in an orderly fashion, are not associated with standard definitions, are not readily related to finance, instructional programs, personnel, and pupil data, and do not serve as acceptable components of an integrated educational information system. Facilities data are needed for integration with other data to improve educational decision making.

The Subsystem concerned itself with assessment of the needs of the various educational agencies, and with providing data for research, evaluation, and communication among and for the agencies involved. It also concerned itself with the roles and functions of the SEA's so that their objectives and activities would be the determining factor for the inclusion of data items.

The Facilities Subsystem Committee was organized in June 1966. Its executive officer was an MSEIP Central Staff Supervisor with a background in school facilities. A chairman was elected from the membership. The 13 committee members included a representative from the SEA of each participating state. The representatives, appointed by their chief state school officers, were SEA personnel whose positions were either in facilities or closely related. The members of the Facilities Subsystem Committee collectively agreed on the inclusion of data items for this Subsystem.

## 601.1 Introduction

This chapter presents the MSEIP Facilities Subsystem as it was designed to meet its objective of building a comprehensive, accurate data file to furnish information that describes the facilities of the LEA. At the same time, the consideration that the Facilities Subsystem is an integral part of a five-file integrated information system has been regarded as an objective of equal importance.

Information guidelines about the collection of data, the construction of machine useable files, and a complete list and definition of data items that may be used are included in this chapter. The data items are those compiled by the Facilities Subsystem Committee, selected after intensive investigation.

This chapter is not a program specification and is not intended to serve that purpose. The guidelines set forth here are intended to give the individual SEA's the ability to design and implement an EDP (electronic data processing) system for processing this data with a minimum of time and effort.

## 602. FACILITIES DATA FILE

### 602.1 Facilities Categories

There are four categories made up by four records in the Facilities Subsystem data file. These are: Site, Building, Space, and Vehicle.

The site number is a three-digit numeric field and assigned at district level. The site is divided into the original site and additions by the site unit code. The site unit is identified by a one-digit code and the original site is always zero, the first addition is one, etc. The site may or may not contain a building or buildings.

The building number is a three-digit numeric field and assigned by the local district. A building is divided into the original building and additions by the building unit code. The building unit is identified by a one-digit code and the original building is always zero, the first addition is one, etc.

The space number is a four-digit numeric code that is assigned within a building unit. Built-in Equipment is a subcategory associated with the space where applicable and is carried as part of the space within which it is located. All spaces are specifically identified through the use of the space name code.

The Vehicle Record is divided into three subcategories: The Conventional Carrier, the Small Carrier, and Other Vehicle. Each vehicle requires a fixed amount of data to describe it, but the number of vehicles described in one district is unlimited. If possible, there should be just one vehicle record for each district.

### 602.2 File Structure and Data Layout

This file was designed to make it adaptable for the retrieval of data necessary to produce management reports and statistical tables. The following general design is suggested whether the file is to be stored on a mass storage device or magnetic tape.

The file structure allows for variable length records. The blocking factor will of necessity be dictated by the hardware and software available to an individual state. Also, the amount of data collected by any given state will affect the decision made about the blocking factors. The general design should conform to the other four subsystems to insure the efficiency of the integrated system.

There are several factors that will cause the size of the records to vary to a marked degree. The vehicle record, for instance, in a district that has five conventional carriers, would be much smaller than the vehicle record for a district that had twenty-five conventional carriers. Also, the space records' size would vary according to the presence or absence of built-in equipment.

If the above described structure is followed, there will be four types of records in the Facilities data file.

1. Site Record - this record will give the location, size and other general characteristics of a given site unit (original and additions). A site may or may not have structures on it. The original site will be identified by 0 in the site unit code; the first addition to the site will have 1 in the site unit code, etc. The record code in all site records will contain 1.

2. Building Record - there will be a building record for each building unit which will be associated with the preceding site unit record. The original building will have a building unit number of 0, the first addition 1, etc. The building unit records will have 2 in the record code and the subrecord code.

3. Space Record - there will be a space record for each individual space within a building unit. This record will also contain the adjuncts applicable to that space and the built-in equipment in that space, if applicable. The space record will have a 2 in the record code and 3 in the subrecord code.

4. Vehicle Record - there will be one vehicle record for each district. Each vehicle owned or leased by that district will have a fixed amount of data to describe it, and the size of the record will vary by the number of vehicles being operated by that district. Only school-owned vehicles and leased vehicles that are maintained and operated by the school district will be carried in this record. The sequence key of the vehicle record will contain 9999 for sequencing purposes; the record code will contain a 3.

### 603. FILE CONSTRUCTION CONSIDERATIONS

#### 603.1 Data Collection

The Facilities data file by necessity will be much more static than the other subsystems. Therefore, great care should be taken in the original collection of data to construct this file.

The collection forms should be designed so all the data an SEA requires will be collected in one effort. The forms should also be designed so that within each county-district the sequence will be as follows: Site, Building Unit Within Sites, Spaces Within Building Units, and Vehicle Record (one per district).

There will be a building unit record, (if applicable), following the site record. Following the building unit record will be all the space records applicable to that building unit. Following the space records will be the next building unit record followed

by the space records applicable to it, etc. After all the sites, building units, and spaces have been described, there will be a vehicle record describing all of the vehicles owned or leased by that district.

Each of the four records and its data item list suggested in the Facilities Subsystem assumes the existence of the other three. However, in the initial development of a facilities file in an SEA, this may not be the case. All records and all data items probably would not be developed at the same time. Hence, priorities must be established according to needs and resources of each implementing agency. For an agency that has no facilities data at all, perhaps a practical beginning would be to identify and number every site and building. Then as information is needed, other data items could be added and the individual records established.

SEA's should be aware of other problems and methods of securing information. Consideration could be given to collecting data in summary form until all the records are implemented. For example, all individual spaces are identified within every building on the Space Record. However, the Space Record adds many problems for data collection, storage requirements, and resources needed. Hence, the Space Record may not be collected at first, but one may want to add these items to the Building Record: 1) number of general purpose spaces; 2) number of special spaces; and 3) number of administrative spaces. This example is used for illustrative purposes only and many other examples and combinations exist. Another area deserving consideration would be SITE LOCATION. If a structure is on the site and the BUILDING ADDRESS has been collected, one may not need both the SITE LOCATION and BUILDING ADDRESS. The items USE OF SITE and USE OF BUILDING would be a comparable example.

#### 603.2 File Sequencing

The Facilities data file is unique in the five subsystems in that the file is built on a multisequence philosophy. It should be noted in section 602.2 that to each of the four types of records, a record code has been added; and to the building records and the space records, a subrecord code has been added. These additional fields are necessary to allow for identification and sequencing of the records.

If the Facilities records are sequenced on the first 21 digits of the records, the file will fall into the sequences shown in Figure 6-1.

FIGURE 6-1. FACILITIES FILE SEQUENCE

	County District Code	Site No.	Site Unit Code	Record Code	Building No.	Building Unit Code	Sub- Record Code	Space No.
Original Site	1111111	111	0	1				
Original Building	1111111	111	0	2	111	0	2	
Space	1111111	111	0	2	111	0	3	1111
Space	1111111	111	0	2	111	0	3	2222
1st Building Addition	1111111	111	0	2	111	1	2	
Space	1111111	111	0	2	111	1	3	1111
1st Site Addition	1111111	111	1	1				
2nd Building Addition	1111111	111	1	2	111	2	2	
Space	1111111	111	1	2	111	2	3	3333
			Sequence Key					
Vehicle	1111111	9999		3				

604. SAMPLE OUTPUT REPORT

An example of a report that may be obtained from the Facilities data file follows in Figure 6-2.

FIGURE 6-2. FACILITIES SUBSYSTEM SAMPLE REPORT

DESCRIPTION OF LABORATORIES				
County-District No. 281 5229				
Name/Type	Air Conditioning	Floor Area	Lighting Foot Candles	Cost Equipment
CHEMISTRY	Yes	1200	65	22,000
PHYSICS	Yes	1200	65	25,000
BIOLOGY	Yes	1000	65	30,000
LANGUAGE	No	900	50	8,000

605. MULTIPLE FILE USES

The central theme of the system being proposed here is that any one or all of the five subsystems may be used in formulating reports. This allows for complete flexibility at the state level not only in producing reports for state and federal use, but also in retrieving data for research projects. To accomplish this flexibility, an index table will be established while files are built that will provide a linkage between all subsystems.

This linkage is described in Chapter 1100, "Common Features of the Subsystems," and is not repeated in each subsystem chapter. It should be noted here, however, that the index will allow a linkage between the Facilities Subsystem and all other given subsystems. The establishment and maintenance of these indexes will be the single most vital feature in the operation of this information system.



606. DATA ITEM LISTINGS, DEFINITIONS, AND CODES

606.1 Data Item Listings

The following four charts list Facilities data items that may be used in building a Facilities Subsystem file. The charts were established by categories of the Facilities Subsystem. Chart 6-1 lists site record data items; Chart 6-2 lists building record data items; Chart 6-3 lists space record data items; and Chart 6-4 lists vehicle record data items.

Each of the records begins with the data items used for identification and header information. These items are needed in this order for sequencing purposes. Other categories and data items in each record are listed in alphabetical order. The order of these items can be changed and items can be added or deleted.

CHART 6-1. FACILITIES SUBSYSTEM SITE RECORD

FIELD NO.	DATA ITEMS (Definitions on pages 75 to 82.)	SIZE DIG/ CHAR	TYPE A,N A/N
— SITE IDENTIFICATION —			
1	County-District Code	7	N
2	Site Number	3	N
3	Site Unit	1	N
4	Record Code (code is 1)	1	N
5	Appraised or Estimated Code	1	N
6	Appraised or Estimated Value	6	N
7	Area of Site	5	N
8	Cost of Improvements to Site	5	N
9	Cost of Site	6	N
10	Date of Acquisition	4	N
11	Date of Disposal	4	N
12	Ownership of Land	1	N
13	Site Location	35	A/N
14	Use of Site - instructional and supporting services (multiple uses if desired)	2	N

CHART 6-2. FACILITIES SUBSYSTEM BUILDING RECORD

FIELD NO.	DATA ITEMS (Definitions on pages 82 to 105.)	SIZE DIG/ CHAR	TYPE A,N A/N
BUILDING IDENTIFICATION			
1	County-District Code	7	N
2	Site Number	3	N
3	Site Unit	1	N
4	Record Code (code is 2)	1	N
5	Building Number	3	N
6	Building Unit	1	N
7	Subrecord Code (code is 3)	1	N
— BUILDING — GENERAL —			
8	Address of Building	35	A/N
9	Availability of Building	1	N
10	Date of Acquisition (building)	4	N
11	Date of Construction Contract of Building	4	N
12	Date of Disposal (building)	4	N
13	Elevators in Building, Number of	1	N
14	Fire Rating	1	N
15	Kind of Building	2	N
16	Mobility of Building	1	N
17	Ownership of Building	1	N
— CONSTRUCTION AND MATERIAL —			
18	Exterior Wall	1	N
19	Floor Framing	1	N
20	Interior Frame (division walls)	1	N
21	Roof Deck	1	N
22	Roof Framing	1	N
23	Structural System (bearing walls and materials)	2	N

(CHART 6-2. FACILITIES SUBSYSTEM BUILDING RECORD, CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 82 to 105.)	SIZE DIG/CHAR	TYPE A,N A/N
	— COST OF BUILDING —		
24	Appraised or Estimated Code	1	N
25	Appraised or Estimated Value	7	N
26	Cost of Architectural and Engineering Services	5	N
27	Cost of Built-in Equipment	6	N
28	Cost of Educational Consultative Services	5	N
29	Cost of Electrical Contract	6	N
30	Cost of Fiscal Services Fees	5	N
31	Cost of General Contract	7	N
32	Cost of Heating Contract	6	N
33	Cost of Legal Services	5	N
34	Cost of Miscellaneous Services	5	N
35	Cost of Plumbing Contract	6	N
36	Cost of Ventilation Contract	6	N
	— FIRE PROTECTION SYSTEM —		
37	Adequate Water Supply for Fire Protection	1	N
38	Heat-Smoke Detection System	1	N
39	Number of Automatic Sprinkler Heads	4	N
40	Number of Call Boxes	2	N
41	Number of Fire Alarm Boxes	2	N
42	Number of Fire Extinguisher Stations	3	N
43	Number of Fire Hose Cabinets	2	N
	— SERVICE SYSTEMS —		
	— Cooling System —		
44	Extent of Cooling System	1	N
45	Type of Cooling System	1	N
46	Ventilating System in Building (type)	1	N

(CHART 6-2. FACILITIES SUBSYSTEM BUILDING RECORD, CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 82 to 105.)	SIZE DIG/CHAR	TYPE A,N A/N
	— Electrical and Communication System —		
47	Communication System in Building (multiple uses)	1	N
48	Emergency Electrical System	1	N
49	Source of Main Electrical System	1	N
50	Television System	1	N
	— Heating System —		
51	Source of Heat for Heating System	1	N
52	Type of Heating System	2	N
	— Sewage Disposal and Water Supply —		
53	Ownership of Sewage System	1	N
54	Sewage Treatment and Disposal System	1	N
55	Source of Water	1	N
	— SIZE OF BUILDING —		
56	Area of Basement	5	N
57	Area of Disaster Shelter	5	N
58	Gross Floor Area of Building Facility	7	N
59	Number of Floors (stories) of Building	2	N
60	Rated Pupil Capacity	5	N
	— USE OF BUILDING —		
61	Types of Schools in Building	2	N
62	Types of Supporting Services in Building	2	N

CHART 6.3. FACILITIES SUBSYSTEM SPACE RECORD

FIELD NO.	DATA ITEMS (Definitions on pages 105 to 112.)	SIZE DIG/ CHAR	TYPE A,N A/N
— SPACE IDENTIFICATION —			
1	County-District Code	7	N
2	Site Number	3	N
3	Site Unit	1	N
4	Record Code (code is 2)	1	N
5	Building Number	3	N
6	Building Unit	1	N
7	Subrecord Code (code is 3)	1	N
8	Space Identification Number	4	N
— SPACES IN BUILDING —			
9	Name/Type Space	2	N
10	Dimensions of Space	8	N
11	Floor Level	1	N
12	Adjuncts (repeated for each adjunct related to this space)	7	N
	Type of Adjunct (2 digits)		
	Number of Adjuncts (1 digit)		
	Area of Adjunct (4 digits)		
— For Instructional Spaces —			
13	Air Conditioning	1	N
14	Area of Windows	4	N
15	Lighting	2	N
16	Wall Flexibility	1	N
— For Finishes of Instructional Spaces —			
17	Ceiling	1	N
18	Flooring (surface)	1	N
19	Walls	1	N
— For Built-in Equipment in Instructional Spaces —			
20	Date Acquired	6	N
21	Description	31	A/N
22	Number of Units	3	N
23	Total Cost	7	N

(CHART 6.3. FACILITIES SUBSYSTEM SPACE RECORD, CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 105 to 112.)	SIZE DIG/ CHAR	TYPE A,N A/N
— For Service Spaces —			
24	Number of Lavatories	2	N
25	Number of Shower Heads	2	N
26	Number of Urinals	2	N
27	Number of Water Closets	2	N

CHART 6.4. FACILITIES SUBSYSTEM VEHICLE RECORD

FIELD NO.	DATA ITEMS (Definitions on pages 112 to 113.)	SIZE DIG/ CHAR	TYPE A,N A/N
— VEHICLE IDENTIFICATION —			
1	County-District Code	7	N
2	Sequence Key (key is 9999)	4	N
3	Record Code (code is 3)	1	N
— CONVENTIONAL CARRIER —			
— Chassis —			
(Items 4-14 repeated for each conventional carrier)			
4	Type of Vehicle	1	N
5	Cost of Chassis	5	N
6	Make Code of Chassis	2	N
7	Ownership Code of Chassis	1	N
8	Year Manufactured of Chassis	2	N

(CHART 6-4. FACILITIES SUBSYSTEM VEHICLE RECORD, CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 112 to 113.)	SIZE DIG/ CHAR	TYPE A,N A/N
	— Body —		
9	Cost of Body	5	N
10	Make Code of Body	2	N
11	Ownership Code of Body	1	N
12	Radio System (two-way)	1	N
13	Rated Capacity of Body	2	N
14	Year Manufactured of Body	2	N
	— SMALL CARRIER AND OTHER VEHICLES —		
	(Items 15-18 repeated for each small carrier or other vehicle)		
15	Type of Vehicle	1	N
16	Cost	5	N
17	Description of Small Carrier	20	A/N
18	Year Acquired	2	N

### 606.2 SITE DATA ITEM DEFINITIONS AND CODES

The site for a given school plant consists of all the land serving the school together with all improvements to the site (other than structures) such as grading, drainage, drives, parking areas, walks, plantings, play courts, and playfields.

A school plant includes the site, buildings, and equipment used by a single school, or by two or more schools sharing common facilities.

A school is a division of the school system consisting of a group of pupils composed of one or more grade groups, organized as one unit with one or more teachers to give instruction of a defined type, and housed in a school plant of one or more buildings. More than one school may be housed in one school plant, as is the case when the elementary and secondary programs are housed in the same school plant.

The definitions from the USOE Glossary and Handbook III were used when applicable. The definition for a site data item is listed in the same order that it appears in the Site Record, Chart 6-1.

### — SITE IDENTIFICATION —

**COUNTY-DISTRICT CODE** - a numeric field comprised of a three-digit county code and a four-digit district code.

**SITE NUMBER** - the number assigned by the district. Each site, whether or not it has a structure, should be assigned a number.

**SITE UNIT** - this code uniquely identifies the original site and all additions to that site. Use the following codes:

- 0— Original Site
- 1— First Addition
- 2— Second Addition, etc.

**RECORD CODE** - code is 1.

**APPRAISED OR ESTIMATED CODE** - this code designates how the value was determined.

- 1— Appraised
- 2— Estimated

**APPRAISED OR ESTIMATED VALUE** - this amount is expected to be the current value of the site according to the best available information. It might be a formal appraisal, a consensus of local authorities, or an estimate made by the superintendent.

**AREA OF SITE** - the total number of developed and undeveloped acres in a site unit (original and all additions) to the nearest tenth, including areas occupied by buildings, walks, drives, parking facilities, and other improvements to the site.

**COST OF IMPROVEMENTS TO SITE** - cost of a site improvement includes the contract amount for contract work and salaries and other expenses for work done by district employees,

plus any other expenses connected with any initial installation or extension of a site improvement. It also includes the cost of any special assessments against the school district for capital improvements on or off the site, such as streets, curbs, and drains on or adjacent to the site, and any easements involved.

When the actual cost of an improvement to site is unknown and the cost of the land is known and has been recorded, the figure to use is the estimated cost at the time the improvement was made.

When an improvement to site has been received as a gift, or acquired at no cost through annexation or reorganization, the entry for its cost is zero plus any costs connected with its acquisition and installation, with an indication that it was a gift or acquired at no cost to the district.

Improvements to site consist of initial and additional work (other than buildings) performed upon the site and its adjacent ways after acquisition by the school district. This involves such things as grading, landscaping, seeding, and planting of shrubs and trees; constructing new sidewalks, roadways, overpasses, retaining walls, sewers, and storm drains; installing water mains, field hydrants, sprinkling systems, and outdoor drinking fountains; original surfacing and soil treatment of athletic fields and tennis courts; furnishing and installing (for the first time) playground apparatus built into the grounds, flagpoles, gateways, fences, and underground storage tanks which are not parts of building services systems; and demolition work.

All grading costs are included under improvement-to-site costs, except the costs for excavation, fill, and backfill necessary for construction of buildings. Such costs would be included under Cost of Building.

**COST OF SITE** (for records of owning unit only) - the cost of a site as maintained in the records of the owning unit is the actual cost to that district. When school districts are reorganized, the new district should retain available cost records of the old district(s) for reference purposes.

The cost of land includes the purchase price paid by the owning district for all land that makes up a site and all improvements to the land existing at the time of purchase, plus all costs related

to acquiring title to the land, such as appraisal fees, search and title insurance, site surveys, and condemnation proceedings.

If the purchase price of the land also includes some buildings which are retained for use, the appraised value of the buildings should be deducted from the price of the land and a record established for the buildings. If the buildings are sold rather than retained for use, the salvage value should be deducted from the price of the land.

When the actual cost of the land is unknown, the figure to use is the estimated cost at the time of acquisition. This figure includes the estimated cost of the land and any existing improvements to site for which actual cost figures are not available.

When the land has been received as a gift, or acquired at no cost through annexation or reorganization, the entry for cost of land is zero plus any costs related to acquiring title to the land, with an indication that the land was received as a gift or at no cost to the district. (School districts may wish to note on a record form the appraised value of such land at the time it was received, but this value figure should not be shown as the cost of the land.) Cost of land does not include improvements to site made after the land was acquired by the district; such costs are recorded under Cost of Improvements to Site.

The acquisition cost includes cost of all the land comprising the site units (original and all additions) at the time the school plant or supporting services facility was first accepted and put into use by the school district.

**DATE OF ACQUISITION** - the date on which the owning school district consummated the transfer of ownership of the land. If dates of acquisition are unknown, they should be estimated. For leased or rented property, the dates are those on which the lease or rent begins.

**DATE OF DISPOSAL** - the date on which each piece of land in a site was sold or otherwise disposed of so that the school district no longer retained it for any purpose.

OWNERSHIP OF LAND - ownership of land is shown on a record form with a designation selected from codes below:

- 1— District-Owned - land owned by a school district (or unit operating the schools), or under its control through a contract to purchase. This designation is used for land to which title is held by the board of education or other school officials of the district keeping the record.
- 2— Municipally-Owned - land owned by a municipal unit of government (not the unit operating the schools) and used for school district purposes. This designation is not used for land to which the board of education or other school officials have title.
- 3— Authority-Owned - land owned by a public-schoolhousing authority, used for school district purposes.
- 4— Other Public Ownership - land owned by county, state, Federal Government, or other governmental agency and used for school district purposes. State-owned or Federally-owned would be indicated on a record form for such a land.
- 5— Nonpublicly-Owned - any land, other than publicly-owned land, that is used by a school district and is under its jurisdiction for school district purposes.

SITE LOCATION - the location of each site should be listed. This may be done in one of two ways as described below. If a site has a postal street address this is sufficient. If, however, a site does not have a postal address then the legal deed description will suffice.

Street Address - postal address of the site.

Legal Description - description of the parcel of land in the records of the city clerk. Use deed reference or longitude-latitude:

Deed Reference - legal description as on the deed - plot number, lot number, etc.

Longitude-Latitude - if nothing else is available, the longitude and latitude as used in the 1962 USOE Inventory will suffice.

USE OF SITE - instructional and supporting services - the use of a site is shown by indicating the type of plant or building located on it, or, if the site is vacant, the purpose for which it is used.

A supporting services facility is a piece of land, a building, or part of a building that services more than one school plant or is not a part of any given school plant. In some instances, a facility which is definitely part of one school plant may also be used by pupils from another school plant. For example, a high school cafeteria may also be used by pupils from a nearby elementary school plant. Such a facility would not be classified as a supporting services facility, but would be accounted for as part of the school plant by which it is used the major portion of the time.

The type of school plant on a site or under construction on a site is shown on a record form with a designation selected from the following codes (multiple uses if desired):

- 01— Elementary School Plant - a plant that houses on a permanent basis one school only - a school classified as elementary by state and local practice and composed of any span of grades below grade 9. In this definition, elementary school includes kindergarten and nursery school.
- 02— Secondary School Plant - a plant that houses on a permanent basis one school only - a school comprised of any span of grades beginning with the next grade following elementary school and ending with or below grade 12, including junior high schools, the different types of high schools, and vocational or trade high schools.
- 03— Combined Elementary and Secondary School Plant - a plant that houses on a permanent basis two schools only - an elementary school and a secondary school.

- 04—Community College Plant - a plant that houses on a permanent basis one school only - a school that begins with grade 13, offers at least one but less than four years of work, and does not grant the baccalaureate degree.
- 05—Combined Secondary School and Community College Plant - a plant that houses on a permanent basis two schools only - a secondary school and a community college.
- 06—Other School Plant - a school plant not classifiable under codes above. This type of school plant should be written on a record form.

The type of supporting services facility on a site or under construction on a site is shown on a record form with a designation selected from the codes below (multiple uses if desired):

- 07—Administration Building - a building used primarily for housing personnel and equipment engaged in activities which have as their purpose the general regulation, direction, and control of the affairs of the school district that are systemwide and not confined to one school, subject, or narrow phase of school activities.
- 08—Instruction Building - a building used primarily for housing personnel and equipment engaged in instructional activities that are available to more than one school plant. Examples of this kind of building are separate television and radio stations, gymnasiums, natatoriums, auditoriums, school libraries, and school museums serving more than one school plant.
- 09—Pupil Transportation Building - a building used primarily for housing personnel and equipment engaged in activities which have as their purpose the conveyance of pupils to and from school activities, either between home and school or on trips for curricular or cocurricular activities. This includes building facilities such as those for pupil transportation supervisors, mechanics, and clerks; bus waiting stations; and storage for vehicles and supplies used in the pupil transportation program.

- 10—Maintenance Building - a building used primarily for housing personnel, equipment, and material storage for those engaged in activities concerned with the repair and upkeep of grounds, buildings, and equipment; or with the manufacture of equipment. This includes building facilities such as those for carpenters, cabinetmakers, machinists, mechanics, painters, plumbers, electricians, and groundskeepers.
- 11—Warehouse - a building used primarily to store supplies and equipment for the school district as a whole.
- 12—Food Services Building - a building used for housing personnel, equipment, and food storage for those engaged in the preparation, serving, or distribution of regular and incidental meals, lunches, or snacks in connection with school activities.
- 13—Student Dormitory - a building that is used primarily as living quarters for groups of students.
- 14—Living Quarters for Professional Personnel - a building that is used primarily as living quarters for professional personnel such as teachers, principals, and supervisors. Individual apartments rented by a school district for teachers are not designated by this term.
- 15—Living Quarters for Service Personnel - a building that is used primarily as living quarters for service personnel such as custodians and maintenance workers.
- 16—Public Library Building - a community services building used primarily for the custody, circulation, and administration of a collection of books, manuscripts, and periodicals kept for the use of the general public, but not for sale.
- 17—Playground Building - a community services building used primarily in conjunction with a community playground, such as buildings housing playground equipment, restrooms, shower rooms, and shelters used during inclement weather.
- 18—Community Services Building - a building used primarily for housing personnel and equipment engaged in

activities carried on by the school district for the community as a whole, or some segment of the community, excluding public school and adult education programs operated by the school district. This term includes buildings used primarily for housing recreation activities that are not considered part of the regular instruction program or student-body activities program; civic activities, such as meetings of citizens, public forums and lectures, parent-teacher associations, and civil defense planning; activities concerned with the custodial and detention care of children; activities concerned with the provision of aid to indigent children; or community canneries and laundries.

- 19— Investment Building - a building that has been acquired by the school district for investment purposes and is held to produce revenue for the support of schools.
- 20— Other Building - any other supporting services building not classifiable under the above codes, such as central heating building for supporting services, buildings acquired for future school use, or buildings acquired as a result of tax sales. The type of building would be written on a record form.
- 21— Vacant Site in Use - a piece of land used for school district purposes that has no buildings on it. The use for such a site would be written on a record form.
- 22— Miscellaneous Educational Site - sites used as school forests, farms, camp sites, nature study areas, etc.
- 23— Other Site - any site not classifiable under any of the above codes. The use for such a site would be written on a record form.

### 606.3 Building Data Item Definitions and Codes

Definitions of building data items are listed in the same order as the items appear in the Building Record, Chart 6-2. Definitions from the USOE Glossary and Handbook III were used when possible.

### — BUILDING IDENTIFICATION —

COUNTY-DISTRICT CODE - a numeric field comprised of a three-digit county code and a four-digit district code.

SITE NUMBER - the number assigned by the district. Each site, whether or not it has a structure, should be assigned a number.

SITE UNIT - this code uniquely identifies the original site and all additions to that site. Use the following codes:

- 0— Original Site
- 1— First Addition
- 2— Second Addition, etc.

RECORD CODE - code is 2.

BUILDING NUMBER - unique building number assigned by the school district or other educational agency.

BUILDING UNIT - the original building and all additions as coded below:

- 0— Original Building
- 1— First Addition
- 2— Second Addition, etc.

SUBRECORD CODE - code is 3.

### — BUILDINGS - GENERAL —

ADDRESS OF BUILDING - legal street address of the building.

AVAILABILITY OF BUILDING - the extent to which a building is available for occupancy is shown on a record form with a designation selected from the following codes:

- 1— Available for Complete Occupancy - the designation used for a building when the entire floor area of the building is available for school district use.



2— Available for Partial Occupancy - the designation used for a building when only a part of the floor area of the building is available for school district use. When this designation is used, the other applicable accounts should be interpreted as applying only to the part of the building available for school district use.

3— Abandoned for Occupancy - the designation used for a building abandoned and officially classified as unsuitable for use by action of the governing authority because of location or unsatisfactory physical condition.

DATE OF ACQUISITION (BUILDING) - the earliest date on which the owning school district consummated the transfer of ownership of an existing building or the acceptance of a new structure.

DATE OF CONSTRUCTION CONTRACT OF BUILDING - the date the construction contract for the building unit (original and all additions) was signed with the contractor.

DATE OF DISPOSAL (BUILDING) - the date on which a building was sold or otherwise disposed of so that the school district no longer retained it for any purpose.

ELEVATORS IN BUILDING, NUMBER OF - number of elevators installed for the purpose of conveying passengers to different levels within a building.

FIRE RATING - use codes below:

1— Fire-Resistive Building - a building constructed entirely of fire-resistive materials; or a building with fire-resistive walls and partitions, floors, stairways, and ceilings. A building of this type may have wood finish, wood or composition floor surfaces, and wood roof construction over a fire-resistive ceiling.

2— Semi-Fire-Resistive Building - a building with fire-resistive exterior and bearing walls and fire-resistive corridor and stairway walls, floors, and ceilings, but with ordinary construction otherwise, such as combustible floors, partitions, roofs, and finish.

3— Combustible Building - an all-frame building; a building with fire-resistive veneer on wood frame; or one with fire-resistive bearing walls, but otherwise of combustible construction.

4— Mixed Construction - a building with one or more sections of one type of construction and one or more sections of another type of construction.

KIND OF BUILDING - this account applies only to building facilities of a school plant. The kind of building facility is shown on a record form with one designation selected from 1 to 13 in terms of the primary use of the facility.

In some instances, facilities in one school plant may be used by pupils housed in another school plant. For example, pupils in a separate junior high school plant may use the gym or shops in a separate senior high school plant. In these cases, the facility is considered as a part of the school plant using it the major portion of time. Use the codes below:

01— Instruction Building - a building or part of a building used primarily for housing personnel and equipment engaged in activities dealing directly with the teaching of students or improving the quality of teaching. Examples of this kind of facility are the typical school building for classrooms, gymnasiums, special rooms, etc.; a separate shop building, home economics building, or auditorium building; and part of a nonpublicly-owned building that may be used for instructional activities.

02— Central Heating Building - a separate building used primarily for housing the heating plant for a school plant.

03— Central Cooling Building - a separate building used primarily for housing the cooling plant for a school plant.

04— Central Heating and Cooling Building - a separate building used primarily for housing the heating and cooling plant(s) for a school plant.

- 05— Student Dormitory - a separate building used primarily as living quarters for groups of students.
- 06— Living Quarters for Professional Personnel - a separate building used primarily as living quarters for professional personnel, such as teachers, principals, and supervisors. Individual apartments rented by a school district for teachers are not designated by this term.
- 07— Living Quarters for Service Personnel - a separate building used primarily as living quarters for service personnel, such as custodians and maintenance workers.
- 08— Stadium - a permanent structure consisting of one or more units with tiers of seats for spectators at athletic contests.
- 09— Field Building - a separate building used primarily for housing dressing room, shower, and toilet facilities. It may contain additional facilities, such as sleeping quarters for visiting teams.
- 10— Food Services Building - a separate building used primarily for housing personnel and equipment engaged in the preparation, serving, or distribution of regular and incidental meals, lunches, or snacks in connection with school activities.
- 11— Bus Garage - a separate building for the housing and/or maintenance and storage of vehicles.
- 12— Warehouse - a separate building used for storage.
- 13— Other Building - any building that is functioning as part of a school plant and is not classifiable under the above accounts.

MOBILITY OF BUILDING - the mobility of a building is shown on a record form with a designation selected from the codes below:

- 1— Permanent Building - a building designed for and constructed on its site and not intended to be moved.

- 2— Portable Building - a building designed and constructed so that it can be disassembled and transported to another location, or transported to another location without disassembling. When portable buildings are moved, the entry for the location of the building should be changed on a record; it is not necessary to make up a whole new record card. Mobile classrooms (self-propelled) are not portable buildings; they are classed as Vehicles.

OWNERSHIP OF BUILDING - the ownership of a building is shown on a record form with a designation selected from the codes below:

- 1— District-Owned - a building owned by a school district (or unit operating the schools) or under its control through a contract to purchase. This designation is used for buildings to which title is held by the board of education or other school officials of the district keeping the record.
- 2— Municipally-Owned - a building owned by a municipal unit of government (not the unit operating the schools) that is used for school district purposes. This designation is not used for buildings to which the board of education or other school officials have title.
- 3— Authority-Owned - A building owned by a public-schoolhousing authority that is used for school district purposes.
- 4— Other Public Ownership - a building owned by a state or the Federal Government that is used for school district purposes. State-owned or Federally-owned would be indicated on the record form for such a building.
- 5— Nonpublicly-Owned - any building, other than publicly-owned, that is used by a school district and is under its jurisdiction for school district purposes.

— CONSTRUCTION AND MATERIAL —

When construction materials are mixed in a building, list the principal one.

**EXTERIOR WALL** - construction materials that form the composition of the exterior wall. Codes:

- 1 - Wood - vertical studs made of wood.
- 2 - Masonry - built-up construction or combination of building units of such materials as clay, concrete, or stone, set in mortar or masonry cement.
- 3 - Metal
- 4 - Panel Wall - a non-bearing wall built between columns in skeleton construction and wholly supported at each story. (Called curtain walls--glass, gypsum, etc.)
- 5 - Other

**FLOOR FRAMING** - construction materials that form the framing of the floor. Codes:

- 1 - Wood Framing - wood joints supporting wood subfloor and a matched-wood finished floor.
- 2 - Concrete on Grade
- 3 - Wood on Steel - wood subfloors supported by girders running between columns.
- 4 - Concrete Slab on Steel Framing
- 5 - Concrete Slab on Concrete Framing
- 6 - Steel on Steel
- 7 - Other

**INTERIOR FRAME** (division walls) - construction materials that form the framing of the fixed interior walls. Codes:

- 1 - Wood Frame
- 2 - Masonry
- 3 - Metal
- 4 - Other

**ROOF DECK** - that portion of the roof construction to which the roof covering or roofing is applied and through which the loads on the roof are transmitted to the girders, frames, etc. Codes:

- 1 - Wood
- 2 - Other Combustible Materials
- 3 - Metal
- 4 - Other Noncombustible Materials

**ROOF FRAMING** - construction materials that are used in the framing of the roof. Codes:

- 1 - Wood
- 2 - Steel
- 3 - Concrete
- 4 - Other

**STRUCTURAL SYSTEM** (bearing walls and materials) - the support of the building made up of interdependent parts in a definite pattern of organization. The principal structure of the building is described below.

System (first position under structural system)

- 1 - Load Bearing Walls - side of a room or building connecting the floor and ceiling or foundation and roof in support of the roof. Supports horizontal load in addition to its own weight.
- 2 - Non-Load Bearing Walls

Materials (second position under structural system)

- 1 - Steel - type of construction in which the load of the building is carried on a steel framework.
- 2 - Concrete - type of construction in which the load of the building is carried on a reinforced concrete skeleton or framework.
- 3 - Laminated Wood - frame of heavy beams for support; solid or made in layers of pressed wood.
- 4 - Wood - that type in which walls, partitions, floors, and roof are mainly of wood.

5—Other - other materials that make up the principal structure of the building and are not one of the above.

— COST OF BUILDING —

The cost of a building as maintained in the records of the owning unit is the actual cost to that unit in acquiring the building, regardless of how the building may have been acquired.

The cost of a building that has been erected by the owning school district is the construction cost of the original building and any subsequent additions or remodeling, plus any miscellaneous expenses of the district that are connected with the construction and acquisition of the building and additions such as advertisements for contracts and expenses connected with the sale of bonds, less the estimated cost of any part of the building that has been removed. The cost of a building does not include debt service costs (payments of principal, interest on debt, and paying agents' fees).

The construction cost consists of all costs of general construction; payments on contracts for construction; installation of plumbing, heating, lighting, ventilating, and electrical systems; built-in lockers, elevators, and other equipment built into buildings; outdoor or underground parts of building service systems; architectural and engineering services, legal services, educational consultative services, and travel expenses incurred in connection with construction; paint and other interior and exterior decorating; and any other costs connected with the planning and construction of the building.

When a school plant is constructed under a combined contract, separate data should be obtained from the contractor in order to complete the appropriate accounts for land, improvements to site, buildings, and equipment.

The cost of a building that has been constructed by employees of the owning school district consists of the direct costs for salaries, materials, use of equipment, planning and supervisory services, and other miscellaneous expenses connected with the erection of the building.

The cost of an existing building that has been purchased, or acquired at some cost through annexation or reorganization,

is the purchase cost to the owning district plus costs of any subsequent additions or remodeling, less the estimated cost of any part of the building that has been removed.

The purchase cost consists of the purchase price, legal fees, or any other expenses incurred in connection with the purchase of an existing building.

In the case of a building acquired as a result of annexation or reorganization, the applicable cost records of the old districts should be retained by the new owning district for reference purposes.

When the actual cost of a building is not known, the estimated cost at the time of acquisition is used as the cost figure. For example, an old building whose record has been lost.

The cost account is increased by the cost of the alterations when an addition is made to the building or the building is remodeled. When the building is completely or partially removed, this account is decreased by the total cost on the record at the time of removal or the proportional part thereof for the part of the building removed. The cost account is not affected by repairs made to a building that do not add to, extend, or reduce the building.

The contract cost of a building includes the cost for the actual erection of a building, involving such costs as: general construction contract plus extras to the contractor and less credits; heating and ventilating contracts, plumbing contracts, electrical contracts, painting contracts, built-in equipment, and outdoor or underground parts of building service systems; and any salaries, construction materials, rental fees for construction equipment, and similar expenses for construction performed by school district employees. Movable equipment is not included in the building cost.

APPRAISED OR ESTIMATED CODE - this code designates how the value was determined.

- 1 — Appraised
- 2 — Estimated

APPRAISED OR ESTIMATED VALUE - this amount is expected to be the current value of the site according to the best

available information. It might be a formal appraisal, a consensus of local authorities, or an estimate made by the superintendent.

**COST FOR ARCHITECTURAL AND ENGINEERING SERVICES** - the cost for architectural plans, drawings specifications, legally-required plan approval, topographical surveys, test borings, and other surveys made in the preparation of building plans, including salaries of school district architects assigned to the project. Costs for preliminary studies made prior to the fiscal year in which definite authority was received to proceed with construction are not capitalized and, therefore, not included under this account. Fees, if any, paid to architects for writing specifications for movable equipment are not included here.

**COST OF BUILT-IN EQUIPMENT** - cost of equipment built into the building. This would include equipment that is an integral part of the building and permanently attached. Items collected about Built-In Equipment are the description, number of units, date acquired, and total cost.

**COST FOR EDUCATIONAL CONSULTATIVE SERVICES** - the cost for consultative services rendered in connection with the construction of a building that are aimed at fitting a building to a school's educational program and are not classifiable under Cost For Architectural and Engineering Services and Cost For Legal Services. Costs for such services rendered prior to the fiscal year in which definite authority was received to proceed with construction are not capitalized and, therefore, not recorded under this account.

#### **COST OF ELECTRICAL CONTRACT**

**COST OF FISCAL SERVICES FEES** - cost of services rendered by financial consultants in evaluating the financial resources of the district, the increase in millage rates on the proposed bond issue, preparing brochures for educational purposes during the bond issue campaign, preparing bond sale brochures which give the financial status of the district, rating the bonds, then evaluating the bond market condition, and, after the bids are in, evaluating and rating the interest rates.

**COST OF GENERAL CONTRACT** - general construction contract plus extras to the contractor and less credits.

#### **COST OF HEATING CONTRACT**

**COST OF LEGAL SERVICES** - the cost for legal services rendered in connection with the construction of a building, including salaries of school district legal personnel assigned to the project. Costs for legal services rendered prior to the fiscal year in which definite authority was received to proceed with the construction are not capitalized and, therefore, not included under this account. Fees for legal services in connection with a bond issue are not recorded here.

**COST OF MISCELLANEOUS SERVICES** - costs incurred in connection with the construction and acquisition of a building that are not classifiable under Contract Cost of Building, Cost For Architectural and Engineering Services, Cost For Legal Services, or Cost For Educational Consultative Services; such as advertisements for contracts, expenses connected with the sale of bonds, and building permits.

#### **COST OF PLUMBING CONTRACT**

#### **COST OF VENTILATION CONTRACT**

#### **— FIRE PROTECTION SYSTEM —**

A fire protection system is a building service system designed to protect the buildings and occupants from fire and consists of such elements as fire alarm boxes and gongs, automatic sprinkler systems, fire hose cabinets, and fire extinguisher stations.

#### **ADEQUATE WATER SUPPLY FOR FIRE PROTECTION**

- 1 — Yes
- 2 — No

#### **HEAT-SMOKE DETECTION SYSTEM**

- 1 — Yes
- 2 — No

#### **NUMBER OF AUTOMATIC SPRINKLER HEADS**

#### **NUMBER OF CALL BOXES**

#### **NUMBER OF FIRE ALARM BOXES**

## NUMBER OF FIRE EXTINGUISHER STATIONS

## NUMBER OF FIRE HOSE CABINETS

### — SERVICE SYSTEMS —

#### — Cooling System —

A cooling system is a building service system designed to keep the temperature inside the building below that outside the building.

EXTENT OF COOLING SYSTEM - the extent of the cooling system in a building is indicated on a record form with a designation selected from the following codes:

- 1— Whole Building Cooled
- 2— Instructional Section Cooled - portions of the instructional spaces in the building are cooled by the cooling system.
- 3— Administration Section Only - only the administration offices are cooled by the system.
- 4— Other - all other cooling of spaces that are not classified above.

TYPE OF COOLING SYSTEM - the type of cooling system in a building is shown on a record form with a designation selected from Central Cooling System, Local Zone Cooling System, or Individual Cooling Units.

When a combination exists, appropriate items are used to show the combination, but, in such cases, the principal system should be coded as follows:

- 1— Central Cooling System - a system that cools a building by using pipes or ducts leading from a single cooling unit to various parts of the building.
- 2— Local Zone Cooling System - a system that cools a building by using two or more cooling units, each of which is designed and installed to function independently

of the other units as a central cooling unit for a given part of the building only.

- 3— Individual Cooling Units - a system consisting of room or space coolers in each room to be cooled.

VENTILATING SYSTEM IN BUILDING (TYPE) - a ventilating system is a building service system designed to provide for sufficient flow of air to remove odors and maintain temperature by moving air, and to create a feeling of comfort for those in the building.

When a combination exists, appropriate items are used to show the combination, but, in such cases, the principal system is noted on a record form.

- 1— Window Ventilation - a ventilating system that uses open windows to admit fresh air and does not have definite provisions, either gravity or mechanical, for exhaust.
- 2— Gravity Ventilation - a ventilating system that uses vents or ducts leading outside the building for air intake and exhaust. The exhaust ducts may or may not have heat coils in the shaft or turbine heads on top of the vent stacks to accelerate the gravity flow.
- 3— Mechanical Exhaust Ventilation - a ventilating system that uses fans to pull air from rooms to the out-of-doors. This system may exhaust the air directly to the out-of-doors through a system of ducts leading to a plenum chamber and then out-of-doors, or to corridors and then to the out-of-doors by means of corridor ceiling exhaust fans.
- 4— Mechanical Supply Ventilation - a ventilating system that uses fan-forced unit ventilators or a central fan with ducts to force air into the rooms; such a system builds up a slight air pressure that forces air from the rooms.
- 5— Total Mechanical Ventilation

— Electrical and Communication System —

COMMUNICATION SYSTEM IN BUILDING - a communication system is a building service system designed to provide for communication only within a school plant as coded below (multiple uses if desired):

- 1— Telephone System - a communication system having a telephone in each classroom.
- 2— Speaker System - a communication system having a speaker in each classroom.
- 3— Combination Speaker-Telephone System - if a communication system is a combination type, it is indicated on a record form with code 3 in addition to showing the extent of the system with code 1 and/or 2 above.
- 4— Program System - a communication system having mechanical or electronic time signal devices at necessary stations in a building.
- 5— Code Call System - a communication system having stations in strategic places in a building to call personnel by means of sound, light, or other signals.

An electrical system is a building service system designed to distribute electricity to an entire building or selected areas of a building. The extent of the electrical system is shown on a record form with designations selected from the codes below:

EMERGENCY ELECTRICAL SYSTEM - A lighting system installed for emergency use in cases of failure of the main electrical system.

- 1— Yes
- 2— No

SOURCE OF MAIN ELECTRICAL SYSTEM - Use codes below:

- 1— Municipal Source
- 2— Private Source
- 3— Total Energy

TELEVISION SYSTEM - Information about a television system is shown on a record form with a designation selection from the codes below:

- 1— Television Receiving System - a central master antenna system with television receiver outlets in principal classrooms or viewing areas and with facilities for receiving one channel or two or more channels simultaneously.
- 2— Program Origination Provisions - Television cameras and associated studio facilities for in-school program or lesson origination for closed circuit transmission or standard channel transmission.
- 3— Both Origination and Receiving.

— Heating System —

SOURCE OF HEAT FOR HEATING SYSTEM - the source of heat for a heating system is shown on a record form with a designation selected from the codes listed. When more than one source of heat is available, all sources are shown on a record form with the principal source indicated.

- 1— Wood
- 2— Coal
- 3— Gas, including natural and liquefied petroleum
- 4— Oil
- 5— Electricity
- 6— Heat Pump
- 7— Other

TYPE OF HEATING SYSTEM - the type of heating system and information about it are shown on a record form with a designation selected from the following codes and further designations from the subitems under them.

First Code Position:

- 1— Central - a central heating system is a heating system whereby the heat is conveyed to various parts of a building through pipes or ducts leading from a central

source. A system of electrically heated radiant panels is also considered a central heating system.

2— Local Zone Heating System - a local zone heating system is a heating system whereby a building's heat is supplied by two or more heating units each of which is designed and installed to function independently of the other units as a central heating unit for a given part of the building only. Room-fired heaters are not recorded under this code position; they are recorded under the second (following) position.

Second Code Position: (To further explain Type of Heating System)

1— Radiators and Convectors - a heating system that has dispensing units, such as radiators, convectors, or unit heaters in the rooms to be heated.

2— Unit Ventilators - a heating system that uses an outside air supply and a combined heating and ventilating unit in the form of a convector with a motor-driven fan and with or without automatic controls.

3— Gravity Warm Air Furnace - a heating system in which furnace-generated heat is absorbed by air circulating around the furnace unit and carried to the rooms.

4— Fan Blast or Forced Air - a heating system in which air is fan-driven over heated surfaces and then delivered to the rooms.

5— Radiant Panel - a heating system that uses heating pipes, ducts, or electric wires embedded or suspended in large sections or panels of wall, floor, or ceiling surfaces for heating the rooms.

6— Split System - a heating system that combines a forced air system with in-the-room radiation.

7— Room-Fired Heaters - space heaters, stoves, or similar type heaters, excluding heat pumps and radiant panels.

OWNERSHIP OF SEWAGE SYSTEM - use codes below:

- 1 — School District
- 2 — Public
- 3 — Private

SEWAGE TREATMENT AND DISPOSAL SYSTEM - the type of sewage treatment and disposal system serving a building is shown on a record form with a designation selected from the codes below:

1 — Public System - a sewage treatment and disposal system, publicly-owned, that serves the community at large.

2 — Open Lagoon System - a sewage treatment and disposal system, not part of a municipal system, that uses an open settling tank which may or may not be followed with provision for secondary treatment, such as activated sludge process units or trickling filters.

3 — Septic Tank Systems

4 — Other - pit privies, chemical toilets, incinerators, privies, and other types of sewage treatment and disposal methods not classifiable above. The specific type of system should be indicated on a record form.

SOURCE OF WATER - the source of water in a building is shown on a record form with a designation selected from the codes below:

1 — Municipal Water System - a publicly-owned or privately-owned water system that furnishes water to the community at large.

2 — Drilled Well - a drilled well that is not part of a municipal water system.

3 — Dug Well or Other Source - a dug well or other source, such as a spring, that is not part of a municipal water system.



— SIZE OF BUILDING —

**AREA OF BASEMENT** - the area in square feet of any floor that is below grade level on all sides and has clear standing head room of at least 6 feet 6 inches. Below grade level means that if the horizontal plane of the floor were to be extended on the side in question, all or part of the land within 20 feet of the building would be above this plane.

**AREA OF DISASTER SHELTER** - size in square feet of an area of the building that has been specified through special design and construction as an emergency shelter.

**GROSS FLOOR AREA OF BUILDING FACILITY** - the gross floor area of a building is the sum of the areas at each floor level included within the principal outside faces of exterior walls, neglecting architectural setbacks or projections. Include all stories or areas which have floor surfaces with clear standing head room (6 feet 6 inches minimum) regardless of their use. Where a ground level or intermediate story, or part thereof, is left unenclosed, consider the gross area of the unenclosed story as the projected area of the story above.

Exclude all unroofed areas and unenclosed roofed-over spaces. Include mezzanines, balconies, and library stack floors only to the extent of their actual floor area. Do not include unenclosed areas under the first floor. Unenclosed roofed areas which have been included in original cost contracts can be excluded on a computed or estimated basis for the development of comparative data of gross building areas and costs.

The area of passageways enclosed with similar type and quality of construction as the building proper, and of tunnels with clear standing head room of at least 6 feet 6 inches, are included in the gross area of a building. The area of covered passageways which are enclosed with similar type and quality of construction as the building proper are excluded from the gross building area.

**NUMBER OF FLOORS (STORIES) OF BUILDING** - total number of floors in the building.

**RATED PUPIL CAPACITY** - (Applicable only to buildings designed for use as instructional buildings.) The pupil capa-

city of a building as rated by the architect, superintendent, or other persons. This should be based on regular day, single sessions. Local, state, or national standards could be utilized to formulate this rating.

— USE OF BUILDING —

A building may be used to house schools or supporting services or it may be vacant. The current use of a building, or, in the case of work in progress, the use for which it is being built, is shown on a record form with designations selected from the codes listed below. If a building is vacant, this fact is noted on a record form.

**TYPES OF SCHOOLS IN BUILDING** - A school is a division of a school system consisting of a group of pupils composed of one or more grade groups, organized as one unit with one or more teachers to give instruction of a defined type, and housed in a school plant of one or more buildings.

