

ICI
Encyclopedia
Of
Internal Controls



Control Descriptions



INTERNAL CONTROL INSTITUTE

"Recognizing Competency World-Wide"

ICI Technical Library

How to use the Controls:

Overview:

This resource document was devised at the Internal Control Institute to provide a single reference source of internal control activities and processes that an organization may consider. These processes are particularly useful when increasing control over certain activities is warranted. Obviously, most organizations need not employ all of these techniques. But this encyclopedia is invaluable when auditing activities recognize shortfalls in certain areas and additional controls are needed.

Organization:

The descriptions are categorized and listed in various fashions to facilitate and simplify identification. The reference numbering system has been specifically devised to further identify the type of specific control. The identification listing follows:

Reference Number
(example)

9. 2. D. C.

9=Accounting

2=Entry

D=Minimal

C=Corrective

**Generic
Category**

**Usage
Activity**

**Strength
of Control**

**Control
Type**

1. Access
2. Authorization
3. Containment
4. Limit
5. Procedures
6. Segregate
7. Standards
8. Void
9. Accounting
10. Confirm
11. Compliance
12. Identify
13. Simulate
14. Observe
15. Redundancy
16. Feedback
17. Sample
18. Tag
19. Verify
20. Scan
21. Copy
22. Defaults
23. Prompt
24. Retrain

1. Origination
2. Entry
3. Communications
4. Process
5. Storage (on-line)
6. Storage (off-line)
7. Output
8. Use of Data
9. General Purpose
0. Authorization

- A. Very Strong
- B. Strong
- C. Average
- D. Minimal

- P. Preventive
- D. Detective
- C. Corrective

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**Generic
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Generic
Category
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Name of Control

Reference

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<u>Category</u>	<u>Name of Control</u>	<u>Reference</u>
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Ref.# 1.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Systems Security Control		
GENERIC CATEGORY	Access	USAGE ACTIVITY	Authorization Access
		STRENGTH	Very Strong
		CONTROL TYPE	Preventive
DESCRIPTION	<p>Distributed systems pose challenging security problems due to the independence of each processing site. The distributed systems security function recommends and administers the security program for the system. Functions like security in a decentralized distributed system must still be centralized in order to protect the resources as they are moved among sites and at the individual site.</p>		
IMPLEMENTATION SUGGESTIONS	<p>An organization-side security officer is the ideal solution for distributed systems security. This individual, who may report outside the data processing function, already has organizational-wide responsibility for security. Lacking this function, the lead node staff can be assigned security responsibility for the network. Responsibility normally involves identifying security requirements and obtaining and implementing those measures necessary to achieve the desired level of security.</p>		
FEEDBACK EVIDENCE	<p>Distributed systems security policy, together with the procedures and methods used to implement the security policies. Evidence should also indicate security responsibilities for the system and at the individual sites.</p>		
ADVANTAGES OF CONTROL	<p>If the information in the network warrants protecting, security procedures are essential in providing the needed protection.</p>		
DISADVANTAGES OF CONTROL	<p>None if protection is required, except for possible inefficiency due to poor implementation.</p>		

Ref.# 1.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Security Classification		
GENERIC CATEGORY Access	USAGE ACTIVITY Authorization Access	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Important documents should be classified in a manner that indicates their importance. This classification of security becomes the basis for determining the amount of protection given those documents, as well as who can see the documents.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many organizations classify information according to its purpose, such as personal confidential, manufacturing confidential, financial confidential, etc. Governmental organizations have long used top secret, secret, and confidential.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate security violations and instances where security classifications have inhibited processing.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of security classifications is that all concerned understand the value of the information to the organization.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that unauthorized people also know the value of the classified information.</p>		

Ref.# 1.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Authorization Hierarchy		
GENERIC CATEGORY Access	USAGE ACTIVITY Authorization Access	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Authorization hierarchy divides people's responsibility into stratum of authority. For example, it may be stratified by dollar amount, or type of transaction.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The stratification of authorization should be documented and disseminated to the individuals involved in the process.</p>		
FEEDBACK EVIDENCE	<p>Periodic checks should be made to ascertain that the appropriate people are assigning within their strata of authorization. Exceptions should be investigated.</p>		
ADVANTAGES OF CONTROL	<p>An authorization hierarchy is a structured means of involving the appropriate levels of management in the authorization process.</p>		
DISADVANTAGES OF CONTROL	<p>Authorization hierarchies require more judgment in determining who is the individual to sign, and because higher levels of management are involved the time to complete a transaction may be substantially increased.</p>		

Ref.#
1.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Terminal Sign On		
GENERIC CATEGORY Access	USAGE ACTIVITY Authorization Access	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Users should be required to sign on and identify themselves before they can perform any other function on the terminal. The sign on process identifies the user and determines whether or not the user is authorized to be on that terminal. This can be accomplished with a terminal profile.		
IMPLEMENTATION SUGGESTIONS	Procedures should be established so that each time a user begins terminal operations they must go through a sign on process.		
FEEDBACK EVIDENCE	Feedback information should indicate attempted sign on violations.		
ADVANTAGES OF CONTROL	The advantage of the terminal sign on process is to ascertain that the user at the terminal is an authorized user for that terminal.		
DISADVANTAGES OF CONTROL	The disadvantage is the time required to go through the sign on procedures.		

Ref.#
1.7.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Output Security Classification		
GENERIC CATEGORY Access	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Output reports should carry an indication of their security classification, if any. The objective of classifying reports is to alert operations personnel to the need to initiated security measures.		
IMPLEMENTATION SUGGESTIONS	The security identification of an output report can be achieved in several ways. The report itself can contain the security classification; the procedures to governing the printing and distribution of the report can indicate the security classification; or all reports which are classified can be segregated and printed in a secure environment.		
FEEDBACK EVIDENCE	Feedback information should identify security problems in the classification, printing, and dissemination of classified reports.		
ADVANTAGES OF CONTROL	The advantage is the awareness on the part of involved personnel of the importance for, and need to protect classified output.		
DISADVANTAGES OF CONTROL	The disadvantage of classifying output is that it identifies classified documents as important documents.		

Ref.# 1.7.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Print On Demand		
GENERIC CATEGORY Access	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	On-line terminals allow users to get their input in remote locations. In these situations, it is better to let the recipient initiate the request for printing rather than printing when the information is available.		
IMPLEMENTATION SUGGESTIONS	Print on demand requires that an authorization method be established so that the recipient and the terminal can be identified. This identification must be entered before the recipient can gain access to the report information.		
FEEDBACK EVIDENCE	Feedback information should identify compromised information, as well as inconveniences caused by the print on demand procedures.		
ADVANTAGES OF CONTROL	The advantage is that the user will be present at the time the report is printed.		
DISADVANTAGES OF CONTROL	The disadvantage is that the report will not be waiting for the user and thus there will be some delay after the user determines they are ready for the report.		

Ref.# 1.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Privacy Classification		
GENERIC CATEGORY Access	USAGE ACTIVITY	General Purpose	STRENGTH Strong
			CONTROL TYPE Preventive
DESCRIPTION	<p>Information should be classified in accordance with its impact on individual privacy. Adding this classification can help protect the privacy of information by alerting employees to the importance of maintaining the privacy of information.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Most organizations have only one privacy classification. Thus, all privacy information is protected through the same means. However, additional classifications may be helpful, such as employee privacy, customer privacy, vendor privacy, etc.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which privacy information was compromised, lost, or stolen.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of introducing a privacy classification is to increase awareness and improve security.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of a privacy classification is that it identifies private information to unauthorized individuals.</p>		

Ref.# 1.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Authorization Lists		
GENERIC CATEGORY Access	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Authorization lists contain the names of individuals authorized to approve transactions and/or events. These lists also contain the method of authorization, such as signature, inserting a magnetically encoded card into data collection equipment, use of a password, etc.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Individuals accountable for an area should develop lists of individuals to whom they have delegated authority to approve a transaction and/or event. For manual operations, the approval should be manually checked, while in automated systems, the approval should be checked through automated procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate violations of the authorization procedure.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of authorization lists is the positive identification of individuals authorized to approve a transaction or event.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.#
1.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Encryption		
GENERIC CATEGORY Access	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Data encryption codes data so that it is unintelligible to those not possessing the encryption key.		
IMPLEMENTATION SUGGESTIONS	Encryption can be accomplished through internal encryption tables or encryption hardware. The more sophisticated encryption utilizes hardware. Internal tables are effective as substitution codes which will prevent the casual user from browsing through computer data.		
FEEDBACK EVIDENCE	Feedback information should identify situations in which security has or has not been broken because of cryptography. Actual or potential compromise of data may indicate new uses for cryptography.		
ADVANTAGES OF CONTROL	Cryptography encodes data so that it is unusable to individuals not possessing the cryptographic key.		
DISADVANTAGES OF CONTROL	The disadvantage to cryptography is the time and effort required to encode and decode the information.		

Ref.# 1.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Group Security Classification		
GENERIC CATEGORY Access	USAGE ACTIVITY	General Purpose	STRENGTH Strong
CONTROL TYPE Preventive			
DESCRIPTION	<p>The security classification of data may change as more pieces of information are combined into a single repository of data. For example, what may be unclassified by itself could carry a high security classification when grouped with enough other unclassified information.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Security officer or security committee should examine the security classification of not only individual transactions or items of data, but the totality of all the data stored in a single area.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which information has been compromised, lost, or stolen.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of group security is to classify information at the proper security level.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 1.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Identification Badges		
GENERIC CATEGORY Access	USAGE ACTIVITY	General Purpose	STRENGTH Strong
			CONTROL TYPE Preventive
DESCRIPTION	<p>Identification badges are worn or carried by individuals so that they can be identified as an individual authorized to have access to restricted areas. Many organizations put the individual's picture on the badge as a positive means of identification.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Badges can either be carried and shown when identification is needed, or worn as a means of continual positive identification. Some organizations permit individuals to carry their badges with them continuously, while others issue badges when people come to work and then retrieve them when the individual leaves at the end of the working period.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify individuals without badges attempting to enter restricted areas, as well as the identification of inconveniences caused by badges.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of identification badges is a positive check on individuals to be assured only authorized individuals enter the restricted area.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and cost to prepare, issue and check badges</p>		

Ref.# 2.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Master Terminal Operation		
GENERIC CATEGORY Authorization	USAGE Authorization ACTIVITY Access	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The master terminal is a designated input terminal to the distributed systems for using predetermined privileged commands. Normally the master terminal would be under the control of the lead node for using those privileged commands that are necessary to administer and/or operate the distributed network.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node staff should be given the responsibility for operation of the distributed systems master terminal operation. This may be included within the general authority of the lead node or it may be special authority given the lead node by the distributed systems committee.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the procedures for using the master terminal operation and evidence that the procedures are functioning. Evidence can also be the rejection of master terminal privilege commands when entered at other terminals.</p>		
ADVANTAGES OF CONTROL	<p>In order to protect the system and the security of the users, one terminal should be designated the master terminal and certain privileged commands restricted to that terminal only.</p>		
DISADVANTAGES OF CONTROL	<p>Some reduced flexibility in entering privileged commands, but generally no significant disadvantage.</p>		

Ref.# 2.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	User Signoff		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Users should be made accountable for their own application systems. This can be accomplished by having the user sign a statement that the application system developed by the systems personnel is, in fact, the system that they specified and want.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users should be involved in acceptance testing of new systems and/or modifications to existing systems prior to signing a statement of acceptance. The user must personally be involved in the testing to be assured that it does, in fact, meet their needs.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the user signed an acceptance statement and later found the system did not meet their needs.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a user signoff is to force the user to become involved in acceptance testing and then take responsibility for the system.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the user may not be technically competent to judge whether the system, in fact, meets their needs.</p>		

Ref.# 2.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Object Program Change Authorization		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Authorization should be required to make a change to the object program library. This control provides a methodology for making that change.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Implementation can be achieved through the signing of a change log prior to submitting the change in a batch system, use of a special authorization code in an on-line system, or another acceptable method to computer operations.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify violations to the authorization process.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of authorization to program changes is increased assurance that only valid changes are entered onto the library.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is inconveniences caused by difficulty in finding the appropriate authorization source.</p>		

Ref.#
2.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Security Profile Signoff		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Individual security profiles should be authorized by supervision. The objective of this authorization is to confirm that the security profiles are, in fact, the true security.		
IMPLEMENTATION SUGGESTIONS	The signoff should be performed by the security officer, if the position exists. However, the individual signing the security profile should not be the same individual that prepares the profile.		
FEEDBACK EVIDENCE	Feedback information should indicate inaccuracies in security profiles.		
ADVANTAGES OF CONTROL	The advantage of the security profile signoff is assurance that the profile is authorized.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
2.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Source Program Change Authorization		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Authorization should be required to make a change to the source program library. This control provides a methodology for making the change.		
IMPLEMENTATION SUGGESTIONS	Implementation can be achieved through the signing of a change log prior to submitting the change in a batch system, use of a special authorization code in an on-line system, or another acceptable method to computer operations.		
FEEDBACK EVIDENCE	Feedback information should identify violations to the authorization process.		
ADVANTAGES OF CONTROL	The advantage of authorization to program changes is increased assurance that only valid changes are entered onto the program library.		
DISADVANTAGES OF CONTROL	The disadvantage is inconveniences caused by difficulty in finding the appropriate authorization source.		

Ref.# 2.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Supervisor Sign On After Shutdown		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>After a terminal has been automatically shut down, a supervisor should be required to reopen the terminal. This will prohibit the same individual who caused the shutdown from reopening the terminal.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be established in the terminal operation so that after a shutdown only a selected group of individuals, normally supervisors, can reopen the terminal for operation.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should list the frequency of automatic shutdown requiring a supervisor to reopen the terminal. The feedback information should indicate the cause of the shutdown.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of having a supervisor reopen a terminal is to investigate the problem involved in the automatic shutdown.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the inconvenience to the supervisor if the shutdown procedures are too strict.</p>		

Ref.# 2.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Signature Authorization		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Transactions and events are approved by having an individual in a position of authority sign his/her name to the document.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be established designating who is authorized to approve what transactions or events. All concerned should be made aware of this list of authorized individuals.</p>		
FEEDBACK EVIDENCE	<p>Either complete or periodic checks should be made to verify that documents have been signed by authorized people, and that the signature appears valid. Exceptions should be noted for follow-up investigation.</p>		
ADVANTAGES OF CONTROL	<p>Having an individual authorize events by signing helps emphasize accountability for the action taken.</p>		
DISADVANTAGES OF CONTROL	<p>Obtaining the signature of an authorized individual may extend the amount of time required to complete a transaction.</p>		

Ref.# 2.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Multiple Signature Authorization		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	More than one individual may be required to authorize a transaction. This provides a concurrence that the transaction is in the best interest of the organization.		
IMPLEMENTATION SUGGESTIONS	In establishing multiple signatures, individuals should be selected that have a slight divergence of opinion. For example, it is better to have individuals in two departments approve rather than two individuals in one department.		
FEEDBACK EVIDENCE	Feedback evidence should indicate violations of transactions being approved without the required multiple signatures, or unauthorized assigners.		
ADVANTAGES OF CONTROL	Multiple signatures bring different viewpoints to the validity of executing a transaction prior to its execution.		
DISADVANTAGES OF CONTROL	Obtaining multiple signatures delays the time required to execute a transaction.		

Ref.# 2.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Automatic Security Violation Shutdown		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Terminals should be programmed so that after a predetermined number of invalid access attempts the terminal will be shut down. This will prohibit the unrestricted access attempts by unauthorized users.</p>		
IMPLEMENTATION SUGGESTIONS	<p>At the time terminal operation is established, operations personnel should determine what is a reasonable number of invalid attempts and establish that as the point where the terminal will be shut down.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be compiled on the number of automatic shutdowns. This should be maintained by terminal, time of day, and types of invalid passwords entered.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of automatic security shutdown is to restrict the terminal to authorized users.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of automatic shutdown is the potential inconvenience of an authorized user who has forgotten the access procedures.</p>		

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Ref.# 2.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Magnetically Encoded Cards		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Plastic cards can be issued individuals that contain magnetically encoded information. This card can be used in conjunction with passwords or other input to identify the individual entering the information.		
IMPLEMENTATION SUGGESTIONS	The security of the system should determine whether magnetically encoded cards are needed in addition to passwords and other identifiers. Properly controlled, the magnetically encoded cards provide additional assurance that positive identification has been made.		
FEEDBACK EVIDENCE	Feedback information should state the number of lost cards, reported card violations, and inconveniences caused due to card restrictions.		
ADVANTAGES OF CONTROL	The advantage of magnetically encoded cards is to increase assurance of positive identification.		
DISADVANTAGES OF CONTROL	The disadvantage of the magnetically encoded cards is that people forget the cards and thus are inconvenienced by not being able to use the system.		

Ref.#
2.3.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Automatic Callback		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Communication	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>When the source of call in over communication lines cannot be verified, the communication can be terminated and the proper number of the identified user called. Thus, if the message was coming from an unauthorized source, the processing would be terminated and would not be reinstated by the callback to the purported user.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be established for either the automated equipment or computer operations to identify the purported user, and then call back the official number of that party.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency of invalid call ins.</p>		
ADVANTAGES OF CONTROL	<p>The Advantage of the automatic callback is the increased assurance of the authenticity of the user making a request.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of automatic callback is the extra expense, time, and effort to terminate the message and reinstate a call.</p>		

Ref.# 2.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Privileged Instruction Profile		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Many automated systems contain a series of privileged instructions. These permit individuals to perform tasks that affect the controls governing the operation. For example, privileged instructions in security systems permit people to change individuals' passwords. A profile of who can use these can both segregate and identify who can perform what privileged action.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Operations personnel should first identify what are the privileged commands, determine which will be used in their organization, and then determine what individual can use what privileged instructions. A profile is then established which should become the basis of enforcement for the use of those commands. In other words, the profile establishes authorization for use of the commands.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency of use of the privileged instructions and who used them.</p>		
ADVANTAGES OF CONTROL	<p>The advantages of a privileged instruction profile is that is formalizes authorization to use the instructions, identifies the individuals who can use them, and is a tool in segregating the commands among various people.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 2.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Object Code Modification Authorization		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Instances occur in computer operations where it is necessary to make quick corrections. These corrections are made to the object code. However, this type of change does not leave an adequate audit trail. Therefore, a special authorization procedure should be initiated for these unusual and emergency changes.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Most vendors provide utility programs for this purpose. For example, IBM provides SUPER ZAP and DEBE. The authorization process should include control over these utility programs. The programs should not be available without appropriate authorization.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the situations where emergency changes were made to source code, who made the change, and who authorized the change.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of controlling emergency changes is that it increases the difficulty in making unauthorized changes.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time to execute the authorization procedures to make the emergency change to object code.</p>		

Ref.# 2.4.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Operator Intervention Procedures		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Operators have the option of intervening into processing for numerous reasons. These interventions need to be controlled and procedures established as to how and when these interventions occur.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations should make an analysis as to the types of intervention operators can perform. The methods of operation intervention should be defined and described in a step-by-stop basis. These procedures should be disseminated to operators as their basis for making these interventions.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency and reasons for operator intervention,</p>		
ADVANTAGES OF CONTROL	<p>The advantages of operator intervention procedures are to form the basis for authorizing those acts, and to outline the methods by which they will be performed.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is inconveniences that may be caused by the operator not intervening in situations for which there are no procedures.</p>		

Ref.# 2.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Lead Node Master Commands		
GENERIC CATEGORY Authorization	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Distributed systems should have administrative capabilities that enable the lead node to perform its administrative and operational responsibilities. Many of these capabilities are executed through powerful commands available to the network. These commands should be restricted for the exclusive use of the lead node to ensure the ability of that site to fulfill the lead node responsibilities.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The distributed system committee should evaluate the privileged commands included in the network and designate the administrative command needed by the lead node to the exclusive use of that site.</p>		
FEEDBACK EVIDENCE	<p>The list of commands designated for the exclusive use of the lead node, and the procedures that ensure that exclusivity.</p>		
ADVANTAGES OF CONTROL	<p>The lead node normally requires certain processing capabilities in order to properly administer and operate the system. Without the exclusive use of these commands the ability of the lead node to function may be undermined.</p>		
DISADVANTAGES OF CONTROL	<p>Some of the system processing capabilities will be denied all of the distributed sites except the lead node.</p>		

Ref.# 2.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Master Command Control		
GENERIC CATEGORY Authorization	USAGE ACTIVITY	General Purpose	STRENGTH Very Strong
			CONTROL TYPE Preventive
DESCRIPTION	<p>Some of the commands available to the network are for the operational control of that network. Those commands not designated for the exclusive use of the lead node should be made available to all of the processing sites, but perhaps limited to predetermined individuals at those sites.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The distributed systems committee should identify the privileged systems commands available for the use of all processing sites. The committee should also indicate the policy for using those master commands.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the commands available to the processing sites, and the controls and policies governing the use of those commands.</p>		
ADVANTAGES OF CONTROL	<p>The master commands require some control to ensure the integrity of processing, and allocating those commands between the lead node and processing sites puts the commands into the hands of the individual in most need for those capabilities.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 2.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Systems Planning Committee		
GENERIC CATEGORY Authorization	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The distributed systems planning committee is comprised of representatives from the key processing sites, and preferably all processing sites. The objective of the distributed systems planning committee is to establish the policies used by the distributed network. It is the governing body of the distributed systems.</p>		
IMPLEMENTATION SUGGESTIONS	<p>A distributed systems planning committee should be established comprised of representatives from all the major processing sites, and preferably all the distributed processing sites. This committee establishes policies and ensures the effective operation of the distributed system.</p>		
FEEDBACK EVIDENCE	<p>Notice of appointments of members to the committee, procedures for operating the committee, and minutes or other evidence that the committee is functioning.</p>		
ADVANTAGES OF CONTROL	<p>The distributed systems committee is essential in ensuring the effective operation of the distributed system through the development of policies acceptable to all members of the system.</p>		
DISADVANTAGES OF CONTROL	<p>The time and effort to operate the committee when the same process could be done by the lead node if acceptable to the full network.</p>		

Ref.#
2.9.B.P/D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Lead Node Function		
GENERIC CATEGORY Authorization	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive, Detective & Corrective
DESCRIPTION	<p>No one site in a distributed network can control the network, but one should be designated as the lead site. The lead node is the coordinating site in this distributed network from which the administration and technical process needed to ensure the functioning of the network emulates. The lead node may be established only for administrative and technical procedures, and thus would not be a site in the network in the same context as the other distributed sites. The lead node acts as the director of the network, but does not have the authority of a typical director.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node should be established by the distributed processing system committee. The lead node should get its authority from this committee as well as being organized, directed, and monitored by the policies of that committee.</p>		
FEEDBACK EVIDENCE	<p>Designated of a site as the lead node, together with the policies and procedures governing the operation of the lead node site.</p>		
ADVANTAGES OF CONTROL	<p>It is essential in a distributed system to appoint one site for administrative and technical direction. Without a selected lead node, the distributed concept may break down due to lack of direction.</p>		
DISADVANTAGES OF CONTROL	<p>The democratic processing concepts of a distributed system may be compromised if too much authority is allocated to the lead node. It can also foster favoritism of some sites in the network over other sites.</p>		

Ref.# 2.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Supervisor Signoffs		
GENERIC CATEGORY Authorization	USAGE ACTIVITY	General Purpose	STRENGTH Average
			CONTROL TYPE Preventive
DESCRIPTION	<p>Tasks requiring review to authenticate the validity of the performance of the tasks should also have a user signoff indicating the task has been properly completed. This provides the supervisor with a formal opportunity to review a subordinate's work.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Supervisors should determine which tasks are important for them to review prior to the tasks being completed. The supervisor should then have placed on or tagged to the task a sheet for the supervisor to indicate approval.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate when tasks of this type are completed but not approved.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of supervisor signoff is the providing of a formal review point and procedure.</p>		
DISADVANTAGES OF CONTROL	<p>Having a supervisor signoff may become a perfunctory task unless it is used with discretion.</p>		

Ref.# 3.0.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Secure Output Storage Holding Areas		
GENERIC CATEGORY Containment	USAGE ACTIVITY Authorization	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Many organizations hold data awaiting couriers from the recipient. These reports should be stored in a secure area until they are picked up by a representative of the recipient.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Reports can be stored in locked boxes with the recipient having the key to the box. Another method is to store all reports in a secure area and have a librarian dispense the reports after the recipient has been properly identified.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify instances where the security of output reports has been compromised.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a secure storage facilities is the increased assurance that the information will not be compromised.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and space needed for the secure facilities.</p>		

Ref.# 3.0.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Test Equipment Control		
GENERIC CATEGORY Containment	USAGE ACTIVITY Authorization Access	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Vendor personnel responsible for the maintenance of the distributed network use test equipment in the performance of their maintenance function. This equipment has the capability to intercept messages, as well as to modify, add, or delete data from the network. The test equipment control process is designed to ensure that the users are aware when the test equipment is being used, and to prevent system abuse by that equipment.</p>		
IMPLEMENTATION SUGGESTIONS	<p>If the physical sites are controllable, the vendor should not be allowed to use test equipment without prior permission of distributed systems supervisory personnel. Where access to the system cannot be controlled, either security procedures should be invoked to prevent system abuse, or detection equipment included within the network to detect when test equipment is put on-line.</p>		
FEEDBACK EVIDENCE	<p>Procedures governing the use of vendor test equipment, and evidence that those procedures are being implemented.</p>		
ADVANTAGES OF CONTROL	<p>The control over test equipment will add to the security over the integrity of the information and processing in the system.</p>		
DISADVANTAGES OF CONTROL	<p>It may make it more difficult for the vendor to perform maintenance when needed, and in some instances may, in fact, delay maintenance and this affect user processing capacity.</p>		

Ref.#
3.1.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Controlled Input Document Containment		
GENERIC CATEGORY Containment	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	Controlled input documents should be stored in a location where they are not readily accessible to change. The documents should be stored both prior to and after entry into the application system.		
IMPLEMENTATION SUGGESTIONS	A locked file cabinet or other physical container should be assigned for the storage of controlled input documents.		
FEEDBACK EVIDENCE	Feedback information should quantify the number of documents stored, problems associated with that storage, and any loss or compromise of documents.		
ADVANTAGES OF CONTROL	The advantage of physical containment is restricting access to the documents.		
DISADVANTAGES OF CONTROL	The disadvantage is the cost of the physical container.		

Ref.#
3.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Physically Secure Terminals		
GENERIC CATEGORY Containment	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	Terminals located in an area where access is restricted due to the physical location is an area whose security is dependent upon the physical attributes of the area. The physical security can be obtained from placing the terminal in a locked area or in an area which in itself is physically secured.		
IMPLEMENTATION SUGGESTIONS	The security of a terminal can be greatly enhanced by placing it in an area where physical access is extremely difficult. This can be extremely important if there are only minimal controls once access to the terminal is gained.		
FEEDBACK EVIDENCE	Feedback information should indicate who operated the terminal at what periods of time, and then compare this to the times the terminal was actually in use.		
ADVANTAGES OF CONTROL	Physically secured terminals reduce the number of people who could gain undetected access to the terminal.		
DISADVANTAGES OF CONTROL	Any containment procedures not only makes it difficult for the unauthorized, but frequently makes it difficult for the authorized users to access the terminal.		

Ref.#
3.3.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Performing Data Entry		
GENERIC CATEGORY Containment	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	Data can be entered either in a free form or formatted form. The formatting places data in contained areas so that it can be more easily identified and controlled.		
IMPLEMENTATION SUGGESTIONS	Preformatting is part of the system development process. If the same data is to be entered repetitively, the preformatting can be built into the system and people trained to use the preformatting format.		
FEEDBACK EVIDENCE	Feedback information should identify the frequency and types of errors occurring in a formatted structure.		
ADVANTAGES OF CONTROL	The advantage of formatting is that people learn the method and can perform it routinely which tends to increase accuracy, and it enables automated systems to more readily identify and verify entered data.		
DISADVANTAGES OF CONTROL	The disadvantage of formatting is that new capabilities may require the redesign of input documents.		

Ref.# 3.7.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Negotiable Document Containment		
GENERIC CATEGORY Containment	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Negotiable documents should be stored in an unaccessible area. This should be stored in a location different from other nonnegotiable documents.		
IMPLEMENTATION SUGGESTIONS	The negotiable instruments can be stored in a safe, a locked room, or a locked cage within the normal document storage area.		
FEEDBACK EVIDENCE	Logs should be maintained on negotiable instruments stored in locked areas. The logs should indicate the available stock and who removed the documents.		
ADVANTAGES OF CONTROL	The storage of negotiable instruments in a locked area reduces the probability of the documents being lost or stolen. If it is a fireproof area, it also reduces the probability of destruction from fire.		
DISADVANTAGES OF CONTROL	The disadvantage is the cost and inconvenience associated with moving forms in and out of a locked area.		

Ref.#
3.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Shredding Computer Waste		
GENERIC CATEGORY Containment	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	Large amounts of documentation are produced in the computer area but never used. For example, the waste includes printer alignment, carbon paper, unwanted copies, etc. Compromise or misuse of this information can be avoided by shredding the waste.		
IMPLEMENTATION SUGGESTIONS	Computer operations working with users should identify documents that contain confidential information. A decision should be made as to whether it is cheaper to shred these individually, or to shred all unused computer output. Machines can be obtained for the purpose of shredding.		
FEEDBACK EVIDENCE	Feedback information should identify compromises of security due to not shredding confidential information.		
ADVANTAGES OF CONTROL	The advantage of shredding is that confidential information is destroyed so that it may neither be compromised nor stolen.		
DISADVANTAGES OF CONTROL	The disadvantage is the time, effort, and machinery required to perform the shredding.		

Ref.# 3.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Bonding Insurance		
GENERIC CATEGORY Containment	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Bonding insurance insures the organization against the improper acts of key individuals. If that individual should embezzle, the insurance company would make good on the loss up to the insured amount.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Bonding insurance is available from most insurance agents. It is most applicable to people handling highly liquid assets.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the type of problems that have recourse to bonding insurance.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of insurance is reducing the amount of loss the organization must suffer in the event of loss.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of the insurance.</p>		

Ref.#
3.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Property Insurance		
GENERIC CATEGORY Containment	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Property insurance includes the loss of the data processing equipment under certain conditions for which the loss is insurable is dependent upon how the policy is written.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Senior management should determine the amount of loss they are willing to accept due to loss of property, and then provide insurance to reimburse the loss over that point.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which losses are covered by insurance.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of insurance is to reduce the amount of loss an organization will suffer per loss occurrence.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of the insurance.</p>		

Ref.#
3.9.D.C

CONTROL DESCRIPTION

NAME OF CONTROL	Loss of Business Insurance			
GENERIC CATEGORY Containment	USAGE ACTIVITY	General Purpose	STRENGTH Minimal Value	CONTROL TYPE Corrective
DESCRIPTION	Loss of business insurance reimburses the organization for business losses attributable to data processing failures. However, this type of insurance is difficult to obtain, costly to obtain, and difficult to substantiate the loss.			
IMPLEMENTATION SUGGESTIONS	Senior management should determine the amount of loss they are willing to accept due to loss of property, and then provide insurance to reimburse the loss over that point.			
FEEDBACK EVIDENCE	Feedback information should identify insurable losses.			
ADVANTAGES OF CONTROL	The advantage of loss of business insurance is limiting an organization's risk on loss of business due to data processing breakdowns.			
DISADVANTAGES OF CONTROL	The disadvantage is the cost of the insurance.			

Ref.#

CONTROL DESCRIPTION

NAME OF CONTROL	Signature Plate Security			
GENERIC CATEGORY Containment	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive	
DESCRIPTION	<p>If signature plates are used to sign documents, such as checks, those signature plates should be stored in a secure manner and their use should be controlled.</p>			
IMPLEMENTATION SUGGESTIONS	<p>Signature plates should be stored by an individual independent of the operation that uses the plate. That individual should produce the signature plates when needed, and observe the use of those plates.</p>			
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which losses are covered by insurance.</p>			
ADVANTAGES OF CONTROL	<p>The advantage of physical security over signature plates is to reduce the opportunity for misuse of the plates.</p>			
DISADVANTAGES OF CONTROL	<p>None.</p>			

Ref.# 3.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Restricted Access to Storage Areas		
GENERIC CATEGORY Containment	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The area where documents are stored should be restricted to individuals whose job function involves storing and retrieving those documents. This increases the difficulty for unauthorized people to obtain information contained in a storage area.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many organizations establish a separate locked room for the retention of storing information. Larger organizations assign a librarian to that restricted area, whose job is to store and retrieve information.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems in storing and retrieving documents, as well as inconveniences caused by storing information in a restricted area.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of restricting access to the storage area is to make it more difficult for unauthorized people to access important information.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the establishment of procedures, possibly hiring a librarian, and designing a secure area for storage.</p>		

Ref.#
3.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Read Only Hardware Features			
GENERIC CATEGORY Containment	USAGE ACTIVITY	General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Features are available which prevent the destruction of data on computer media. These are hardware features such as rings on reels of magnetic computer tape.			
IMPLEMENTATION SUGGESTIONS	Control-oriented people should study the type of features available to protect computer data. Those features which are cost-effective for protecting data should be implemented.			
FEEDBACK EVIDENCE	Feedback information should identify situations in which data is inadvertently destroyed. This information should be used to improve the data destruction controls.			
ADVANTAGES OF CONTROL	The advantage of hardware features to prevent unintentional data destruction is that they are difficult to circumvent.			
DISADVANTAGES OF CONTROL	There is normally an additional cost associated with either the hardware feature or the use of that feature, although it might be minimal compared to the loss associated with the destruction of data.			