The types of schools housed in a building facility are shown on a record form with designations selected from the list below.

More than one school may be housed in the same building facility. For example, an elementary school and a junior high school, or parts of these two schools, may be housed in one building. The term housed means that the building facility is used on a regular day-to-day basis by the schools indicated.

When combinations of schools exist within a single building, they may be identified by using the necessary combinations of these designations.

01—Elementary School - a school classified as elementary by state and local practice and composed of any span of grades not above grade 8. In this definition, this term includes kindergarten and nursery schools if they are under the control of the local board of education.

02—Junior High School - a separately organized secondary school intermediate between elementary and senior high school.

- 03—Incomplete High School - a secondary school which offers less than four years of work beyond grade 8 in a school system that is organized in such a manner that grades nursery, kindergarten, or 1 through 8 constitute the elementary grades.
- 04—Four-Year High School - a four year high school immediately following elementary school in an 8-4 plan or, in some instances, 7-4 plan. This does not include vocational or trade high schools.
- 05—Senior High School - a school offering the final years of high school work necessary for graduation; invariably preceded by a junior high school in the same system.
- 06—Junior-Senior High School - a secondary school organized on a junior-senior basis and administered under one head as one unit.
- 07—Undivided High School - a secondary school served by one faculty organized under one principal which includes more than four grades, is not divided on a junior and senior basis, and is not preceded by a junior high school in the same system.
- 08—Vocational or Trade High School - a secondary school which is separately organized under a principal for the purpose of offering training in one or more skilled or semi-skilled trades or occupations. It includes such schools whether federally aided or not. Departments of other types of high schools which offer such courses as business education, agriculture, home economics, industrial arts, and other applied art courses would not be considered as separately organized vocational high schools.
- 09—Community College (junior college, technical institute, etc.) - a public school beginning with grade 13 which offers at least one but less than four years of work and does not grant the baccalaureate degree.
- 10—Special School for Exceptional Children - a separate school for children who, because of certain atypical

characteristics, may require special instruction and guidance.

11—K - 12 School

12—Other School - any school not classifiable by the above codes. In this case the type of school would be written on a record form.

TYPES OF SUPPORTING SERVICES IN BUILDING - supporting services consist of activities of a school district that are not limited to one school plant.

The services housed in a given building are shown on a record form with designation selected from the coded list. More than one service may be housed in the same building. For example, maintenance services and warehouse services might be housed in one building. In this case, the types of services housed would be indicated by the code below with principal use indicated.

- 01—Administrative Services - activities which have as their purpose the general regulation, direction, and control of the affairs of the school district that are systemwide and not confined to one school, subject, or narrow phase of school activity.
- 02—Instructional Services - activities dealing directly with the teaching of students or improving the quality of teaching. This term, at this point in the classification, is used to designate instructional services provided for more than one school plant - for example, radio and television programs - and supervision of some subject, grade level, or other restricted phase of instructional activity, such as remedial reading or audiovisual services.
- 03—Pupil Transportation Services - activities which have as their purpose the conveyance of pupils to and from school activities, either between home and school or on trips for curricular or cocurricular activities.
- 04—Maintenance Services - activities which are concerned with keeping the grounds, buildings, and equipment at their original condition of completeness or efficiency, either through repairs or by replacement of property.

- 05—Warehouse Services - activities concerned with the storage of supplies and equipment for the school district as a whole.
- 06—Food Services - activities which have as their purpose the preparation and serving of regular and incidental meals, lunches, or snacks, in connection with school activities.
- 07—Student Dormitory - living quarters for groups of students.
- 08—Living Quarters for Professional Personnel - living quarters for professional personnel such as teachers, principals, and supervisors. Individual apartments rented by a school district for teachers are not designated by this term.
- 09—Living Quarters for Service Personnel - living quarters for service personnel such as custodians and maintenance workers.
- 10—Public Library Services - activities concerned with the custody, circulation, and administration of a collection of books, manuscripts, and periodicals kept for the use of the general public, but not for sale.
- 11—Playground Services - services provided for community playgrounds or for those playgrounds not a part of an individual school plant such as housing community playground equipment, restrooms, and shower rooms, and the provision of shelters used during inclement weather.
- 12—Community Services - activities which are carried on by the school district for the community as a whole or some segment of the community, and which are not restricted to the public schools or adult education programs. This term includes recreation activities that are not part of the regular instructional program or student-body activities program; civic activities, such as meetings of citizens, public forums and lectures, parent-teacher associations, and civil defense planning; activities concerned with custodial and detention care of children; activities concerned with provision of aid

to indigent children; and community canneries and laundries.

- 13—Investment Building - a building that has been acquired by the school district for investment purposes and is held to produce revenue for the support of schools.
- 14—Other Building - any other supporting services building not identifiable by the services under the above codes. The particular services provided should be indicated on a record card.

#### 606.4 Space Data Item Definitions and Codes

The definition, description, and code for a space data item are listed in the order of items in the Space Record, Chart 6-3.

The space record identifies each individual space in a building by a unique number. Thus, each space must be assigned a number. Spaces are usually categorized into four divisions - instructional, administrative, service, and circulation areas. It is possible for a space to be in more than one of these divisions through its use. When this happens, it should be listed through its major or designed use.

It is possible to ask any number of items about all of these divisions or spaces. However, it is believed by the Facilities Subsystem Committee that different items will be desired in each division.

Instructional Space - a space which was specifically designed, or adapted, to accommodate some form of instructional activity and is available for such purposes. A classroom is a space designed for or adapted to accommodate and is used for regularly scheduled group instruction, including the regular classrooms and special use classrooms, such as laboratories and shops. Storage and other service areas opening into and serving as adjuncts to a particular classroom should be considered a separate part of that classroom space.

A space with movable partitions or walls is recorded on the basis of the primary or principal use for which it was designed and not the secondary use for which adapted.

**General Purpose Space** - a space designed in such a manner that it can be used to house any class that does not require special built-in equipment.

**Special Spaces** - spaces designed for instruction that requires special built-in equipment that is permanently attached, such as kindergarten rooms, laboratories, and shops.

**Other Instructional Spaces** - all instructional areas, other than general purpose and special spaces, that are specifically designed to accommodate an activity and are available for this purpose, such as libraries, study halls, separate audiovisual spaces, museums, auditoriums, gymnasiums, gymnatoriums, cafeteriums, multipurpose rooms, etc.

**Administrative Space** - a space devoted to school business, pupil personnel management, or public relations activities of a school, or a combination of these activities, where such an area is not designated for other purposes.

**Principal's Office** - a space designed or adapted for use of the principal and/or assistant principals in the discharge of their administrative responsibilities, including areas for secretarial and clerical assistants.

**Guidance Space** - a space designed or adapted for the use of persons such as counselors, deans, placement counselors, and clerical personnel, who have been assigned specific duties and school time to carry on recognized functions of the guidance program.

**Health Service** - a space designed or adapted for the use of persons in the field of physical and mental health, such as physicians, psychiatrists, nurses, dentists, dental hygienists, psychiatric social workers, and therapists, in providing health services to students, such as inspection, treatment, weighing, etc.

**Superintendent's Office** - a space designed or adapted for the use of the superintendent or assistant superintendents in the discharge of his administrative responsibilities, including areas for secretarial and other assistants.

**Other spaces (specify)** - school administration spaces that are not classifiable under the above. Examples are rooms, other than

classrooms, for itinerant teachers; separate offices, that do not open into classrooms, for teachers or department heads; and conference rooms.

**Circulation Space** - a space designed for general traffic, omitting such spaces as unit-contained corridor and stairs located within, and serving parts of, a unit or suite.

**Inside Circulation Space** - All circulation areas inside a building, consisting of such areas as corridors, including extensions into deep recessed doors or entryways; equivalent floor opening areas at each floor level for stairs, elevators, ramps, and escalators; and foyer and vestibule areas.

**Outside Circulation Space** - enclosed or unenclosed covered passageways which are connected to the building but lie outside the exterior walls.

— SPACE IDENTIFICATION —

**COUNTY-DISTRICT CODE** - a numeric field comprised of a three-digit county code and a four-digit district code.

**SITE NUMBER** - the number assigned by the district. Each site, whether or not it has a structure, should be assigned a number.

**SITE UNIT** - this code uniquely identifies the original site and all additions to that site. Use the following codes:

- 0 — Original Site
- 1 — First Addition
- 2 — Second Addition, etc.

**RECORD CODE** - code is 2.

**BUILDING NUMBER** - unique building number assigned by the school district or other educational agency.

**BUILDING UNIT** - the original building and all additions as coded below:

- 0 — Original Building
- 1 — First Addition
- 2 — Second Addition, etc.

SUBRECORD CODE - code is 3.

SPACE IDENTIFICATION NUMBER - the identification number assigned to the space by the local agency.

— SPACES IN BUILDING —

NAME/TYPE SPACE - select appropriate code for name of space (room).

Instructional Spaces

- 01 — Agriculture
- 02 — Art
- 03 — Auditorium
- 04 — Cafetorium
- 05 — Commercial ( typing, etc.)
- 06 — Gymnasium
- 07 — Gymnasium
- 08 — Home Economics
- 09 — Kindergarten
- 10 — Laboratory, biology
- 11 — Laboratory, chemistry
- 12 — Laboratory, language
- 13 — Laboratory, physics
- 14 — Laboratory, reading
- 15 — Library
- 16 — Media Center
- 17 — Multipurpose
- 18 — Music
- 19 — Regular Classroom
- 20 — Shop, agriculture
- 21 — Shop, electrical
- 22 — Shop, metal
- 23 — Shop, wood
- 24 — Shop, general
- 25 — Special for Exceptional Children
- 26 — Study Hall
- 39 — Other Instructional Space

Administrative Spaces

- 40 — Guidance Space
- 41 — Health Service
- 42 — Principal's Office
- 43 — Superintendent's Office
- 49 — Other Administrative Space

Service Spaces

- 50 — Cafeteria (or lunchroom)
- 51 — Shower Room
- 52 — Teachers' Room
- 53 — Toilet Rooms
- 59 — Other Service Space

Circulation Spaces

- 60 — Corridors, entryways, stairs
- 61 — Covered passageway outside building
- 62 — Inside Circulation Space
- 63 — Outside Circulation Space
- 69 — Other Circulation Space

DIMENSIONS OF SPACE - width, length, and height in feet.

FLOOR LEVEL - the floor level on which the space is located as coded below:

- 0 — Basement
- 1 — First Floor
- 2 — Second Floor, etc.

ADJUNCTS - a space joined or connected to a principal space, but not essentially a part of it. An adjunct enhances the use of the principal space. Each adjunct should be accounted for through some principal space, but if an adjunct serves two or more principal spaces, it should be accounted for only once.

Type of Adjunct - the type of adjunct space as coded below:

- 01 — Audiovisual Control Room
- 02 — Clinic Bedroom
- 03 — Cloak Room
- 04 — Communications Control Room
- 05 — Concession Room
- 06 — Conference Room (office, preparation work, etc.)
- 07 — Darkroom
- 08 — Dental Care Room
- 09 — Display Room
- 10 — Dressing Room
- 11 — Drying Room
- 12 — Hearing Test Room
- 13 — Laundry Room
- 14 — Lavatory
- 15 — Library (instructional materials, supplementary materials center)
- 16 — Locker Room
- 17 — Lounge (counselor's suite)
- 18 — Observation Room
- 19 — Press Box
- 20 — Reception Room
- 21 — Recording Room
- 22 — Shower Room
- 23 — Snack Bar
- 24 — Storage Room
- 25 — Study Carrels (alcove)
- 26 — Television Control
- 27 — Television Studio

- 28 — Ticket Booth
- 29 — Toilet Room
- 30 — Training Room
- 31 — Transformer Room
- 32 — Vault
- 50 — Other

Number of Adjuncts - the number (how many) of this type of adjunct space.

Area of Adjuncts - the size in square feet of the adjunct area.

— For Instructional Spaces —

AIR CONDITIONING - control of the humidity and temperature. Use codes:

- 1 — Yes
- 2 — No

AREA OF WINDOWS - the square footage of windows in the space.

LIGHTING - average number of maintained footcandles at desk level.

WALL FLEXIBILITY - use codes and definitions below:

- 1 — Operable - a wall that can be opened and closed readily. For example, folding or sliding walls.
- 2 — Demountable - a wall that can be demounted, disassembled, moved, and remounted.

— For Finishes of Instructional Spaces —

Finishes of Spaces - the construction materials used as interior finishes of the space as coded below.

CEILING:

- |                        |                       |
|------------------------|-----------------------|
| 1 — Plaster            | 5 — Metal             |
| 2 — Acoustical Plaster | 6 — Acoustical Panels |
| 3 — Masonry            | 7 — Fiber Board       |
| 4 — Wood               | 8 — Other             |

FLOORING (SURFACE):

- |                    |               |
|--------------------|---------------|
| 1 — Concrete       | 5 — Terrazzo  |
| 2 — Wood           | 6 — Carpet    |
| 3 — Resilient Tile | 7 — Clay Tile |
| 4 — Ceramic Tile   | 8 — Other     |

WALLS:

- |                    |                 |
|--------------------|-----------------|
| 1 — Plaster        | 6 — Metal       |
| 2 — Concrete Block | 7 — Fiber Board |
| 3 — Tile           | 8 — Glass       |
| 4 — Brick          | 9 — Other       |
| 5 — Wood           |                 |

— For Built-in Equipment of Instructional Spaces —

Equipment will be included in the MSEIP System to the extent of built-in equipment in the Instructional Spaces. Built-in equipment is equipment that is an integral part of the instructional space or room. Usually built-in equipment is permanently attached.

DATE ACQUIRED - month and year of purchase.

DESCRIPTION - brief written description of the piece of equipment. Could be name, model number, style, manufacturer, etc., if applicable.

NUMBER OF UNITS - number of units purchased.

TOTAL COST - original cost of the equipment of all units.

— For Service Spaces —

Service spaces are spaces designed for any functional and building service space not otherwise classified. Service space would include such spaces as the cafeteria, teachers' room, maintenance and operation rooms including mechanical and electrical service, custodial rooms, building work or repair shops, toilet rooms, and storage rooms. Service areas that open and serve as adjuncts to other spaces in the building are not

recorded here. The following items are collected about service spaces:

NUMBER OF LAVATORIES

NUMBER OF SHOWER HEADS

NUMBER OF URINALS

NUMBER OF WATER CLOSETS

### 606.5 Vehicle Data Items, Definitions, and Codes

The definition, description, and code for a data item are listed in the same order as the items appear in the Vehicle Record, Chart 6-4.

Vehicles - conveyances used to transport persons or objects, such as automobiles, trucks, aircraft, wreckers, buses, station wagons, bookmobiles, tractors, wagons, boats, etc. Consider only school-owned or leased vehicles. However, on the chassis and body of a bus, indicate whether it is district-owned or privately-owned.

#### —VEHICLE IDENTIFICATION—

COUNTY-DISTRICT CODE - a numeric field comprised of a three-digit county code and a four-digit district code.

SEQUENCE KEY - key is 9999.

RECORD CODE - code is 3.

#### —CONVENTIONAL CARRIER—

##### — Chassis —

Conventional Carrier - buses used for pupil transportation.

TYPE OF VEHICLE - use code 1 for conventional carrier.

COST OF CHASSIS - use original cost.

#### MAKE CODE OF CHASSIS:

- |               |                   |
|---------------|-------------------|
| 1 — Chevrolet | 5 — International |
| 2 — Dodge     | 6 — Mack          |
| 3 — Ford      | 9 — Other         |
| 4 — G.M.C.    |                   |

#### OWNERSHIP CODE OF CHASSIS:

- 1 — District
- 2 — Leased

#### YEAR MANUFACTURED OF CHASSIS

— Body —

COST OF BODY - use original cost.

#### MAKE CODE OF BODY - make of body code:

- |               |            |
|---------------|------------|
| 1 — Bluebird  | 5 — Thomas |
| 2 — Carpenter | 6 — Wayne  |
| 3 — Oneida    | 7 — Ward   |
| 4 — Superior  | 9 — Other  |

#### OWNERSHIP CODE OF BODY:

- 1 — District
- 2 — Leased

#### RADIO SYSTEM (TWO-WAY):

- 1 — Yes
- 2 — No

#### RATED CAPACITY OF BODY

#### YEAR MANUFACTURED OF BODY

#### —SMALL CARRIER AND OTHER VEHICLES—

#### TYPE OF VEHICLE:

- 2 — Small carrier (carryall, station wagon, etc.)
- 3 — Other (truck, etc.)

#### COST

DESCRIPTION OF SMALL CARRIER - name, make, model

#### YEAR ACQUIRED

## Chapter 700

### 700. FINANCE SUBSYSTEM

#### 701. *FINANCE SUBSYSTEM COMMITTEE*

The MSEIP Finance Subsystem Committee was concerned primarily with the SEA's need for a system of financial accounting that could provide control over fiscal resources and also provide information for effective decision making and evaluation. Accepting the premise that fiscal policies of school districts are direct reflections, interpretations, and translations into financial terminology of educational decision making, the Committee determined that a program-oriented budgeting and accounting system would most satisfactorily provide necessary data for making these decisions. The transition from USOE Handbook II financial accounting to the MSEIP program-oriented system involved modification of functions to programs.

The program-oriented budgeting and accounting system fulfills the needs of SEA's for educational cost information, recording financial operations and transactions, and general fiscal accountability and auditing. To provide local districts with the means of reporting financial information in the context of their programs, the system was constructed to include the foundations for a financial accounting system for local agencies. The traditional system of budgeting and accounting does not provide information on what school districts actually get for their money in terms of programs.

The program-oriented budgeting and accounting system is designed to highlight management considerations in budgeting and to point out the educational objectives of policymakers in financial terms. However, the current overriding need of state agencies for financial information from local districts is for operational use. This is still provided for in the MSEIP program-oriented budgeting and accounting system in a manner which is historically familiar to all school finance managers.

The Finance Subsystem Committee was organized in June 1966. Its executive officer was an MSEIP Central Staff Supervisor with



a background in school finance. A chairman was elected from the membership. The 13 committee members included a representative from the SEA of each participating state. The representatives, appointed by their chief state school officers, were SEA personnel whose positions were either in school finance or closely related. The members of the Finance Subsystem Committee collectively agreed on the inclusion of data items for this Subsystem.

### 701.1 Introduction

The Finance Subsystem's generalized model was developed with the dual objective of becoming an integral part of the MSEIP System, and of introducing a program-oriented accounting system into an area which has been traditionally fund-object oriented. The successful implementation of such a system will entail a great deal of further study, and involve considerable revision of existing methods and procedures in budgeting and reporting expenditures at local, district, and state level. This Subsystem is not presented as an exhaustive study of educational financial accounting, but as a guideline which will provide better financial information.

The Subsystem, its records, and their dimensions, were developed for optimal recording and reporting at the district level. Great detail is possible at this level within the proposed structure, and could be reported in total or in summary form to the SEA. The system and its implied and expressed procedures could be implemented at the district level on any basis from manual to computer processing and still provide meaningful input to the SEA information system. The structure of information records proposed below facilitates preparation of summary and/or detailed reports in a variety of classification structures for a variety of uses. The key to successful implementation lies in adapting the proposed and existing systems to each other, in utilizing the capacity for detail only insofar as it is practicable at the lowest reporting level, and in insuring that the definition and content of the dimensions are standard and consistent throughout the implementing state.

Because the MSEIP System was designed to provide for interstate information exchange, some areas were left for the individual states to study and integrate into their own systems. The elements presented are intended as least common denominators. For example, no provision is made for the actual state internal

accounting and budgeting system in that no tax base information is maintained for state aid computation. The fact that the model does not cover such areas should in no way detract from state efforts to incorporate such areas into the system.

### 701.2 Financial Management System

#### Accounting Approach

In program-oriented budgeting and accounting, more recognition is given to serving the management needs of the school district than is presently possible with the traditional budgeting and accounting methods.

The same basic data classifications should be used for the budget detail, for the bookkeeping accounts, and for the reports that are prepared periodically for cost analysis and budget control.

To implement an effective program-oriented budgeting and accounting system, a certain amount of system refinement and expansion will be needed in many school districts. Since this will be a major move, careful study and attention should be given to the accounting procedures. It would be a waste of time and funds to implement a detailed system of budget preparation involving all of the personnel of the school district and then depend on an outdated, slow moving system of accounting to provide the data that are vital for management decisions.

Electronic data processing opens unlimited opportunities for collecting, gathering, sorting, printing, and analyzing educational financial data, and is one of the major factors that is bringing program-oriented budgeting and accounting closer to becoming a reality in more schools throughout the country.

#### Cash, Encumbrance, or Accrual Basis

Financial accounting in school districts ranges from a relatively simple cash basis of accounting that records the flow of cash receipts and disbursements, to an encumbrance system that charges to the proper accounts those commitments incurred in the form of purchase orders, contracts or salary contracts, to a refined accrual basis that records actual expenditures and revenue in that period of time in which the revenue is earned and the expenditure is incurred.

It is important to point out that program-oriented budgeting and accounting can be installed using any of these approaches as long as the budget and the accounts are maintained as part of an integrated system. Combinations of parts of different systems might be used. General ledger Asset and Liability accounts may be developed in a cash or an encumbrance system as well as in a complete accrual system.

The accounts and the coding system presented in this DOCUMENTATION can be used with any of the procedures discussed above. However, the list of accounts is prepared to accommodate a double entry system utilizing ledger Asset and Liability accounts.

This DOCUMENTATION does not attempt to go into the details of accounting. U.S. Office of Education Handbook II B illustrates basic accounting principles as they apply to financial accounting for public schools.

#### Depreciation and Proration

It is recognized that depreciation plays a part in the analysis of the complete cost of any program. However, it is felt that depreciation should not be included as an expense item in budget preparation or be a part of the financial fund accounts.

If depreciation is needed for a certain cost analysis, detailed depreciation records can be maintained apart from the financial accounts.

If any proration of cost, such as heat, light, etc., to specific programs is to be considered, this should also be handled in a separate cost analysis report.

In developing the recommended coding system and detail items for program budgeting and accounting, it is the basic aim to charge only direct expenses to the various cost centers. This permits the accounting system to produce "clean" factual data for cost analysis and reporting.

In developing a chart of accounts for the budget and the accounting records, consideration must be given to the Asset, Liability, Fund Balance, and Revenue accounts as well as the Expenditure accounts. It is not necessary to record as much detail information for the Revenue accounts as is recorded for the

Expenditure accounts. In most school districts, the major portion of the revenue - taxes and state support - are not earmarked for specific subjects or for certain attendance centers. A minimum of detail is necessary for Asset and Liability accounts. The specific details of the transactions are recorded in the Revenue and Expenditure accounts. However, certain basic identifying codes are needed in all five of the types of accounts: Assets, Liabilities, Fund Balance, Revenue, and Expenditures. A fund designation number is also required in the accounts of most school districts.

In this DOCUMENTATION, no attempt is made to code all revenues so as to assign them to a given Instructional Area or to a specific Area of Responsibility. However, school districts may want to code certain revenues, such as book rental receipts, so they can be identified with a specific Organizational Unit, or may wish to identify certain reimbursement Revenues with the reimbursable Instructional Area. It is important that the chart of accounts and coding system for Revenues take these items into consideration and permit these identifications to be made when they are desirable.

The traditional method of illustrating a chart of accounts is to list all of the possible accounts for each fund and assign code numbers to these accounts. Since the accounting system in this DOCUMENTATION is program-oriented, it is not practical to present a chart of Expenditure accounts in the traditional manner. Such a chart showing all of the possible accounts for a district could have thousands of accounts for each Organizational Unit within the district.

The coding system developed in this DOCUMENTATION provides for various distributions of Expenditures to cost centers to an extent not practical by many bookkeeping methods. Each school district will develop the actual accounts it needs, beyond the requirements set forth by the SEA, based on that district's curriculum, organization, and size, using the combinations of items from each of the code sections or dimensions which are appropriate to its programs.

#### 702. FINANCE DATA FILE

##### 702.1 Finance Categories

There are five types of records in the Finance Subsystem data file which correspond to the five Types of Accounts. They are: Assets, Liabilities, Fund Balance, Revenue, and Expenditures.

Although the first four types of records are structured in a manner similar to existing systems, this is intended more as a transitional measure than as a final solution. Their design and use could be further modified and developed to minimize classifying and reporting problems which doubtlessly will arise in the course of implementation and experience. The structure of the fifth type of record is the real foundation upon which a program-oriented financial information system can be built. Accordingly, discussion in the following sections will be limited largely to the expenditure records.

## 702.2 Finance Dimensions

Dimension, as used here, implies a grouping of values or factors on which a financial data item may be classified. The fact that such items will have several dimensions gives the system both simplicity and versatility. The dimensions of a financial data item are:

- Fund
- Type of Account
- Organizational Unit
- Area of Responsibility
- Instructional Area
- Local Course Number
- Activity
- Object

These dimensions are defined and a proposed list of values for each is presented in section 706. A value would not necessarily be assigned to each dimension for all financial data items reported, but the information content of the Finance data file would vary directly with the thoroughness and consistency employed in assigning values where they apply. Ambiguities must be resolved by each implementing state through the elimination and/or addition of values to one or more dimensions.

Provision could be made for infinitesimal detail by the extension or expansion of one or more of the dimensions, particularly Object. However, even though the list of values assigned to this dimension is merely a proposed list, great care must be exercised in balancing the desirability of more detail with the cost in time, effort, and accuracy of reporting and collecting it, as well as the increased complexity which is created by further proliferating the lists.

## 703. FILE CONSTRUCTION CONSIDERATIONS

### 703.1 Data Collection

The intention in the proposed Finance Subsystem in its initial implementation would be to collect budget and expenditure information at the state level on an annual basis. Local and district educational agencies could maintain the expenditure information on a current or periodic schedule, and submit this information in detail or in summary form to the state at the end of the reporting year. The proposed budget would be reported for the ensuing year. The budget would be prepared in the same format and to very nearly the same degree of detail as the expenditure information.

Identical formats for reporting proposed budgets and expenditures would permit the use of updating procedures as the means of reporting. The budget would be reported at the beginning of the year and updated or revised, at the end of the year, to reflect actual expenditures.

The suggested initial effort does not necessarily mean that the state financial data files could not be maintained in a current status; this will certainly be both desirable and practical in the future as experience is gained and as the concept of automated data processing becomes accepted at all levels. The real versatility and value of the Finance Subsystem is contingent upon the employment of EDP equipment, because only by this means can data be manipulated, analyzed, restructured, and summarized in sufficient manner to justify implementation. However, the problems which will be encountered in implementing and gaining acceptance of and confidence in the proposed initial Finance Subsystem should not be compounded by attempting to arrive at an ultimate goal on the first attempt.

The area of proration and apportionment of certain expenditures which are not clearly assignable to a specific instructional program, but part of which most certainly contribute to its cost, is a matter for future investigation and solution based on experience, as is the area of depreciation. There are many methods proposed in current state and federal publications, and some lend themselves to the development of algorithms which could be employed in a computer program. Unquestionably, the method or methods adopted must be used consistently and uniformly, or the results will be meaningless. Nonetheless, such techniques

must be developed by the individual implementing states for application to the information submitted by the districts.

### 703.2 File Sequencing

The Finance Subsystem data file would be maintained in district sequence. The records within each district file would be maintained by organization unit. The individual records sequence would be:

- District (Header)
- Organizational Unit
- Type of Account
- Area of Responsibility
- Instructional Area
- Local Course Number
- Activity
- Object
- Fund

The rationale for establishing a Finance Subsystem file sequence must be predicated upon several factors. The extent to which the total system is implemented and the degree of detail in which the information is reported are two important factors. Another significant consideration is the nature of the reports and analyses done at state level. The proposed sequence assumes full system implementation and detailed reporting. It is conceivable that a state may not require reporting of expenditures by Local Course Number. In this case, perhaps the file would be sequenced on Area of Responsibility within Type of Record within District, and any sequencing on Organizational Unit would be subordinate to these dimensions. In any case, provision would be made for carrying all of the dimensions, and experience may indicate that a sequence other than that initially established would be more practical.

### 704. SAMPLE OUTPUT REPORTS

The dimension concept allows numerous combinations for reporting budget and expenditure information. The most obvious advantage in reporting capabilities is that information may be summarized on any broad category of a dimension, and that same information also may be reported in detail, rearranged, or restructured with no further IEA input requirements.

The following sample reports illustrate this contention to a small degree. Figure 7-1 shows total expenditures for a hypothetical school district by Area of Responsibility. Figure 7-2 shows the expenditures for the Instructional Area of Responsibility by Object within type of school. Figure 7-3 shows the expenditures in the Instructional Area of Responsibility for all district high schools by Object within Instructional Area.

FIGURE 7-1. FINANCE SUBSYSTEM SAMPLE REPORT FOR DISTRICT BY AREA OF RESPONSIBILITY

DISTRICT 512 EXPENDITURES		
July 1967 - June 1968		
Area of Responsibility		
100	Instruction	\$1,692,808
200	General Control	105,304
250	Instructional Administration	228,667
270	Research and Development	4,854
300	Facilities, Maintenance and Operation	227,971
350	Facilities, Acquisition or Improvement	32,500
400	Food Services	125,934
500	Pupil Personnel	71,846
550	Health Services	33,195
600	Pupil Transportation	74,471
700	Community Services	38,506
800	Outgoing Transfers	2,040
900	Debt Service	147,630
	Total	\$2,785,726

FIGURE 7-2. FINANCE SUBSYSTEM SAMPLE REPORT FOR INSTRUCTIONAL AREA OF RESPONSIBILITY, BY OBJECT WITHIN TYPE OF SCHOOL

DISTRICT 20 EXPENDITURES								
July 1967 - June 1968								
INSTRUCTION (100)								
School		10 Salaries	20 Employee Benefits	30 Supplies	40 Contracted Services	60 Employee Travel	80 Equip- ment	TOTAL
199	All High Schools	377,560	36,320	48,993	17,980	12,005	30,258	523,116
299	All Jr. Highs	265,070	26,475	26,695	7,005	4,645	14,115	344,005
799	All Elementary	584,737	56,721	43,530	7,945	8,155	36,793	737,881
899	All Summer Programs	59,882	675	8,901	7,700	1,185	2,290	80,633
989	All Adult Education	5,975	228	800	70	100	0	7,173
<b>TOTALS</b>		<b>1,293,224</b>	<b>120,419</b>	<b>128,919</b>	<b>40,700</b>	<b>26,090</b>	<b>83,456</b>	<b>1,692,808</b>

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FIGURE 7-3. FINANCE SUBSYSTEM SAMPLE REPORT OF EXPENDITURES BY INSTRUCTIONAL AREA OF RESPONSIBILITY FOR ALL HIGH SCHOOLS IN A DISTRICT, BY OBJECT, WITHIN INSTRUCTIONAL AREA

DISTRICT 504 EXPENDITURES						
July 1967 - June 1968						
HIGH SCHOOLS (199) INSTRUCTION (100)						
Object Instructional Area	10 Salaries	20 Employee Benefits	30 Supplies	40 Contracted Services	60 Employee Travel	Totals
00 Does Not Apply*	19,000	2,283	6,890	300	280	28,753
01 Agriculture	10,200	831	1,168	610	440	13,249
02 Art	7,700	831	2,005	70	100	10,706
03 Business	16,600	1,672	1,390	400	260	20,322
04 Distrib. Ed.	9,600	828	800	50	300	11,578
05 Eng. Lang. Arts	54,920	5,855	2,630	850	800	65,055
06 Foreign Lang.	14,100	1,656	1,430	400	200	17,786
08 Health, Safety, P.E.	13,600	1,656	3,050	1,410	200	19,916
09 Home Ec.	8,800	829	2,050	170	120	11,969
10 Indust. Arts	26,140	2,768	1,200	210	120	30,438
11 Mathematics	34,600	3,220	1,800	150	180	39,950
12 Music	28,700	2,485	2,450	850	360	34,845
13 Natural Science	32,240	2,768	2,805	500	350	38,663
15 Social Studies	27,760	2,973	2,020	450	300	33,503
18 General Education	11,200	1,169	0	0	0	12,369
19 Exceptional Child Ed.	37,300	3,597	1,850	1,350	560	44,657
20 Co-curricular Activities	18,300	83	14,375	9,670	7,225	49,653
30 Driver Ed.	6,800	816	1,080	700	50	9,446
All Instructional Areas	377,560	36,320	48,993	18,140	11,845	492,858
*Audiovisual, Library						

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705. *MULTIPLE FILE USES*

As mentioned in subsection 703.2, "File Sequencing," the nature of reporting and maintaining financial information precludes the use of a key in the same way that Personnel and Pupil files may be keyed on an individual's identification code. Although there is no Finance Subsystem file index as such, certain factors such as characteristics of pupils in a given school, or course of instruction, or characteristics of staff members performing duties within a given Area of Responsibility or a given Activity, would permit multiple file use on a summary basis.

The steps in attaining the desirable goal of developing a program-oriented budgeting and accounting system cannot be delineated for the MSEIP System, because the exact specifications of an individual state's implementation plan would be prerequisite to a successful system. Certain areas were not considered in depth, but are certainly relevant to such a system and have a direct impact on an overall budgeting and accounting system. Examples of areas not considered in depth were School Lunch Program, Pupil Transportation, and Vocational Rehabilitation. Nonetheless, through the use of the other subsystems, much quantitative and some qualitative information may be extracted for combination with Finance Subsystem information and presented in a useable form for educational management decision processes.

706. *DATA ITEM LISTINGS, DEFINITIONS, AND CODES*

706.1 Expenditure Records (See Chart 7-1.)

FUND - school districts are acquainted with the practice of using, in the financial accounting system, a number or letter to designate the fund from which an expenditure is budgeted or paid. Since the fund structure varies from state to state, no attempt is made to assign code numbers to each of the funds that might be established. Each SEA should assign numbers to the funds that are used by its district.

For illustrative purposes, it is suggested that 10 be used for the General Fund and 20 for the Building Fund. Two digits in the coding system are allocated for the fund designation.

- |                   |                 |
|-------------------|-----------------|
| 10— General Fund  | XX— (as needed) |
| 20— Building Fund | XX— (as needed) |

TYPE OF ACCOUNT - there are five types of accounts: Asset, Liability, Fund Balance, Revenue, and Expenditure. In each transaction one or more types of accounts are affected. In a cash transaction, an asset (cash) and either a revenue or expenditure account is affected. In a non-cash transaction, one or more of the five types of accounts are affected. In a cash transaction the one digit indicates whether a revenue or expenditure account is affected, and in a non-cash transaction the one digit indicates the asset, liability, fund balance, revenue, or expenditure account type affected.

The codes for this dimension are based on a double entry system of accounting utilizing Asset, Liability, Fund Balance, Revenue, and Expenditure accounts. In this dimension, an Expenditure record is identified by a 5.

- 1— Asset
- 2— Liability
- 3— Fund Balance
- 4— Revenue
- 5— Expenditure

ORGANIZATIONAL UNIT - this is a three-digit code and identifies the organization, under a single administrative head, created to fulfill certain instructional, supporting, or community service responsibilities.

The organizational unit code number should be assigned by the SEA or LEA. However, a certain block of numbers (100-199) is assigned to the high school, another block (200-299) to junior highs and a third block (400-799) to the elementary schools within a district. Numbers 300-399 are to be used for other schools, such as middle schools.

Some expenditures will apply to all the high schools in the district and cannot be identified with a particular school. Number 199 is reserved for this item. The same system is used for junior high (299) and elementary schools (799).

Code 000 is reserved for expenditures, such as the superintendent's salary, that apply to the entire district and are identifiable with the administrative office. Numbers 001 through 099 are to

be used for other specific organizational units, such as a transportation garage and warehouse, that serve the entire district and have an administrative head, but are not a part of the administrative office.

Separate code numbers 800-899 apply to the summer school programs and 900-989 to the adult education programs. It is advisable to separate these expenditures from the regular term, K-12, program for cost analysis purposes. Also, these programs often have separate administrative heads, and the budgets are developed separately.

Number 990 is to be used for those activities that are associated with one or more schools but are administered independently of them. An example is a physical education coordinator who spends his time working with the teachers in a number of elementary and junior high schools.

Code number 998 is to be used for districts that have established separate administrative units for community services, such as a public library operated by a school district.

Code number 999 provides for any expenditure not applicable to the previous code numbers.

- 000 — Administrative Offices
- 00X — (as needed)
- 1XX — High Schools (individually numbered)
- 199 — All High Schools within the District
- 2XX — Junior High Schools Individually Numbered
- 299 — All Junior High Schools within the District
- 3XX — As Needed for Other Schools—Middle School, etc.
- 4XX-7XX — Elementary Schools Individually Numbered
- 799 — All Elementary Schools within the District
- 8XX — Summer Programs Individually Identified
- 899 — All Summer Programs
- 9XX — Adult Education Programs Individually Identified
- 989 — All Adult Education
- 990 — Activities Associated with One or More Schools but Administered Independently of them
- 998 — Activities not Associated with a School or Administrative Office
- 999 — Other Units not Applicable to Previous Code Numbers

AREA OF RESPONSIBILITY - (See definitions, section 706.4.) This section uses a three-digit number, and specific numbers are assigned to each of the Areas of Responsibility.

The first and second digits (of the code number) combined will identify each of the 13 functional categories, such as General Control, Pupil Transportation, or Debt Service. The third digit added to the first two identifies the specific Areas of Responsibility within these categories, such as Classroom Teaching or Building Maintenance.

For example, code number 611 indicates that the expenditure falls under the Pupil Transportation functional category, and under the specific Area of Responsibility of Vehicle Operation.

Note that a general category is provided at the beginning of each of the Area of Responsibility groupings except Outgoing Transfers and Debt Service. Code 301, for example, is to be used for the expense of an employee who does general facilities, maintenance and operation work which cannot be identified with one of the more specific Areas of Responsibility and when proration is not feasible or desirable.

100-199	INSTRUCTION		
101	Instructional Services, Gen.	231	Warehousing & Distribution
111	Classroom Teaching	236	Centralized Printing and Publication Services
121	Library Services		
131	Computer Assisted Instruction	241	Other General Control
141	Educational TV Services	250-269	INSTRUCTIONAL ADMINISTRATION
151	Audiovisual Services		
161	Homebound Teaching	251	Instructional Admin., Gen.
		256	Administration of a School
200-249	GENERAL CONTROL	261	Improvement of Curr. and Instr.
201	General Administration	266	Other Instructional Admin.
206	Board of Education		
211	Business and Finance	270-299	RESEARCH AND DEVELOPMENT
216	Data Processing		
221	Legal Services	271	R and D, General
226	Personnel Administration	276	Research
		281	Development

286	Evaluation	421	Transportation of Food
291	Statistics		
296	Other R and D Services	431	Other Food Services
300-349	FACILITIES, MAINT. AND OPER.	500-549	PUPIL PERSONNEL
301	Plant Maint. and Oper., Gen.	501	Pupil Services, Gen.
311	Site Maintenance	511	Attendance Services
316	Site Operation	516	Guidance Services
321	Building Maintenance	521	Social Work Services
326	Building Operation	526	Psychological Services
331	Built-in Equipment, Maint.	531	Therapeutic Services
336	Built-in Equipment, Oper.	541	Other Pupil Services
341	Movable Equipment, Maint.	550-599	HEALTH SERVICES
346	Movable Equipment, Oper.	551	Health Services, Gen.
		561	Medical Services
350-399	FACILITIES, ACQ. OR IMPROVEMENT	566	School Nurse Services
351	Plant Acq./Improvement Gen.	571	Dental Services
361	Site Acq./Improvement	581	Other Health Services
371	Building Acq./Improvement	600-699	PUPIL TRANSPORTATION
381	Built-in Equip. Acq./Improvement	601	Transportation, Gen.
391	Movable Equip. Acq./Improvement	611	Vehicle Operation
		621	Vehicle Servicing and Maint.
400-499	FOOD SERVICES	631	Other Transportation Services
401	Food Services, Gen.	700-799	COMMUNITY SERVICES
411	Food Preparation and Serving	701	Community Services, Gen.

711	Recreation	811	Transportation Outside State
721	Civic Activity		
731	Public Library Services	821	Tuition Within State
741	Custody and Detention	831	Tuition Outside State
751	Welfare Activities		
761	Nonpublic School Services	900-999	DEBT SERVICE
771	Other Community Services	911	Bond Redemption
		921	Long Term Loan
800-899	OUTGOING TRANSFERS	931	Short Term Loan
801	Transportation Within State	941	Current Loan

INSTRUCTIONAL AREA - a large percentage of a district's expenditures can be identified with a particular Instructional Area such as the subject in departmentalized schools or the homeroom in those schools not having departmental structure. A two-digit code is to be used for all expenditures that can be identified with an Instructional Area. The code 00 should be used for all expenditures that cannot be identified with one of these areas.

A code designation in this code section will be used for practically all of the expenditures in any of the other Areas of Responsibility if the expenditure is identified with a particular Instructional Area.

Instructional Area code numbers are also assigned to the broad groupings of cocurricular activities, such as Athletic Cocurricular Activities.

00 — Does Not Apply (DNA)	11 — Mathematics
01 — Agriculture	12 — Music
02 — Art	13 — Natural Science
03 — Business	14 — Office Occupations
04 — Distributive Education	15 — Social Studies
05 — English Language Arts	16 — Technical Education
06 — Foreign Language	17 — Trades and Industry
07 — Health Occupations	18 — General Education (Pupil Supervision)
08 — Health, Safety, P.E.	19 — Exceptional Child Education
09 — Home Economics	
10 — Industrial Arts	



- |  |   |
|--|---|
| 20—Cocurricular Activities                 | 25—Cocurricular Social Organizations          |
| 21—Academic Cocurricular Activities        | 30—Driver Education                           |
| 22—Athletic Cocurricular Activities        | 50—Homeroom, Elementary (nondepartmentalized) |
| 23—Music Cocurricular Activities           | 51—Homeroom, Secondary (nondepartmentalized)  |
| 24—School Services Cocurricular Activities |   |

**LOCAL COURSE NUMBER** - this is a three-digit code for those districts that wish to budget and/or account for the expenditures of each course in departmentalized schools, such as chemistry, biology and physics. Also, this code section can be used to identify each of the Cocurricular Activities.

**ACTIVITY** - this two-digit code section is to be used for gathering together all of the costs, salaries, supplies, equipment, etc. - of a specific type of work regardless of the Organizational Unit, Area of Responsibility, or Instructional Area.

For example, salaries for clerical services might be found in any of the Areas of Responsibility. It would be difficult to separate these and compile a list of all the clerical costs in a school district if a specific code is not provided for this. The number 12 in the Activity code section is to be used for all of the district costs of providing clerical services, such as salaries, supplies, equipment, employee travel, employee benefits and any other identifiable clerical expense.

Another example is supervisory services - code number 28. This code is to be used for identifying all supervisory costs and includes such salaries as those of the transportation supervisor, custodial supervisor, and school lunch supervisor, as well as the other costs that are incurred as a result of the work they are doing.

The following list of activities does not necessarily include all of the activities that can be identified by this manner of coding. School districts might use this code section for additional specific activity groupings.

- |                   |                             |
|-------------------|-----------------------------|
| 02—Accounting     | 08—Auditing                 |
| 04—Administrative | 10—Census                   |
| 06—Architectural  | 12—Clerical and Secretarial |

- |                           |                                 |
|---------------------------|---------------------------------|
| 14—Counseling             | 28—Supervisory                  |
| 16—Custodial              | 30—Teaching                     |
| 18—Guard and Police       | 32—Teaching Assistance          |
| 20—Health or Medical      | 34—Therapeutic                  |
| 22—Maintenance and Repair | 36—Transportation, Pupils       |
| 24—Recruiting Personnel   | 38—Transportation, Other        |
| 26—Pathological           | 40—Warehousing and Distributing |

**OBJECT** - a two-digit code identifies the object classification. This code should be used for all expenditures to identify that which is received in exchange for an expenditure. The objects are organized into nine general categories. Each of these categories is subdivided into specific object classifications.

- |                                |   |
|--------------------------------|---|
| 10—Salaries                    | 34—General Supplies for resale                  |
| 11—Certificated, Regular       | 35—Library Materials                            |
| 12—Certificated, Temporary     | 40—Contracted Services                          |
| 13—Certificated, Substitute    | 41—Consultation                                 |
| 16—Noncertificated, Regular    | 42—Other Non-Staff Personnel                    |
| 17—Noncertificated, Temporary  | 43—Transportation                               |
| 18—Noncertificated, Substitute | 44—Tuition                                      |
| 20—Employee Benefits           | 45—Repairs                                      |
| 21—Social Security             | 46—Insurance                                    |
| 22—State Retirements           | 47—Memberships                                  |
| 23—Municipal Retirements       | 48—Rentals                                      |
| 24—Local District Retirement   | 49—Other Contracted Services (Except Utilities) |
| 25—Health Insurance            | 50—Contracted Services, Utilities               |
| 26—Life Insurance              | 51—Electricity                                  |
| 27—Guaranteed Income Insurance | 52—Telephone and Telegraph                      |
| 28—Workmen's Compensation      | 53—Water  |
| 29—Other Benefits              | 54—Sewer  |
| 30—Supplies                    | 55—Gas  |
| 31—Textbooks                   | 56—Oil  |
| 32—Textbooks, resale or rental | 57—Coal   |
| 33—General Supplies            | 58—Other Utilities                              |
|                                | 60—Employee Travel                              |
|                                | 61—Travel Within District                       |
|                                | 62—Travel Outside District                      |

- 70— Facilities
- 71— Site Purchase
- 72— Site Improvement
- 73— Building Purchase
- 74— Building Lease or Lease Purchase
- 75— Building Improvement
- 80— Equipment
- 81— Furniture, New
- 82— Furniture, Replacement
- 83— Machinery and Apparatus, New
- 84— Machinery and Apparatus, Replacement
- 85— Vehicles, New
- 86— Vehicles, Replacement
- 90— Debt Service
- 91— Principal
- 92— Interest

CHART 7-1. FINANCE SUBSYSTEM EXPENDITURE RECORD

FIELD NO.	DATA ITEMS (Definitions on pages 143 to 165.)	SIZE DIG/ CHAR	TYPE A,N A/N
1	Fund	2	N
2	Type of Account	1	N
3	Organizational Unit	3	N
4	Area of Responsibility	3	N
5	Instructional Area	2	N
6	Local Course Number	3	N
7	Activity	2	N
8	Object	2	N
9	Amount	9	N

706.2 Revenue Records (See Chart 7-2.)

In developing the coding structure for revenue accounts, it is desirable to provide for several items of information about the revenue.

It is important to designate in the accounting code the fund for which the revenue is received. Also, it is necessary to include in the code a number to signify that the account is a revenue account.

A large number of the revenue transactions in a school district, such as textbook rentals, tuition, gate receipts, building rental, and sale of supplies, can be easily identified to a specific organizational unit.

The source of the revenue is a logical grouping of accounts, and this establishes a framework for the specific types of revenue items.

A complete program budgeting and accounting system should provide a code in the revenue account that indicates the specific Instructional Area and Local Course Number for which the revenue is received. Most revenue items in a school district cannot be identified with a particular Instructional Area and course. However, where this identity is possible, the information should be included in the code.

For example, a school district may wish to code the account for gate receipts so that the code indicates the specific cocurricular activity for which the gate receipts are collected.

FUND - for this section, use the same two-digit code numbers that are established for expenditure accounts.

TYPE OF ACCOUNT - the 4 in this code section identifies the account as a revenue account.

ORGANIZATIONAL UNIT - use the same three-digit code as for expenditures.

SOURCE AND TYPE OF REVENUE - the following three-digit codes are to be used to identify the source and type of the revenue.

100 REVENUE FROM LOCAL SOURCES

- 110 Property Taxes
  - 111 Current Taxes
  - 112 Back/Delinquent Taxes
  - 113 Taxes in Advance
  - 114 Payments in Lieu of Taxes

- 120 Sales Taxes
  - 121 Current Taxes
  - 122 Back/Delinquent Taxes
  - 123 Taxes Advanced
  - 124 Payments in Lieu of Taxes

- 130 Income Taxes
  - 131 Current Year Taxes
  - 132 Back/Delinquent Taxes

(100 REVENUE FROM LOCAL SOURCES, CONTINUED)

- 133 Taxes Advanced
- 134 Payments in Lieu of Taxes
  
- 140 Special Taxes
  - 141 Current Year Taxes
  - 142 Back/Delinquent Taxes
  - 143 Taxes Advanced
  - 144 Payments in Lieu of Taxes
  
- 150 Tuition
  - 151 Tuition from Students
  - 152 Tuition from Patrons
  
- 160 Transportation
  - 161 Transportation fees from Students
  - 162 Transportation fees from Patrons
  - 163 Transportation fees from Other Sources
  
- 170 Student Sources
  - 171 Fees and Rentals
  - 172 Athletic Activities
  - 173 Music Activities Receipts
  - 174 Food Services Receipts
  - 175 Other
  
- 180 Interest
  
- 190 Other Revenue from Local Sources
  
- 200 REVENUE FROM INTERMEDIATE SOURCES
  - 210 Property Taxes
    - 211 Current Taxes
    - 212 Back/Delinquent Taxes
    - 213 Taxes in Advance
    - 214 Payments in Lieu of Taxes
  
  - 220 Sales Taxes
    - 211 Current Taxes
    - 222 Back/Delinquent Taxes
    - 223 Taxes Advanced
    - 224 Payments in Lieu of Taxes

(200 REVENUE FROM INTERMEDIATE SOURCES, CONTINUED)

- 230 Income Taxes
  - 231 Current Year Taxes
  - 232 Back/Delinquent Taxes
  - 233 Taxes Advanced
  - 234 Payments in Lieu of Taxes
  
- 240 Special Taxes
  - 241 Current Year Taxes
  - 242 Back/Delinquent Taxes
  - 243 Taxes Advanced
  - 244 Payments in Lieu of Taxes
  
- 250 Tuition
  - 251 Tuition from Students
  - 252 Tuition from Patrons
  
- 260 Transportation
  - 261 Transportation fees from Students
  - 262 Transportation fees from Patrons
  - 263 Transportation fees from Other Sources
  
- 270 Student Sources
  - 271 Fees and Rentals
  - 272 Athletic Activities
  - 273 Music Activities Receipts
  - 274 Food Services Receipts
  - 275 Other
  
- 280 Interest
  
- 290 Other Revenue From Intermediate Sources
  - 291 Gifts
  - 292 Facilities Rental
  - 293 Other
  
- 300 REVENUE FROM STATE SOURCES
  - 310 State Foundation Program
  - 320 Transportation
  - 330 Driver Education
  - 340 Special Education
  - 350 Vocational Education
  - 360 Monies in Lieu of Taxes
  - 390 Other Revenue from State Sources

400 REVENUE FROM FEDERAL SOURCES

- 410 Vocational Education
  - 411 Agriculture
  - 412 Distributive Education
  - 413 Health Occupation Education
  - 414 Home Economics
  - 415 Office Education
  - 416 Technical Education
  - 417 Trades and Industrial Education
  - 418 Practical Nurse Training (P.L. 84-911)
  - 419 Area Vocational Education (P.L. 85-864 Title VIII)
  - 420 Vocational Education Act 1963 (P.L. 88-210)
  - 421 Manpower Development Training Act 1962 - Indian Vocational Training (P.L. 88-214)
  - 422 Manpower Development Training Act 1962 - Training Programs (P.L. 89-15)
  - 423 Public Health Training - Traineeship (P. L. 88-498)
  - 424 Public Health Service Act - Nurse Training (Title VIII)
  - 425 Welfare Education Program - ADC - (P.L. 87-543)
  - 426 Vocational Rehabilitation (P.L. 66-236)
  - 427 Social Security Amendments 1956 - Research and Demonstration Projects (P.L. 84-880)
  - 428 Appalachian Regional Development Act 1965 (P.L. 89-4)
- 430 Educational Opportunity Act 1964 (P.L. 88-452)
  - 431 Title IB - Neighborhood Youth Corps
  - 432 Title IIA - Community Action Programs (Basic Adult Education)
  - 433 Title IIA and IIIB - Special Poverty Programs
- 440 Elementary and Secondary Education Act (P.L. 89-10)
  - 441 Title I - Educationally Deprived
  - 442 Title II - Library
  - 443 Title III - Supplementary Education
  - 444 Title VI - Special Education
- 450 National Defense Education Act (P.L. 864)
  - 451 Title III - Instruction
  - 452 Title VA - Guidance
- 460 Miscellaneous
  - 461 Federal Forest Lands
  - 462 Flood Control
  - 463 Grazing Land

(400 REVENUE FROM FEDERAL SOURCES, CONTINUED)

- 464 Johnson-O'Malley Act (P.L. 73-167)
- 465 Adult Education-Indian Program (P.L. 67-85)
- 466 Mineral Leases
- 467 National School Lunch Program
- 468 School Milk Program
- 469 Construction/Federally Impacted Areas (P.L. 81-815)
- 470 Maintenance and Operation/Federally Impacted Areas (P.L. 81-874)
- 471 Assistance for Public Schools Affected by Major Disasters (P.L. 89-313)
- 472 Immigration and Nationality Act (P.L. 414)
- 473 Juvenile Delinquency and Youth Offenses Control Act 1961 (P.L. 87-274)
- 474 Migrant Health Act 1962 (P.L. 87-692)
- 475 Vaccination Assistance Act 1962 (P.L. 87-868)
- 476 Educational Television Broadcasting Facilities (P.L. 87-447)
- 477 Library Services and Construction (P.L. 88-269)
- 478 Title II - Civil Rights Act 1964 (P.L. 88-353)
- 479 Title IV - Civil Rights Act 1964 (P.L. 88-353)
- 480 Teaching Materials for the Blind (20 USC 101-105)
- 481 Research and Demonstration Projects in Education of the Handicapped (P.L. 88-164)
- 482 Area Redevelopment Act (P.L. 87-27)
- 483 Civil Defense Adult Education Program
- 490 Other
  - 491 Federal Reimbursements
- 500 SALE OF PROPERTY
  - 510 Sale of Equipment
  - 520 Sale of Buildings
  - 530 Sale of Sites
- 900 INCOMING TRANSFERS
  - 910 Tuition from within the state
  - 920 Tuition from outside the state
  - 930 Transportation from within the state
  - 940 Transportation from outside the state

**CHART 7-2. FINANCE SUBSYSTEM REVENUE RECORD**

FIELD NO.	DATA ITEMS (Definitions on pages 143 to 165.)	SIZE DIG/ CHAR	TYPE A,N A/N
1	Fund	2	N
2	Type of Account	1	N
3	Organizational Unit	3	N
4	Source & Type of Revenue	3	N
5	Instructional Area	2	N
6	Local Course Number	3	N
7	Amount	9	N

**706.3 Asset, Liability and Fund Balance Records (See Chart 7-3.)**

An eight-digit code will be used for the asset, liability and fund balance accounts. The first two digits identify the fund and the third digit identifies the specific asset or liability.

For these accounts, there is no need to include, in the coding system, provision for Organizational Unit, Instructional Area, or Local Course Number.

Accounts are provided for systems using the accrual basis as well as for those using the cash or obligation basis. The accounts that are to be used only for the accrual basis systems are identified in the list of accounts.

**FUND** - use the same two-digit code for the fund as for the revenue and expenditure accounts.

**TYPE OF ACCOUNT**

- 1— Asset Accounts
- 2— Liability Accounts
- 3— Fund Balance Account

**ACCOUNT** - the following numbers are to be used to identify the specific asset, liability and fund balance accounts.

**ASSET ACCOUNTS**

**10000 Cash**

- 11000 Petty Cash
- 12000 Imprest Fund
- 13000 Cash in Banks

**20000 Investments**

**30000 Accounts Receivable**

- 31000 Taxes Receivable
  - 311XX Local Taxes (extend as needed)
  - 312XX Intermediate Taxes (extend as needed)

**32000 Governmental Claims Receivable**

- 323XX State Sources (extend as needed)
- 324XX Federal Sources (extend as needed)

**39000 Other Receivables**

**40000 Accrued Revenues**

- 41XXX Accrued Interest
- 42XXX Accrued Tuition (extend as needed)
- 49XXX Other Accrued Revenues (extend as needed)

**50000 Deferred Charges**

- 51XXX Prepaid Insurance
- 52XXX Prepaid Interest
- 53XXX Other Deferred Charges

**60000 Inventories**

- 61XXX Warehouse Inventories
- 69XXX Other Inventories

**70000 Vocational Projects for Resale**

**80000 Facilities**

- 81XXX Sites (extend as needed)
- 82XXX Buildings (extend as needed)
- 83XXX Equipment (extend as needed)

**90000 Other Assets**

LIABILITIES

- 100XX Loans Payable
  - 110XX Long Term Loans
  - 120XX Short Term Loans
  - 130XX Current Loans
- 200XX Bond and Interest Payable
  - 210XX Bonds Payable (Accrual basis)
    - 211XX Current (Accrual basis)
    - 212XX Long Term (Accrual basis)
  - 220XX Interest Payable (Accrual basis)
    - 221XX Current (Accrual basis)
    - 222XX Long Term (Accrual basis)
- 300XX Payroll Deductions Payable
- 400XX Accounts Payable (Accrual basis)
- 500XX Accrued Expense
  - 510XX Accrued Salaries (Accrual basis)
  - 520XX Accrued Tuition (Accrual basis)
  - 530XX Accrued Interest (Accrual basis)
  - 540XX Accrued Rent (Accrual basis)
  - 590XX Other Accrued Expense (Accrual basis)
- 600XX Other Liabilities

FUND BALANCE

- 10000 Fund Balance

CHART 7-3. FINANCE SUBSYSTEM ASSET, LIABILITY AND FUND BALANCE RECORD

FIELD NO.	DATA ITEMS (Definitions on pages 143 to 165.)	SIZE DIG/ CHAR	TYPE A,N A/N
1	Fund	2	N
2	Type of Account	1	N
3	Specific Account	5	N
4	Amount	9	N

706.4 Finance Subsystem Definitions

ACCOUNTS DEFINITIONS

Following are definitions and explanations of each of the Asset, Liability, and Fund Balance accounts. Further expansion of any of the accounts can be accomplished by adding accounts and extending the basic accounting code.

ASSETS. An asset is cash or the right to receive cash at a later date. On the cash basis, school districts record only those assets that arise from a previous payment of cash. For example, if cash is paid for an investment in United States Treasury bills, this investment represents an asset when using cash basis.

On the accrual basis, all assets are recorded even though no previous cash transaction has been made to establish this asset. For example, an asset, taxes receivable, is recorded on the accrual basis when the tax is levied because the district has established a legal claim on tax revenue.

100 Cash - bank accounts and petty cash funds that are the property of the school district.

110 Petty Cash - money set aside for making change or for immediate payments in coin and currency of comparatively small amounts such as freight bills.

120 Imprest Fund - an amount established in a bank account, separate from the regular checking accounts, and maintained to provide for emergency type disbursements for which a district wishes to issue a check, but because of the timing cannot pay through the regular disbursement procedures.

130 Cash in Banks - the book balances - excess of deposits over checks written - of the regular checking accounts.

200 Investments - amounts invested in United States Government Securities or other legal forms of investments.

300 Accounts Receivable - unpaid balances of amounts owed to the school district by individuals or others.

310 Taxes Receivable - accrual basis - the portion of the tax levy that has not been paid to the school district.

320 Governmental Claims Receivable - accrual basis - the portion of the school district claims that has not been paid to the school district.

390 Other Receivables - this section provides for the addition of receivables not provided for in the Chart of Accounts. Certain receivable accounts might be established on the cash basis. An example is the purchase of an equipment item for an organization that will reimburse the district. Certain other receivable accounts will be used only on the cash basis.

400 Accrued Revenue - accrual basis - amounts recorded at the end of a fiscal period to indicate the revenues that have accrued but have not yet been paid to the school district. At the beginning of the following fiscal period, the entry recording the accrued revenue should be reversed.

410 Accrued Interest - accrual basis - interest earned on investments but not yet received by the school district.

420 Accrued Tuition - accrual basis - tuition earned but not yet received by the school district.

430 Other Accrued Revenue - accrual basis - other revenue that is earned but not yet received.

500 Deferred Charges - accrual basis - amounts recorded at the end of a fiscal period to indicate that portion of a paid expenditure that applies to future fiscal periods. At the beginning of the following fiscal period, the entry recording this deferred charge should be reversed.

510 Prepaid Insurance - accrual basis - that portion of a paid insurance premium that applies to future fiscal periods.

520 Prepaid Interest - accrual basis - that portion of interest that the school district has paid but is not yet earned.

530 Other Deferred Charges - accrual basis - other expenditures that have been paid by the district but not yet earned.

600 Inventories - cost of supplies or other materials that have been purchased but have not been distributed for use.

610 Warehouse Inventories - cost of the supplies and materials in a central warehouse.

620 Other Inventories - cost of other supplies and materials that have been purchased but have not been distributed for use.

700 Vocational Projects for Resale - cost of major vocational projects that are to be sold when completed.

800 Facilities - accounts recorded in a facilities group of accounts separate from the regular funds. They comprise a record of the cost of the facilities owned by the district regardless of when they were purchased or from which fund they were purchased.

810 Sites - the cost of all acquisitions and improvements of sites owned by the school district.

820 Buildings - the cost of all acquisitions and improvements of buildings owned by the school district.

830 Equipment - the cost of all equipment owned by the school district.

900 Other Assets - all other assets not provided for.

LIABILITIES - a liability is an obligation to pay cash to others, or to another fund, at a later date. On the cash basis, school districts will record only those liabilities that result from a previous cash transaction. For example, an amount borrowed through the issuance of tax warrants is recorded as a liability on the cash basis since a cash transaction created the liability.

On the accrual basis, school districts will record additional liabilities even though a previous cash transaction has not created the liability. For example, rent accrued but not yet paid by the school district, is recorded as a liability on the accrual basis at the end of a fiscal period.

100 Loans Payable - amounts that are borrowed from others, or another fund, and not secured by serial or term bonds.

110 Long Term Loans - loans which extend for more than five years from the date of the loan.

120 Short Term Loans - loans which are payable within five years of the date of the loan, but not within the fiscal year of issue.

130 Current Loans - loans which are payable in the same fiscal year in which the money was borrowed. Tax anticipation warrants, or notes, are considered to be current loans if they are to be repaid from the tax collections anticipated with the issuance of the warrants.

## 200 Bond and Interest Payable

210 Bonds Payable - principal amount of outstanding bonds.

211 Current Bonds Payable - the principal amount of bonds that have matured or will be payable within the next fiscal year.

212 Long Term Bonds Payable - the principal amount of bonds outstanding excluding the current bonds payable.

220 Bond Interest Payable - interest to be paid in the future on outstanding bonds.

221 Current Bond Interest Payable - bond interest that is now due or will be payable within the next fiscal year.

222 Long Term Bond Interest Payable - interest to be paid in the future on outstanding bonds excluding the current bond interest payable.

300 Payroll Deductions Payable - liabilities resulting from the deduction from payroll checks for withholding tax, retirement contributions, insurance, etc. The balance of the accounts represent the portion of the deductions that has not been forwarded to the proper agency. Each school district should establish the specific accounts that are needed.

400 Accounts Payable - accrual basis - amounts of unpaid invoices for services or merchandise received.

500 Accrued Expense - accrual basis - amounts recorded at the end of the fiscal year to indicate the expenses that have accrued but have not been paid by the school district. At the beginning of the following fiscal year, the entry recording the accrued expense should be reversed.

510 Accrued Salaries - accrual basis - salaries earned but not yet paid at the end of a fiscal period.

520 Accrued Tuition - accrual basis - tuition that is due a district by another district or agency at the end of a fiscal period, but has not been paid.

530 Accrued Interest - accrual basis - interest that has accrued at the end of a fiscal period but has not been paid by the district.

540 Accrued Rent - accrual basis - rent that has accrued at the end of a fiscal period but has not been paid by the district.

590 Other Accrued Expense - accrual basis - any other expenditures that have accrued at the end of a fiscal period but have not been paid by the district.

600 Other Liabilities - all other liabilities not provided for.

## FUND BALANCE

100 Fund Balance - the excess of assets over liabilities.

## ACTIVITIES DEFINITIONS

This code section is provided to group, from all Areas of Responsibility, those personnel, supplies, equipment and other expenditures associated with a specific type of activity or service.

02 Accounting - accounting is concerned with recording and reporting activities and events affecting personnel, facilities, materials, or money of an administrative unit and its programs. Specifically, it is concerned with determining what accounting records are to be maintained, how they will be maintained, and the procedures, methods, and forms to be used; recording, classifying and summarizing activities or events; analyzing and interpreting recorded data; and preparing and issuing reports and statements which reflect conditions as of a given date, and results of operations for a specific period, and the evaluation of status and results of operations in terms of established objectives.

04 Administrative - activities or services which have as their general purpose the regulation, direction and control of the affairs of the school system, organizational units, or departments.

06 Architectural and Engineering - activities and services which provide professional services in connection with designing and



preparing specifications and drawings for new construction, rehabilitating or altering existing buildings, developing landscaping or acting as professional adviser on architectural matters.

08 Auditing - the technical activities or services of verifying the accuracy and appropriateness of receipts, expenditures, accounts and accounting statements in accordance with applicable laws and regulations.

10 Census - the activities or services concerned with the systematic counting of resident persons in a school district and with recording such related information as the school district requires.

12 Clerical and Secretarial - the activities or services normally classified as clerical, secretarial or stenographic. Concerned with preparing, transferring, transcribing, systematizing or preserving written communications and records; or the operation of such machines as bookkeeping machines, card-punch machines, duplicating machines and tabulating machines.

14 Counseling - the nonclassroom professional activities or services designed to assist pupils or other persons in making plans and choices in relation to education, vocation, or personal development.

16 Custodial - those activities and services concerned with cleaning the buildings of school plants or supporting services facilities; operating such equipment as heating and ventilating systems; preserving the security of school property; and keeping the school plant safe for occupancy and use. It consists of such activities as cleaning, sweeping, disinfecting, heating, lighting, moving furniture, keeping school entrances appropriately locked or unlocked, keeping such facilities as fire escapes and panic bars in working order, and watchman duties. It also includes caring for the sites owned or used by the school system including such activities as raking, watering, mowing, transplanting shrubbery, trimming shrubbery, and preparing, planting, and caring for flower beds.

18 Guard and Police - those activities or services concerned specifically with the security of school property, facilities, personnel, and pupils.

20 Health and Medical - those activities and services concerned with providing medical, dental, psychiatric and nursing services.

22 Maintenance and Repair - those activities and services concerned with the upkeep, maintenance, and replacement of movable equipment, fixed equipment, building, and sites.

24 Recruiting - the activities and services designed to attract professional and non-professional applicants for positions.

26 Diagnostic - those activities and services, other than those classified as health services, designed to identify and evaluate physical, emotional, and learning problems and to recommend appropriate therapeutic services.

28 Supervisory - the activities or services designed to provide leadership, guidance or expertise in a field of specialization for the purpose of improving the performance of staff members.

30 Teaching - the activities or services designed to instruct or provide a learning opportunity for students. Included are expenditures related to classroom teaching, homebound teaching, libraries, instructional T.V., computer assisted instruction, study hall, self study, etc.

Not included are expenditures for teacher aides, counselors, secretarial assistance, administration, teacher supervision, diagnostic and therapeutic services.

32 Teaching Assistance - these activities and services provided by teacher aides, including the expenditures directly related to teacher aides.

34 Therapeutic - those activities or services designed to provide appropriate individual or small group therapy in response to the findings and recommendations of the diagnostic services.

36 Transportation, Pupils - those activities and services designed to transport pupils to and from school, between schools, and to school related activities.

38 Transportation, Other - the activities and services designed to transport material and personnel, other than pupils, within the district and outside the district.

40 Warehousing and Distribution - the activities and services designed to receive, store, distribute and account for materials

and equipment which are received centrally and then delivered to points of consumption. Distribution may immediately follow receipt or it may be on a later schedule or may be later in response to specific requisitions.

#### AREA OF RESPONSIBILITY DEFINITIONS

100-199 Instruction - instruction includes all activities dealing directly with the teaching of pupils. Teaching, the major aspect of instruction, may be provided for pupils in a classroom of a school, in another location such as a home or hospital, and other learning situations such as those involving cocurricular activities. It may also be provided through other approved media such as television, radio, telephone, and correspondence.

101 Instructional Service, General - the area of responsibility for providing those services which apply to two or more of the following instructional areas of responsibility and which cannot be reasonably or accurately prorated among them.

111 Classroom Teaching - the area of responsibility for instructing pupils in courses in classroom situations for which daily pupil attendance figures for the school system are kept.

121 Library Services - the area of responsibility for organizing and managing libraries of books and other instructional resource materials in a school or school system for the use of pupils and faculty. It consists of such technical activities as ordering, cataloging, processing, and circulating books and other materials; planning the use of the library by teachers and pupils; selecting books and materials; participating in faculty planning for the use of books and materials; and guiding teachers and pupils in the use of the library. Audiovisual materials and equipment are included if they are managed under the direction of the librarian.

131 Computer Assisted Instruction - the area of responsibility for providing computer assisted instruction for a school or school system. It may consist of such activities as writing, programming, directing, supervising and providing computer time for the CAI program of school or school system.

141 Educational Television Services - the area of responsibility for providing educational television programs as a part of the instructional program of the school or school system. It consists

of such activities as writing, programming and directing educational television programs for a school or a school system.

151 Audiovisual Services - the area of responsibility for preparing, caring for, and making available to instructional programs in a school or school system the equipment, materials, scripts, and other aids which assist teaching and learning through special appeal to the senses of sight and hearing.

161 Homebound Teaching - the area of responsibility for teaching regular or special subjects to those students who are unable to attend regular classes because of long or short terms of confinement at home or in an institution. Such confinement is normally due to temporary problems of physical disability.

200-249 General Control - the areas of responsibility for administering those noninstructional programs which have as their purpose the general regulation, direction and control of the affairs of the school district that are systemwide and not confined to one school, subject, or narrow phase of school activity. Research and Development, Facilities, Food Services, Pupil Personnel, Health, Pupil Transportation, and Community Services are recorded under the accounts of those areas of responsibility.

201 General Administration - the area of responsibility for the administrative activities which pertain to the entire school district and are performed only by the chief executive officer and his executive assistants.

206 Board of Education - the area of responsibility encompassing the activities of the elected or appointed body which has been created according to state law and vested with responsibilities for educational activities in a given geographical area, the board secretary, treasurer, school elections, tax collections and audit.

211 Business and Finance - the area of responsibility concerned with the control of the fiscal activities of the school district. Included are budgeting, accounting, purchasing and related activities.

216 Data Processing - the area of responsibility for providing data processing services for the school system. It consists of program direction, system analysis, programming, collection and preparation of data, operations and output services.

221 Legal Services - the area of responsibility for providing legal counsel for the general control of the school district. Legal services obtained expressly for financing or acquiring facilities, or improving facilities, should be included in the appropriate facilities account.

226 Personnel Administration - the area of responsibility for the administration of the staff personnel program of the school system. It consists of assignments to perform such activities as recruiting staff members, staff accounting, staff placement, staff transfer, and other staff personnel administration activities.

231 Warehousing and Distribution - the area of responsibility for administering a systemwide program of storing and distributing those supplies, equipment and materials used in the operation of the school system which are purchased, received and stored in a central warehouse.

236 Centralized Printing and Publication Services - the area of responsibility for administering a centralized printing and/or publication service for the benefit of all organizational units of the school district. Included are such activities as typesetting, photo work, duplication, copying, collating, punching, and binding.

241 Other General Control - the area of responsibility for providing general control services which are not included in the other specific general control areas of responsibility.

250-264 Instructional Administration - the areas of responsibility for providing the leadership, supervision, coordination, direction, administration and consultation for the operation of the instructional program of schools or school systems.

251 Instructional Administration, General - the areas of responsibility for providing those services which apply to two or more of the following instructional administration areas of responsibility and which cannot reasonably or accurately be prorated among them.

256 Administration of a School - the area of responsibility for administering the operation of a school (organizational unit, not a school system). The principal, assistant principal, vice principal, dean, etc. would be assigned to this area as would their staffs and other directly related expenditures.

261 Improvement of Curriculum and Instruction - the area of responsibility for administering the program of curriculum and instructional improvement of a department, school or school system. The assistant superintendent for curriculum, curriculum directors, department heads, supervisors, coordinators and consultants are commonly assigned to this area along with their staffs and other direct expenditures. (Note: Personnel with identical titles may be assigned to instructional administration, general, or improvement of curriculum and instruction, depending upon the nature of their actual responsibilities.)

266 Other Instructional Administration - the area of responsibility for providing instructional administration services which are not included in the previous instructional administration areas of responsibility.

270-299 Research and Development - the areas of responsibility for systematically observing, investigating, evaluating and studying various aspects of the instructional and noninstructional programs of a school district and then developing and recommending new programs based upon the findings.

271 Research and Development, General - the area of responsibility for providing those services which apply to two or more of the following research and development areas of responsibility and which cannot be reasonably or accurately prorated among them.

276 Research - the area of responsibility for providing means of applying the technology, methods, and strategies of science to the solutions of research problems which are peculiar to the operation of schools.

281 Development - the area of responsibility for technical activity concerned with nonroutine problems which are encountered in translating research findings or other general scientific knowledge into processes.

286 Evaluation - the area of responsibility for evaluation of all aspects of education. It consists of such activities as evaluating instructional, supporting services, and ancillary services programs.

291 Statistics - the area of responsibility for collecting and organizing educational data pertinent to various areas of interest, including pupils, staff, instruction, facilities, and finance.

296 Other R & D Services - the area of responsibility for providing research and development services which are not included in the previous R & D areas of responsibility.

300-349 Facilities, Maintenance and Operation - the area of responsibility for repairing and keeping ready for use, land, outdoor facilities, buildings or parts of buildings.

301 Facilities, Maintenance and Operation, General - the area of responsibility for providing those services which apply to two or more of the following facilities maintenance and operation areas of responsibility, and which cannot reasonably or accurately be preorated among them.

311 Site Maintenance - the area of responsibility consisting of those activities which have as their main purpose keeping sites at their original or improved condition of completeness and efficiency through repairs or replacement. Included is the necessary labor, supplies and equipment (i.e. necessary tree removal and tree replacement would be included). All improvements including drives, walks, playgrounds, athletic fields, and outdoor lighting are considered to be sites.

316 Site Operation - the area of responsibility consisting of those activities that have as their main purpose keeping the site acceptable in appearance and readiness for use. Included is the necessary labor, equipment and supplies for fertilizing, mowing, snow removal, cleaning and watering.

321 Building Maintenance - the area of responsibility which has as its main purpose keeping buildings or parts of buildings at their original condition of completeness and efficiency through repairs or replacement (anything less than total replacement of a building).

326 Building Operation - the area of responsibility consisting of those activities which have as their main purpose keeping the physical plant open and ready for use. The activities include preserving the security of the building, cleaning, heating, cooling, lighting, maintenance, safe conditions, moving furniture, and other such housekeeping services as are repeated somewhat regularly on a daily, weekly, monthly or seasonal basis.

331 Built-In Equipment, Maintenance - the area of responsibility consisting of those activities which have as their main purpose

keeping the built-in equipment at its original condition of completeness and efficiency through repairs or replacement. Built-in equipment is that equipment which is an integral part of the building or grounds and is usually permanently attached.

336 Built-In Equipment, Operation - the area of responsibility which has as its main purpose keeping the built-in equipment in service or ready for use.

341 Movable Equipment, Maintenance - the area of responsibility which has as its main purpose keeping movable equipment at its original condition of completeness and efficiency through repairs or replacement. Movable equipment is defined as equipment that is transportable without appreciable damage or damage to the other equipment, the place from which it is removed or to the location where it is installed.

346 Movable Equipment, Operation - the area of responsibility which has as its main purpose the operation of movable equipment. (Note: Annual cleaning and oiling, or replacing a lens of a movie projector would be recorded under Movable Equipment, Maintenance. Replacement of an exciter or projector bulb would be Movable Equipment, Operation.)

350-399 Facilities Acquisition or Improvement - the area of responsibility concerned with acquiring title to sites, buildings, built-in equipment or movable equipment by purchasing contract, own labor, gift or otherwise. It also includes additions or improvements to facilities presently owned. (Renovation to return facilities to a previous condition of improvement is recorded under Maintenance.)

351 Plant Acquisition/Improvement, General - the area of responsibility for providing those services which apply to two or more of the following plant acquisition/improvement areas of responsibility and which cannot be reasonably or accurately prorated among them.

361 Site Acquisition/Improvement - the area of responsibility for purchasing or otherwise acquiring title to land and for improving the site in all ways other than construction of buildings. Included are such things as drainage, grading, drives, parking areas, wells, planting, play courts, and play fields.

371 Building Acquisition/Improvement - the area of responsibility for purchasing, building or otherwise acquiring title to

buildings, additions to buildings or improvements to buildings. (Not included are expenditures, no matter how large, which merely renovate.) Most major work on existing buildings include both renovation and alteration. If the costs cannot be divided between Maintenance and Improvement, the main purpose of the work will have to be considered along with an evaluation of the costs to determine the area to be charged.

381 Built-In Equipment Acquisition/Improvement - the area of responsibility for purchasing or otherwise acquiring title to built-in equipment. Built-in equipment is that equipment which is an integral part of the building or grounds and is usually permanently attached.

391 Movable Equipment Acquisition/Improvement - the area of responsibility for purchasing or otherwise acquiring title to movable equipment and for modifying movable equipment to improve it.

400-499 Food Services - the area of responsibility consisting of those activities which have as their purpose the management of food services programs for the school or school system and the preparation and serving of regular and incidental meals, lunches, or snacks in connection with school activities. This area is applicable to both schools and school systems.

401 Food Services, General - the area of responsibility for providing those services which apply to two or more of the following Food Service areas of responsibility and which cannot be reasonably or accurately prorated among them.

411 Food Preparation and Serving - the area of responsibility for preparing and serving regular and incidental meals, lunches, or snacks in connection with school activities. It consists of such activities as preparing and cooking food, operating kitchen equipment, serving food, cleaning dishes, and storing dishes and kitchen equipment.

421 Transportation of Food - the area of responsibility for transporting prepared food from a central kitchen to one or more schools.

431 Other Food Services - other food services activities which cannot be recorded under the preceding areas of responsibility.

500-549 Pupil Personnel Services - the area of responsibility that consists of those activities which have as their purpose various services for pupils, other than instruction, transportation, food and health services. This area is applicable to both schools and school systems.

501 Pupil Services, General - the area of responsibility for providing those services which apply to two or more of the following pupil service areas of responsibility, and which cannot reasonably or accurately be prorated among them.

511 Attendance Services - the area of responsibility for promoting and improving school attendance of pupils. It consists of such activities as early identification of patterns of nonattendance, promotion of positive pupil and parent attitudes toward attendance, analysis of causes of nonattendance, early action on problems of nonattendance, and enforcement of compulsory attendance laws.

516 Guidance Services - the area of responsibility for helping pupils assess and understand their abilities, aptitudes, interests, environmental factors, and educational needs; for assisting pupils in increasing their understanding of educational and career opportunities; and for aiding pupils in making optimum use of educational and career opportunities through the formulation of realistic goals. It consists of such activities as counseling pupils and parents, evaluating the abilities of pupils, assisting pupils to make their own educational and career plans and choices, assisting pupils in personal and social adjustments, and working with other staff members in planning and conducting guidance programs.

521 Social Work Services - the area of responsibility for assisting in the prevention or solution of the personal, social, and emotional problems of pupils which involve family, school, and community relationships when such problems have a bearing upon the quality of the school work of the pupils. It consists of such professional activities as diagnosing the problems of pupils arising out of the home, school, or community; casework services for the child, parent, or both; interpreting the problems of pupils for other staff members; and promoting modification of the circumstances surrounding the individual pupil which are related to his problem insofar as the resources of the family, school and community can be effectively brought to bear upon the problem.

526 Psychological Services - the area of responsibility for supplementing the school system reservoir of information identifying the individuality of each pupil, his capacities, achievements, interests, potentials, and needs; for studying the individual pupil experiencing acute problems of education development in order to furnish diagnostic information; and for suggesting programs concerning the psychological aspects of these problems. It consists of such activities as administering psychological tests, interpreting the results of psychological tests, working with other staff members in planning programs to meet needs indicated by psychological tests, and managing and planning a program of psychological services for the school system.

531 Therapeutic Services - the area of responsibility for providing speech, visual, physical, occupational, auditory, or other therapy services to pupils.

541 Other Pupil Services - the area of responsibility for providing pupil services which are not included in the previous pupil services area of responsibility.

550-599 Health Services - the area of responsibility consisting of physical and mental health services which are not direct instruction. It consists of the activities of providing medical, dental, psychiatric, and nursing services.

551 Health Services, General - the area of responsibility for providing those services which apply to two or more of the following Health Services, and which cannot reasonably and accurately be prorated among them.

561 Medical Services - the area of responsibility, under the direction of a physician, for providing medical services for pupils. The services may include examination, inoculations, and treatment.

566 School Nurse Services - the area of responsibility for providing treatment of minor injuries, health inspection, screening examinations for determining need for health referrals, regular determination of physical growth factors and maintenance of pupil health records.

571 Dental Services - the area of responsibility, under the direction of a dentist, for providing dental examinations, extractions, treatment or repair for pupils.

581 Other Health Services - the area of responsibility for providing pupil health services which are not included in the previous Health Services areas of responsibility.

600-699 Pupil Transportation - the area of responsibility for transporting pupils attending public schools either by the school district staff and buses, or otherwise, between home and school or on trips related to school activities. It consists of such activities as providing and maintaining pupil transportation vehicles, driving buses or other pupil transportation vehicles, in-transit pupil supervision, attending loading and unloading points, dispatching buses, operating the bus-control radio and directing traffic. It can also include contracting for pupil transportation.

601 Transportation, General - the area of responsibility for providing those services which apply to two or more of the following Pupil Transportation areas of responsibility and which cannot be reasonably or accurately prorated among them. Include here the cost of additional or replacement vehicles.

611 Vehicle Operation - the area of responsibility for operating the school transportation vehicles. Salaries of operational supervisors and drivers are included.

621 Vehicle Servicing and Maintenance - the area of responsibility for maintaining public school pupil transportation vehicles (in as nearly new condition and original efficiency as possible) through repair, replacement of parts, servicing and care. (It consists of such activities as repairing vehicles, replacing vehicle parts, cleaning, painting, greasing, fueling, preventive maintenance, and inspection of vehicle for safety.)

631 Other Transportation Services - the area of responsibility for providing pupil transportation services which cannot be included in the previous Pupil Transportation areas of responsibility.

700-799 Community Services - the broad area consisting of those services, other than public school and adult education programs, provided by the school or school system for purposes relating to the community as a whole or some segment of the community. These include such services as community recreation programs, civic activities, public libraries, programs of custodial and detention care of children, community welfare activities, and services for nonpublic school pupils provided by the schools on a continuing basis.

701 Community Services, General - the area of responsibility for providing those services which apply to two or more of the following Community Service areas of responsibility, but which cannot reasonably or accurately be prorated among those areas.

711 Recreation - the area of responsibility for providing recreation programs for the community as a whole or for some segment of the community. It consists of such staff activities as organizing and supervising playgrounds, swimming pools, and other recreation programs for the community.

721 Civic Activities - the area of responsibility for providing services in connection with civic activities such as meetings of parent-teacher associations, public forums, and lectures, civil defense planning, and other civic-center activities.

731 Public Library Services - the area of responsibility for providing library facilities and/or services for the general public.

741 Custody and Detention Care of Children - the area of responsibility for providing programs for the custodial and detention care of children in residential or day school or child care centers which are not part of or directly related to the instructional program, and where the attendance of the children is not included in the attendance figures for the school system.

751 Welfare Activities - the area of responsibility for providing aid to indigent children (whether in nonpublic or public schools, or in neither) and adults, when such aid is restricted to indigent persons, or for providing services in connection with disaster relief.

761 Nonpublic School Activities - the area of responsibility for providing services to nonpublic school pupils. It consists of such activities as those involved in providing instructional services, attendance and social work services, health services, and transportation services, for nonpublic school pupils, where the attendance of the children is not included in the attendance figures for the public school system.

771 Other Community Services - the area of responsibility for providing community services which are not included in the previous areas of responsibility.

800-899 Outgoing Transfers - the area of responsibility for transactions involving payment to other school districts or administrative units in or out of the state and tuition to other than public schools.

801 Transportation Within the State - the area of responsibility for reimbursing another school district, private school, or individual for transportation services within the state, rendered for students residing within the paying district.

811 Transportation Outside the State - the area of responsibility for reimbursing another school district, private school, or individual for transportation services outside the state, rendered for students residing outside the paying district.

821 Tuition Within the State - the area of responsibility for reimbursing another school district, private school, or individual for instructional services within the state, rendered for students residing within the paying district.

831 Tuition Outside the State - the area of responsibility for reimbursing another school district, private school, or individual for instructional services outside the state, rendered for students residing outside the paying district.

900-999 Debt Service - the area of responsibility for transactions involving payment of principal and interest on long and short term debts, retirement of serial bonds, amounts paid into a sinking fund, and expenditures to a public schoolhousing authority.

911 Bond Redemption - the area of responsibility for redeeming the bonds and paying the interest on the bonds which have been issued previously to accommodate major remodeling or Facilities Acquisition/Improvement projects.

921 Long Term Loan - the area of responsibility for administering long term loans. Long term loans are loans which extend for more than 5 years from the date the loan was obtained and is not secured by serial or term bonds.

931 Short Term Loan - the area of responsibility for administering short term loans. Short term loans are loans which are payable within 5 years of the date of the loan, but not within the fiscal year of issue.

941 Current Loans - the area of responsibility for administering current loans. Current loans are those loans which are payable during the same fiscal year in which the money was borrowed.

#### OBJECTS DEFINITIONS

10 Salaries - the total amount paid before deductions for personal services rendered while on the payroll of the school district.

11 Certificated, Regular - the salary expenditures for personnel, employed on a regular full or part-time basis for the performance of a regular or continuing assignment, who have been certified by the SEA as authorized to perform the services for which a legal credential is required.

12 Certificated, Temporary - the salary expenditures for personnel, employed on a temporary full or part-time basis, who have been certified by the SEA as authorized to perform the services for which a legal credential is required. For example, a teacher hired to teach remedial reading to selected students for the last three months of the school year. Any teacher hired to supplement the work of the regular instructional staff, rather than replace personnel, would be classified as temporary.

13 Certificated, Substitute - the salary expenditures for personnel, employed on a full or part-time basis, who have been employed to replace regular or temporary certificated personnel who are absent from their assigned position. A person employed as a certified employee on a regular basis with regard to time and salary would still have salary coded as substitute if in fact his assignment is to substitute for other certificated persons who may be absent from their regular assignments.

16 Noncertificated, Regular - the salary expenditures for personnel, employed on a regular full or part-time basis for the performance of a regular or continuing assignment which does not require the services of personnel specifically authorized by the SEA.

17 Noncertificated, Temporary - the salary expenditures for personnel employed on a temporary full or part-time basis to perform assignments which do not require the services of personnel specifically authorized by the SEA.

18 Noncertificated, Substitute - the salary expenditures for personnel employed to perform services for noncertificated person-

nel who are absent from their assigned positions. A person employed as a noncertificated person on a regular basis with regard to time and salary would still have his earnings coded as substitute if in fact his assignment is to substitute for other noncertificated persons who may be absent from their regular assignments.

20 Employee Benefits - those expenditures (not withholdings or deductions from employee earnings) made to provide or assist in providing the various nonsalary or nonwage benefits for employees.

30 Supplies - material items of an expendable nature which are consumed, worn out, or deteriorated through use; or that lose their identity through fabrication or incorporation into a different or more complex unit or substance.

31 Textbooks - books obtained and furnished to students free of charge for use in certain classes, grades, or other particular student groups rather than for general school use.

32 Textbooks, resale or rental - books obtained and provided for students on a rental or sale basis primarily for use in certain classes, grades or other particular student groups rather than for general school use.

33 General Supplies - material items of an expendable nature, other than textbooks, library materials, or supplies for resale; or that lose their identity through fabrication or incorporation into a different or more complex unit or substance. Included are those general supplies needed to operate the libraries and those periodicals purchased for use in the classroom.

34 General Supplies for Resale - material items of an expendable nature, other than textbooks which are purchased for resale; or that lose their identity through fabrication or incorporation into a different or more complex unit or substance.

35 Library Materials - all books, other than textbooks, all periodicals, other than those periodical purchases for use in the classrooms, and all other instructional materials or supplies used in, furnished by, or controlled through the library.

40 Contracted Services - those services rendered to the school system through contract or other agreement with a firm, company, individual or other educational agency or institution, such service



being performed by a person or persons not on the school staff. Personnel records are not usually maintained by the school system for persons performing contract services, nor are these persons usually eligible for employee benefits that may accrue to staff members.

41 Consultation - services of an instructional or consultative nature performed by nonstaff personnel.

42 Other Nonstaff Personnel - services, other than by professional educators, provided by nonstaff personnel. Included would be off-duty policemen hired as parking lot attendants, personnel employed by secretarial and manpower agencies and contracted to the school system, etc.

43 Transportation - services contracted for total pupil transportation service, lease of school buses, lease of other transportation services; payments to employees excepted.

44 Tuition - payments to educational agencies for instructional services performed for students for whom the paying district is responsible.

45 Repairs - labor and/or material provided by other than own school personnel for maintenance or repairs to sites, buildings, fixed equipment and movable equipment.

46 Insurance - all insurance except that which may be classified as Employee Benefits.

47 Memberships - institutional memberships in accrediting associations, voluntary associations, etc.

48 Rentals - payments for the use of facilities or equipment.

49 Other Contracted Services (except utilities).

50 Contracted Services, Utilities.

60 Employee Travel - the cost of transportation, meals, lodging, and other expenses associated with employees traveling in the pursuit of school district business. Travel may be by school-owned, private or commercial vehicles.

61 Travel Within District - travel performed wholly within the school district.

62 Travel Outside District - travel which takes the employee outside the district. Include that within-district travel directly associated with a particular trip out of the district.

70 Facilities

71 Site Purchase - the purchase of any land by a school district. Include purchased land completely surrounded by land not owned by the school district as well as land abutting property previously owned by the school district.

72 Site Improvement - all work performed upon the site and its adjacent ways, after acquisition by the school district, with the exception of buildings.

73 Building Purchase - the construction or direct purchase of a building or an addition to a building. Includes contract price, legal fees, architectural fees and other costs directly associated with the building purchase.

74 Building Lease or Lease Purchase - record here expenditures for leased building regardless of whether title is retained by the lessor or transferred to the lessee upon fulfillment of the contract.

75 Building Improvement - construction other than original or additions which are made to alter or improve the building.

80 Equipment - a material item of a nonexpendable nature, such as built-in facility, a movable or fixed unit of furniture or furnishings, an instrument or apparatus, a machine (including attachments), an instructional skill-training device, or a set of small articles, whose parts are replaceable or repairable, the whole retaining its identity and utility over a period of time which is characteristic of, and definable for, items of its class.

## Chapter 800

### 800. INSTRUCTIONAL PROGRAMS SUBSYSTEM

#### 801. *INSTRUCTIONAL PROGRAMS SUBSYSTEM COMMITTEE*

The MSEIP Instructional Programs Subsystem Committee developed a subsystem that will serve the needs of SEA's for in-depth information about instruction in the local schools of that state. The dimensions included in this Subsystem are qualitatively oriented but deal specifically with quantitative data only. The intent was to provide a systematic means of identifying the entire curriculum of local schools as well as the content of these curricula. Consideration was also given to consistency with U.S. Handbook VI. Through the systematic approach encompassed in this Subsystem, SEA's can accommodate both identification and descriptions in detail of the courses, classes, and activities which make up the curriculum of a local school. The Subsystem itself, through integration with other subsystems, provides the means by which other operational applications of state agencies are accommodated, such as determining teacher assignment, class load, financing of programs, etc.

The Instructional Programs Subsystem Committee was organized in June 1966. Its executive officer was an MSEIP Central Staff Supervisor with a background in curriculum. A chairman was elected from the membership. The 13 committee members included a representative from the SEA of each participating state. The representatives, appointed by their chief state school officers, were SEA personnel whose positions were either in curriculum or closely related. The members of the Instructional Programs Subsystem Committee collectively agreed on the inclusion of data items for this Subsystem.

##### 801.1 Introduction

The Instructional Programs Subsystem is designed to provide a means of gathering and storing data concerning each course and section (class) held in each school in each district of an im-

plementing state. The data will be stored to allow easy and complete access to any part. Using the various index tables presented in Chapter 500 these data can be utilized with data from any or all of the other subsystem data files. The Subsystem will provide the ability to report the data collected about the course and section in a wide variety of formats and levels of summary and detail.

The implementation of this Subsystem will depend somewhat upon the degree of implementation of the other subsystems, particularly the Personnel and the Pupil Subsystems. Some data required by the Instructional Programs data file can be gathered by these other subsystems; however, all required data can be collected by the Instructional Programs Subsystem.

This chapter examines the data structure of the Instructional Programs file and records. The data items that make up the file's data record will be described and defined in complete detail. A sample report and possible multiple file uses will also be discussed.

## 802. *INSTRUCTIONAL PROGRAMS DATA FILE*

The Instructional Programs data file consists of a record for each course and section held in each organization in each school district. Each course/section data record identifies a particular course/section with both applicable course number assigned at the local level and a course title number which will be standard throughout the state. The course title, which is identified by a course title number, describes the subject being taught. It, along with the content descriptors, can be used to identify the contents of a particular course.

### 802.1 Instructional Programs Categories

The categories of Instructional Programs are delineated by the instructional area code of subject area. The instructional/subject area codes and definitions are derived from the U.S. Office of Education Handbook VI. A complete listing of these subject areas is included with the listing of the course and titles in section 806.3.

### 802.2 File Structure and Data Layout

The structure of the Instructional Programs data file is not complicated. All the records in the file are fixed length and have

the same format. The 24 data items that make up each course/section record on the Instructional Programs file are described on Chart 8-1. Each course/section record will include all these 24 data items, although several of the data item code structures can indicate that the item does not apply (DNA).

## 803. *FILE CONSTRUCTION CONSIDERATIONS*

The file will be constructed in three logical phases. The phases approximate the span of time from the initial development of the course to the actual registration of students in each course/section in the course. The three phases could occur at the same time or at separate times to fit the processes of each LEA. It is quite probable that the first two phases will occur simultaneously and be followed by the third. Using this approach, the process can be set up to fit the requirements of the individual states.

Curriculum Description Phase - this phase of the file development occurs when each course is first prepared and described. The phase serves simply to identify the course with both locally assigned course numbers and the course title number which will be standard identification on a statewide basis. This phase can occur several months before the beginning of the school year.

Assignment Phase - this phase can occur at the same time or any time after the initial phase, but before or very soon after the start of the school year. This phase begins the process of definition and description of the particular course. Part of the purpose of this phase can be to serve as the vehicle for teacher assignment. It further serves to describe in detail the course/section as to content, difficulty, types of students, etc. This phase of file construction actually facilitates the program of validation of teacher assignments that must be accomplished by the SEA.

Course/Section Phase - this phase has two purposes. The first is to indicate the number of pupils that will actually be registered in the course/section. The second purpose is to update or correct any of the data items in the particular course/section record that have been introduced in the other two phases. This phase of the final development occurs very soon after the beginning of the school year. If so desired, this phase may also be accomplished during the school year (at the beginning of each term) to give a more dynamic quality to the Instructional Programs file.

Due to the three phases of the file development, it would be possible to maintain two separate types of records in the Instructional Programs file. The first would contain data items concerning only the course and its instructional area. There would be only one of this type of record for the course/instructional area within the particular organization's part of the file.

The second type of record would serve each particular course/section given for the particular course/instructional area. There would be as many of these subordinate records as there were sections for the particular course. However, to simplify the file structure and to facilitate the use of the indexing system there will be one standard record format. This standard format will require a duplication of some of the data for each course; however, it is felt that the simpler mechanics of processing required for the maintenance of this file with the simpler record format outweigh the disadvantage of possible added storage requirements.

#### 803.1 Data Collection

The collection of the data for the construction of the Instructional Programs file will follow the three phases of the file development. The data collected in the first phase will concern only the particular instructional area and course and could be collected on a course description form. The actual contents of this collection document will be determined by the implementing state because of the variation in state requirements and prescribed course plans.

To collect the data required by the second phase of the file construction, a turnaround document could be used. A number of forms, one for each anticipated course/section in a particular organization, would be produced. This turnaround document would be completed (at the organization) at the time the instructor for the course/section was assigned. This turnaround document could be the teacher assignment document as well as the collection media for the more detailed information concerning the contents of the particular section. These completed turnaround documents would then be returned to the SEA and would be used not only for the updating of the Instructional Programs file, but also could be used for the validation of the teacher assignments.

The third phase of the file construction could be accomplished as a by-product of the student registration at the local level. The data of student registration could be transmitted from the local

organization to the SEA in either detail or summary form. The highest level summarization that would be allowed, however, would be the number of male pupils and the number of female pupils in a particular course/section. This phase could also be used to update the entire course/section record. This correction process would utilize a standard data correction document.

#### 803.2 File Sequencing

The principal sequence of the Instructional Programs data file will be determined by district as its major element; organization within district as the intermediate element; and course/section as its minor element. This course/section element will be constructed from the section number within the local course number within an instructional area. The majority of the processing within the Instructional Programs Subsystem will be serial. The major portion of the sequence - organization within district - is also the major sequence determining elements of the other four data files within the MSEIP System.

The Instructional Programs Index, described in Chapter 500, has been designed to allow direct access to each of the course/section records in the Instructional Programs data file. The Instructional Programs Index is sequenced on the same basis as the Instructional Programs data file.

### 804. *SAMPLE OUTPUT REPORT*

The data held in the Instructional Programs data file can be reported in total, in any combination of data items, in detail or summary, etc. The exact manner and content of a report based on this file depends on the uses to be made of the data. A detailed examination of the use of the data must be accomplished before the report is designed.

Figure 8-1 is a sample report based on the data in the Instructional Programs file. It is a hypothetical report that demonstrates the use of the data in the file. The report is to serve as a tool in the evaluation of specific instructional areas of the curriculum of a district.

The report shows each local course/section within each standard course title number for an organization within the district. This equates the locally assigned course number with the standard state-prescribed course number.

The content descriptors (up to seven) are listed for each course/section within an instructional area. The number of female pupils and of male pupils is also given for each course/section. Totals are generated for the number of pupils at the end of each course and each instructional area.

805. *MULTIPLE FILE USES*

The Instructional Programs Subsystem, like the other four subsystems, has been designed to provide data in a file that is structured to allow its data to be used in conjunction with other subsystem data. The principal sequence of the Instructional Programs data file (organization within district) is designed to facilitate this interfile usage. The system of index tables described in section 504.2 is a further means of interrelating data from several files.

Some possible uses of data from this file with data from other files could be: to correlate the background and education level of the teachers with the various course/sections they are in charge of; to indicate some individual data concerning the pupils in the course/sections within a specific instructional area across all districts in the state; and to attach cost figures to the above data correlations at the organization and instructional area level, if cost data is maintained to that level.

The above examples are just a few of the possible methods of using data from several files with the Instructional Programs file as the base file. The actual use of the data from the five files of the MSEIP System must be determined by each implementing state. The actual schedule of implementation, as well as the level of implementation of the five subsystems, is the final determinant of the data to be used and type of usage possible.

806. *DATA ITEM LISTINGS, DEFINITIONS, AND CODES*

This section will define the actual record that will be held in the Instructional Programs file for each course/section in each organization, in each district. Chart 8-1 is the list of data items in the Course/Section Record. Section 806.1 is the alphabetically sequenced definitions of each of these data items. Section 806.2 is the tabular listing of the codes used in some of these items.

FIGURE 8-1. INSTRUCTIONAL PROGRAMS SUBSYSTEM SAMPLE REPORT

		CURRICULUM REPORT			PUPILS			
		LOCAL COURSE/SECTION	CONTENT DESCRIPTORS	FEMALE	MALE	TOTAL		
District No. 152 - Fairview Corners							Page 6	
Organization No. 110 - Lincoln Elementary							Date: 15 November 1969	
Instructional Area - 05 - English Language Arts								
0040	Practical English	100-10	100-103-104-108 201-202-203	10	8	18		
		100-11	100-103-104-108 201-202-203	15	10	25		
		100-12	100-103-104-108 115-201-202	6	3	9		
			TOTALS	31	21	52		
0221	Fundamental Grammar	110-01	202-222-223	15	10	25		
		110-02	202-222-223 224	21	6	27		
		110-03	202-222-223 224	12	15	27		
			TOTALS	48	31	79		

806.1 Data Item Listing

The following chart lists data items in the Course/Section Record. Each Course/Section Record will include all these items, although several data item code structures can indicate that the item does not apply.

CHART 8-1. INSTRUCTIONAL PROGRAMS SUBSYSTEM COURSE SECTION DATA RECORD

FIELD NO.	DATA ITEMS (Definitions on pages 174 to 179, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
1	Instructional Area	2	N
2	Local Course Number	3	N
3	Section Number	2	N
4	Course Title Number	4	N
5	Sequential Year	1	N
6	Level of Difficulty	1	N
7	Year or Grade Level	4	N
8	Teacher Social Security Number	9	N
9	Site Number	3	N
10	Space Number	8	N
11	School Year	2	N
12	Term	1	N
13	Type of Program	2	N
14	Type of Pupils	1	N
15	Credit Units	3	N
16	Course Meets Requirements	1	N
17	Content Descriptors	21	N
18	Text Usage	1	N
19	Teaching Media Used	8	N
20	Number of Days	3	N
21	Minutes Per Week	3	N
22	Percent of Time in Lab.	2	N
23	Number of Male Pupils	3	N
24	Number of Female Pupils	3	N

806.2 Data Item Definitions and Codes

CONTENT DESCRIPTORS - a series of codes associated with each instructional area and used to describe the content of a

particular course/section. It is a three-digit code - a maximum of seven content descriptors (21 digits) is allowed per course/section. The complete list of content descriptors by instructional area is in section 806.3.