Ref.# 3.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Processing Area Visitor Policy		
GENERIC CATEGORY Containment	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>A policy should be established regarding the movement of visitors in the data processing area. The policy should cover all personnel including vendor personnel, maintenance personnel, firefighters, corporate officers, and so on. The policy should spell out specifically who can enter, whether they need to be escorted, and any sign-in, sign-out log.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Data processing management, jointly with senior management, should develop an overall policy regarding visitors.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should report violations of the visitor policy and any inconvenience caused by the policy.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a visitor policy is that all employees know how to treat visitors, and thus all visitors are treated equally.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of a visitor policy is the inconvenience caused in getting people into the area that should be in the area.</p>		

Ref.# 3.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Security Pouch		
GENERIC CATEGORY Containment	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>A security pouch is a container in which important documents are placed during movement. Pouches are normally locked and normally inaccessible to the carrier.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The objective of the security pouch is to make compromise of information more difficult. When documents are being transmitted which contain confidential information, such as payroll information, that data should be transmitted in a security pouch. The simplest type is a sealed envelope with some indication covering the sealed part of the envelope that must be broken when the envelope is broken. More sophisticated security pouches are made of stronger materials and are locked.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate problems encountered in moving important documents both with security pouches and without security pouches.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a security pouch is the extra assurance that the data will not be compromised.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of the security pouch is the time required to execute the security procedures.</p>		

Ref.# 3.9.C.P/D

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Security Policy		
GENERIC CATEGORY Containment	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Protective & Detective
DESCRIPTION	<p>Organization should have a formal policy on security. This would cover people, equipment, and property. The policy outlines the overall philosophy of the organization toward security.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Most organizations that develop a security policy have previously established a security committee, or acquired a security officer, whose responsibility it is to develop the security policy.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate security problems. The information should indicate both the frequency and type of suspected and actual security violations.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a security policy is that employees to the organization understand management security intent.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 3.9.C.P/D

CONTROL DESCRIPTION

NAME OF CONTROL	Sensitive Area Control Policies			
GENERIC CATEGORY Containment	USAGE ACTIVITY	General Purpose	STRENGTH Average	CONTROL TYPE Protective & Detective
DESCRIPTION	<p>Sensitive areas, such as payroll processing or research, require extra security procedures. These normally involve the hiring, supervision, training, and over personnel working in the area and personnel moving in and out of the area.</p>			
IMPLEMENTATION SUGGESTIONS	<p>These sensitive area policies should be developed by individuals knowledgeable in the risks inherent in the area.</p>			
FEEDBACK EVIDENCE	<p>Feedback information should identify sensitive area problems not adequately handled by the organization's policies.</p>			
ADVANTAGES OF CONTROL	<p>The advantage of the policies is it formalizes control over the sensitive area.</p>			
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort to develop, maintain, and enforce the policies.</p>			

Ref.# 4.2.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Cutoff Checks		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Entry
		STRENGTH	Very Strong
		CONTROL TYPE	Detective
DESCRIPTION	<p>Cutoff checks evaluate the accounting period in which transactions should fall and either place the transaction in the appropriate period, or reject transactions entered in the wrong period.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Cutoff checks require the accounting date to be included within the transaction. Checks then determine in which accounting period processing is occurring, and if the incoming transaction is appropriate for that accounting period.</p>		
FEEDBACK EVIDENCE	<p>Feedback information identifies transactions entered in the wrong accounting period.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that transactions are recorded in the appropriate accounting period.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 4.2.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Invalid Character Checks		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Entry
		STRENGTH	Very Strong
		CONTROL TYPE	Preventive
DESCRIPTION	<p>Invalid character checks search for bit configurations which could cause systems problems. For example, attempting to print an unprintable character might result in misunderstandings in output reports.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Checks should be made on critical fields to determine that all characters are valid. In some computers, invalid characters cause indicators to be turned on, and if that facility exists the indicator should be interrogated.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate if invalid characters are entered or created during processing.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the avoidance of errors due to invalid characters.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 4.2.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Installation Convention Checks						
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Entry	STRENGTH	Very Strong	CONTROL TYPE	Preventive
DESCRIPTION	Most organizations have conventions in structuring data. Where these conventions exist, the data should be audited to determine it is in compliance with the convention.						
IMPLEMENTATION SUGGESTIONS	Users should identify for systems analysts application conventions and the characteristics of those conventions. Systems analysts should then build in checks to determine data is entered in accordance with those conventions.						
FEEDBACK EVIDENCE	Feedback information should indicate variances from conventions.						
ADVANTAGES OF CONTROL	The advantage of checking installation conventions is to assure that entered data is in accordance with the conventions.						
DISADVANTAGES OF CONTROL	None.						

Ref.# 4.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Range Checks		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Entry
		STRENGTH	Strong
		CONTROL TYPE	Preventive
DESCRIPTION	<p>Range checks restrict the entry of data to data falling within that range. For example, if hours worked is limited to 0 – 60 hour range, then hours worked outside that range would be rejected.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users should identify for the systems analyst the expected range of values for each field.</p>		
FEEDBACK EVIDENCE	<p>Feedback information identifies data outside the acceptable range.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the avoidance of errors.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of developing and operating the range check.</p>		

Ref.#
4.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Positive Identification of Data		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Entry
		STRENGTH	Strong
		CONTROL TYPE	Preventive
DESCRIPTION	Positive identification requires a data element to be one of a specified number of values. For example, sex codes may be restricted to M for male and F for female; all others are unacceptable.		
IMPLEMENTATION SUGGESTIONS	The user should identify those data elements where there is a specific value expected.		
FEEDBACK EVIDENCE	Feedback information should indicate when nonacceptable values are entered.		
ADVANTAGES OF CONTROL	The advantage is restricting the codes to the accepted value.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 4.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Date Checking		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Entry
		STRENGTH	Strong
		CONTROL TYPE	Preventive
DESCRIPTION	<p>Dates of transactions should be evaluated to determine they are reasonable dates.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The reasonableness of dates is usually determined by a moving range. For example, in orders the range may be thirty days prior to today's date through today's date.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate dates that are unreasonable.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is to avoid basing transactions on erroneous dates.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the dates, while appearing unreasonable, may be correct.</p>		

Ref.#
4.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Size Checks		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Entry
		STRENGTH	Strong
		CONTROL TYPE	Preventive
DESCRIPTION	Fields should be examined to ascertain that they are the correct length. For example, a zip code field should be five characters in length.		
IMPLEMENTATION SUGGESTIONS	Users should identify the systems analyst those fields which have a specified length. Audits should be added to verify that the correct length is entered.		
FEEDBACK EVIDENCE	Feedback information should indicate fields entered that are the wrong length.		
ADVANTAGES OF CONTROL	The advantage is the assurance that the correct length field is entered.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 4.3.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Message Priority Structure		
GENERIC CATEGORY Limit	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Distributed systems allocate resources among users based on need. An essential element in establishing need is assigning priority to work. High-priority work should be processed ahead of low-priority work. The priority system requires the originator of a process to assign a priority to that process.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The priority system should differentiate between priority categories and provide the capability to shift priority as time passes. For example, a simple priority system may account for high, medium, and low priority. However, a low-priority message or process may need to be shifted to medium priority and perhaps even high priority as time passes.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the priority system and demonstration that the prioritization functions properly in the production environment. Entering different priority messages and observing processing results may suffice for adequate evidence of the proper functioning of the priority system.</p>		
ADVANTAGES OF CONTROL	<p>Enables the more important work to be processed ahead of the least important work.</p>		
DISADVANTAGES OF CONTROL	<p>When capacity is limited, the low-priority users may be required to wait an exorbitant amount of time which may cause them to search for alternate processing means.</p>		

Ref.# 4.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Processing Priority Structure		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Process
		STRENGTH	Average
		CONTROL TYPE	Detective
DESCRIPTION	<p>Distributed systems distribute processing capacity among the users. Therefore, priorities for processing must be determined as a basis for moving capacity in the event demand exceeds capacity. The users with high-priority processing capacity needs can satisfy those needs over low-priority processors if a prioritization system has been established.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Processing priorities need to be categorized and time-phased. Due to the complexities of shifting processing capabilities, priorities should include both order of importance as well as amount of capacity required to do that work. This will enable the realistic movement of processing capacity.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the processing prioritization system and evidence that that system is functioning properly in the production environment.</p>		
ADVANTAGES OF CONTROL	<p>The processing prioritization program permits the effective utilization of capacity to meet the high-priority needs first. The system permits the effective utilization of resources.</p>		
DISADVANTAGES OF CONTROL	<p>Users entering work may be subjected to extensive wait periods due to the continual introduction of high-priority processing. Also, the prioritization system may be abused in order for some users to get their work done quicker.</p>		

Ref.# 4.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Memory Protection		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Process
		STRENGTH	Very Strong
		CONTROL TYPE	Preventive
DESCRIPTION	<p>When multiple users use the same processing facility concurrently, one user could access or inadvertently modify another user's data. Memory protection procedures ensure that users in a multiprocessing environment are restricted to their allocated processing areas.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Memory protection facilities are easiest when hardware implemented. Software memory protection performs the process through processing restrictions enforced by operating system software and/or security system software.</p>		
FEEDBACK EVIDENCE	<p>Documentation of purchase or rental of hardware memory protection devices, or documentation of software memory protect facilities. The technique selected should be tested to ensure that it functions as specified.</p>		
ADVANTAGES OF CONTROL	<p>Assurance that one user's data and procedures cannot be accessed or modified by another user.</p>		
DISADVANTAGES OF CONTROL	<p>The cost to acquire and operate protection facilities. In addition, the facility may limit user's ability to take maximum advantage of processing capabilities, in the event other users are not on the system.</p>		

Ref.#
4.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL		Overflow Indication					
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Process	STRENGTH	Very Strong	CONTROL TYPE	Preventive
DESCRIPTION		Most computers have facilities to identify conditions where the size of mathematical field has exceeded the available space. In these instances, high order values may be lost.					
IMPLEMENTATION SUGGESTIONS		Programs should test the overflow indicator immediately following all mathematical operations. If the programming language performs this operation, an error routine should be established to go to in the event the overflow indicator is turned on.					
FEEDBACK EVIDENCE		Feedback should indicate conditions where mathematical overflows have occurred.					
ADVANTAGES OF CONTROL		The advantage is the identification of overflow conditions, and thus preventing losses associated with inadequate field size.					
DISADVANTAGES OF CONTROL		None.					

Ref.# 4.4.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Limited Batch Size		
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Process
		STRENGTH	Average
		CONTROL TYPE	Preventive
DESCRIPTION	<p>Limiting the size of a batch and the number of transactions or the value of the batch enables additional checking to occur. For example, if a batch cannot exceed twenty transactions then an additional control can be added to verify that no more than twenty transactions are included in a batch.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The type of processing required should be analyzed and batch sizes developed accordingly. If a restricted batch size is used, necessary procedures should be developed and the people trained to achieve those batch objectives.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be available on the number of batches, the size of the batches, and problems associated or caught due to the limited batch size.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of limiting a batch can be to speed up processing by entering batches more frequently, to provide additional checking on the restricted size of the batch, and to have fewer transactions to examine should problems occur.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of restricting batch size is the increase in the number of batches that need to be processed.</p>		

Ref.#
4.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Limited Report Copies						
GENERIC CATEGORY	Limit	USAGE ACTIVITY	Output	STRENGTH	Average	CONTROL TYPE	Preventive
DESCRIPTION	The number of copies of the report prepared should be limited based on usage. No more copies of reports should be prepared than are needed.						
IMPLEMENTATION SUGGESTIONS	Users should indicate the number of copies of reports that are needed. This is the maximum number that should be printed unless it is more economical to print without a paper change. In those instances, extra copies should be destroyed.						
FEEDBACK EVIDENCE	Feedback information should, indicate when too many copies of a report are prepared.						
ADVANTAGES OF CONTROL	The advantage is that there are no more copies prepared of a report than are needed.						
DISADVANTAGES OF CONTROL	None.						

Ref.# 4.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Anticipation Audits		
GENERIC CATEGORY Limit	USAGE ACTIVITY	General Purpose	STRENGTH Strong
			CONTROL TYPE Detective
DESCRIPTION	<p>The value of many fields can be anticipated. Where this occurs, audits should be included in the application to determine if the expected values are, in fact, received.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Memory protection facilities are easiest when hardware implemented. Software memory protection performs the process through processing restrictions enforced by operating system software and/or security system software.</p>		
FEEDBACK EVIDENCE	<p>Documentation of purchase or rental of hardware memory protection devices, or documentation of software memory protect facilities. The technique selected should be tested to ensure that it functions as specified.</p>		
ADVANTAGES OF CONTROL	<p>Assurance that one user's data and procedures cannot be accessed or modified by another user.</p>		
DISADVANTAGES OF CONTROL	<p>The cost to acquire and operate protection facilities. In addition, the facility may limit user's ability to take maximum advantage of processing capabilities, in the event other users are not on the system.</p>		

Ref.# 4.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Systems Failure Control		
GENERIC CATEGORY Limit	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>When multiple users use the same processing facility concurrently, one user could access or inadvertently modify another user's data. Memory protection procedures ensure that users in a multiprocessing environment are restricted to their allocated processing areas.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Memory protection facilities are easiest when hardware implemented. Software memory protection performs the process through processing restrictions enforced by operating system software and/or security system software.</p>		
FEEDBACK EVIDENCE	<p>Documentation of purchase or rental of hardware memory protection devices, or documentation of software memory protect facilities. The technique selected should be tested to ensure that it functions as specified.</p>		
ADVANTAGES OF CONTROL	<p>Assurance that one user's data and procedures cannot be accessed or modified by another user.</p>		
DISADVANTAGES OF CONTROL	<p>The cost to acquire and operate protection facilities. In addition, the facility may limit user's ability to take maximum advantage of processing capabilities, in the event other users are not on the system.</p>		

Ref.# 5.0.D.P

CONTROL DESCRIPTION

NAME OF CONTROL	Network Polling Profile		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Authorization	STRENGTH Minimal	CONTROL TYPE Preventive
DESCRIPTION	<p>Profiles for network polling provide an orderly method of allocating resources to terminals. The profile no only indicates the sequence but the priority for service of the terminals on the network.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The network profile should be established by the lead terminal in the network. The individual responsible for that terminal working with all terminal users establishes an algorithm for polling requests and allocating resources.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the type of response and service the terminals of the network are receiving. Terminals should be periodically queried regarding the adequacy of the service.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a network polling profile is that it allocates service and resources on a planned basis.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of the profile is that service is always allocated according to the profile regardless of whether or not needs are challenging.</p>		

Ref.# 5.1.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Origination Procedure Manuals		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>These manuals are designed to provide step-by-step instructions on how to originate data for a computerized application. The procedures in the manual include when the data should be originated, explanation of codes used in the transaction, where to obtain the data, who can originate the data, and the methods of receiving and transmitting the data to the next work station.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The data origination procedure manual should be developed jointly by the data processing department and the application users. The manual should be written in easy to read and non technical terminology. Examples and illustrations should also be included in the manual.</p>		
FEEDBACK EVIDENCE	<p>Existence of the manual provides evidence that the control has been implemented. The use of the manual can be determined through observation and interview.</p>		
ADVANTAGES OF CONTROL	<p>The manual provides a ready source of answers to the day-to-day questions regarding proper preparation of transactions. It can also be used to train new employees.</p>		
DISADVANTAGES OF CONTROL	<p>The manual must be maintained on a current basis to be of value. If the manual is allowed to become outdated, it can cause more errors than it eliminates.</p>		

Ref.# 5.1.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Data Origination Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Formal procedures cause people to plan the process in more detail. The formal procedures provide a step-by-step procedure in performing the function, as well as the steps to be taken when unusual or questionable transactions occur.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The formal procedures should be developed during the system development process. In addition, the procedures should be updated as system changes occur that affect those procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems in the procedures so that corrective action can be taken. This can be accomplished by requesting the people using the procedures to notify supervision of problems, or have supervision regularly interview the users of the procedures as to the adequacy of the procedures.</p>		
ADVANTAGES OF CONTROL	<p>Written procedures provide a guide for people to follow without having to ask questions. It also documents good practices.</p>		
DISADVANTAGES OF CONTROL	<p>The development of formal procedures requires time and effort to plan and write the procedures.</p>		

Ref.# 5.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Special – Purpose Data Origination Forms		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Special-purpose forms are preprinted forms containing space to enter all the needed input information. In addition, special-purpose forms can include instructions on what type of information to enter and how to enter it.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems analyst and user jointly define the information needed. The design of the form should facilitate both the entry of the information and the translation onto computer media.</p>		
FEEDBACK EVIDENCE	<p>The people using the form should be interviewed periodically to assess the ease of use in completing and transcribing the information, and the value of the information collected based on the user's current needs.</p>		
ADVANTAGES OF CONTROL	<p>Special-purpose form helps organize people's methods for entering information. If well designed, it reduces the amount of time required to enter data.</p>		
DISADVANTAGES OF CONTROL	<p>Preprinted forms are difficult to change because of the cost and effort in preparing and duplication forms.</p>		

Ref.# 5.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Data Entry Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Formal procedures cause people to plan the process in more detail. The formal procedures provide a stop-by-stop procedure in performing the function, as well as the stops to be taken when unusual or questionable transactions occur.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The formal procedures should be developed during the system development process. In addition, the procedures should be updated as system changes occur that affect those procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems in the procedures so that corrective action can be taken. This can be accomplished by requesting the people using the procedures to notify supervision of problems, or have supervision regularly interview the users of the procedures as to the adequacy of the procedures.</p>		
ADVANTAGES OF CONTROL	<p>Written procedures provide a guide for people to follow without having to ask questions. It also documents good practices.</p>		
DISADVANTAGES OF CONTROL	<p>The development of formal procedures requires time and effort to plan and write the procedures.</p>		

Ref.#
5.3.D.P

CONTROL DESCRIPTION

NAME OF CONTROL	Message Intercept		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Communication	STRENGTH Minimal	CONTROL TYPE Preventive
DESCRIPTION	When a message cannot be transmitted to a terminal because it is inoperative or there are line problems, a message intercept routine can be initiated to hold that message in a central location awaiting the reentry of the terminal into the network. At that time, the message is forwarded to the appropriate terminal.		
IMPLEMENTATION SUGGESTIONS	Message intercept procedures are partially automatic and partially developed procedures. If the control is desired it needs to be coordinated with communication experts.		
FEEDBACK EVIDENCE	Feedback information should record the frequency of message intercepts and the location to which they were directed.		
ADVANTAGES OF CONTROL	The advantage of message intercept is that the transmitting terminal can complete its transmission.		
DISADVANTAGES OF CONTROL	The disadvantage of message intercept may be that the transmitter is unaware that the user has not received the message. In addition, there may be extra hardware procedures required to implement this procedure.		

Ref.# 5.3.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Data Movement (to processing capability)		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Distributed systems can move data to available processing capabilities. The identification of those resources and the movement of the data requires a control process. The objective of the control process is to move data to those resources where it can be most effectively and economically processed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Network maps should be prepared identifying processing facilities and the ease with which data can be transmitted to those facilities.</p>		
FEEDBACK EVIDENCE	<p>Documented procedures at distributed site locations identifying the methods of moving data to sites where processing capacity is available.</p>		
ADVANTAGES OF CONTROL	<p>Improve processing through put of a network through the effective and efficient shifting of data to sites where processing capacity is available.</p>		
DISADVANTAGES OF CONTROL	<p>The overhead required to continually identify available capacity, and then to administer the process of moving data to that facility.</p>		

Ref.#
5.4.A.C

CONTROL DESCRIPTION

NAME OF CONTROL	Operation Priorities		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	Computer operation in conjunction with users should establish the priorities for rerunning applications in the event problems occur.		
IMPLEMENTATION SUGGESTIONS	Operations priorities should establish both a priority for rerunning an application in comparison to other applications, and priority of operations by day. For example, the priority may change on different days, or after a number of days of nonoperation.		
FEEDBACK EVIDENCE	Feedback information should indicate problems identified with improper priorities in the event of need to operate according to those priorities.		
ADVANTAGES OF CONTROL	The advantage of operation priorities is to identify the high priority runs in both high-volume periods where computer capacity is insufficient, and after operation problems.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
5.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Operator Message Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	There is continual need to communicate with operators of automated data processing equipment. These messages must be preprogrammed into they system, and thus the only variable is when they will occur. Procedures should be developed that explain both what these messages mean, and the action that the operator should take as a result of the message.		
IMPLEMENTATION SUGGESTIONS	Computer operations should determine the type of messages they want their operators to receive, and then develop procedures for the operator to follow when those messages are displayed. Messages not requiring action should not be displayed, but may be recorded on a computer operator message log.		
FEEDBACK EVIDENCE	Feedback information should indicate the situations where the operator took inappropriate action, or did not receive the proper information form the computerized system.		
ADVANTAGES OF CONTROL	The advantage of operator message procedures is the uniformity of action based on the messages.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to amplify operator manuals provided by the vendors.		

Ref.# 5.4.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Dynamic Load Leveling		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Movement of processing capability among multiple distributed sites is a complex process. Automatic load leveling automates the movement of processing capabilities to satisfy user needs. The load-leveling system attempts to match needs with capacity to ensure the most effective utilization of the system resources.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node of a distributed system should acquire and administer the facilities to dynamically level the load among the available processing resources. The system is usually implemented through software.</p>		
FEEDBACK EVIDENCE	<p>The standard deviation from the mean processing time should be analyzed to determine the effectiveness of the load-leveling system. If the standard deviation is high, it indicates that the load has not been adequately leveled. It is normally more desirable to have a higher mean response time for processing with a low standard deviation than a low mean processing time with a high standard deviation.</p>		
ADVANTAGES OF CONTROL	<p>The complexities of shifting processing requirements within a distributed system may result in ineffective load leveling, while dynamic load leveling attempts to continually adjust the allocation of resources as the load adjusts.</p>		
DISADVANTAGES OF CONTROL	<p>The cost to acquire and operate the dynamic load-leveling facility.</p>		

Ref.# 5.4.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Hardware Movement (to processing need)		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Distributed systems may physically distribute hardware. Networks can be constructed so that processing capability is physically moved as well as transferred over communication lines. Obviously, the movement of hardware can be time-consuming but it does place capacity where needed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Hardware movement is best accomplished when the device is lightweight and small in size. For example, the movement of personal computers or attachable devices is more practical than moving large, heavy hardware devices.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the method of determining when hardware is moved plus physical evidence that the procedure works through the movement of hardware when needed.</p>		
ADVANTAGES OF CONTROL	<p>Hardware with only limited needs can be moved to other installations more economically than the cost of acquiring the additional needed hardware so that each site will have full capacity.</p>		
DISADVANTAGES OF CONTROL	<p>The cost and effort to physically move the hardware, as well as potential time delays in movement.</p>		

Ref.# 5.4.C.D

CONTROL DESCRIPTIO

NAME OF CONTROL	Redundant Hardware Control		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Maintaining duplicate hardware so that should one hardware system fail, a second or third is available. The redundant hardware may be in the same location, another location of the same company, or identical hardware in another organization. Both the use of the control and the location of the redundant hardware should be based upon the organization's processing need.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Organizations considering redundant hardware should determine the dollar loss to their organization in the vent that it was without hardware for various periods of time, such as one minute, one hour, one day, etc. The potential loss will normally make the decision obvious as to whether or not redundant hardware is required. Results of the risk analysis should be presented to management for decision.</p>		
FEEDBACK EVIDENCE	<p>Physical examination of hardware, or lists of hardware components, should be examined to ensure compatibility of hardware. In addition, tests should be performed by the operating sites periodically to ensure that redundant hardware is identical and that other procedures have been prepared so that a shift of hardware can be performed smoothly.</p>		
ADVANTAGES OF CONTROL	<p>When continuous processing is essential for the profitability of the organization, redundant hardware may be the only solution. The major advantage is that additional hardware resources are available whenever needed.</p>		
DISADVANTAGES OF CONTROL	<p>Unless the redundant hardware can be used for other purposes, such as systems and programming testing, the cost of redundant hardware can be extensive.</p>		

Ref.# 5.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Processing Control		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Processing capabilities in a distributed system need to possess the same features and characteristics. Controls need to be established to ensure that the redundant processing capabilities are consistent so that processing results will be consistent between sites.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node should approve all changes in hardware to ensure consistency between sites.</p>		
FEEDBACK EVIDENCE	<p>Hardware requisitions to ascertain compatibility between the various sites in the network.</p>		
ADVANTAGES OF CONTROL	<p>Flexibility is significantly enhanced when all of the sites have the same processing capabilities.</p>		
DISADVANTAGES OF CONTROL	<p>Additional features and capacity may be required to ensure compatibility when compatibility is not needed at all sites.</p>		

Ref.# 5.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Recovery Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Recovery is the restarting of operations after file integrity has been lost. The procedures encompass both the normal restart process plus whatever is required to restore the files to a point where the integrity can be assured. This may mean going back in time and reconstructing processing from a point where the integrity was established.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Recovery procedures are normally very complex, and thus require extensive planning and practice. Computer operation personnel in conjunction with systems analysts should design and document the step-by-step procedures needed to recover an operation.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and cause for recovery to be instigated.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of formal recovery procedures is the preplanning and training that occurs prior to performing the process.</p>		
DISADVANTAGES OF CONTROL	<p>The only disadvantage to formal recovery procedures would be in instances where the recovery procedures are extremely easy.</p>		

Ref.# 5.4.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Restart Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Restart of a computer application is start-up from a position of file integrity. The methods of restarting an application system should be predetermined and documented.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Operations personnel should determine the appropriate procedures to assure a controlled restart, and then document and disseminate those procedures to the individual responsible for restarting the application system.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and types of restarts and problems associated with restart.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of formal restart procedures is assurance that restart will be performed according to the preferred procedures.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is trained operators may not need to refer to the procedures.</p>		

Ref.# 5.4.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Operating Procedure Manual		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The operating procedure manual contains the step-by-stop procedures to be followed in operating an application system. The manual is designed for the computer operator to aid them in the efficient and effective execution of the application system.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The operating procedure manual should be developed by the application system personnel, and reviewed by the user. The manual should be prepared prior to the implementation of the application system.</p>		
FEEDBACK EVIDENCE	<p>Feedback procedures should identify situations in which the operating procedure manual is deficient.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the operating procedure manual is to provide guidance to the operator on how to operate the application system.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop the procedures.</p>		

Ref.# 5.4.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Scheduled Processing		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Processing in the computer area should be scheduled. The schedule indicates either what job is to be run on what day and time, or the availability and capacity of processing for on-line user-initiated processing.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Schedules should be prepared on a regular basis by computer operations. The objective of scheduling is to ensure there is available capacity for projected needs, which may result in some rescheduling. On-line users should be allocated capacity during predetermined periods.</p>		
FEEDBACK EVIDENCE	<p>Reports should be prepared showing the capacity used versus scheduled capacity. Reports should show which scheduled jobs were not run, and which unscheduled jobs were run, or capacity exceeded.</p>		
ADVANTAGES OF CONTROL	<p>Scheduling permits the orderly use of computer resource capacity. Excessive demand can be smoothed through scheduling.</p>		
DISADVANTAGES OF CONTROL	<p>Scheduling is only effective when the scheduled work is available at the predetermined time. Failure of jobs to be ready on time can result in wasted capacity.</p>		

Ref.# 5.5.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Dictionary			
GENERIC CATEGORY Procedures	USAGE ACTIVITY	Storage - On-Line	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>A data dictionary is a formalized method of documenting data. The documentation is automated and contained on computer media.</p>			
IMPLEMENTATION SUGGESTIONS	<p>Data dictionaries are software utilities that are available from many vendors. The data dictionary should be under the operating control of the data base administrator.</p>			
FEEDBACK EVIDENCE	<p>Feedback information should identify data definition problems.</p>			
ADVANTAGES OF CONTROL	<p>The advantage of a data dictionary is the formalization and consistency of data definition.</p>			
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of acquiring and using the software package.</p>			

Ref.# 5.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Control Reconciliation Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>The steps involved in reconciling control figures should be documented. These procedures should illustrate the step-by-stop movement required in the reconciliation process.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Whenever a reconciliation process is required, the procedures on how to perform that reconciliation should be documented and formalized. The people needing to perform that reconciliation should receive copies of the procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems in performing the reconciliation and/or errors in the formal procedures.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of documenting reconciliation procedures is that it aids people in going through all the necessary steps.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to prepare and maintain the procedures.</p>		

Ref.# 5.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Output Handling Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Output handling procedures describe the step-by-stop process for preparing and distributing output reports.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The procedures describe the type of paper needed, the number of copies, how the report is to be bound, and how it is to be packed and marked for distribution.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify report output handling and distribution problems.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of procedures is the formalization of the methods for working with output material.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop the procedures.</p>		

Ref.# 5.8.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Report Use Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY Use of Data	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Formal procedures should be developed with each report to explain how to use the report. These procedures will explain what the report contains, the significance of the information on the report, and the types of action the user should take based upon information in the report</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users working with systems analysts should develop the report use procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify weaknesses or inconsistencies in the procedures, as well as problems associated with the use of reports.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of report use procedures is to increase the usability of the report.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop the procedures.</p>		

Ref.#
5.9.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Audit Trail Procedures			
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	Procedures should be developed explaining how to store and retrieve audit trail information. These should be step-by-step procedures, with examples and illustrations to facilitate the use of the audit trail.			
IMPLEMENTATION SUGGESTIONS	The audit trail should be designed with ease of use in mind. The first step is to determine the purposes for which the audit trail will probably be used and then design the audit trail to achieve that purpose.			
FEEDBACK EVIDENCE	Users of audit trail information should be asked to provide feedback on the ease of use and value of that information.			
ADVANTAGES OF CONTROL	Audit trail procedures explain what type of evidence is available to substantiate processing how to obtain it.			
DISADVANTAGES OF CONTROL	Audit trail procedures become ineffective when they are technically complex or out of date.			

Ref.#
5.9.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Organize Control Group			
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	A formalization of a control function into an independent group strengthens its ability to act. This independent control group should report to the highest level of management practical.			
IMPLEMENTATION SUGGESTIONS	In smaller organizations, the control group can be a section of computer operations, while in larger organizations it may be an independent department.			
FEEDBACK EVIDENCE	Feedback information should identify the benefits provided by the control group and the impediments to timely and effective processing attributable to the control group, if any.			
ADVANTAGES OF CONTROL	The advantage of organizing a control group is to centralize and strengthen a control function.			
DISADVANTAGES OF CONTROL	The disadvantage is the overhead needed for a separate control organization.			

Ref.# 5.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Backup Control		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Backup processing capabilities may be needed in more than one location. Control needs to be established to ensure that all of the resources needed for backup exist at all of the backup locations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node should have the administrative responsibility to ensure the adequacy of backup. The lead node staff should develop and administer the policies that ensure adequate backup capabilities.</p>		
FEEDBACK EVIDENCE	<p>The documentation that inventories or directs backup sites to possess the needed backup resources.</p>		
ADVANTAGES OF CONTROL	<p>Compatible backup facilities can significantly improve the ability of one site to regain its operation capabilities.</p>		
DISADVANTAGES OF CONTROL	<p>The cost associated with the coordination and resources required to ensure adequate and compatible backup sites within the network.</p>		

Ref.#
5,9,A,P

CONTROL DESCRIPTION

NAME OF CONTROL	Sensitive Document Destruction		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Documents of importance to an organization should be destroyed rather than discarded. Much can be learned about an organization by the examination of their documents. When these documents are destroyed, the opportunity for compromise of valuable information is eliminated.		
IMPLEMENTATION SUGGESTIONS	The most common methods for destroying documents are shredding and burning. In a shredding operation, the documents are cut into small pieces and then discarded, while in a burning operation the documents are completely destroyed. The sensitivity of the document normally determines which method is used.		
FEEDBACK EVIDENCE	Feedback information should indicate what documents have been destroyed, by whom, and when.		
ADVANTAGES OF CONTROL	The advantage of destroying sensitive documents is that they are no longer available for examination by unauthorized individuals.		
DISADVANTAGES OF CONTROL	The disadvantage is the cost and effort required in destroying the document.		

Ref.#
5.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Security Policy			
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Organizations should have a high-level policy outlining their management's security intents. This policy becomes the basis for all other security procedures.			
IMPLEMENTATION SUGGESTIONS	The security policy should be developed by senior management as their expression and support for security measures in their operations.			
FEEDBACK EVIDENCE	Feedback information should identify areas of security inconsistent with the policy.			
ADVANTAGES OF CONTROL	The advantage of a security policy is a clear understanding on the part of subordinates as to management's intent and support for security.			
DISADVANTAGES OF CONTROL	None.			