COURSE TITLE NUMBER - the codes that are correlated to the various subjects (courses) within each instructional area. The complete list of course titles and numbers is in section 806.3.

COURSE MEETS REQUIREMENT - a one-character code, as follows, to show what requirements are met by successful completion of the course.

Code-Requirement

- 0 - Does Not Apply
- 1 - State Requirement
- 2 - School District Requirement
- 3 - Both a School District and a State Requirement
- 4 - Required for Admission to Higher Education Institutions
- 5 - Other Requirements
- 6 - None

CREDIT UNITS - expressed in Carnegie units or their equivalent to be reported in whole and/or decimal fractions to the nearest hundredth. If credit units are inappropriate to a given class or activity, as in elementary schools, this item should be reported as 0 in all spaces. Example: A class in which 1½ Carnegie units are given is reported as 1510.

INSTRUCTIONAL AREA - these two-digit codes are the same as the subject area codes found in the U.S. Office of Education Handbook VI. The complete group of these codes is listed in section 806.3.

LEVEL OF DIFFICULTY - to better identify the course, the modifier which is often part of the course title is used; for example, Advanced English I. Selection is made from the following modifiers:

Code Modifier and Definition

- 0 - Does Not Apply
- 1 - Remedial - Remediation or re-teaching
- 2 - Basic - Below average
- 3 - Advanced - Above average

- 4— Honors or College - College advanced standing or gifted students
- 5— No Level Indicated - Heterogeneously organized level or not structured

LOCAL COURSE NUMBER - this three-digit number is applied to a course by the local district. This is the number used in the Instructional Programs Index, section 504.2.

MINUTES PER WEEK - the total amount of time normally scheduled each week for the class/activity, including classroom, laboratory, and related experiences. When classes do not meet rigid schedules, the responses should be the best average time. Example: A class which meets for six 55 minute periods per week (one of which might be a laboratory)— **3310**.

NUMBER OF DAYS - the number of days the class is scheduled to meet from the beginning day to the last day of the class, either in one term or more than one term, but not requiring more than one registration.

NUMBER OF FEMALE PUPILS - the enrollment of female pupils in the course/section.

NUMBER OF MALE PUPILS - the enrollment of male pupils in the course/section.

PERCENT OF TIME IN LABORATORY - that portion of total class time which is allocated to laboratory use. Time in laboratory has been defined as time spent in supervised or directed activities for credit such as science laboratory, shop laboratory, field trips, work experience, and other class-related activities which are not in the usual classroom but are part of the total class experience.

SCHOOL YEAR - the last two digits of the calendar year during which the school year ends. Example: class taught during the first semester from September 1967 to January 1968 is reported as **68**.

SECTION NUMBER - the locally assigned number used to identify a class or activity within a course (course/section). A class or activity is a group of students which meets for a specified period of time under the direction of a teacher.

SEQUENTIAL YEAR - if the course title includes a Roman numeral as part of the course title, it is recorded here; otherwise this item does not apply. Example: English I.

Code-Year

- 0— Does Not Apply
- 1— I
- 2— II
- 3— III
- 4— IV
- 5— V
- 6— VI

SITE NUMBER - this is the number that identifies the site on which the building(s) that house the organization have been constructed. For further explanation see section 606.2.

SPACE NUMBER - this number is the identifier of the space in which the course/section takes place. This number is actually an expansion of the Space Identification Number defined in the Facilities Subsystem Space Record. It includes Building Number (3 digits), Building Unit Code (1 digit), and Space Number (4 digits).

TEACHER SOCIAL SECURITY NUMBER - the social security number (or other assigned identification number) which is used in the personnel record. This is the teacher who has primary responsibility for the class or activity.

TEACHING MEDIA USED - identification of audiovisual, mechanical, or other teaching aid which is used in the class. That media which is used is selected from the list below. A maximum of eight is allowed per class/section.

Code-Media

- 0— Does Not Apply
- 1— Projectors
- 2— Record Players, Recorders, other Audio Equipment
- 3— Library Reference Materials
- 4— Chalk Boards
- 5— Manual Displays, for example, Flannel Boards, Posters, Graphs, Maps, Charts, Bulletin Boards, etc.
- 6— Electronic Computational Equipment
- 7— Laboratory Equipment
- 8— Mechanical Equipment

TERM - designates the period of time within the school year during which the class is taught.

Quarter (11 to 15 weeks during regular school year):

- 1 - Fall
- 2 - Winter
- 3 - Spring
- 4 - Fall, Winter and Spring
- 5 - Summer

Semesters (16 to 20 weeks during regular school year):

- 6 - Fall
- 7 - Spring
- 8 - Fall and Spring
- 9 - Summer
- 0 - Other

Example: Nine-month course in a school that uses semester basis is indicated as **8**.

TEXT USAGE - the use or lack of use of textbooks for class purposes is indicated as follows:

- 1 - One text is the primary basis of the class.
- 2 - Multitext is more than one text used as basis of the class.
- 3 - No text - class is not based on a textbook but uses other resources.

TYPE OF PROGRAM - to be used only as appropriate; if the class is eligible for special funds, either from state or federal sources.

00 - Does Not Apply

(Federally Funded-except ESEA and OEO)

- 01 - Vocational Agriculture
- 02 - Vocational Home Economics
- 03 - Distributive/Marketing
- 04 - Technical Education
- 05 - Trade and Industry
- 06 - Health Occupations
- 07 - Office Occupations
- 08 - Combination of two or more of above
- 09 - Vocational Rehabilitation

(State Specially Funded)

- 11 - Special Education
- 12 - Driver Education
- 13 - Gifted Education
- 14 - Compensatory Education
- 15 - Adult Basic Education
- 16 - Other State Funded

TYPE OF PUPILS - The group or groups into which individuals are classified when identified by professionally-qualified personnel.

- 0 - Normal range of pupils
- 1 - Gifted and talented
- 2 - Slow Learner
- 3 - Mentally handicapped
- 4 - Physically handicapped
- 5 - Socially and/or emotionally handicapped
- 6 - Culturally handicapped
- 7 - Pupils with learning difficulties
- 8 - Former dropouts
- 9 - Miscellaneous characteristics

YEAR OR GRADE LEVEL - grade(s) in school in which the course is taught. In ungraded schools, the level of the course content is equated to the grade which would be used in graded schools. If more than one grade level is included, the lower grade is reported in the first two spaces, the highest grade in the second two. When only one grade level is involved, 0 will be reported in the first two characters and the grade is reported only in the second two.

- |                     |                      |
|---------------------|----------------------|
| 00 - Does Not Apply | 07 - 7               |
| 20 - N              | 08 - 8               |
| 21 - K              | 09 - 9               |
| 01 - 1              | 10 - 10              |
| 02 - 2              | 11 - 11              |
| 03 - 3              | 12 - 12              |
| 04 - 4              | 13 - 13              |
| 05 - 5              | 14 - 14              |
| 06 - 6              | 15 - Adult Education |

### 806.3 Course Lists and Codes

These lists are for the course titles that were too extensive to be included with the item definitions in section 806.



Course Title - these coded data items are defined in section 806.2. In the lists, each set of course title numbers will be associated with its corresponding Instructional Area Code.

Code	Instructional Area	Code	Instructional Area
01	— Agriculture	20	— Cocurricular Activities
02	— Art	21	— Academic Cocurricular Activities
03	— Business Education	22	— Athletic Cocurricular Activities
04	— Distributive Education	23	— Music Cocurricular Activities
05	— English Language Arts	24	— School Services Cocurricular Activities
06	— Foreign Language	25	— Cocurricular Social Organizations
07	— Health Occupations		
08	— Health, Safety, P.E.	30	— Driver Education
09	— Home Economics		
10	— Industrial Arts	50	— Homeroom, Elementary (Nondepartmentalized)
11	— Mathematics	51	— Homeroom, Secondary (Nondepartmentalized)
12	— Music		
13	— Natural Science		
14	— Office Occupations		
15	— Social Studies		
16	— Technical Education		
17	— Trades and Industry		
18	— General Education (Pupil Supervision)		
19	— Exceptional Child Education		

The first two digits in the course title codes are the Instructional Area Codes above and should not be repeated when recording the course title.

## 01 — AGRICULTURE

Code Course Title

011000	— Agriculture (Nonvocational)
011100	— Agriculture Production (Nonvocational)
011110	— Animal Science (Nonvocational)
011120	— Plant Science (Nonvocational)
011121	— Crops (Nonvocational)
011122	— Soils (Nonvocational)
011130	— Farm Mechanics (Nonvocational)
011140	— Farm Business Management (Nonvocational)
011200	— Agricultural Supplies (Nonvocational)
011300	— Agricultural Mechanics (Nonvocational)
011310	— Agricultural Power and Machinery (Nonvocational)
011400	— Agricultural Products (Nonvocational)
011410	— Agricultural Food Products (Nonvocational)
011420	— Agricultural Non-food Products (Nonvocational)
011500	— Ornamental Horticulture (Nonvocational)
011540	— Landscaping (Nonvocational)
011600	— Agricultural Resources (Nonvocational)
011700	— Forestry (Nonvocational)
011900	— Other Agriculture (Nonvocational)
012000	— Agriculture (Vocational)
012100	— Agriculture Production (Vocational)
012110	— Animal Science (Vocational)
012120	— Plant Science (Vocational)
012121	— Crops (Vocational)
012122	— Soils (Vocational)
012130	— Farm Mechanics (Vocational)
012140	— Farm Business Management (Vocational)
012200	— Agricultural Supplies (Vocational)
012300	— Agricultural Mechanics (Vocational)
012310	— Agricultural Power and Machinery (Vocational)
012400	— Agricultural Products (Vocational)
012410	— Agricultural Food Products (Vocational)
012420	— Agriculture Non-food Products (Vocational)
012500	— Ornamental Horticulture (Vocational)
012540	— Landscaping (Vocational)
012600	— Agriculture Resources (Vocational)
012700	— Forestry (Vocational)
012900	— Other Agriculture (Vocational)

## 02—ART

Code	Course Title	Code	Course Title
020000—Art		020242—Ceramics	
020010—Applied Art		020243—Textile Design	
020020—Major Art		020244—Special Crafts	
020030—General Fine Art		020245—Arts and Crafts	
020101—Art History		020246—General Crafts	
020104—Art Appreciation		020247—General Crafts and Design	
020105—Art Appreciation and Cultural Art			
020106—Cultural Art		020250—Drawing	
020200—Art Studio		020251—Drawing and Designing	
020201—Art Talent		020252—Drawing and Painting	
020202—Art Media and Techniques		020253—Freehand Drawing	
020210—Design		020254—Life Drawing	
020211—Commercial Art		020255—Posters and Display	
020220—Commercial Design		020256—School Service Art	
020221—Graphics		020257—Lettering	
020223—Fashion Design		020260—Painting	
020224—Technical Illustrations		020261—Painting, Drawing and Sculpture	
020225—Interior Decorating		020262—Watercolors	
020230—Architectural and Industrial Design		020270—Photography	
020232—Industrial Design		020280—Printmaking	
020233—Interior Design		020290—Sculpture	
020235—Special Design			
020236—General Design			
020240—Crafts			
020241—Metal and Jewelry			

## 03—BUSINESS EDUCATION

Code	Course Title
030100—Accounting	
030107—Data Processing Accounting	
030200—Advertising	
030300—Bookkeeping	
030305—Machine Bookkeeping	
030307—Record Keeping	
030500—Business Arithmetic	
030600—Business Communications	
030601—Business English	
030800—Business Finance	
030801—Banking	
030900—Business Law	
031000—Business Machines	
031005—Office Machines	
031100—Business Psychology	
031300—Office Work Experience	
031301—Business Work-study	
031302—Cooperative Business Education	
031303—Cooperative Office Education	
031304—Vocational Office Education	
031400—Clerical Practices	
031700—Data Processing and Computer Operations	
031701—Data Processing (Instruction)	
031702—Data Processing Systems	
031704—Data Processing Programming	
031706—Data Processing Equipment Operation	
031707—Electric Accounting Machines	
032000—Exploratory Business Practice	
032100—Filing	
032300—General Business	
032601—Junior Business Training	
032602—Business Organization and Management	
032604—Merchandising	
032605—Office Procedures	
032800—Office Practices	
033300—Salesmanship	
033400—Shorthand	
033401—Machine Shorthand	
033402—Personal Use Shorthand	
033500—Typing	
033501—Personal Typing	

#### 04 — DISTRIBUTIVE EDUCATION

Code	Course Title
040010	Distributive Education
040014	Marketing
040015	Distribution
040016	Distribution and Marketing
040017	Work Experience
040018	Cooperative Work-study
040101	Advertising
040102	Apparel
040103	Automotive and Petroleum
040104	Finance and Credit
040105	Food Distribution
040106	Food Service
040107	General Merchandise
040108	Hardware, Building, and Farm Materials
040109	Home Furnishings
040110	Hotel and Lodging
040111	Insurance
040112	International Trade
040113	Management
040114	Marketing
040115	Mid-management
040116	Real Estate
040117	Retail Trade
040118	Transportation
040119	Wholesale Trade

#### 05 — ENGLISH LANGUAGE ARTS

Code	Course Title	Code	Course Title
050000	English	050242	Language Background
050010	English Fundamentals	050243	Introduction to Language
050020	English Seminar	050270	Principles of Language
050030	English Workshop	050271	Experimental Language
050040	Practical English	050272	Exploratory Language
050050	College Prep English	050273	Comparative Language
050060	Business English	050274	English as a Second Language
050100	Language Skills	050275	English for Foreigners
050110	Reading	050276	General Foreign Language
050111	Reading Readiness		
050113	Developmental Reading	050300	Literature
050116	Individualized Reading	050301	General Literature
050119	Reading for Enrichment	050310	American Literature
050120	Handwriting	050311	American Folklore
050124	Penmanship	050320	Bible Literature
050130	Spelling	050330	Classical Literature
050140	Language Arts	050334	Poetry
050141	Vocabulary	050337	Drama
050200	Linguistics	050340	English Literature
050220	Grammar	050341	Great Books
050221	Fundamental Grammar	050350	World Literature
050222	Language-linguistics	050353	Modern Literature
050223	Language Orientation	050368	Mythology
050240	History of the English Language	050369	Humanities
050241	Language Culture		

05— ENGLISH LANGUAGE ARTS (Continued)

Code	Course Title
050400	— Composition
050420	— Writing
050423	— Creative Writing
050425	— Writing Laboratory
050426	— Writing Workshop
050430	— Journalism
050439	— Publications
050500	— Speech
050511	— Public Speaking
050512	— Debate
050541	— Radio-Video
050600	— Dramatics
050610	— Stage and Drama
050700	— Library Science
050800	— Study Skills

06— FOREIGN LANGUAGES

Code	Course Title
060101	— Arabic (Classical)
060102	— Chinese (Classical)
060103	— Greek (Classical)
060104	— Hebrew (Classical/Biblical)
060105	— Latin (Classical)
060199	— Other Classical Languages
060201	— Arabic, Modern Standard
060202	— Arabic, Colloquial
060203	— Chinese, Modern Mandarin
060204	— Chinese, Cantonese
060205	— Czech
060206	— English as a Foreign Language
060207	— Finnish
060208	— French
060209	— German
060210	— Greek, Modern
060211	— Hawaiian
060212	— Hebrew, Modern
060213	— Italian
060214	— Japanese
060215	— Norwegian
060216	— Polish
060217	— Portuguese
060218	— Russian
060219	— Spanish
060220	— Swedish
060299	— Other Modern Foreign Languages

## 07— HEALTH OCCUPATIONS

Code Course Title

(Course title keys used herein represent occupational titles or clusters of such titles. Preparation for these occupations consists of subject matter content drawn from other subject areas, as well as content designed for and unique to the specific occupation.)

- 070100—Dental Services
- 070101—Dental Assistant
- 070102—Dental Hygienist
- 070103—Dental Laboratory Technician
- 070120—Clinical Laboratory Technician
- 070130—Dental Mechanics, Technician
  
- 070200—Medical Services
- 070201—Cytology Technician
- 070202—Histology Technician
- 070203—Medical Laboratory Assistant
- 070204—Nurse, Associate Degree
- 070205—Nurse, Practical (Vocational)
- 070206—Nurses Aide
- 070207—Biomedical Technician
- 070208—Hospital Food Service Supervisor
- 070209—Inhalation Therapy Technician
- 070210—Medical Records Technician
- 070211—Medical X-Ray Technician
- 070212—Optician
- 070213—Surgical Technician
- 070214—Occupational Therapy Assistant
- 070215—Physical Therapy Technician
- 070216—Medical Technician, General
  
- 070220—Nursing
- 070230—Medical Assistant
- 070240—Optometric Assistant
- 070241—Optometric Mechanics, Technician
- 070242—Radiological Health Technician
- 070243—Premedical
- 070244—Optical Mechanics
- 070245—Hospital Ward Aide
  
- 070301—Electroencephalograph Technician
- 070302—Health Education Technician

## 07— HEALTH OCCUPATIONS (Continued)

Code Course Title

- 070303—Home Health Aide
- 070304—Medical Emergency Technician
- 070305—Medical Psychiatric Social Worker Assistant
- 070306—Nuclear Medical Technician
- 070307—Orthoptic Technician
- 070308—Orthotist
- 070309—Radiation Therapy Technician
- 070310—Operating Room Technician
- 070320—Medical Library Assistant

## 08—HEALTH, SAFETY, PHYSICAL EDUCATION

Code Course Title

- 080100—Health
- 080105—Sex Education
- 080106—First Aid
- 080110—Health and Physical Education
- 080120—Health and Safety
  
- 080200—Safety
  
- 080400—Physical Education
- 080401—Adaptive Physical Education
- 080403—Physical Education, Coeducational
- 080406—Individual Sports
- 080409—Team Sports
- 080413—Physical Education, Female
- 080419—Varsity Sports, Female
- 080423—Physical Education, Male
- 080429—Varsity Sports, Male
  
- 080500—Recreation
  
- 080600—R.O.T.C. Drill

## 09—HOME ECONOMICS

Code Course Title

- 090000—Home Economics (Nonvocational)
- 091001—Homemaking (Nonvocational)
- 091010—Comprehensive Home Economics (Nonvocational)
- 091020—Child Development (Nonvocational)
- 091030—Clothing and Textiles (Nonvocational)
- 091031—Dressmaking (Nonvocational)
- 091032—Costume Design/Selection (Nonvocational)
- 091033—Glovmaking (Nonvocational)
- 091034—Millinery (Nonvocational)
- 091035—Tailoring (Nonvocational)
- 091036—Weaving (Nonvocational)
- 091040—Consumer Education (Nonvocational)
- 091060—Family Relations (Nonvocational)
- 091061—Family Living (Nonvocational)
- 091062—Modern Family Living (Nonvocational)
- 091063—Personal Family and Social Relations (Nonvocational)
- 091064—Personal Living (Nonvocational)
- 091065—Training for Marriage (Nonvocational)
- 091070—Foods and Nutrition (Nonvocational)
- 091071—Nutrition (Nonvocational)
- 091080—Home Management (Nonvocational)
- 091090—Housing and Home Nursing (Nonvocational)
- 091110—Health and Home Nursing (Nonvocational)
- 091120—Home Economics Seminar (Nonvocational)
- 091150—Home Services (Nonvocational)
  
- 092000—Home Economics (Vocational)
- 092001—Homemaking (Vocational)
- 092010—Comprehensive Home Economics (Vocational)
- 092020—Child Development (Vocational)
- 092030—Clothing and Textiles (Vocational)
- 092031—Dressmaking (Vocational)
- 092032—Costume Design and Selection (Vocational)
- 092033—Glovmaking (Vocational)
- 092034—Millinery (Vocational)
- 092036—Weaving (Vocational)
- 092040—Consumer Education (Vocational)
- 092060—Family Relations (Vocational)
- 092061—Family Living (Vocational)
- 092062—Modern Family Living (Vocational)

09—HOME ECONOMICS (Continued)

Code	Course Title
092063	— Personal Family and Social Relations (Vocational)
092064	— Personal Living (Vocational)
092065	— Training for Marriage (Vocational)
092070	— Foods and Nutrition (Vocational)
092071	— Nutrition (Vocational)
092080	— Home Management (Vocational)
092090	— Housing and Home Furnishings (Vocational)
092110	— Health and Home Nursing (Vocational)
092150	— Home Services (Vocational)

10—INDUSTRIAL ARTS

Code	Course Title	Code	Course Title
100000	— Industrial Arts	100403	— Electronics
100010	— Industrial Arts Theory	100404	— Radio Technical Electricity
100020	— Industrial Arts Shop	100500	— Elementary Industrial Arts
100030	— Industrial Arts Laboratory	100502	— Handicrafts
100100	— Construction	100600	— General I. A. Shop
100101	— Pre-engineering	100604	— Applied Shop
100102	— Pre-engineering Shop	100700	— Graphics
100110	— Carpentry	100701	— Graphic Arts
100120	— Cabinetmaking	100702	— Photography
100200	— Crafts	100704	— Printing
100201	— Art Metals Crafts	100705	— Graphic Arts Industries
100202	— Ceramics Crafts	100706	— Lettering
100204	— Plastics Crafts	100800	— Home Mechanics
100205	— Leather Crafts	101200	— Industrial Materials and Processes
100206	— Textiles Crafts	101201	— Fluid Power
100207	— Creative Crafts	101202	— Industrial Materials
100208	— Upholstery	101204	— Industrial Processes
100300	— Drafting	101210	— Industrial Survey
100301	— Drafting Architectural	101300	— Manufacturing
100305	— Drawing, Engineering	101310	— Group Manufacturing
100307	— Drawing, Mechanical	101320	— Industrial Technology
100309	— Drawing, Machine	101330	— Job Orientation
100319	— Drawing, Shop	101400	— Metalworking
100329	— Blueprints	101402	— Machine Shop
100339	— Patternmaking	101405	— Welding
100400	— Electricity and Electronics		
100401	— Electricity		

## 10—INDUSTRIAL ARTS (Continued)

Code	Course Title
101406	General Metal Shop
101407	Foundry
101500	Plastics
101600	Power Machines
101601	Auto Mechanics
101603	Mechanics
101604	Transportation
101605	Aeronautics
101606	Gasoline Engines
101607	Machines
101608	Machine Technology
101609	Millwork
101800	Services
101801	Surveying
101802	Surveying Stress and Design
101803	Stagecraft
101804	Gardening
101900	Woods
101901	Woodworking

## 11—MATHEMATICS

Code	Course Title
110000	Mathematics
110091	Accelerated Mathematics
110092	Higher Mathematics
110093	Intensive Mathematics
110094	Integrated Mathematics
110095	Modern Mathematics
110096	Scientific Mathematics
110097	Set Theory Mathematics
110100	Arithmetic
110300	Algebra
110305	College Algebra
110306	Advanced Algebra and Solid Geometry
110390	Modern Algebra
110400	Algebra and Trigonometry
110500	Applied Mathematics
110501	Business Arithmetic
110502	Consumer Mathematics
110503	Shop Mathematics
110590	Industrial Arts Mathematics
110600	Calculus
110700	Calculus with Analytic Geometry
110800	Computer Mathematics
110900	Functional Mathematics
111100	General Mathematics
111113	Algebra and Statistics
111200	Geometry
111201	Analytic Geometry
111202	Plane Geometry
111203	Plane and Solid Geometry
111204	Solid Geometry
111290	Integrated Geometry
111300	Analysis
111400	Liberal Arts Mathematics
111500	Probability and Statistics
111600	Trigonometry
111690	Geometry and Trigonometry
111901	Beta Mathematics
111902	Math Analysis
111904	School Math Study Group (SMSG)
111905	University of Illinois Committee School Math (UICSM)



## 12—MUSIC

Code	Course Title
121000	— General Music
121010	— Public School Music
122000	— Music Literature and/or History
122020	— Music Appreciation
123000	— Music Theory
123020	— Theory and Harmony
124000	— Vocal Music
124010	— Choir
124011	— Chorus, Female
124012	— Chorus, Male
124013	— Chorus, Mixed
124020	— Voice
124022	— Applied Music, Private Vocal
124030	— Choral Ensemble
124111	— Glee Club, Female
124112	— Glee Club, Male
124113	— Glee Club, Mixed
125000	— Instrumental Music
125010	— Band
125011	— Concert Band
125012	— Marching Band
125013	— Stage Band
125014	— Drum and Bugle Corps
125015	— Majorette - Twirling
125020	— Orchestra
125030	— Instrumental Ensemble
125040	— Instrumental Techniques
125042	— Applied Music, Private Instrumental

## 13—NATURAL SCIENCES

Code	Course Title	Code	Course Title
132000	— Biological Science	133105	— Chemical Bond Approach
132001	— Biology	133110	— Applied Chemistry
132010	— Applied Biology	133113	— Inorganic Chemistry
132020	— Biology Laboratory	133120	— Chemistry Laboratory
132030	— Marine Biology	133122	— Organic Chemistry
132040	— Radiation Biology	133125	— Qualitative Analysis
132050	— Laboratory Research Biology	133126	— Quantitative Analysis
132060	— Biological Science	133130	— Chemistry Study
132070	— Biological Science Curriculum Study (BSCS)	133200	— Physics
132100	— Botany	133210	— Applied Physics
132200	— Microbiology	133219	— Nuclear Science
132300	— Zoology	133220	— Physics Laboratory
132401	— Anatomy	133221	— Optics
132420	— Physiology	133250	— Laboratory Research Physics
132511	— Ecology	133252	— Physics, Physical Science Study Committee (PSSC)
132600	— Science and Health	133300	— Science of Photography
132812	— Entomology		
133000	— Physical Science	134000	— Earth-Space Science
133001	— General Science	134001	— Aeronautics
133008	— Electricity	134005	— General Earth Space Science
133009	— Electronics	134010	— Applied Earth Science
133010	— Applied Science		
133019	— Nuclear Science		
133033	— Thermodynamics		
133091	— Practical Science		
133100	— Chemistry		

13—NATURAL SCIENCES (Continued)

Code	Course Title
134100	— Astronomy
134101	— Space Science
134105	— Cosmology
134200	— Geology
134201	— Conservation
134210	— Hydrology
134215	— Paleontology
134216	— Physical Geography
134217	— Soil Science
134300	— Meteorology
134304	— Climatology
134400	— Oceanography

14—OFFICE OCCUPATIONS (see Business Education)

Preparation for these occupations consists of subject matter content drawn from other subject areas. To use this subject area for reporting, choose course title keys from Business Education, but change the code number of these course title keys as follows: Drop the first two digits of the Business Education course code (03) and substitute the Office Occupations course code (14). Content descriptors can be used from Business Education without any change, or they can be omitted entirely.

Example: To report accounting, course title key—030100 as an Office Occupation course, drop the digits 03 and use 14 instead. The code number then becomes 140100 for accounting as an Office Occupation course.

15—SOCIAL SCIENCES

Code	Course Title	Code	Course Title
150000	— Social Science	150727	— Commercial Geography
150100	— Anthropology	150751	— U.S. Geography
150200	— Area Studies (Multidisciplinary)	150752	— World Geography
150214	— Western Europe	150800	— History
150300	— Citizenship	150810	— American History
150301	— Community Civics	150811	— American History and World Backgrounds
150400	— Conservation	150812	— North American History
150500	— Consumer Education	150813	— Northwest History
150600	— Economics	150814	— Canadian History
150603	— Consumer Economics	150820	— Local History
150605	— Money and Banking	150830	— Modern History
150607	— Principles of Economics	150831	— Contemporary History
150608	— Occupations	150832	— Modern European History
150609	— Occupational Planning	150840	— Non-Western History
150699	— Economic Problems	150841	— Old World History
150700	— Geography	150842	— Oriental History
150702	— Human Geography	150843	— Russian History
150703	— Physical Geography	150844	— Far Eastern History
150723	— Economic Geography	150845	— European History
150724	— Government and Geography	150846	— English History
		150847	— Eastern Hemisphere

15—SOCIAL SCIENCES (Continued)

Code	Course Title	Code	Course Title
150848	— Asian History	150893	— Negro History
150849	— Latin America	150894	— Economic History
150850	— State History	150895	— Ethnic History
150851	— Regional History	150900	— Philosophy
150853	— Southwest History	150904	— Logic
150854	— History of the South	150990	— Law
150855	— New England History	151000	— Political Science
150860	— United States History	151001	— American Government
150861	— Colonial History	151002	— Comparative Systems
150862	— American Studies	151004	— World Problem
150870	— Western Civilization	151005	— International Relations
150871	— Western European History	151008	— Government
150872	— Western Hemisphere	151009	— Problems
150880	— World Civilization	151010	— American Contemporary Problems
150881	— World Cultures	151011	— American Institutions
150882	— Ancient History	151012	— American Studies
150883	— Ancient-Medieval History	151013	— Problems of Democracy
150884	— Bible History	151014	— State's Government
150885	— Medieval History	151015	— U.S. Government
150886	— History of Civilization	151040	— Contemporary Civilization
150890	— World History	151100	— Psychology
150891	— History of Nations	151101	— Developmental Psychology
150892	— Industrial History	151102	— Educational Psychology

## 15—SOCIAL SCIENCES (Continued)

Code	Course Title
151103	— General Psychology
151105	— Social Psychology
151200	— Sociology
151201	— Social Studies
151202	— Social Studies Seminar
151205	— Social Problems
151242	— Family Life
151243	— Religion

## 16—TECHNICAL EDUCATION

Code	Course Title	Code	Course Title
160100	— Engineering Technology	160163	— Building and Contracting Technology
160101	— Aeronautical Technology	160169	— Safety Engineering Technology
160102	— Agricultural Technology	160300	— Health Technology
160103	— Architectural Technology	160400	— Office Related Technology
160104	— Automotive Technology	160502	— Commercial Pilot Training
160105	— Chemical Technology	160503	— Fire and Safety Technology
160106	— Civil Engineering Technology	160504	— Forestry Technology
160107	— Electrical Technology	160505	— Marine Technology
160108	— Electronics Technology	160901	— Mortuary Technology
160109	— Electro-mechanical Technology	160902	— Television Production
160110	— Air Conditioning, Refrigeration, and/or Heating Mechanics	160903	— Technical Writing
160111	— Industrial Technology	160904	— Radiological Technology
160112	— Instrumentation Technology	160905	— Aerospace Technology
160113	— Mechanical Design/Production	160906	— Communications Technology
160114	— Metallurgical Technology	160907	— Technical Training, other
160115	— Nuclear Technology	160908	— Meteorological Technology
160116	— Petroleum Technology	161000	— Data Processing Technology
160118	— Microminization Technology	161010	— Computer Programming
160119	— Drafting Design Technology	161020	— Systems Analysis

17—TRADES AND INDUSTRY (INDUSTRIAL EDUCATION)

Code	Course Title	Code	Course Title
170100	— Air Conditioning	171008	— Glazing
170102	— Heating	171009	— Cement Finishing
170200	— Appliance Service and Repair	171010	— Steam Fitting
170301	— Automotive Body Repair and Refinishing	171020	— Roofing
170302	— Automotive Mechanics	171100	— Custodial Service and Building Maintenance
170400	— Aircraft M. & Op.	171200	— Diesel Mechanics
170401	— Aviation Mechanics	171300	— Drafting
170402	— Aviation, Ground Op.	171301	— Mechanical Drafting
170409	— Aviation Sheet Metal	171302	— Structural Drafting
170500	— Blueprint Reading and Estimation	171303	— Electrical Drafting
170600	— Business Machines Mechanics	171311	— Patternmaking
170700	— Commercial and Advertising Art	171401	— Electricity, Industrial
170701	— Interior Decorating	171402	— Electric Line Service
170800	— Fishing, Commercial	171403	— Electric Motor/General Mechanics
170900	— Photography and Photo-Finishing	171500	— Electronics
171000	— Building and Trades	171501	— Telephone Installation and Repair Service
171001	— Carpentry	171503	— Radio and Television Service
171002	— Electric Wiring	171504	— Radio Communication
171003	— Heavy Equipment	171505	— Television Studio M. & Op.
171004	— Brick Masonry, Blocklaying, Tile Setting	171509	— Electronic Mechanics and Assembly
171005	— Painting and Decorating	171512	— Computer Maintenance
171006	— Plastering		
171007	— Plumbing and Pipe Fitting		

17—TRADES AND INDUSTRY (Continued)

Code	Course Title	Code	Course Title
171600	— Dry Cleaning and Laundry	173000	— Refrigeration
171700	— Industrial Supervision and Foremanship	173100	— Gasoline Engine Mechanics
171900	— Graphic Arts	173200	— Petroleum and Natural Gas
171901	— Lithography	173210	— Boilermaking
171902	— Engraving	173220	— Water and Sewage Plant Operation
171903	— Printing	173300	— Garment Making, Commercial
171904	— Mechanical Shop Drawing	173301	— Needle Trades
171910	— Cartography	173302	— Tailoring
172100	— Instrument Repair	173400	— Shoe Repair
172102	— Watchmaking	173500	— Upholstery
172200	— Maritime Occupations	173600	— Woodworking
172300	— Iron Work	173601	— Cabinet Making, Millwork, and Furniture Making
172301	— Foundry	173609	— Furniture Repair
172302	— Machine Shop Work	174000	— Mechanics
172303	— Power Machine Tool Operation	174010	— Hydraulic Mechanics
172304	— Tool and Die Making	174020	— Maintenance and Op. Mechanics
172305	— Sheet Metal Work	174030	— Machinery Repair
172306	— Welding	174310	— Railroad Engineering and Firing
172309	— Lathing	174320	— Railroad Telegraphy and Station Agency Work
172310	— Millwrighting	174330	— Railroad Train Work
172400	— Metallurgy	174600	— Trade Science
172500	— Nucleonics	175100	— Landscaping and Industrial Nursery Work
172601	— Barbering	175200	— Surveying
172603	— Cosmetology	176000	— Transportation Trades
172640	— Massage		
172700	— Plastics		
172800	— Public Service		
172801	— Fire Fighting		
172802	— Law Enforcement		
172900	— Food Trades		
172903	— Meat Cutting		
172920	— Commercial Cooking and Baking		

17—TRADES AND INDUSTRY (Continued)

Code	Course Title
176101	Vehicle Driving, Commercial
176200	Navigation
179000	Exploratory Voca- tional

18—GENERAL ELEMENTARY EDUCATION AND GEN-  
ERAL SECONDARY EDUCATION

Code Course Title

(Handbook VI—identifies “selected types of instructional or-  
ganization for carrying on instruction.”)

- 180100—General Elementary Years and Grades
- 180101—Early Elementary Years or Grades, Early Child-  
hood Education
- 180102—Intermediate Elementary Level
- 180103—Upper Elementary Level
- 180111—Nursery-Kindergarten Level
- 180112—Primary Level
- 180119—Other Early Elementary Organization
- 180199—Other Plan for General Elementary Year or Grades
  
- 180200—Middle School Level
- 180300—General Secondary Years or Grades
- 180301—Junior High School Level
- 180302—Senior High School Level
- 180399—Other Secondary School Level (see Code 5X for Non-  
departmentalized Homerooms)

Courses/Activities Not Elsewhere Classified

- 180410—Cadets
- 180411—Medical Cadet Corps
- 180412—Military Science
- 180413—R. O. T. C.
- 180420—Cooperative Program
- 180421—Special Group Instruction
- 180422—Work Experience
- 180430—Guidance
- 180431—Group Guidance
- 180440—School Service
- 180450—Teacher Training, In-service

## 19—EXCEPTIONAL CHILD EDUCATION/DIFFERENTIALIZED CURRICULUM

Code Course Title

- 190000— Special Education
- 190100— Special Education Communications
- 190500— Exceptional Child Education
- 190900— Differentiated Curriculum, General
  
- 191000— Intellectually Disabled (Mentally Handicapped)
- 191010— Educable Mentally Handicapped
- 191020— Trainable Mentally Handicapped
- 191030— Learning Disabilities
  
- 192000— Physically Handicapped
- 192010— Speech Handicapped
- 192030— Physically Handicapped, Crippled
- 192040— Physically Handicapped, Aurally
- 192050— Physically Handicapped, Visually
- 192060— Multihandicapped
- 192070— Multihandicapped, Deaf-Blind
- 192071— Multihandicapped, Deaf-Mentally Handicapped
- 192072— Multihandicapped, Blind-Mentally Handicapped
- 192073— Multihandicapped, Crippled and Deaf or Blind
- 192080— Physical Therapy
  
- 193010— Emotionally Handicapped
  
- 194000— Varying Exceptionalities
- 194010— Occupational Therapy
- 194050— Special Services
  
- 195000— Socially and Emotionally Handicapped
- 195010— Culturally Handicapped
  
- 199000— Intellectually Superior (Mentally Gifted)

## 20—COCURRICULAR ACTIVITIES

Activities which are cocurricular are noncredit and are usually related to the total curriculum either during or outside of the regular scheduled school program.

Each of the five kinds of cocurricular activities, Academic, Athletic and Sports, Music, Service and Social are coded by groups. Code 20 should be used only when the activities are so broadly defined that they cannot be placed in one of these groups or when they involve several groupings.

## 21—COCURRICULAR ACTIVITIES, ACADEMIC

Code	Course Title
210101	— Art Club
210102	— Biology Club
210103	— Boys Nation
210104	— Debate Club
210105	— Distributive Education Clubs of America
210106	— Dramatics Club
210107	— Family Living Club
210108	— 4-H Club
210109	— Foreign Language Club
210110	— Future Business Leaders of America
210111	— Future Farmers of America
210112	— Future Homemakers of America
210113	— Future Teachers of America
210114	— Girls Nation
210115	— International Relations Club
210116	— Journalism Club
210117	— Junior Achievement, Incorporated
210118	— Literary Club
210119	— Mathematics Club
210120	— Music Club
210121	— National Honor Society (NEA)
210122	— National Junior Honor Society (NEA)
210123	— National Thespian Society
210124	— Photography Club
210125	— Quill and Scroll
210126	— Science Club
210127	— Science Fair, International
210128	— Social Studies Club
210129	— Speech Club
210130	— Student Nurses Association
210131	— Trades and Industrial Education Club
210132	— Voice of Democracy
210133	— Young Farmers Association
210199	— Other Academic Cocurricular Activities

## 22—COCURRICULAR ACTIVITIES, ATHLETICS AND SPORTS

Code	Course Title
220201	— Aquatics (includes swimming)
220202	— Archery
220203	— Badminton
220204	— Baseball
220205	— Basketball
220206	— Bowling
220207	— Cheerleading
220208	— Cross Country
220209	— Field Hockey
220210	— Football
220211	— Girls Athletic Association
220212	— Golf
220213	— Gymnastics
220214	— Riflery
220215	— Snowskiing
220216	— Soccer
220217	— Softball
220218	— Tennis
220219	— Track and Field
220220	— Twirlers
220221	— Volleyball
220222	— Wrestling
220299	— Other Athletic and Sport Cocurricular Activities



## 23—COCURRICULAR ACTIVITIES, MUSIC

Code	Course Title
230301	— Combo
230302	— Concert Band
230303	— Dance Band
230304	— Drum and Bugle Corps
230305	— Marching Band
230306	— Pep Band
230307	— Choir
230308	— Chorus
230309	— Instrumental Ensemble
230310	— Voice Ensemble
230311	— Glee Club
230312	— Music Production
230313	— Orchestra
230399	— Other Music Cocurricular Activities

## 24—COCURRICULAR ACTIVITIES, SERVICE

Code	Course Title
240401	— Audiovisual Assistant
240402	— Class Officer
240403	— Film Projectionist
240404	— Laboratory Assistant
240405	— Library Assistant
240406	— National Junior Red Cross
240407	— National Student Traffic Safety Program
240408	— Office Assistant
240409	— Poster and Display Club
240410	— School Newspaper Photographer
240411	— School Safety Patrol
240412	— School Service Club
240413	— Student Council, National Association of
240414	— Student Union and/or Student Activity Center
240499	— Other School and/or Public Service Ccurricular Activities

## 25—COCURRICULAR ACTIVITIES, SOCIAL AND OTHER

Code	Course Title
250501	— Boy Scouts of America
250502	— Camp Fire Girls
250503	— Creative Dance
250504	— Cub Scouts
250505	— Folk Music Club
250506	— Girls Recreation Association
250507	— Girl Scouts of the U.S.A.
250508	— Hi-Y
250509	— Hobby Club
250510	— Junior Hi-Y
250511	— Junior Tri-Hi-Y
250512	— Stamp Club
250513	— Tri-Hi-Y
250514	— Y.M.C.A.
250515	— Y-Teens
250516	— Y.W.C.A.
250599	— Other Social Cocurricular Activities

## 30—DRIVER EDUCATION

Code	Course Title
300300	— Driver Education
300304	— Driver Education, Behind the Wheel
300310	— Driver Education, Classroom
300320	— Driver Education, Simulator Trainee

## 5X—NONDEPARTMENTALIZED

When the instructional program or segments of it are nonde-  
partmentalized and cannot appropriately be reported by sub-  
ject area, they can be reported by using these codes. Since these  
programs are usually organized around a homeroom, that is  
the terminology employed here to refer to them.

Code Course Title

500000—Homeroom, Elementary

510000—Homeroom, Secondary

## 806.4 Content Descriptor Lists and Codes

These lists are for the content descriptors, of the data items, that  
were too extensive to be included with the item definitions in  
section 806.

Content Descriptors - these coded data items are defined in sec-  
tion 806.2 and are used to describe the content of a course/  
section. The use of content descriptors in the Instructional Pro-  
grams Subsystem is predicated on the assumption that they  
provide a means of describing the curricula found in schools  
today. The scope of coverage is from nursery (prekindergarten)  
through grade 14 or equivalent.

Several subjects are unusual enough that a different means of  
describing them is employed. Because the content of certain  
areas is largely occupationally oriented, the classifications used  
in Handbook VI identify only clusters of occupations rather  
than discrete subject matter content. Therefore, content descriptors  
are not given for the Areas of Industrial Education, Technical  
Education, Office Occupations, Health Occupations or Cocurricu-  
lar Activities.

The Instructional Area of Foreign Languages is analogous to  
the occupationally oriented areas of vocational education. Hand-  
book VI does not provide for description of content such as  
skill development or other discrete aspects of each language.  
Instead, only the names of specific languages are given. There-  
fore, the content descriptors used here are not attributable to  
the Handbook. In several other subject areas handbook terminol-  
ogy has been supplemented where, in the judgment of the In-  
structional Programs Subsystem Committee, obvious inadequa-  
cies existed.

The following lists of Content Descriptor Codes are organized  
by Instructional Area.

## 01 — AGRICULTURE

### Code    Content Descriptors

- 100 — Production Agriculture
- 101 — Animal Science
- 102 — Plant Science
- 103 — Farm Mechanics
- 104 — Farm Business Management
  
- 200 — Agricultural Supplies
- 201 — Agricultural Chemicals
- 202 — Livestock Feeds
- 203 — Seeds
- 204 — Fertilizers
  
- 300 — Agricultural Mechanization
- 301 — Agricultural Power and Machinery
- 302 — Agricultural Structures and Conveniences
- 303 — Soil and Water Management
- 304 — Agricultural Mechanics Skills
- 306 — Agricultural Electrification
- 307 — Metal Working Shop
- 308 — Woodworking Shop
  
- 400 — Agricultural Products
- 401 — Food Products
- 499 — Other Agricultural Products
  
- 500 — Ornamental Horticulture
- 501 — Arboriculture
- 502 — Floriculture
- 503 — Greenhouse Management
- 504 — Landscaping
- 505 — Nursery Operation
- 506 — Fine Turf Management
  
- 600 — Agricultural Resources
- 601 — Forests
- 602 — Recreation Resources
- 603 — Soil
- 604 — Wildlife
- 605 — Water
- 606 — Air
  
- 900 — Other Agriculture

## 02 — ART

### Code    Content Descriptors

- 101 — Art History
- 102 — Art Theory
- 103 — Humanities, Including Performing Arts
  
- 200 — Art Studio
  
- 210 — Basic Design
- 211 — Two-D Design
- 212 — Three-D Design
  
- 220 — Commercial Design
- 221 — Advertising and Graphic Arts
- 222 — Design for Performing Arts
- 223 — Fashion Design
- 224 — Technical Illustration
  
- 230 — Environmental Design
- 231 — Architectural Design
  
- 240 — Crafts
- 241 — Metalwork and Jewelry
- 242 — Pottery Forming and Ceramics
- 243 — Textiles
- 244 — Metal Finishing, Casting, Forging, Soldering, and/or Brazing
- 245 — Lapidary
- 246 — Glazing
- 247 — Weaving, Hooking, and/or Stitchery
- 248 — Wood and Leather Crafts
- 249 — Other Crafts
  
- 250 — Drawing
- 251 — Contour Drawing
- 252 — Gesture Drawing

### Code    Content Descriptors

- 253 — Shading
- 254 — Linear Perspective
- 255 — Other Drawing
  
- 260 — Painting
- 261 — Oil Painting
- 262 — Watercolor
- 263 — Tempera Painting
- 264 — Casein Painting
- 265 — Using Synthetic Paints
  
- 270 — Photography
- 271 — Film Development and Production
- 272 — Photomontage
- 273 — Camera Mechanics
- 274 — Motion Pictures
- 275 — Photography Lighting
  
- 280 — Printmaking
- 281 — Intaglio
- 282 — Relief
- 283 — Planographics
- 284 — Stencil
- 285 — Etching, Engraving and/or Lithography
- 286 — Wood and Linoleum Arts
- 287 — Lettering and/or Calligraphy
- 288 — Serigraphy (silk screen)
  
- 290 — Sculpture
- 291 — Casting Sculpture
- 292 — Sculpture Media
  
- 900 — Other Art

03—BUSINESS EDUCATION

Code	Content Descriptors	Code	Content Descriptors
010	— Accounting	140	— Clerical Practices
011	— Accounting Principles	170	— Data Processing and Computer Operation
012	— Accounting Systems	171	— Introduction to Data Processing
013	— Advanced Accounting	171	— Data Processing Systems
014	— Auditing	174	— Computer Programming
015	— Cost Accounting	175	— Computer Operation - Introduction
016	— C.P.A. Review	176	— Processing Equipment Operation
017	— Data Processing Accounting	179	— Other Data Processing
018	— Government and Institutional Accounting	200	— Exploratory Business
019	— Intermediate Accounting	210	— Filing
020	— Managerial Accounting	220	— Filing and Record Control
021	— Payroll Accounting	230	— General Business or Introduction to Business
023	— Secretarial Accounting	240	— Insurance
024	— Tax Accounting	250	— Investments
030	— Bookkeeping	260	— Management Principles
035	— Machine Bookkeeping	261	— Business Principles
036	— Payroll Record Keeping	262	— Business Organization and Management
037	— Record Keeping	263	— Labor Management Relations
040	— Budget Control	280	— Office Practice
050	— Business Arithmetic	290	— Personal Development/ Human Relations
060	— Business Communications	300	— Personal Finance
062	— Report Writing	330	— Salesmanship Principles
070	— Business Ethics	339	— Other Salesmanship
080	— Business Finance	340	— Shorthand Stenographic and Secretarial
090	— Business Law	341	— Machine Shorthand
100	— Business Machines		
103	— Calculating and Listing Machines		
104	— Duplicating Machines		
109	— Other Business Machines		
110	— Business Psychology		
120	— Business Statistics		
130	— Business Work Experience		

03—BUSINESS EDUCATION (Continued)

Code	Content Descriptors
342	— Personal Shorthand
343	— Shorthand Theory
344	— Specialized Shorthand Terminology and Transcription
345	— Shorthand Dictation
346	— Shorthand Speed Building
347	— Shorthand Transcription
348	— Machine Transcription
349	— Secretarial Practice
350	— Typewriting
351	— Personal Typewriting
352	— Production Typing
990	— Other Business

04—DISTRIBUTIVE EDUCATION

Code	Content Descriptors	Code	Content Descriptors
002	— Business	200	— Advertising and Sales Promotion
004	— Communications for Distribution		
005	— Economics of Consumption	300	— Buying
006	— Economics of Marketing	301	— Fashion Merchandising
011	— Expense Control	302	— Fashion Trends
012	— Human Relations	303	— Merchandising Mathematics
013	— Mathematics of Distribution	304	— Retail Buying
099	— Other Allied Subject Matter	305	— Retail Merchandising
		390	— Other Merchandising
		399	— Other Buying
101	— Advertising Services	400	— Marketing Management
102	— Apparel and Accessories	401	— Mid-management
103	— Automotive and Petroleum	402	— Personnel Management
104	— Finance and Credit	403	— Real Estate Management
105	— Food Distribution	404	— Retail Store Management
106	— Food Services	405	— Sales Management
107	— General Merchandise	406	— Small Business Management
108	— Hardware Building Materials, Farm and Garden Supplies and Equipment	490	— Other Management
109	— Home Furnishings		
110	— Hotel and Lodging	500	— Marketing Research
111	— Insurance	501	— Market Analysis
112	— Foreign Trade	502	— Marketing Trends
113	— Management (General/Miscellaneous)	590	— Other Marketing
114	— Marketing (General)		
115	— Mid-management	601	— Credit and Collection
116	— Real Estate	602	— Purchasing
117	— Retailing (General/Miscellaneous)	603	— Transportation
119	— Wholesaling (General/Miscellaneous)	699	— Other Marketing Operations

04—DISTRIBUTIVE EDUCATION (Continued)

Code	Content Descriptors
700	— Selling
701	— Direct Sales
702	— Retail Selling
703	— Sales Management
704	— Salesmanship
799	— Other Selling
800	— Composite Subject Matter
801	— Agricultural Marketing
802	— Distribution
803	— Distribution (Cooperative)
804	— Distribution (Project)
811	— Industrial Marketing
812	— International Marketing
813	— Principles of Marketing
900	— Specialty Subject Matter
903	— Principles of Insurance
907	— Product Information
990	— Other Distribution and Marketing (Distributive Education)

05—ENGLISH LANGUAGE ARTS

Code	Content Descriptors	Code	Content Descriptors
100	— Language Skills	336	— Biography
101	— Handwriting Skills	337	— Drama
102	— Library Use Skills	338	— Essay
103	— Spelling Skills	339	— Fiction
104	— Punctuation Skills	340	— Poetry
105	— Listening	366	— Children's Literature
106	— Dictionary Skills	367	— Adolescent Literature
107	— Reference Skills Skills	369	— Humanities/Literature
108	— Vocabulary/Diction Skills	400	— Composition
110	— Reading	401	— Composition Theory
111	— Reading Readiness	411	— Composition Logic (Reasoning)
112	— Beginning Reading	412	— Rhetoric
113	— Developmental Read- ing	413	— General Semantics
115	— Remedial Reading	413	— General Semantics (Connotative Mean- ing)
116	— Individualized Read- ing	420	— Writing
200	— Linguistics	421	— Expository Writing
201	— Phonology	422	— Persuasive Writing
202	— Grammar	423	— Creative Writing
203	— Usage (Functional Grammar)	424	— Narrative Writing
204	— History of English Language	430	— Journalism
205	— Dialectology	431	— Reporting
206	— Semantics/Semology	432	— Editorial Writing
207	— Study about Language	433	— Feature Writing
211	— Phonetics	434	— History of Journalism
222	— Grammar, Structural	490	— Note Taking/Outlining
223	— Grammar, Generative	500	— Speech
224	— Grammar, Transfor- mational	502	— Oral Interpretation of Literature
300	— Literature	503	— Speech Improvement
301	— American Literature	504	— Speech through Mass Media
302	— Biblical Literature	511	— Public Speaking
303	— Classical Literature	512	— Argumentation and De- bate
304	— English Literature	515	— Discussion
305	— World Literature	516	— Speech Criticism

05—ENGLISH LANGUAGE ARTS (Continued)

Code	Content Descriptors
517	— Parliamentary Proce- dure
518	— Speech Persuasion
521	— Choral Speech
531	— Voice and Diction
600	— Dramatic Arts
601	— Acting
602	— Dramatic Literature
603	— Creative Dramatics
604	— Play Production
605	— Playwriting
606	— Technical Theater and Design
607	— Theater Criticism
608	— Theater History

06— FOREIGN LANGUAGES - Descriptors are not taken from U.S.O.E. Handbook VI

Code	Content Descriptors
101	— Composition
102	— Grammar
103	— Reading
104	— Speaking
105	— Translation to English
106	— Translation from English
107	— Vocabulary
201	— Civilization
202	— Culture
203	— History
204	— Literature
301	— Linguistics
302	— Morphology
303	— Philology
304	— Phonics
305	— Phonemics
306	— Structure
307	— Syntax

08— HEALTH, SAFETY, PHYSICAL EDUCATION

Code	Content Descriptors	Code	Content Descriptors
100	— Health Education	400	— Physical Education
101	— Community Health	401	— Adapted Physical Education
103	— Disease Prevention and Control	402	— Aquatics (Includes swimming)
104	— Environmental Health	403	— Body Dynamics
105	— Family Life Education	404	— Dance, Rhythms, and Dramatic Activities
106	— First Aid	405	— Group Games, Contests, and Relays
107	— Growth and Development	406	— Individual and Dual Sports
108	— Harmful Substances	407	— Outdoor Recreational Activities
109	— Health Careers	408	— Stunts, Tumbling, and Gymnastics
110	— Health Maintenance and Care	409	— Team Sports
111	— International Health	499	— Other Physical Education
199	— Other Health Education		
200	— Safety Education	500	— Recreation
201	— Civil Defense	501	— Arts and Crafts
202	— Explosives	502	— Communicative Arts
203	— Fire Arms	503	— Hobbies
204	— Fire Safety	504	— Outdoor Recreation
205	— Holiday and Vacation Safety	505	— Performing Arts
206	— Law, Liability, and Responsibility	506	— Physical Recreation
207	— Personal Responsibility and Unsupervised Activities	507	— Voluntary Service
208	— Safety in Home	599	— Other Recreation
209	— Safety in Physical Education and Recreation		
210	— School Safety		
211	— Traffic Safety		
212	— Vocational and Occupational Safety		
213	— Water Safety		
299	— Other Safety Education		



## 09—HOME ECONOMICS

Code	Content Descriptors
100	Homemaking — Preparation for Personal, Home, and Family Living
101	Comprehensive Homemaking or Home Economics
102	Child Development
103	Clothing and Textiles
104	Consumer Education
105	Family Health
106	Family Relations
107	Foods and Nutrition
108	Home Management
109	Housing and Home Furnishings
199	Other Homemaking
200	Home Economics Occupational Preparation
201	Care and Guidance of Children
202	Clothing Management
203	Food Management
204	Home Furnishings and/or Equipment
221	Clothing Production
222	Clothing Services
231	Food Production and Preparation
232	Food Services for Furnishings
241	Home Services for Furnishings
242	Interior Decoration
251	Institutional and Commercial Housekeeping
252	Home Management and Supporting Services
253	Public Housing Services and Management
299	Other Home Economics NEC

## 10—INDUSTRIAL ARTS

Code	Content Descriptors	Code	Content Descriptors
010	Industrial Arts Science (Chemistry)	203	Crafts (Industrial)
011	Industrial Arts Science (Physics)	205	Leather
012	Industrial Materials and Processes	206	Textiles
100	Construction	300	Drafting
110	Carpentry Construction	301	Architectural Drafting
113	Masonry Construction	302	Descriptive Geometry
114	Plumbing Construction	304	Drafting Technology
115	Electrical Construction	305	Engineering Drawing
116	Scaled Structures	306	Industrial Design
121	Fluid Power	307	Mechanical Drawing
122	Industrial Materials	308	Technical Illustration
124	Industrial Processes	400	Electricity/Electronics
125	Instrumentation	401	Electricity
126	Numerical Control	403	Electronics
130	Manufacturing	500	Elementary School Industrial Arts
141	Metals	600	General Industrial Arts
142	Metal Machining	700	Graphic Arts
143	Metal Technology	702	Photography
144	Sheet Metal	703	Photolithography
145	Welding	704	Printing
150	Plastics	800	Home Mechanics
152	Plastics Technology	900	Industrial Arts Mathematics
160	Power and Automotive Machines	999	Other Industrial Arts
161	Automotive Mechanics		
163	Power Mechanics		
164	Transportation		
170	Research and Development		
180	Service Industries		
190	Woods		
192	Woods Technology		
200	Crafts		
201	Art Metals		
202	Ceramics		

## 11 — MATHEMATICS

Code	Content Descriptors	Code	Content Descriptors
010	Mathematics for Elementary Teachers	169	Trigonometric Identities
011	General Mathematics	190	Arithmetic
100	Elementary School Mathematics	191	Fractions
101	Sets, Numbers, Numerical Concepts	193	Symbolic Logic
103	Decimal System - Place Values	200	Progressions, Arithmetic, Geometric
104	Number Systems	209	Coordinate Geometry
105	Basic Operations and Properties of Operations	211	Non-Euclidean Geometry
108	Problem Solving	213	Linear Equations
109	Ratio, Proportion, Percent	219	Parametric and Polar Equations
110	Equality and Inequality	222	Nature of Proof/Proof of Theorems
111	Theory of Numbers	227	Metric and Non-metric Geometry
112	Finance, Interest, Taxes, Installments	228	Geometric Drawing and Measurement
113	Measurement	231	Graphing
114	Informal Geometry	300	Algebra
115	Informal Algebra	301	Symbols, Numbers, Algebraic Expressions
120	Geometry	306	Linear Algebra
121	Analytic Geometry	323	Set Theory
122	Plane Geometry	326	Number Plane
124	Solid Geometry	329	Quadratic Equations and Inequalities
130	Introduction to Analysis	336	Integers
136	Polynomials	342	Equations
137	Conics	347	Radicals
140	Liberal Arts Mathematics	351	Formulas
150	Probability and Statistics	360	Linear Transformation
151	Statistics	361	Probability
160	Trigonometry	362	Binomial Theorem
165	Trigonometric Functions	363	Convexity
		364	Orthogonal Bases

## 11 — MATHEMATICS (Continued)

Code	Content Descriptors
367	Scalars
368	Matrices
369	Vectors
370	Limits
390	Algebraic Analysis
399	Other Algebra
402	Mathematical Induction
403	Factor Theorem
405	Circular Function
500	Applied Mathematics
501	Business Mathematics
502	Consumer Mathematics
503	Shop Mathematics
508	Surveying
600	Calculus
601	Pre-calculus
611	Function Series and Expansion
613	Differentiation
802	Algorithms
803	Computer Programming Language
805	Problem Solving
900	Elementary Functions
902	Algebraic Functions
904	Exponential Functions
906	3-Dimensional Analytic Geometry
994	Logarithms

## 12 — MUSIC

Code	Content Descriptors	Code	Content Descriptors
100	General Educational Music	501	Band
101	Public School Music	502	Orchestra
		503	Instrumental Ensembles
200	Music Literature	504	Instrumental Instruction
201	History of Music	505	Performing Skills
202	Music Appreciation	506	Sight Singing Skills
203	Basic Elements of Music (rhythm, melody, harmony, timbre, form)	507	Ear Training
204	Creativity	508	Repertoire Development
205	Historic Influences	509	Mechanics of Instruments
206	Composers - Style and Form Development	531	Group Performance
207	Folklore	532	Instrumental Music
208	Musicology	533	Methods - Style
		544	Private Keyboard
300	Music Theory	545	Private Strings
301	Music Fundamentals	546	Private Percussion
302	Harmony	547	Private Brass Instruments
303	Rudiments	548	Private Woodwind Instruments
304	Form and Analysis	549	Private Music NEC
305	Orchestration	590	Conducting
306	Rhythm		
307	Composition Structure	600	Humanities
308	Music Appreciation	601	Music Relationships to other Disciplines
309	Music Expression and Communication	602	Evaluation and Comparison of Music
310	Music Structure in Interpretation		
		700	Science of Sound
400	Vocal Music		
401	Choir, Chorus, Glee Club		
402	Vocal Instruction		
421	Vocal Ensembles		
422	Private Vocal		
462	Voice Development		
463	Vocal Sound Production		

## 13 — NATURAL SCIENCES

Code	Content Descriptors	Code	Content Descriptors
021	Botany	220	Physiology
022	Microbiology	221	Reproduction
023	Zoology	222	Taxonomy
031	Chemistry		
032	Physics	300	Physical Science
041	Astronomy	301	Astronomy
042	Geology	302	Atomic and Molecular Structure
043	Meteorology	303	Biochemistry
044	Oceanography	305	Chemical Bonding
045	Space Exploration	306	Chemical Calculations
		307	Chemical Reactions
100	General Science	308	Electricity and Magnetism
110	BSCS Yellow	309	Electronics
120	BSCS Green	310	Equilibrium
130	BSCS Blue	312	Heat
140	CBA Chemistry	313	Inorganic Chemistry
150	PSCS Physics	314	Kinetic Molecular Theory
160	Chemistry Study		
		315	Materials Science
200	Biological Science	316	Measurement
201	Anatomy	317	Mechanics
202	Anthropology	318	Meteorology
203	Bacteriology	319	Nuclear Science
204	Behavior	320	Oceanography
205	Biochemistry	321	Optics
206	Biometrics	322	Organic Chemistry
207	Biophysics	323	Periodic Properties
208	Cellular Phenomena (Cytology)	324	Physical Chemistry
209	Conservation	325	Qualitative Analysis
210	Developmental Biology	326	Quantitative Analysis
211	Ecology	327	Quantum Mechanics
212	Entomology	328	Solid State Physics
213	Evolution	329	Solution Phenomena
214	Genetics	330	Sound
215	Molecular Biology	331	Stoichiometry
216	Nature Study	332	Technological Applications
217	Nutrition		
218	Organic Systems	333	Thermodynamics
219	Origins of Life	334	Wave Phenomena

### 13—NATURAL SCIENCES (Continued)

Code	Content Descriptors
400	— Earth Space Science
401	— Aeronautics
402	— Astronautics
403	— Biological Interrelationships
404	— Climatology
405	— Cosmology
406	— Earth Changes
407	— Forces and Motion
408	— Geochemistry
409	— Geophysics
410	— Hydrology
411	— Instrumentation and Analytical Methods
412	— Levels of Organization
413	— Matter - Energy Exchange
415	— Paleontology
416	— Physical Geography
417	— Soil Science
418	— Uniformitarianism
419	— Technological Applications

### 15—SOCIAL SCIENCES

Code	Content Descriptors	Code	Content Descriptors
010	— Political Science	300	— Citizenship Education
011	— American Government	400	— Conservation
012	— Comparative Systems	500	— Consumer Education
013	— Constitution, The	600	— Economics
014	— Contemporary World Affairs	601	— Business & Industry Economics
015	— International Relations	602	— Comparative Economics
016	— Political Parties and Public Opinion	603	— Consumer Economics
017	— Political Theory	604	— History of Economic Thought
018	— Public Administration	605	— Money and Banking
100	— Anthropology	606	— National Income
101	— Archeology	607	— Principles of Economics
102	— Cultural Anthropology	608	— Resource Economics
104	— Ethnology	700	— Geography
106	— Physical Anthropology	701	— Historical Geography
110	— Psychology	702	— Human Geography
111	— Developmental Psychology	703	— Physical Geography
112	— Educational Psychology	704	— Regional Geography
113	— General Psychology	705	— Other Geography
114	— Psychology of Adjustment	800	— History
115	— Social Psychology	801	— U.S. History
116	— Other Psychology	802	— Regions of U.S.
120	— Sociology	803	— State History
121	— Community, The	804	— Non-Western Civilization
122	— Public Opinion and Political Sociology	805	— Community Study
123	— Socialization	806	— Local History
124	— Social Organizations	807	— Western Civilization
125	— Social Problems	808	— World Civilization
126	— Social Stratification	811	— Colonial History
127	— Social Theory	812	— Early National History
129	— Other Sociology	813	— Industrialization
200	— Area Studies	814	— U.S. as World Power
201	— Areas Beyond U.S.		
202	— Regions of U.S.		
203	— Small Areas		
299	— Other Areas Studied		

15—SOCIAL SCIENCES (Continued)

Code Content Descriptors

- 821—Diplomatic History
- 822—Economic History
- 823—Geographical History
- 824—Intellectual History
- 825—Military History
- 826—Political History
- 827—Social-Anthropological History
- 831—Ancient History
- 832—Medieval History
- 833—Modern History
- 834—Prehistoric History
- 841—Area Studies (Non-U.S.)
- 843—History of Western Thought
- 844—History of Religion
- 846—Historiography
- 849—Other History
  
- 900—Philosophy
- 901—Ethics
- 902—History of Philosophy
- 903—Introduction to Philosophy
- 904—Logic
- 905—Metaphysics
- 906—Philosophy of Religion
- 990—Other Social Studies/Social Sciences

19—EXCEPTIONAL CHILD EDUCATION/DIFFERENTIALIZED CURRICULUM

Code Content Descriptors

- 100—Communication Skills
- 101—Language Stimulation
- 102—Language Development
- 103—Language Correction
- 104—Speech Stimulation
- 105—Speech Development
- 106—Speech Correction
- 107—Special Communication Methods
- 171—Braille Reading/Writing
- 172—Object Magnification
- 173—Finger Spelling
- 175—Typing for Communication
- 176—Speech (Lip) Reading
  
- 200—Interpersonal and Behavioral Coping Skills
- 201—Self Concept Development
- 202—Self Concept Re-education
- 203—Social Stimulation
- 204—Social Development
- 205—Social Re-education
- 299—Other Interpersonal Behavioral Coping Skills
  
- 300—Motor Skills
- 301—Dexterity Skills
- 302—Physical Management
- 303—Mobility Training
- 321—Self-help Skills
- 322—Use of Devices and Equipment
- 323—Personal Safety
- 331—Mobility Orientation
- 332—Travel
- 399—Other Motor Skills

Code Content Descriptors

- 400—Perceptual Skills
- 401—Auditory Stimulation
- 402—Auditory Development
- 403—Auditory Correction
- 404—Tactile and Kinesthetic Stimulation
- 405—Tactile and Kinesthetic Development
- 406—Tactile and Kinesthetic Correction
- 407—Visual Stimulation
- 408—Visual Development
- 409—Visual Correction
- 410—Personal Spatial Relationships
- 499—Other Perceptual Skills
  
- 500—Vocational and Avocational Orientation
- 501—Vocational Information
- 502—Prevocational Work Experience
- 503—Specialized Vocational Preparation
- 504—Avocational Information
- 505—Avocational Experience
- 599—Other Vocational and Avocational Orientation
  
- 990—Other Differentiated Curriculum for Handicapped Pupils

## 30—DRIVER EDUCATION

### Code    Content Descriptors

- 300—Driver Education
- 301—Alcohol, Drugs, Other Harmful Substances, and Driving
- 302—Characteristics of Driving
- 303—Development of Judgment
- 304—Driving Skills
- 305—Traffic Engineering
- 306—Laws and Ordinances of Enforcement
- 307—Motor Vehicle, The
- 308—Traffic Accidents
- 309—Traffic Citizenship
- 391—Psychological Factors in Driving
- 392—The Driving Task
- 399—Other Driving Education

## Chapter 900

### 900.    PERSONNEL SUBSYSTEM

#### 901.    *PERSONNEL SUBSYSTEM COMMITTEE*

The MSEIP Personnel Subsystem Committee was concerned primarily with establishing a system that would increase knowledge about school staff members, and would standardize and simplify personnel data collection procedures and materials as they relate to local and intermediate education agencies within the framework of state law and policy.

The Personnel Committee accepted this task with the view that an appropriate quantity or quality of personnel data, when used alone or in conjunction with information about facilities, finance, instructional programs, and pupils, will facilitate a better understanding of the total educational effort by the SEA. The Committee assessed SEA functions regarding personnel and related those functions to programs identified with personnel information to establish its approach to developing this Subsystem. Consideration was also given for consistency with U.S. Handbook IV.

The Personnel Subsystem Committee was organized in June 1966. Its executive officer was an MSEIP Central Staff Supervisor with a background in employed personnel. A chairman was elected from the membership. The 13 committee members included a representative from the SEA of each participating state. The representatives, appointed by their chief state school officers, were SEA personnel whose positions were either in personnel or closely related. The members of the Personnel Subsystem Committee collectively agreed on the inclusion of data items for this Subsystem.

#### 901.1    Introduction

This chapter describes the Personnel Subsystem as an entity that can be collected and processed as a separate data base, or as an integral part of a multi-subsystem group, that can be processed in conjunction with one or more other subsystems.

The basic premise of this description is to set forth guidelines to allow any given state to adapt the Personnel Subsystem file to best suit its own needs. A carefully considered number of data items are described in this chapter. The decision to use some or all of the items will have to be part of the implementation of the user state.

It must be understood that this document is not a specification that can be used as a basis for programming, but is a general specification that can be used as a model for writing program specifications for an operational subsystem.

## 902. PERSONNEL DATA FILE

### 902.1 Personnel Categories

The four Personnel categories are described as educational employment status levels as follows: Professional-Educational Staff Member, Professional Staff Member, Technical Staff Member, and Ancillary Staff Member. These categories describe all personnel employed in the school system and are defined as follows:

**PROFESSIONAL-EDUCATIONAL STAFF MEMBER** - the Professional-Educational Staff Member is a person who meets all the stated criteria of a staff member and is performing activities regarded as professional in the field of education by the laws and regulations governing certification in the state, or by other professional-educational requirements recognized by the state.

**PROFESSIONAL STAFF MEMBER** - for reporting purposes, a Professional Staff Member is a person who meets all the stated criteria of a staff member and who is performing activities which, although in the service of a school system, relate more closely to a particular field of professional specialization other than education.

**TECHNICAL STAFF MEMBER** - a Technical Staff Member is a person who meets all the stated criteria of a staff member and is performing activities which, although in the service of a school system, relate more closely to a particular area of technical specialization than to education.

**ANCILLARY STAFF MEMBER** - an Ancillary Staff Member is a person who meets all the stated criteria of a staff member

and who is performing activities of a nontechnical or nonprofessional nature which provide supplementary service in the field of education.

The obvious use of categorizing school system personnel is to structure the staff for all administrative and managerial needs. More explicitly this category code (see Educational Employment Status, section 906.2) can be used to great advantage in processing an electronic information system. If the Personnel file is constructed in a sequential manner, the use of this code as a sequencing key will allow for a more efficient approach to updating and reporting. Also if the file is structured in a random manner, then this code can be used as a part of the identification key, thereby dividing the file into smaller groups for data retrieval.

### 902.2 File Structure and Data Layout

This file should be constructed to make it as adaptable as possible for the extraction of the data necessary to construct management reports and statistical tables. Using this approach, the following design is suggested.

The file should be made up of variable length records. Whether the logical records are blocked or unblocked will depend entirely on such factors as method of processing (sequential, random sequential, random, etc.), amount of data collected and implemented in the system, and characteristics and configuration of hardware being used. These factors will, without question, vary from state to state. The variable format design should be followed as much as possible through the five subsystems to allow for more efficient systems analysis and programming in the implementation of the entire system.

The records will be designed so that all fixed items will be in the beginning or high-order portion of the record. The fixed items will be followed by a field containing the item or character count of the data contained in the variable items that follow the fixed items. This will allow all systems handlers to immediately ascertain the amount of variable data that can be processed in that particular record.

Variable items are such as certification, course numbers, section numbers, etc. Also, items that apply only to certain personnel

types would appear only when used. Professional-Educational personnel carry items that Ancillary personnel do not carry and vice versa. Removing these fields from records in which they are not used will make the file more compact and reduce the error factor in producing reports. This method of file construction is more expensive and time consuming than the conventional fixed physical record or the fixed logical record file design, but the end product is so much more compact, error free, and useable, that the efficiency of processing far overcomes the initial expense. The suggested data format for the personnel file is in section 906.

### 903. FILE CONSTRUCTION CONSIDERATIONS

#### 903.1 Data Collection

Before data collection begins, each state should give careful consideration to the collection form it desires to use. Since each state will not necessarily require the same data to be collected, the data collection form will vary from state to state. The method of data conversion to an electronically useable form will also be a factor in the variety of collection forms. Some states may choose to key-punch their data, while others may choose to use a mark-sense optical scanner or a digital scanner for data conversion. The method of data conversion should be the same for all subsystem files.

The design of the form is of great importance in data collection. The form should allow as little room for error as possible and should be self-explanatory. Frequency of collection should be once a year, or more often if the state office feels that it is necessary. The first time the data is collected, in most instances, all the information for all personnel will be collected; in subsequent collections, it will be collected only on an updating basis. Once the file and the updating cycle are established, data collection can be held to a realistic minimum.

#### 903.2 File Sequencing

Whether the data is processed in sequential or random manner, the original data that are collected should be sequenced before the data is structured as a file. Also, the data that are collected as update items should be sequenced prior to the update operation. This allows for a more efficient system regardless of the type of processing used. The personnel file should be sequenced by social

security number within educational employment status, within school, within district. This allows for access to as small a group of personnel as possible, thereby increasing the efficiency of the operating system and allowing for as high a level of validity of the data output as possible. These relevant factors are, of course, present whether the system is processed in a sequential or random manner.

### 904. SAMPLE OUTPUT REPORT

The following are samples of reports using only Personnel Subsystem information. Figure 9-1 is a hypothetical report for a district; Figure 9-2 is a hypothetical report of the same information totaled for the state.





905. *MULTIPLE FILE USES*

The central theme of the System being proposed here is that any one or all of the five subsystems may be used in formulating reports. This allows for complete flexibility at the state level, not only in generating reports for state and federal use, but also in retrieving data for research. To allow this purpose to be accomplished, an index table will be established as the files are built, to provide linkage among all subsystems. These linkages are shown in Chapter 1100, for all subsystems. The establishment and maintenance of these indexes will be the single most vital feature in the operation of this System.

906. *DATA ITEM LISTINGS, DEFINITIONS, AND CODES*

The following information is given in two formats. The record layout itself is given in actual data item sequence and identified numerically. It is followed by a listing of item definitions, related codes, and instructions in alphabetic sequence.

906.1 Data Item Listings

The following charts for the Personnel Subsystem present data items listed by combination of categories. Chart 9-1 combines the Technical Staff Member and the Ancillary Staff Member personnel categories. Chart 9-2 combines the Professional-Educational Staff Member and the Professional Staff Member personnel categories.

CHART 9-1. PERSONNEL SUBSYSTEM DATA ITEM LIST OF TECHNICAL/ANCILLARY PERSONNEL

FIELD NO.	DATA ITEMS (Definitions on pages 249 to 268, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
1	County-District Code	7	N
2	School (Organization) Code	3	N
3	Social Security Number	9	N
4	Legal Name	25	A
5	Sex	1	N
6	Marital Status	1	N
7	Date of Birth	6	N
8	Highest Level of Education	2	N
9	Educational Employment Status	1	N
26	Medical Examination	4	N
27	Accident Record	6	N
	(variable portion of record)		
28	Days Employed	3	N
29	Hours Worked Per Day	1	N
30	Hourly Wage	3	N
31	Annual Wage	5	N
39	Position Title	2	N
40	Area of Responsibility	3	N
41	Instructional Area	2	N
42	Scope of Assignment	1	N
43	Level of Assignment	1	N
44	Percent of Time on Assignment (Items 39-44 repeated for each assignment)	3	N

CHART 9-2. PERSONNEL SUBSYSTEM DATA ITEM LIST OF PROFESSIONAL-EDUCATIONAL/PROFESSIONAL PERSONNEL

FIELD NO.	DATA ITEMS (Definitions on pages 249 to 268, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
1	County-District Code	7	N
2	School (Organization) Code	3	N
3	Social Security Number	9	N
4	Legal Name	25	A
5	Sex	1	N
6	Marital Status	1	N
7	Date of Birth	6	N
8	Highest Level of Education	2	N
9	Educational Employment Status	1	N
10	Institution Granting First Degree	6	N
11	Year First Degree Earned	2	N
12	Institution Granting Highest Degree	6	N
13	Year Highest Degree Earned	2	N
14	Total Semester Hours	3	N
15	Year Last Credit Earned	2	N
16	Contract Period	3	N
17	Percent of Time Worked	3	N
18	Total Contract Salary	5	N
19	Does Salary Include Compensation for Extra Duties	1	N
20	Amount for Extra Duties	5	N
21	Employment Previous Year	1	N
22	Employment Status	1	N
23	Local Experience	3	N
24	State Experience	3	N
25	Total Educational Experience	3	N
26	Medical Examination	4	N
27	Accident Record	6	N
	(variable portion of record)		
32	Certificate Held	2	N
33	Date Certificate Issued	6	N
34	Date Certificate Expires	6	N
35	Instructional Level Authorized by Certificate	1	N

(CHART 9-2. PROFESSIONAL-EDUCATIONAL/PROFESSIONAL RECORD, CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 249 to 268, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
36	Grades Authorized by Certificate	4	N
37	Fields/Areas/Services Authorized	2	N
38	Subjects Authorized	4	N
39	Position Title	2	N
40	Area of Responsibility	3	N
41	Instructional Area	2	N
42	Scope of Assignment	1	N
43	Level of Assignment	1	N
44	Percent of Time on Assignment	3	N
45	Local Course Number	3	N
46	Section Number (Items 39-46 repeated for each assignment)	2	N

906.2 Data Item Definitions and Codes

The following list provides an alphabetic sequence of the Personnel Subsystem's data item definitions and codes.

ACCIDENT RECORD - a numeric field containing month, day of month, and year of the most recent motor vehicle accident involving vehicle or property damage, or personal injury. This field relates only to vehicle operators and driver education teachers. This date should be recorded numerically as: June 12, 1962 - 06-12-62.

AMOUNT FOR EXTRA DUTIES - if salary includes compensation for extra duties, enter the portion of the total contract salary which is compensation for the extra duties performed. This amount should be recorded to the nearest whole dollar and right justified.

ANNUAL WAGE - the amount of money paid, before deductions each school year, to a staff member as determined by the contract during the current year, Technical and Ancillary (T & A) only. This amount should be recorded to the nearest whole dollar and right justified.

AREA OF RESPONSIBILITY - a major division or subdivision of a school system operation. A staff member should use the code provided to indicate the area in which services are provided:

100-199 INSTRUCTION	270-299 RESEARCH AND DEVELOPMENT
101 Instructional Services, Gen.	271 R & D, General
111 Classroom Teaching	276 Research
121 Library Services	281 Development
131 Computer Assisted Instruction	286 Evaluation
141 Educational TV Services	291 Statistics
151 Audiovisual Services	296 Other R & D Services
161 Homebound Teaching and Other	
200-249 GENERAL CONTROL	300-349 FACILITIES, MAINT. & OPER.
201 General Administration	301 Plant Maint. & Oper., Gen.
206 Board of Education	311 Site Maintenance
211 Business and Finance	316 Site Operation
216 Data Processing	321 Building Maintenance
221 Legal Services	326 Building Operation
226 Personnel Administration	331 Built-in Equipment, Maint.
231 Warehouse and Distribution	336 Built-in Equipment, Oper.
236 Cent. Printing and Pub. Serv.	341 Movable Equipment, Maint.
241 Other General Control	346 Movable Equipment, Oper.
250-269 INSTRUCTION-ADMINISTRATION	400-499 FOOD SERVICES
251 Instructional Admin., Gen.	401 Food Services, Gen.
256 Administration of a School	411 Food Preparation & Serving
261 Improvement of Curr. & Instr.	421 Transportation of Food
266 Other Instructional Admin.	431 Other Food Services
	500-549 PUPIL PERSONNEL
	501 Pupil Services, Gen.
	511 Attendance Services

516 Guidance Services	621 Vehicle Servicing and Maintenance
521 Social Work Services	631 Other Transportation Services
526 Psychological Services	
531 Therapeutic Services	
541 Other Pupil Services	
550-599 HEALTH SERVICES	700-799 COMMUNITY SERVICES
551 Health Services, Gen.	701 Community Services, General
561 Medical Services	711 Recreation
566 School Nurse Services	721 Civic Activity
571 Dental Services	731 Public Offices
581 Other Health Services	741 Custody and Detention
600-699 PUPIL TRANSPORTATION	751 Welfare Activities
601 Transportation, General	761 Nonpublic School Services
611 Vehicle Operation	771 Other Community Services

CERTIFICATE HELD - a numeric code that is the equivalent of the name or title of each active license, certificate or permit held by a staff member. The coding structure will be consistent as described by the individual state's terminology.

CONTRACT PERIOD - the number of days a staff member is employed annually for a contract period for the regular school year. For teachers this figure should include teaching service for instruction activities plus days legally allocated to in-service activities. This figure should be reported as: 90 days — 090.

COUNTY-DISTRICT CODE - this is a numeric field comprised of a three-digit county code and a four-digit district code.

DATE CERTIFICATE EXPIRES - month, day of month, and year when active certificate expires. This date should be recorded numerically as: March 16, 1966 — 03-16-66.

DATE CERTIFICATE ISSUED - month, day of month, and year active certificate was issued. This date should be recorded numerically as: October 3, 1932 — 10-03-32.

DATE OF BIRTH - month, day of month, and year of staff member's birth. December 22, 1931 would be recorded as 12-22-31.

**DAYS EMPLOYED** - the actual number of days the staff member is employed, including paid vacations. T & A - a staff member employed five days per week on an annual basis would report 260 days per year. This figure should be right justified.

**DOES SALARY INCLUDE COMPENSATION FOR EXTRA DUTIES?** Code as follows:

- 1 - Yes
- 2 - No

**EDUCATIONAL EMPLOYMENT STATUS** - the current employment status of the staff member as defined by the following:

- 1 - Professional-Educational Staff Member - a professional educational staff member is a person who meets the stated criteria of a staff member and is performing activities regarded as professional in the field of education by the laws and regulations governing certification in the state, or by other professional-educational requirements recognized by the state.
- 2 - Professional Staff Member - a professional staff member is a person who meets all the stated criteria of a staff member and who is performing activities which, although in the service of the school system, relate more closely to a particular field of professional specialization other than education.
- 3 - Technical Staff Member - a technical staff member is a person who meets all the stated criteria of a staff member and who is performing activities which, although in the service of the school system, relate more closely to a particular area of technical specialization than to education.
- 4 - Ancillary Staff Member - an ancillary staff member is a person who meets all the stated criteria of a staff member and who is performing activities of a nontechnical or nonprofessional nature which provide supplementary service in the field of education.

**EMPLOYMENT PREVIOUS YEAR** - the employment or activity of the staff member during the past school year. Coded as follows:

- |                                 |                          |
|---------------------------------|--------------------------|
| 1 - Public Education            | 3 - Business or Industry |
| 2 - Nonpublic/Private Education | 4 - Military             |

- 5 - Student
- 6 - Housewife/Homemaking

- 7 - Retired
- 8 - Other

**EMPLOYMENT STATUS** - the circumstances under which the staff member serves in the school system:

- 1 - Probationary - the employment status of the staff member who is employed from year to year preliminary to being placed on tenure status upon satisfactory performance over a stipulated period of time.
- 2 - Tenure or Permanent - the employment status of the staff member whose employment is not subject to discontinuance by the governing authority except in stipulated circumstances.
- 3 - Other Employment Status - the employment status of the staff member who is on neither probationary nor tenure status.

**FIELDS/AREAS/SERVICES AUTHORIZED** - the numeric code signifying the descriptive name of each teaching field, area or service within which the staff member is authorized to teach or serve by each active license, certificate, or permit held. This is to be coded as follows:

- 00 - Does Not Apply
- 01 - Agriculture
- 02 - Art
- 03 - Business
- 04 - Distributive Education
- 05 - English Language Arts
- 06 - Foreign Language
- 07 - Health Occupations
- 08 - Health, Safety, P.E.
- 09 - Home Economics
- 10 - Industrial Arts
- 11 - Mathematics
- 12 - Music
- 13 - Natural Science
- 14 - Office Occupations
- 15 - Social Studies
- 16 - Technical Education
- 17 - Trades and Industry
- 18 - General Education (Pupil Supervision)

- 19 - Exceptional Child Education
- 20 - Cocurricular Activities
- 21 - Academic Cocurricular Activities
- 22 - Athletic Cocurricular Activities
- 23 - Music Cocurricular Activities
- 24 - School Services Cocurricular Activities
- 25 - Cocurricular Social Organizations
- 30 - Driver Education
- 50 - Homeroom, Elementary
- 51 - Homeroom, Secondary

**GRADES AUTHORIZED BY CERTIFICATES** - the grade or ranges of grades within which the staff member is authorized to serve by the certificate, license, or permit. Record the grade or range of grades as shown by the example: Grades 7 through 12—07-12.

**HIGHEST LEVEL OF EDUCATION** - the highest educational level attained in a formal program. The following codes will be used to indicate the highest level of education completed:

- |   |   |
|---|---|
| 01—Less Than High School Diploma                  | 07—Associate Degree (including two-year certificate)  |
| 02—High School Diploma or Equivalency Certificate | 08—Three Years of College   |
| 03—Vocational Program - Post Secondary            | 09—Four Years of College  |
| 04—Technical Program - Post Secondary             | 10—Bachelor's Degree  |
| 05—Freshman Year of College                       | 11—Master's Degree  |
| 06—Two Years of College                           | 12—Intermediate Degree, Diploma or Certificate (6th year program, educational specialist, etc.) |
|   | 13—Doctor's Degree  |

**HOURLY WAGE** - the rate of pay per hour to be paid a T&A staff member during the current year. Record the amount paid per hour. Example: \$2.52 would be recorded as 0252.

**HOURS WORKED PER DAY** - the average number of hours worked per day by T & A staff members. This information should be recorded to the nearest hour. Example: 10¼ hours as 11.

**INSTITUTION GRANTING FIRST DEGREE** - the code representing the institution granting the first degree, certificate, or diploma held which relates to education. Record the institution code as provided by the U.S. Office Universe of Institutions of Higher Education - 1966-67 listing.

**INSTITUTION GRANTING HIGHEST DEGREE** - the code representing the institution which granted the highest degree, diploma, or certificate held. Record the institution code as provided by the U.S. Office Universe of Institutions of Higher Education - 1966-67 listing.

**INSTRUCTIONAL AREA** - a grouping of related courses or units of subject matter. Indicate the instructional area that the staff member provides service in, using the following codes:

- |  |  |
|--|--|
| 00—Does Not Apply                        | 19—Exceptional Child Education             |
| 01—Agriculture                           | 20—Cocurricular Activities                 |
| 02—Art                                   | 21—Academic Cocurricular Activities        |
| 03—Business                              | 22—Athletic Cocurricular Activities        |
| 04—Distributive Education                | 23—Music Cocurricular Activities           |
| 05—English Language Arts                 | 24—School Services Cocurricular Activities |
| 06—Foreign Language                      | 25—Cocurricular Social Organizations       |
| 07—Health Occupations                    | 30—Driver Education                        |
| 08—Health, Safety, P.E.                  | 50—Homeroom, Elementary                    |
| 09—Home Economics                        | 51—Homeroom, Secondary                     |
| 10—Industrial Arts                       |  |
| 11—Mathematics                           |  |
| 12—Music                                 |  |
| 13—Natural Science                       |  |
| 14—Office Occupations                    |  |
| 15—Social Studies                        |  |
| 16—Technical Education                   |  |
| 17—Trades and Industry                   |  |
| 18—General Education (Pupil Supervision) |  |

**INSTRUCTIONAL LEVEL AUTHORIZED BY CERTIFICATE** - the instructional level authorized by the certificate. This is coded as follows:

- |                    |                    |
|--------------------|--------------------|
| 1—Preschool        | 5—Secondary (9-12) |
| 2—Elementary (K-6) | 6—Secondary (9-14) |
| 3—Elementary (K-8) | 7—Post Secondary   |
| 4—Secondary (7-12) | 8—Not Designated   |

**LEGAL NAME** - the full legal name of the staff member includes last name, first name, and middle initial or maiden name of a married female. Leave one blank space between the last name, the first name, and middle initial or maiden name.

**LEVEL OF ASSIGNMENT** - a code indicating the general level of the assignment of a staff member. This is coded as follows:

- |                            |                                     |
|----------------------------|-------------------------------------|
| 1—Elementary               | 4—Elementary - Junior - Senior High |
| 2—Elementary - Junior High | 5—Junior High                       |
| 3—Elementary - Senior High | 6—Junior - Senior High              |
|                            | 7—Senior High                       |
|                            | 8—Post High School                  |

**LOCAL COURSE NUMBER** - a numeric code generated at district level, to identify a specific course.

**LOCAL EXPERIENCE** - the number of years to the nearest half a staff member has been employed in a professional-educational or professional position by the present school system, excluding the current year. This should be recorded as follows: Ten and one-half years—10.5, five years—05.0. Three digits should be entered, using zeros if necessary.

**MARITAL STATUS** - a numeric code indicating marital status. The following code should be used:

- 1—Single
- 2—Married
- 3—Separated
- 4—Divorced
- 5—Widowed

**MEDICAL EXAMINATION** - the month and year of the most recent medical examination. This date should be recorded as: June 1961—06-61.

**PERCENT OF TIME ON ASSIGNMENT** - percent of employed time spent on this assignment. A staff member that worked all day every day for the regular school year would enter 100 percent. A staff member working one-half day every day for the regular school year would enter 50 percent. NOTE: Three digits must be entered, as 050. Any figure less than 100 percent will need adjustment in this manner.

**PERCENT OF TIME WORKED (PE & P)** - a staff member employed five days a week for at least the number of hours per day equal to the number of hours of a regular school day would be considered a full time staff member, expressed as 100 percent. A professional staff member employed only half the normal school day five days per week would be expressed as 50 percent. A staff member working full time for one semester, for example, would be reported as 100 percent for that period of time.

**POSITION TITLE(S)** - the title(s) most descriptive of the staff member's activities as described by the titles and functions coded below:

01—Accountant - a staff member performing assigned duties regarding management functions of control of expenditures.

Duties may include designing and maintaining financial, staff, program, pupil or property records; summarizing or verifying such records; or controlling and certifying expenditures and receipts.

02—Administrative Assistant - a staff member performing assigned professional activities of assisting the chief executive officer in performing designated executive management activities of the administrative unit.

Aide, Teacher - see Teacher Aide

Analyst, Systems - see Systems Analyst

03—Architect - a staff member performing assigned activities regarding the designing and preparation of specifications for new construction, rehabilitating or altering existing buildings, developing landscaping, or acting as professional advisor on architectural matters.

04—Assistant Director - a staff member performing assigned activities and granted defined autonomy in fulfilling specifically delegated functions assigned by the director.

05—Assistant Principal - a staff member performing assigned activities and granted defined autonomy in fulfilling specifically delegated functions assigned by the principal.

Assistant Superintendent - see Superintendent, Assistant, Associate, or Deputy

Associate Superintendent - see Superintendent, Assistant, Associate, or Deputy

Assistant, Teaching - see Teaching Assistant

06—Attendance Officer - a staff member performing the assigned activity of reporting identifiable causes for nonattendance, enforcing compulsory attendance laws, and surveying environmental conditions and situations related to delinquency, within the authority granted by state statute and local board policy.

Attendant - see Guard

- 07—Attorney - a staff member performing assigned professional duties of providing legal counsel and services for the school system.
- 08—Audiologist - a staff member performing specialized services of a clinical nature which involve diagnostic, evaluative, and therapeutic activities regarding hearing disabilities.
- 09—Audiometrist - a staff member performing assigned activities of testing the auditory perception of individuals by means of electrical or mechanical testing equipment.
- 10—Audiovisual Technician - a staff member performing assigned activities in the use and care of audiovisual equipment and in the development and production of audiovisual instructional materials.
- 11—Auditor - a staff member performing the assigned technical activities of verifying the accuracy and appropriateness of receipts, expenditures, accounts, and accounting statements in accordance with the laws and regulations that are applicable.
- 12—Bookkeeper - a staff member performing the assigned activities of maintaining a systematic record of financial assets, transactions, and obligations.
- 13—Bus Driver - a staff member performing the assigned activities of operating a vehicle for the purpose of transporting pupils to and from school or on trips involved in school activities.
- 14—Business Manager - a staff member performing assigned activities related to the management of fiscal affairs and physical properties essential to the accomplishment of school programs.
- 15—Buyer (purchasing agent) - a staff member performing the assigned activities related to purchasing policies, competitive bidding, vendor contacts and contractual and non-contractual agreements for the acquisition of material, capital equipment, and property essential to the accomplishment of school programs.
- 16—Cafeteria or Food Services Manager - a staff member performing activities related to food services and the serving of food products in a school cafeteria.

- 17—Cashier - a staff member performing the activities of receiving, acknowledging, recording, and placing receipts in accounts or other safe places according to the controlling board regulations.
- 18—Census Taker - a staff member performing assigned activities concerned with the systematic identification of resident persons in a school district, and the recording of selected biographical and related information.
- 19—Clerk - a staff member performing a variety of assigned activities pertaining to the preservation and/or reproduction of records and reports involving the use of files or mechanical devices such as bookkeeping machines, duplicating machines, typewriters, and tabulating machines.
- 20—Consultant - a staff member performing assigned activities involving the providing, organizing and interpreting of information in a specialized field for the purpose of improving staff performance and working environment.
- 21—Controller - a staff member performing assigned activities of expenditures control in conformity with budgetary provisions and/or statutory expectations.
- 22—Coordinator - a staff member performing assigned activities having the purpose of keeping a variety of immediate objectives in proper perspective while pursuing the accomplishment of common goals.
- Counselor, Guidance - see Guidance Counselor
- 23—Crafts and Trades Worker - a staff member performing activities assigned in skilled or semiskilled crafts or trades activities.
- 24—Custodian (janitor, matron) - a staff member performing assigned activities in the maintenance, operation, and servicing of the physical plant and equipment.
- 25—Data Processing Machine Operator - a staff member performing assigned activities regarding the operation of input, storage, computing, control, and output devices.
- 26—Dental Hygienist - a staff member performing dental hygiene services, such as the cleaning and care of teeth and gums, who is licensed to perform such services.



27—Dentist - a staff member who is licensed to practice dentistry and who is providing dental services.

Deputy Superintendent - see Superintendent, Assistant, Associate or Deputy

28—Dietitian - a staff member performing assigned activities regarding the application of nutrition principles to menu planning and food preparation.

29—Director - a staff member performing assigned activities involving a broad segment of related functions, such as pupil services or curriculum planning and implementation, but functioning within defined and limited autonomy.

Director, Assistant - see Assistant Director

30—Dispatcher - a staff member performing the activities of assigning vehicles and drivers to perform specific services, and recording such information concerning vehicle movement as the school system may require.

31—Draftsman - a staff member performing assigned activities in the preparation of working plans and drawings for engineering, manufacturing, or construction purposes.

Driver, Bus - see Bus Driver

32—Engineer - a staff member performing assigned professional engineering activities in such fields as civil, electrical, mechanical and structural engineering.

Engineer, Plant - see Plant Engineer

Engineer, Stationary - see Stationary Engineer

33—Food Services Worker - a staff member performing activities assigned by the cafeteria manager in the storing, preparation, and serving of food products.

34—Foreman - a staff member performing the assigned activities of overseeing the work of laborers and crafts or trades workers.

35—Grounds Keeper - a staff member performing assigned activities regarding lawn, tree, and shrub care, snow removal, and other related grounds or site work.

36—Guard (attendant) - a staff member performing assigned activities concerned with the safety and security of school property, facilities, and personnel.

37—Guidance Counselor - a staff member performing the assigned activities of assisting pupils in analyzing their strengths and weaknesses as a basis for the process of making plans and choices with respect to personal development.

Hearing Specialist - see Speech and Hearing Specialist

38—Helper - a staff member performing a variety of nontechnical, nonskilled activities, under the immediate direction of a skilled worker or other comparable party.

Hygienist, Dental - see Dental Hygienist

39—Inspector - a staff member performing assigned activities concerned with checking the condition of equipment and buildings as it relates to safety and health or the inspection of new construction as it relates to specifications and codes.

40—Instructional Programmer - a staff member performing the assigned activities of providing precise sequences of information to pupils through devices such as teaching machines.

41—Intern - a staff member who is performing assigned activities which are part of a preparation plan of a college or local school system in which there is close supervision and which experience contributes to the fulfillment of degree, license, and/or upgrading certification requirements.

42—Librarian - a staff member performing assigned activities regarding the selection, ordering, classification and distribution of books and other reproduced materials, and who serves a leadership and consultative role in the development and usage of curricular materials.

Machine Operator, Data Processing - see Data Processing Machine Operator

- 43— Machine, Programmer - a staff member performing the assigned activities of developing precise sequences of machine-coded instructions for data processing machines.
- Manager, Business - see Business Manager
- Manager, Cafeteria - see Cafeteria Manager
- 44— Messenger - a staff member performing assigned activities such as sorting and delivering letters, messages, packages, and records to, from, and within the school system.
- Nurse - see School Nurse
- 45— Nurse-Teacher - a staff member performing assigned teaching activities requiring the technical education and training necessary to qualify for licensing as a nurse and a teacher.
- 46— Nutritionist - a staff member performing assigned activities regarding the nutritive value of foods, including the analysis and interpretation of nutrient information for adaptation and application to various food problems.
- 47— Occupational Therapist - a staff member performing assigned duties involving planning, organization, and participation in medically oriented occupational programs to rehabilitate persons who are physically or mentally ill.
- Officer, Attendance - see Attendance Officer
- Operator, Vehicle - see Vehicle Operator
- Operator, Data Processing Machine - see Data Processing Machine Operator
- 48— Ophthalmologist - a staff member who is a licensed physician providing specialized services within the school system in the care of the eye and its related structures, including prescribing and administering medications and performing surgery.
- 49— Optometrist - a staff member who is a nonmedical practitioner licensed to treat optical and muscular defects of the eye without the use of drugs or surgery, through the use of lenses, exercises, visual training, and control of visual environment.

Pathologist, Speech- see Speech Pathologist

- 50— Physical Therapist - a staff member performing assigned activities for the purpose of restoring damaged or atrophied muscles to optimum use through the use of exercises, heat, water, massage and special equipment and machines.
- 51— Physician - a staff member who is licensed to practice the art and science of medicine and who is providing medical services within the school system.
- 52— Plant Engineer - a staff member performing the assigned activities of supervising the operational staff of individual buildings or plants.
- 53— Principal - a staff member performing the assigned activities of the administrative officer of an individual school within a school system to whom has been delegated major responsibility with commensurate authority for the direction of all aspects of the program.
- 54— Printer - a staff member performing the assigned skilled activities of hand and machine setting of type, assembling type, and other skilled activities in connection with preparation for printing, and the actual printing, either by letterpress or offset methods.
- Programmer, Instructional - see Instructional Programmer
- Programmer, Machine - see Machine Programmer
- 55— Psychiatrist - a staff member who is a licensed physician performing professional services for the school system in the art and science of psychiatric medicine.
- Psychologist - see School Psychologist
- 56— Psychometrist - a staff member assigned to perform professional activities in measuring the intellectual, social, and emotional characteristics of pupils through the use of intelligence, aptitude, achievement, and other psychological tests.
- 57— Secretary - a staff member performing assigned activities regarding correspondence, file maintenance, record keeping, and other routine and detail work assigned by a professional staff member.

- 58—School Nurse - a staff member who is licensed to practice nursing and who is providing nursing services within the school system.
- 59—School Psychologist - a staff member performing assigned services of psychological evaluation and analysis of pupils, cooperating in program development, conducting research, assisting staff members with pupil problems of a psychological nature and broadening their understanding of psychological forces.
- 60—Social Worker - a staff member performing the assigned activities related to the prevention and correction of personal, social, and emotional maladjustments of pupils which involve family, school, and community relationships.
- 61—Speech and Hearing Specialist (clinician) - a staff member performing assigned activities such as assisting in the identification of speech and hearing handicaps of children; planning and conducting special programs and services for speech and hearing handicapped children (exclusive of the deaf); counseling school personnel, parents, and children concerning problems related to speech and hearing impairment; and cooperating with persons in related disciplines and community services.
- 62—Speech Pathologist - a staff member who is a specialist in communicative disorders including diagnosis, research, and management of speech, hearing, and language disabilities, including the planning and directing of remedial programs and counseling and guidance to handicapped individuals.
- 63—Speech Therapist - a staff member who is a specialist in the treatment of speech, hearing, and language disabilities such as stuttering, voice disorders, and articulatory and speech problems associated with impairments.
- 64—Stationary Engineer - a staff member performing assigned activities regarding the operation and maintenance of service systems and equipment within a school building, such as heating, cooling, electrical and plumbing systems.
- 65—Stenographer - a staff member performing assigned activities such as preparing, transcribing, transmitting, systematizing, or preserving written communications and reports.

- 66—Superintendent, Assistant, Associate, or Deputy - a staff member granted substantial autonomy in performing specifically delegated functions in assistance to the chief executive officer of the school administrative unit.
- 67—Superintendent of Schools - a staff member who is the chief executive officer of a school administrative unit and works directly under a board of education, or in private schools, is responsible to an advisory committee or official board, or in the absence of a board, makes decisions directly related to the instructional programs.
- 68—Supervisor - a staff member performing the assigned activities of directing, stimulating, analyzing, planning, and implementing personnel, material, and educative activities involved in school functions.
- 69—Systems Analyst - a staff member performing assigned activities having as their purpose the collection, organization, and evaluation of facts about a system and the environment in which it operates, including determination of the demands for outputs, the sources of data, and the processing methods and files that serve as a link between input and output.
- 70—Teacher - a staff member performing assigned professional activities involving the selection, organization, presentation, and evaluation of the learning experiences of pupils in the school environment.

Teacher, Visiting - see Visiting Teacher

- 71—Teacher Aide - a non-certificated staff member performing assigned non-professional activities of a clerical, secretarial, or technical nature with autonomy subjected to the requirements of the professional staff member to whom assigned.
- 72—Teaching Assistant - a certificated staff member performing professional activities of a contributive and supportive nature with autonomy subjected to the requirements of the professional staff member to whom assigned.