Ref.#
5.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Processing Policies		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	The distributed network is in effect a pure democracy. Conceptually no site has authority or jurisdiction over another site. Therefore, ground rules for processing need to be established. The distributed processing policies outline the agreed-to methods of processing as well as how to modify those procedures. The policies should also explain how to resolve disputes between the sites.		
IMPLEMENTATION SUGGESTIONS	A distributed systems committee should be established comprised of representatives from all the major sites, and preferably all the distributed sites. This committee should be charged with the responsibility of developing the distributed systems policy manual.		
FEEDBACK EVIDENCE	The distributed systems policies and the acceptance and implementation of those policies by the sites in a distributed network.		
ADVANTAGES OF CONTROL	Distributed systems policies are necessary to operate a distributed network in an orderly manner.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 5.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Observed Document Destruction		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Individuals responsible for destroying documents hopefully destroy them. However, by having a second person observe the destruction increases the assurance that the documents will actually be destroyed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The independent observer should be from an area other than the area responsible for the destruction. In some organizations, internal auditors are assigned to observe the destruction of sensitive documents.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate what documents were destroyed, when destroyed, who destroyed them, and who observed the destruction.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of observed destruction is the increased assurance that the documents will be destroyed.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of having an observer present when destruction occurs.</p>		

Ref.#
5.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Automated Training Procedures			
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Many training courses can be implemented using automated equipment. For example, terminal operators can receive their training on the terminal.</p>			
IMPLEMENTATION SUGGESTIONS	<p>Users and systems analysts should determine the type of training that can best be performed using automated equipment. The courses should then be developed and implemented so people can train using the automated equipment.</p>			
FEEDBACK EVIDENCE	<p>Feedback information should identify inadequacies in the training material.</p>			
ADVANTAGES OF CONTROL	<p>The advantage of automated training is that there is no need to wait for an instructor, a student can commence training and conduct training at their convenience.</p>			
DISADVANTAGES OF CONTROL	<p>The disadvantage of automated training is the time and effort required to implement the procedures.</p>			

Ref.# 5.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Administrative Procedure Manual		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>An administrative procedure manual covers the procedures employees are to follow in predetermined situations. These manuals cover the step-by-step procedures employees follow for numerous conditions. For example, in a billing system if a customer wants to cancel an order that has been placed, the procedures explain exactly how to do this.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The administrative procedure manual should be developed before the application system becomes operational. The responsibility for the development of the manual should be with the user, but the computer systems personnel may aid in the preparation of the manual.</p>		
FEEDBACK EVIDENCE	<p>Feedback information identifies situations not adequately covered by the manual.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the manual is the formalization of the procedures to be taken in specific situations.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop the manual.</p>		

Ref.# 5.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Housekeeping Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Organizations should establish procedures governing the cleanliness of the area. This should cover such procedures as the frequency and types of cleaning of the different areas of the organization, as well as employee housekeeping practices such as having a desk clean at night.</p>		
IMPLEMENTATION SUGGESTIONS	<p>General management should establish the overall housekeeping policies, and department heads should establish their detailed departmental housekeeping policies.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate when housekeeping procedures are violated.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of housekeeping procedures is uniformity of cleanliness and communication to employees as to what type of housekeeping procedures are expected.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 5.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Operator Intervention Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Average
			CONTROL TYPE Preventive
DESCRIPTION	<p>Operators have the option of intervening into processing for numerous reasons. These interventions need to be controlled and procedures established as to how and when these interventions occur.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations should make an analysis as to the types of intervention operators can perform. The methods of operation intervention should be defined and described in a step-by-step basis. These procedures should be disseminated to operators as their basis for making these interventions.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency and reasons for operator intervention.</p>		
ADVANTAGES OF CONTROL	<p>The advantages of operator intervention procedures are to form the basis for authorizing those acts, and to outline the methods by which they will be performed.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is inconveniences that may be caused by the operator not intervening in situations for which there are no procedures.</p>		

Ref.# 5.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Test Equipment Use Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Average
			CONTROL TYPE Preventive
DESCRIPTION	<p>The organization should have a policy on the use of test equipment usage. The policy should indicate who can use the equipment, at what times it can be used, and what jobs can be running on data processing equipment is in use.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations personnel working with test personnel should develop a policy regarding the use of test equipment that is amenable to both parties.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify violations of the test equipment use procedures, as well as inconveniences caused by the policy.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the policy is that people using the test equipment cannot gain undetected access to data being processed while the test equipment is in operation.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that maintenance and other operations requiring test equipment may be delayed because of the policy, leading to potential problems.</p>		

Ref.# 5.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Error-Handling Procedures		
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Average
			CONTROL TYPE Preventive
DESCRIPTION	<p>Procedures should be developed that instruct people what to do when an error condition occurs. The more detailed these procedures, the easier it will be for people to process errors correctly.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems people and the users should jointly agree as to the stops to be followed when an error is detected. These procedures should be documented and disseminated to the people who will process the errors.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be collected on the frequency and types of errors uncovered, together with the number of errors corrected properly the first time, and the time span required to correct the errors.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of formal error handling procedures is that the same type of error will be handled in the same manner. In addition, people will be instructed on specifically what they are expected to do.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the people developing the procedures may not be able to anticipate the variety of errors that could occur, and thus may mislead people into following the wrong error-handling procedures.</p>		

Ref.# 5.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Preventive Maintenance Standards		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Vendors of most equipment provide recommendations as to the type and frequency of maintenance required on that equipment. Many times guarantees are dependent upon following these maintenance practices.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The individual accountable for the hardware should confer with the vendor regarding preventive maintenance recommendations and turn them into maintenance standards for the organization.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should provide data on compliance to preventive maintenance standards. Deviations from these standards should be investigated.</p>		
ADVANTAGES OF CONTROL	<p>Following preventive maintenance recommendations normally increases the up time of equipment.</p>		
DISADVANTAGES OF CONTROL	<p>Preventive maintenance requires the expenditures of resources at a point in time where the equipment is functioning properly.</p>		

Ref.# 5.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distribute Schedules		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>The schedules prepared for the operating department are documented and disseminated to those people or departments responsible for the scheduled operations. The schedules describe what function is to be executed at what time. In on-line applications, the schedule may be available capacity in hours.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The computer operation department should plan the workload based on available equipment and needs. These should be worked into a schedule that optimizes workload. The schedule is then disseminated to users. The computer operation department should automate this process to use the power of the computer to optimize workload. Two versions of the schedule should be prepared: one for computer operations showing all workloads; and another by user.</p>		
FEEDBACK EVIDENCE	<p>Users should be asked to comment on the adequacy of the schedule for meeting their needs. This information should be requested periodically and schedules adjusted accordingly.</p>		
ADVANTAGES OF CONTROL	<p>Documenting the schedule for operators and users informs them of expected times of job starts and completions. Knowing when work will be performed eliminates inquiry phone calls and associated time wasted waiting for reports or duplicating work that will arrive shortly.</p>		
DISADVANTAGES OF CONTROL	<p>Preparing printed schedules eliminates last minute flexibility in revising workloads.</p>		

Ref.# 5.9.A.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	User Training		
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Very Strong
CONTROL TYPE	Preventive		
DESCRIPTION	<p>Users should be trained in how to use application systems. This training should involve all individuals in the user department involved in the normal or casual use of application information.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The training procedures and courses should be jointly developed between the data processing personnel and the user personnel.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations which could be corrected with training.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of training is that individuals are skilled in the performance of their normal tasks, as well as trained in handling unusual conditions.</p>		
DISADVANTAGES OF CONTROL	<p>There are no disadvantages to training unless training becomes redundant. In other words, people are continually subjected to the exact same training.</p>		

Ref.# 5.9.A.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Penalties for Violation of Procedures			
GENERIC CATEGORY Procedures	USAGE ACTIVITY	General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Standards and rules that must be followed by employees should have penalties established for violators. If there is no penalty for violation, there is little reason to follow the rule or standard. The penalty can be as simple as making the individual redo the task according to the rule or standard through dismissal.</p>			
IMPLEMENTATION SUGGESTIONS	<p>Senior management should be involved in establishing penalties for violation of procedures. The penalty should fit the procedure violated. In other words, if it is a minor procedure it should be a minor penalty, and if it is a major procedure a major penalty.</p>			
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency, types, and individuals who violated the organization's rules and standards.</p>			
ADVANTAGES OF CONTROL	<p>The advantage of penalties for violation is to encourage adherence to rules and standards.</p>			
DISADVANTAGES OF CONTROL	<p>None.</p>			

Ref.# 5.9.B.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Operator Training		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Operators should be trained in how to process computer applications. This training should cover the procedures necessary for normal operations, as well as actions to be taken when unusual events occur.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems analyst, working in conjunction with operations personnel, should formalize the operating procedures. The operator should be formally trained in how to use those procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations which could be corrected with training.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of training is that individuals are skilled in the performance of their normal tasks, as well as trained in handling unusual conditions.</p>		
DISADVANTAGES OF CONTROL	<p>There are no disadvantages to training unless training becomes redundant. In other words, people are continually subjected to the exact same training.</p>		

Ref.# 5.9.B.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Systems Analyst/Programmer Training		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Systems analysts and programmers should be trained in how to develop and implement application systems. The training for the systems analyst is normally different that that of the programmer is trained in program design, coding, and testing, while the systems analyst is trained in developmental procedures.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many courses for systems analysts and programmers are available from manufacturers of hardware and software, as well as independent vendors. However, this frequently needs to be supplemented to train technical personnel in the organization's application systems policy and procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations which could be corrected with training.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of training is that individuals are skilled in the performance of their normal tasks, as well as trained in handling unusual conditions.</p>		
DISADVANTAGES OF CONTROL	<p>There are no disadvantages to training unless training becomes redundant. In other words, people are continually subjected to the exact same training.</p>		

Ref.# 5.9.B.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Control Personnel Training		
GENERIC CATEGORY Procedures	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Control personnel should be trained in how to use the control features included in the application system. This training would involve explaining the normal control procedures, and then what to do for unusual circumstances.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The training should be developed and conducted jointly by data processing systems analysts and user personnel. This type of training is normally on-the-job training.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations which could be corrected with training.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of training is that individuals are skilled in the performance of their normal tasks, as well as trained in handling unusual conditions.</p>		
DISADVANTAGES OF CONTROL	<p>There are no disadvantages to training unless training becomes redundant. In other words, people are continually subjected to the exact same training.</p>		

Ref.# 6.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Entry Priority Structure		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Procedures should be developed to prioritize work. This is most valuable when there is more work than capacity, or immediately following a shutdown of operations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations personnel working jointly with users should establish a priority system for work. These priority procedures should be documented and in the hands of operation personnel.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be collected on the average length of time to process work of each priority.</p>		
ADVANTAGES OF CONTROL	<p>Prioritization permits the most needed work to be processed first.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of prioritization is that it is fixed prior to the time it is needed, and low priority work may change in priority status over a period of time.</p>		

Ref.# 6.3.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Communication Priority Structure		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Procedures should be developed to prioritize work. This is most valuable when there is more work than capacity, or immediately following a shutdown of operations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations personnel working jointly with users should establish a priority system for work. These priority procedures should be documented and in the hands of operation personnel.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be collected on the average length of time to process work of each priority.</p>		
ADVANTAGES OF CONTROL	<p>Prioritization permits the most needed work to be processed first.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of prioritization is that it is fixed prior to the time it is needed, and low priority work may change in priority status over a period of time.</p>		

Ref.# 6.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Privileged Instruction Profile		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Many automated systems contain a series of privileged instructions. These permit individuals to perform tasks that affect the controls governing the operation. For example, privileged instructions in security systems permit people to change individuals' passwords. A profile of who can use these can both segregate and identify who can perform what privileged action.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Operations personnel should first identify what are the privileged commands, determine which will be used in their organization, and then determine what individual can use what privileged instructions. A profile is then established which should become the basis of enforcement for the use of those commands. In other orders, the profile establishes authorization for use of the commands.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency of use of the privileged instructions and who used them.</p>		
ADVANTAGES OF CONTROL	<p>The advantages of a privileged instruction profile is that is formalizes authorization to use the instructions, identifies the individuals who can use them, and is a tool in segregating the commands among various people.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 6.4.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Process Priority Structure		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Procedures should be developed to prioritize work. This is most valuable when there is more work than capacity, or immediately following a shutdown of operations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations personnel working jointly with users should establish a priority system for work. These priority procedures should be documented and in the hands of operation personnel.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be collected on the average length of time to process work of each priority.</p>		
ADVANTAGES OF CONTROL	<p>Prioritization permits the most needed work to be processed first.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of prioritization is that it is fixed prior to the time it is needed, and low priority work may change in priority status over a period of time.</p>		

Ref.#
6.5.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Deadlock Resolution			
GENERIC CATEGORY Segregate	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Corrective	
DESCRIPTION	In a data base environment, two programs may develop a situation in which the data base for those data elements becomes inoperative. For example, program A can have item one and want item two, while program B has item two and wants item one. Neither are willing to release their data item until they get the other.			
IMPLEMENTATION SUGGESTIONS	Most data base management systems have automated procedures to resolve data deadlocks. This should be investigated during the data base management system acquisition process. If the feature is not available, it should be added.			
FEEDBACK EVIDENCE	Feedback information should identify situations where the deadlock resolution did not function properly.			
ADVANTAGES OF CONTROL	The advantage of deadlock resolution is to facilitate processing.			
DISADVANTAGES OF CONTROL	None.			

Ref.#
6.5.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Conflict Matrix			
GENERIC CATEGORY Segregate	USAGE ACTIVITY Storage - On-Line	STRENGTH Very Strong	CONTROL TYPE Preventive	
DESCRIPTION	A data conflict matrix shows all of the programs that can access a single data element. The data conflict matrix is valuable in a data base environment, while the file conflict matrix is valuable in a non-data base environment.			
IMPLEMENTATION SUGGESTIONS	The data base administrator should prepare the data conflict matrix. This type of information should be available on the data dictionary. The conflict matrix can be used to control access to data elements.			
FEEDBACK EVIDENCE	Feedback information should identify conflicts in the use of data.			
ADVANTAGES OF CONTROL	The advantage of data conflict matrix is to show potential conflicts in the use of data which can identify potential control weaknesses requiring further investigation.			
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to prepare the matrix.			

Ref.# 6.5.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	File Conflict Matrix		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Storage - On-Line	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>A file conflict matrix shows all of the programs that can access what files and for what purposes. The objective of the matrix is to show potential conflicts in two or more programs updating the same file for conflicting purposes, or conflicting time. It can also identify programs that can modify a file that should not have that authority.</p>		
IMPLEMENTATION SUGGESTIONS	<p>File conflict matrices should be prepared by an individual who has access to file processing information. It is important that all users of files be identified. Job accounting systems that record programs that use files can be used as a basis for preparing such a matrix.</p>		
FEEDBACK EVIDENCE	<p>Potential conflicts illustrated by the matrix are the feedback information. This matrix process should be repeated periodically so that the segregation of the file environment can be observed as it changes over time.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of data conflict matrix is that it documents the file environment for analysis purposes.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to prepare the matrix. A thorough study of the file environment must be made to gain the knowledge needed to prepare the matrix.</p>		

Ref.# 6.5.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Dormant File Control		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Storage - On-Line	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Dormant files are subject to manipulation and abuse. These files should be segregated from active files. The objective of the segregation is to ensure that the integrity of the file is maintained on a day-to-day basis.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Dormant files need to be identified for the purpose of special control. Some organizations define a dormant file as one that has had no activity in over ninety days. The files of concern are normally financial files. The type of controls may be a comparison to the current version against a control copy, or the file may be physically segregated into a special area.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify activity occurring on a dormant file. This should indicate the type of activity and who authorized the activity.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the dormant file control is to provide additional assurance of the continuing integrity of the file.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop and operate the controls.</p>		

Ref.#
6.5.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Split Files			
GENERIC CATEGORY Segregate	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Preventive	
DESCRIPTION	<p>A split file is a file that is divided into two or more segments. As files become unmanageable in size, they need to be divided into workable units. In some instances, the software procedures cannot effectively and efficiently handle files over a certain size. In those instances the file needs to be split for economy reasons.</p>			
IMPLEMENTATION SUGGESTIONS	<p>Files can be split in two ways. First, they can be split into groupings of the same type of record. This divides the file strictly for control purpose. Second, the file can be divided by creating two or more records out of a single record. These records can then be placed on different files, which can be read into the same processing program concurrently.</p>			
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which files should be split.</p>			
ADVANTAGES OF CONTROL	<p>The advantage of the split file is to improve either control or performance.</p>			
DISADVANTAGES OF CONTROL	<p>The disadvantage of the split file is that all of the information is not in a single file.</p>			

Ref.#
6.6.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	File Detail Segregation			
GENERIC CATEGORY Segregate	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Preventive	
DESCRIPTION	Large files that are operated on by more than one clerk can be segregated into controllable units. Each clerk is assigned one of those units, and thus becomes accountable for processing within that unit.			
IMPLEMENTATION SUGGESTIONS	Files that are subject to manipulation should be able to identify the individual responsible for that manipulation. If more than one person can manipulate, accountability is difficult to determine. Therefore, files should be divided into controllable units. These units should divide the file into approximately equal workload between the people involved in working with the file.			
FEEDBACK EVIDENCE	Feedback information should identify the frequency and types of problems occurring in each controllable segment of the file..			
ADVANTAGES OF CONTROL	The advantage of segregating the detail records of files into controllable units is to pinpoint accountability for actions occurring within the file.			
DISADVANTAGES OF CONTROL	The disadvantage is that when workload increases extensively in one controllable unit, another clerk cannot assist with that work.			

Ref.# 6.7.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Output Prioritization		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Many output reports are stored in queues awaiting distribution to report recipients. A prioritization of report preparation should be prepared and govern the dissemination of output reports during times of inadequate output capacity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer personnel working with the users should establish a priority code for preparation and dissemination of output. Each report should then be assigned the appropriate priority code and output prepared in that order.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify instances where the priority code is not achieving the desired results.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a priority code is that the more important work will be finished first.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that priorities may change after items have been in queue for an extended period of time. Most prioritization systems cannot handle the situation.</p>		

Ref.# 6.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Output Priority Structure		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Procedures should be developed to prioritize work. This is most valuable when there is more work than capacity, or immediately following a shutdown of operations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations personnel working jointly with users should establish a priority system for work. These priority procedures should be documented and in the hands of operation personnel.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be collected on the average length of time to process work of each priority.</p>		
ADVANTAGES OF CONTROL	<p>Prioritization permits the most needed work to be processed first.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of prioritization is that it is fixed prior to the time it is needed, and low priority work may change in priority status over a period of time.</p>		

Ref.# 6.9.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Independent Reconciliation		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>When reconciliations need to be performed, they should be performed by an individual independent of the operation being reconciled. This segregation of functions aids in the identification of problems.</p>		
IMPLEMENTATION SUGGESTIONS	<p>When the reconciliation procedures are being established, an individual independent of the operation should be appointed and trained to conduct the reconciliation process.</p>		
FEEDBACK EVIDENCE	<p>The results of the reconciliation are the feedback information.</p>		
ADVANTAGES OF CONTROL	<p>Having reconciliations performed by an independent party makes concealment of problems difficult.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that an independent person must be trained to perform a reconciliation for an area other than the one in which they work.</p>		

Ref.# 6.9.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Conflict Matrix		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>A transaction conflict matrix shows who can perform what functions on a transaction. The objective of the matrix is to identify individuals or programs who have too much authority in manipulating a transaction.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Transaction conflict matrices should be prepared by the data base administration function, This would show for each transaction who can read, who can update, who can change, and for what purpose.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should show conflicts identified through the development and maintenance of the matrix.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the matrix is to identify segregation of duties in an automated application. However the matrix can also be used in a manual system.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to prepare and maintain the matrix.</p>		

Ref.# 6.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Job Description		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Job descriptions should indicate the duties that an individual is to perform, and the authority and responsibility that goes with those duties. It should also indicate how that individual's performance will be evaluated, as well as the skills needed to fill the job.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Job descriptions should be prepared by people skilled in preparation of job descriptions. However, this should be done in conjunction with the individual whose job is being evaluated and/or that individual's supervisor.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate when actual duties, responsibilities, and authority deviate from the stated job description.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the job description is that all concerned know what is expected out of an individual, as well as the limits of authority and responsibility.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 6.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Dormant Account Control		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Dormant accounts are subject to manipulation and abuse. Examples of dormant accounts are inactive savings accounts, inactive checking accounts, inactive investment accounts, etc. The objective of the dormant account controls is to ensure the integrity on a day-to-day basis.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Dormant accounts need to be identified and usually contain a special code that will identify it as a dormant account. Other methods of control include maintaining a log of the names of dormant accounts and then periodically comparing the current account against a control copy to identify activity.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify any activity to a dormant account, the type of activity and the individual who initiated the activity.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of dormant account control is to provide additional assurance of the day-to-day integrity of the account.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop and implement the dormant account controls.</p>		

Ref.# 6.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Separation of Duties		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Functions should be separated so that no one individual can execute a complete transaction. One individual should have responsibility for the use and another the accounting over a resource. In larger organizations, segregations may break down the functions into more detail</p>		
IMPLEMENTATION SUGGESTIONS	<p>Segregation of duties is a management function implemented through the organizational structure. Individuals' job descriptions and procedures should state specifically the duties that an individual can perform.</p>		
FEEDBACK EVIDENCE	<p>Feedback information on the adequacy of an organizational structure is usually achieved through management audits. These periodic analyses attempt to identify organizational control witnesses.</p>		
ADVANTAGES OF CONTROL	<p>Separation of duties reduces temptation to embezzle, and permits the identification of error through involvement of multiple people in a single transaction.</p>		
DISADVANTAGES OF CONTROL	<p>Segregation of duties involves more people, and thus complicates and extends the amount of time required to complete a transaction.</p>		

Ref.# 6.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Administrator		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>The data administrator is a high-level function in the organization responsible for the data policy. This individual establishes the strategy on how data will be used, the policy on access and use of data, as well as coordinating the use of data between diverse users.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The data administrator is normally an individual organizationally above the data processing department. This is a senior individual who may or may not be intimately familiar with data processing. However, the individual should be knowledgeable on the types of data needed in the organization, who should access it, and the reliability of the data.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the reports prepared by the data administrator.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of having the data administrator is to direct high-level management attention to the use of data in the organization.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the effort required to staff the function.</p>		

Ref.# 6.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Error -Tracking Analyst		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>An error-tracking analyst is an individual who is responsible for identifying the cause of an application system problem. This individual is the one that makes the determinations to what caused the problem, and who should correct the problem. The individual identified as the one to correct the problem is then notified of the problem.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The error-tracking analyst normally works for computer operations, and is the first person to work on problems. The error-tracking analyst goes through a formal documentation and analysis procedure; all of which will be turned over to the individual responsible for correcting the problem.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the error documentation that goes to the individual responsible for correction, and a summary of the types and causes of errors which goes to management.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an error-tracking analyst is that a skilled individual can pinpoint whether it is an operating system problem, hardware or software problem, or an application system problem. Frequently, this will speed up the error correction process.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and support of a new position in the data processing area.</p>		

Ref.# 6.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Base Administrator		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The data base administrator is a function responsible for the definition and use of data in the organization. The data base administrator implements the data policy of the organization. While the function is normally associated with data base, it is not necessary to have a data base to establish the function.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Data base administrator can be a part-time function in a small organization, or a full-time function with a staff in a large organization. The data base administrator establishes the procedures for data documentation. In a data base environment, the administrator works with systems analysts in designing systems to effectively use the data base.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is reports prepared by the data base administrator.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a data base administrator is the increased attention paid to data definition and usage.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost to staff the function.</p>		

Ref.# 6.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Security Officer		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>An individual should be appointed security officer for an organization. This function has the responsibility for establishing security procedures and reviewing the implementation of those procedures.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The security officer function can be a part time job in a smaller organization, or a full-time job with a staff in larger organizations. The security officer should report to a high level in the organization so that appropriate action is taken on security recommendations and the individual has sufficient authority.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the reports prepared by the security officer.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a security officer is the recognition of the importance of the security function.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of establishing and supporting the function.</p>		

Ref.# 6.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Dual Custody of Forms		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Dual custody means that two individuals are responsible for control over the same document. One individual cannot control the form individually. Both individuals responsible must jointly decide the storage, release, and use of forms.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Dual custody of forms can be implemented through storing the forms in a container with two keys, or implemented through written documentation.</p>		
FEEDBACK EVIDENCE	<p>Documents should be prepared showing the disposition of all forms under dual custody. Initials or signatures of both individuals should be on these documents.</p>		
ADVANTAGES OF CONTROL	<p>Dual custody is a method of segregating controls among two individuals. Both must approve an action before it can occur. In addition, one checks on the actions of the other.</p>		
DISADVANTAGES OF CONTROL	<p>Dual custody involves extra procedures and the availability of the two individuals prior to action occurring. Without proper planning, this may delay procedures because of the unavailability of one individual.</p>		

Ref.# 6.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Independent Control Transmission		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Control information should be transmitted independently of the information or event it is controlling. This provides additional insurance that the information will not be changed during the transmission process.</p>		
IMPLEMENTATION SUGGESTIONS	<p>In manual systems, this requires two independent shipments of information. In automated systems, the transmissions are sent at different times. The detailed information may be sent in one group, or sent continuously, and the control information at the end of a shift or day.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should report losses of either the controls or the detailed information, and problems in the detail and control not agreeing.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the separate transmission is increasing assurance that at least one of the two transmissions will arrive, and reducing the possibility of accidental or intentional changing of information.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of the dual transmission is the extra time and effort required to prepare, transmit, and receive the two transmissions.</p>		

Ref.# 6.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Job Rotation		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>In job rotation, people are physically moved from one job to another. Rotation of functions implies that a new job will be performed. In some instances, two people actually change jobs.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Job rotation should be performed at lulls in workloads. It is at these points in time that people can train one another for new jobs.</p>		
FEEDBACK EVIDENCE	<p>Job performance and employee morale are two measures of a successful job rotation program. In addition individuals can be interviewed for their reaction to the movement.</p>		
ADVANTAGES OF CONTROL	<p>Job rotation helps eliminate fraud, helps reduce on-the-job boredom, and provides job backup in case employees are sick or leave.</p>		
DISADVANTAGES OF CONTROL	<p>Job rotation requires continual training and potential errors due to new people assuming unfamiliar jobs.</p>		

Ref.# 6.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Rotation of Job Duties		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>When many employees have a single job function, they can be rotated within that function. For example, if accounts receivable customers are divided among five clerks, they can rotate the batch of customers that each clerk handles.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Job duty rotation requires segmenting of the work and holding each individual accountable for one segment. This is a prerequisite to job function rotation.</p>		
FEEDBACK EVIDENCE	<p>Records should be maintained showing which clerk is accountable for which segment of processing. As clerks move, they should be asked to assess the condition of processing at the time of movement.</p>		
ADVANTAGES OF CONTROL	<p>Job duties rotation reduces the probability of fraud and the continuance of errors in a specific segment of processing.</p>		
DISADVANTAGES OF CONTROL	<p>If employees develop a rapport with the people involved in a segment of processing, that rapport is broken at the time duties are rotated.</p>		

Ref.# 6.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Individual Security Clearances		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Organizations should predetermine the types of information each individual can observe. The objective of providing security clearances for each individual is to assure people only have access to information for which they have a need.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The organizations must determine what information is to be classified, and then determine the individuals that need to have access to that information. These individuals are then provided clearance to access that information. Once granted, it must be enforced and maintained.</p>		
FEEDBACK EVIDENCE	<p>Feedback information identifies inconveniences attributable to the security classification, as well as actual or suspected compromises of information.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of providing security clearances to individuals is the increased assurance that only those having a need to see information will see it.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort to develop, implement, and enforce individual security classifications.</p>		

Ref.# 6.9.C.P/D

CONTROL DESCRIPTION

NAME OF CONTROL	Mandatory Vacation		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Individuals in positions of responsibility should be required to take their annual vacation. This provides an opportunity to put a second person into that position so that if problems or abuses are occurring, they may be detected.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Organizations should establish a policy requiring people to take annual vacation. Once established, this policy should be enforced.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate who is not taking a vacation.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of mandatory vacations is improved employee morale, and the opportunity to reduce the temptation for abuse.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that extra people or training may be required to fill in for the individual while on vacation.</p>		

Ref.# 6.9.B.P/D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Training		
GENERIC CATEGORY Segregate	USAGE ACTIVITY General Purpose	STRENGTH Storage	CONTROL TYPE Preventive Detective & Corrective
DESCRIPTION	<p>People should be given formal training for the jobs procedures but the specific authority delegated to them, the decisions they can make and not make, and the procedures to follow for unusual or questionable processing.</p>		
IMPLEMENTATION SUGGESTIONS	<p>When jobs are established, the training procedure for that job should be established at that time. Depending upon turnover and the number of employees in a position, training can be formalized and documented or relatively informal. In senior jobs, the training process may center around a detailed explanation of job descriptions.</p>		
FEEDBACK EVIDENCE	<p>Orientation checklists should be prepared and completed as part of an employee's training. Employees should initial that their job and responsibilities have been explained to them.</p>		
ADVANTAGES OF CONTROL	<p>The training prepares an employee not only for the normal situation but the abnormal situation. The better trained the employee, the better they are able to react to unusual conditions.</p>		
DISADVANTAGES OF CONTROL	<p>The only disadvantage to training is when it is inadequate.</p>		

Ref.# 7.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Standards Override Authorization		
GENERIC CATEGORY Segregate	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Standards are only standards when they are enforced. However, there are instances where it becomes temporarily advantageous to override the standard. This override should be authorized.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many organizations have delegated the authority to authorize standards overrides to their quality assurance group. Project leaders who feel that they cannot meet a standard, at least temporarily, would formally petition that group to either achieve or be denied authorization to override the standard.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency and reason for overriding standards. This report should indicate which standards have been overridden.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of authorization procedures to override standards is that without this process it is difficult to enforce standards.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 7.2.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Key Device Feature Standards		
GENERIC CATEGORY Standards	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Key devices include optional control features. For example, the entry of data can be restricted through these features to numeric data entered only. The use of the features is optional.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Individuals familiar with control would review the key device features to determine which ones should be implemented. The desirable features should be incorporated into key entry standards.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should record the types of errors that could be reduced if unused key device control features were implemented.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of utilizing automatic features is improved control at minimal cost.</p>		
DISADVANTAGES OF CONTROL	<p>The use of the control features requires time and effort to develop the necessary key device programs and procedures.</p>		

Ref.#
7.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Screen Standards		
GENERIC CATEGORY Standards	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Standards for the development of computer terminal video screens should be developed. These standards indicate the steps that must be followed in developing the screen, any screen format standards, use of feature standards, and screen documentation.		
IMPLEMENTATION SUGGESTIONS	The data processing should be responsible for developing and enforcing the screen standards.		
FEEDBACK EVIDENCE	Feedback information should identify violations of standards, and inconveniences caused by the standards.		
ADVANTAGES OF CONTROL	The use of screen standards eliminates the implementation of bad practices and encourages the use of good practices.		
DISADVANTAGES OF CONTROL	None, except the time and effort to develop the standards.		

Ref.# 7.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Terminal Feature Standards		
GENERIC CATEGORY Standards	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Manufacturers of terminal equipment build in several control features. For example, some terminals have supervisor override keys. Which of these features will be used and not used is a part of the organization's operating standards.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The features included with terminals should be evaluated by control-oriented personnel. The decision on which features are cost-effective should be made, and those features should become organizational standards.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify violations of standards, and identify problem conditions that could be reduced if unused terminal control features were implemented.</p>		
ADVANTAGES OF CONTROL	<p>The implementation of control features built into terminals normally enhances control at minimal cost.</p>		
DISADVANTAGES OF CONTROL	<p>The use of terminal control features may delay processing to utilize such features as releasing a terminal by a supervisor after a questionable transaction has occurred.</p>		

Ref.# 7.4.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Restart Point Standards		
GENERIC CATEGORY Standards	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Restart points are points within processing where the integrity of the processing is established for the purpose of restarting should problems occur. Restart points are normally required in programs which require extensive amount of time to process. Thus, if problems occur it is not necessary to rerun the entire system.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Some operating systems provide the capability for establishing restart points during processing. However, with some operating systems it is necessary for the organization to establish their own restart points and procedures.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency of use of restart points, and the amount of time expended in application systems where problems occurred and there were no restart points.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of restart points is to reduce the amount of time expended for reruns.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to establish the restart points.</p>		

Ref.# 7.4.B.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Processing Benchmarks		
GENERIC CATEGORY Standards	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>The user should predetermine the level of reliability required by application processing. This reliability can be expressed in the level of performance most important to the user. This may be in response time, percent of errors, time to process, etc.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The user must determine the processing benchmarks required from an application system. These benchmarks then become an integral part of the application system specification. Systems designers should design systems to achieve those levels of performance.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify areas of situations where the processing benchmarks are not achieved.</p>		
ADVANTAGES OF CONTROL	<p>The establishment of benchmarks provides system processing specifications.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.#
7.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	System Change Standards		
GENERIC CATEGORY Standards	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	System change standards define the procedures that must be followed in making a change to an application system. These procedures define any forms that must be completed, authorization that must be obtained, testing that must be performed, etc.		
IMPLEMENTATION SUGGESTIONS	Data processing management should define the standards that must be followed in making changes to application systems.		
FEEDBACK EVIDENCE	Feedback information should identify violations of standards, as well as conditions that inconvenience people because of the standards.		
ADVANTAGES OF CONTROL	The advantage of system change standards is the encouragement of good practices and the prohibition of bad change practices.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 7.5.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Master File Standards		
GENERIC CATEGORY Standards	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Standards should be established on the methods for the creation and maintenance of master files. These procedures should outline the controls and procedures to be followed to ensure the integrity of master files.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Data processing management should establish master file standards. These would include steps necessary to enter data on the master file, to make a change to master file data, to delete master file data, and the types of controls implemented to ensure the operating integrity of the master file. Procedures should also outline testing requirements.</p>		
FEEDBACK EVIDENCE	<p>Feedback information identifies master file problems.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of master file standards is the enforcement of good practices and the prohibition of bad practices.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.#
7.7.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Output Report Delivery Standards		
GENERIC CATEGORY Standards	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Reports should be clearly labeled as to whom is to receive the report, the location of that individual, and the security classification if the report is classified. This information should be prominently located on the report so it is easy to identify the report recipient.		
IMPLEMENTATION SUGGESTIONS	Systems personnel should develop standardized procedures for the labeling of output reports. Normally, this would be done on the first page of the report, which could then be detached and discarded after the recipient receives the report.		
FEEDBACK EVIDENCE	Feedback information should indicate misdeliveries of reports.		
ADVANTAGES OF CONTROL	The advantage of report identification is reducing losing reports because they are unidentifiable, or delivering them to the wrong recipient.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 7.9.B.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Training Benchmarks		
GENERIC CATEGORY Standards	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>Training benchmarks are levels of proficiency that students are expected to achieve. The benchmarks are used both in designing the training material and evaluating the student proficiency at the end of the training period.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Training benchmarks should be established by the supervisor accountable for the job performance. The supervisor should indicate the skills and knowledge needed by an individual to perform a certain task, and this becomes the basis for developing and conducting the training.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify those students who have not achieved the benchmark performance.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of training benchmarks is to evaluate the effectiveness of both the training material and the graduate.</p>		
DISADVANTAGES OF CONTROL	<p>None if the benchmarks are realistic.</p>		

Ref.# 7.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Updating Action Lists		
GENERIC CATEGORY Standards	USAGE ACTIVITY	General Purpose	STRENGTH Strong
			CONTROL TYPE Preventive
DESCRIPTION	<p>The operations department needs standardized methods for updating their action lists. These include such items as call-in lists for problems, distribution lists for reports, and input preparation lists. These lists contain the names of individuals who are contacts.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Maintaining current lists requires continual effort on the part of operations. Operations personnel noting a change in contacts should initiate a change on the list, job changes should be reviewed for potential new contact names, and periodically senior management in the affected areas should be asked to confirm the accuracy of the action lists.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate when job changes affect the contact on action lists.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of keeping the lists current is to facilitate making contacts and to increase assurance that information will not be given to an unauthorized person.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 7.9.B.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Employee Performance Benchmarks		
GENERIC CATEGORY	Standards	USAGE ACTIVITY	General Purpose
		STRENGTH	Strong
		CONTROL TYPE	Preventive Corrective
DESCRIPTION	<p>Employees should be provided goals and objectives to achieve on the job. These objectives are performance benchmarks. They are measures against which an employee's performance can be measured.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The performance benchmarks should be established by the individual accountable for the employee's performance. These should be defined and explained to the employee. In addition, the employee's performance should be measured against those benchmarks.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate deviations from employee performance benchmarks.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of employee performance benchmarks is that it communicates to the employee what is expected, and becomes a measure against which management can evaluate performance.</p>		
DISADVANTAGES OF CONTROL	<p>None if the benchmarks are realistic.</p>		

Ref.# 8.0.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Password Entry Suppress Print		
GENERIC CATEGORY Void	USAGE ACTIVITY Authorization	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>When passwords are entered into a terminal, they should not be printed or displayed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many terminals offer the option not to print predetermined entered data. Passwords should be in this category.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should provide the frequency and types of password compromise.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of suppressing printing on passwords is that individuals in the close proximity cannot learn the passwords.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of suppress print is that the individual cannot visually determine what password he/she entered.</p>		

Ref.#
8.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Terminal Sign Off		
GENERIC CATEGORY Voids	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	At the conclusion of computer processing, terminal users should be required to indicate they are through processing. This sign off procedure prevents unauthorized users from piggybacking the initial access to the system.		
IMPLEMENTATION SUGGESTIONS	The sign off procedures should be designed and implemented and then users should be instructed on how to use those procedures.		
FEEDBACK EVIDENCE	Feedback information should be prepared on when the users fail to properly execute the sign off procedures.		
ADVANTAGES OF CONTROL	The advantage of terminal sign off procedures is that unauthorized users cannot piggyback on another user's operations.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to execute the sign off procedures.		

Ref.# 8.0.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Automatic Time-Oriented Sign Off		
GENERIC CATEGORY Void	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Access to the computer can be controlled by both time and continuous activity. When either of these events occur, the terminal can be automatically shut down.</p>		
IMPLEMENTATION SUGGESTIONS	<p>In establishing terminal operations, decisions need to be made whether to restrict user access to a specific time span, such as fifteen or thirty minutes; and whether to monitor activity so that if a user walks away, the terminal will be automatically shut down after a predetermined time span of activity, such as two or three minutes.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be collected on the number of times the automatic time-oriented shutdown is executed and any inconveniences caused by those shutdown procedures.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the automatic time-oriented shutdown is that unauthorized users cannot piggyback on an authorized access.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of automatic shutdown is potential inconvenience caused to users by the execution of this feature.</p>		

Ref.# 8.0.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Voided Control Document Retention		
GENERIC CATEGORY Void	USAGE ACTIVITY Authorization	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Control documents that are voided should be retained until their existence and proper destruction can be authenticated.</p>		
IMPLEMENTATION SUGGESTIONS	<p>A procedure should be established to destroy voided documents. This can involve a log which indicates the sequence number of documents voided, and the witnesses to the destruction of those documents.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate what documents have been voided and identify problems associated with the voiding and/or destruction process.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of storing voided documents until they can be properly destroyed is to provide increased assurance that voided documents are, in fact, voided.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and inconveniences associated with storing voided documents.</p>		

Ref.# 8.1.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Voiding Source Document		
GENERIC CATEGORY Void	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>After source documents have been entered, they should be manually or mechanically voided. Voiding should occur in such a manner that is readily apparent to anyone looking at the document that it has been voided. Also, machine-readable documents should be voided in such a manner that the reading mechanism detects the voiding.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Voiding can occur by stamping the word void or entered onto the document, or perforating the document with the words cancelled or void. Machine-readable documents can be voided by extra punching or marking, which will cause the reader to reject the document.</p>		
FEEDBACK EVIDENCE	<p>The voiding indication on the document provides the evidence of voiding. Supervisors may wish to make period checks to determine that documents not voided have, in fact, not been entered.</p>		
ADVANTAGES OF CONTROL	<p>The major advantage of voiding is that the document cannot be reentered into the system.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage to manually voiding a document is the time and effort required. This disadvantage to machine-readable documents is that the organization may want to reread those documents in case of processing problems.</p>		

Ref.# 8.5.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Computer Media Erasure		
GENERIC CATEGORY Void	USAGE ACTIVITY Storage – On-Line	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Computer media that contains important information should have that information erased prior to reuse.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The erasure of data from computer media can be accomplished on-line through programming, or off-line through special equipment designed to erase data from computer media.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which important information was, or could have been, compromised.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of erasing computer media is the increased assurance that important information will not be compromised.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort to execute the erasure process.</p>		

Ref.# 8.6.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Application Data Disposition Procedures		
GENERIC CATEGORY Void	USAGE ACTIVITY Storage - Off-Line	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Individuals responsible for the disposition of application data should be instructed on when and how to dispose of that information. The individual should not be put into a position of "guessing" what to do with the information when it is no longer useful.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The disposition procedures can request that the information be returned to computer operations or some other area, that it be shredded or burnt, or that it can be discarded the normal organization trash. The voiding procedures should also indicate the time frame in which the voiding should occur.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the situations in which disposition instructions have not been given, or have been disregarded.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of formal disposition procedures is the increased assurance that the information will be disposed of properly.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 8.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Voiding Printer Alignment Documents		
GENERIC CATEGORY Void	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>The alignment process of a computer printer may require the use of several forms. In the alignment process, these forms may contain the production information. For example, if checks are being printed the first few checks might be printed in order to align the printers. These forms used during printer alignment should be voided.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Voiding of forms consumed during printer alignment can be accomplished by creating a special printer alignment image that uses X's for amount fields and repeats the word void many times on the document.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate forms consumed during alignment that inadvertently were delivered to users.</p>		
ADVANTAGES OF CONTROL	<p>Voiding forms consumed during alignment reduces the risk of issuing duplicate documents.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to create the voiding routines and procedures.</p>		

Ref.#
8.6.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Voiding Control Document Retention			
GENERIC CATEGORY Void	USAGE ACTIVITY Storage - Off-Line	STRENGTH Average	CONTROL TYPE Preventive	
DESCRIPTION	Control documents that are voided should be retained until their existence and proper destruction can be authenticated.			
IMPLEMENTATION SUGGESTIONS	A procedure should be established to destroy voided documents. This can involve a log which indicates the sequence number of the documents voided, and the witnesses to the destruction of those documents.			
FEEDBACK EVIDENCE	Feedback information should indicate what documents have been voided and identify problems associated with the voiding and/or destruction process.			
ADVANTAGES OF CONTROL	The advantage of storing voided documents until they can be properly destroyed is to provide increased assurance that voided documents are, in fact, voided.			
DISADVANTAGES OF CONTROL	The disadvantage is the cost and inconveniences associated with strong voided documents.			

Ref.# 8.6.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Application Data Disposition Procedures		
GENERIC CATEGORY Void	USAGE ACTIVITY Storage - Off-Line	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Individuals responsible for the disposition of application data should be instructed on when and how to dispose of that information. The individual should not be put into a position of "guessing" what to do with the information when it is no longer useful.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The disposition procedures can request that the information be returned to computer operations or some other area, that it be shredded or burnt, or that it can be discarded in the normal organization trash. The voiding procedures should also indicate the time frame in which the voiding should occur.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the situations in which disposition instructions have not been given, or have been disregarded.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of formal disposition procedures is the increased assurance that the information will be disposed or properly.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 8.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Voiding Printer Alignment Documents		
GENERIC CATEGORY Void	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>The alignment process of a computer printer may require the use of several forms. In the alignment process, these forms may contain the production information. For example, if checks are being printed the first few checks might be printed in order to align the printers. These forms used during printer alignment should be voided.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Voiding of forms consumed during printer alignment can be accomplished by creating a special printer alignment image that uses X's for amount fields and repeats the word void many times on the document.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate forms consumed during alignment that inadvertently were delivered to users.</p>		
ADVANTAGES OF CONTROL	<p>Voiding forms consumed during alignment reduces the risk of issuing duplicate documents.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to create the voiding routines and procedures.</p>		

Ref.# 9.1.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Controlled Data Origination Document Log		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Special documents, transactions, or batches need to be controlled during application processing. These controlled documents should be assigned sequence numbers and a log maintained to account for those numbers.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Controlled documents should be identified during the system development phase and procedures established to assign and control sequence numbers over those documents. This normally requires a log.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the number of controlled documents, their status and problems associated with controlling the sequence numbers.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a controlled document log is a positive accounting of the controlled documents.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the extra time and effort required to issue, maintain a log, and investigate purported missing documents.</p>		

Ref.# 9.2.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Controlled Data Entry Document Log		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Special documents, transactions, or batches need to be controlled during application processing. These controlled documents should be assigned sequence numbers and a log maintained to account for those numbers.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Controlled documents should be identified during the system development phase and procedures established to assign and control sequence numbers over those documents. This normally requires a log.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the number of controlled documents, their status and problems associated with controlling the sequence numbers.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a controlled document log is a positive accounting of the controlled documents.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the extra time and effort required to issue, maintain a log, and investigate purported missing documents.</p>		

Ref.#
9.2.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Accounting		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Accounting procedures should be established to account for all numbered transactions.		
IMPLEMENTATION SUGGESTIONS	Procedures and reports should be designed during system development to uniquely identify transactions and then account for the processing of those transactions through the application system.		
FEEDBACK EVIDENCE	Feedback reports should identify missing transactions.		
ADVANTAGES OF CONTROL	The advantage of transaction accounting is to identify missing transactions.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to trace missing transactions, which may only be late in processing.		

Ref.# 9.2.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Batch Header Listing		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Batch header records may contain valuable control information about the batch. Listing these header records provides control-oriented personnel with information useful in monitoring processing.</p>		
IMPLEMENTATION SUGGESTIONS	<p>If the information contained in the batch header can be valuable in controlling processing, procedures should be established to periodically list batch header information. This should occur in reports designed to facilitate interpreting the data in the header record.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems uncovered as a result of reviewing batch header records, plus attitudes of individuals using the report regarding the value of the report.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of listing batch header records is to use existing information to aid in problem identification.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that there may not be enough information in the batch header record to properly identify problems.</p>		

Ref.# 9.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Delayed Processing		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Processing of accounting information should be delayed after the end of important accounting periods so that all of the necessary data can be entered into processing. The length of time will vary depending on the importance of the accounting period involved.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be established indicating how long processing will be delayed at the end of accounting periods, as well as how to identify the types of transactions that should be included in the delayed processing.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems associated with delaying problems as well as the frequency and value of transactions that were not included after the end of the rating period.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of delayed processing is including all the necessary transactions in the preparation of financial statements.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the delay in producing the financial reports.</p>		

Ref.#
9.4.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Control Total Adjustments		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	Changes in detail records should result in like changes in control totals. Changes at any point during processing to detail information should be reflected in the control totals.		
IMPLEMENTATION SUGGESTIONS	In automated systems, this logic can be pre-programmed into the system, while in manual systems the control totals must be manually adjusted.		
FEEDBACK EVIDENCE	Feedback information should indicate the frequency with which adjustments occur, and the number of instances where control totals are not adjusted to reflect changes in detail records.		
ADVANTAGES OF CONTROL	The advantage is maintaining current control totals.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 9.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Sequence Checking		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Where sequence numbers exist, they should be checked in the application system. If the sequence is required to be entered in order, processing can stop for out of sequence conditions. However, where data is not entered in sequence but is sequenced data, the check can still be made but processing should not be stopped.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users should indicate what fields contain sequence numbers and the importance of controlling that sequence. Where required, routines should be developed and implemented to sequence check transactions.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the types and frequency of sequencing problems.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of sequence checking is to identify missing transactions or batches.</p>		
DISADVANTAGES OF CONTROL	<p>Sequence checking can occur only when transactions or batches are identified by a sequence number.</p>		

Ref.#
9.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	System-to-System Totals		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	When data is moved system to system, a total value of the data being moved should be transmitted with the data. This will enable the receiving system to verify the completeness of the detailed information sent to it.		
IMPLEMENTATION SUGGESTIONS	When systems are being designed, the inner system interfaces should be considered. A part of this interface is not only the passing of detailed records, but the passing of control totals to authenticate the integrity of the transmitted data.		
FEEDBACK EVIDENCE	Feedback information should identify discrepancies between the detail and control totals.		
ADVANTAGES OF CONTROL	The advantage is increased assurance that the transmitted data is correct.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
9.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Automated Control File		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	There is a continual interaction between computer processing and users. This interaction normally involves a decision to be made by the user. A control file records all of those messages so that follow-up can be made in the event user fails to take action.		
IMPLEMENTATION SUGGESTIONS	The automated control file is a message suspense file. It can be established by using any file maintenance utility.		
FEEDBACK EVIDENCE	Feedback information should indicate the frequency and types of errors not being acted upon by users.		
ADVANTAGES OF CONTROL	The advantage of an automated control file is to account for control messages.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to maintain the file.		

Ref.#
9.4.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Accounting Period Cutoff		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Transactions should be recorded in the accounting period in which the events will occur.		
IMPLEMENTATION SUGGESTIONS	If computer transactions contain the date for accounting purposes, then accounting cutoffs can be easily implemented in automated systems.		
FEEDBACK EVIDENCE	The frequency and types of cutoff violations should be recorded. In addition, for financial information the dollar amount of the misclassified transactions should be accumulated.		
ADVANTAGES OF CONTROL	The advantage of accounting cutoffs is putting transactions in the proper accounting period.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 9.5.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	File Update Simple Accounting Proof		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Storage - On-Line	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>A simple accounting proof on file updating adds additions to the current balance and subtracts deletions to compute the new ending balance. This should be confirmed against actual processing.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Simple accounting proofs can be manual or automated. The procedure is to verify that the ending number of records or value is correct. The accounting proof computes that value and then it is confirmed through the accumulation of the detailed values.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the file is an out of balance condition.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the simple accounting proof is to verify the correctness of the ending balance.</p>		
DISADVANTAGES OF CONTROL	<p>The only disadvantage is when the amounts needed to perform the accounting proof are not readily available.</p>		

Ref.# 9.5.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Physical Inventory of Computer Media		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Periodically, an inventory should be made of all computer media. The objective is to ascertain that information and/or computer media has not been lost or stolen.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The inventory should be conducted by individuals who are independent of the computer media storage process.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify missing media.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of conducting an inventory is to evaluate the status of the storage procedures and identify missing media.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to conduct the inventory.</p>		

Ref.#
9.5.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	File Control Totals		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	The information contained on a report should be totaled and that value carried with the report. This will permit verifying the completeness of the report at any desired point in time.		
IMPLEMENTATION SUGGESTIONS	Procedures should be established to accumulate the value of the detailed records on the file and to create a control total record.		
FEEDBACK EVIDENCE	Feedback information should identify situations in which the detailed transactions on the file do not equal the file control totals.		
ADVANTAGES OF CONTROL	The advantage of file control totals is the increased assurance that data in the file is accurate and complete.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 2.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Passwords		
GENERIC CATEGORY Authorization	USAGE ACTIVITY Authori- zation	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Passwords are special identifiers that authorize individuals access to computer and controlled access resources.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Passwords can be manually constructed and disseminated or computer devised and distributed. The most effective passwords are those generated automatically by the computer and then imprinted without ink onto sealed envelopes and printed inside. This eliminates knowledge of the password by anyone other than the computer algorithm and the individual assigned the password.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should report password violations and lost passwords</p>		
ADVANTAGES OF CONTROL	<p>The advantage of password is that an individual has a unique identifier. However, it is important to emphasize the importance of nondisclosure of this password.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of password is the inconvenience caused by forgetting the password and the time and effort to disseminate, maintain and verify password.</p>		

Ref.# 9.5.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	Manual Footing and Crossfooting		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Storage - On-Line	STRENGTH Minimal Value	CONTROL TYPE Detective
DESCRIPTION	<p>Computer-produced records may contain errors. To verify the mathematical integrity of the report, the arithmetic values can be footed and crossfooted. This process will verify the accuracy of computer data.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The manual footing and crossfooting is a time-consuming process and thus should be initiated only in cases where errors are suspected. For example, it might be done after a program "bug" has been uncovered.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate both instances where manual footing and crossfooting should be undertaken, and arithmetic differences uncovered through implementing the control.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of manual footing and crossfooting is the assurance that the arithmetic additions in the report are correct.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to perform the footing and crossfooting.</p>		

Ref.# 9.5.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Computer Media Usage Indicator		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Computer media will wear out after extensive usage. The amount of usage should be contained on the media, which would become the basis for disposing of computer media before problems occur with that media.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations should attempt to obtain from computer media vendors the useful life of that media. This should then be measured and the media disposed of shortly before the useful life is scheduled to end.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify troublesome media.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of measuring media usage is to reduce problems caused by faulty media.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that media may be disposed of even though it could still be used without causing problems.</p>		

Ref.# 9.6.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Physical inventory of Accountable Documents		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Periodically, an inventory should be made of the accountable documents. These are documents such as checks, prenumbered certificates, prenumbered insurance policies, etc.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The physical inventory should be conducted by an individual who is not responsible for the storage of accountable documents.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify missing accountable documents.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the inventory is to evaluate storage procedures and to identify missing accountable documents.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to conduct the inventory.</p>		

Ref.#
9.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Sequential Page Numbering		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Pages in reports should be numbered sequentially beginning with number one.		
IMPLEMENTATION SUGGESTIONS	Systems analysts and programmers should be instructed to number the pages of all computer reports. Many report-writing utility programs include this as an automatic feature.		
FEEDBACK EVIDENCE	Feedback information should identify reports whose pages are not numbered.		
ADVANTAGES OF CONTROL	The advantage of page numbering is the assurance on the part of a recipient that the report is intact.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 9.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Printer Form Replenishment Control		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Procedures should be established to account for the use of printer forms, and to reorder those forms when the supply reaches a predetermined reorder point.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users and computer operations personnel should jointly establish reorder points and reorder quantities. Procedures should then be established to identify when the reorder point has been reached.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate any out-of-forms condition.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of replenishment procedures is the reduction in out-of-form conditions.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.#
9.8.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Application System Totals		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Control totals should be accumulated over the detailed processing occurring in an application system. These provide users with accounting information used for both control and action purposes. System totals can include total value of processing, units processed, value in file at end of processing, units in file at end of processing, etc.		
IMPLEMENTATION SUGGESTIONS	During the system development process, the system-controlled totals should be specified by the user of the application. The process necessary to accumulate and report these totals should be designed and implemented by the systems analyst.		
FEEDBACK EVIDENCE	Feedback information should identify conditions where the control totals are incorrect.		
ADVANTAGES OF CONTROL	The advantage of control totals is to provide a basis for the user to control an application and to take necessary action.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
9.8.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Computer-Generated Transaction Accounting Totals		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	The value involved in automatically-generated transactions is unknown to the people accountable for the actions. Having the computer provide the total value of those transactions provides the accountable individual an indication of the scope of the automatically-generated transactions.		
IMPLEMENTATION SUGGESTIONS	When computer-generated transactions involve an action, the value of those actions should be accumulated. The value might be in dollars, quantity, units of work, etc.		
FEEDBACK EVIDENCE	Feedback information should indicate the number of automatically-generated transactions and the value of those transactions by type.		
ADVANTAGES OF CONTROL	The advantage of accounting totals is in providing the accountable individual a guide as to the magnitude of the initiated action.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 9.8.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Simple Accounting Proof		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>A simple accounting proof is a verification between two points in time.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The simple accounting proof begins with the closing balance at one point in time, adds to it any additions, subtracts from it any deletions, to calculate a new closing balance which can then be verified against the processing.</p>		
FEEDBACK EVIDENCE	<p>Feedback information identifies situations where there are out-of-balance conditions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the simple accounting proof is to prove the integrity of new totals.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to conduct the proof.</p>		

Ref.# 9.8.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Anticipation Control Totals		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Where practical, the user should predetermine the value of processing. This can be an exact value or an approximation. The actual total is then compared against the anticipated total and significant differences should initiate investigation.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Systems designers and users should determine if it is possible to anticipate system control totals. If so, these reasonableness checks are valuable in uncovering illogical processing, or significant error conditions.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the actual totals vary significantly from the anticipated totals and the reason for the variation.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of anticipation control totals is to identify serious error conditions early.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that when anticipated totals are inaccurate, extensive investigation may be undertaken that is unnecessary.</p>		

Ref.#
9.8.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Aging Open Items		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	Aging open items is preparing a listing of outstanding items on a file in order of the time period in which they have been on the file. The items that have been on the file the longest would be listed first. The objective is to call management attention to the old items on the file.		
IMPLEMENTATION SUGGESTIONS	Aging is performed by calculating a new field indicating the number of days the item has been open. The file is then sorted in reverse order so the item which has been on the file the longest will be first. The file is then listed in readable and usable format.		
FEEDBACK EVIDENCE	The feedback information is the aging report.		
ADVANTAGES OF CONTROL	The advantage of aging open items is to call management's attention to the older transactions on the file.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort to develop, implement, and use the aging report.		

Ref.#
9.8.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Sequence Number Control List		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	A sequence number control list is a form containing a series of sequential numbers. The form is used to check the sequence number of incoming, or assign sequence numbers to outgoing transmissions.		
IMPLEMENTATION SUGGESTIONS	The form can be preprinted with a large block of numbers, such as two or three hundred numbers. When all of the sequential numbers have been used, they can be repeated on a new form.		
FEEDBACK EVIDENCE	Feedback information indicates missing transmittals.		
ADVANTAGES OF CONTROL	The advantage of a sequential number control list is the ease and convenience of accounting for sequence numbers.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
9.8.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Independent Control Total		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	Users should create an independent control total to verify the integrity of computer processing. This control total should be prepared using information gained independently of the application being verified.		
IMPLEMENTATION SUGGESTIONS	Users and systems analysts should work jointly to determine where these independent control totals would be valuable, and then how to gather the information to accumulate the total.		
FEEDBACK EVIDENCE	Feedback information should identify variance between computer-produced totals and independently-produced totals.		
ADVANTAGES OF CONTROL	The advantage is an additional check on the integrity of computer processing.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to create and verify the independent control total.		

Ref.# 9.8.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Remote Terminal to Control Facility Reconciliation		
GENERIC CATEGORY Accounting	USAGE ACTIVITY Use of Data	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Information entered or maintained at remote terminals, and also maintained at the central facility, should be periodically reconciled. This reconciliation determines whether the common processing has occurred properly.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Systems analysts and users should identify the applications where processing is either distributed or processed locally and then transmitted. Control totals should be maintained at the remote site and at the central site. Periodically, these control totals should be reconciled to determine that transaction processing is accurate and complete.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate differences between the remote control totals and the central control totals.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the assurance that remote and central processing is in synchronization.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 9.9.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Accountable Document Reconciliation		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>A reconciliation should be made as to the use of accountable documents used during computer operations. For example, if checks are printed on a computer printer, the reconciliation should account for all the checks consumed during operations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>A reconciliation form should be prepared that lists the number of accountable documents consumed and the disposition of each document. This would indicate documents removed from storage, documents destroyed in printer alignment, documents voided, documents sent to users, and documents returned to the accountable document storage area.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the accountable documents that cannot be accounted for in the reconciliation process.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the accountable document reconciliation is the immediate identification of a missing document. The control often identifies the specific accountable document that is missing.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 9.9.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Input/Output Transaction Reconciliation		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Input/Output transaction reconciliation verifies that all of the transactions entered into application processing result in output. This provides assurance that processing is complete.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Input/Output reconciliations can be by number of records, value of the records, or both. The systems analyst should determine how to reconcile between input and output and then develop the procedures necessary to perform the reconciliation.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate variances between input and output.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is increased assurance that all data entered into the system has been processed and outputted.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort to develop, implement, and operate the reconciliation procedures.</p>		

Ref.# 9.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Cutoff Date Reviews		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Cutoff date reviews should be conducted at the end of significant accounting periods. This is usually quarterly and annual reporting. The review should examine the areas of transactions which may be recorded in the wrong accounting period, such as invoices received and recorded early in the new accounting period.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be developed for conducting cutoff reviews based on previous experience of the organization in recording transactions in the wrong accounting period. These represent the categories of transactions that should be examined during the review.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency and types of transactions recorded in the wrong accounting period.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of cutoff reviews is to catch improperly recorded transactions so that the financial statements will better reflect the results of operations.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that if procedures are adequate this may be an unnecessary step.</p>		

Ref.# 9.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Step-by-Step Totals		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Control totals should be continually adjusted to reflect changes in the values in the detailed records. At each new stop, the total should be verified to ensure that data is not lost during processing.</p>		
IMPLEMENTATION SUGGESTIONS	<p>This type of control must be built into the logic of the application system. It is more suited to large batch operations moving through many processing steps.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate accounting control differences.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of step-by-stop totaling is that errors are detected at the point of occurrence.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the additional time and effort required to develop, operate, and verify the step-by-step totals.</p>		

Ref.# 9.9.B.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Job Accounting		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>Job accounting maintains records on who used what computer resources. The objective of job accounting is to accumulate information on the use of resources.</p>		
IMPLEMENTATION SUGGESTIONS	<p>There are commercial packages available that perform the job accounting function. The best known of these packages is IBM's Systems Management Facility. This package records job starts, stops, file usage, resource usage, etc.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should provide an overview of the statistics collected from job accounting system.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of job accounting is the analysis provided on the total use of resources, and who used the resources.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of obtaining a job accounting system, and operating and using that system.</p>		

Ref.# 9.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Risk Quantification		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>The probable loss from each risk should be quantified. This helps establish an upper limit for the cost of controls.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Risk analysis concepts should be used to quantify each of the identified risks.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should track the actual losses to determine if the probable losses are reasonable.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of risk quantification is that controls can be designed in a businesslike manner.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 9.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Multilevel Charging		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Services provided by the computer operation can be charged at multiple rates. Processing occurring at peak periods is charged a substantially higher rate than processing occurring at times of minimal processing. The objective is to discourage peak time use.</p>		
IMPLEMENTATION SUGGESTIONS	<p>A workload analysis should be made of operations. The charging algorithm is then changed so that work processed during peak days or time periods receives a surcharge. At the same time, workloads during minimal work periods may receive a cost reduction.</p>		
FEEDBACK EVIDENCE	<p>The workload should be monitored to determine the level of smoothing provided by the multilevel charging. If the initial surcharge or discount does not result in smoothing, the surcharge or discount should be increased.</p>		
ADVANTAGES OF CONTROL	<p>The multilevel charging helps smooth workload by having users reschedule the low priority work.</p>		
DISADVANTAGES OF CONTROL	<p>Multilevel charging may encourage uneconomical work to be run because of the low charge.</p>		

Ref.# 9.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Systems Cost/Benefit Analysis		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>The cost/benefit analysis of a distributed system defines the one-time and continuing costs as well as the tangible and intangible benefits to be received from the system. The information is then processed through a return on investment or cash flow rate of return to show the economic impact of the system on the organization.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Standardized cost/benefit procedures should be developed for the distributed systems. Normally these will be developed in conjunction with the organization's accountants to ensure a fair and equitable economic analysis.</p>		
FEEDBACK EVIDENCE	<p>Procedures to be followed in developing cost/benefit analysis, together with the results of that analysis.</p>		
ADVANTAGES OF CONTROL	<p>The economic impact of moving to distributed systems can be readily determined from the cost/benefit analysis.</p>		
DISADVANTAGES OF CONTROL	<p>Improperly calculated cost/benefit studies, together with invalid assumptions, can cause management to make improper decisions.</p>		

Ref.# 9.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	User Chargeback		
GENERIC CATEGORY Accounting	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>User chargeback is making the allocation of charges to users based upon their utilization of resources. The objective of the chargeback is to make the user aware of the amount of resources used, and to make them accountable for the expenditure involved in providing those resources.</p>		
IMPLEMENTATION SUGGESTIONS	<p>User chargeback can be automatically accumulated from job accounting systems. These systems can accumulate costs by user, by application system, or by whatever method is most appropriate for the organization.</p>		
FEEDBACK EVIDENCE	<p>Feedback should provide a listing of charges by user.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of user chargeback is to make them accountable for the use of organizational resources.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that it may discourage new uses of automated facilities.</p>		

Ref.# 10.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	No Data To Enter Confirmation		
GENERIC CATEGORY Confirm	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>If the user has no data to enter at a scheduled data entry point, they should notify computer operations that there is no input. This will alert the data processing people that they do not need scheduled computer resources.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be established in the user area to provide positive conformation to operations personnel when there is no data to enter.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which there is no data to enter but computer operations are not notified of this condition.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of confirming that there is no data to enter is the freeing of computer resources for other work. It is also a check against lost data.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 10.0.A.C

CONTROL DESCRIPTION

NAME OF CONTROL	Site Cutoff Procedures		
GENERIC CATEGORY Confirm	USAGE ACTIVITY Authorization Access	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Sites in the network have the ability to call for and utilize the resources of the network. Misuse of the system can result in security violations, severe degradation of service, and introduction of problems into other users' processing. Cutoff procedures enable the systems administrator (i.e., lead node) to delete temporarily or permanently one site from the network.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The distributed systems committee should define the conditions in which one site can be temporarily or permanently deleted from the network. The lead node staff either manually or automatically implements those guidelines.</p>		
FEEDBACK EVIDENCE	<p>Cutoff procedures describing who and when can be removed from the system. Procedures should outline the mechanism and if performed review the effectiveness of the procedures.</p>		
ADVANTAGES OF CONTROL	<p>Developing site cutoff procedures enables the lead node to deal immediately with and correct a distributed systems problem. Obviously, the cutoff authority should be used sparingly but when needed can be a valuable tool.</p>		
DISADVANTAGES OF CONTROL	<p>Users may be improperly cut off the system and may cause organizational disputes over the ability of the systems administrator to remove users from the system.</p>		

Ref.# 10.2.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Receipt Procedures		
GENERIC CATEGORY	Confirm	USAGE ACTIVITY	Data Entry
		STRENGTH	Strong
		CONTROL TYPE	Detective
DESCRIPTION	<p>In a distributed system, the acceptance of a transmission is optional, not mandatory. Transmissions can involve the movement of processing requirements as well as messages to the receiving site. Procedures need to be established governing both the acceptance of transmissions as well as the distribution of messages and processing requests should the designated site fail to accept the message.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The distributed systems committee should develop the guidelines and procedures to be followed regarding the acceptance of messages, and the storage or redirection of messages in the event the designated site fails to accept a message. The procedures may involve the establishment of a transmission switching facility in which messages can be stored until accepted for a delivery.</p>		
FEEDBACK EVIDENCE	<p>Transaction acceptance procedures governing both the immediate acceptance of a transmission plus the procedures to be followed for unaccepted transmission. If the unaccepted transmission procedures involve the storage of messages, evidence of the existence of that capability should be examined.</p>		
ADVANTAGES OF CONTROL	<p>In a distributed system, it is essential to resolve the handling of messages between distributed sites. The process ensures that all messages will be handled on a timely basis in some manner.</p>		
DISADVANTAGES OF CONTROL	<p>The formalization of procedures for rejecting messages may encourage sites not to accept processing workload from other sites in the network.</p>		

Ref.# 10.3.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Handshaking		
GENERIC CATEGORY Confirm	USAGE ACTIVITY Communication	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Communication circuits must be synchronized before proper transmission can occur. Handshaking are those procedures, normally conducted automatically by the equipment, that ensure that the data being sent from one communication device is being properly received by the other communication device. Handshaking is a two-way process in that transmission going in both directions whether synchronous or asynchronous is occurring properly.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Handshaking procedures should be included in the communication circuitry. An inquiry should be made to ensure that the procedures can detect communication problems.</p>		
FEEDBACK EVIDENCE	<p>Documentation or other evidence provided by the communication hardware vendor as to the type and extent of handshaking routines.</p>		
ADVANTAGES OF CONTROL	<p>Ensure that communication facilities are functioning properly.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 10.5.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	File Completion Check		
GENERIC CATEGORY Confirm	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>A file completion check is an indicator that indicates or confirms that the file has been completely processed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>In computerized applications, file completion checks are normally accomplished by adding a record to the end of file which becomes a notification that the last record has been processed. In on-line processing, the terminal operator can indicate that the file is complete.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the end of file condition has not been identified.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a file completion check is a positive assurance that file processing is complete.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of a file completion check is the extra step that ends to be performed to confirm the end of file condition.</p>		

Ref.# 10.7.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Turnaround Documents		
GENERIC CATEGORY Confirm	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>A turnaround document is an output document which is to be returned to the originator in completing the transaction. Turnaround documents are heavily used in billing systems, in which the customer returns part of the turnaround document and the payment to the billing organization.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Turnaround documents should be designed so that they are machine readable. In addition, there should be sufficient information so that a clerk can visually determine whether the customer has taken the appropriate action. If the customer has not taken the appropriate action, for example, not made the correct payment, then the receiving clerk needs to note the difference so the appropriate processing can occur.</p>		
FEEDBACK EVIDENCE	<p>Feedback evidence should be collected indicating the categories of response by customers. This would include those responding properly, those not responding properly, and those who did not return the turnaround document.</p>		
ADVANTAGES OF CONTROL	<p>The use of turnaround documents substantially increases the identification of information and monies coming from customers of an application system. It also instills some confidence in the customer that their response will be properly identified and recorded.</p>		
DISADVANTAGES OF CONTROL	<p>The major disadvantage to turnaround documents is that some customers will not return them. This causes extra processing to occur on the part of the clerical people receiving customer responses.</p>		

Ref.# 10.7.C.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Report Receipt Confirmation		
GENERIC CATEGORY Confirm	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Report recipients can confirm the receipt of the report by signing a document so indicating. This receipt document can be signed prior to receipt of the report, or sent with the report and returned by the recipient.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Report receipts are normally only used for the more important reports. This provides assurance to operations that they have been delivered to the proper area. Also, if there is a question about who actually received the report, the signature on the receipt pinpoints receipt accountability.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which receipts are not signed or returned, and problems with recipients not receiving reports.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a report is a positive confirmation of receipt.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to have receipts signed, returned, and stored.</p>		

Ref.#
10.8.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Formal Report Use Confirmation		
GENERIC CATEGORY Confirm	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	Periodically, users of reports should be sent a letter confirming whether or not they use reports. The reports identified as not needed should be eliminated.		
IMPLEMENTATION SUGGESTIONS	A written confirmation can be duplicated and attached periodically to all of the reports. The confirmation can either be positive, in other words the user must indicate that they want the report continued or negative in that the report will be continued unless they indicate otherwise.		
FEEDBACK EVIDENCE	Feedback information should indicate the number and types of reports eliminated through the confirmation process.		
ADVANTAGES OF CONTROL	The advantage is the elimination of unneeded reports, and the associated cost to produce those reports.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 10.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Processing Acceptance Criteria		
GENERIC CATEGORY Confirm	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Distributed systems are designated to provide processing advantages over nondistributed systems, notably independence amount the sites in the network plus the movement of resources to the point of need. Without preestablished criteria to measure the effectiveness of the system, management will not know whether or not the concept achieved its objectives.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The distributed systems committee, in conjunction with the lead node staff, should develop measurable criteria to evaluate the performance of the distributed system. The responsibility for the collection of measurement data and the measurement process should be the responsibility of the lead node staff.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the acceptance criteria and evaluation of the results of collecting and measuring achievement or nonachievement of those criteria.</p>		
ADVANTAGES OF CONTROL	<p>The major advantage of acceptance criteria is the determination of whether or not the technology achieved the desired objectives. Without acceptance criteria, poor performance might be accepted as normal, but with acceptance criteria, changes can be made in areas where the system fails to achieve the desired level of performance.</p>		
DISADVANTAGES OF CONTROL	<p>The time and effort to identify, collect, and analyze acceptance criteria if that criteria will not be used in a decision-making process</p>		

Ref.# 10.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	User Acceptance Testing		
GENERIC CATEGORY	Confirm	USAGE ACTIVITY	General Purpose
		STRENGTH	Very Strong
		CONTROL TYPE	Preventive
DESCRIPTION	<p>Users should be involved in testing applications for which they are accountable. This testing should occur prior to the application system going into production.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Acceptance testing should involve testing the manual support procedures, testing the adequacy of the documentation, testing the normal processing procedures, and testing the abnormal processing procedures.</p>		
FEEDBACK EVIDENCE	<p>The feedback information is the evaluation of the application by the user performing the acceptance testing.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of acceptance testing is the involvement of the user in the system prior to it going into production.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the user may not be technically competent to perform adequate acceptance testing.</p>		

Ref.# 10.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Base Case Testing		
GENERIC CATEGORY Confirm	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Base case testing is an exhaustive set of test data that confirms that all the paths in the application system are functioning correctly.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The base case set of test data should be prepared by a committee comprised of users, data processing personnel, and control-oriented personnel, such as an auditor or quality assurance analyst.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify inadequacies in the application.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of base case testing is that it tests all paths in the application system.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage to base case testing is the cost to develop, maintain, and use the base case's</p>		

Ref.# 10.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	User Acceptance Testing of System Changes		
GENERIC CATEGORY Confirm	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Before system changes go into production, the user should again become involved in authenticating the completeness of system changes. The user should determine if the implemented change is what they want and meet their objectives.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The user should prepare test data to test all of the system conditions. Ideally, the user would retest all system conditions to provide assurance that not only has the change been implemented correctly, but that nothing else has been changed.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify inadequacies in the implementation of the charge.</p>		
ADVANTAGES OF CONTROL	<p>User acceptance testing of system change enables them to evaluate the adequacy of the change prior to its going into production.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of involving users in system changes may be frequency of change or the magnitude of change makes heavy testing impractical.</p>		

Ref.# 10.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Employee Screening – Current Employees		
GENERIC CATEGORY Confirm	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Current employees in positions of trust should have their background reviewed periodically. However, this must be done using discretion and within the law.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Background checks on current employees should be performed by the personnel department, and should not discriminate against specific individuals.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify questionable background situations.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of these continued background checks is to identify situations which may question the integrity of the employee.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is it may be upsetting to employees, the information may not be completely accurate, and it is questionable what an employee can do legally using this type of information.</p>		

Ref.# 10.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Employee Screening – New Employees		
GENERIC CATEGORY Confirm	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Employees hired in key positions should be investigated prior to hiring. This investigation should include background and reference checks regarding the integrity of the individual.</p>		
IMPLEMENTATION SUGGESTIONS	<p>These background checks should be made by the personnel department.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the results of the investigation.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of screening employees prior to hiring is the increased assurance of their integrity.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort, and perhaps unreliable information obtained.</p>		

Ref.#
11.2.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Convention Compliance Audits		
GENERIC CATEGORY Compliance	USAGE ACTIVITY Entry	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Most organizations have conventions in structuring data. Where these conventions exist, the data should be audited to determine it is in compliance with the convention.		
IMPLEMENTATION SUGGESTIONS	Users should identify for systems analysts application conventions and the characteristics of those conventions. Systems analysts should then build in checks to determine data is entered in accordance with those conventions.		
FEEDBACK EVIDENCE	Feedback information should indicate variances from conventions.		
ADVANTAGES OF CONTROL	The advantage of checking installation conventions is to assure that entered data is in accordance with the conventions.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
11.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Reaudited Corrected Data		
GENERIC CATEGORY Compliance	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	When errors are corrected, they should be reentered through the normal audit procedures of the application system. This will provide assurance that the entire transaction still meets the rules of the application system.		
IMPLEMENTATION SUGGESTIONS	Procedures should be established to assure that corrected transactions are reentered at the beginning of the application system. Exceptions would only occur in instances where some processing has already occurred at the point of error detection. In these instances, reentry should be through automated error suspense systems.		
FEEDBACK EVIDENCE	Feedback information should be maintained on resubmitted error data, regarding the types and frequency of errors detected on the resubmitted data.		
ADVANTAGES OF CONTROL	The advantages of auditing resubmitted data is assurance that all the application system rules have been met.		
DISADVANTAGES OF CONTROL	The disadvantage is the extra processing effort required to reaudit the transaction.		