Therapist, Occupational - see Occupational Therapist

Therapist, Physical - see Physical Therapist

Therapist, Speech - see Speech Therapist

Trades Worker - see Crafts and Trades Worker

73— Vehicle Operator - a staff member performing assigned activities consisting of driving a vehicle for the purpose of transporting materials required to support the school programs.

74— Visiting Teacher - a staff member performing assigned activities having the purpose of coordinating the school and home attack on the problems of the personal adjustments of pupils.

Work Adjustment Counselor - see Guidance Counselor

Worker - see Food Services Worker, or Helper

SCHOOL (ORGANIZATION) CODE - this is an assigned number to identify an organization under a given administrator. This number is to be supplied by the state education association.

SCOPE OF ASSIGNMENT - a numeric code indicating the classification of the assigned activities of a staff member. This is to be coded as follows:

- 1— Single School or Supporting Facility
- 2— More Than One School or Supporting Facility but Less Than Systemwide
- 3— Systemwide
- 4— More Than One System but Less Than Statewide
- 5— Statewide

SECTION NUMBER - a number generated for each section of a course.

SEX - the sex of the staff member. This is to be coded as follows:

- 1— Male
- 2— Female

SOCIAL SECURITY NUMBER - the number assigned to the staff member by the Social Security Administration.

STATE EXPERIENCE - the number of years to the nearest half year, excluding the current year, a staff member has been

employed in this state in elementary and/or secondary public and nonpublic school systems that conduct programs supporting the transfer of students in established grade sequences. Record as by example: 15.0 years or 06.5 years. Three digits should be entered, using zeros, if necessary.

SUBJECTS AUTHORIZED - a numeric code indicating the subject the staff member is authorized to teach by each active license, certificate, or permit held. This is to be coded by referring to the course title codes of Instructional Programs and dropping the first two digits. See section 806.3.

TOTAL CONTRACT SALARY - this item expresses to the nearest whole dollar the salary for the regular school year including supplemental pay for Professional-Educational or Professional (PE-P) only. This should not include payment for summer school, night school, and adult education instruction, but should include all payment for extra duties specifically stated in the contract. Enter a five-digit number using zeros, if necessary.

TOTAL EDUCATIONAL EXPERIENCE - the number of years to the nearest half year the staff member has been employed in professional-educational or professional positions that conduct programs supporting transfer of pupils in established grade sequence in all educational systems, excluding the current year. Record years as follows: 15.0 years or 06.5 years. Three digits should be entered, using zeros, if necessary.

TOTAL SEMESTER HOURS - the total number of semester hours of credit earned by the staff member in undergraduate and graduate study. To convert quarter hours to semester hours, multiply the number of quarter hours by two-thirds. Example: 60 quarter hours times 2/3 equal 40 semester hours. Trimester hours correspond to semester hours and need no conversion.

YEAR FIRST DEGREE EARNED - the year in which the first degree, certificate or diploma was granted to the staff member. Record the last two digits of the year the degree was granted.

YEAR HIGHEST DEGREE EARNED - the year in which the highest degree, certificate or diploma was granted. Record the last two digits of the year the highest degree was granted.

YEAR LAST CREDIT EARNED - the most recent year in which a staff member satisfactorily completed course work at an accredited institution. Certified vocational teachers would enter the most recent work completed which is related to their position. Record the last two digits of the most recent year in which the course was completed.

## Chapter 1000

### 1000. PUPIL SUBSYSTEM

#### 1001. PUPIL SUBSYSTEM COMMITTEE

The MSEIP Pupil Subsystem was primarily concerned with collecting and developing an individual pupil information system that would satisfy requirements of state education agency needs, that would provide for needs of the local school districts in the collection of pupil data, and would provide feedback of meaningful pupil data and analyses on which local education decisions can be based.

This subsystem sought to identify the relationships that exist among individual pupil characteristics in the areas of academic achievement, physical development, mental abilities, emotional and social adjustment, and out-of-school environment. Also, to identify and provide for that pupil data needed for analysis, research, regulatory, evaluation, and educational decision making at the SEA level; and to provide for the inclusion of pupil data that is legally required by individual state statutes. In designing the system, consideration was given to providing quantitative pupil data needed to identify areas in which SEA's can increase fulfillment of their leadership functions. Consideration was also given to consistency with U.S. Handbook V.

The Pupil Subsystem Committee was organized in June 1966. Its executive officer was an MSEIP Central Staff Supervisor with a background in pupil personnel. A chairman was elected from the membership. The 13 committee members included a representative from the SEA of each participating state. The representatives, appointed by their chief state school officers, were SEA personnel whose positions were either in pupil personnel services or closely related areas. The members of the Pupil Subsystem Committee collectively agreed on the inclusion of data items for this subsystem.

## 1001.1 Introduction

The Pupil Subsystem is a component of an integrated educational information system. The philosophy, rationale, item listings, and item definitions found in this chapter are the result of the combined suggestions, proposals, and reactions of the Pupil Subsystem Committee members, consultants, MSEIP Central Staff, and the Pupil Subsystem Supervisor. The item listings that have evolved from this effort are open-ended to permit updating and expansion as needs change and computer capabilities improve. This implies the necessity for constant appraisal of SEA and LEA requirements for educational information.

The Pupil Subsystem data file is unique among the subsystems in that there are more pupils requiring data collection within any given state than the Personnel, Instructional Programs, and Facilities Subsystems data combined. This creates a major storage and retrieval problem within the MSEIP System. The problem can be solved only by careful scrutinization and selection of essential data items collected for each pupil.

With this in mind, the composite data items as specified by the Pupil Subsystem Committee have been segregated, listed, and described contiguously in two categories.

The grouping and ultimate data item categorization resulted from careful consideration of each item's applicability as either useful or pertinent data at the SEA level.

The following sections will encompass the file structure and data layout, the file construction considerations including the data collection methodology, the file sequencing, the pupil categories, and sample output reports. The last section of this chapter will list in total all of the items, their definitions, and their descriptions.

## 1002. PUPIL DATA FILE

### 1002.1 Pupil Categories

The Pupil Subsystem data file is separated into two categories based on relative need of the data items. The first category consists of items 1-12 which are considered essential in collecting pupil information. The second category contains optional data

items. All pupil data items in each category are collected for each individual pupil. These items are listed in section 1006.1.

The items in the first category are those which are essential for the calculation of state aids, transportation aids, enrollments, and other required statistics. These items must be collected to insure a comprehensive and complete Pupil Subsystem. They are both the minimum and maximum number of items that will provide the SEA with the basic units of quantitative information necessary to meet its responsibilities as charged by the statutes of the state.

The items in the second category are optional. The SEA's must carefully determine, and consequently select from this list, those items which they desire to collect and add to the essential items of the first category. It should be noted that it is imperative, for reasons specified above, that each state attempt to keep its selection of items from this optional list to an absolute minimum. This is necessary because of the large number of pupils within a state and the voluminous amount of data to be collected and maintained.

### 1002.2 File Structure and Data Layout

The basic structure and data format of the Pupil file must serve several criteria. The file should be constructed to make it as adaptable as possible for the extraction of management and statistical reports. To accomplish this, the following two requirements are necessary:

The file should be structured to provide an adequate and easy link to the other four subsystems.

The file must contain only meaningful and useful data in standard record format.

Maintaining data that is infrequently or never used is extremely expensive and time consuming. A requirement should be established at the outset of the implementation of this and other subsystems to periodically purge the data files and eliminate that data which is ambiguous, outdated, or extraneous.

The file should be constructed of variable length records with one record for each pupil in the file. Each record should be a block or

physical record such that the data for each pupil can be autonomous.

The first record on each physical file of information should conform to standard label and header conventions.

The physical records should be designed so that all items of fixed length are contained in the high-order position of the record. (The fixed items are those such as sex, grade entered, membership, transportation status, etc.)

The physical records should be designed so that all the items of variable length and number follow those of fixed length and are preceded by a field containing the item character count of the variable data to follow. (The variable items are those such as standardized test scores, number of courses, etc.)

The future use of generalized report or statistical table generators could be made more efficient if the files were in this standard design.

Another important factor in file structuring and data format is to collect in total the full complement of data for each pupil regardless of whether he may fall into a special category of pupil, such as mentally or physically handicapped pupil. This will provide for standardization within the subsystem without sacrifice of speed and time to encompass a small percentage of the pupils. If additional information is desired or changes needed to include the small minority, it is recommended that a special system be set up to handle it rather than burden the MSEIP proposed system. This method of file and record construction is more expensive and time consuming than the conventional fixed physical record, or the fixed logical record file design, but the end product is so much more compact, error free, and data useable, that the efficiency of processing far overcomes the initial expense.

### 1003. FILE CONSTRUCTION CONSIDERATIONS

#### 1003.1 Data Collection

There are several general and specific rules which form the methodology of data collection within the Pupil Subsystem. The first step in the Pupil Subsystem data collection is to determine

and specify the items which it will be necessary to collect. This list of items should then be submitted to a forms designer who, with the help of a technical systems analyst, should design a form which will permit all of the items to be collected with one form at one time.

The intention of the proposed Pupil Subsystem in its initial implementation would be to collect data on each of the items in its first category (listed in section 1006.1) for each individual pupil within district-county and organization at the state level on an annual basis. If the initial collection is one hundred percent, then future collections will form the basis for updating only the data items that change in a given individual pupil record.

Because each state will not necessarily require the same data to be collected, it may be that the form necessary for the data collection will vary slightly from state to state. Another factor that could cause a variance from state to state is the means chosen to convert the data into the electronically useable forms. Some states may wish to keypunch their data, other states may wish to use a mark-sense optical scanner or a digital scanner to convert their data to tapes or other electronic forms. These factors must be taken into consideration before data collection begins.

The methods used in the collection and maintenance of Pupil data must be consistent and uniform or the results of the use of these items will be either inaccurate or meaningless. The design of the form is of extreme importance in maintaining the consistency and accuracy of reporting. The form should be self-explanatory, simple to use, and with as little room for error as possible. The grouping of similar or related items next to each other on the form(s) will improve reliability and help towards achieving these goals.

Sticking to the overall goal of the MSEIP System of compatibility between subsystems, it is recommended that each of the techniques of data collection and conversion be consistent among all five subsystems.

#### 1003.2 File Sequencing

Whether the pupil data are processed sequentially or randomly, the original data that are collected should be sequenced before

they are structured as a file. In like manner, the data that are collected as update items should be sequenced prior to the update operation. This allows for a more efficient system regardless of the type of processing that is used. To increase the speed and efficiency of locating and extracting individual pupil information, it is necessary to devise two pupil numbering systems. The first numbering system consists of an eleven-digit Universal Birth Number. This number provides a unique identification for each pupil. For a further explanation of this numbering system, refer to page 297 of the Pupil data item definitions and codes.

The second numbering system consists of a five-digit internal pupil sequence number which is assigned by the state by district, school within district, and grade within school. This number is necessary because of the voluminous size of the pupil file and the need to isolate a range of pupils to save time in the searching of the file for information. This numbering system is also used for linkage purposes from the other files. This internal numbering system described below will insure continuity of information within district and within state. This will facilitate pupil transfers between schools within a district without the need to renumber and without the loss of individual pupil data.

This internal pupil identification number assignment plan by district is as follows:

FIGURE 10-1. SAMPLE OF INTERNAL PUPIL SEQUENCE NUMBER

File Identification Number—Five Numeric Digits District XXXX	
Grade	Internal Pupil Sequence Range
K	No. 1- 7603
1	No. 7604-15387
2	No. 15388-23081
3	No. 23082-30774
4	No. 30775-38468
5	No. 38469-46161
6	No. 46162-53855
7	No. 53856-61548
8	No. 61549-69242
9	No. 69243-76935
10	No. 76936-84629
11	No. 84630-92322
12	No. 92323-99999

It is recommended that each state evolve a similar internal numbering scheme by district. Many states with several million pupils will probably want to expand the number of digits for this internal number to six.

If each state numbers the pupils within each district according to a plan similar to the plan shown above, a student may move from one school to another and retain the same number because each school will be assigned a different subrange of numbers. This will facilitate consistent, accurate reporting on a pupil who is transferred between schools within a district. Should a pupil transfer to a new district, he, of course, will be assigned a new number and a new data file will be created for him. His old file within his old district will be retained for the rest of the year and will be eliminated when the file is purged the next year. In addition, through the normal update cycle at the state department level, all previous information contained on his file in the old district will automatically be transferred to his new district and added to his new district file.

This internal pupil sequence number will be reassigned for all pupils each year. Therefore, this number will be unique only for the processing year.

As a result, if the state is interested in following a pupil from year to year and after graduation, it is necessary to follow the pupil by the Universal Birth Number.

#### 1004. SAMPLE OUTPUT REPORT

The following is a sample report using only data contained in the Pupil Subsystem. Although contrived, this report, because of the delineation by grade, probably typifies the largest percentage of reports likely to be desired from the Pupil Subsystem.

With a minimum of 12 items in the Pupil data file, an infinite number of varied reports is possible. In this sample report, the agency that has paid the tuition and transportation costs is specified by grade in summary form.



FIGURE 10-2. PUPIL SUBSYSTEM SAMPLE REPORT

	Grade <u>1</u>	Grade <u>2</u>	Grade <u>3</u>	Grade <u>4</u>	Grade <u>5</u>	Grade <u>6</u>
<b>TUITION PAID BY:</b>						
Another District	17	9	15	6	10	4
County	9	1	3	2	4	7
Parent	5	0	7	0	4	12
No Tuition	<u>3,334</u>	<u>3,672</u>	<u>3,719</u>	<u>3,500</u>	<u>3,661</u>	<u>3,142</u>
<b>TOTALS</b>	<b>3,365</b>	<b>3,682</b>	<b>3,744</b>	<b>3,508</b>	<b>3,679</b>	<b>3,165</b>
<b>TRANSPORTATION PAID BY:</b>						
District	7	4	9	8	6	4
Another District	17	9	15	6	10	4
State Only	16	14	14	17	10	11
Private Individual	16	7	7	9	8	6
District and State	<u>819</u>	<u>721</u>	<u>804</u>	<u>917</u>	<u>841</u>	<u>736</u>
<b>TOTALS</b>	<b>875</b>	<b>755</b>	<b>849</b>	<b>957</b>	<b>875</b>	<b>761</b>

1005. *MULTIPLE FILE USES*

The central theme of the MSEIP System is that any one or all of the five subsystems may be used in formulating reports. This allows for complete flexibility at the state level, not only for producing reports for state and federal use, but also for ease of retrieving data for research projects. To allow such flexibility, an

index table will be established during file building which will provide a linkage among all subsystems.

This index is presented in Chapter 1100. It will allow a linkage between the Pupil Subsystem and any other given subsystem. The establishment and maintenance of these indexes will be the single most vital feature in the operation of this information system.

1006. *DATA ITEM LISTINGS, DEFINITIONS, AND CODES*

1006.1 Data Item Listings

Chart 10-1, below, lists the individual Pupil data items of the first category. These items, 1-12, are essential in calculating required individual pupil statistics. Chart 10-2 lists the individual Pupil data items of the second category, 13-80, which are optional in establishing an individual pupil data file.

CHART 10-1. PUPIL SUBSYSTEM FILE - CATEGORY ONE

FIELD NO.	DATA ITEMS (Definitions on pages 282 to 288, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
1	County-District Code	7	N
2	School (Organization) Code	3	N
3	Internal Pupil Sequence Number	5	N
4	Sex	1	N
5	Grade Entered	2	N
6	Type of Entry or Re-entry	3	A/N
7	Withdrawal	2	N
8	Transportation Status of the Pupil	5	N
9	Residence Criteria	1	N
10	Tuition Status	1	N
11	Number of Half Days Membership	3	N
12	Number of Half Days Present	3	N

CHART 10-2. PUPIL SUBSYSTEM FILE - CATEGORY TWO

FIELD NO.	DATA ITEMS (Definitions on pages 288 to 328, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
13	Adults Living in the Household (21 Years or Older)	variable	A/N
14	Age Group of the Pupil	1	N
15	Any Other Name	25	A
16	Area of Specialization and Course Emphasis	3	N
17	Brothers and Sisters Living in the Household	variable	A/N
18	Business Telephone Number of the Head of Household, if Differ- ent from the Parent or Legal Guardian	10	A/N
19	Business Telephone Number of Male Parent or Legal Guard- ian	10	A/N
20	Citizenship Status	1	N
21	Course Information	variable	N
22	Course Load and Time Status	3	N
23	Date of Birth	6	N
24	Disease and Illness	variable	N
25	Educational and Vocational Interests and Plans	3	N
26	Educational Level of the Man with whom the Pupil Resides	2	N

(CHART 10-2. PUPIL SUBSYSTEM - CATEGORY TWO,  
CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 288 to 328, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
27	Educational Level of the Woman with whom the Pupil Resides	2	N
28	Eligible for Federal Assistance	variable	N
29	Eligible for Welfare	variable	N
30	Evidence and Verification of Birth	1	N
31	Follow-up After High School Graduation or Withdrawal	3	N
32	Full Legal Name	25	A
33	Hearing	5	N
34	Height	2	N
35	Identification Number	11	A/N
36	Immunization Record	variable	N
37	Language	variable	N
38	Limitations for School Activities	variable	N
39	Marital Status	1	N
40	Name of the Female Head of Household, if Different from the Female Parent	25	A
41	Name of the Female Parent	26	A/N
42	Name of the Male Head of Household, if Different from the Male Parent	25	A
43	Name of the Male Parent	26	A/N

(CHART 10-2. PUPIL SUBSYSTEM - CATEGORY TWO, CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 288 to 328, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
44	Name of School	63	A/N
45	Nonschool Performance	variable	A/N
46	Number of Half Days Absent	3	N
47	Number of Times Tardy	3	N
48	Occupation of the Man with whom the Pupil Resides	2	N
49	Occupation of the Woman with whom the Pupil Resides	2	N
50	Other Children Living in the Household	variable	A/N
51	Person to Call in Case of Emergency	50	A/N
52	Physical Examination	3	N
53	Physical Impairment	variable	N
54	Place of Birth	45	A/N
55	Promotion or Retention	1	N
56	Pupil Referral	variable	N
57	Pupil's Telephone Number and Location	11	A/N
58	Race	1	N
59	Reason for not Entering Local Public School	1	N
60	Reason for Withdrawal	2	N
61	Relationship of the Female Head of Household to the Pupil	1	N
62	Relationship of the Female Parent to the Pupil	1	N

(CHART 10-2. PUPIL SUBSYSTEM - CATEGORY TWO, CONTINUED)

FIELD NO.	DATA ITEMS (Definitions on pages 288 to 328, in alphabetical order.)	SIZE DIG/ CHAR	TYPE A,N A/N
63	Relationship of the Male Head of Household to the Pupil	1	N
64	Relationship of the Male Parent to the Pupil	1	N
65	Religion	1	N
66	Residence of the Female Parent if Different from the Pupil's	80	A/N
67	Residence of the Male Parent if Different from the Pupil's	80	A/N
68	Residence of the Pupil	80	A/N
69	School Activities (Cocurricular)	variable	N
70	School from which Incoming Pupil is Received	63	A/N
71	Speech	5	N
72	Standardized Tests and Inventories	variable	N
73	Surgery and Injuries	variable	N
74	Teeth	7	N
75	Telephone Number of the Male Head of Household and Location if Different from the Pupil's and Male Parent's	11	A/N
76	Telephone Number of the Male Parent or Legal Guardian and Location, if Different from the Pupil's	11	A/N
77	Type of Class	1	N
78	Type of Pupil	2	N
79	Vision	7	N
80	Weight	3	N

## 1006.2 Data Item Definitions and Codes

This subsection lists the Pupil data item definitions and codes in alphabetical order within each category. The first category consists of the essential items; the second lists the optional items.

### CATEGORY ONE

**COUNTY-DISTRICT CODE** - this is a numeric field comprised of a three-digit county code and a four-digit district code.

**GRADE ENTERED** - the grade entered by the pupil, during this current school year.

01—Grade 1	14—Grade 14 (College 2 Years)
02—Grade 2	15—Third Year College
03—Grade 3	16—Fourth Year College
04—Grade 4	20—Nursery/Pre-kindergarten
05—Grade 5	21—Kindergarten
06—Grade 6	30—Adult Education
07—Grade 7	40—Ungraded Elementary
08—Grade 8	41—Ungraded Secondary
09—Grade 9	42—Special Education, Elementary
10—Grade 10	43—Special Education, Secondary
11—Grade 11	44—Sheltered Workshop
12—Grade 12	45—Clinic
13—Grade 13	99—Other

(College 1 Year)

**INTERNAL PUPIL SEQUENCE NUMBER** - this is a five-digit numeric field assigned to a pupil for internal file sequencing purposes. This code is assigned yearly at the district level.

**NUMBER OF HALF DAYS MEMBERSHIP** - the number of half days a pupil is present and absent when school is in regular session during a given reporting period.

**NUMBER OF HALF DAYS PRESENT** - the number of half days a pupil is present when school is in regular session during a given reporting period.

### RESIDENCE CRITERIA

- 1—Resident
- 2—Nonresident Out of State (Pupil who resides in another state.)

- 3—Nonresident Closed School (Pupil who resides in another active district which has no schools.)
- 4—Nonresident Normal (Pupil who resides in another district which has elementary schools only but goes to school in this district.)

**SCHOOL (ORGANIZATION) CODE** - this is a numeric field consisting of a three-digit organization code.

**SEX** - the sex of the pupil.

- 1—Male
- 2—Female

**TRANSPORTATION STATUS OF THE PUPIL** - the information about whether or not a pupil is transported to and/or from school, or receives services in lieu of transportation, and at whose expense.

#### Transported

- 1—Yes
- 2—No

#### Whose Expense

- 1—District Only
- 2—Another District
- 3—State Only
- 4—Private Individual
- 5—District and State
- 9—Other

**Distance Transported** - one-way distance from school

- 1—Less than One Mile
- 2—One Mile but Less than Two Miles
- 3—Two Miles but Less than Five Miles
- 4—Five Miles or More

#### Qualified for State Aid

- 1—Yes
- 2—No

#### Services in Lieu of Transportation

- 1—Yes
- 2—No

**TUITION STATUS** - information indicating whether a district receives tuition payment for a pupil, regardless of his residence.

- 1— No Tuition
- 2— Paid by Another County
- 3— Paid by Another District
- 4— Paid by Another State
- 5— Paid by Parent
- 9— Other

#### **TYPE OF ENTRY OR RE-ENTRY**

**Original Entry** - a pupil entering a school or other instructional situation for the first time in the United States or its outlying areas is referred to as an original entry.

- 0— Original Entry

**Type of Re-entry** - any entering pupil who was previously enrolled in any public or nonpublic school in the United States and/or its outlying areas is referred to as a re-entry. Re-entry codes and definitions are the following:

- 1— (R-1) - A Pupil Received from Within the Same School - this applies where the pupil continues in membership in the school from one regular school term to the next; where the pupil's name has been transferred during a regular school term from one homeroom register to another because of a transfer, promotion, or demotion within the same school; and where the pupil returns to the same room in the same school after withdrawal or discharge without entering any other school during the intervening period.
- 2— (R-2) - Re-entry from a Public School in the Same Local Administrative Unit - a pupil received from another school under the same local control. This applies to pupils who are promoted from one school to another; change their residence and go to a different school; or are reassigned to a different school.
- 3— (R-3) - Re-entry from a Nonpublic School in the Same Local Administrative Unit - a pupil received from a nonpublic school located in the same local district. This applies to pupils who transfer from private or parochial schools located within the local district.

- 4— (R-4) - Re-entry from a Public School Outside the Local District but Within the Same State as the Local District - a pupil received from a public school outside the local district but within the same state as the local district.

- 5— (R-5) - Re-entry from a Nonpublic School in the State, but Outside the Local District - a pupil received from a private or parochial school outside the local district but within the same state as the local district.

- 6— (R-6) - Re-entry from Another State or Country - a pupil received from a school, public or nonpublic, located outside the state or country.

- D— Former Dropout - a pupil whose most recent previous school membership was terminated by dropping out. The suffix "D" should be added to designation for re-entry to indicate the source of the re-entry: 1D, 2D, 3D, 4D, 5D, and 6D.

**Control** - Is this the first time you have enrolled in a school in this state this year?

- 1— Yes
- 2— No

**WITHDRAWAL** - information about pupils who have withdrawn from membership in a class, grade, or school by transferring, completing schoolwork, dropping out, or because of death.

**Transfer** - a pupil who leaves one class, grade, or school and moves to another class, grade, or school is referred to as a transfer. Coded as follows:

- 01— (T-1) - A pupil transferred to another grade or homeroom within the same school.
- 02— (T-2) - A pupil transferred to another public school or other instruction under public school supervision in the same administrative unit.
- 03— (T-3) - A pupil transferred to a nonpublic school located within the same local administrative unit.
- 04— (T-4) - A pupil transferred to a public school in the state, but outside the local administrative unit.

- 05—(T-5) - A pupil transferred to a nonpublic school in the state, but outside the local administrative unit.
- 06—(T-6) - A pupil transferred to another school, public or nonpublic, outside the state.
- 07—(T-7) - A pupil transferred to another school, public or nonpublic, in another country.

Completion - a pupil who has graduated from a high school (grade 12) or junior college or otherwise has fulfilled the requirements for a prescribed program of studies.

- 08—Graduated from High School or Junior College - a pupil receives a diploma or degree as formal recognition for the successful completion of a high school or junior college program of instruction.
- 09—Completed Other Schoolwork - a pupil who has completed school in an approved manner other than 08 and receives a certificate of completion, gains recognition for work as a high school postgraduate, is accepted for early admission to a college or university, or receives other recognition.

Dropout - a pupil who leaves school, for any reason except death, before graduation or completion of a program of studies and without transferring to another school.

- 10—Physical Illness - a pupil leaves school because of physical illness.
- 11—Physical Disability - a pupil who was excused from school attendance because of a physical defect of handicap of a permanent or semipermanent nature.
- 12—Mental Illness - a pupil who was excused or required to leave school because of a mental illness.
- 13—Mental Disability - a pupil who was excused from school attendance because of a mental handicap or defect of a permanent or semipermanent nature.
- 14—Behavioral Difficulty - a pupil who was required to withdraw from school because of behavioral difficulty.
- 15—Academic Difficulty - a pupil leaves school because of academic difficulty.

- 16—Lack of Appropriate Curriculum - a pupil leaves school because the curriculum was not appropriate for his needs.
- 17—Poor Pupil-Staff Relationship - a pupil leaves school because of poor relationships with members of the school staff.
- 18—Poor Relationship with Fellow Pupils - a pupil leaves school because of poor relationships with fellow pupils.
- 19—Dislike of School Experience - the pupil leaves school because of an active dislike of one or more aspects of his school experiences.
- 20—Parental Influence - a pupil leaves school as a result of parental encouragement to do so.
- 21—Needed at Home - a pupil leaves school to help with work at home.
- 22—Economic Reasons - a pupil leaves school because of economic reasons, including inability to pay for school expenses and inability of parents to provide suitable clothing.
- 23—Employment - a pupil leaves school to seek or accept employment, including employment required to support parents or other dependents.
- 24—Marriage - a pupil leaves school to marry.
- 25—Pregnancy - a pupil leaves school, or is required to leave school, because of pregnancy.
- 26—Other Known Reason - a pupil leaves school or was required to leave for some reason other than those given for codes 01 to 25 above.
- 27—Reason Unknown - a pupil leaves school for a reason which is not known.

Note: Codes 28 and 29 will not be included in computing total dropouts.

- 28—Never Belonged in this School - a pupil who was erroneously put into another school's file when in fact he never belonged to that school.

Death - a pupil's name was removed from the membership roll of the school following his death.

29— Death - a pupil's name is removed from the rolls of the school because of his death.

## CATEGORY TWO

ADULTS LIVING IN THE HOUSEHOLD (21 Years or Older) - the names, birthdates, and relationships of adults living in the household, other than parents, heads of household, or brothers and sisters.

### Relationship

- |           |                |
|-----------|----------------|
| 1— Aunt   | 6— Grandmother |
| 2— Uncle  | 7— Grandfather |
| 3— Niece  | 8— No Relation |
| 4— Nephew | 9— Other       |
| 5— Cousin |                |

Specify in the left-most character position of this item the total number of adults living in the household. Example: 2—02. Immediately following this code, specify the last name followed by a space and then the first name followed by the birthdate and relationship code. For example:

**02 SMITH JOHN 091132 5 JONES ANN 112603 6**

AGE GROUP OF THE PUPIL - the age group into which a pupil falls at the time of registration for an adult education program.

- |             |                |
|-------------|----------------|
| 1— Under 18 | 6— 35-44       |
| 2— 18-19    | 7— 45-54       |
| 3— 20-24    | 8— 55-64       |
| 4— 25-29    | 9— 65 and over |
| 5— 30-34    |                |

ANY OTHER NAME - the last name and any appendages such as Jr. or III, first name, and middle name other than the legal name by which the pupil is known; the maiden name of a married female should be used as her middle name. (Excluding nicknames)

Leave one blank space between the combined last name with appendage, and the first name and the middle name. Example:

**JONES JR DAVID ALLEN**

AREA OF SPECIALIZATION AND COURSE EMPHASIS - the general accumulation of courses completed by a pupil enabling him to qualify for a diploma, certificate, or degree for completion of schoolwork as stipulated by the practices of the local and/or state school system.

### Area of Specialization

- |                        |                          |
|------------------------|--------------------------|
| 0— Does Not Apply      | 5— Liberal Arts          |
| 1— General             | 6— Liberal Arts Transfer |
| 2— College Preparatory | 7— Technical             |
| 3— Business            | 8— Terminal Occupational |
| 4— Vocational          | 9— Other                 |

### Course Emphasis

- |  |   |
|--|---|
| 00— Does Not Apply                                   | 12— Music   |
| 01— Agriculture                                      | 13— Natural Science   |
| 02— Art  | 14— Office Occupations  |
| 03— Business Education                               | 15— Social Sciences   |
| 04— Distributive Education                           | 16— Technical Education   |
| 05— English Language Arts                            | 17— Trades and Industry (Industrial Education)                      |
| 06— Foreign Languages                                | 18— General Elementary Education and/or General Secondary Education |
| 07— Health Occupations                               | 19— Exceptional Child Education/Differentiated Curriculum           |
| 08— Safety, Physical Education, and Driver Education |   |
| 09— Home Economics                                   |   |
| 10— Industrial Arts                                  |   |
| 11— Mathematics                                      |   |

BROTHERS AND SISTERS LIVING IN THE HOUSEHOLD - the names, birthdates, and relationships of brothers and sisters living in the same household as the pupil.

### Relationship

- |                 |                 |
|-----------------|-----------------|
| 1— Brother      | 4— Half Sister  |
| 2— Sister       | 5— Step Brother |
| 3— Half Brother | 6— Step Sister  |

Specify in the left-most character position of this item the total number of brothers and sisters; following this, the name, birthdate, and relationship without spaces. Example:

3	JOHN	060660	3	JUDY	041058	2	JAN	100156	1
---	------	--------	---	------	--------	---	-----	--------	---

**BUSINESS TELEPHONE NUMBER OF THE HEAD OF HOUSEHOLD** (If Different from the Parent's or Legal Guardian's) - the current telephone number of the head of household's employer. Indicate the area code and all of the letters and/or digits.

**BUSINESS TELEPHONE NUMBER OF THE MALE PARENT OR LEGAL GUARDIAN** - the current telephone number of the male parent's or legal guardian's employer. Indicate the area code and all of the letters and/or digits.

**CITIZENSHIP STATUS** - the nature of the pupil's citizenship status within the United States.

- 1 — United States Citizen
- 2 — Other than United States Citizen

**COURSE INFORMATION** - the Local Course Number and Section Number, Mark of Course Performance, and the Credit Information given to the individual courses in which a pupil is enrolled.

**Local Course Number and Section Number** - the Local Course Number and Section Number as specified in the Instructional Programs Subsystem section of this document.

**Mark of Course Performance** - any final mark or report received by the pupil for a course or for a portion of subject matter. If a percentage grade is used, convert to the appropriate letter grade.

- |              |                    |
|--------------|--------------------|
| 0 — No grade | 5 — F              |
| 1 — A        | 6 — Unsatisfactory |
| 2 — B        | 7 — Satisfactory   |
| 3 — C        | 8 — Incomplete     |
| 4 — D        | 9 — Withdrawal     |

**Credit Information** - the credit or credits, expressed in Carnegie Units or their equivalent, to be reported in whole or decimal fractions to the nearest hundredth. If credit units are inap-

propriate to be given, as in an elementary school, this item should be reported as zeros in all spaces. Example:

000
-----

This item should be coded by left justifying a two-character sum total of courses as specified by Local Course Number and Section Number. This is immediately followed by the three-character Local Course Number and two-character Section Number as specified in the Instructional Programs Subsystem section of this document. This in turn is followed by the one-character Mark of Course Performance and the three-character Credit Information for this course and section. Example:

03	201	02	3	150	110	01	2	125	400	03	6	000
----	-----	----	---	-----	-----	----	---	-----	-----	----	---	-----

In this example, the pupil is enrolled in three (03) courses. The first, analytical geometry (201), section two (02), he received a grade of C (3), and one and one-half credit units (150). The second, reading (110), section one (01), he received a grade of B (2) and one and one-quarter credit units (125). The third, physical education (400), section three (03), he received a grade of unsatisfactory (6), and no credit units (000). (Hypothetical Local Course Number)

**COURSE LOAD AND TIME STATUS** - whether a pupil is carrying a full course load as designated by his state and/or local school district, and the percent of time a pupil is in school.

**Course Load** - Is the pupil carrying a full course load as determined by the state or local school system?

- 1 — Yes
- 2 — No

**Time Status** - to determine the percent of time a pupil is in school, divide the number of clock hours per week a pupil is in school by the number of clock hours school is in session, and multiply by 100.

00 — Full time

For part-time, enter the percent figured to the nearest whole number.



DATE OF BIRTH - the month, day, and year of the pupil's birth.

Example:

July 6, 1950 would be entered as **070650**

DISEASE AND ILLNESS - a record of each disease or physical illness contracted which might or does affect the pupil's school performance.

- |                   |                               |
|-------------------|-------------------------------|
| 00 - None         | 06 - Rheumatic Fever          |
| 01 - Measles      | 07 - Diphtheria               |
| 02 - Pneumonia    | 08 - Whooping Cough           |
| 03 - Chicken Pox  | 09 - Mumps                    |
| 04 - Tuberculosis | 98 - No Information Available |
| 05 - Polio        | 99 - Other                    |

Extent

- 1 - Slight
- 2 - Moderate
- 3 - Severe

Date - enter the month and year the disease or illness was contracted.

Specify the number of diseases and illnesses. Left justify this number followed by the two-character disease or illness code contiguously placed. This code is then followed by the one-character extent code for that disease or illness followed by the four-character month and year code in which the disease or illness was contracted. Example:

**3011066305209640921159**

In this example, the pupil had three (3) diseases and/or illnesses. The first, measles (01) with slight (1) extent, in June 1963 (0663). The second, polio (05), moderate (2) extent, in September 1964 (0964). The third, mumps (09), moderate (2) extent, in November 1959 (1159).

EDUCATIONAL AND VOCATIONAL INTERESTS AND PLANS - information about the pupil's aspirations and plans for vocational training and/or education after leaving the school in which he is currently in membership.

### Educational Aspirations

- 01 - Less than High School Graduation
- 02 - High School Graduation
- 03 - On-the-job Training
- 04 - Apprentice Program
- 05 - Go to School in Military Service
- 06 - Technical, Trade, or Business School - Two Years or Less
- 07 - Technical, Trade, or Business School - More than Two Years
- 08 - Some College - not to Graduate
- 09 - Complete Junior College
- 10 - Bachelor's Degree
- 11 - Beyond a Bachelor's Degree
- 99 - Other

### Vocational Interests

- 0 - No Information Available
- 1 - Professional, Technical, and Managerial Occupations
- 2 - Clerical and Sales Occupations
- 3 - Service Occupations
- 4 - Farming, Fishing, Forestry, and Related Occupations
- 5 - Processing Occupations
- 6 - Machine Trades Occupations
- 7 - Bench Work Occupations
- 8 - Structural Work Occupations
- 9 - Miscellaneous Occupations

EDUCATIONAL LEVEL OF THE MAN WITH WHOM THE PUPIL RESIDES (Parent or Male Head of Household) - the highest educational level attained by the man with whom the pupil resides.

- |                                |   |
|--------------------------------|---|
| 00 - None                      | 14 - Grade 14 (College 2 Years)                         |
| 01 - Grade 1                   | 15 - College 3 Years                                    |
| 02 - Grade 2                   | 16 - College 4 Years                                    |
| 03 - Grade 3                   | 60 - High School Diploma                                |
| 04 - Grade 4                   | 61 - High School Equivalency                            |
| 05 - Grade 5                   | 62 - Business or Clerical School Diploma or Certificate |
| 06 - Grade 6                   | 63 - Voc-Tech 2-Year Certificate                        |
| 07 - Grade 7                   | 64 - Associate of Arts Degree                           |
| 08 - Grade 8                   | 65 - Other Post High School                             |
| 09 - Grade 9                   | 70 - Bachelor's Degree                                  |
| 10 - Grade 10                  | 71 - Master's Degree                                    |
| 11 - Grade 11                  | 72 - Doctor's Degree                                    |
| 12 - Grade 12                  | 80 - No Information Available                           |
| 13 - Grade 13 (College 1 Year) |   |

EDUCATIONAL LEVEL OF THE WOMAN WITH WHOM THE PUPIL RESIDES (Parent or Female Head of Household) - the highest educational level attained by the woman with whom the pupil resides.

- |                              |   |
|------------------------------|---|
| 00—None                      | 14—Grade 14 (College 2 Years)                         |
| 01—Grade 1                   | 15—College 3 Years                                    |
| 02—Grade 2                   | 16—College 4 Years                                    |
| 03—Grade 3                   | 60—High School Diploma                                |
| 04—Grade 4                   | 61—High School Equivalency                            |
| 05—Grade 5                   | 62—Business or Clerical School Diploma or Certificate |
| 06—Grade 6                   | 63—Voc-Tech 2-Year Certificate                        |
| 07—Grade 7                   | 64—Associate of Arts Degree                           |
| 08—Grade 8                   | 65—Other Post High School                             |
| 09—Grade 9                   | 70—Bachelor's Degree                                  |
| 10—Grade 10                  | 71—Master's Degree                                    |
| 11—Grade 11                  | 72—Doctor's Degree                                    |
| 12—Grade 12                  | 80—No Information Available                           |
| 13—Grade 13 (College 1 Year) |   |

ELIGIBLE FOR FEDERAL ASSISTANCE - information necessary to establish the eligibility of the local school system to receive federal assistance.

- 400—Revenue from Federal Sources
  - 410—Vocational Education
  - 411—Agriculture
  - 412—Distributive Education
  - 413—Health Occupation Education
  - 414—Home Economics
  - 415—Office Education
  - 416—Technical Education
  - 417—Trades and Industrial Education
  - 418—Practical Nurse Training P.L. 84-911
  - 419—Area Vocational Education P.L. 85-864, Title VIII
  - 420—Vocational Education Act 1963 P.L. 88-210
  - 421—Manpower Development Training Act 1963 (Indian Vocational Training) P.L. 88-214
  - 422—Manpower Development Training Act 1962 (Training Programs) P.L. 88-214
  - 423—Public Health Training (Traineeships) P.L. 88-498
  - 424—Public Health Service Act (Nurses Training) Title VIII
  - 425—Welfare Education Program (ADC) P.L. 87-543
  - 426—Vocational Rehabilitation P.L. 66-236

- 430—Educational Opportunity Act 1964 P.L. 88-452
- 431—Title I B (Neighborhood Youth Corps)
- 432—Title II A (Community Action Programs - Basic Adult Education)
- 433—Title II A and III B (Special Poverty Programs)
- 440—Elementary and Secondary Education Act P.L. 89-10
- 441—Title I (Educationally Deprived)
- 442—Title II (Library)
- 443—Title III (Supplementary Education)
- 444—\*Title VI (Special Education)
- 460—Miscellaneous
- 464—Johnson-O'Malley Act P.L. 73-167
- 465—Adult Education (Indian Program) P.L. 67-85
- 469—Construction/Federally Impacted Area P.L. 81-815
- 470—Maintenance and Operation/Federally Impacted Areas P.L. 81-874
- 472—Immigration and Nationality Act (Citizenship Training) P.L. 83-414
- 473—Juvenile Delinquency and Youth Offenses Control Act of 1961 P.L. 87-274
- 474—Migrant Health Act 1962 P.L. 87-692
- 480—Teaching Materials for the Blind 20 USC 101-105
- 482—Area Redevelopment Act P.L. 87-27
- 483—Civil Defense Adult Education
- 490—Other
- 491—Federal Reimbursement

Specify the number of entries. Left justify this number, followed by the three-character code for each entry. Example:

**3|411|469|470**

In this example, the pupil is in the Vocational Agriculture program (411), and counted toward the number to qualify for P.L. 81-815 (469) and P.L. 81-874 (470).

ELIGIBLE FOR WELFARE - information as to whether a pupil is receiving a portion of his support via some welfare program.

- |                            |                       |
|----------------------------|-----------------------|
| 0—None                     | 5—Federal Government  |
| 1—No Information Available | 6—Private Institution |
| 2—Local Government         | 7—Private Individual  |
| 3—County Government        | 9—Other, Specify      |
| 4—State Government         |                       |

Specify the number of welfare programs. Left justify this number followed by the one-character code for each program. Example:

**237**

In this example, the pupil receives welfare from two (2) sources, county government (3) and a private individual (7).

**EVIDENCE AND VERIFICATION OF BIRTH** - the type of evidence by which the pupil's birthdate is verified.

- 1 - Birth Certificate
- 2 - Previously Verified School Record
- 9 - Other

**FOLLOW-UP AFTER HIGH SCHOOL GRADUATION OR WITHDRAWAL** - information concerning the employment or other activities of a former pupil after he leaves a school.

**Education**

- 00 - None
- 01 - Less than High School Graduation
- 02 - High School Graduation
- 03 - On-the-job Training
- 04 - Apprentice Program
- 05 - Go to School in Military Service
- 06 - Technical, Trade, or Business School - Two Years or Less
- 07 - Technical, Trade, or Business School - More than Two Years
- 08 - Some College - not to Graduate
- 09 - Complete Junior College
- 10 - Bachelor's Degree
- 11 - Beyond a Bachelor's Degree
- 99 - Other

**Employment**

- 0 - No Information Available
- 1 - Professional, Technical and Managerial Occupations
- 2 - Clerical and Sales Occupations
- 3 - Service Occupations
- 4 - Farming, Fishing, Forestry, and Related Occupations
- 5 - Processing Occupations
- 6 - Machine Trades Occupations
- 7 - Bench Work Occupations
- 8 - Structural Work Occupations
- 9 - Miscellaneous Occupations

**FULL LEGAL NAME** - the last name and any appendages such as Jr. or III, first name and middle name of the pupil.

Leave one blank space between the combined last name with appendage, and the first name and the middle name. Example:

**VANHORNIII JOHN JOSEPH**

**HEARING** - a measurement that indicates normal or abnormal hearing in a pupil. Record the measurement of hearing ability for each ear in decibels and the speech range due to hearing loss, along with the name of the test or instrument used, and the year the test was administered.

0 - Normal

**Loss in Decibels**

- |        |                |
|--------|----------------|
| 1 - 10 | 6 - 60         |
| 2 - 20 | 7 - 70         |
| 3 - 30 | 8 - 80         |
| 4 - 40 | 9 - 90 or more |
| 5 - 50 |                |

**Speech Range**

- 1 - Normal
- 2 - Limited

**Test Used**

- 1 - Air Conduction Audiometer
- 2 - Bone Conduction Audiometer
- 9 - Other

**Year the Test was Administered** - enter the last two digits of the year.

**HEIGHT** - the height of the pupil expressed in inches, without shoes.

**IDENTIFICATION NUMBER** - the number assigned to the pupil that will be used for identification. The Universal Birth Number, a number assigned by the Bureau of Vital Statistics within each state, is recommended by the Pupil Subsystem Committee.

The Universal Birth Number is stamped on the birth certificate and is developed in the following manner:

A - an 11-digit identifier which is coded as follows:

000	000000	00
Area Code	Birth Registration Number	Year of Birth

B - a temporary 11-digit identifier could be developed for those state education agencies that do not have access to state-assigned Universal Birth Numbers. The following alpha-numeric system is suggested:

000	A00000	00
Area Code	Temporary Registration Number	Year of Birth

Use an alpha character for the first space of the registration number, as illustrated. The remaining five spaces should be numeric and taken from blocks of numbers assigned by the state education agency. The same format as A above is retained. Efforts to obtain the Universal Birth Number should be pursued.

Area Codes to be used in A and B:

101 - Alabama	122 - Minnesota
102 - Arizona	123 - Mississippi
103 - Arkansas	124 - Missouri
104 - California	125 - Montana
105 - Colorado	126 - Nebraska
106 - Connecticut	127 - Nevada
107 - Delaware	128 - New Hampshire
108 - District of Columbia	129 - New Jersey
109 - Florida	130 - New Mexico
110 - Georgia	131 - New York
111 - Idaho	132 - North Carolina
112 - Illinois	133 - North Dakota
113 - Indiana	134 - Ohio
114 - Iowa	135 - Oklahoma
115 - Kansas	136 - Oregon
116 - Kentucky	137 - Pennsylvania
117 - Louisiana	138 - Rhode Island
118 - Maine	139 - South Carolina
119 - Maryland	140 - South Dakota
120 - Massachusetts	141 - Tennessee
121 - Michigan	142 - Texas

143 - Utah	153 - Virgin Islands
144 - Vermont	154 - Baltimore
145 - Virginia	155 - Boston
146 - Washington	156 - New York City
147 - West Virginia	157 - New Orleans
148 - Wisconsin	158 - Immigration & Naturalization Service, Dept. of Justice
149 - Wyoming	159 - Passport Division, Department of State
150 - Alaska	
151 - Hawaii	
152 - Puerto Rico	

IMMUNIZATION RECORD - a record of each immunization or immunity test and the date of administration to the pupil.

0 - None	5 - Measles
1 - Smallpox	6 - Schick Test
2 - Diphtheria	7 - TB Test
3 - Whooping Cough	8 - Tetanus
4 - Polio	9 - Other, specify

Date - enter the last two digits of the year the immunization was administered.

Specify the number of immunizations. Left justify this number followed by the one-character code for the immunization, followed by the two-character year in which the immunization was administered. Example:

**2 3 5 8 4 5 9**

In this example, the pupil had two (2) immunizations, the first for Whooping Cough (3) in 1958 (58); the second for Polio (4) in 1959 (59).

LANGUAGE - the language or languages spoken in the pupil's home.

01 - English	09 - Italian
02 - American Indian	10 - Japanese
03 - Chinese	11 - Norwegian
04 - Finnish	12 - Polish
05 - French	13 - Russian
06 - German	14 - Spanish
07 - Greek	15 - Swedish
08 - Hebrew	99 - Other

Specify the number of languages to a maximum of nine. Left justify this number followed by the two-character code for each language contiguously placed. Example:

**4|0|1|0|3|0|5|1|3**

This example specifies that four (4) languages are spoken in the pupil's home: English (01), Chinese (03), French (05), and Russian (13).

**LIMITATIONS FOR SCHOOL ACTIVITIES** - a record of each restriction placed upon a pupil's activity at school because of impairment and/or handicap.

0 - None

**Restriction**

- 1 - No Physical Education
- 2 - No Shop Classes
- 3 - No Laboratory Classes
- 4 - No Climbing Stairs
- 5 - Seat at Front of the Room
- 9 - Other

**Duration of the Restriction**

- 1 - One Month
- 2 - One Quarter
- 3 - One Semester
- 4 - One Year
- 5 - Indefinite
- 6 - Permanent
- 9 - Other

**Person Making the Recommendation**

- 1 - Physician
- 2 - Nurse
- 3 - Dentist
- 4 - Other Health Official
- 5 - Mental Health Worker
- 6 - Psychologist
- 7 - Social Worker
- 8 - School Administrator
- 9 - Other

**Date** - enter the month and year of the recommendation.

Specify the number of restrictions. Left justify this number followed by the one-character restriction code contiguously placed. This would be followed by the one-character duration code, the one-character code showing who recommended this restriction, and the month and year when this restriction became effective. Example:

**2|3|3|1|0|8|6|7|2|3|1|0|9|6|7**

In this example, the pupil has two (2) restrictions. The first is No Laboratory Classes (3) for one semester (3), recommended by a physician (1), in August 1967 (0867). The second restriction is No Shop Classes (2) for one semester (3), recommended by a physician (1), in September 1967 (0967).

**MARITAL STATUS** - the marital status of the pupil.

- 1 - Single
- 2 - Married, Living With Spouse
- 3 - Married, Separated
- 4 - Divorced
- 5 - Widowed

**NAME OF THE FEMALE HEAD OF HOUSEHOLD (If Different from the Female Parent)** - the last name, first name, and maiden name of the female assuming the responsibility for the family.

Enter as in FULL LEGAL NAME.

**NAME OF THE FEMALE PARENT** - the last name, first name, and maiden name of the female having parental or guardian responsibility for a pupil.

**Control** - is the female parent living?

- 1 - Yes
- 2 - No

This 26-character field should be specified with the living/deceased code left justified followed by the 25-character name. Enter as in FULL LEGAL NAME.

**NAME OF THE MALE HEAD OF HOUSEHOLD (If Different from the Male Parent)** - the last name and any appendages such as Sr. or II, first name and middle initial of the man assuming the responsibility for the family.

Enter this item in the same format as FULL LEGAL NAME.

**NAME OF THE MALE PARENT** - the last name and any appendages such as Sr. or II, first name, and middle initial of the man having parental or guardianship responsibility for a pupil.

Control - is the male parent living?

- 1 - Yes
- 2 - No

This 26-character field should be specified with the living/deceased code left justified followed by the 25-character name. Enter as in FULL LEGAL NAME.

NAME OF SCHOOL - the complete name, number, and address of the school in which the pupil is enrolled.

This item should be coded by separating the complete name, number, and address with spaces. Example:

**WESTFARGOHIGHSCHOOL | 123 | 211NORTH**  
**HIGHSTREETFARGONORTHDAKOTA58102**

NONSCHOOL PERFORMANCE - information concerning employment of a pupil and other activities performed outside the school, whether performed during the school year or during vacations.

Enter the year or years of participation and the honors received.