Ref.# 11.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Error Suspense Reentry		
GENERIC CATEGORY Compliance	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Transactions contained in the error suspense file should be used to reenter that transaction. Only the part containing the error or part needed for further identification needs to be modified.</p>		
IMPLEMENTATION SUGGESTIONS	<p>In designing applications, there should be a direct reentry from the error suspense file to normal processing. There is no need to reenter the data that has already been entered correctly. The error suspense file should have the capability to make the necessary correction and then transfer the data back into normal processing.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems encountered in reentering data from the error suspense file to normal processing.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that the correct segments of the transaction need not be reentered into the application system.</p>		
DISADVANTAGES OF CONTROL	<p>A disadvantage could be that it is more complex to correct a transaction on the error suspense file than it is to reenter the entire transaction.</p>		

Ref.# 11.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Field-by-Field Editing		
GENERIC CATEGORY Compliance	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Data element should be edited to determine they comply with the stated attributes of the data element.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The field-by-field editing should comply with the documented attributes of the data element.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should list the frequency and types of uncovered errors.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of editing is increased assurance that the data will be accurate.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of editing is the time and effort required to perform the editing.</p>		

Ref.# 11.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Field-to-Field Editing		
GENERIC CATEGORY Compliance	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>If there are interrelationships between fields, these relationships should be verified. For example, if an individual is in a particular pay grade, then the rate for that pay grade should fall within a particular range.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The interfiled relationships should be documented as part of data definition. These documented relationships should be verified through editing routines.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should list the frequency and types of uncovered errors.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of editing is increased assurance that the data will be accurate.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of editing is the time and effort required to perform the editing.</p>		

Ref.#
11.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Active Data Dictionary		
GENERIC CATEGORY Compliance	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	An active data dictionary enforces the use of the data definitions in the data dictionary. In other words, systems analysts and programmers cannot enter or access data in the computer environment unless they use the definitions from the data dictionary.		
IMPLEMENTATION SUGGESTIONS	An active data dictionary requires the use of a data base. The two software packages are tied together so that unauthorized definitions cannot be used.		
FEEDBACK EVIDENCE	Feedback information identifies data abuses, and inconveniences caused by an active data dictionary.		
ADVANTAGES OF CONTROL	The advantage of an active data dictionary is the enforcement of the standardized data definitions.		
DISADVANTAGES OF CONTROL	The disadvantage is the cost of operating the data dictionary, which may be offset by not having to define data.		

Ref.# 11.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Quality Assurance Analyst		
GENERIC CATEGORY Compliance	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The quality assurance analyst has the responsibility to determine that the application systems are in compliance with the organization's policies, procedures, and standards. In addition, quality assurance may verify that they system is being developed in accordance with the system specifications.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The quality assurance analyst works from procedures that enable the analyst to verify compliance to organization standards, policies, and procedures. This review is normally done at predetermined checkpoints during the developmental cycle.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the quality assurance analyst reports.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of having an application system subjected to a quality assurance review is the increased assurance that the application system will meet the organization's policies, procedures, and standards.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the support and cost of establishing a new function in the data processing area.</p>		

Ref.# 11.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Systems Operating Procedures		
GENERIC CATEGORY Compliance	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The operating procedures describe the process that the sites must follow to obtain the needed processing capabilities. The procedures are normally designed for the use of system designers, programmers, and operators. The procedures specify the interface necessary to effectively utilize the facility.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node staff should be assigned the responsibility to develop the distributed system operating procedures. The procedures should be distributed to all sites for evaluation and suggestions for improvement prior to formalizing the procedures. In addition, a method should be established to monitor the effectiveness of the procedures and make the necessary adjustments.</p>		
FEEDBACK EVIDENCE	<p>The procedure manual and the acceptance and use of the procedures by the sites in the distributed system.</p>		
ADVANTAGES OF CONTROL	<p>Common interface procedures are necessary to effectively use the distributed network. Well-developed and accepted procedures increase the effectiveness of the distributed system.</p>		
DISADVANTAGES OF CONTROL	<p>None – It may be impossible to operate a distributed system without procedures specifying the interface between sites.</p>		

Ref.# 11.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Processing Conversion Procedures		
GENERIC CATEGORY Compliance	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Distributed systems normally evolve from other technologies. This requires the conversion of one method of processing to another. Frequently this is from a highly centralized mode to the decentralized distributed system. The conversion procedures outline the methods that a site should follow to move most effectively and in a controlled manner from one-time of technology to the distributed systems.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node staff should develop the procedures for conversion. These should be customized for the organization, and may need to be customized for individual sites if they have unique processing characteristics. Normally the conversion procedures include needed software tools.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the conversion procedures, and reports (if conversion has been completed) of the results of using those procedures.</p>		
ADVANTAGES OF CONTROL	<p>The development of conversion procedures prevents each site from "Reinventing the Wheel" on how to convert from one type of technology to the other. The procedures normally minimize the effort required to convert from one type of technology to distributed systems.</p>		
DISADVANTAGES OF CONTROL	<p>Generalized conversion procedures may not be effective if they cannot be readily adopted to local processing needs.</p>		

Ref.#
11.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	System Testing Checklist			
GENERIC CATEGORY Compliance	USAGE ACTIVITY	General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	The system testing checklist provides all of the stops that should be followed in testing application systems and changes to application systems.			
IMPLEMENTATION SUGGESTIONS	The testing checklist should be developed by data processing management. It should include the steps to be followed in testing manual procedures as well as automated procedures.			
FEEDBACK EVIDENCE	Feedback information should identify checklist violations.			
ADVANTAGES OF CONTROL	The advantage of checklists is the increased assurance that all the stops will be followed.			
DISADVANTAGES OF CONTROL	None.			

Ref.# 11.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Control Checklist		
GENERIC CATEGORY Compliance	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The control checklist provides an overview as to the type of situations that should be controlled in an application system. This is to provide the analyst guidance in the type of controls that are needed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The control checklist should be developed by data processing management. Data processing management may wish to use the guidance of auditors in the development of this checklist.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify checklist violations.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of checklists is the increased assurance that all the stops will be followed.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 11.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	System Development Checklist		
GENERIC CATEGORY Compliance	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>A system development checklist provides a listing of all the steps that should be followed in the development of an application system. This is used by systems analysts to assure that all the necessary steps are followed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The system development checklist should be developed by data processing management. The checklist includes all the steps that management desires to be followed in the system development process.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify checklist violations.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of checklists is the increased assurance that all the stops will be followed.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 11.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Audit Trail Checklists		
GENERIC CATEGORY Compliance	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>An audit trail checklist provides a listing of all the steps that should be performed in designing and implementing an audit trail.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The audit trail checklist should be developed by data processing management. However, it may be helpful to involve the auditors and lawyers in the preparation of this checklist. This will help provide assurance that legal and regulatory requirements are met.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which checklist items are not followed.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the checklist is to provide additional assurance that the audit trail will be complete.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.0.A.C

CONTROL DESCRIPTION

NAME OF CONTROL	User Profile		
GENERIC CATEGORY Identify	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>User profiles describe all of the functions that a user is authorized to perform. Profiles can be general, giving users unrestricted access to files, or specific, defining which data elements can be used and for what purposes.</p>		
IMPLEMENTATION SUGGESTIONS	<p>User profile should be prepared by a data administrator. These profiles define the resources that an individual user can access or consume in the fulfillment of their responsibilities.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify attempted or actual violations of the user profile, as well as user problems working within the profile restrictions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the user profile is that it definitively defines the authority to use resources by each user.</p>		
DISADVANTAGES OF CONTROL	<p>User profiles require time and effort to develop, maintain, and implement, and at the same time can restrict an individual's ability to utilize resources which would be helpful in fulfilling their responsibility.</p>		

Ref.#
12.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	User identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	The user of computer resources should be identified so that the system can ascertain the resources to which they are entitled.		
IMPLEMENTATION SUGGESTIONS	The user identification can be physical location, job numbers, passwords, special codes, or other methods which enable the system to positively identify a specific user.		
FEEDBACK EVIDENCE	Feedback should identify situations in which an authorized user could not be identified, or an unauthorized user would not challenge for identification.		
ADVANTAGES OF CONTROL	The advantage of identifying users is to make individuals accountable for their actions.		
DISADVANTAGES OF CONTROL	User identification requires the time and effort to establish, maintain, and enforce identification procedures.		

Ref.# 12.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Resource Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Resources that can be used in a computerized environment should be identified. The objective of this identification is to restrict access to that resource to authorized users.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Resources can be identified using special names or numbers, passwords, or other measures which enable each resource to be uniquely identified. Resources are data, files, and other physical and logical resources.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate which resources are desired by users which are not identified. Also, problems in identification of resources should be identified.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of resource identification is that it provides the basis for restricting access to authorized users.</p>		
DISADVANTAGES OF CONTROL	<p>The major disadvantage to resource identification is the cost to develop, maintain, and use identification procedures.</p>		

Ref.# 12.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Element Profile		
GENERIC CATEGORY Identify	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>The data element profile described who can access the data element and for what purposes. The data element profile should be defined by the data base administration function.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The data base profile should be established at the time a new data element is established, and updated whenever the data element is changed.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the data element profile violations, and inconveniences caused by profile restrictions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the data element profile is that it definitively defines who can access each data element and for what purposes.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of a data element profile is that it requires time and effort to develop, implement, and enforce the profile, together with any inconveniences caused by profile restrictions.</p>		

Ref.# 12.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Program Profile		
GENERIC CATEGORY Identify	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>A program profile describes who can use a program and for what purposes. The program profile restricts the use of programs to authorized users, and subsets of processing if appropriate.</p>		
IMPLEMENTATION SUGGESTIONS	<p>When programs are entered into the production library, a profile should be established indicating which users have access to that program and for what purposes. The profile might also describe the frequency of running a program and the dates and times in which the program can be run.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate violations of the program profile and any inconveniences caused by profile restrictions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the program profile is that it definitively defines who can use a program and for what purposes.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of a program profile is the time and effort required to develop, implement, and enforce the profile, together with any inconveniences caused by profile restrictions.</p>		

Ref.#
12.0.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Terminal Profile		
GENERIC CATEGORY Identify	USAGE ACTIVITY Authorization	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	The terminal profile defines the users authorized to use that terminal and the purposes and times in which it can be operated.		
IMPLEMENTATION SUGGESTIONS	As terminals are added to a computer network, the profile of those terminals should be defined. The definition should be developed jointly by management, data processing operations, and the users needing access to that terminal.		
FEEDBACK EVIDENCE	Feedback information should describe terminal usage violations as well as restrictions placed on users because of the profile and strength.		
ADVANTAGES OF CONTROL	The advantage of terminal profiles is that it definitively defines who can use the terminal and for what purposes.		
DISADVANTAGES OF CONTROL	The disadvantage of a user profile is the time and effort needed to develop, maintain, and enforce the profile, plus inconveniences caused by profile restrictions.		

Ref.# 12.1.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Data Origination Accountability		
GENERIC CATEGORY Identify	USAGE ACTIVITY Origination	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>An individual should be associated with each originated document and that individual should be held accountable for the information contained in that document.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Accountability should be established at the time systems are developed. As people change, the record of accountability should also be changed.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should quantify the frequency and types of errors made by individuals. This should be expressed as a percentage of work entered.</p>		
ADVANTAGES OF CONTROL	<p>Accountability makes individuals aware of their personal responsibility for accuracy and completeness.</p>		
DISADVANTAGES OF CONTROL	<p>Increased emphasis on accountability and holding people responsible may reduce individual productivity in order to increase accuracy.</p>		

Ref.# 12.1.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Source Document Cross-Referencing		
GENERIC CATEGORY Identify	USAGE ACTIVITY Organization	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>The objective of source document cross-referencing is to enable source documents to be located easily in support of computer processing. This control requires two steps. The first step is the identification of source documents, and the second step is placing that reference number in the computer transaction.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Determination should be made during systems design as to the need to refer to source documents to substantiate or clarify computer processing. If this need exists, source documents must be uniquely identified. This identification is then carried with the computerized data throughout processing.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and type of source document requests, together with whether or not appropriate reference is included in the computerized records.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of cross-referencing computer records to source documents is the ease in which source documents can be located to substantiate or clarify computer processing.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to reference source documents and enter that reference number into computerized processing.</p>		

Ref.# 12.2.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Data Entry Accountability		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>An individual should be associated with each entry document and that individual should be held accountable for the information contained in that document.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Accountability should be established at the time systems are developed. As people change the record of accountability should also be changed.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should quantify the frequency and types of errors made by individuals. This should be expressed as a percentage of work entered.</p>		
ADVANTAGES OF CONTROL	<p>Accountability makes individuals aware of their personal responsibility for accuracy and completeness.</p>		
DISADVANTAGES OF CONTROL	<p>Increased emphasis on accountability and holding people responsible may reduce individual productivity in order to increase accuracy.</p>		

Ref.# 12.2.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Immediate Display of Terminal Errors		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Errors detected in an on-line environment should be immediately transmitted to the individual entering the transaction. At the time of entry, the individual is most familiar with the transaction data and in the best position to make the error correction.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be established in the terminal data entry to provide immediate display of error messages to the terminal operator. The system should not permit processing to continue until the errors are corrected.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should list the frequency and types of errors encountered in on-line data entry. Information should also state the types of frequency of errors that cannot be corrected at the time of entry.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of immediate error display is correcting the error at the time the operator is most familiar with the transaction, and to facilitate the processing cycle.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that all transactions cannot be entered until errors in each transaction are corrected.</p>		

Ref.# 12.2.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Duplicate Entry Checks		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Duplicate entry checks search for the erroneous reentry of a transaction.		
IMPLEMENTATION SUGGESTIONS	Duplicate entry of transactions can be determined by comparing an entered record against information already in the file, maintaining a log of transaction numbers so that a duplicate can be easily determined.		
FEEDBACK EVIDENCE	Feedback information should identify potential or actual duplicate entries.		
ADVANTAGES OF CONTROL	The advantage is the elimination of duplicate entries.		
DISADVANTAGES OF CONTROL	The disadvantage is that entries may appear identical, such as two orders by the same customer for the same number of products on the same day, but are, in fact, two separate transactions.		

Ref.# 12.2.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Prenumbered Data Entry Forms		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Prenumbered data entry forms can be controlled throughout processing using the number on the form. Among the uses for the number are control over missing forms, easy identification of transactions, tracing transactions back to source documents, and pinpointing accountability for problems. Normally, prenumbered is associated with preprinted forms, but the assignment of a number of control clerk is also a viable method for prenumbering.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Prenumbering can be used on any document in which missing or additional input is of concern. Examples where prenumbering is used include purchase orders, checks, changes to master information such as pay rates, and cash receipts.</p>		
FEEDBACK EVIDENCE	<p>Control reports should be prepared showing the disposition of prenumbered forms. The reports should show the number of forms ordered with their numbers, the numbers used, the numbers voided, and any unaccounted for numbers.</p>		
ADVANTAGES OF CONTROL	<p>Prenumbered forms enable the detection of missing forms. The use of prenumbered forms also encourages employees to follow good control practices because they know the use of the forms is being monitored.</p>		
DISADVANTAGES OF CONTROL	<p>New control procedures must be established to monitor the use of prenumbered forms. This requires extra time and effort for those procedures. In addition, there is an extra cost for prenumbering.</p>		

Ref.# 12.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Batch Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>When data is submitted in a batch format, the batch should be uniquely identified. In many organizations these are sequentially issued batch numbers. However, they should also describe the content of the batch.</p>		
IMPLEMENTATION SUGGESTIONS	<p>In application systems using batch processing, procedures should be established to identify and control batches by their unique identifier.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify missing batches.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of batch identification is that missing batches can be readily identified.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of batch identification is the time and effort required to identify and control batch identification.</p>		

Ref.# 12.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Internal Batch Identification Record		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Batches should contain a record that identifies the batch. In automated systems, this would be a record on computer media, in manual systems this would normally be the first record in the batch.</p>		
IMPLEMENTATION SUGGESTIONS	<p>When batches are designed, they should include an initial record that identifies the contents of the batch.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems with batch identification and batch identification records.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the easy identification of the information in the batch.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to prepare and use the batch identification record.</p>		

Ref.# 12.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Input Transaction Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Each transaction entered into an application systems should be identified. The objective of the identification is to be able to trace and select transactions based on a unique description of the transaction. In computerized applications, identifications are normally numeric or alphanumeric fields of relatively short length.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The transaction identification should enable an individual transaction to be selected. This may require a two-or-three-part identification such as in a billing system the identification could be a combination of the customer number and the type of transaction identification such as a purchase, return, credit, cash payment, etc.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should list the transactions that cannot be identified plus duplicate identifiers. The feedback information will be used to describe identification problems.</p>		
ADVANTAGES OF CONTROL	<p>Transaction identification permits are transaction to be uniquely described during input, processing, output, and storage.</p>		
DISADVANTAGES OF CONTROL	<p>Transaction identification allows unauthorized individuals to identify transactions.</p>		

Ref.# 12.2.C.P/D

CONTROL DESCRIPTION

NAME OF CONTROL	User Data Entry Scheduling		
GENERIC CATEGORY Identify	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Users should schedule their times of data entry so they can determine whether or not they have entered the needed input.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Schedules should be prepared by user management and disseminated to individuals to follow up to determine that data is entered at the appropriate time.</p>		
FEEDBACK EVIDENCE	<p>Feedback information identifies times and places where data is not entered according to the schedule.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of scheduling is to confirm that events happen in the desired manner.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.4.A.C

CONTROL DESCRIPTION

NAME OF CONTROL	Hangup Action Log		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>When computer operations “hang up” (operations cease) that should be recorded on a log together with whatever action was taken to either restart or remove the application with the problem.</p>		
IMPLEMENTATION SUGGESTIONS	<p>A hangup action log is manually maintained log by the computer operator in charge of the shift. This log should indicate not only the conditions of the hangup and the action taken, but who authorized the action to be taken.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify hangup conditions, action taken, and who authorized the action.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of hangup action logs is to identify problem conditions so that they can be avoided in the future, and for management to review and determine if the appropriate action was taken.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to record the information.</p>		

Ref.# 12.4.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Processing Override Log		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>A transaction processing override log lists all of the conditions in which normal transaction processing was overridden. This is a chronological log indicating the value of the override and who initiated the override.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations personnel need to identify override capabilities in application systems and then provide a facility to record the execution of those override capabilities.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency, type, and who authorized overrides.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is to provide management with a summary of the use of the override facilities.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to record, present, and analyze the override conditions.</p>		

Ref.# 12.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Abnormal Processing Log		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Operations personnel expect a certain processing rhythm out of an application system. When this rhythm is interrupted, it becomes obvious to the trained operator. Examples include excessive processing, excessive seeks on a file, extra printing per report page, etc.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operators should be provided the opportunity to formally record these abnormal processing conditions. The log should indicate the application, the time of operation, the operator on duty, and a description of the abnormal processing.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should go to the individual accountable to the application identifying the unusual processing circumstances.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an abnormal processing log is to identify problems before they can become losses.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the abnormal condition noted may not be improper and thus time is wasted on an unnecessary investigation.</p>		

Ref.# 12.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Computer Rerun Analysis Log		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Computer reruns are indicative of either application or operating problems. Each rerun should be recorded. This recording will provide a chronological history of the reruns made.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The rerun log should contain the date, time, and application system rerun. In addition, it should contain the cause of the rerun, the operators on duty at the time of the rerun, and the resources utilized during the rerun process.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the cause of reruns, and the operator or application system responsible for the rerun. In addition, a special report should be prepared for vendor-caused reruns which should result in a reduced rental or rebate from the vendor.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of reruns logs is to recoup costs from the vendor, and to improve operations by correcting the conditions causing the rerun.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Emergency Processing Messages		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>When conditions occur during processing that require immediate action, special emergency procedures should be invoked. These are needed to alert the operator that some highly unusual condition has occurred.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Emergency messages can be indicated by stopping operations, or providing some unique highly visible display. Some equipment allows for audio indication of problems.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and reason for emergency messages, together with the action taken.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of emergency messages is to stop operations before serious problems occur.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Excessive Activity Report		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Excessive activity reports identify when accounts or files have excessive activity. The objective of this control is to identify computer abuse and to identify potential illogical processing due to excessive activity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Records need to be maintained on the average activity for each account and file. To this average activity is added a tolerance range, which may be, for example, plus or minus 25%. Whenever activity exceeds that range it should be identified for potential investigation.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the indication of abnormal activity.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an abnormal activity report is to identify potential problems early.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop, implement, and use the abnormal processing activity reports.</p>		

Ref.# 12.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Too Little Activity Report		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Too little activity reports identify when accounts or files have too little activity. The objective of this control is to identify computer abuse and to identify potential illogical processing due to too little activity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Records need to be maintained on the average activity for each account and file. To this average activity is added a tolerance range, which may be, for example, plus or minus 25%. Whenever activity is less than that range, it should be identified for potential investigation.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the indication of abnormal activity.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an abnormal activity report is to identify potential problems early.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop, implement, and use the abnormal processing activity reports.</p>		

Ref.# 12.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Critical File Activity Report		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>File processing that is very important to the organization should be subject to special anticipation controls. These controls anticipate activity and identify situations of abnormal activity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The user and systems analyst should identify the criteria by which abnormal activity on critical files can be identified. This may include total number of transactions, total dollar activity, activity of dollar amount on special accounts, product lines, areas of organization, etc.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify areas of abnormal activity on critical files.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of critical file activity reports is to anticipate problems before they can turn into losses.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to design, implement, and operate these activity reports.</p>		

Ref.# 12.4.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	Cutoff Date Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Minimal	CONTROL TYPE Detective
DESCRIPTION	Accounting cutoff procedures should be established and the people responsible for implementing those procedures notified.		
IMPLEMENTATION SUGGESTIONS	The accounting department should identify the cutoff dates and other pertinent cutoff information. This becomes the basis of implementing cutoff procedures.		
FEEDBACK EVIDENCE	Transactions not complying with cutoff procedures should be identified for follow-up purposes.		
ADVANTAGES OF CONTROL	The advantage of identifying cutoff times and procedures is the assurance that transactions will be recorded in the appropriate accounting period.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 12.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Privileged Instruction Profile		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Many automated systems contain a series of privileged instructions. These permit individuals to perform tasks that affect the controls governing the operation. For example, privileged instructions in security system permit people to change individuals' passwords. A profile of who can use these can both segregate and identify who can perform what privileged action.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Operations personnel should first identify what are the privileged commands, determine which will be used in their organization, and then determine what individual can use what privileged instructions. A profile is then established which should become the basis of enforcement for the use of those commands. In other words, the profile establishes authorization for use of the commands.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency of use of the privileged instructions and who used them.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a privileged instruction profile is that it formalizes authorization to use the instructions, identifies the individuals who can use them, and is a tool in segregating the commands among various people.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.#
12.4.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Initial Program Load Logs		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Initial program load logs indicate whenever the entire computer operation has been shut down and restarted. Whenever normal security procedures are in operation, processing violations can be detected and/or prevented. However, when the system is shut down it is possible to deactivate these security systems and run in an unrecorded mode. However, appropriate controls can record these restarts.		
IMPLEMENTATION SUGGESTIONS	Many vendors have firmware that records IPL's. This type of information may be available from the vendor, which should then be compare to the indicated IPL's a differences investigated.		
FEEDBACK EVIDENCE	Feedback information should identify unscheduled initial program loads.		
ADVANTAGES OF CONTROL	The advantage is the identification of unusual operating procedures.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 12.4.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Software Interface Planning		
GENERIC CATEGORY Identify	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Each site in the network utilizes software for both applications and operation at the local site. Frequently, the parameters passed by software at one site must be acceptable to other sites. This requires coordination to ensure that they are all operating on the same version using compatible software.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The establishment of software interface control policy should be done by the distributed systems committee, with the procedures developed and administered by the lead node.</p>		
FEEDBACK EVIDENCE	<p>Procedures designed to ensure software compatibility together with documentation that supports software compatibility.</p>		
ADVANTAGES OF CONTROL	<p>Software compatibility ensures the effective interface of information and systems. Incompatible software may result in errors and misunderstanding.</p>		
DISADVANTAGES OF CONTROL	<p>None</p>		

Ref.# 12.5.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Suspense Record Control		
GENERIC CATEGORY Identify	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Unidentifiable information is frequently placed into a computer file awaiting resolution. These records should be placed a special control account so that they can be easily identified and controlled until the disposition is resolved.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many organizations use the account number of all nines to place transactions in suspense. For example, if cash is received but it cannot be identified with a particular customer, it would be placed in a cash receipts suspense account until it can be identified.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the number, value, and type of transactions in the suspense account. Out of balance conditions between the detail suspense records and the suspense total should be indicated.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of suspense record control is the assurance that records will not be lost.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to maintain control totals.</p>		

Ref.#
12.5.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Data Storage (On-Line) File Labels		
GENERIC CATEGORY Identify	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	Files should have a record that identifies the information contained on the file.		
IMPLEMENTATION SUGGESTIONS	Most operating systems have the compatibility to create a file identification record.		
FEEDBACK EVIDENCE	Feedback information should indicate file handling problems due to faulty labels.		
ADVANTAGES OF CONTROL	The advantage of a label is the positive identification of the data on the file.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort to develop, implement, and verify the labeling information.		

Ref.# 12.5.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Employee Account Analysis			
GENERIC CATEGORY Identify	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Detective	
DESCRIPTION	<p>Many employees who embezzle direct those funds to their own accounts. Therefore, periodically the organization should analyze employee accounts who are in a position to misuse their authority.</p>			
IMPLEMENTATION SUGGESTIONS	<p>The types of accounts that would be analyzed include payroll accounts, personal benefit accounts, and any account held in the business which is appropriate for that line of business, such as a depositor in the bank in which the employee works.</p>			
FEEDBACK EVIDENCE	<p>Feedback information should identify questionable situations involving employee accounts.</p>			
ADVANTAGES OF CONTROL	<p>Analysis of employee accounts identifies potential fraud situations and thus limits the size of the fraud.</p>			
DISADVANTAGES OF CONTROL	<p>The disadvantage of employee account analysis is unhappiness on the part of the employees, and potential invasion of privacy.</p>			

Ref.#
12.5.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	File Header Record			
GENERIC CATEGORY Identify	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Preventive	
DESCRIPTION	File header records identify the content of a computer file.			
IMPLEMENTATION SUGGESTIONS	Many operating systems include the capability to automatically generate and check file header records.			
FEEDBACK EVIDENCE	Feedback information should indicate the frequency and type of file header problems.			
ADVANTAGES OF CONTROL	The advantage of a file header record is the positive identification of the file.			
DISADVANTAGES OF CONTROL	None if header record is automatically generated.			

Ref.# 12.6.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Data Storage (Off-Line) File Labels		
GENERIC CATEGORY Identify	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	Files should have a record that identifies the information contained on the file.		
IMPLEMENTATION SUGGESTIONS	Most operating systems have the compatibility to create a file identification record.		
FEEDBACK EVIDENCE	Feedback information should indicate file handling problems due to faulty labels.		
ADVANTAGES OF CONTROL	The advantage of a label is the positive identification of the data on the file.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort to develop, implement, and verify the labeling information.		

Ref.#
12.7.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	End of Report Indication		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	An indication should be on all reports indicating the end of the report. This end of report indication identifies for the user that the complete report is intact.		
IMPLEMENTATION SUGGESTIONS	End of report indications can either be on the last page of useful information, or be a page immediately following the last page. The pages should be sequentially numbered so that not only does the end of the report indicator appear, but the user can verify the intermediate pages easily.		
FEEDBACK EVIDENCE	Feedback information should identify conditions where complete report do not exist.		
ADVANTAGES OF CONTROL	The advantage is that the user is assured that the report is complete.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
12.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Report Anticipation Check		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Report recipients should be advised when to expect reports, and then initiate controls to anticipate that receipt. If the report is not received within a reasonable period of time, investigation should be undertaken to determine the status of the report.		
IMPLEMENTATION SUGGESTIONS	Anticipation checks can be performed by providing clerical personnel with a listing of expected reports and the expected time. If the report is not received within a specified period of time after the expected receipt, investigation is undertaken.		
FEEDBACK EVIDENCE	Feedback information should indicate what reports are not received at the expected time.		
ADVANTAGES OF CONTROL	The advantage is that misdirected reports or late reports can be identified quickly by the user and the user can attempt to remedy the situation quickly.		
DISADVANTAGES OF CONTROL	Anticipation reports are only valuable when reports are needed to specific points in time.		

Ref.#
12.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Printer Accuracy Test		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Prior to beginning operations on a computer printer, the accuracy of computer printing should be checked. The objective is to determine whether there is a mechanical problem with the printer.		
IMPLEMENTATION SUGGESTIONS	Some printers contain automatic test patterns, while others require a special program to be run that tests each print position for each character. The results of the test should be readily apparent to the printer operator.		
FEEDBACK EVIDENCE	Feedback information should identify situations in which the printer has malfunctioned.		
ADVANTAGES OF CONTROL	The advantage is that printer problems will be identified prior to printing reports.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort to conduct the test.		

Ref.# 12.7.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Report Description		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Each report should include a detailed description of the material included in the report. At a minimum, this is the name of the report, but ideally it would be extensive description of the type of material in the report. If only a single user uses the report, an extensive description is not needed; however, if casual users use it, then more descriptive information is valuable.</p>		
IMPLEMENTATION SUGGESTIONS	<p>A page can be added to the beginning of a report which provides several paragraphs of narrative description describing the report. This would include such information as the source of the data, the reliability of the data, what is included and excluded, potential problems in interpretation, who to contact to ask questions, etc.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate problems in interpreting the report description and/or misinterpretations as to what is in the report.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that the user of the report will have a clear understanding of the meaning and reliability of the content of the report.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to prepare the report description.</p>		

Ref.# 12.7.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Processing Period Covered		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The processing period covered by the report indicates the starting and stopping date of the data presented in the report. For example, the report may indicate all the data in a particular month, week, or other accounting period.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems analyst should determine the period covered by the report and indicate that date on the report itself.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate discrepancies between the data in the report and the indicated periods of inclusion of that data.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that it identifies for the user what data is included in the report.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.#
12.7.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Output Report Labeling		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Reports should be clearly labeled as to whom is to receive the report, the location of that individual, and the security classification if the report is classified. This information should be prominently located on the report so it is easy to identify the report recipient.		
IMPLEMENTATION SUGGESTIONS	Systems personnel should develop standardized procedures for the labeling of output reports. Normally, this would be done on the first page of the report, which could then be detached and discarded after the recipient receives the report.		
FEEDBACK EVIDENCE	Feedback information should indicate misdeliveries of reports.		
ADVANTAGES OF CONTROL	The advantage of report identification is reducing losing reports because they are unidentifiable, or delivering them to the wrong recipient.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
12.7.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Report Preparation Date		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	The report preparation date is the date on which the report was prepared. The objective is to provide identification on the report of the date processed by operations.		
IMPLEMENTATION SUGGESTIONS	The preparation date can be put on the page identifying the recipient of the report. This will avoid having the preparation date throughout the report, as it may not be meaningful to the data within the report.		
FEEDBACK EVIDENCE	Feedback information should indicate problems associated with the preparation date, such as it being prepared early or late.		
ADVANTAGES OF CONTROL	The advantage of having the preparation date on the report is to positively identify the date it was prepared.		
DISADVANTAGES OF CONTROL	The disadvantage may be that the preparation date is meaningless.		

Ref.#
12.7.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Transmission Labeling		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	Transmissions should be labeled to indicate who is to receive the transmission. This provides positive identification of the final destination of the transmission.		
IMPLEMENTATION SUGGESTIONS	In manual systems, the labeling can be done on envelopes, while in automated transmission the label is frequently the first part of the transmitted message.		
FEEDBACK EVIDENCE	Feedback should indicate transmissions that are not received, misaddressed, transmissions, and other transmission labeling problems.		
ADVANTAGES OF CONTROL	The advantage of transmission labeling is to provide a positive identification as to who is to receive the transmission.		
DISADVANTAGES OF CONTROL	The disadvantage of transmission labeling is that it identifies for unauthorized sources who is receiving the transmission, plus the time and effort required to create and process the labeling information.		

Ref.#
12.7.D.P

CONTROL DESCRIPTION

NAME OF CONTROL	Report Frequency Code		
GENERIC CATEGORY Identify	USAGE ACTIVITY Output	STRENGTH Minimal Value	CONTROL TYPE Preventive
DESCRIPTION	Report frequency code is a code in a report that indicates how frequently the report is prepared. This frequency code can indicate it is an annual report, monthly, weekly, daily, or the hour of the day it is printed.		
IMPLEMENTATION SUGGESTIONS	The frequency code can be a code on the sheet identifying the recipient of the report so that it does not need to be included on every page of the report.		
FEEDBACK EVIDENCE	Feedback information should indicate errors in the frequency code.		
ADVANTAGES OF CONTROL	The advantage is that the recipient will know how frequently the report is prepared.		
DISADVANTAGES OF CONTROL	The disadvantage is that the frequency of a report may not always be known.		

Ref.#
12.8.A.C

CONTROL DESCRIPTION

NAME OF CONTROL	Override Log		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Very Strong	CONTROL TYPE Corrective
DESCRIPTION	A log should be maintained of normal processing conditions that are overridden by the users of the system. This override log should list the normal condition, and the condition actually processed as a result of the override.		
IMPLEMENTATION SUGGESTIONS	Whenever override conditions are permitted in an application system, provision should be made to record that override on a log.		
FEEDBACK EVIDENCE	Feedback information would identify the frequency and types of override conditions. Financial applications should summarize the financial implications of the override.		
ADVANTAGES OF CONTROL	The advantage is of an override log is to permit review of the types of normal conditions that are being overridden.		
DISADVANTAGES OF CONTROL	The disadvantage of the override log is the time and effort required to develop, maintain, and review the information produced.		

Ref.# 12.8.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Report Transaction Inclusion List		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>The listing identifies all of the transactions that were used in preparing the report. This list can include transaction types, sources of transactions, and other information that explains the source of data gong into the report.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems analyst and programmers should compile a listing of all the transactions going into each application system report. This list would provide sufficient descriptive information so that the transactions and their source are identifiable.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate sources not included in this list, and problems in using the list.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the user of the report will know the source of the information that went into the report.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the information contained in the transactions and the identification of the transactions may be too technical to be useful for the user of the report.</p>		

Ref.# 12.8.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Audit Trail Pointers		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Audit trail pointers are indicators that interrelate audit trail information. For example, a merchandise credit issued to a customer should have a pointer to the original invoice.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems designers and users should identify the interrelationships between audit trail records. Where these interrelationships occur, pointers should exist leading individuals to other needed audit trail information.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate breaks in audit trails, which represent additional pointers needed.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of audit trail pointers is to close audit trail gaps.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the process is complex and the trail may not be needed frequently.</p>		

Ref.# 12.8.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Error Suspense File Analysis Report		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Difficult-to-correct transactions may remain on the suspense file for extended periods of time. Periodic analysis of this file, together with reports indicating the results of those analyses, involves supervision in clearing uncleared transactions.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The process of analyzing the suspense files can be created over an extended period of time through analysis of difficult-to-correct conditions. The analysis should be performed on a regular basis, monthly is usually sufficient, and then transmitted to supervision for review and action.</p>		
FEEDBACK EVIDENCE	<p>The suspense analysis report is the feedback needed from this control.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of suspense analysis is to clear the file of old transactions.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that investigation might be initiated for transactions which, in fact, take a long time to correct.</p>		

Ref.# 12.8.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Continuous Negative Confirmation		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>A negative confirmation is a statement put on a report inviting the user to identify incorrect conditions. The statement usually indicates who the user should contact if the user does not believe the values contained on the report are correct.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The individual to be contacted should be independent of the group responsible for the report. In many organizations, the internal auditors are named as the contact. This confirmation is printed on every output form so that the user is continuously aware of who to contact in the event of problems.</p>		
FEEDBACK EVIDENCE	<p>The feedback information is the response back from the recipients of the negative confirmation.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the rapid identification problems.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that the contact may be contacted for many situations that are not error conditions but, rather, requesting information not available to the contact.</p>		

Ref.#
12.8.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Report Sensitivity Code		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	A sensitivity code indicates the importance of the integrity of the report. This importance can be due to the fact that it is going to a governmental regulatory agency, or that it is going to a senior level of management. An error in the report could result in some adverse action.		
IMPLEMENTATION SUGGESTIONS	Users should identify sensitive, or highly visible, reports so that they can receive extra scanning prior to delivery.		
FEEDBACK EVIDENCE	Feedback information should identify situations in which highly visible, or sensitive, reports contain errors.		
ADVANTAGES OF CONTROL	The advantage of using the sensitivity code is to identify errors before sending the report to a group or individual to whom it is undesirable to have detect an error.		
DISADVANTAGES OF CONTROL	The disadvantage is the extra time and effort required to scan these reports.		

Ref.# 12.8.C.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Exception Reporting		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>Exception reporting can be used to identify situations requiring action. The alternative is to list all events and let people search for the condition requiring action.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Systems designers and users should identify those conditions where action is required. Reports can then be prepared listing only the exceptions, or conditions requiring action. The user of the report assumes that if something is not listed it is correct.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations requiring action where the condition was not reported on exception reports.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of exception reporting is a reduction in the size of reports, and the easy identification of errors requiring action.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of exception reporting is that the user cannot examine all conditions.</p>		

Ref.#
12.8.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Report Use Confirmation		
GENERIC CATEGORY Identify	USAGE ACTIVITY Use of Data	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	Periodically, users of reports should be sent a letter confirming whether or not they use reports. The reports identified as not needed should be eliminated.		
IMPLEMENTATION SUGGESTIONS	A written confirmation can be duplicated and attached periodically to all of the reports. The confirmation can either be positive, in other words the user must indicate that they wan the report continued, or negative in that the report will be continued unless they indicate otherwise.		
FEEDBACK EVIDENCE	Feedback information should indicate the number and types of reports eliminated through the confirmation process.		
ADVANTAGES OF CONTROL	The advantage is the elimination of unneeded reports, and the associated cost to product those reports.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 12.9.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Management Problem Analysis		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>A summary of the type of problems occurring throughout application systems should be summarized and presented to senior management. The objective of the report is to alert senior management to the type of problems that are occurring, and to recommend to them corrective action requirement their support.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Management summary reports should be prepared by a control group, if there is such a group, or otherwise by data processing administration.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the value of the report to senior management, and areas where information could be added or deleted to increase the value of the report.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a management summary report is to identify and alert them to the type and frequency of problems occurring with application systems.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to prepare the report versus the contribution that management can take in initiating corrective action that could not be done without the report.</p>		

Ref.# 12.9.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Dating		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Transactions should contain the date of their organization. This provides positive proof as to the date when the transaction was entered into the application system.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Transaction dating should be an automatic process of the application system. The date stored in computer memory should be inserted into the transactions.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should provide statistical information relating to dating. This would include such information as the average number of days to process the transaction, the range of processing dates, stratification of processing dates, etc.</p>		
ADVANTAGES OF CONTROL	<p>The dating of transactions provides management with an overview of the amount of time required to perform tasks.</p>		
DISADVANTAGES OF CONTROL	<p>Additional storage space and time is required to enter and maintain the date transactions were entered.</p>		

Ref.# 12.9.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Reason Codes		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	Reason codes indicate the reason that a particular event occurred. The objective of using a reason code is to analyze the cause of selected events. For example, reason codes may be included for product returns, credits issued to customers, employee overtime, budget overruns, etc.		
IMPLEMENTATION SUGGESTIONS	Users and management need to identify those events for which they would like an analysis of the reasons for that event occurring. Procedures must then be established to record those reason codes into the transactions entering the events into the application system.		
FEEDBACK EVIDENCE	Feedback information is the frequency and reason for those events occurring.		
ADVANTAGES OF CONTROL	The advantage of reason codes is that it provides management with an excellent analytical tool for evaluating causes of events.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to develop, implement, and analyze the reason codes.		

Ref.# 12.9.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Surprise Audits		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Periodically, areas should be reviewed without advance notice. These reviews should be performed by somebody independent of the area being reviewed. Ideally it will be done by auditors, but may also be done by members of management.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Independent audits are designed to evaluate compliance to procedures, the adequacy of controls, plus the accuracy and completeness of data. Audits also can assess the efficiency, economy, and effectiveness of an operation and in some instances the value of continuing the operation.</p>		
FEEDBACK EVIDENCE	<p>The reports prepared as a result of the audit are the feedback information.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a surprise audit is to assess the operation as it is being performed on a day-to-day basis without any extra effort required to clean up loose ends or make operations look better than they normally would be.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of a surprise audit is the interruption to operations caused by the extra effort required to satisfy auditor requests and the concern over what the audit may find.</p>		

Ref.# 12.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Error-Handling Accountability		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Individuals should be made accountable for each type of error that can occur in an application system. Some individuals may be responsible to correct several types of errors, but when an error occurs it will be known to all concerned who is accountable for the correction.</p>		
IMPLEMENTATION SUGGESTIONS	<p>As each error message is created, an individual and/or position should be made accountable for the correction of that error. The individual may not actually correct the error, but is accountable for the correction. Ideally, procedures are established explaining how to correct each type of error.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and types of errors occurring by accountable individuals. If possible, the number of hours or days to process would be a valuable feedback addition.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of error-handling accountability is that all parties know who is responsible for error correction. If questions need to be answered, the individual accountable is known.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Error Description Reports		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Detected errors should be documented and a report of detected errors disseminated to the individual accountable for correction. This log can frequently be used as a worksheet or control log by the individual responsible for the error corrections.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The format of the report listing the errors should be prepared during the development of the application system. The user should be involved to determine the types of information valuable in controlling and correcting errors.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should list the types and frequency of errors detected. These will be errors listed on the error report.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of error reporting is the formal documentation of the error conditions.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of error reporting is the time and effort required to formalize the reporting methods.</p>		

Ref.# 12.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Override Code		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Special codes should be required to override the normal processing rules of an application system. These codes should identify the individual causing the override to occur.</p>		
IMPLEMENTATION SUGGESTIONS	<p>During systems development, the procedure should be developed to control the use of system overrides. A special code identifying the override normally serves this purpose.</p>		
FEEDBACK EVIDENCE	<p>Regular reports should be issued summarizing the frequency and types of override uses in the application system.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of using an override code is to develop a formal method for overriding application system rules.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Error Suspense Listings		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Periodically the errors contained on the error suspense file should be listed in an error suspense report. The objective of this report is to analyze the types of errors occurring and the length of time they have been on the suspense file.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Procedures should be established to periodically print out the error suspense file. In an automated system, this is accomplished by a report writing program, while in a manual system, it is a typed listing of the errors in the file.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the findings uncovered by analyzing this file, and the use and benefits obtained from printing the file.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of printing the error suspense file is to provide supervision with an overview of the types of errors on the file.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to develop, print, and use the report.</p>		

Ref.# 12.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Error Sequencing		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Error sequencing is the assignment of sequence numbers to each error message. The objective of sequencing is to aid in accounting and identification of error messages.</p>		
IMPLEMENTATION SUGGESTIONS	<p>In automated error suspense files, the sequence number can be added automatically by the routine that enters the error message. In manual error logs, the sequence number can be added using a sequence number control sheet.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the unaccounted for error messages. These are the messages that have not been corrected within a predetermined amount of time.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of error message sequencing is to account for messages, and to provide an easy identifier for the messages.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of error message sequencing is the time an effort required to add the sequence number.</p>		

Ref.# 12.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Removal Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>When documents or materials are removed from a restricted area, the individual removing them should sign a document so indicating. This document becomes the evidence of who has the information; it also indicates the information is not available in the contained area.</p>		
IMPLEMENTATION SUGGESTIONS	<p>When restricted areas are designed to store information and materials, a sign-out procedure should be developed for that area. The two methods most commonly used are sign-out cards, usually three by five cards, or sign-out on a log. When the document or material is returned, it should be so indicated on the log.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and type of documents removed, who is removing the documents, for how long they are removed, and problems identified with document material removals.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a sign-out procedure is identifying what documents are out and who has them.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Splitting Identifier		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Transaction splitting identifier associates multiple transactions that have been created from a single transaction. The objective of this identifier is to show the source from which transactions originated.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Transaction splitting identifiers normally are the identification associated with the parent transaction.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate problems in tracing split transactions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the audit trail provided when transactions are provided.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to carry the splitting identifier.</p>		

Ref.# 12.9.A.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Financial Chart of Account Identifiers		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>Financial records can contain an identifier which associates that record with one of the accounts in the organization's chart of accounts. This enables a financial audit trail to be established through the computerized applications permitting the tracing from source document through the general ledger and from the general ledger back through source documents.</p>		
IMPLEMENTATION SUGGESTIONS	<p>All source transactions, and computer-generated transactions, that contain financial information must be identified with the appropriate chart of accounts. In some instances, a single transaction will result in posting to multiple accounts. All of the accounts affected must be carried with the transaction.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the chart of account is not appropriately identified, or there is difficulty in identifying the involved accounts.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the chart of account identifier is providing a complete financial audit trail.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to design and implement the inclusion of the chart of account number with source transactions.</p>		

Ref.# 12.9.B.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Error Correction Reason Code		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>When errors are corrected, a reason code for error should be prepared. The objective of the reason code is to categorize the source of errors for analysis purposes.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users, systems analysts, and operation personnel should jointly develop a listing of the reasons why errors occur. These codes should then be included with error correction and analyzed for analysis at a later time.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and causes of errors in the organization. Also, it would be valuable if a value, such as days processing is delayed, amount of product lost, etc. could also be included to add meaning to the significance of the errors.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an error reason code is to aid in the analysis of problems so that procedures can be improved.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to code the errors and produce the needed reports.</p>		

Ref.# 12.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Risk Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Risks inherent in an application system should be identified.		
IMPLEMENTATION SUGGESTIONS	A team of knowledgeable people very early in the system development should attempt to identify the type of risks inherent in the system.		
FEEDBACK EVIDENCE	Feedback information on losses and problems should indicate whether or not the appropriate risks have been identified.		
ADVANTAGES OF CONTROL	The advantage of risk identification is so that controls can be designed based on the risks.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 12.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Program Version Number		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Programs should carry a version number. This identifies each variation of the program.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The version number permits several variations of the program to be on the object program library, and the source program library. It also facilitates the movement of different versions into production library and into operation.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate problems associated with version number.</p>		
ADVANTAGES OF CONTROL	<p>Version numbers allow different variations of the same program to be uniquely identified.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Systems Disaster Plan		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>The disaster plan describes how the distributed system can protect itself from extraordinary circumstances and losses. Disaster plans normally identify the risks, determine the significance of those risks, and then develop a distributed system strategy for dealing with those risks. The strategy becomes the disaster plan.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The disaster plan should be developed by the distributed systems committee or by a technical task force organized by that committee. The key elements of the disaster plan are the identification and the strategy for dealing with significant risks. The actual implementation of the disaster plan, including the procedures, backup, and needed software, can be developed by the lead node staff or other technical individuals.</p>		
FEEDBACK EVIDENCE	<p>Disaster procedures outlining the types of problems to be dealt with in a disaster plan, together with the methods for dealing with those risks. Evidence should exist that the disaster plan has been tested; if not, a test should be requested.</p>		
ADVANTAGES OF CONTROL	<p>When disasters occur, it is too late to plan; planning must occur before the problem or the needed resources to get back into operation may not be available.</p>		
DISADVANTAGES OF CONTROL	<p>None, however, the resources allocated to the disaster plan should be consistent with the magnitude of the risk.</p>		

Ref.# 12.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Supportive Error Message Information		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>If additional information is pertinent to the correction of an error, it should be printed with the error information. For example, if a pricing error needs pricing information, that should be obtained from the pricing master and printed out with the error message.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems designer and the user should determine at the time the error message is designed what type of information is needed to make the corrections and then take those steps necessary to get and print that information with the error message.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify how helpful the supporting information is, together with other information that may be needed.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that the individual responsible for correcting the error has all the information in one place at one time.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to gather and print the supporting information.</p>		

Ref.# 12.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Error Alert Report		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Error alerts reports describe an error condition, its cause, and recommended corrective action. The error alert is designed to prevent the same type of error from recurring in many application systems.</p>		
IMPLEMENTATION SUGGESTIONS	<p>When an error is encountered that may be common to many applications, it forms the basis for an error alert. The individual who corrects the error describes the error condition, how it was detected, what caused the error, and what actions should be taken to both correct the error and to prevent it from occurring in other application systems.</p>		
FEEDBACK EVIDENCE	<p>Feedback should identify the value of the error alert program.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the error alert is in avoiding repetition of errors which could be prevented.</p>		
DISADVANTAGES OF CONTROL	<p>None, unless the volume of error alerts becomes too great.</p>		

Ref.# 12.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Expiration Dating		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>If the date for which a policy, procedure, manual, program, etc. becomes obsolete is known, that expiration date should be appended to that document or media. Having the expiration date identifies the document information as obsolete.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The individual responsible for preparing the procedure, policy, or information should identify the expiration date of that information if known. The group responsible for dissemination of the policy, procedure, or information should prominently indicate the expiration date on the information.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems with obsolete documents that are not so identified.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of placing an expiration date on information is so that people will not use obsolete information.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Procedure Page Dating		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Procedures should contain the date in which those procedures became effective. Thus, if new procedures supersede the old, the dating will readily tell which is new and which is the old procedure.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The group responsible for the duplication and distribution of procedures should include the effective date on each page of the procedure.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify undated procedures.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of dating procedures is so that the user of the procedure will know the date on which it was developed.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Transmittal Document		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>A transmittal document should accompany the movement of transactions to identify the transactions being transmitted. This is particularly important when the data is contained on computer media.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The transmittal document should be designed at the time the decision is made to move transactions from one location to another. The document identifies the batch, where it is from, and where it is going.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify missing transmittal documents.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of transmittal documents is the easy identification of the transactions being transmitted.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is unauthorized individuals will know what is being transmitted plus the time and effort required to prepare the transmittal documents.</p>		

Ref.# 12.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Problem Anticipation Notification		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Many potential problem conditions are known in advance. For example, when prices change, when new programs are put into production, and when new people are on the job new problems can occur. If these are identified and people alerted, many of the problems can be caught and corrected before loss occurs.</p>		
IMPLEMENTATION SUGGESTIONS	<p>A problem anticipation form should be prepared and given to the people who instigate change. These people should then complete the form outlining any anticipated problems, even if there are general in nature. The people who scan documents should be made aware of these potential problems and include the identification of these problems in their scanning process.</p>		
FEEDBACK EVIDENCE	<p>Reports should be prepared of all problems to determine whether or not they could have been anticipated. If categories of problems are unanticipated, procedures should be taken to require the people initiating the change that caused the problem to prepare the problem anticipation form.</p>		
ADVANTAGES OF CONTROL	<p>Anticipation controls alert people to potential problems that enable them to stop them before losses occur.</p>		
DISADVANTAGES OF CONTROL	<p>Anticipation controls cause people to spend time and effort and worry looking for problems that may never occur.</p>		

Ref.# 12.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Capacity Planning		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Processing facilities are established to satisfy the processing needs of users of the system. Users' needs change continuously, and unless those needs are monitored inadequate or too much capacity may result from the lack of planning. In distributed systems, capacity planning involves all of the sites in the network as well as the capabilities to move capacity between sites.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Manuals and software can be acquired to assist in capacity planning. The need is common to most processing units which has resulted in numerous standardized approaches for estimating capacity.</p>		
FEEDBACK EVIDENCE	<p>Documentation of assignment of capacity planning responsibilities to an individual together with the documented results of capacity planning. Indications of inability to satisfy processing needs, or evidence of excessive capacity are indications that the capacity planning process is inadequate.</p>		
ADVANTAGES OF CONTROL	<p>The ability to sustain processing through the availability of adequate processing capacity.</p>		
DISADVANTAGES OF CONTROL	<p>If user processing requirements cannot be acquired with a reasonable degree of precision, the planning process cannot produce usable capacity estimates.</p>		

Ref.# 12.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Computer-Generated Record Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Computer-generated records should contain the identification of the source and date of the transaction. The objective is to identify when and where the transaction was generated so that the events causing the transaction to be generated can be more readily identified.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The source of the computer-generated transaction is normally a computer program number; however, if it can be traced to a specific event, that, too, should be included in the identification. In addition, the date the transaction was generated should be included.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems in tracing the source of computer-generated transactions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the computer-generated transaction identifier is to provide an audit trail link to when, where, and why the transaction was generated.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to carry the identifier with the transaction.</p>		

Ref.# 12.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Consolidation Identifiers		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>When a single record is created from multiple records, that new record should contain the identifiers of the records used to create it.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The consolidation identifiers are normally the identification of all of the records which were combined to create the single record. The objective is to provide an audit trail where records are consolidated.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems associated with identifying the source records for consolidation and problems in following consolidation.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of identifying source records is the ability to trace processing.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to carry all of the source identifiers in a consolidated record.</p>		

Ref.# 12.9.A.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Program Identification		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Programs should be uniquely identified so that there is no misinterpretation as to the identity of a program.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations personnel, in conjunction with systems analysts, should design a program numbering system. All program libraries and compilers should use this number as the control mechanism.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify unnumbered programs and program numbering problems.</p>		
ADVANTAGES OF CONTROL	<p>Providing programs with the unique identification enables them to be readily identified.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 12.9.C.P/D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Folio Number		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>Transaction folio numbers are record identifiers that can be used to trace transactions through multiple application systems. The identifier is unique for the organization so that not two transactions in the organization will have the same folio number.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The types of identifiers that could be contained in the folio number include system number, record number, source of entry, date and time of entry, and individual accountable for the transaction.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems in finding and identifying transactions. Feedback should also indicate the use being made of the folio number.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that each transaction in the organization is uniquely identified and can be traced through multiple application systems.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to design, implement, and use the folio number.</p>		

Ref.# 12.9.C.P/D

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Systems Master Schedule		
GENERIC CATEGORY Identify	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive Detective
DESCRIPTION	<p>The master schedule describes all of the system events that need to occur to ensure the effective and efficient operation of the distributed systems. Types of items included on the master schedule would be dates at which sites come on-line, dates to upgrade or add software capabilities, dates to upgrade or change hardware, meeting dates for distributed systems committees.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The distributed systems steering committee should maintain responsibility for the master calendar. The lead node staff and other involved parties should submit for inclusion on the master calendar those items that affect the operation and administration of the distributed system.</p>		
FEEDBACK EVIDENCE	<p>The master schedule and its distribution list.</p>		
ADVANTAGES OF CONTROL	<p>Having a master schedule for distributed systems aids in the coordination of a loosely controlled network of sites. The effectiveness of the master schedule is dependent upon the completeness of the information contained in the calendar.</p>		
DISADVANTAGES OF CONTROL	<p>Formalization of a process that may better be done informally.</p>		

Ref.# 13.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Financial Analysis Simulation		
GENERIC CATEGORY Simulate	USAGE ACTIVITY Limit	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Financial analysis techniques can be used to simulate actual processing. This control technique uses ratios and percentages to simulate the actual results of processing. This simulated result is then compared to the actual result, and differences investigated.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Financial analysis utilizes historical ratios and percentages. For example, an organization may know that product line X will cost approximately 75% of sales. Therefore, if on a \$100,000 sales the cost of product X varies significantly from \$75,000 (i.e., \$100,000 times .75) that warrants additional investigation.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the noted variance between the simulated amount and the actual amount.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of financial analysis simulation is that it provides an independent measure of the adequacy of actual financial results.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the variables that may cause the historical percentage to deviate over time, thus causing unnecessary investigation.</p>		

Ref.# 13.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Parallel Simulation		
GENERIC CATEGORY Simulate	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Parallel simulation is routine that simulates actual processing. The simulations run in parallel to the actual processing. In other words, the data is processed twice. However, the simulated processing need not be as complex as the actual processing because the control is only attempting to approximate actual processing through parallel simulation.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Parallel simulation normally involves high-risk computational areas, such as FICA payroll deductions and savings account interest. A routine is developed that simulates actual processing, and then all of the actual transactions are run through simulated routine. The simulated results are compared to the actual results and significant variances investigated.</p>		
FEEDBACK EVIDENCE	<p>The feedback information is the results produced by the simulated process.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of parallel simulation is to provide increased assurance that the actual routines are functioning properly.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop, implement, and operate the parallel routines.</p>		

Ref.#
14.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Monitoring Accounting Controls		
GENERIC CATEGORY Observe	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	The control totals provided by application systems should be monitored by supervision. This puts people with a good understanding of a system in a position to identify unusual or questionable circumstances.		
IMPLEMENTATION SUGGESTIONS	This control can be performed by routing copies of accounting control information to supervisors accountable for the area.		
FEEDBACK EVIDENCE	Feedback information should identify areas where the report is deficient, or areas of needed improvements.		
ADVANTAGES OF CONTROL	The advantage of monitoring accounting controls is the direct involvement of supervision.		
DISADVANTAGES OF CONTROL	None.		

Ref.#
14.8.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Dump		
GENERIC CATEGORY Observe	USAGE ACTIVITY Use of Data	STRENGTH Minimal Value	CONTROL TYPE Detective
DESCRIPTION	Transaction dumping is the listing of all of one type transactions, or all transactions for a specific time period. The objective of dumping is to provide supervision with the opportunity to observe the type of processing that is occurring.		
IMPLEMENTATION SUGGESTIONS	Supervision should determine the type of transactions they wish to examine. The systems analysts should dump the transactions in a readable and usable format.		
FEEDBACK EVIDENCE	Feedback information should indicate the types of problems uncovered by examining the transaction dump.		
ADVANTAGES OF CONTROL	The advantage of a transaction dump is that it gives supervision an opportunity to concentrate their efforts on a specific type of transaction.		
DISADVANTAGES OF CONTROL	The disadvantage is that it is a very technical, tedious, and time-consuming task and without some inclination of the problem, the time may not be productive.		

Ref.#
14.9.CC

CONTROL DESCRIPTION

NAME OF CONTROL	Monitoring Error Processing		
GENERIC CATEGORY Observe	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	Supervision should overview the error analysis and reentry process. This critical aspect of computer processing needs to be handled accurately, completely, and on a timely basis.		
IMPLEMENTATION SUGGESTIONS	Special reports should be prepared for supervision to provide the information needed to monitor error processing. The type of information needed is primarily status of error handling and status of handling by individuals accountable for error correction.		
FEEDBACK EVIDENCE	Feedback information should identify the value of existing control information and the types of information needed by supervision to monitor error processing more effectively.		
ADVANTAGES OF CONTROL	The advantage of monitoring errors is the involvement of supervision in the error analysis and correction process.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 14.9.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Documentation Reviews		
GENERIC CATEGORY Observe	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Periodically, the adequacy of application system documentation should be reviewed. This includes system, program, operator, user, and control documentation.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The documentation should be reviewed by an individual sufficiently skilled in what is good documentation and knowledgeable in the application system.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify weaknesses in documentation as well as areas where there is too much or ineffective documentation.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of documentation reviews is the increased assurance of the adequacy and currency of documentation.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of documentation review is the time and effort required to conduct the review.</p>		

Ref.# 14.9.C.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Process Flow Monitoring		
GENERIC CATEGORY Observe	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>Process flow monitoring follows the flow of processing from the origination of transactions through use of output. This control is most valuable in following the flow of very important transactions, while following batches of transactions.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users and systems personnel should identify the event whose flow warrants monitoring. The users should then determine at what points during the processing flow it would be important to monitor processing. At these points, feedback mechanisms are established to report processing has reached that point.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the flow of processing as it progresses through the processing cycle.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that the user can monitor the flow and take corrective action should delays occur during the processing cycle.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to build, implement, and use the monitoring facility.</p>		

Ref.# 14.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Observed Terminal Usage		
GENERIC CATEGORY Observe	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Observed terminal usage is having a member of supervision observe who is using the terminal and being advised as to the purpose of usage. The supervisor has the responsibility to challenge unauthorized operators or unauthorized usage of the terminal.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Terminals should be located in areas that facilitate observation by supervision. This can be accomplished by providing supervisors with a direct view of the terminal, or place the terminal in a position that users must pass by a supervisor's place of work to use the terminal. In addition, supervisors should periodically review the work being performed on the terminal.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should be provided by the supervisor as to who is using the terminal and for what purposes. Questionable uses should be investigated by the supervisor.</p>		
ADVANTAGES OF CONTROL	<p>Observed terminals make it difficult for unauthorized people to gain undetected access to the terminal.</p>		
DISADVANTAGES OF CONTROL	<p>Observing a terminal puts a supervisor in a policeman-type role, requiring them to enforce procedures and challenge people's authority to use organization resources.</p>		

Ref.# 14.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Observed Computer Operations		
GENERIC CATEGORY Observe	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>A single operator should not be allowed to work unobserved in a computer room. As a minimum, two operators should be in attendance, and ideally there will be a supervisor observing operations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operation management should establish the necessary procedures to prohibit a single individual from working unobserved in the computer room. Having the second operator or supervisor in attendance diminishes the temptation for computer abuse.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations where a single operator utilized the computer individually.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of having a second person present during operations is to make unauthorized acts require the cooperation of that second person.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage may be the cost of a second operator if the second operator is not needed to complete the available work.</p>		

Ref.# 15.2.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Data Entry Equipment		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Any mechanical process is subject to failure. Providing redundant backup equipment enables the application system to stay operational even though some of the equipment is not functioning.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The importance of the application system must be evaluated and if reasonable periods of down time cannot be tolerated, backup equipment should be obtained.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should record the frequency and amount of time the equipment is not in operation. The report should also indicate whether or not backup equipment is used, and if so how effectively it functions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of redundant equipment is that operations can continue in the event of equipment failure.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of backup equipment is the added cost if the equipment is leased or purchased, or the obligation associated with mutual backup agreements with other organizations.</p>		

Ref.#
15.2.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Key Verification		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Entry	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	Key verification is keying the same data twice during two different operations. The data is first entered and transcribed onto computer media and then entered again, at which time the second entry of data is compared to what was entered first. Any differences cause error indications.		
IMPLEMENTATION SUGGESTIONS	Key verification should be performed when the accuracy of data necessitates a second keying operation. Systems designers can key verify selectively, picking the important fields and not key verifying the less important fields.		
FEEDBACK EVIDENCE	Feedback data should be maintained on the number of errors not corrected through the lack of key verification or not corrected through key verification. This information can be used to improve the accuracy of entered information.		
ADVANTAGES OF CONTROL	Key verification normally substantially improves the accuracy of keyed data. It is normally not effective when the more senior operators are assigned the key verification duties.		
DISADVANTAGES OF CONTROL	Key verification doubles the effort required to enter data.		

Ref.# 15.2.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Data Entry		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Redundant data entry is the recording of data twice on different media. The data on the two media can then be compared to determine if an error has occurred. For example, data entered at a terminal location may be recorded on a disk at the terminal and at the same time transmitted to the central location for recording on another disk.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Redundant recording is most effective when done at a terminal transmitting to a central location. It should be considered when it is extremely important that mechanical errors do not occur.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and types of mechanical errors that occur during the comparison of the recorded information.</p>		
ADVANTAGES OF CONTROL	<p>Redundant recording should substantially reduce errors due to mechanical or electronic failures.</p>		
DISADVANTAGES OF CONTROL	<p>Redundant recording requires extra processing time to compare the recorded information.</p>		

Ref.# 15.2.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Entry of Data Elements		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Very important data elements can be entered twice in an effort to increase the accuracy of entered data. This is a substitute for key verification. However, it has the advantage of letting one operator perform both functions.</p>		
IMPLEMENTATION SUGGESTIONS	<p>If the rhythm of the key entry operator is not broken, the data element entered twice should not be entered concurrently. The redundantly entered data element may be entered the second time when all other data for the transaction has been entered.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should maintain statistics on the frequency and type of errors occurring in redundantly entered data elements.</p>		
ADVANTAGES OF CONTROL	<p>The redundant entry of data elements improves accuracy of key fields without requiring a second data entry operator and process.</p>		
DISADVANTAGES OF CONTROL	<p>Redundant entry of data doubles the cost of entry of that data element.</p>		

Ref.#
15.3.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Communication Equipment		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	Any mechanical process is subject to failure. Providing redundant backup equipment enables the application system to stay operational even though some of the equipment is not functioning.		
IMPLEMENTATION SUGGESTIONS	The importance of the application system must be evaluated and if reasonable periods of down time cannot be tolerated, backup equipment should be obtained.		
FEEDBACK EVIDENCE	Feedback information should record the frequency and amount of time the equipment is not in operation. The report should also indicate whether or not backup equipment is used, and if so how effectively it functions.		
ADVANTAGES OF CONTROL	The advantage of redundant equipment is that operations can continue in the event of equipment failure.		
DISADVANTAGES OF CONTROL	The disadvantage of backup equipment is the added cost if the equipment is leased or purchased, or the obligation associated with mutual backup agreements with other organizations.		

Ref.# 15.4.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Process Equipment		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Any mechanical process is subject to failure. Providing redundant backup equipment enables the application system to stay operational even though some of the equipment is not functioning.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The importance of the application system must be evaluated and if reasonable periods of down time cannot be tolerated, backup equipment should be obtained.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should record the frequency and amount of time the equipment is not in operation. The report should also indicate whether or not backup equipment is used, and if so how effectively it functions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of redundant equipment is that operations can continue in the event of equipment failure.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of backup equipment is the added cost if the equipment is leased or purchased, or the obligation associated with mutual backup agreements with other organizations.</p>		

Ref.# 15.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Dual Processing		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>In instances where the accuracy of processing is essential, the processing can be performed twice. It may be performed twice on the same equipment or on different equipment.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users should determine those segments of processing where it is essential to the organization for it to be accurate. In those instances, methods of processing the data twice should be designed and implemented.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate variances between dual processing, as well as situations where errors occur that dual processing could have eliminated.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of dual processing is the increased assurance that the processing is accurate.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to conduct the dual processing.</p>		

Ref.#
15.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Arithmetic Proofs		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Manually-generated totals and values can be recalculated and checked by automated systems. These systems validate the accuracy of computations and control totals.		
IMPLEMENTATION SUGGESTIONS	Systems designers and users need to make the determination as to whether or not it is necessary to prove arithmetic calculations. If so, routines should be developed and inserted into systems to perform these arithmetic proofs.		
FEEDBACK EVIDENCE	Feedback information should indicate the frequency and types of arithmetic errors.		
ADVANTAGES OF CONTROL	The advantage is increased assurance the amounts are correct.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required for the recalculations.		

Ref.# 15.4.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	Manual Footing and Crossfooting		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Process	STRENGTH Minimal Value	CONTROL TYPE Corrective
DESCRIPTION	<p>Computer-produced records may contain errors. To verify the mathematical integrity of the report, the arithmetic values can be footed and crossfooted. This process will verify the accuracy of computer data.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The manual footing and crossfooting is a time-consuming process and thus should be initiated only in cases where errors are suspected. For example, it might be done after a program "bug" has been uncovered.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate both instances where manual footing and crossfooting should be undertaken, and arithmetic differences uncovered through implementing the control.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of manual footing and crossfooting is the assurance that the arithmetic additions in the report are correct.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to perform the footing and crossfooting.</p>		

Ref.# 15.5.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Storage – On-Line		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Any mechanical process is subject to failure. Providing redundant backup equipment enables the application system to stay operational even though some of the equipment is not functioning.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The importance of the application system must be evaluated and if reasonable periods of down time cannot be tolerated, backup equipment should be obtained.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should record the frequency and amount of time the equipment is not in operation. The report should also indicate whether or not backup equipment is used, and if so how effectively it functions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of redundant equipment is that operations can continue in the event of equipment failure.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of backup equipment is the added cost if the equipment is leased or purchased, or the obligation associated with mutual backup agreements with other organizations.</p>		

Ref.# 15.6.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Storage – Off-Line		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Storage - Off-Line	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Any mechanical process is subject to failure. Providing redundant backup equipment enables the application system to stay operational even though some of the equipment is not functioning.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The importance of the application system must be evaluated and if reasonable periods of down time cannot be tolerated, backup equipment should be obtained.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should record the frequency and amount of time the equipment is not in operation. The report should also indicate whether or not backup equipment is used, and if so how effectively it functions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of redundant equipment is that operations can continue in the event of equipment failure.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of backup equipment is the added cost if the equipment is leased or purchased, or the obligation associated with mutual backup agreements with other organizations.</p>		

Ref.#
15.6.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Remote Data Backup		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Data Storage - Off-Line	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	Distributed site facilities should not back up their own processing data. Backup data can be stored at other sites through the redundant storage of data at that site; through direct transmission of the backup data from one sit to another; or through the duplication and physical distribution of data from one site to another.		
IMPLEMENTATION SUGGESTIONS	Backup for distributed sites should be handled uniformly through the entire network. One of the alternatives should be selected by the group, and then used by all of the group. Procedures need to be developed and monitored to ensure that adequate backup data exists. In addition, the completeness of the backup data should be periodically tested.		
FEEDBACK EVIDENCE	Documentation of the remote backup facility and records in both the backed up site and the backup site indicating what backup data is available. Inventory records should be maintained in both the backed up site and the backup site indicating what data has been stored and the length of retention for that data.		
ADVANTAGES OF CONTROL	Ability to recover processing in the event of problems. The length of time to recover will be dependent upon the frequency of backup and the speed in which the data can be moved to the backed up site.		
DISADVANTAGES OF CONTROL	The disadvantage of backup equipment is the added cost if the equipment is leased or purchased, or the obligation associated with mutual backup agreements with other organizations.		