**Activities**

- |  |  |
|--|--|
| 000 - None                               | 202 - Archery  |
| 001 - No Information Available           | 204 - Baseball   |
| 101 - Art Club                           | 205 - Basketball                                       |
| 108 - 4-H Club                           | 206 - Bowling  |
| 110 - Future Business Leaders of America | 210 - Football   |
| 111 - Future Farmers of America          | 212 - Golf   |
| 112 - Future Homemakers of America       | 214 - Riflery  |
| 117 - Junior Achievement, Inc.           | 215 - Snowskiing                                       |
| 120 - Music Club                         | 216 - Soccer   |
| 124 - Photography Club                   | 217 - Softball   |
| 133 - Young Farmers Assoc.               | 218 - Tennis   |
| 201 - Aquatics                           | 219 - Track and Field                                  |
|  | 220 - Twirlers   |
|  | 221 - Volleyball                                       |
|  | 222 - Wrestling  |
|  | 299 - Other Athletic and Sport Cocurricular Activities |

- |   |  |
|---|--|
| 301 - Combo                               | 503 - Creative Dance                       |
| 302 - Concert Band                        | 504 - Cub Scouts                           |
| 303 - Dance Band                          | 505 - Folk Music Club                      |
| 304 - Drum & Bugle Corps                  | 506 - Girls Recreation Ass'n.              |
| 305 - Marching Band                       | 507 - Girl Scouts of the USA               |
| 306 - Pep Band                            | 508 - Hi-Y                                 |
| 307 - Choir                               | 509 - Hobby Club                           |
| 308 - Chorus                              | 510 - Junior Hi-Y                          |
| 309 - Instrumental Ensemble               | 511 - Junior Tri-Hi-Y                      |
| 310 - Voice Ensemble                      | 512 - Stamp Club                           |
| 311 - Glee Club                           | 513 - Tri-Hi-Y                             |
| 312 - Music Production                    | 514 - YMCA                                 |
| 313 - Orchestra                           | 515 - Y-Teens                              |
| 399 - Other Music Cocurricular Activities | 516 - YWCA                                 |
| 501 - Boy Scouts of America               | 599 - Other Social Cocurricular Activities |
| 502 - Camp Fire Girls                     |  |

Honors - enter one or more of the following:

- |                          |                            |
|--------------------------|----------------------------|
| 00 - None                | 07 - Historian             |
| 01 - President           | 08 - State Honors          |
| 02 - Vice President      | 09 - National Honors       |
| 03 - Secretary           | 10 - Team Captain          |
| 04 - Treasurer           | 11 - All Conference Honors |
| 05 - Secretary/Treasurer | 99 - Other                 |
| 06 - Sergeant at Arms    |                            |

Employment - enter a job title if the pupil is employed at a job, other than as part of a family endeavor.

- 1 - Unemployed
- 2 - Employed

This item should be coded as follows:

Number of Activities (2 Characters)	Employed/ not Employed Indicator (1 Character)	Job Title if Employed (If not employed, this will be omitted) (15 Characters)		
00	0	000000000000000		
First Activity (3 Characters)	Number of Honors (1 Character)	First Honor (2 Characters)	Second Honor (2 Characters)	Repeat as Needed
000	0	00	00	

(CONTINUED FROM PAGE 303)

Number of Years Participation (1 Character)	First Year of Participation (2 Characters)	Second Year of Participation (2 Characters)	Repeat as Needed
0	00	00	
Second Activity (3 Characters)	Repeat as Needed		
000			

Example:

022CLERK-TYPIST 108103460

616263306105163

In this example, the pupil participated in two activities (02). She was employed as a CLERK-TYPIST (15 characters, left justified with trailing spaces). The first activity was 4-H Club (108) in which she received one honor (1). This honor was her appointment as Secretary (03). This pupil participated four (4) years, 1960 (60), 1961 (61), 1962 (62), and 1963 (63). The second activity was that of Pep Band (306) in which she received one honor (1), Secretary-Treasurer (05). She participated one (1) year, 1963 (63).

NUMBER OF HALF DAYS ABSENT - the number of half days a pupil is absent when school is in regular session during a given reporting period.

NUMBER OF TIMES TARDY - the number of times a pupil is tardy during a given reporting period.

OCCUPATION OF THE MAN WITH WHOM THE PUPIL RESIDES (Parent or Male Head of Household) - the nature of the work usually performed by the man with whom the pupil resides and his current employment status.

Occupation

- 0— No Information Available
- 1— Professional, Technical, and Managerial Occupations
- 2— Clerical and Sales Occupations
- 3— Service Occupations
- 4— Farming, Fishing, Forestry, and Related Occupations

- 5— Processing Occupations
- 6— Machine Trades Occupations
- 7— Bench Work Occupations
- 8— Structural Work Occupations
- 9— Miscellaneous Occupations

Employment Status

- 0— No Information Available
- 1— Full time
- 2— Part-Time
- 3— Unemployed
- 4— Disabled
- 5— Retired

OCCUPATION OF THE WOMAN WITH WHOM THE PUPIL RESIDES (Parent or Female Head of Household) - the nature of the work usually performed by the woman with whom the pupil resides and her current employment status.

Occupation

- 00— No Information Available
- 01— Professional, Technical, and Managerial Occupations
- 02— Clerical and Sales Occupations
- 03— Service Occupations
- 04— Farming, Fishing, Forestry, and Related Occupations
- 05— Processing Occupations
- 06— Machine Trades Occupation
- 07— Bench Work Occupations
- 08— Structural Work Occupations
- 09— Miscellaneous Occupations
- 10— Housewife

Employment Status

- 0— No Information Available
- 1— Full time
- 2— Part-time
- 3— Unemployed
- 4— Disabled
- 5— Retired

OTHER CHILDREN LIVING IN THE HOUSEHOLD - the names, birthdates, and relationships of children, other than brothers and sisters, living in the same household as the pupil.

Relationship

- 1— Aunt
- 2— Uncle
- 3— Niece
- 4— Nephew

- 5 — Cousin
- 6 — Foster Child

- 7 — No Relation
- 9 — Other

Specify in the left-most character positions of this item, the total number of other children living in the household. Example: **02** indicates two children. Immediately following this code, specify the last name followed by a space and then the first name followed by the birthdate and relationship code. Example:

**02|SMITH|JOHN|091132|5|JONES|ANN**

**112603|6**

PERSON TO CALL IN CASE OF EMERGENCY - the last name, and locator information of the individual designated by the parents as the person to notify in case of emergency.

Example:

**SMITH|513EASTCENTRALAVENUE|**

**WESTSALEM|WISCONSIN 6087862331**

PHYSICAL EXAMINATION - a record of physical examinations administered to the pupil.

0 — No Physical Examination

School Examination

- 1 — School Physical Examination that Was Required
- 2 — School Physical Examination that Was Not Required

Nonschool Examination

- 3 — Nonschool Physical Examination Required
- 4 — Nonschool Physical Examination Not Required

Year - enter the last two digits of the most recent physical examination.

PHYSICAL IMPAIRMENT - a record of the nature and degree of physical impairment which might or does affect the pupil's normal progress in the usual school program.

00 — None

Nature of Impairment

01 — Asthma

02 — Epilepsy

- 03 — Cerebral Palsy
- 04 — Diabetes
- 05 — Allergy
- 06 — Heart Condition

- 07 — Crippled
- 08 — Physical Development
- 09 — Hernia
- 99 — Other

Extent of Impairment

- 1 — Slight
- 2 — Moderate
- 3 — Severe

Specify the number of physical impairments. Left justify this number followed by the two-character Nature of Impairment code contiguously placed. This code is then followed by the one-character Extent of Impairment code. Example:

**2|04|3|06|1**

In this example, the pupil has two impairments (2). The first is Diabetes (04) with severe (3) extent of impairment. The second is a Heart Condition (06) with slight (1) extent of impairment.

PLACE OF BIRTH - the city, county, state and zip code, and if born outside the United States, the city, province, and country in which the pupil was born. Leave a blank space between city and county, and county and state. Also, leave a blank space between city and province, and province and country where applicable.

Example:

**WESTFARGO|CASS|NORTHDAKOTA58078**

PROMOTION OR RETENTION - information about the progress of a pupil in a full time school program or in a graded or an ungraded situation during a regular school term.

- 1 — Promotion
- 2 — Retention

PUPIL REFERRAL - information about instances in which the pupil was referred to a person or agency for assistance or guidance.

Pupil Referred By

00 — Does Not Apply



**School Personnel**

- 01 — Self
- 02 — Teacher
- 03 — Counselor
- 04 — Principal
- 05 — Other School Administrator
- 06 — Social Worker
- 07 — Visiting Teacher
- 08 — Attendance Officer
- 09 — Mental Health Worker
- 10 — Psychologist

**Nonschool Personnel**

- 20 — Parent
- 21 — Other Relative
- 22 — Foster Parent
- 23 — Legal Guardian
- 24 — Counselor
- 25 — Social Worker
- 26 — Welfare Official
- 27 — Police Official
- 28 — Court Official
- 29 — Mental Health Worker

**Pupil Referred To**

- 00 — Does Not Apply

**School Personnel**

- 01 — Teacher
- 02 — Counselor
- 03 — Principal
- 04 — Other School Administrator
- 05 — Social Worker
- 06 — Visiting Teacher
- 07 — Attendance Officer
- 08 — Mental Health Worker

**Nonschool Personnel**

- 20 — Parent
- 21 — Other Relative
- 22 — Foster Parent

- 11 — Psychiatrist
- 12 — County Level Supervisor or Administrator
- 13 — State Level Supervisor
- 14 — Nurse
- 15 — Physician
- 16 — Dentist
- 17 — Other Health Worker
- 19 — Other

- 30 — Psychologist
- 31 — Psychiatrist
- 32 — Nurse
- 33 — Physician
- 34 — Dentist
- 35 — Other Health Worker
- 36 — Employer or Related Personnel
- 37 — Community Agency
- 38 — Vocational Rehabilitation
- 99 — Other

- 09 — Psychologist
- 10 — Psychiatrist
- 11 — County Level Supervisor or Administrator
- 12 — State Level Supervisor
- 13 — Nurse
- 14 — Physician
- 15 — Dentist
- 16 — Other Health Worker
- 19 — Other

- 23 — Legal Guardian
- 24 — Counselor
- 25 — Social Worker

- 26 — Welfare Official
- 27 — Police Official
- 28 — Court Official
- 29 — Mental Health Worker
- 30 — Psychologist
- 31 — Psychiatrist
- 32 — Nurse
- 33 — Physician

- 34 — Dentist
- 35 — Other Health Worker
- 36 — Employer or Related Personnel
- 37 — Community Agency
- 38 — Vocational Rehabilitation
- 99 — Other

Date - enter the month, day, and year the referral was made.

Specify the number of referrals. Left justify this number followed by the two-character code, showing who made the referral, contiguously placed. This would be followed by the two-character code showing to whom the pupil was referred and the month, day and year of the referral. Example:

**110207122067**

In this example, the pupil has been referred once (1), by a classroom teacher (01) to an attendance officer (07), on December 20, 1967 (122067).

PUPIL'S TELEPHONE NUMBER AND LOCATION - the current residence telephone number of the pupil with area code and all letters and/or digits.

**Location of the Telephone**

- 0 — No Information Available
- 1 — In the Home
- 2 — In the Same Building
- 3 — Neighbor's Home
- 4 — No Telephone Available
- 9 — Other

This eleven-character field should be specified with the location code left justified followed by the ten-character telephone number. Example:

**17016332790**

RACE - the pupil's racial origin.

- 1 — American Indian
- 2 — Caucasian
- 3 — Negro
- 4 — Oriental
- 9 — Other

**REASON FOR NOT ENTERING LOCAL PUBLIC SCHOOL -**  
the explanation why a child or youth of compulsory attendance age or of school census age has not entered any local public school for the regular school term.

- |  |                                 |
|--|---------------------------------|
| 0 — No Information Available               | 4 — Entered Private School      |
| 1 — Completed School in an Approved Manner | 5 — Entered Parochial School    |
| 2 — Physically Incapable                   | 6 — Entered Other Public School |
| 3 — Mentally Incapable                     | 9 — Other                       |

**REASON FOR WITHDRAWAL -** the reason given by the pupil for leaving school and his planned destination.

- |   |  |
|---|--|
| 01 — New Residence, Different School              | 12 — Poor Pupil-Staff Relationships        |
| 02 — New Residence, School Status Unknown         | 13 — Poor Relationships with Fellow Pupils |
| 03 — Graduated from High School or Junior College | 14 — Dislike of School Experience          |
| 04 — Completed Other Schoolwork                   | 15 — Parental Influence                    |
| 05 — Physical Illness                             | 16 — Needed at Home                        |
| 06 — Physical Disability                          | 17 — Economic Reasons                      |
| 07 — Mental Illness                               | 18 — Employment                            |
| 08 — Mental Disability                            | 19 — Enter Military Service                |
| 09 — Behavioral Difficulty                        | 20 — Marriage                              |
| 10 — Academic Difficulty                          | 21 — Pregnancy                             |
| 11 — Lack of Appropriate Curriculum               | 22 — Other Known Reasons                   |
|   | 23 — Reason Unknown                        |
|   | 99 — Other                                 |

**RELATIONSHIP OF THE FEMALE HEAD OF HOUSEHOLD TO THE PUPIL -** the legal relationship of the female head of household to the pupil.

- |                              |                    |
|------------------------------|--------------------|
| 0 — No Information Available | 4 — Wife           |
| 1 — Mother                   | 5 — Other Relative |
| 2 — Other Legal Guardian     | 6 — Foster Parent  |
| 3 — Stepmother               | 7 — Self           |
|                              | 8 — None           |

**RELATIONSHIP OF THE FEMALE PARENT TO THE PUPIL —** the legal relationship of the female parent to the pupil.

- |                              |                    |
|------------------------------|--------------------|
| 0 — No Information Available | 4 — Wife           |
| 1 — Mother                   | 5 — Other Relative |
| 2 — Other Legal Guardian     | 6 — Foster Parent  |
| 3 — Stepmother               | 7 — Self           |
|                              | 8 — None           |

**RELATIONSHIP OF THE MALE HEAD OF HOUSEHOLD TO THE PUPIL -** the legal relationship of the male head of household to the pupil.

- |                              |                    |
|------------------------------|--------------------|
| 0 — No Information Available | 4 — Husband        |
| 1 — Father                   | 5 — Other Relative |
| 2 — Other Legal Guardian     | 6 — Foster Parent  |
| 3 — Stepfather               | 7 — Self           |
|                              | 8 — None           |

**RELATIONSHIP OF THE MALE PARENT TO THE PUPIL -** the legal relationship of the male parent to the pupil.

- |                              |                    |
|------------------------------|--------------------|
| 0 — No Information Available | 4 — Husband        |
| 1 — Father                   | 5 — Other Relative |
| 2 — Other Legal Guardian     | 6 — Foster Parent  |
| 3 — Stepfather               | 7 — Self           |
|                              | 8 — None           |

**RELIGION -** the pupil's religious preference as indicated by the pupil or his family.

- |                              |                |
|------------------------------|----------------|
| 0 — No Information Available | 3 — Protestant |
| 1 — Catholic                 | 4 — Undeclared |
| 2 — Jewish                   | 9 — Other      |

**RESIDENCE OF THE FEMALE PARENT (If Different from the Pupil's) -** the current residence of the pupil's female parent.

Enter this item with spaces as indicated. Example:

**APT5G MOORHOTEL 144AWESTHIGHSTREET**

**WESTFARGO NORTHDAKOTA58078**

**RESIDENCE OF THE MALE PARENT (If Different from the Pupil's) -** the current residence of the pupil's male parent.

Enter this item with spaces as indicated in RESIDENCE OF FEMALE PARENT.

RESIDENCE OF THE PUPIL - the current residence address of the pupil, including, whenever applicable, the number of the house or hotel name and number, or apartment name and apartment number. Also include the name of the street, trailer park, city, zip code, county, or RFD, and state.

Enter this item with spaces as indicated in RESIDENCE OF FEMALE PARENT.

SCHOOL ACTIVITIES (Cocurricular) - information about participation in noncourse activities under the direction of a school.

Enter the year or years of participation and the honors received.

Honors

- |                          |                            |
|--------------------------|----------------------------|
| 00 — None                | 07 — Historian             |
| 01 — President           | 08 — State Honors          |
| 02 — Vice President      | 09 — National Honors       |
| 03 — Secretary           | 10 — Team Captain          |
| 04 — Treasurer           | 11 — All Conference Honors |
| 05 — Secretary/Treasurer | 99 — Other                 |
| 06 — Sergeant at Arms    |                            |

Cocurricular Activities

- |   |  |
|---|--|
| 000 — None                                    | 116 — Journalism Club                      |
| 101 — Art Club                                | 117 — Junior Achievement, Incorporated     |
| 102 — Biology Club                            | 118 — Literary Club                        |
| 103 — Boys Nation                             | 119 — Mathematics                          |
| 104 — Debate Club                             | 120 — Music Club                           |
| 105 — Distributive Education Clubs of America | 121 — National Honor Society (NEA)         |
| 106 — Dramatics Club                          | 122 — National Junior Honor Society (NEA)  |
| 107 — Family Living Club                      | 123 — National Thespian Society            |
| 108 — 4-H Club                                | 124 — Photography Club                     |
| 109 — Foreign Language Club                   | 125 — Quill and Scroll                     |
| 110 — Future Business Leaders of America      | 126 — Science Club                         |
| 111 — Future Farmers of America               | 127 — Science Fair, International          |
| 112 — Future Homemakers of America            | 128 — Social Studies Club                  |
| 113 — Future Teachers of America              | 129 — Speech Club                          |
| 114 — Girls Nation                            | 130 — Student Nurses Association           |
| 115 — International Relations Club            | 131 — Trades and Industrial Education Club |

- |  |  |
|--|--|
| 132 — Voice of Democracy                               | 402 — Class Officer  |
| 133 — Young Farmers Association                        | 403 — Film Projectionist   |
| 199 — Other Academic Cocurricular Activities           | 404 — Laboratory Assistant                                       |
| 201 — Aquatics (includes swimming)                     | 405 — Library Assistant  |
| 202 — Archery  | 496 — National Junior Red Cross                                  |
| 203 — Badminton  | 407 — National Student Traffic Safety Program                    |
| 204 — Baseball   | 408 — Office Assistant   |
| 205 — Basketball                                       | 409 — Poster and Display Club                                    |
| 206 — Bowling  | 410 — School Newspaper Photographer                              |
| 207 — Cheerleading                                     | 411 — School Safety Patrol                                       |
| 208 — Cross Country                                    | 412 — School Service Club  |
| 209 — Field Hockey                                     | 413 — Student Council, National Association of                   |
| 210 — Football   | 414 — Student Union and/or Student Activity Center               |
| 211 — Girls Athletic Association                       | 499 — Other School and/or Public Service Cocurricular Activities |
| 212 — Golf   | 501 — Boy Scouts of America                                      |
| 213 — Gymnastics                                       | 502 — Camp Fire Girls  |
| 214 — Riflery  | 503 — Creative Dance   |
| 215 — Snowskiing                                       | 504 — Cub Scouts   |
| 216 — Soccer   | 505 — Folk Music Club  |
| 217 — Softball   | 506 — Girls' Recreation Association                              |
| 218 — Tennis   | 507 — Girl Scouts of the USA                                     |
| 219 — Track and Field                                  | 508 — Hi-Y   |
| 220 — Twirlers   | 509 — Hobby Club   |
| 221 — Volleyball                                       | 510 — Junior Hi-Y  |
| 222 — Wrestling  | 511 — Junior Tri-Hi-Y  |
| 229 — Other Athletic and Sport Cocurricular Activities | 512 — Stamp Club   |
| 301 — Combo  | 513 — Tri-Hi-Y   |
| 302 — Concert Band                                     | 514 — YMCA   |
| 303 — Dance Band                                       | 515 — Y-Teens  |
| 304 — Drum and Bugle Corps                             | 516 — YWCA   |
| 305 — Marching Band                                    | 599 — Other Social Cocurricular Activities                       |
| 306 — Pep Band   |  |
| 307 — Choir  |  |
| 308 — Chorus   |  |
| 309 — Instrumental Ensemble                            |  |
| 310 — Voice Ensemble                                   |  |
| 311 — Glee Club  |  |
| 312 — Music Production                                 |  |
| 313 — Orchestra  |  |
| 399 — Other Music Cocurricular Activities              |  |
| 401 — Audiovisual Assistant                            |  |

This item should be coded as follows:

Number of Cocurricular Activities	First Cocurricular Activity	Number of Honors in Cocurricular Activity	
(2 Characters)	(3 Characters)	(1 Character)	
<b>010</b>	<b>01010</b>	<b>0</b>	
First Honor	Second Honor	Repeat as Needed	
(2 Characters)	(2 Characters)		
<b>010</b>	<b>010</b>		
Number of Years Participation	First Year of Participation	Second Year of Participation	Repeat as Needed
(1 Character)	(2 Characters)	(2 Characters)	
<b>0</b>	<b>010</b>	<b>010</b>	
Second Cocurricular Activity	Repeat as Needed		
(3 Characters)			
<b>01010</b>			

Example:

**0211042101108361626320401164**

In this example, the pupil participated in two cocurricular activities (02). The first activity was Debate Club (104) in which he received two honors (2). The first honor was his election as President (01). The second honor he received was State Honors (08). This pupil participated three (3) years: 1961 (61), 1962 (62), and 1963 (63). The second activity was Baseball (204) in which he received no honors (0). He participated one year (1), 1964 (64).

SCHOOL FROM WHICH INCOMING PUPIL IS RECEIVED - the complete name, number, and address of the school from which an incoming pupil is received.

SPEECH - a measurement that indicates normal or abnormal speaking patterns in a pupil, also the type of impairment, the test used, and the year of the test.

- 0 - Normal
- Impairment
  - 1 - Articulation
  - 2 - Cleft Palate
  - 3 - Cerebral Palsy
  - 4 - Stutter
  - 5 - Stammer
  - 6 - Voice
  - 9 - Other

- Extent
  - 1 - Slight
  - 2 - Moderate
  - 9 - Other

- Test Used
  - 1 - Templin-Darley
  - 2 - Locally Devised Test
  - 9 - Other

Year the Test Was Administered - enter the last two digits of the year.

STANDARDIZED TESTS AND INVENTORIES - information about each standardized test, subtest, and/or inventory taken by the pupil.

Test Identification

- Achievement Batteries
  - 101 - American College Test
  - 102 - American School Achievement Test
  - 103 - California Achievement Tests
  - 104 - California Basic Skills Test
  - 105 - CEEB Achievement Tests
  - 106 - Cooperative Primary Tests
  - 107 - Coordinated Scales of Attainment
  - 108 - Essential High School Content Battery
  - 109 - Gray-Votaw-Rogers General Achievement Tests
  - 110 - High School Placement Tests
  - 111 - Iowa Tests of Basic Skills
  - 112 - Iowa Tests of Educational Development
  - 113 - Metropolitan Achievement Tests

- 114 — National Educational Development Test
- 115 — National Merit Scholarship Qualifying Test
- 116 — Public School Achievement Test
- 117 — Public School Attainment Tests for High School Entrance
- 118 — SRA Achievement Series
- 119 — SRA High School Placement Test
- 120 — Sequential Tests of Educational Progress (STEP)
- 121 — Stanford Achievement Test
- 122 — Test of Academic Progress
- 123 — Wide Range Achievement Test
- 199 — Other

Scholastic Aptitude (Intelligence)

- 201 — American Council on Education Psychological
- 202 — American School Intelligence Test
- 203 — Arthur Point Scale
- 204 — California Short-Form Test of Mental Maturity
- 205 — California Test of Mental Maturity
- 206 — CEEB Preliminary Scholastic Aptitude Tests (PSAT)
- 207 — CEEB Scholastic Aptitude Test (SAT)
- 208 — Goodenough-Harris Drawing Test
- 209 — Henmon-Nelson Test of Mental Ability
- 210 — Kuhlmann-Anderson Intelligence Test
- 211 — Lorge-Thorndike Intelligence Tests
- 212 — Otis Group Intelligence Scale
- 213 — Otis Quick-Scoring Mental Ability Tests
- 214 — Peabody Picture Vocabulary Test
- 215 — Pitner General Ability
- 216 — SRA Tests of Educational Ability (TEA)
- 217 — SRA Tests of General Ability (TOGA)
- 218 — School and College Ability Test (SCAT)
- 219 — Stanford-Binet
- 220 — Survey of Mental Maturity; California Survey Series
- 221 — Terman-McNemar Test of Mental Ability
- 222 — Wechsler Intelligence Scale for Children (WISC)
- 223 — Wechsler Adult Intelligence Scale (WAIS)
- 299 — Other

Single Subject Achievement

- 301 — Barrett-Ryan English Test
- 302 — Basic Skills in Arithmetic Form A
- 303 — Basic Skills in Arithmetic Form B
- 304 — Before We Read
- 305 — Silent Reading Diagnostic Tests: Developmental Reading Tests

- 306 — California Algebra Aptitude
- 307 — California Reading Test
- 308 — California Survey in Reading
- 309 — Cooperative Algebra Test
- 310 — Cooperative Chemistry Achievement
- 311 — Cooperative English Test
- 312 — Cooperative Plane Geometry Test
- 313 — Cooperative Science Test
- 314 — Cooperative Solid Geometry Test
- 315 — Cooperative Trigonometry
- 316 — Crary American History Test
- 317 — Betty Crocker Test
- 318 — Developmental Reading Test
- 319 — Durrell-Sullivan Reading Capacity & Achievement
- 320 — Gates Basic Reading Test
- 321 — Gates-McKillop Reading
- 322 — Gates Primary Reading Test
- 323 — General Reading Test
- 324 — Ginn Pre-Reading Test
- 325 — Ginn Achievement Test
- 326 — Gray-Oral Reading Test
- 327 — Green-Kelly Reading Test
- 328 — Iowa Algebra Prognostic Test
- 329 — Iowa Silent Reading Test
- 330 — Lee-Clark Reading Test
- 331 — Lee Test of Geometric Aptitude
- 332 — Metropolitan Readiness Test
- 333 — Metropolitan Reading Test
- 334 — Nelson Biology Test
- 335 — Nelson-Denny Reading Test
- 336 — Nelson-Lohman Reading Test
- 337 — Orleans Algebra Prognosis
- 338 — Orleans Geometry Prognosis
- 339 — Purdue English Test
- 340 — SRA-Diagnostic Reading Test
- 341 — Scott-Foresman Reading Readiness
- 342 — Scott-Foresman Reading Test
- 343 — Shaycoft Plane Geometry Test
- 344 — Survey of Reading Achievement
- 345 — Traxler Silent Reading
- 399 — Other

Multifactor Aptitude Battery

- 401 — Differential Aptitude Test Battery (DAT)
- 402 — Flanigan Aptitude Classification Test
- 403 — General Aptitude Test Battery (GATB)
- 404 — Jostak
- 405 — SRA Primary Mental Abilities
- 499 — Other

Personality

- 501 — California Test of Personality
- 502 — Personal Adjustment Inventory (Test of Personal Adjustment)
- 503 — Personality & Interest Inventory
- 504 — Personality Rating Scale

Nonstandardized Measures

- 601 — Anecdotal Records
- 602 — Assessment of Pupil Attitudes or Opinions
- 603 — Assessment of Project Teacher Attitudes or Opinions
- 604 — Assessment of Non-project Teacher Attitudes or Opinions

Miscellaneous

- 701 — Frostig Developmental Test of Visual Perception

Publisher

- 01 — American College Testing Program, Incorporated
- 02 — American Guidance Services, Incorporated
- 03 — American Orthopsychiatric Association
- 04 — Association Press
- 05 — Bobbs-Merrill Company, Incorporated
- 06 — California Test Bureau
- 07 — Columbia University
- 08 — Consulting Psychologists Press, Incorporated
- 09 — Education Testing Service

- 505 — SRA Youth Inventory
- 506 — Syracuse Scales of Social Relations
- 507 — Vineland Social Maturity Scale
- 508 — Bender-Gestalt Test
- 599 — Other

- 605 — Interviews
- 606 — Locally Devised Achievement Measures
- 607 — Observer Rating
- 608 — Parental Opinion Questionnaire
- 609 — Preschool Measures
- 699 — Other

- 799 — Other

- 10 — Educators and Employers Tests and Services Association
- 11 — Ginn and Company
- 12 — Harcourt, Brace & World
- 13 — Houghton-Mifflin
- 14 — Lyons and Carnahan
- 15 — Minneapolis Educational Test Bureau
- 16 — Personnel Press, Incorporated
- 17 — Psychological Corporation
- 18 — Public School Publishing Company
- 19 — Science Research Associates, Incorporated
- 20 — Scott-Foresman

- 21 — The Steck Company
- 22 — U.S. Employment Security Commission
- 23 — State Devised Test
- 24 — Locally Devised Test
- 99 — Other

Year of Copyright - enter the last two digits of the year of the copyright. 1962 should be entered as 62.

Title of Test Administrator

School Personnel

- 01 — Teacher
- 02 — School Counselor
- 03 — Administrator
- 04 — School Psychologist
- 05 — Psychometrist
- 06 — County School Official
- 07 — State School Official
- 09 — Other

Nonschool Personnel

- 10 — Psychologist
- 11 — Psychiatrist
- 12 — Mental Health Worker
- 13 — Guidance Clinic Personnel
- 14 — Social Worker
- 15 — State Employment Agency Personnel
- 16 — Vocational Rehabilitation Personnel
- 99 — Other

Norm Group

First Digit

- 1 — National
- 2 — Regional
- 3 — State
- 4 — County
- 5 — District
- 6 — School
- 9 — Other

Second Digit

- 0 — Does Not Apply
- 1 — Sex
- 2 — Age
- 9 — Other

Type of Conversion Score

- 0 — Does Not Apply (Raw Score)
- 1 — Percentile Band
- 2 — Percentile
- 3 — Stanine
- 4 — Standard Score
- 5 — Grade Equivalent
- 6 — Age Equivalent
- 7 — I.Q.
- 8 — Mental Age
- 9 — Other

Level of Test

- |                      |                        |
|----------------------|------------------------|
| 1 — Primary          | 5 — Junior High School |
| 2 — Intermediate     | 6 — Secondary          |
| 3 — Upper Elementary | 7 — Adult              |
| 4 — Elementary       | 9 — Other              |

Test Form - enter the form (number and/or letters) of the test. Left justify this number.

000 — Does Not Apply

Date Administered - enter the month and year.

Scores - enter the test score or scores.

Specify the number of tests. Left justify this number followed by the codes for test identification, publisher, copyright date, title of the test administrator, norm groups, type of conversion score, level of the test, test form, date of administration, number of test scores, and the score for each test. Example:

**2101016202100264AC116259090907585**  
**20913etc.**

In this example, there are two tests(2). The first is The American College Test (101), published by American College Testing Program, Inc. (01), copyrighted 1962 (62), administered by the local school counselor (02), with a National Norm only (10), with the scores converted to Percentiles (02), the test level is secondary (6), the test form is (4AC), administered in November 1962 (1162), and has five scores (5). The scores are: (90), (90), (90), (75), (85). The second test is the Henmon-Nelson Test of Mental Ability (209), published by Houghton-Mifflin (13), etc.

SURGERY AND INJURIES - a record of surgery undergone and/or injuries sustained which might or does affect the pupil's school performance.

Surgery

- |                    |               |
|--------------------|---------------|
| 00 — None          | 06 — Eye      |
| 01 — Tonsillectomy | 07 — Ear      |
| 02 — Appendectomy  | 08 — Oral     |
| 03 — Heart         | 09 — Organic  |
| 04 — Thoracic      | 10 — Muscular |
| 05 — Brain         | 99 — Other    |

Injuries

- |                   |                   |
|-------------------|-------------------|
| 00 — None         | 02 — Loss of Limb |
| 01 — Broken Bones | 03 — Loss of Eye  |

- |                           |                               |
|---------------------------|-------------------------------|
| 04 — Loss of Hearing      | 08 — Muscular                 |
| 05 — Loss of Teeth        | 09 — Internal                 |
| 06 — Dislocation of Joint | 98 — No Information Available |
| 07 — Burn                 | 99 — Other                    |

Specify the number of surgeries. Left justify this number followed by the number of injuries. This is then followed by the two-character type of surgery code, followed by the four-character month and year code in which the surgery occurred. Immediately following the month and year code for the last surgery, specify the two-character injury code, followed by the four-character month and year code in which the injury occurred. Example:

**23011259070660041055070866091167**

In this example, the pupil had two (2) surgeries and three (3) injuries. The first surgery was a Tonsillectomy (01) in December 1959 (1259). The second was ear surgery (07) in June 1960 (0660). The first injury, loss of hearing (04), occurred in October 1955(1055). The second injury, burn (07), occurred in August 1966 (0866). The third and final injury, internal (09), occurred in November 1967 (1167).

TEETH - the condition of the teeth and gums of the pupil. Record the number of teeth missing, decayed, and filled.

Gum Condition

- 0 — Normal
- 1 — Fair
- 2 — Poor
- 3 — Serious
- 4 — Critical
- 5 — No Information Available

Enter this item without spaces. Example:

**0107172**

This pupil has one tooth missing (01), seven decayed (07), seventeen filled (17), and has a gum condition classified as poor (2).

TELEPHONE NUMBER OF THE MALE HEAD OF HOUSEHOLD AND LOCATION (If Different from the Pupil's and Male Parent's) - the current residence telephone number of the male head of household.

**Location of the Telephone**

- 0— No Information Available
- 1— In the Home
- 2— In the Same Building
- 3— Neighbor's Home
- 4— No Telephone Available
- 9— Other

Enter this item in the same format as PUPIL'S TELEPHONE NUMBER AND LOCATION.

**TELEPHONE NUMBER OF THE MALE PARENT OR LEGAL MALE GUARDIAN AND LOCATION** (If Different from the Pupil's) - the current residence telephone number of the male parent or legal male guardian.

**Location of the Telephone**

- 0— No Information Available
- 1— In the Home
- 2— In the Same Building
- 3— Neighbor's Home
- 4— No Telephone Available
- 9— Other

Enter this item in the same format as PUPIL'S TELEPHONE NUMBER AND LOCATION.

**TYPE OF CLASS** - the type of class or classes in which a pupil is to receive approved instruction.

- 1— Regular
- 2— Exceptional
- 3— Homebound
- 9— Other

**TYPE OF PUPIL** - the group or groups into which individuals are classified when identified by professionally qualified personnel.

00— Normal Range of Pupils - pupils within the normal range of ability and performance, that is, the general type of pupils in most schools, courses, or classes serving pupils of a given age group.

10— Gifted and Talented - pupils identified by professionally qualified personnel as being mentally gifted or talented in such areas as:

11— In General Academic Work - including mathematics, science, social studies, reading, foreign language, and other language arts.

12— In Fine Arts Areas - including music, dance, arts of design, and dramatics.

13— In Vocational and Technical Areas

19— In Other Areas - including athletics, human relationships, and creativity in areas not identified above.

20— Slow Learner - pupils who display evidence of having difficulty in adjusting to the curriculum in academic areas, requiring some minor modification of school offering within the regular classroom in order to attain maximum growth and development.

30— Mentally Handicapped - pupils identified by professionally qualified personnel as being mentally handicapped according to degrees of retardation. This includes those individuals whose level of mental development is such that they have been identified by professionally qualified personnel as unable to profit from the school program without special help. Pupils in this category are classified educationally as educable (mild) mentally handicapped; trainable (moderate) mentally handicapped; and custodial (severe or profound) mentally handicapped.

31— Educable (Mild) Mentally Handicapped - mentally handicapped individuals who are educable in the academic, social, and occupational areas even though moderate supervision may be necessary.

32— Trainable (Moderate) Mentally Handicapped - mentally handicapped individuals for whom little or no self-support is anticipated although some improvement in performance is possible, especially in the self-care social, and emotional adjustment and economic usefulness in the home or sheltered environment.

33— Custodial (Severe or Profound) Mentally Handicapped - mentally handicapped individuals for



whom neither self-support nor significant improvement in performance is anticipated.

40—Physically Handicapped - pupils identified by professionally qualified persons as having one or more physical handicaps, for example, the blind, the hard of hearing, the speech impaired, and the crippled.

41—Blind - those pupils who are declared legally blind.

42—Partially Seeing - those pupils who require special educational facilities beyond the usual school program.

43—Deaf - those pupils who are declared legally deaf.

44—Hard of Hearing - those pupils who require special consideration because of a hearing loss.

45—Speech Handicapped - those pupils whose speech is abnormal due to a physical reason.

46—Crippled - individuals having a physical impairment of a type which might restrict normal opportunities for education or self-support. This term is generally considered to include individuals having impairments caused by a congenital abnormality, for example, cleft palate, club foot, absence of some member, etc. It also includes impairment caused by disease, for example, poliomyelitis, tuberculosis, encephalitis, and other neurological involvements which might result in conditions such as cerebral palsy or epilepsy, etc. It further includes impairments, caused by accidents, for example, fractures or burns which cause contractures, etc.

47—Pupils With Special Physical Health Problems - pupils identified by professionally qualified personnel as having either permanently or periodically less than the usual amount of strength, energy, and endurance and hence may need appropriate modification of their educational program. Such a condition might result from chronic illness or environmental causes, for example, diabetes, cardiac disease, or lead poisoning.

50—Socially and/or Emotionally Handicapped - pupils identified by professionally qualified personnel as having a social and/or emotional handicap, such as being emotionally disturbed and delinquency prone. (Pupils having a cultural handicap are included under a separate classification.)

51—Emotionally Disturbed - pupils identified by professionally qualified personnel as having an emotional handicap of such nature and severity as to require one or more special services, whether or not such services are available. Such services include institutional care, other professional treatment or care, and instruction in special classes for special pupils on a full time or part-time basis.

52—Delinquency Prone - pupils who have been identified by professionally qualified personnel as having a strong tendency toward committing acts which are classified as patterns of delinquent behavior.

59—Other Social and/or Emotional Handicapped - pupils identified by professionally qualified personnel as being socially and/or emotionally handicapped in a manner other than those identified under the items above. The nature of their handicap should be specified; for example, children addicted to hallucinogenic or other deviate drugs.

60—Culturally Handicapped - pupils identified by professionally qualified personnel as having a deviation or deficiency in cultural or environmental background that adversely affects their school performance or learning, for example, non-English speaking pupils, migrant children, functional illiterates, and members of disadvantaged cultural groups.

61—Culturally Disadvantaged - pupils whose cultural background is so different from that of most pupils that they have been identified by professionally qualified personnel as needing additional educational opportunities beyond what are provided by the usual school program if they are to be educated to the level of their abilities. Certain types of programs for culturally disadvantaged pupils are referred to as compensatory education programs.

- 62— Non-English Speaking Pupils - pupils whose ability to speak English is so retarded that they are unable to profit from the usual classroom instruction in English.
- 63— Migrant Children - pupils whose parents are migrant workers and who are within the age limits for which the local school district provides free public education.
- 64— Functional Illiterates - individuals who are unable to read, write, and compute sufficiently well to meet the needs of adult life. This frequently is considered to include adults who have not gone beyond the eighth grade or who cannot read, write, and compute at or about an eighth grade level of performance.
- 69— Other Culturally Handicapped Pupils - pupils identified by professionally qualified personnel as having cultural handicaps in a manner other than those identified under the items above, for example, culturally different, parental neglect, and economically disadvantaged. The nature of their handicap should be specified.
- 70— Pupils with Learning Difficulties
- 71— Learning Difficulties - pupils identified by professionally qualified personnel as having sharp deficits in one or a limited number of aspects of the cognitive processes, that is, the sensory, associate, or expressive processes and marked underachievement when considering the general level or mode of the overall abilities. Many such pupils are also said to have brain injury (Strauss Syndrome), perceptual handicaps, or minimal brain dysfunctions. For reporting purposes, pupils having learning difficulties also should be identified according to other characteristics such as being within the normal range of pupils, being gifted or talented, being mentally handicapped, partially seeing, hard of hearing, or speech impaired, or having other specific types of handicaps. In each case, the distinctive features are the sharp imbalance within the pupil's cognitive development and marked underachievement.

- 72— Communication Disorder - pupils identified as having a communication problem for which no physical reason can be determined.
- 73— Underachieving Pupils - pupils who score consistently and significantly below their expected performance levels on standardized achievement tests. Their expected performance levels are determined by using scores on standardized tests of ability to predict performance on standardized tests of achievement.
- 80— Former Dropouts - pupils who have returned to school after dropping out, that is, pupils whose most recent formal education was in an elementary or secondary school and who withdrew from this school by dropping out.
- 90— Miscellaneous Characteristics
- 91— Multiple Handicaps - pupils having more than one handicap. These pupils should be identified also according to the nature of each handicap as indicated elsewhere in this series.
- 92— Pre-kindergarten Age - pupil is below legal age for admission into kindergarten.
- 93— Employed Youth Under Age 18 - persons under 18 years of age who have not completed a secondary school and who left full time instruction to enter the labor force.
- 94— Pregnancy - a pupil who is receiving a special program because of pregnancy.
- 95— Adult and Post High School - persons of adult age, usually 21 years old, and youth beyond the age of compulsory school attendance who enroll in a program of instruction.
- 96— Parents - parents of school children and children of pre-school age.
- 99— Other Characteristics - distinctive characteristics of pupil groups not identified elsewhere under this

series, such as pupils in a given program of study. Any such characteristic should be specified.

**VISION** - a measurement that indicates normal or abnormal vision in a pupil.

Record the measurement of visual ability for each eye, uncorrected and corrected with eyeglasses, along with the name of the vision test and the year of the test.

**Uncorrected Vision**

0 - 20/20 (normal)	5 - 20/70
1 - 20/30	6 - 20/80
2 - 20/40	7 - 20/90
3 - 20/50	8 - 20/100
4 - 20/60	9 - More Severe than 20/100

**Corrected Vision**

0 - 20/20(normal)	5 - 20/70
1 - 20/30	6 - 20/80
2 - 20/40	7 - 20/90
3 - 20/50	8 - 20/100
4 - 20/60	9 - Less than 20/100

**Test Used**

- 0 - No Information Available
- 1 - Snellen Illiterate "E"
- 2 - Snellen Alphabetic
- 3 - Titinus Optical School Vision Tester
- 9 - Other

Year the test was administered - enter the last two digits of the year.

**WEIGHT** - the weight of the pupil without shoes, expressed in pounds.

## Chapter 1100

### 1100. COMMON FEATURES OF THE SUBSYSTEMS

#### 1101. GENERAL

The overall design concept of the MSEIP System was predicated upon district information being compiled and submitted as input to an SEA information system. For this reason all five subsystem files are maintained in district sequence.

The collection of a data item only once is an advantage of this system that is second only to the improvement of availability and accuracy of the information. There are systems presently collecting identical data items several times. If sufficient systems analysis precedes implementation, the MSEIP System will satisfy information requirements and lessen duplication of effort by the LEA.

#### 1102. PROCESSING AND STORAGE

##### 1102.1 File Storage Considerations

As used in this chapter, a storage device in which all individual records have essentially the same access time (usually in terms of milliseconds) is considered a mass storage device (magnetic disk or drum). A device in which the access time for a specific record may vary by several orders of magnitude, depending on its sequential file position, is a sequential storage device (magnetic tape).

For effective and efficient multiple subsystem file usage, it would appear to be desirable to have all records equally accessible from a time standpoint. This is true if frequent use is contemplated for interdistrict compilation and analysis, and if input to the system is done on a short-term updating basis. If the files are updated only at annual intervals and if reports are generated infrequently, then a magnetic tape system utilizing packaged sort and report generator software could well be the optimum choice.

Certain hardware utilization for other purposes by the SEA or by other state agencies plays a significant role in the selection of equipment. Mass storage devices which are highly desirable for some applications, but the cost of which might not be justified on the basis of a single application, may become economically desirable and practical (even essential) in light of overall computer installation utilization.

## 1102.2 Updating and Maintenance Considerations

The updating and maintenance procedures, and the computer programs required to implement these procedures, must be designed with consideration given to the frequency of file usage and to the type of storage devices which will be used. Some updating information will, of course, affect more than one subsystem file. It would be worthwhile, both for reduction of clerical effort and for increased accuracy, to consider interfile updating from one computer input document. For example, if a course number designation is to be changed, it would affect all five subsystem files. An input document might signal an Instructional Programs Subsystem file update, and internal processing might initiate the updating operation for the Facilities, Finance, Pupil, and Personnel Subsystem files wherever the erroneous course number appears. The practicality of such a single-source updating technique would obviously depend on the selection of mass storage devices.

## 1103. MULTIPLE FILE LINKAGE

### 1103.1 General

The fundamental concept of an integrated information system is that information can be collected and maintained on the basis of two or more logical constructs (as in the five subsystems that constitute the MSEIP System), and the information so collected and maintained can be structured in a manner which facilitates association of all data. Thus, data are collected and maintained in separate files to facilitate the collection process itself; to group the more obviously related data items on a rational basis; to simplify the actual data file construction; and to gain acceptance by system users and in increasing accuracy of recorded information - to minimize redundancy and duplication of effort.

Another significant aspect of designing a total integrated information system is in establishing the use, definition, and code of each data item. If information usage is not thoroughly analyzed as a part of the overall system design, then there is a good possibility that the total system will incorporate large masses of useless data. Further, it might not contain data which is desirable or essential, for either current or future use.

In a system composed of two or more subsystems, there exists the danger of making each subsystem a self-contained information unit with reports and analyses envisioned from separate subsystems. An overview of the data to be contained in all subsystems and the specific definition and rationale for interrelationships among the subsystem files is an absolute prerequisite to integrated information systems design.

Additions and expansions of data items add to the complexity of the system and must be weighted against their usefulness to the total system before they are incorporated.

Through the use of key items or dimensions, a physical link may be established between information contained in one subsystem file and some logically associated information contained in one or more of the other subsystem files.

As explained in Chapter 500, this physical link is effected through the construction of indexes which serve the dual purpose of file linking and cataloging of the record storage locations. This is direct linkage.

Of at least equal importance to the integrated information system concept are the indirect linkages which exist among subsystem files. The sequential order of records in a subsystem file may not always be the most desirable order for a specific file use. In such a case, a file may be resequenced, or it may be searched and the desired information accumulated and summarized during the search operation.

Actual manipulation of two or more subsystem files may take place concurrently with the techniques employed in processing one file being controlled wholly or in part by the processing taking place in another file. This is the essence of indirect linkage. Specific instances of linkage for each subsystem follow.

### 1103.2 Linkage From Facilities Subsystem

The Facilities Subsystem consists of four basic types of records as defined in Chapter 600. A direct link exists between building and space numbers for an individual space record in the Facilities Subsystem file and the records in the Instructional Programs Subsystem file for courses taught in that space.

Indirect linkages exist between the Facilities Subsystem file and the Finance Subsystem file in that characteristics of buildings or of vehicles as found in the Facilities Subsystem file may be associated with the costs of operation and maintenance as they appear in the Finance Subsystem file under the applicable area of responsibility codes (300 — Facilities, Maintenance, and Operation; 611 — Vehicle Operation; 621 — Vehicle Servicing and Maintenance). This linkage may be broadened to include number of pupils eligible for transportation (Pupil Subsystem file) and number of professional and ancillary personnel involved (Personnel Subsystem file - assignment and area of responsibility). A linkage exists between the Space Records for specialized built-in equipment, and the Instructional Programs Subsystem file for the courses taking place in these spaces. This linkage gives an indication of the utilization of specialized classrooms.

The hypothetical report (Figure 11-1), outlined to illustrate interfile linkage with Facilities, utilizes the Finance Subsystem file. Vehicles are listed by type and number from the Facilities Subsystem records, and the average number of pupils transported per day; cost per pupil, total miles traveled, and total cost are summarized from the Finance Subsystem records.

FIGURE 11-1. FACILITIES SUBSYSTEM ILLUSTRATIVE REPORT

TRANSPORTATION FACILITIES				
District 1001				
Number/Type of Vehicles	Avg. No. of Pupils Trans. Per Day	Cost Per Pupil	Total Miles Traveled	Total Trans. Cost
10 Conventional Carriers	396	\$75.21	45,270	\$29,783.16
4 Small Carriers	26	32.22	21,600	837.72
2 Automobiles	8	26.43	11,240	211.44

### 1103.3 Linkage From Finance Subsystem

The Finance Subsystem has no index as such, because the dimensions which constitute the file records would require that the index be nearly as large as the file itself. Further, the expenditures record was designed so that many different facets of educational costs could be analyzed through the use of a single data base, and a comparative cost analysis could be performed utilizing other data bases.

Thus, the cost of maintaining and operating facilities may be related to the physical characteristics of the facilities; the cost of an instructional area may be related to the individual courses offered in that area and to the specialized facilities available; the cost of employee benefits may be related to the longevity of the employees (the employees could be classified by major area of responsibility or simply by professional/professional-educational or technical/ancillary status); the cost of specialized instructional programs may be compared to nonspecialized programs on the basis of pupils served and of the characteristics of pupils (normal or exceptional, retarded or gifted, normal or socially maladjusted).

The report (Figure 11-2), chosen to illustrate interfile relationships for the Finance Subsystem, utilizes the Finance Subsystem file to determine all costs directly associated with the mathematics program in a particular high school, and the Instructional Programs Subsystem file to list the courses (and content) which constitute this program.

FIGURE 11-2. FINANCE SUBSYSTEM ILLUSTRATIVE REPORT

MATHEMATICS PROGRAM 107 High School District 4444													
<u>COST</u>	<u>SALARIES</u>	<u>EMPLOYEE BENEFITS</u>	<u>CONTRACTED SERVICES</u>	<u>SUPPLIES</u>	<u>EMPLOYEE TRAVEL</u>	<u>TOTAL</u>	<u>TITLE KEY</u>	<u>SEQUENTIAL YEAR</u>	<u>DIFFICULTY LEVEL</u>	<u>SECTION</u>	<u>GRADE LEVEL</u>	<u>ENROLLMENT</u>	<u>CONTENT DESCRIPTORS</u>
	\$34,600	\$3,220	\$150	\$1,800	\$180	\$39,950							
COURSES													
Modern	110095	1	2	1	11	23	101	104	111	130			
Math I	110095	1	2	2	11	23	101	104	111	130			
	110095	1	3	3	11	20	101	104	111	130			
Modern	110095	2	3	1	12	26	150	323	361	402			
Math II	110095	2	4	2	12	20	150	323	361	402			
Algebra I	110300	1	2	1	10	25	390	399	902	904			
	110300	1	2	2	10	23	390	399	902	904			
	110300	1	2	3	10	24	390	399	902	904			
General	111100	0	2	1	9	20	011						
Math	111100	0	2	2	9	23	011						
Plane	111202	0	2	1	10	25	120	222	228	228			
Geometry	111202	0	2	2	10	25	120	222	228	228			

1103.4 Linkage From Instructional Programs Subsystem

An Instructional Programs Subsystem index has been designed which will directly link each course to the instructor (Personnel Subsystem), to the space where the course is offered (Facilities Subsystem), and, through a range of internal pupil sequence numbers for each course, to the pupils enrolled in that course (Pupil Subsystem).

Indirect linkages exist from the Instructional Programs Subsystem file to the Finance Subsystem file through the Local Course Number and the Instructional Area dimensions of the Finance Subsystem records.

Summary information which relates to the Pupil Subsystem file, such as number of male pupils and number of female pupils enrolled in each course, is maintained on the Instructional Programs Subsystem file. In the area of cocurricular activities, particularly athletic cocurricular activities, indirect linkages may be made to the Facilities Subsystem records which describe the sites and spaces used primarily for these activities.