Ref.# 15.6.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Data Control		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Data Storage - Off-Line	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>The same data may be physically located at multiple sites, and in multiple places at a single site. Controls need to be established to ensure that the data represents the same value in all locations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The control over redundant data is best done automatically by developing procedures that will identify all locations where a specific data element is locate, and update all concurrently</p>		
FEEDBACK EVIDENCE	<p>Procedures and process that both identify redundant data and ensure consistency of updating. In addition, tests should be conducted to ensure that the procedures work.</p>		
ADVANTAGES OF CONTROL	<p>Consistency and reliability of data among multiple sites.</p>		
DISADVANTAGES OF CONTROL	<p>The cost of controlling redundancy if the magnitude of the risk of inconsistent data is low.</p>		

Ref.# 15.7.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Output Equipment		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Any mechanical process is subject to failure. Providing redundant backup equipment enables the application system to stay operational even though some of the equipment is not functioning.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The importance of the application system must be evaluated and if reasonable periods of down time cannot be tolerated, backup equipment should be obtained.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should record the frequency and amount of time the equipment is not in operation. The report should also indicate whether or not backup equipment is used, and if so how effectively it functions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of redundant equipment is that operations can continue in the event of equipment failure.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of backup equipment is the added cost if the equipment is leased or purchased, or the obligation associated with mutual backup agreements with other organizations.</p>		

Ref.# 15.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Output Report Totaling		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>After output reports have been prepared in print image, they should be retotaled to verify the accuracy of the print image process. This check will determine whether or not an error was made in preparing the print image.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Most print images contain financial data in readable, not computerized, format. Therefore, it must be converted back into addable numbers to verify the control totals. This will involve the removal of decimal points and commas, and the reinsertion of negative signs, if any.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the report images were incorrect.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that errors in preparing print line images will be detected.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to perform the check.</p>		

Ref.# 15.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Dual Report Distribution		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>In instances where it is essential that the report arrive in the hands of the recipient at a specified time, the report can be sent by two different methods. The objective is to increase the probability that the report will arrive at the needed time.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The individual responsible for the delivery of the report should determine what are the two most probable methods for delivering the report. These methods should be cost-effective, but different. For example, a report may be sent by both air express and U.S. mail special delivery.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate which method of distribution is most effective, and instances where reports did not arrive at the needed time.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of dual distribution is the increased probability that the report will arrive when needed.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort required to send the material twice.</p>		

Ref.# 15.8.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Duplicate Identification Numbers		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Computer-produced sequence numbers can be added to prenumbered sequenced forms. The use of the duplicate numbers not only accounts for the forms, but accounts for the number of transactions initiated by the computer. This redundancy is a cross-check between the use of forms and computer transactions.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The user should determine where the reconciliation between forms and computer transactions is important, and in those instances systems designers can initiate routines to issue computer sequence numbers.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify missing forms, or missing computer-generated sequence numbers.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of duplicate sequence numbers is the added assurance that transactions and/or forms will not be lost.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to issue and control duplicate sequence numbers.</p>		

Ref.# 15.8.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Independent Control Total		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY Use of Data	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Users should create an independent control total to verify the integrity of computer processing. This control total should be prepared using information gained independently of the application being verified.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users and systems analysts should work jointly to determine where these independent control totals would be valuable, and then how to gather the information to accumulate the total.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify variances between computer-produced totals and independently-produced totals.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is an additional check on the integrity of computer processing.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to create and verify the independent control total.</p>		

Ref.# 15.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Processing Facility		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Separate processing facilities duplicate the capabilities available in the primary facility. The objective is to have an alternate processing facility in the event the primary facility becomes inoperative.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The duplicate facility can be the entire facility or a critical part. For example, an organization may only feel they need duplicate printers or disk drives, but do not duplicate the main processing unit. This type of analysis is a cost/benefit analysis based on the needs for the duplicate facility.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the times the redundant processing facility is used, the length of time it was used, and the cause of use.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is continuity of processing in the event of problems in the primary facility.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost of obtaining and maintaining the duplicate facility.</p>		

Ref.# 15.9.D.C

CONTROL DESCRIPTION

NAME OF CONTROL	Redundant Hardware		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY General Purpose	STRENGTH Minimal Value	CONTROL TYPE Corrective
DESCRIPTION	<p>The ability to provide processing capacity when needed is dependent upon the availability of hardware. Should the primary hardware fail or additional hardware capacity needed, the quickest method to provide needed processing capacity is through the maintenance of redundant hardware. Redundant hardware includes all of the needed features of primary hardware. The redundant hardware can be located at the same site, or at a remote site with the capability of utilizing the remote hardware when needed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The risk to each location due to the inability to process data must be assessed. The risk should be time phased showing the impact of lack of processing capability for one minute, one hour, one day, and one week. If the significance of the inability to process far exceeds the cost of redundant hardware, then redundant hardware should be acquired.</p>		
FEEDBACK EVIDENCE	<p>Specifications of both the primary and redundant hardware to ensure compatibility. In addition, the ability of the redundant hardware to function properly should be periodically tested.</p>		
ADVANTAGES OF CONTROL	<p>Redundant hardware may be the only way to recoup operations within the required time frame.</p>		
DISADVANTAGES OF CONTROL	<p>Unless the redundant hardware can be productively used by a remote site, in which case there may be no disadvantage, the disadvantage is the cost of acquiring and maintaining the redundant capability.</p>		

Ref.# 15.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Off-Site Storage		
GENERIC CATEGORY Redundancy	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Off-site storage provides an area located remotely from the primary storage site. The objective is to store sufficient information in the off-site facility so that if the primary site is destroyed the information stored off-site will be sufficient to enable operations to be recovered.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Off-site facilities ideally are in a remote location. Some organizations use storage sites located under mountains. Others use bank vaults, while still others use their own facilities located a sufficient distance from the primary site.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the usage made of off-site information, and the cause for that use.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of off-site storage is the increased assurance that operations can be recovered in the event of problems in the primary site.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort in maintaining and operating the off-site facility.</p>		

Ref.#
16.2.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Interactive Editing		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	In on-line operations, it is possible to "converse" with the terminal operator. During this process, the system can interact with the user to correct detected problems.		
IMPLEMENTATION SUGGESTIONS	Interactive editing can be performed by sending messages to the terminal, by flashing a pointer at the point of the detected error, by flashing the erroneous data on and off, by increasing the intensity of the error information, or by placing a screen behind the error information,		
FEEDBACK EVIDENCE	Feedback information should state the number of errors detected, and the numbers corrected through interactive editing. The report should also state the types and frequency of errors that could not be corrected through interactive editing.		
ADVANTAGES OF CONTROL	The advantage of interactive editing is to correct errors on the spot, and thus speed processing.		
DISADVANTAGES OF CONTROL	The disadvantage is that the operator must work through the interactive process one field at a time.		

Ref.#
16.2.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Data Entry Warning Messages		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Computer systems personnel should attempt to anticipate questionable events. When they occur, a warning message should be issued indicating a potential error.		
IMPLEMENTATION SUGGESTIONS	Systems personnel and users should jointly determine the types of transactions that are questionable.		
FEEDBACK EVIDENCE	Feedback information should present the frequency and type of warning messages issued, together with some indication as to the number that were actual errors, and those that were unnecessary warning messages.		
ADVANTAGES OF CONTROL	Warning messages alert users to potential error conditions.		
DISADVANTAGES OF CONTROL	If too many warning messages are issued, they may be ignored. In addition, the follow-up of warning messages can be a time-consuming process.		

Ref.#
16.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Process Warning Messages		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Computer systems personnel should attempt to anticipate questionable events. When they occur, a warning message should be issued indicating a potential error.		
IMPLEMENTATION SUGGESTIONS	Systems personnel and users should jointly determine the types of transactions that are questionable.		
FEEDBACK EVIDENCE	Feedback information should present the frequency and type of warning messages issued, together with some indication as to the number that were actual errors, and those that were unnecessary warning messages.		
ADVANTAGES OF CONTROL	Warning messages alert users to potential error conditions.		
DISADVANTAGES OF CONTROL	If too many warning messages are issued, they may be ignored. In addition, the follow-up of warning messages can be a time-consuming process.		

Ref.#
16 4 B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Hardware Performance Criteria		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	The proper functioning of hardware can only be determined if there is a yardstick to measure performance. The development of measurement criteria establishes a normal standard of performance, for which the performance of the hardware can be measured.		
IMPLEMENTATION SUGGESTIONS	Hardware vendors should be able to supply reasonable criteria of performance. If not, comparable processing sites may have this type of information available, as would user groups or data processing services. If no performance criteria can be located, processing goals should be established and actual performance measured against those goals.		
FEEDBACK EVIDENCE	Documentation of the criteria used to measure performance and the results of that measurement process.		
ADVANTAGES OF CONTROL	Knowledge of the level of performance being achieved by the hardware. Without this type of measurement criteria, inadequate performance may be accepted.		
DISADVANTAGES OF CONTROL	The cost of acquiring and monitoring hardware performance.		

Ref.#
16.6.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	File Disposition Report		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Storage - Off-Line	STRENGTH Minimal	CONTROL TYPE Detective
DESCRIPTION	As files are destroyed or scratched, that information should be recorded and made available to interested parties. This report would describe the name of the file and the disposition made of the file.		
IMPLEMENTATION SUGGESTIONS	File disposition reports are prepared by the individual or function responsible for disposing of files. If the file is destroyed by reusing the media for another purpose, that disposition might be automatically recorded. However, most file dispositions are recorded on a manual log.		
FEEDBACK EVIDENCE	Feedback information should identify situations where files are not available for destruction or destroyed at the wrong time.		
ADVANTAGES OF CONTROL	The advantage of the file disposition report is that it completes the audit trail indicating the disposition of the file.		
DISADVANTAGES OF CONTROL	In an organization with a large number of files, these reports may be too voluminous to be of value. However, those organizations may limit the report to the more important files.		

Ref.#
16.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Report Distribution Log		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	The report distribution log indicates what reports have been prepared and the status of their distribution. The log indicates who was to get the report, who actually received it, the time of the receipt, and the location of delivery.		
IMPLEMENTATION SUGGESTIONS	A report distribution log can be prepared by the computer or manually. If manually prepared, it is done by the individual removing the reports from the printer. If automated, it is normally the first item printed and can be used to verify that all the reports in queue have been printed.		
FEEDBACK EVIDENCE	Feedback information should indicate what reports have not been delivered, the cause, plus complaints by report recipients over delivery.		
ADVANTAGES OF CONTROL	The advantage of report distribution log is that it documents the disposition of reports.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to develop and use the log.		

Ref.# 16.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Report Distribution Confirmation		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Recipients of reports should be periodically queried regarding the type of service and value of the reports being received.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The distribution confirmation can be a form attached to the reports. Periodically, this form can be added, requesting recipients' comments. The form should have as many multiple-choice questions and as little narrative as possible.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the reports coming back from the recipients.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the confirmation is input from the recipient of the report regarding the value of the service and the usability of the report. Comments could include cleanliness of reports, proper size, method of binding, delivery pouch, etc.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to complete the forms versus the ability to make the requested change. If the DP Department is in the position to make the change, they could cause ill will by asking for data which they have no intention to act upon.</p>		

Ref.#
16.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Output Warning Messages		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Computer systems personnel should attempt to anticipate questionable events. When they occur, a warning message should be issued indicating a potential error.		
IMPLEMENTATION SUGGESTIONS	Systems personnel and users should jointly determine the types of transactions that are questionable.		
FEEDBACK EVIDENCE	Feedback information should present the frequency and type of warning messages issued, together with some indication as to the number that were actual errors, and those that were unnecessary warning messages.		
ADVANTAGES OF CONTROL	Warning messages alert users to potential error conditions.		
DISADVANTAGES OF CONTROL	If too many warning messages are issued, they may be ignored. In addition, the follow-up of warning messages can be a time-consuming process.		

Ref.#
16.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Warning Message Feedback		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Warning messages do not require action. They are merely informative, and the lack of action may indicate no action is needed, or action is needed but the message has been ignored.		
IMPLEMENTATION SUGGESTIONS	A feedback follow-up message should be initiated when action is not taken on a warning message in a predetermined amount of time. This gives the user a second opportunity to react to a warning.		
FEEDBACK EVIDENCE	Feedback information should indicate the number of warning messages issued, the number acted upon, the number of follow-up messages issued, and the resulting action occurring because of the follow-up message.		
ADVANTAGES OF CONTROL	The advantage of the warning message follow-up is the avoidance of conditions requiring action.		
DISADVANTAGES OF CONTROL	The disadvantage is that follow-ups will be issued on warning messages where no action is required.		

Ref.# 16.7.C.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Listing of Reports Prepared		
GENERIC CATEGORY Feedback	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>A listing of reports provides supervision with an overview of what reports have been prepared during a predetermined period of time.</p>		
IMPLEMENTATION SUGGESTIONS	<p>This listing should include the name of the report, the number of pages, when it was prepared, number of copies, and to whom the report is to be delivered.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the usefulness of this report, and the types of problems identified from using the report.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the listing is to provide supervision with an overview of the workload produced by operations.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost to produce, and the effort to review it versus the potential findings.</p>		

Ref.# 16.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Distributed Resource Use Monitoring		
GENERIC CATEGORY Feedback	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Distributed systems normally include overhead to permit the movement of resources to the point of need. The value of this process is achieved through the use of the facilities. If the users do not take advantage of the facilities, the system should be eliminated or modified. Monitoring the use of the facilities provides this type of information.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node staff should develop the mechanisms for recording and monitoring use information. This normally involves a log which indicates which resources, who used them, and to what extent.</p>		
FEEDBACK EVIDENCE	<p>The description of the mechanism for recording and analyzing the system use data, together with the reports produced by the system.</p>		
ADVANTAGES OF CONTROL	<p>Knowing the use of the distributed system provides the information needed to make adjustments to better satisfy user needs.</p>		
DISADVANTAGES OF CONTROL	<p>The cost and effort required to collect and analyze the use information.</p>		

Ref.#
16.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Systems Response Time Monitoring			
GENERIC CATEGORY Feedback	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective	
DESCRIPTION	One of the major advantages of the distributed systems is the ability to move resources to meet the needs of users. The speed at which this operation can be performed will affect the user's satisfaction of the system. Response time monitoring is used to measure both the mean response time and average standard deviation from the mean response time.			
IMPLEMENTATION SUGGESTIONS	The lead node staff should be assigned the responsibility for monitoring response time. Normally this involves the establishment of one or more logs to record the time of request and time of response. Normally the reports can be prepared automatically from those logs.			
FEEDBACK EVIDENCE	Evaluation of the mechanisms used to collect and report the measurement information, as well as the reports produced by that system.			
ADVANTAGES OF CONTROL	Technical and administrative adjustments to the system that can be made from analyzing and monitoring results.			
DISADVANTAGES OF CONTROL	The time and effort required to collect and analyze operational statistics.			

Ref.# 16.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Error Notification Document		
GENERIC CATEGORY Feedback	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>The individual accountable for error correction should receive notification as to the type and frequency of error messages detected. This is an overview document for supervision to make them aware of the current status of errors.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The scope and content of the document should be designed in conjunction with the responsible supervisor who will receive the document.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the strengths and shortcomings of the error notification report.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of error notification document is to create an awareness on the part of supervision as to the type and frequency of errors occurring.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to prepare the report.</p>		

Ref.# 16.9.C.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Suggestion System		
GENERIC CATEGORY Feedback	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective Corrective
DESCRIPTION	<p>People involved in creating or using application systems should be provided the opportunity to make suggestions regarding those systems. A suggestion system provides the opportunity for people who desire to comment on the applications.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The suggestion system can be a simple form that is readily available and a place to send or put the completed suggestion forms. The suggestor need not sign the form. Some organizations give cash awards for good suggestions.</p>		
FEEDBACK EVIDENCE	<p>The feedback is the suggestions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that the people associated with applications are given the opportunity to comment on those applications.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that time and effort must be expended analyzing and answering suggestions whether or not they are reasonable. Also, the organization must be willing to implement ideas or they can cause ill will by gathering good ideas they have no intention of implementing.</p>		

Ref.# 16.9.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Control Point Identification		
GENERIC CATEGORY Feedback	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Control points are those points in applications where the risk is the greatest, and thus the points where controls should be established. Those points should be identified so that controls can be established at those points to reduce the risk.</p>		
IMPLEMENTATION SUGGESTIONS	<p>During the design of the application systems, the risk should be identified, as well as the point where those risks occur in the application system.</p>		
FEEDBACK EVIDENCE	<p>Problems and losses should be analyzed to determine that they do occur at the identified points.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of identifying control points is to determine the most cost-effective point to place controls.</p>		
DISADVANTAGES OF CONTROL	<p>None.</p>		

Ref.# 16.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Error Alert Report		
GENERIC CATEGORY Feedback	USAGE ACTIVITY General Purpose	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Error alert reports describe an error condition, its cause, and recommended corrective action. The error alert is designed to prevent the same type of error from recurring in many application systems.</p>		
IMPLEMENTATION SUGGESTIONS	<p>When an error is encountered that may be common to many applications, it forms the basis for an error alert. The individual who corrects the error describes the error condition, how it was detected, what caused the error, and what actions should be taken to both correct the error and to prevent it from occurring in other application systems.</p>		
FEEDBACK EVIDENCE	<p>Feedback should identify the value of the error alert program.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of error alert is in avoiding repetition of errors which could be prevented.</p>		
DISADVANTAGES OF CONTROL	<p>None, unless the volume of error alerts becomes too great.</p>		

Ref.# 16.9.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Detailed Error Descriptions		
GENERIC CATEGORY Feedback	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Error descriptions should be as extensive as practical. The use of codes and other cryptic information inhibits the easy correction of errors.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Lists of descriptions of errors can be contained in a computer library for printing at the time the error is encountered.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the completeness and usability of the error messages.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the readability and understandability of the error messages.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to prepare and print the extended error messages.</p>		

Ref.#
17.8.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	User Opinion Sampling		
GENERIC CATEGORY Sample	USAGE ACTIVITY Use of Data	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	Periodically users should be asked their opinion regarding the value of reports, value of service, and other attributes of application processing. However, rather than asking all users, this can be done on a sampling basis to reduce the time and effort required to obtain the user feedback. The results of sampling can be as statistically valid as surveying the entire population.		
IMPLEMENTATION SUGGESTIONS	Individuals knowledgeable in statistics should help in the selection of the sample.		
FEEDBACK EVIDENCE	The feedback information is the result of the sample.		
ADVANTAGES OF CONTROL	The advantage is the reduced time and effort required to gain user feedback.		
DISADVANTAGES OF CONTROL	The disadvantage is that all users will not have the opportunity to identify situations which they would like improved or corrected.		

Ref.# 17.8.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Output Sample Analysis		
GENERIC CATEGORY Sample	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Sampling is a technique that selects a subset of the population. Based on the analysis of this subset, the attributes of the subset can be applied to the population.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Statistically valid sampling routine must be used if the results of analyzing the sample are to be extended to the entire population. This normally requires the use of a prepackaged sampling routine. These are available on the commercial market. However, individuals knowledgeable in statistics should construct the sample and instruct people on how to interpret the results of an analysis.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate both the problems and the applicability of the problems to the entire population.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of sampling is that a high level of confidence can be obtained with minimum effort.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that there may be a sampling error which results in undetected problems.</p>		

Ref.# 18.1.C.D/C

CONTROL DESCRIPTION

NAME OF CONTROL	Tagging Transactions		
GENERIC CATEGORY	USAGE ACTIVITY	STRENGTH	CONTROL TYPE
Tag	Origination	Average	Detective Corrective
DESCRIPTION	<p>Tagging transactions provides a mechanism to monitor that transaction as it flows through the processing cycle. This may be done to determine the amount of time a transaction takes to be processed, to identify important transactions so there whereabouts will be known, or to evaluate controls during the processing cycle.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The transactions to be tagged should be identified. The systems personnel should then build in the necessary mechanism to identify the tag and report the desired information at each checkpoint where the flag is identified.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should provide an audit trail of the events occurring during the processing of the tag transaction.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that the processing of specific transactions can be monitored.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort to develop, implement, and use tagging procedures.</p>		

Ref.# 18.2.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Message Storage Control		
GENERIC CATEGORY Tag	USAGE ACTIVITY Data Entry	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Messages not accepted by a site must be stored until the sit can accept the message or it can be rerouted to another site. The storage facility can be centralized, located at the lead node, or at another site that will operate in this capacity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The lead node should take the administrative responsibility for overseeing the development of procedures and the process to store messages. The lead node staff should make arrangements for storage facilities and administer the use of that facility.</p>		
FEEDBACK EVIDENCE	<p>Documentation of the procedures governing the storage of messages, together with the records indicating the storage and delivery of delayed messages.</p>		
ADVANTAGES OF CONTROL	<p>Without storage procedures and facilities, the messages would need to be returned to the originating site.</p>		
DISADVANTAGES OF CONTROL	<p>The cost of developing, acquiring, and administering storage facilities for messages not accepted by the designated site.</p>		

Ref.# 18.4.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Program Instruction Tracing		
GENERIC CATEGORY Tag	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Many computer-programming languages provide the option to issue a listing of the sequence in which program instructions were executed. The objective of this listing is to trace transaction processing through application programs.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Program instruction tracing is an option that is compiled into programs that can be turned on and off. Because it consumes extensive computer time, it should be turned off during production runs, and on when analyzing error conditions.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the uses and value obtaining from tracing.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of tracing is that it is the only method that assures the programmer as to what paths were followed in a program during processing of a transaction.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of tracing is the time and effort required to execute tracing.</p>		

Ref.#
19.0.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Authorization Verification Matrix		
GENERIC CATEGORY Verify	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	The authorization verification matrix cross-references users with resources. The matrix indicates what users can gain access to what resources and then what actions can be taken on those resources. For example, user X can only read transaction Y.		
IMPLEMENTATION SUGGESTIONS	The verification matrix is an exhaustive list of authorization to use computer resources. The matrix shows all of the resources an individual user can access, and all of the individuals who can access a single resource.		
FEEDBACK EVIDENCE	Feedback information should indicate who has attempted to access or needs access to a specific resource, and violations of the matrix if it is not enforced automatically.		
ADVANTAGES OF CONTROL	The advantage of the authorization verification matrix is that access to computer resources must be definitively documented. This matrix can also be used in security environments to enforce access rules.		
DISADVANTAGES OF CONTROL	The matrix formalizes access to data, and thus requires continual maintenance if it is to be an effective working tool.		

Ref.# 19.0.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Authorization Verification		
GENERIC CATEGORY Verify	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>A method should be established to verify that request reported to be authorized are, in fact, authorized. This requires a step that verifies that the authorization is authentic.</p>		
IMPLEMENTATION SUGGESTIONS	<p>In a manual system, this is frequently done by comparing actual signatures to signature cards. In automated systems, this can be a single or multistep process. In highly secure systems, it may be done by an interchange of information between the individual and the authorization verification process.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should present authorization violations and inconveniences incurred because of the authorization procedures.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the authorization verification is that it increases reliance on the authenticity of the authorization step.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of authorization verification is the time and effort required to perform the verification process.</p>		

Ref.#
19.2.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Self-Checking Data Elements		
GENERIC CATEGORY Verify	USAGE ACTIVITY Entry	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	Check digits can be added to data elements to provide verification that the information within the data elements has been entered correctly. These not only check that the right characters are entered, but that they are entered in the right sequence.		
IMPLEMENTATION SUGGESTIONS	Common forms of check digits can be automatically verified by data entry equipment, or by preprogrammed processing routines.		
FEEDBACK EVIDENCE	Feedback information should record the frequency of errors detected through check digits, as well as the number of detected errors for fields which could use check digits but don't.		
ADVANTAGES OF CONTROL	The advantage of check digits is the extra assurance that the data will be entered correctly.		
DISADVANTAGES OF CONTROL	The disadvantage of check digits is the extra time and effort to append, and verify the check digit.		

Ref.#
19.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Interfield Consistency Checks		
GENERIC CATEGORY Verify	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	In most computerized applications there is an interrelationship between the data in transactions. For example, in a bank large customers are entitled to the prime rate on loans. Thus, there is in interrelationship between the interest rate changed and the type of customer.		
IMPLEMENTATION SUGGESTIONS	Users should identify those interfield inter-analyst. Checks should then be installed to verify that the proper relationship exists.		
FEEDBACK EVIDENCE	Feedback information should indicate who inconsistencies in relationship between two fields.		
ADVANTAGES OF CONTROL	The advantage is the assurance that the appropriate relationship between fields exists.		
DISADVANTAGES OF CONTROL	None.		

Ref.# 19.3.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Self-Checking Transmissions		
GENERIC CATEGORY Verify	USAGE ACTIVITY Communication	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Control characters can be added to transmissions which verify the integrity of the transmission. In sophisticated equipment these control characters are added automatically and check the vertical and horizontal alignment of bits. In less sophisticated systems, these can be performed manually.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Self-checking mechanisms must be built into either the hardware or operating system. This is a difficult control to build into applications.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency and types of transmission errors both detected and corrected, plus errors not corrected by the automatic routines.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of self-checking transmissions is increased assurance of the accuracy of transmitted data.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of self-checking transmissions is the extra transmission time required for this purpose.</p>		

Ref.#
19.3.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Terminal Handshaking		
GENERIC CATEGORY Verify	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	The integrity of transmission lines can be determined by verifying the quality of the line between two points. This process is frequently called "handshaking" and is an automated method of verifying the integrity of the line and transmissions over the line.		
IMPLEMENTATION SUGGESTIONS	Procedures should be established so that before transmissions are executed, terminals verify the integrity of communication between the terminals.		
FEEDBACK EVIDENCE	Feedback information should indicate the location and frequency of line problems. When these conditions occur it should also be determined whether or not handshaking routines were executed, and if so, how long prior to the problem.		
ADVANTAGES OF CONTROL	The advantage of handshaking is increased assurance over the quality of transmitted data.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to execute the handshaking routines.		

Ref.#
19.3.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Echo Checking		
GENERIC CATEGORY Verify	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	Echo checking is a reverse transmission of a received message back to the originating source. The sending terminal can then compare the "echo" message versus the one sent to verify the integrity of the transmission.		
IMPLEMENTATION SUGGESTIONS	Echo checking is an automatic feature of hardware and if available should be utilized.		
FEEDBACK EVIDENCE	Feedback information should identify the type and frequency of transmission errors.		
ADVANTAGES OF CONTROL	Echo checking increases the assurance that the transmitted message is accurate and complete.		
DISADVANTAGES OF CONTROL	The disadvantage of echo checking is the additional hardware and transmission time to perform a check.		

Ref.#
19.3.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Message Transmission Verification		
GENERIC CATEGORY Verify	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	The terminal of individual receiving a message should provide a positive verification to the sender that the message has been received.		
IMPLEMENTATION SUGGESTIONS	Message transmission verification can be done individually or in batches. The sender may indicate at the end of each message that it has been received, or the total number of messages received during the day may be verified at the end of the day.		
FEEDBACK EVIDENCE	Feedback information should record the frequency and type of invalid transmissions.		
ADVANTAGES OF CONTROL	The advantage of message transmission verification is that the sender knows that the receiver has received the message.		
DISADVANTAGES OF CONTROL	The disadvantage of message transmission verification is that it requires another message to verify that a message has been received.		

Ref.#
19.3.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Transmission Address Verification		
GENERIC CATEGORY Verify	USAGE ACTIVITY Communication	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	The address of messages should be verified prior to the transmission of that message. This provides assurance that the message will not be sent to improper address.		
IMPLEMENTATION SUGGESTIONS	The address of a message should be verified through address tables in an automated system, and by clerical personnel in a manual system.		
FEEDBACK EVIDENCE	Feedback information should record when messages are sent to an improper address.		
ADVANTAGES OF CONTROL	The advantage of transmission address verification is that it provides additional assurance that the message will go to the proper location.		
DISADVANTAGES OF CONTROL	The disadvantage of transmission address verification is that it is another step that must be performed prior to the transmission of a message, which may delay that transmission.		

Ref.#
19.5.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Hash Totals		
GENERIC CATEGORY Verify	USAGE ACTIVITY Storage - On-Line	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	Hash totals are an accumulation of alphanumeric data producing a meaningless total which is used for control purposes. For example, names can be added to arrive to a total which when rechecked can identify whether or not names are missing or added to the file.		
IMPLEMENTATION SUGGESTIONS	Hash totals should be used in situations where control is important but a numerical total is impractical, such as with names, descriptions, and other alphabetic or alphanumeric data.		
FEEDBACK EVIDENCE	Feedback information should identify the frequency and types of errors detected of hash totals		
ADVANTAGES OF CONTROL	The advantage of hash totals is to verify that data is not lost.		
DISADVANTAGES OF CONTROL	The disadvantage of the time and effort to calculate and check hash totals.		

Ref.#
19.5.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Structured Hash Totals		
GENERIC CATEGORY Verify	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	A structured hash total is the accumulation of a meaningless value in a structured manner. The objective of the has total is to determine whether data is missing or has been added. The objective of a structured hash total is the same plus that the records are in the same sequence.		
IMPLEMENTATION SUGGESTIONS	Structured hash total includes both the key alphanumeric data plus an indicator of the sequence of that data in the record. A common approach is to multiply the alphanumeric value times the sequence number of the value in the file.		
FEEDBACK EVIDENCE	Feedback information should indicate the type and frequency of errors encountered because of the structured hash total.		
ADVANTAGES OF CONTROL	The advantage of the structured hash total is that it verifies both that all the transactions are in existence, and that they are in the proper sequence.		
DISADVANTAGES OF CONTROL	The disadvantage of the time and effort to compute and verify the structured hash total.		

Ref.#
19.5.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Record Hash Totals		
GENERIC CATEGORY Verify	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	The objective of the record hash total is to verify that the records in a file have not been deleted, modified, or increased. The hash total selects predetermined alphanumeric data in the record and accumulates them for verification at a later time.		
IMPLEMENTATION SUGGESTIONS	The hash totals should be an accumulation of the key fields in the record. As the records in the file are passed through subsequent processing, the hash total can be recalculated and verified.		
FEEDBACK EVIDENCE	Feedback information should indicate the frequency and types of errors identified because of record hash totals.		
ADVANTAGES OF CONTROL	The advantage is increased assurance that the integrity of the file has been protected.		
DISADVANTAGES OF CONTROL	The disadvantage is the extra time and effort required to create and verify the accuracy of the hash total.		

Ref.#
19.8.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Postinstallation Audit		
GENERIC CATEGORY Verify	USAGE ACTIVITY Use of Data	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	Organizations should verify that the application systems implemented meet the system specification. This can be accomplished through an evaluation of the operational application sometime shortly after the application becomes operational.		
IMPLEMENTATION SUGGESTIONS	The postinstallation audit should be conducted by an individual independent of the groups that implemented and operated the application system. In some instances this is done by internal auditors.		
FEEDBACK EVIDENCE	Feedback information is the postinstallation audit report.		
ADVANTAGES OF CONTROL	The advantage of a postinstallation audit is the positive verification that the system does, or does not, perform as specified.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and effort required to conduct the audit, and the possibility that the specifications may have been significantly changed by the user so that there is no accurate record as to what the system is supposed to accomplish.		

Ref.#
20.0.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Authorization Scanning		
GENERIC CATEGORY Scan	USAGE ACTIVITY Authorization	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	Management should periodically scan authorized transactions to verify that the appropriate authorization steps have been taken before it was approved.		
IMPLEMENTATION SUGGESTIONS	Supervisory personnel should be assigned the responsibility to periodically check specific types of authorization.		
FEEDBACK EVIDENCE	Feedback routines should indicate authorization violations. In addition, supervisors should provide reports on their findings regarding the authorization process.		
ADVANTAGES OF CONTROL	The advantage of authorization scanning is that people with authorization responsibility know that their work will be monitored, and potential violations will be identified.		
DISADVANTAGES OF CONTROL	The disadvantage to authorization scanning is that people must act as policemen, and it tends to question the integrity of those in positions to authorize.		