The hypothetical report (Figure 11-3), constructed to illustrate interfile linkages from the Instructional Programs Subsystem, utilizes the Instructional Programs file to describe science courses, the Facilities Subsystem file to define the type of space and whether or not that space has built-in equipment in which the science courses are held, and the Pupil Subsystem file to give mean score and variance in an imagined general sciences achievement test for those pupils who received instruction in each facility. This type of report would most likely be used for detailed analysis.

FIGURE 11-3. INSTRUCTIONAL PROGRAMS SUBSYSTEM ILLUSTRATIVE REPORT

District	NINTH GRADE BIOLOGY PROGRAM										Biology	
	Organizational Unit	Course Title Key	Section	No. of Pupils	Lab	Type of Space	Built-in Equipment	Achievement Mean	Test SD			
3333	109	132001	01	18	Yes	09	Yes	60	4.11			
3333	109	132001	02	17	Yes	09	Yes	71	5.12			
3333	110	132001	01	23	No	19	No	80	6.01			
3333	111	132001	01	22	Yes	19	No	68	4.80			
3333	112	132001	01	20	No	19	No	64	4.60			
3333	112	132001	02	21	No	19	No	77	5.86			
3333	113	132001	01	18	Yes	09	Yes	73	5.42			
3333	113	132001	02	20	Yes	09	Yes	69	4.89			
3333	114	132001	01	18	No	19	No	63	4.75			
3333	114	132001	02	15	No	19	No	76	5.70			

1103.5 Linkages From Personnel Subsystem

A Personnel Subsystem index has been designed which will directly link each staff member to the Instructional Programs Subsystem file for each course the individual teaches. The Personnel records so indexed will consist only of professional personnel with actual teaching assignments. The linkage for non-teaching (administrative and support) professional staff and for technical-ancillary staff will be indirect. These indirect linkages might be through primary area of responsibility for technical-ancillary personnel which could link to Finance Subsystem records, or to Facilities Subsystem records in the case of custodial personnel for the sites and buildings or vehicles for which they are responsible.

A direct multi-index linkage exists for the teaching staff through the combined use of the Personnel Subsystem index and the Instructional Programs Subsystem index. The Personnel Subsystem index points to the entry in the Instructional Programs Subsystem index for each course assignment; the Instructional Programs Subsystem index, in turn, gives the location in the Facilities Subsystem of the record describing the space in which the course is offered and the location of the beginning internal pupil sequence number in the Pupil Subsystem file for the range of such numbers identifying the pupils enrolled in that course.

The hypothetical report (Figure 11-4), constructed to illustrate interfile linkage capabilities of the Personnel Subsystem, should be examined with consideration of all the usual perils involved in attempts to determine teacher quality. The report describes elementary homeroom teacher traits such as highest degree held, sex, and age; and it uses the Pupil Subsystem file to determine, on the basis of tests and retest scores, changes in social awareness.

FIGURE 11-4. PERSONNEL SUBSYSTEM ILLUSTRATIVE REPORT

HOMEROOM TEACHER STUDY 409 Elementary School District Number 3333							
SOCIAL SECURITY NUMBER	HIGHEST DEGREE	SEX	AGE	PUPIL SOCIAL AWARENESS TEST AND RETEST IMPROVEMENT		Total Cost of Activity	Revenue
				MEAN	SD		
484 32 2351	13	1	36	12	2.63	\$ 2,560	\$ 0
391 24 7735	12	1	38	15	3.01	400	175
482 60 6510	10	2	22	19	3.45	810	452
480 36 7164	11	2	33	13	2.89	2,830	1,000
						6,440	5,100
						1,000	0
						11,715	14,200
						1,600	800
						1,300	350
						1,400	1,200
						750	500
						1,238	0

1103.6 Linkage From Pupil Subsystem

Due to the size of the individual pupil records and to the number of records in the file, the Pupil Subsystem index is restricted to an internal pupil sequence number range locator. Analogous to the Finance Subsystem, a Pupil Subsystem index which would point to each course in which a pupil was enrolled, would be prohibitively large. Therefore, most of the interfile linkages involving the Pupil Subsystem are from, rather than to, other subsystem files. Several of the indirect linkages of Pupil Subsystem files and other subsystem files have been mentioned previously. Most are on a summary or selective basis, such as number of pupils eligible for transportation or for special program aid.

The hypothetical report (Figure 11-5), outlined to illustrate interfile linkage with the Pupil Subsystem, involves cocurricular activities. The cocurricular activity is defined from the Instructional Programs Subsystem file; the direct cost and the revenue produced comes from the Finance Subsystem file; the staff member(s) responsible for the activity comes from the Personnel file; the facilities acquisition cost, if any, used for each activity comes from the Facilities Subsystem file; and the number of pupils engaged in each activity (with an indication of how many of those are engaged in one or more other activities) comes from the Pupil Subsystem file.

FIGURE 11-5. PUPIL SUBSYSTEM ILLUSTRATIVE REPORT

1968 COCURRICULAR ACTIVITIES 109 High School District Number 3210							
Activity	Facility or Type of Space	Cost of Acquisition (If Special)	Staff Compensation	Student Participation	Total Cost of Activity	Revenue	
200104 Debate Club	26	0	\$ 600	24	\$ 2,560	\$ 0	
200105 Distrib. Ed. Club	30	0	0	22	400	175	
200111 Future Farmers	01	0	0	75	810	452	
200201 Aquatics	10	21,500	900	80	2,830	1,000	
200205 Basketball	10	0	2,400	48	6,440	5,100	
200207 Cheerleading	03	0	300	42	1,000	0	
200210 Football	50	175,000	5,300	86	11,715	14,200	
200302 Concert Band	27	3,125	None	96	1,600	800	
200305 Marching Band	50	3,125	None	108	1,300	350	
200307 Choir	27	3,125	None	90	1,400	1,200	
200313 Orchestra	27	3,125	None	88	750	500	
200413 Student Council	11	0	1,100	40	1,238	0	
Student Enrollment							470
Cocurricular Activities Participation							438
(One or More Activities)							



## Chapter 1200

### 1200. PROGRAM SPECIFICATION CONSIDERATIONS

A program specification is a document which represents all the design criteria for any program or system of programs. The completion of this document is an essential requirement prior to the implementation of all or any part of the system.

This specification document is useful in all stages of program development, from coding the initial program instructions to the completed product or program. The program specification normally contains two divisions, general data pages and general logic flowcharting.

#### *1201. GENERAL DATA PAGES*

The general data pages of the program specification provide various program essentials: definition of purpose and requirements; algorithmic requirements; definition of terms, formats, and codes used within the program; program restrictions; and edit and error procedures.

##### 1201.1 Definition of Purpose and Requirements of the Program

The first step in the development of a program specification is that of determining the requirements of the program. This is a prerequisite for any other effort on the program specification.

To define the program requirements, the exact purpose of the program must be determined. The logical derivatives of the purpose are reflected in the specific program requirements.

For example, assume that we want to perform a comparison study of the overall adjustment and resulting grade point average of all male students in the eighth grade of each school district. Such a study is begun by listing all of the requirements of the program or subprogram. Requirements of the program in this example would be to: determine the total number of students in the eighth grade of each school district; determine the grade point of each student and the grade point average for each dis-

strict; and complete and rank each district by comparing the average grade points of the students in each district. Such general requirements must be defined before other program specification considerations are undertaken.

### 1201.2 Algorithmic Requirements

An important consideration in the design and development of a program or system of programs is the algorithmic requirements. Algorithmic requirements consist of formulas used within the program application, input and output parameters used in the program, and algorithms used within the program.

An algorithmic requirement pertains to a constructive calculating process or technique usually assumed to lead to the solution of a problem in a finite number of steps.

The various algorithms, formulas, and miscellaneous parameters which are used within the program are defined in the program specification. The basic program specification normally contains an entire subsection which is devoted to the definition and listing of each algorithmic requirement specified within the program. This is important to the full understanding of the techniques used in the problem solution.

### 1201.3 Input and Output Requirements

The input and output requirements are a basic part of, and play an extremely important role in, the design and development of a program or system of programs. It is important that they be listed and defined within the program specification. The following are examples of input and output requirements:

**Input/Output Media** - contain all the pertinent information defining exactly the media of the input to the program and the output media from the program.

**Input/Output Formats** - consist of detailed information about the specific input/output formats used in the program.

**Input/Output Codes** - consist of a listing of the various codes used within the program, resulting from the input or output of a particular peripheral device.

### 1201.4 Definition of Terms, Formats, and Codes Used Within the Program

Just as the program requirements for a program must be defined, the various codes, terms, and formats used within the program or system of programs must also be defined. It is not important that one code or term be used instead of another but the term or code used must be defined exactly. However, a particular code may have distinct advantages in a given operation.

Terms, formats, and codes serve the same purpose to the program as the alphabet does to the language structure. They are the basic units of data to the program. They must be well defined and entered in the program specification.

### 1201.5 Restrictions of the Program

The description of the various restrictions of the program or system of programs is often overlooked. Yet, it is just as important to the program and its users as the requirements of the program. The user must know both the restrictions and the requirements of the program.

Normally encountered program restrictions can involve those of usage, input/output, timing and space, among others. The recognition of program restrictions is important to the implementation and maintenance of a program, and it is necessary to describe and list all pertinent program restrictions in the specification of the program.

### 1201.6 Edit and Error Procedures of the Program

The edit and error procedures are an integral part of the program or system of programs. Their primary purpose is to achieve full utilization of the program.

It is, of course, important that all the requirements of the program are met. It is equally important that the procedures for error recovery or edit techniques are provided in the event that program requirements are not met. The provision of these procedures is, unfortunately, one of the most common areas of laxity in the design and development of a program and its specifications. However, the final program will be successful only to the degree in which these procedures are developed.

## 1202. GENERAL LOGIC FLOWCHART

The success of any particular design effort is directly proportional to the detail in which the program has been flowcharted. Flowcharts are pictorial, or graphic, representations of the major steps of the work to be done. Their illustrative symbols may represent documents, machines, or actions taken during the work process.

The logical flow of the program represented by a flowchart is a detailed diagram of the work steps to be done in terms of the logic or built-in operations and characteristics of a specific machine. As a result, the flowchart of a program or system of programs is a vital part of the program specification.

Once the program requirements have been defined, the design phase begins. During the design phase, the program is laid out logically from beginning to end, through the use of flowcharts. When the program is completely flowcharted, the program implementation phase begins. It is during this phase that accuracy of the program logic, as depicted by the flowcharts, can be determined. The implementation of the program will be only as effective as the general logic flowcharting.

## 1203. MANUAL INTEGRATION CONSIDERATIONS

In the overall system concept, the computer and computer programs are but a small part of the entire software environment. Other areas of consideration revolve around the manual operations of the system and their applicability for integration into the system. These include such items as independently standing programs. Questions arise as to whether the system should bend to accommodate smaller programs or vice versa. These are manual integration questions.

The entire system must function in an integrated or related manner; it cannot exist as a series of unrelated entities. These are considerations which must be taken into account during the early stages of the design phase.

Another important consideration in the design and development of a program, which is reflected in the program specification, is that of the manual integration procedures. At the outset of a project, it is necessary to include in the program considerations such items as the software environment and the possible prob-

lems this environment might cause. Other related considerations revolve around such questions as: Will the program run in an on-line or batch processing mode, in parallel with another program, or in a real-time environment?

The approach in answering these questions and solving the inherent problems falls into the general category of manual integration considerations. At times these considerations are not a part of the program specification document, but they are important considerations in the development of the specification.

## 1204. INSTRUCTION AND TRAINING REQUIREMENTS

The design and development of a program or system of programs necessitates the consideration of the instruction and training requirements of all technical and operational personnel. These requirements reflect the schedule of events and milestones of the project.

The instruction and training requirements are considerations which must be made early in the design and development phase of a project. They are critical to the project and form the basis for the schedule, which is included in the program specification. During the design phase, it is necessary to consider the numerous requirements of the program and how each relates to the complexity of the training phase of the program implementation period.

## 1406. FILE CONVERSION

The problem of converting existing files to be compatible with the files developed by the tailored MSEIP System will vary greatly among SEA's. This conversion problem may be the most difficult problem facing the SEA in the implementation of the system. Many states have already collected and stored data items defined by the MSEIP System. In addition, some SEA's have already developed systems and operational programs for collecting, storing, and retrieving the data. Further complicating matters, some SEA's have historical data files covering the past several years.

Each SEA will have to solve the problem as to what should be done with the data items that have been collected previously. In most cases, trying to convert these historical files to make them compatible with the new system will be a difficult task. For example, the definition and coding structure for many of the data items will be different and there may be no meaningful way to convert the old codes. If the SEA should decide to convert the previously collected data, the same analysis and design steps that are discussed throughout this DOCUMENTATION should be used in designing the system for file conversion.

## 1407. TIME, COST, AND HARDWARE CONSIDERATIONS

The length of time and the amount of money needed to implement an integrated information system can be determined only by each SEA. The length of time will depend upon the money and personnel the SEA is willing to allocate to the design and operation of the system. Only under rare circumstances, or perhaps never, should an SEA attempt to reduce the length of time by reducing the amount of preplanning needed to implement the system. Experience has shown that the length of time and the cost are inversely proportional to the amount of preplanning. The SEA should perform the prescribed steps in the design of the complete system before it attempts to implement data collection of any part of the system.

The cost for any system should consider two categories - developmental and operational. The developmental cost will be approximately the same whether the SEA implements the system in phases, or all at once. Hence, implementing the system in phases does not reduce developmental cost. It does, however, spread part of

# Chapter 1300

## 1300. PROGRAMMING CONSIDERATIONS

The technical design and development of a system of programs must concern itself with numerous programming considerations. These considerations must be decided early in the design phase prior to any development effort.

Six of the most common programming considerations are: programming languages, utility programs, test planning and implementation procedures, program maintenance, documentation standards, and review and concurrence. A detailed analysis of these programming consideration categories is given in the following sections.

### 1301. PROGRAMMING LANGUAGES

The selection of the basic programming language or languages to be used in the implementation phase of the project is probably the most important programming consideration. Nearly every programming language has an orientation specific to a particular application.

For example, the scientific programmer or engineer with many formulas and little knowledge of a computer would choose the FORTRAN programming language. The business oriented programmer with a business application would prefer the COBOL (COmmon Business Oriented Language).

FORTTRAN exists in numerous degrees of capability, that is, FORTRAN II, FORTRAN IV, FORTRAN V, etc. COBOL also varies from compiler to compiler and computer to computer. Consequently, it is necessary to investigate thoroughly each category of programming languages early in the program design phase. This investigation should result in the selection of the programming language which most closely fits the implementation needs of the application.

### 1302. UTILITY PROGRAMS

Another important programming consideration revolves around the proper selection of certain utility programs to be used in

the project implementation phase. Examples of these utility programs are: report generator program, sort-merge program, diagnostic programs, file maintenance program, and flowchart generation program.

Utility programs are best described as problem and project aids which effectively complement the programming language in achieving the total implementation of the program. In the total programming effort, it is important that each of the utility programs is investigated for possible applicability prior to the development of the program. These program subroutines are integral parts of the overall programming language considerations and are normally selected coincidentally with the programming languages.

### **1303. TEST PLANNING AND IMPLEMENTATION PROCEDURES**

The development of any program requires a test planning and implementation phase. It is during this testing period that the program design and abilities are thoroughly reviewed through a formal testing and evaluation plan.

The testing and evaluation plan is similar in nature for every software product. Categorically, the phases are described below:

Pre-project Definition Phase - during this phase, the total software requirements are reviewed, planned, and proposed.

Test Development Phase - during this phase, the acceptance test procedure(s) is designed, developed, and checked out. This phase is separated into three categories: component testing, sub-program system testing, and systems testing.

Demonstration Testing Phase - during this phase, a demonstration test, consisting of derivatives from the test development phase as well as new material developed, is used in delivery of the product to the customer and in achieving acceptance of the product.

Maintenance Testing Phase - during this phase, necessary modifications and normal maintenance techniques are applied to the previously developed test procedures such that the existing test procedures for the software product are in an up-to-date condition at any given time.

The implementation of a well-defined test plan will assure a more accurate, timely, and inexpensive program.

### **1304. PROGRAM MAINTENANCE**

A programming consideration often overlooked is program maintenance. Program maintenance is that activity by which the program is kept up to date in respect to design, development, and documentation. It requires a period of time during which approved changes, updates, and corrections for errors are made to the program. During this time, the program specification document is correspondingly updated to reflect any changes which have been made to the program.

Program maintenance begins early in the implementation phase with the assignment of appropriate personnel to the project. These personnel should be assigned to make the technical preparations for the eventual maintenance period. This would consist of studying the overall system and its components such that these people could maintain the system or program in its entirety.

### **1305. DOCUMENTATION STANDARDS**

A considerable amount of time in the design, development, and implementation phase of any system should be spent in documenting. There is a definite need that documentation standards be set prior to the beginning of the design phase. These standards would then apply throughout the entire project and continue into the program maintenance phase.

The standards relate to the documentation as the program specification relates to the program. The documentation standards govern the format and content of all documents of any project. Each class of documents such as a program specification, progress report, design and maintenance manual, etc., will not have the same format, but each class of document will be consistent in format and content.

The various classes of documents which should be standardized are: technical design specification, program specification document, milestone type progress reports, design and maintenance manuals, program user manuals, program operating instructions, and newsletter type updates.

A well-designed and defined documentation standard for each class of document can insure a continuity of information without sacrificing content.

### 1306. REVIEW AND CONCURRENCE

Review and concurrence are generalized terms which refer to the determination of the soundness, accuracy, and content of the design specification and other technical documents. It is this review which can reveal, at a very early stage, any program design error which would alter the outcome of the project. This could prevent an outcome inconsistent with the overall project goal.

This review should occur periodically and work should not proceed until the review and concurrence is complete. This type of review not only checks for mechanical errors, but also for errors of interpretation which frequently cause greater problems than mechanical errors.

## Chapter 1400

### 1400. IMPLEMENTATION CONSIDERATIONS

#### 1401. GENERAL

The purpose of Chapter 1400 is to assist the SEA's in the implementation of an integrated information system. It is impossible to list all of the considerations pertinent to each state in the implementation of an integrated information system. However, this chapter will suggest considerations to assist SEA's in preparing their detailed plan for implementation. The considerations presented are general and SEA's should incorporate others that are specific to their individual states.

#### 1401.1 Organization

A broad diversity of organizational patterns currently exists within SEA's. The description in this chapter of the staff organization suggested for implementing the MSEIP System is a generalized pattern which could be used by any participating state. It does not consider individuality or uniqueness among the states.

For purpose of reference the section with responsibility for implementing the system is referred to in this chapter as the data processing division. The division should be organized on a level which can report directly to the chief state school officer, because it must have the capability and commensurate authority to go into any part of the SEA to evaluate its information-related procedures and suggest changes when needed. The division is hampered in efficient service to the SEA as a unit if it is forced to go through several levels in the chain of command.

The development of a staff organization with the responsibility to implement the MSEIP System needs many different types of personnel, but the prime requisite is for a data processing or technical specialist. Such a specialist must be experienced in data processing in the area of systems analysis and programming. A background in education would also be helpful; however, a great amount of experience in education is represented on the SEA staff and a competent systems analyst would draw on such experience.

An SEA staff member who is an educational specialist must also serve as part of the implementing organization to assure the satisfaction of the educationally oriented objectives of the SEA. A combination of educational and technical specialists on the data processing division staff is important. Some positions would require broad experiences in both areas. In others, such experience would be an advantage but is not required.

The data processing division must be structured around trained and experienced personnel; but as it expands, some positions can be filled by retraining people currently working in the SEA. This retraining can be accomplished through on-the-job training, vendor sponsored data processing courses, and computer science courses in the colleges and universities. This process will benefit the SEA by providing trained specialists in both education and information processing. The following positions are suggested for the data processing division:

Division Director - experience in education and an extensive background in systems analysis and programming are needed. The person in this position would have the direct responsibility for the development and operations of the data processing division.

Educational Coordinator - this position requires experience in data processing and a good concept of the functions and programs that are performed by the SEA. His responsibilities include coordinating the efforts of the data processing division within the SEA in the definition and use of information.

School Consultant - the major responsibility is to coordinate the efforts of the data processing division with the LEA's throughout the state. He should hold training sessions with the public school personnel and train them in the external procedures for the operation of the system. This person should have experience in public education and a complete understanding of the external operating procedures of the system.

Systems Analyst - experience in both programming and systems analysis is necessary. Responsibilities of this person include analysis, design and development of the information system, and problem definition in evaluative procedures.

Programmers - experience in programming for automated systems is necessary. This person is to write the detailed programs and document all operative procedures.

Input Procedures and Forms Specialist - the major responsibility is to design or approve all data collection forms and the procedures for administering them. This person should have strong background in the collection of volume data, putting it in machine-readable form, and a thorough knowledge of LEA operations. He should be knowledgeable as to who could best enter the data on the collection forms (pupils, teachers, principals, etc.), the best method for transcribing the data into machine-readable form, (keypunching, optical scanning, optical character recognition), and in estimating the reliability of the data being collected.

Data Retrieval and Statistical Specialist - the major responsibility is to aid the users of the system in selecting the data needed from the files and producing the necessary reports. This person must have a complete understanding of the data files, the data items within the files, and the linkages among files. He should know the best way to select the data items from the data bank and to manipulate them to produce the desired report.

Technical Writer - the major responsibility is to write the instructions used to complete the data collection forms. After sufficient exposure to data processing, he could also assist in the writing of the systems documentation and production procedures. This person should have experience in the operation of the public school system and training in technical writing.

#### 1401.2 SEA Training

A necessary step towards the implementation of the MSEIP System is to develop a training program for the SEA staff. There should be different levels of training programs. One level should be directed to the policymakers. This would include the general concepts of the system, the advantages of such a system, and the resource requirements necessary to implement the system. A second level of training would be for SEA staff members who are users of the system and who will contribute in defining the objectives and specifications. This level would generally include the training in level one, but in greater detail. In addition, it would include such facts as how the MSEIP educational specifications are established, what constitutes a file linkage, and why certain data items are used as file linkages. Training level three would be for SEA staff members who are technically data processing oriented. In addition to what was covered in the other two levels, this training level would include file layouts, index

tables, random access and/or sequential processing, and all technical details of the System.

Since most SEA's do not have personnel who are knowledgeable in all levels of these training programs, the MSEIP Central Staff will assist during the initial implementation phases to coordinate the efforts within each of the 13 states. In addition, SEA personnel should utilize vendor courses that will help train the technically oriented individuals. In the event an SEA does not have these key personnel available, it may be more convenient, faster, and economical to contract with an outside agency for consulting, system analysis, and programming services.

#### 1402. *MSEIP GENERAL SYSTEM DESIGN*

The MSEIP System is a general design. Each SEA using the general design must develop detail system specifications after defining its own needs and objectives. The purpose of the general design is to provide a framework for the subsystems which when fully implemented will function logically through an integrated concept.

##### 1402.1 Review of the General Design

As an SEA begins implementation of the MSEIP System, it should carefully review the general system design of this DOCUMENTATION. Each phase should be fully planned and documented by each individual state. It is only after an SEA has carefully reviewed the MSEIP DOCUMENTATION that it should proceed to defining the specifications for its system. The specifications are the ground rules which guide the data processing division in the design, implementation, and operation of the system. An SEA should not begin implementation of a system at the data collection level without a thoroughly preplanned set of specifications. The success that each SEA achieves in implementing its system will depend largely on the effective use of preplanning. Preplanning is seen as a more important factor than the amount of money allocated, the data processing equipment, or the personnel available, although these are certainly important.

There are a number of steps that must be accomplished by an SEA to assure the successful implementation of the MSEIP System. Although the initiation of each step in the implementa-

tion process may occur sequentially, some of the steps can proceed in parallel. It is important to review the general design to effect understanding of the problem and to preplan sufficiently to enable specifications to be written. Considerations for the implementation of an integrated information system should include the following steps:

1. Review the general system design in the MSEIP DOCUMENTATION.
2. Design a specific system which satisfies a given set of specifications including problem definition, objectives, data items, system documentation, procedures, program specification and programs to produce needed reports.
3. Write administrative instructional manuals for the collection of the data and procedure manuals for the operation of the system.
4. Pilot test the complete system from the administration of collection documents to the production of output records.
5. Evaluate and review each step of the entire operation.
6. Revise the system, its specifications, instruction manuals, and/or production procedure manuals where needed, as shown from the evaluation and review.

#### 1403. *INDIVIDUAL SEA SPECIFICATIONS*

After review of the MSEIP DOCUMENTATION, the SEA should proceed to define specifications for its own system based on that SEA's needs. The establishment of the set of specifications may not be an easy task, but it is one that is essential to the success of the implementation. Other steps toward implementation should not precede the generation of a thoroughly preplanned set of specifications. There are definable procedures for setting specifications for the system and it would be well to establish a systematic procedure for approaching this vital task. The factors in the following sections deserve consideration by an SEA when developing specifications for its system.

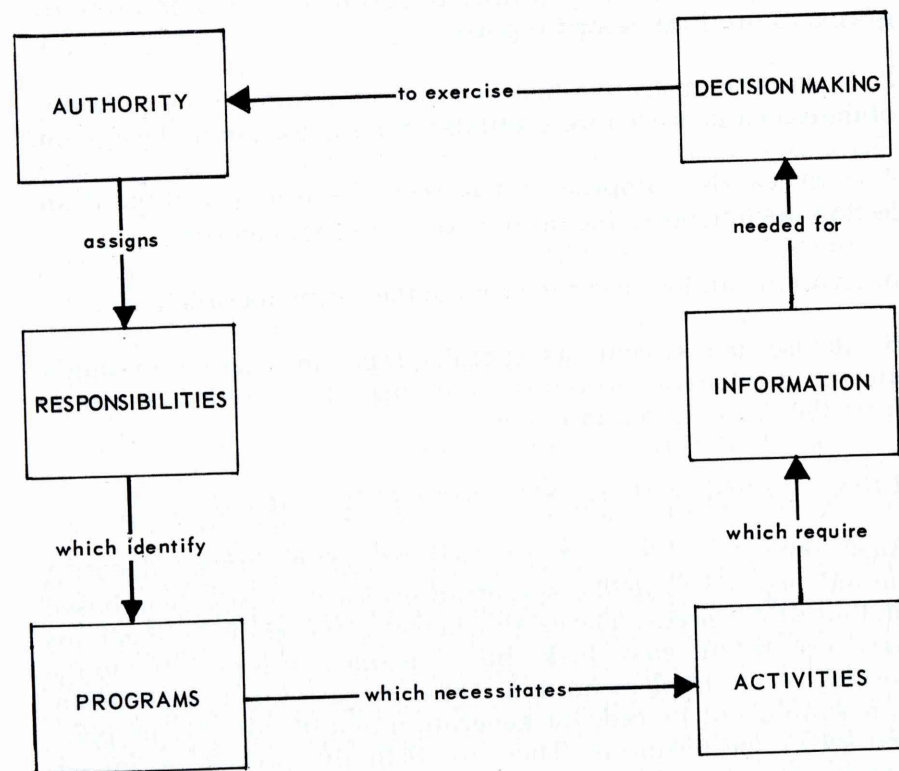
##### 1403.1 Problem Definition

The problem definition should include the responsibilities, functions, and a detailed description of the objectives of the SEA.



The problem definition involving these aspects of the SEA should be defined in view of its need for data and the services of an information system in the decision-making process. Figure 14-1 depicts the role of information in the SEA environment.

FIGURE 14-1. THE ROLE OF INFORMATION IN DECISION MAKING



#### 1403.2 Data Item Selection

In the context of the problems defined, the data items must be identified as to what items are to be collected, why, and when. The procedures for accomplishing the selection of data items need not be subsystem oriented. That is, the procedure should

disregard such subsystem delineation and consider each data item against all other data items from all subsystems. The need for and purpose to be accomplished by each data item should be the deciding factor in its selection.

To implement an entire system at one time will often be beyond the resources of the SEA in terms of money, personnel, and equipment. However, the design of that system should include all data items that are needed to make the system function. The data item selection process should establish priorities for the data items and associated timing schedules for their inclusion in the system. This selection and priority procedure should be the responsibility of the educational specialists who have an understanding of SEA functions and the competence and authority to question and evaluate data needs and data requests.

The above prescribed procedures are the beginning of the tailoring required to implement the MSEIP System in each SEA. In this context, additional data items which were not included in the MSEIP System should be described and their collection justified in support of the unique requirements of each SEA. At this point it is proper to determine data reports that will be needed by the SEA, although it will not be necessary or even desirable to specify the format of these reports.

#### 1403.3 Establishing Time Schedules

In any project that involves many people and tasks for them to perform, it is important to establish time schedules. These schedules serve to improve communication between people and to give a broader concept of the total project. A critical path network can be an invaluable tool for SEA's in accomplishing implementation. Time schedules should include the many tasks that must be performed and the time when all decisions must be made to assure completion of all project phases within the proper time sequence.

#### 1403.4 Tailoring

The MSEIP general system design is not detailed enough to serve as the specification necessary to write the programs to operate the system, but it does provide a framework by which states can define the specific detail, the tailoring, so that complete implementation can be accomplished.

After an SEA has reviewed the MSEIP DOCUMENTATION and has established time schedules, it is ready to tailor, from the MSEIP System, the detailed system that is to be implemented. The necessary changes or modifications can be made to fulfill the objectives established for a state's information requirements. This tailoring would include the selection of data items, their definitions and codes, file layouts, linkages, and modifications in the system design itself. Tailoring must be done for specific hardware, with considerations given for budget limitations.

#### 1403.5 Documenting

To insure the successful operation of a system it is critical that the entire information system be completely and accurately documented at each milestone.

The first project-produced document, the program specification, must be documented precisely and thoroughly. This document will serve as the blueprint of the information system. The overall success of the implementation of the information system will be in direct proportion to the completeness and correctness of all the documents which will be produced.

#### 1403.6 Establishing Priorities

Due to limited resources, an SEA probably will not try to implement its entire system at one time; therefore, priorities should be established. Just as the SEA should establish the procedure for the selection of the data items, it should develop a plan for implementation that lists these priorities. The plan should state in a logical and consistent manner which data items are to be collected and which phases implemented the first year, which additional items are to be collected and which phases implemented the second year, etc., until the complete system is implemented.

The SEA should consider the same factors in developing the plan as it did in the selection procedures for the data items. The data items and functions necessary for the operation of many of the educational programs may come from more than one subsystem. Therefore, the plan should consider these programs as well as internal functions of the SEA. The SEA should make a priority ranking of the educational programs and other SEA functions. Criteria that should be considered are: the number of data items necessary for the operation of the program or activity under consideration; cost to collect and maintain the data items; the

degree of accuracy desired in the data items; etc. The point of emphasis is not which criteria an SEA uses, but that it establish these priorities in a logical and consistent manner. Next, the SEA should pinpoint the decisions that are necessary to operate each program. Finally, it should select the data items necessary to assist in making each of these decisions. Therefore, the plan should be to implement each year those parts of the system necessary to handle the data items for as many of the programs as the SEA has resources (money, personnel, and equipment) to allocate to that task.

#### 1404. PROGRAM SPECIFICATION

To implement a system totally or in parts, the system's functions and all associated procedures must be specified in exact detail. The MSEIP System, when made specific by SEA tailoring, is not only the data items, but is also the people who use the system, the data collection documents and collection procedures, the uses for the stored data and the retrieval procedures associated with these uses, and the organizations whose responsibilities are supported by the system's functions. All are part of the system.

All parts of the system must be specified and although these specifications may take different forms they must all merge to form the system. Even though an SEA might implement only portions of the system each year, care must be exercised so that the program specification is first developed for the entire system. This should be done as if the complete system were to be implemented at once. In this way when all portions of the system are implemented, integration is assured.

Specifications detailing the procedures can be developed as soon as the MSEIP System has been tailored to serve the implementing SEA. These specifications should be derived from the functions necessary to the SEA in fulfilling its objectives and responsibilities in the administration of its state's educational programs.

Manuals and procedures for all portions of the system should be developed; together they form the majority of the technical documentation of the implemented system. These documents are the operational specifications of the system.

The following considerations should be included in the development of the specifications for the system. SEA's may wish to add

considerations, but they should not delete any. Deleting steps will not decrease the length of time and cost for the design and operation of the system; it may, in fact, create situations and problems that would increase the time and cost.

A system flow should be developed completely illustrating the movement of data. This flow would indicate distribution of the collection forms and instructions to the LEA's, their completion and return to the SEA and their conversion to machine-readable form. The flow continues by showing the file origination, updating cycles and maintenance, and the production of desired records. This flow should show every operation that must be performed by the data processing division, the SEA, and the LEA's whether it is done by people or machines. Besides the flow, there should be a written documentation which explains the functions of each of the operations and how they affect the entire system.

A technically competent staff member should be able to read the documentation, follow the flow, and have a good understanding of what it will take to implement and operate the system. He should expand the documentation by writing a detailed set of instructions (production procedures) for each of those operations that are performed by people, and write the program specification for those operations that are performed by machine. The production procedures contain the purpose of the operation, circumstances under which the operation may run, the duration of the operation, samples of the forms used in the operation, answers to the major questions that arise in performing the operation, etc. A program specification should be written for each operation of the system flow that pertains to machines. Chapter 1200 can serve as a guide in the writing of program specifications.

#### 1404.1 Determining Specifications and Report Requirements

The generalized programs determined by the program specification utilize the indexes, described in section 504.2, to perform the functions of file maintenance and data reporting. These programs are not dictated in form or function by the content of the data they process. They will perform activities that are common to all information systems. The specifying of these programs will be accomplished by technical staff members (systems analysts and programmers). The specifications should begin as soon as the decision for implementation is made so that

the programs themselves will be operational as soon as the actual collection of data begins. The descriptions in Chapter 500 will serve as the foundation of these specifications.

Necessary SEA applications not specified in the MSEIP design, but using data from the integrated files, must be included in the specifications of the computer programs. Some of these applications might include: state aid calculations, general statistics generation and reporting, internal SEA financial accounting, and food service reimbursements and inventory accounting. The formulation of these applications must be a joint effort between the educational and the technical specialists. The educator specifies what applications are necessary and the technical specialist determines the technical specifications in the context of the newly tailored system and prepares the computer programs.

These computer program specifications should include details, types, and frequencies of the reports and statistical analyses that the SEA will demand of the system. These details must be specifically set forth in these educationally-oriented specifications concerning data that need to be collected, stored, and retrieved in an efficient and economical manner.

#### 1404.2 Designing Input-Output Forms

Specifications for the collection of data to be utilized by the system can only be developed after the system design has been evaluated and tailored to reflect the defined objectives and responsibilities of the implementing SEA. The description and specifications of the various operational parts of the system (computer programs and procedures) will help guide the data collection specifications and procedures.

The technical specialist and/or a forms design specialist can design collection forms and procedures that will be suited to a computer oriented process. But it will be the educator on the SEA staff who will be responsible for assuring that the forms and procedures developed are operable in the LEA and that they will properly serve the objectives of the SEA.

Decisions concerning data collection will be indicated as the system specifications are determined. These specifications will include the data to be collected which will facilitate decisions concerning the frequencies and procedures of collection media, processing, and reports.

### 1404.3 Data Collection Techniques

The degree of accuracy of the coding, collection, and validation processes is directly proportional to the accuracy of the input data. Requiring complete accuracy of data would mandate several validation cycles between the automated portions of the system and organizations from which the data are collected.

The volume of data to be collected will be a determinant in the decision concerning the collection media. Section 502.3 examines a number of collection (input) media. The higher cost of data collection and machine-readable media can be easily justified when a very large amount of data is to be collected. In fact, extremely large amounts of data cannot be collected economically by some of the less expensive media.

The frequency of data collection can be determined by both the need for accuracy and the degree of currentness required. The educational programs administered by an SEA are changeable by nature; therefore, the ability to change the data to be collected about these programs is necessary. The MSEIP System has been designed to maintain files in as current a status as the frequency of data collection to maintain these files will allow. Not all of the data to be collected and the files to be maintained have the same dynamic, changing nature. For example, the Facilities data file and the data to maintain it are not nearly as dynamic as the Pupil data file and its data.

Together, the educational specialist and the technical specialist of the SEA must determine the procedures and the volume of data to be collected. The data collection specifications should include a manual with complete collection procedures. These manuals are necessary so that the LEA's and other data-originating agencies can supply the data for the system.

Since the input forms and collection procedures should be designed basically by forms and technical specialists in the data processing division, these same people should have an integral role in the writing of the instruction manuals. It would be desirable to have all the instructions written by the same group, in a similar style, with consistent terminology. This is important in increasing the accuracy of data submitted by the LEA's.

The programming staff, by analysis of the system flow, can determine which programs are necessary for implementation of the first phase of the plan. Just as the data processing division

should insist on a well-defined set of goals and objectives for the system, the programmers should insist on a well-defined program specification. The programmer should carefully read Chapter 1300 before any programs are written.

### 1405. PROGRAMMING AND PILOT TESTING

This phase of the implementation effort is the actual coding of the computer programs based on the program specification. It also includes the check-out of these programs as well as their implementation in the system. Most of the program check-out is accomplished by a simulated operation. The data to be collected and the collection procedures must also be validated by the simulation. The final check-out of the data to be collected, the collection documents and procedures, the SEA associated applications and the computer programs that process the data, comprise the pilot test. A pilot test uses a small population to perform each operational step on the system flow. The pilot test will point out weaknesses in the system. For example:

Do the LEA's understand the definition of the data items?

Do the LEA's find it difficult to complete the collection forms according to instructions?

Are the data processing division's production procedures adequately written so that the data flow smoothly into the data bank?

Are the users within the SEA informed sufficiently to be able to request the reports they need?

Do the computer programs provide the functions required of them?

Many questions and problems will arise in the operation of the pilot test. Even with proper preplanning, there will still be questions and problems to resolve. An SEA should not implement a phase of the plan without first pilot testing that entire phase.

From an evaluation of the problems that arise from the pilot test, the specifications, the plan of implementation, the system, the programs, the instructions, and the production procedures may need to be altered. After all modifications have been made, this phase of the system is ready to be operational statewide.

#### 1406. FILE CONVERSION

The problem of converting existing files to be compatible with the files developed by the tailored MSEIP System will vary greatly among SEA's. This conversion problem may be the most difficult problem facing the SEA in the implementation of the system. Many states have already collected and stored data items defined by the MSEIP System. In addition, some SEA's have already developed systems and operational programs for collecting, storing, and retrieving the data. Further complicating matters, some SEA's have historical data files covering the past several years.

Each SEA will have to solve the problem as to what should be done with the data items that have been collected previously. In most cases, trying to convert these historical files to make them compatible with the new system will be a difficult task. For example, the definition and coding structure for many of the data items will be different and there may be no meaningful way to convert the old codes. If the SEA should decide to convert the previously collected data, the same analysis and design steps that are discussed throughout this DOCUMENTATION should be used in designing the system for file conversion.

#### 1407. TIME, COST, AND HARDWARE CONSIDERATIONS

The length of time and the amount of money needed to implement an integrated information system can be determined only by each SEA. The length of time will depend upon the money and personnel the SEA is willing to allocate to the design and operation of the system. Only under rare circumstances, or perhaps never, should an SEA attempt to reduce the length of time by reducing the amount of preplanning needed to implement the system. Experience has shown that the length of time and the cost are inversely proportional to the amount of preplanning. The SEA should perform the prescribed steps in the design of the complete system before it attempts to implement data collection of any part of the system.

The cost for any system should consider two categories - developmental and operational. The developmental cost will be approximately the same whether the SEA implements the system in phases, or all at once. Hence, implementing the system in phases does not reduce developmental cost. It does, however, spread part of

the cost (that of program writing, manuals, testing, etc.) over several years. The primary difference between developing one subsystem or all subsystems at one time is in the manpower allocation. If all subsystems are implemented at one time, a larger staff of systems analysts and programmers will be needed than if only one subsystem is implemented. This would reduce the time period necessary for the development and implementation, but it would cost more.

There are many factors that contribute toward the determination of the operating costs of the system. They are such things as: the number of data items to be collected; the frequency of collecting and correcting the data items; the degree of accuracy desired of the data items; the type of output requested, and the frequency of the requests. These factors regarding operational cost should be the only factors an SEA manipulates to reduce the length of time and the cost of the implementation of the system.

Implementation is a cyclic process whether it proceeds with a part or parts of the system or the whole system. The following guide for planning implementation of the integrated information system presupposes four to six months for each period. Some of the procedures, such as staff training and system maintenance, may be continuous; some may be concurrent and/or overlapping.

If implementation begins with less than the whole system, as is likely in most cases, it is important that the complete process be repeated as each part of the system is introduced for implementation.

The first period in implementation would be for training of SEA staff and defining the overall system specifications. The overall system specifications will include all parts of the system regardless of the phases in which any part eventually may be implemented. This complete system planning before any phase is implemented is vital in development of an effective integrated information system.

The second period would involve the design, writing of the program specification, and documentation of the overall system. It would also include the writing of the specific programs and administration manual necessary to implement the first phase of the plan which may be any part or parts of the overall system.

During the third period, the collection documents and procedures, of the first phase of the system to be implemented, would be pilot tested.

Following evaluation of the pilot test, the fourth period would be for revision, as needed, of collection materials, program specifications, programs, and the administration manual. Data collection could then begin.

During the fifth period, while data are being collected, total SEA application reports would be determined.

In the sixth period, the part of the system being implemented would be pilot tested and run in parallel with the existing system.

After evaluation and revision, the seventh period would be used for file building, followed by production of reports and system maintenance.

The final period of the cycle would be full-scale operation, on a statewide basis, of the first phase of the implementation plan. As other phases of the system are to be implemented, the complete process would be repeated from the point of writing specific programs and an administration manual (part of period two), on through each succeeding period.

The implementation of an integrated information system which includes several major data files suggests that the user give serious consideration to the retrieval functions in terms of efficiency and economy. For most SEA's this usually means changes in existing data processing equipment. Thus, the long range planning essential to the implementation of an integrated information system is equally applicable to the acquisition of appropriate data processing equipment. As the integrated information system is gradually constructed, it is necessary to acquire data processing equipment which is commensurate to the system's need. The hardware configurations are suggested only to serve as a guide for SEA planning relative to modifications in equipment as the specifications for the system are developed.

In the writing of the system specifications it is essential to determine the hardware configuration required for efficient operation of the system. Complete implementation of the MSEIP System would require random access mass storage capabilities. This in turn will influence the need for the large (131,000) character capacity central processor, Figures 14-2, 14-3. The provisions for data collection, storage, and retrieval suggested in the MSEIP System do not specifically require the configuration in any of the figures. In theory, the MSEIP System could be implemented

without sophisticated equipment. However, practical application of this theory will reveal the limitations which are inherent in the system without such equipment.

Beginning phases of implementation could be accomplished with a less sophisticated configuration, as shown in Figure 14-4. In the event that implementation is initiated at a minimal level, careful consideration should be given to adequate core storage in the central processor. With the smaller configuration, integration of the files is limited and the retrieval of data from two or more files will likely be more expensive and inefficient. The equipment shown in the figures are only samples and not intended to be precise. Input-output devices could be tape or disk or a combination. Mass storage devices might be disk, drum, or data cell and the capacities are approximations which will vary with individual SEA's volume needs.

Through long range planning, SEA's can reduce the difficult problem of writing and rewriting programs, file conversions, etc., by exercising adequate foresight in scheduling modifications in equipment as implementation progresses.

FIGURE 14-2. CONFIGURATION CONSIDERATIONS FOR FULL IMPLEMENTATION

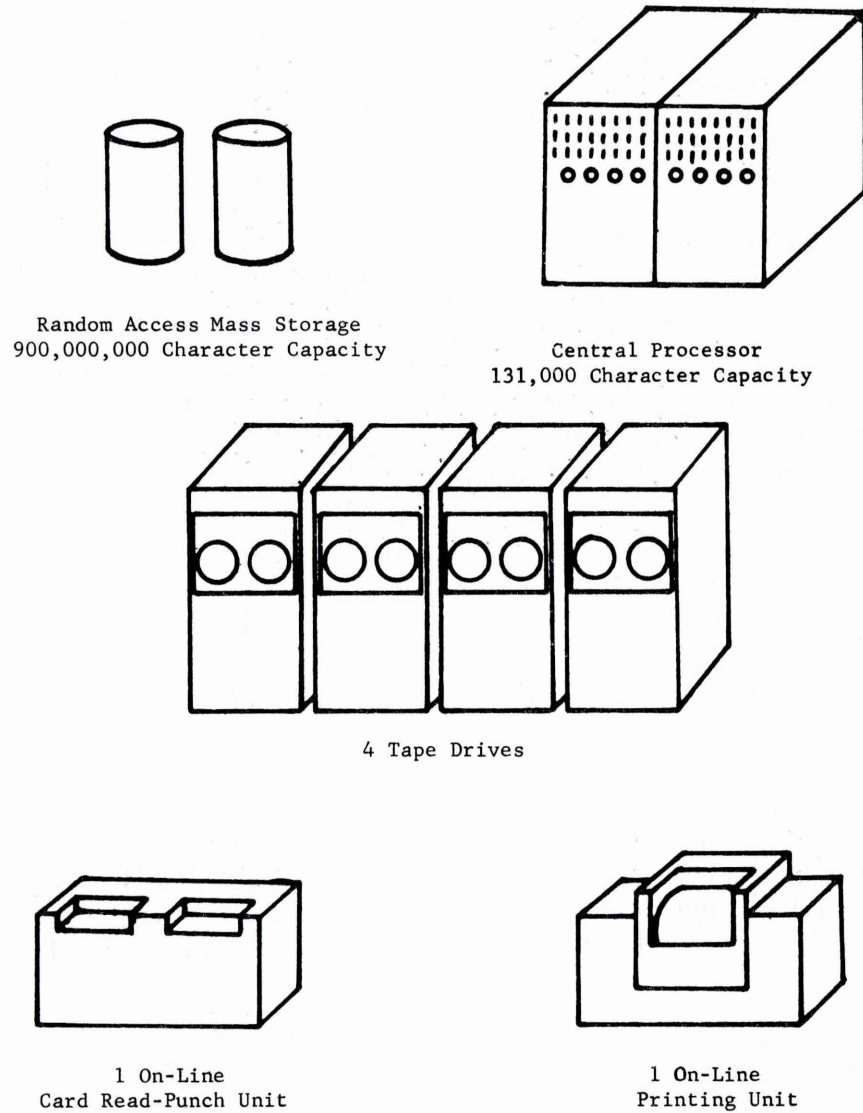


FIGURE 14-3. CONFIGURATION CONSIDERATIONS FOR MIDDLE-LEVEL IMPLEMENTATION

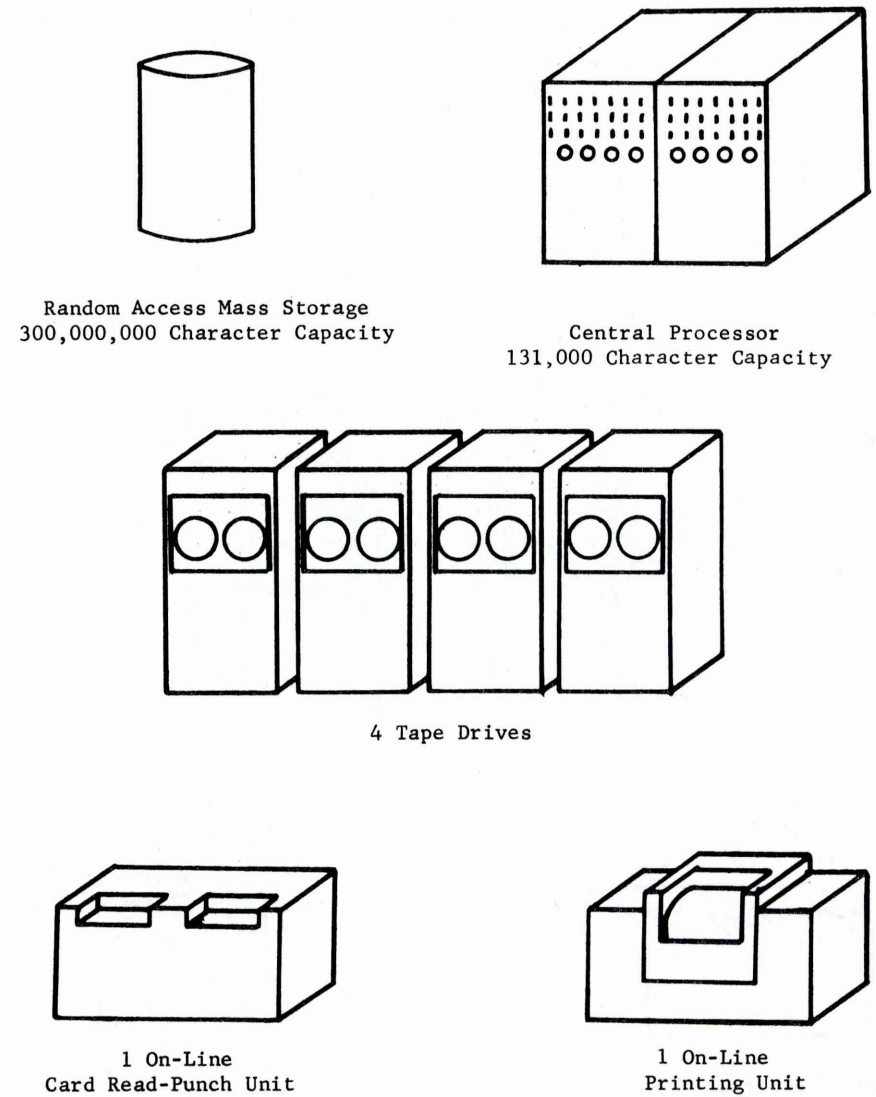
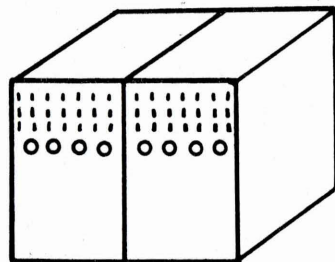
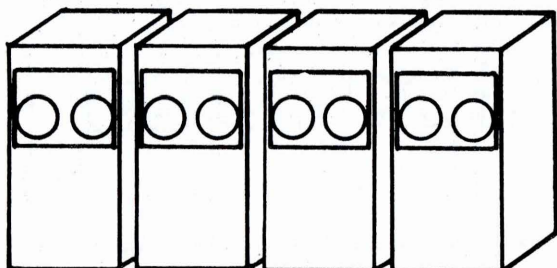


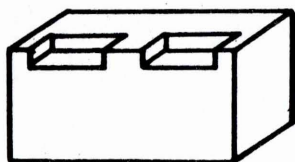
FIGURE 14-4. CONFIGURATION CONSIDERATIONS FOR MINIMAL IMPLEMENTATION



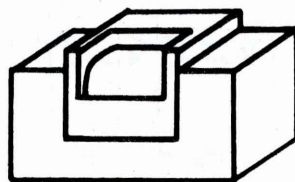
Central Processor  
65,000 Character Capacity



4 Tape Drives



1 On-Line  
Card Read-Punch Unit



1 On-Line  
Printing Unit

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