Ref.# 20.0.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	Security Violation Review		
GENERIC CATEGORY Scan	USAGE ACTIVITY Authorization	STRENGTH Minimal	CONTROL TYPE Detective
DESCRIPTION	<p>The security violations recorded by automated systems should be regularly reviewed by supervision. The objective of this review is to investigate security weaknesses and improve security.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Security violations should be recorded on a report for management review. The report should indicate the time, place, and circumstances surrounding a security violation. Violations should also be summarized by point of origin.</p>		
FEEDBACK EVIDENCE	<p>Feedback information is the reports going to management for review. Management should indicate action taken on the reported violations.</p>		
ADVANTAGES OF CONTROL	<p>Receiving and reviewing security violations by management will encourage them to improve and support security procedures.</p>		
DISADVANTAGES OF CONTROL	<p>In automated systems, many security violations will be due to improper use of passwords, and thus require management time to review what many believe are normal operating procedures.</p>		

Ref.# 20.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Scanning Job Control Cards		
GENERIC CATEGORY Scan	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Scanning job control cards involves skilled personnel reviewing the instructions provided to operating systems for the operation of a job. This control assumes that there are job control cards directing computer operations.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Computer operations should identify the more typical job control card problems, and then build checks against those problems into a scanning procedure.</p>		
FEEDBACK EVIDENCE	<p>The advantage is that errors will be uncovered and corrected before they can result in a loss.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of authorization scanning is that people with authorization responsibility know that their work will be monitored, and potential violations will be identified.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the potential delays caused by the time required to scan the cards.</p>		

Ref.# 20.4.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Reasonableness Check		
GENERIC CATEGORY Scan	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Most data entered into computerized applications will fall within a certain range or possess certain characteristics. These ranges or characteristics should form the basis of determining the reasonableness of data entered.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The systems designers and the user should jointly establish what is a reasonable value for data.</p>		
FEEDBACK EVIDENCE	<p>Cutoff procedures should identify the frequency and types of errors occurring in a computerized application. This information can be used to add additional reasonableness checks.</p>		
ADVANTAGES OF CONTROL	<p>Reasonableness checks have the advantage that most illogical processing would be caught. For example, a payroll check for over \$1 million would be unreasonable.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage to reasonableness checks is the time and effort required to design and implement the checks.</p>		

Ref.# 20.4.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	Scanning Computer Console Log		
GENERIC CATEGORY Scan	USAGE ACTIVITY Process	STRENGTH Minimal Value	CONTROL TYPE Detective
DESCRIPTION	<p>Computer operations supervisory personnel should regularly or periodically scan the computer console log. The objective of the scanning is to look for unusual conditions or areas where operations can be improved.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The console log should be provided to the supervisory personnel for the opportunity to review the log. In automated logs, this may be done at a terminal, or the supervisor may receive consolidated reports by type of operator action,</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify unusual operating conditions.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of supervisors reviewing the operation console log is partly psychological in that the operator knows the work is reviewing, and partly to uncover unusual conditions.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to review the numerous entries in the operator log versus the probability of finding the problem.</p>		

Ref.# 20.8.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	User Transaction Scanning		
GENERIC CATEGORY Scan	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Users are intimately familiar with their own transactions. Thus, conditions that might appear reasonable to the uninitiated are unreasonable to people familiar with the transactions. Having users scan transactions should identify unusual or questionable transactions.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users should maintain data on the types of problems that occur in application systems. These problems then form the basis for scanning transactions. The problem should be transcribed into scanning procedures and disseminated to the individuals performing the scanning.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the type of frequency of errors occurring in the transactions. It should also indicate the types of errors that should have been caught by scanning but were not.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of having users scan transactions is the increased assurance that the used transactions will be correct.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that if processing is accurate and complete, the scanning will be wasted time.</p>		

Ref.# 20.8.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Operator Scanning		
GENERIC CATEGORY Scan	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Computer operators should scan the results of the jobs they execute. This serves two purposes: first, it increases the operator's familiarization with the job; and second, it helps identify problems.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Operators should be given a general overview of what to expect out of an application system, and then review output documents to determine compliance with their interpretation of accurate and complete processing results.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate operator-detected problems.</p>		
ADVANTAGES OF CONTROL	<p>Operator reviews the system outputs provide one more check to aid in identification of errors prior to sending the reports to the report recipient.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required by the operator to perform this function, which may detract from the operations duties.</p>		

Ref.# 20.8.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Anticipation Scanning		
GENERIC CATEGORY Scan	USAGE ACTIVITY Use of Data	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Anticipation scanning of output reports is conducting the scanning during high-risk periods. High risk is normally defined as periods where changes in procedures, prices, etc. is or has just recently occurred.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Users and systems analysts should identify points in time where changes occur that may adversely affect the system outputs. These changes could be documented and control people alerted to the potential problems. The type of problem, the anticipated problem outcomes, and suggested actions are documented and provided to control-oriented people within scanning output reports in an attempt to identify the anticipated problems.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate both the types of problems caught, and the types of problems existing that were not anticipated or caught.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is that scanning is implemented at the time it will probably be most productive.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantages are the time and effort to scan for problems that may not exist.</p>		

Ref.# 20.8.C.P/D

CONTROL DESCRIPTION

NAME OF CONTROL	Scanning Computer-Generated Transactions		
GENERIC CATEGORY Scan	USAGE ACTIVITY Use of Data	STRENGTH Average	CONTROL TYPE Preventive Detective
DESCRIPTION	<p>In advanced applications, there are normally more computer-generated transactions than there are people-generated transactions. Many of these initiate action such as replenishing inventory. Users should scan these documents to determine that they do want the action automatically generated by the computerized application.</p>		
IMPLEMENTATION SUGGESTIONS	<p>At the time the automatic transaction routines are initiated, the scanning procedures should also be established. These procedures become the basis for examining the transactions during the scanning process.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and types of automatic generated transactions whose action is executed but unwanted. This feedback information can both change the scanning rules and change the automatic transaction generation procedures.</p>		
ADVANTAGES OF CONTROL	<p>The advantage is the increased assurance that automatically-generated transactions will meet the needs of the organization.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that if the automatic generation routines are performing properly there is no need to scan the transactions.</p>		

Ref.#
20.9.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Control Coordinator		
GENERIC CATEGORY Scan	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>The control coordinator has the responsibility to monitor the completeness and timeliness of processing. This individual scans the input and output documents prior to and following processing to determine the reasonableness of the documents. Normally the control coordinator is given instructions to follow for each type of document.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The control coordinator position should be established to encourage good practices and discourage bad practices. The position should be built around the experiences of the application. As new problems occur, or new good procedures uncovered, they should be built into the position.</p>		
FEEDBACK EVIDENCE	<p>The control coordinator should produce documents indicating the work performed and the problems encountered during the performance of that work.</p>		
ADVANTAGES OF CONTROL	<p>The control coordinator is an individual familiar with the operation of the application, and through experience can pinpoint unusual conditions for investigation.</p>		
DISADVANTAGES OF CONTROL	<p>The control coordinator needs to be intimately familiar with the application. Inexperienced people are normally not effective in a control-coordinated position.</p>		

Ref.# 20.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Visual Document Scanning		
GENERIC CATEGORY Scan	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Documents should be scanned by people familiar with the content of the form. This scanning can occur during any phase of processing. The objective of scanning is to look for unusual and questionable data on the documents.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Both supervisors and senior clerical people should be assigned responsibility to scan application documents. This can be a continuous duty or a rotated duty. Those performing the scanning should be given general instructions or what to scan for, and what investigative procedures to undertake for unusual or questionable data.</p>		
FEEDBACK EVIDENCE	<p>Documents should be prepared indicating what data has been scanned and the results of the scanning.</p>		
ADVANTAGES OF CONTROL	<p>Scanning by senior people provides the advantage of using their experience to uncover problems to involve them directly into applications which should help improve the application.</p>		
DISADVANTAGES OF CONTROL	<p>Scanning does not uncover all problems and if relied upon too heavily may mislead management to the benefits of scanning.</p>		

Ref.#
20.9.D.D

CONTROL DESCRIPTION

NAME OF CONTROL	Scanning Terminal Usage Logs		
GENERIC CATEGORY Scan	USAGE ACTIVITY General Purpose	STRENGTH Minimal	CONTROL TYPE Detective
DESCRIPTION	Supervisors should periodically or regularly scan terminal usage to identify unusual or questionable usages of the terminal. This can help identify gross misuses of terminal operation.		
IMPLEMENTATION SUGGESTIONS	Logs should be prepared of terminal usage and disseminated to supervisors for the purpose of scanning terminal usage.		
FEEDBACK EVIDENCE	Feedback information should be provided by the supervisors on potential misuses of computer terminal resources.		
ADVANTAGES OF CONTROL	The advantage of scanning terminal usage is to both alert users that their use of resources will be monitored, and to identify problems that might otherwise not be identified.		
DISADVANTAGES OF CONTROL	The disadvantage is that it may not be a cost-effective procedure if there are large numbers of users, or it is difficult to identify the use from the log.		

Ref.# 21.1.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Data Entry Copy		
GENERIC CATEGORY Copy	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Documents and files may be lost, stolen, or destroyed. By creating a copy of the information, it will be available in the event the original documents are not locatable. In addition, the copy may be sent to another area for use.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Manual files can be duplicated on copy machines, or converted into microfilm. Automated files can be duplicated on the same media, a new media, or microfilm.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the uses made of copied material, and the cause for the use. It should also indicate when noncopied material is unavailable..</p>		
ADVANTAGES OF CONTROL	<p>The advantage of copy material is that if the primary file or document is lost a copy is still available.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is creating and filing duplicate copies of material.</p>		

Ref.# 21.1.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Data Entry Copy		
GENERIC CATEGORY Copy	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Documents and files may be lost, stolen, or destroyed. By creating a copy of the information, it will be available in the event the original documents are not locatable. In addition, the copy may be sent to another area for use.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Manual files can be duplicated on copy machines, or converted into microfilm. Automated files can be duplicated on the same media, a new media, or microfilm.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the uses made of copied material, and the cause for the use. It should also indicate when noncopied material is unavailable.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of copy material is that if the primary file or document is lost a copy is still available.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is creating and filing duplicate copies of material.</p>		

Ref.# 21.2.A.D

CONTROL DESCRIPTION

NAME OF CONTROL	Simultaneous Data Entry		
GENERIC CATEGORY Copy	USAGE ACTIVITY Entry	STRENGTH Very Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Simultaneous recording is the entry of computer data at the time of origination. For example, point-of-sale equipment simultaneously enters data into computerized applications while the customer receipt is being prepared. This eliminates the step of originating the data on one document, and then entering it into the application system through another process.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Simultaneous recording is most effective with terminal operation. However, it can also occur with mark sensing and optical scanning.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and types of errors occurring in the recording process.</p>		
ADVANTAGES OF CONTROL	<p>Simultaneous recording eliminates dual recording of input information.</p>		
DISADVANTAGES OF CONTROL	<p>Simultaneous recording does not have the advantage of two people reviewing the information for usual or questionable transactions.</p>		

Ref.# 21.2.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Data Entry Logging		
GENERIC CATEGORY Copy	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>A listing of data entered into computerized application can be maintained for recovery and verification of the entry of the transaction. This log is an image of the data entered and can be maintained manually or automatically. In on-line systems, logs are normally maintained on tapes, while in manual systems logs can be a file of input document or a recording of the data entered.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Data entry logs should be maintained at the point of origin. If terminals are used, the logs should be maintained at the terminal location so they can verify that all transactions have been received and properly entered should that prove necessary. Manual logs need to be sequenced by time and entry. Once processing has been verified, manual logs can be resorted to another sequence if needed.</p>		
FEEDBACK EVIDENCE	<p>Procedures should be documented on how to maintain the logs. These procedures should require documentation of the usage of the logs as a means of identifying problems and in proving the information on, and accessibility to, the data entry logs.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the data entry log is a source of entered transactions for recovery and verification purposes.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of data entry logs is the same and effort required to maintain the logs.</p>		

Ref.#
21.3.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Communication Control Log		
GENERIC CATEGORY Copy	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	Communication control logs contain information about the operation of communication terminals and/or network. The log contains startup, sign on, sign off, resources requested, etc.		
IMPLEMENTATION SUGGESTIONS	Most communication software packages provide the capability to log administrative information. These features should be evaluated by control-oriented people and utilized where needed.		
FEEDBACK EVIDENCE	Feedback information should provide operating statistics on the communication facilities.		
ADVANTAGES OF CONTROL	The advantage to communication logs is the presentation of the information necessary to fine-tune the system.		
DISADVANTAGES OF CONTROL	The disadvantage is the time and equipment necessary to maintain and use the log.		

Ref.# 21.4.B.D

CONTROL DESCRIPTION

NAME OF CONTROL	Transaction Processing Logs		
GENERIC CATEGORY Copy	USAGE ACTIVITY Process	STRENGTH Strong	CONTROL TYPE Detective
DESCRIPTION	<p>Logs can be maintained of transactions entering processing. This type of log is not valuable when data entry and processing do not occur sequentially. When the two occur sequentially, the information can be maintained on either a data entry or processing transaction log.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Transaction logs record transactions immediately prior to processing modules. The log is an exact image of the transaction going into processing. These types of logs are normally maintained on tape.</p>		
FEEDBACK EVIDENCE	<p>Transaction logs are produced by computer programs so that the program documentation and evidence indicating that the program has been executed verifies the execution of the control. Usage of the log should be maintained and reported to identify the types of problems for which the log is used.</p>		
ADVANTAGES OF CONTROL	<p>The main advantage of the log is verification of the transactions that actually went into processing.</p>		
DISADVANTAGES OF CONTROL	<p>The major disadvantage of transaction logs are the time and effort required to develop, execute, and maintain the logging information.</p>		

Ref.#
21.5.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Data Storage (On-Line) Copy			
GENERIC CATEGORY Copy	USAGE ACTIVITY Storage - On-Line	STRENGTH Average	CONTROL TYPE Corrective	
DESCRIPTION	Documents and files may be lost, stolen, or destroyed. By creating a copy of the information, it will be available in the event the original documents are not locatable. In addition, the copy may be sent to another area for use.			
IMPLEMENTATION SUGGESTIONS	Manual files can be duplicated on copy machines, or converted into microfilm. Automated files can be duplicated on the same media, a new media, or microfilm.			
FEEDBACK EVIDENCE	Feedback information should identify the uses made of copied material, and the cause for the use. It should also indicate when noncopied material is unavailable.			
ADVANTAGES OF CONTROL	The advantage of copy material is that if the primary file or document is lost a copy is still available.			
DISADVANTAGES OF CONTROL	The disadvantage is creating and filing duplicate copies of material.			

Ref.#
21.6.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Data Storage (Off-Line) Copy			
GENERIC CATEGORY Copy	USAGE ACTIVITY Storage - Off-Line	STRENGTH Average	CONTROL TYPE Corrective	
DESCRIPTION	Documents and files may be lost, stolen, or destroyed. By creating a copy of the information, it will be available in the event the original documents are not locatable. In addition, the copy may be sent to another area for use.			
IMPLEMENTATION SUGGESTIONS	Manual files can be duplicated on copy machines, or converted into microfilm. Automated files can be duplicated on the same media, a new media, or microfilm.			
FEEDBACK EVIDENCE	Feedback information should identify the uses made of copied material, and the cause for the use. It should also indicate when noncopied material is unavailable.			
ADVANTAGES OF CONTROL	The advantage of copy material is that if the primary file or document is lost a copy is still available.			
DISADVANTAGES OF CONTROL	The disadvantage is creating and filing duplicate copies of material.			

Ref.# 21.7.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	System Output Logs		
GENERIC CATEGORY Copy	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Information prepared for output should, in addition to being disseminated, be copied for backup purposes. This log can be used to substantiate the preparation of output, as well as to reconstruct the output should disseminated output be lost.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Output logs copy the output image for the purpose of backup and reconstruction, if necessary. In some on-line communication systems, this facility is provided automatically.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the copied output is needed, and the cause of the need.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of copying output is to have the information available should it be needed. This eliminates reprocessing to produce new output data.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost to copy the output information on a log, and to store those logs.</p>		

Ref.# 21.7.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Output Copy		
GENERIC CATEGORY Copy	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Documents and files may be lost, stolen, or destroyed. By creating a copy of the information, it will be available in the event the original documents are not locatable. In addition, the copy may be sent to another area for use.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Manual files can be duplicated on copy machines, or converted into microfilm. Automated files can be duplicated on the same media, a new media, or microfilm.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the uses made of copied material, and the cause for the use. It should also indicate when noncopied material is unavailable.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of copy material is that if the primary file or document is lost a copy is still available.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is creating and filing duplicate copies of material.</p>		

Ref.# 21.9.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	Error-Handling Logs		
GENERIC CATEGORY Copy	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Detected error messages should be maintained on a log to provide assurance that detected errors will be corrected. The log normally contains images of the error messages which are deleted from the log at the time corrective action is taken.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Error message logs can be manual or automated. The log should contain the error message, to whom it was sent for action, and the date sent. If action is not taken within a reasonable period of time, additional follow-up should occur.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should provide status on error handling. This status should come from the log which should show number of error messages by type, by accountability, and the average number of days to handle messages. Special feedback should be provided on error messages over X days old.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an error log is that all errors are recorded in a centralized location. Should error messages get lots, they can be duplicated and/or follow-up initiated from the log information.</p>		
DISADVANTAGES OF CONTROL	<p>Logging procedures require time and effort to establish, implement, and administrative.</p>		

Ref.# 22.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Utilization of Default Options		
GENERIC CATEGORY Defaults	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>The understanding and education of default options may result in reduced costs. People knowing default option can eliminate data entry to take advantage of the automated default features.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The input requirements should be studied and the most commonly entered values identified. If these are costly to enter values, instruction should be prepared for data entry operators so that it is unnecessary for them to enter values which will be obtained through default features.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which the use of default options causes problems. Feedback should also attempt to identify other potential default options. The result of this feedback information will be enhanced default features.</p>		
ADVANTAGES OF CONTROL	<p>The planned use of default options should result in reduced data entry costs.</p>		
DISADVANTAGES OF CONTROL	<p>The use of default options may result in erroneous processing if the features are misused or error messages ignored.</p>		

Ref.# 22.4.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Default Processing		
GENERIC CATEGORY Defaults	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Default processing automatically enters or corrects information to the most probable value. Default value is used when people either fail to enter data or enter data which cannot be identified as a correct value.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Default processing can be implemented to reduce the repetitive key entry of such data as date, and to aid users in correcting invalid data to highly probable value.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should provide the frequency and types of default insertions that are correct as well as the frequency and types of default insertions that the user changed because it was not the desired value. These statistics can be used to improve default processing.</p>		
ADVANTAGES OF CONTROL	<p>Default processing both reduces key entry strokes and reduces the number of error messages requiring action. With default processing, the user need do nothing if the inserted default is the desired value.</p>		
DISADVANTAGES OF CONTROL	<p>Default processing causes action to occur which may or may not be correct. If users are lax in reviewing default insertions, invalid processing may occur.</p>		

Ref.#
23.1.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Origination Prompting		
GENERIC CATEGORY Prompt	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Prompting provides the individual using the system with instructions on how to use the system at the time of use. Prompting not only explains to the user how to use the system, but if properly programmed, questions entered data if it does not meet the normal processing rules or the system can identify it as out of the normal range of processing, such as a very large order quantity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Prompting is a capability normally associated with on-line systems. It is most effective when using video screens so that a large amount of information can be displayed at one time. This enables the user to select among various alternatives.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the types of prompting needed, as well as the types of errors being made by users. Analysis of this type of information will enable prompting to be improved.</p>		
ADVANTAGES OF CONTROL	<p>Prompting helps correct errors at the point of entry. It also permits lesser skilled operators and new users to be successful more quickly.</p>		
DISADVANTAGES OF CONTROL	<p>The development and use of prompting aids requires a lot of planning, development, and machine time for implementation.</p>		

Ref.#
23.2.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	On-Line Prompting		
GENERIC CATEGORY Prompt	USAGE ACTIVITY Entry	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	In an on-line system, the application should include prompting attributes. These are special instructions that help the operator use the system properly.		
IMPLEMENTATION SUGGESTIONS	Prompting routines should serve two purposes: first, to help operators understand the procedures they must follow to get tasks accomplished; and second, to question improper input and make suggestions on how to correct those improprieties.		
FEEDBACK EVIDENCE	Feedback information should indicate weaknesses in prompting routines, and areas where prompting could be added to improve productivity.		
ADVANTAGES OF CONTROL	On-Line prompting helps increase operator productivity and accuracy.		
DISADVANTAGES OF CONTROL	The disadvantage to on-line prompting is the time and effort required to develop and implement the prompting routines.		

Ref.# 23.2.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Data Entry Prompting		
GENERIC CATEGORY Prompt	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Prompting provides the individual using the system with instructions on how to use the system at the time of use. Prompting not only explains to the user how to use the system, but if properly programmed, questions entered data if it does not meet the normal processing rules or the system can identify it as out of the normal range of processing, such as a very large order quantity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Prompting is a capability normally associated with on-line systems. It is most effective when using video screens so that a large amount of information can be displayed at one time. This enables the user to select among various alternatives.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the types of prompting needed, as well as the types of errors being made by users. Analysis of this type of information will enable prompting to be improved.</p>		
ADVANTAGES OF CONTROL	<p>Prompting helps correct errors at the point of entry. It also permits lesser skilled operators and new users to be successful more quickly.</p>		
DISADVANTAGES OF CONTROL	<p>The development and use of prompting aids requires a lot of planning, development, and machine time for implementation.</p>		

Ref.# 23.4.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Process Prompting		
GENERIC CATEGORY Prompt	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>Prompting provides the individual using the system with instructions on how to use the system at the time of use. Prompting not only explains to the user how to use the system, but if properly programmed, questions entered data if it does not meet the normal processing rules or the system can identify it as out of the normal range of processing, such as a very large order quantity.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Prompting is a capability normally associated with on-line systems. It is most effective when using video screens so that a large amount of information can be displayed at one time. This enables the user to select among various alternatives.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the types of prompting needed, as well as the types of errors being made by users. Analysis of this type of information will enable prompting to be improved.</p>		
ADVANTAGES OF CONTROL	<p>Prompting helps correct errors at the point of entry. It also permits lesser skilled operators and new users to be successful more quickly.</p>		
DISADVANTAGES OF CONTROL	<p>The development and use of prompting aids requires a lot of planning, development, and machine time for implementation.</p>		

Ref.# 23.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Recommended Corrective Action		
GENERIC CATEGORY Prompt	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>A recommended corrective action should be appended to the error message to guide the individual responsible for correction. This recommended action should be as specific as practical, such as suggesting that the credit limit override be given.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The user should work with the systems analyst in determining the most practical suggestive action for each error condition. This would then be built into a library of corrective actions which can be selected based on the error condition.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the percentage of recommended corrective action adopted, and the types of actions that were not adopted, the reason why, and the actual action taken.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of recommending a corrective action is to reduce the effort required in making corrections.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that individuals may use the recommended corrective actions in instances when they should not.</p>		

Ref.# 23.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Issue Corrective Action Document		
GENERIC CATEGORY Prompt	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>If a corrective action document is required, a recommended action document should be issued. If the application system has selected the proper action, all the necessary steps have been taken to correct the error.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The types of corrective action documents that can be prepared are letters, transactions for reentry, order for more merchandise, etc. These should be actions recommended by the user of the application for specific error conditions.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the percentage of recommended corrective action adopted, and the types of actions that were not adopted, the reason why, and the actual action taken.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of recommending a corrective action is to reduce the effort required in making corrections.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that individuals may use the recommended corrective actions in instances when they should not.</p>		

Ref.# 23.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Control Menus		
GENERIC CATEGORY Prompt	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>Control menus are lists of procedures available to the operator of a terminal. Providing this menu to the operator enables them to quickly select the proper routines needed to complete their tasks.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Control menus should be developed by systems analysts and users. The menus should be designed to lead the operator to the appropriate operating procedures, or to procedures that can display or analyze information for their use.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify inadequacies in control menus.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a control menu is that it identifies the options available to terminal operator, and also ca provide guidance as to which is the appropriate option to select.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of control menus is the time and effort required to develop the menus.</p>		

Ref.# 23.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Prompting		
GENERIC CATEGORY Prompt	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>People interacting with application systems should have procedures that prompt them on how to use this system properly. Prompting provides advice and direction to people on how to interact properly with the application system.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Prompting can be accomplished by adding instruction to forms, providing an instruction sheet to a user, or providing a telephone answering service that will help people in the performance of their tasks.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify situations in which prompting is inadequate. Feedback should also identify situations that could be improved by the addition of prompting routines.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of prompting is increased productivity and accuracy.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to develop the prompting tools and techniques.</p>		

Ref.# 24.0.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Evidence of Authorization		
GENERIC CATEGORY Retain	USAGE ACTIVITY Authorization	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Computerized transactions should identify the individual who authorized the transaction. If the authorization was executed manually, it should be transcribed into computer media; if the evidence was automated, that, too, should be carried with the transaction.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Individuals authorized to approve transactions should be identified with an authorization code. That is the code that should be carried in the computer record.</p>		
FEEDBACK EVIDENCE	<p>Authorization violations should be noted for follow-up purposes.</p>		
ADVANTAGES OF CONTROL	<p>Maintaining authorization evidence enables the reconstruction of the authorization process, and thus the individual accountability.</p>		
DISADVANTAGES OF CONTROL	<p>Maintaining authorization evidence adds to the cost and effort in development and operation of an application.</p>		

Ref.#
24.1.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Retaining Source Documents		
GENERIC CATEGORY Retain	USAGE ACTIVITY Origination	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	Source documents should be retained where they are needed to substantiate or clarify processing, or required for retention by legal or organizational policy.		
IMPLEMENTATION SUGGESTIONS	At the time the document is designed, the retention policy for that document should be determined. The policy should indicate who retains it, where it is retained, and for how long it is retained.		
FEEDBACK EVIDENCE	Feedback information should indicate the number of documents retained, their location, who is accountable for the document, and the time in which they will be destroyed.		
ADVANTAGES OF CONTROL	The advantage of document retention is to have the information needed to substantiate or clarify processing.		
DISADVANTAGES OF CONTROL	The disadvantage of storage retention is the cost and space required to retain the documents.		

Ref.# 24.1.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Retaining Documents at Origination Point		
GENERIC CATEGORY Retain	USAGE ACTIVITY Origination	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Filing source documents at the point of origination locates them at the point of greatest understanding. The people who created the transaction understand the circumstances leading to the information in the transaction. If questions arise, these are the people best suited to answer the questions.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Source documents can be entered from the point of origin by terminals, or sent to another location for data entry. If entered in another location, the documents should be returned to the point of origin for storing. Storing should be in the sequence in which they were entered until the organization is satisfied that processing is accurate and complete.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the number of times source documents were needed for follow-up purposes. Descriptive information should describe if the documents could or could not be locate, the cause of the inquiry, ad the ability to satisfy the inquiry.</p>		
ADVANTAGES OF CONTROL	<p>Filing source documents at the point of origination spreads the documentation and the workload. It also permits the most knowledgeable people about the transactions to answer inquiries.</p>		
DISADVANTAGES OF CONTROL	<p>Spreading the source documents in multiple locations may make it difficult to identify the location where a needed document is stored.</p>		

Ref.# 21.1.C.P

CONTROL DESCRIPTION

NAME OF CONTROL	Source Document Retention Period		
GENERIC CATEGORY Retain	USAGE ACTIVITY Organization	STRENGTH Average	CONTROL TYPE Preventive
DESCRIPTION	<p>The retention period for source documents should be indicated on the document itself. This will provide positive indication of how long a document should be retained, and when it should be destroyed.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Two approaches can be used for indicating the retention period. First, the date until which the document should be retained can be stamped onto the form as it is used; second, the form itself can indicate that it should be saved for X days after the date of issue.</p>		
FEEDBACK EVIDENCE	<p>The retention indication on the form is the evidence that the control is implemented. Periodic checks should be made in storage area to determine that the documents are destroyed on the appropriate dates.</p>		
ADVANTAGES OF CONTROL	<p>Placing retention dates on source documents encourages both the retention until the appropriate ate, and then the destruction on the proper date.</p>		
DISADVANTAGES OF CONTROL	<p>Manual placed retention dates require extra time and effort.</p>		

Ref.# 24.2.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Retaining Data Entry Documents		
GENERIC CATEGORY Retain	USAGE ACTIVITY Entry	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Source documents should be retained where they are needed to substantiate or clarify processing, or required for retention by legal or organizational policy.</p>		
IMPLEMENTATION SUGGESTIONS	<p>At the time the document is designed, the retention policy for that document should be determined. The policy should indicate who retains it, where it is retained, and for how long it is retained.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the number of documents retained, their location, who is accountable for the document, and the time in which they will be destroyed.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of document retention is to have the information needed to substantiate or clarify processing.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage of storage retention is the cost and space required to retain the documents.</p>		

Ref.# 24.3.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Store and Forward Transmissions		
GENERIC CATEGORY Retain	USAGE ACTIVITY Communication	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>In a busy communication network, messages cannot always be transmitted because lines are busy. The store and forward feature enables undelivered message to be stored centrally and transmitted whenever the communication lines and/or terminals become free.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The store and forward feature should be designed into the communication operating system. The users and receivers should not have to be involved in, or aware of, this process.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should record the number of messages stored by receiving locations, and the average time held prior to transmission to receiving terminal.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the store and forward feature is that messages can be sent regardless of whether the receiving terminal and/or communication lines are busy.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the sender may not be aware the receiver has not received the message, plus any additional cost involved in storing and administering the stored messages.</p>		

Ref.# 24.4.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Restart/Recovery Logging		
GENERIC CATEGORY Retain	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Restart/recovery logging is the recording of the initiation of the restart or recovery procedures. This provides a chronological history of operating problems. The log should indicate the cause for the restart or recovery process to be initiated.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Most restart/recovery logs are manual logs completed by the operator. However, some computers have the capability to automatically record those procedures. However, the automatic recording normally does not indicate the cause, and thus that must be manually recorded.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency and cause to initiate the restart or recovery procedures.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of logging restart/recovery is to provide supervision with an overview of the type of problems occurring in computer operations.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is that many restart operations may be normal and thus meaningless for analysis purposes.</p>		

Ref.# 24.4.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Restart/Recovery Logging		
GENERIC CATEGORY Retain	USAGE ACTIVITY Process	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>Operator messages and actions should be logged. The objective of this log is to provide an audit trail of events occurring during processing.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many operating systems provide the operator message logging capability. Computer operation personnel should determine the type of messages and indications of action that they want recorded on this log.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify unusual conditions for further investigation,</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a computer operator message log is that it provides a complete audit trail of messages and actions which can be used to investigate questionable conditions or to substantiate processing.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time, effort, and equipment required to design, maintain, and use the log.</p>		

Ref.# 24.5.A.P

CONTROL DESCRIPTION

NAME OF CONTROL	Master File Change Log		
GENERIC CATEGORY Retain	USAGE ACTIVITY Storage - Process	STRENGTH Very Strong	CONTROL TYPE Preventive
DESCRIPTION	<p>A master file change log is a chronological listing of all of the changes made to a master file. For example, this log would contain all of the changes made to a product pricing master file, a pay rate master file, etc. The objective of the log is to provide an audit trail of changes.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Some generalized file update systems have the capability to log changes. If the feature is available, it should be used. Otherwise, a log of changes needs to be designed and implemented.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency, types of changes, and who authorized changes to a master file.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a master file log is to provide an audit trail of changes to the log, as well as backup data in the event the integrity of the master file is lost.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time an effort required to implement and operate the log.</p>		

Ref.#
24.7.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Retaining Output Documents		
GENERIC CATEGORY Retain	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	Source documents should be retained where they are needed to substantiate or clarify processing, or required for retention by legal or organizational policy.		
IMPLEMENTATION SUGGESTIONS	At the time the document is designed, the retention policy for that document should be determined. The policy should indicate who retains it, where it is retained, and for how long it is retained.		
FEEDBACK EVIDENCE	Feedback information should indicate the number of documents retained, their location, who is accountable for the document, and the time in which they will be destroyed.		
ADVANTAGES OF CONTROL	The advantage of document retention is to have the information needed to substantiate or clarify processing.		
DISADVANTAGES OF CONTROL	The disadvantage of storage retention is the cost and space required to retain the documents.		

Ref.# 24.7.C.D

CONTROL DESCRIPTION

NAME OF CONTROL	File Retention Status Report		
GENERIC CATEGORY Retain	USAGE ACTIVITY Output	STRENGTH Average	CONTROL TYPE Detective
DESCRIPTION	<p>Reports can be prepared showing what files are being retained. This report is in effect the library card catalog of data files.</p>		
IMPLEMENTATION SUGGESTIONS	<p>File retention reports can be a "living file" which is never actually listed, but contains all of the files in retention. The report can be for the entire organization, or it can be divided into reports for various operating units.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify lost files, files inadvertently destroyed, and other problems associated with file retention.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of file retention reports is that the existence of files in retention is positively stated.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop, maintain, and use file retention status information.</p>		

Ref.# 24.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Object Program History		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>An object program history provides a chronological listing of the changes made to object programs. The objective of the history is to provide a complete audit trail of changes to the production version of the source program.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The objective program history file contains a listing of the changes made to the object program library. The object program running in production should be reconstructable from the information contained on the object program history file. This file could be used to reconstruct the object program library.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify the frequency of changes to programs on the object program library. In addition, it might also indicate who authorized the change.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an object program history file is to provide a complete audit trail of the changes made to the object program library. This can be used for reconstruction or to substantiate the changes involved in the current status of an object program.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop, implement, and maintain the object program history file.</p>		

Ref.# 24.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Source Program History		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Source history provides a chronological listing of all the changes made to individual programs. The history is a complete audit trail of how a program evolved into its current status..</p>		
IMPLEMENTATION SUGGESTIONS	<p>The source program history log contains an image of all sourced code changes made to each source program. In addition, it might indicate the individual initiating each change.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should indicate the frequency of changes made to source programs. In addition, it might indicate the individual initiating each change.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an source program history file is in providing a complete audit trail of changes to the program. Questions regarding when and who made a change can be readily resolved..</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to develop, implement, and maintain the object program history.</p>		

Ref.# 24.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Automated Error Suspense		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>Most applications encounter unidentifiable or unprocessable transactions. These must be held in suspense awaiting resolution of the problem. The automation of this process uses the computer to file and control the suspense transactions.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Automated error suspense files use the same techniques as any other updated file. Rather than rejecting transactions from the system, they are placed on an automated suspense file where they can be controlled.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should list the frequency and type of transactions on the error suspense file. It should also indicate the average amount of time, by transaction type, before it is cleared from the suspense file.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of the automated suspense file is the control exercised over unidentifiable or unprocessable transactions.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort required to develop, implement, and use of the error suspense file.</p>		

Ref.# 24.9.B.C

CONTROL DESCRIPTION

NAME OF CONTROL	Audit Trail		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	<p>An audit trail is a history of processing that enables the reconstruction of processing that enables the reconstruction of processing. Reconstruction can be from totals to supporting data or supporting data to control totals.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Audit trails should be designed hand in hand with the application system. If the audit trail can be intermeshed with backup data, costs can be reduced.</p>		
FEEDBACK EVIDENCE	<p>Records should be maintained on when and why audit trail information was used. This will form the basis of extending, reducing, or modifying audit trail information.</p>		
ADVANTAGES OF CONTROL	<p>Audit trial information permits interested parties to reconstruct transactions.</p>		
DISADVANTAGES OF CONTROL	<p>Audit trail information can increase the cost of processing with the associated effort and cost to retain the information,</p>		

Ref.# 24.9.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Object Program Log		
GENERIC CATEGORY Retain	USAGE ACTIVITY Accounting	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>An object program log is a listing of changes made to programs made in the object program library. This log provides a complete listing of all the program changes made by the organization in the order in which it was entered.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Many software systems that maintain object programs libraries provide the capability to also maintain a log of changes. This log is normally a chronological log listing the changes in the order in which they were entered.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems associated with updating the object program library.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an object program library log is to provide backup in the event the problems, and to record for the programmer the exact changes that were entered into the object program library.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort to operate the log.</p>		

Ref.# 24.9.C.C

CONTROL DESCRIPTION

NAME OF CONTROL	Error History File		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Average	CONTROL TYPE Corrective
DESCRIPTION	<p>An error history file contains a record of all the errors made in particular application or operation area. The objective of retaining errors is to substantiate the cause of the error and to back up the application should problems be encountered.</p>		
IMPLEMENTATION SUGGESTIONS	<p>The error history file can be a chronological recording of the errors from the different parts of the application or different applications.</p>		
FEEDBACK EVIDENCE	<p>The feedback information should summarize the types, frequencies, and source of errors.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of an error history file is to enable management to conduct analyses on errors in order to improve operations.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the cost and effort involved in developing, maintaining, and using an error history file.</p>		

Ref.#
24.9.B.P

CONTROL DESCRIPTION

NAME OF CONTROL	Before and After Images		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Corrective
DESCRIPTION	On-line applications with minimal hard copy may require extra audit trail procedures. The before and after image shows a computer record before it was changed and after it was changed. This provides an audit trail and backup data for recovery purposes.		
IMPLEMENTATION SUGGESTIONS	Most communication systems provide the capability to log before and after images. If the capability is available, control-oriented and operations personnel should evaluate the merits of implementing the feature in their organization.		
FEEDBACK EVIDENCE	Feedback information should indicate the frequency of use of before and after images and the purpose for their use.		
ADVANTAGES OF CONTROL	The advantage of a before and after image log is the backup data provided and the audit trail information needed to reconstruct processing.		
DISADVANTAGES OF CONTROL	The disadvantage of the before and after image log is the time required to operate the log.		

Ref.# 24.9.B.P/C

CONTROL DESCRIPTION

NAME OF CONTROL	Source Program Change Log		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Strong	CONTROL TYPE Preventive Corrective
DESCRIPTION	<p>The source program change log records all of the changes to the source program library. The objective of this log is to provide backup data in case recovery is necessary.</p>		
IMPLEMENTATION SUGGESTIONS	<p>Software systems can be purchased that provide a logging of source program changes. This is a chronological log listing all of the changes going into the source program master. It not only provides a basis for recovery, but provides programmers with confirmation as to what changes were made.</p>		
FEEDBACK EVIDENCE	<p>Feedback information should identify problems associated with entering source code.</p>		
ADVANTAGES OF CONTROL	<p>The advantage of a source program log is both providing backup in the event of problems with the source program library and to provide a record for the computer programmer as to what changes were or were not entered.</p>		
DISADVANTAGES OF CONTROL	<p>The disadvantage is the time and effort required to operate the log.</p>		

Ref.#
24.9.D.P

CONTROL DESCRIPTION

NAME OF CONTROL	Retention Date Index		
GENERIC CATEGORY Retain	USAGE ACTIVITY General Purpose	STRENGTH Minimal	CONTROL TYPE Preventive
DESCRIPTION	An index of documents by their retention at facilitates the proper destruction of the document, and when used properly prevents the destruction of documents whose retention date has not been reached.		
IMPLEMENTATION SUGGESTIONS	The retention index can be set of three by five card, or in more sophisticated record retention systems, a computerized report.		
FEEDBACK EVIDENCE	Feedback information should identify problems incurred in the retention of documents, as well as documents not covered in the retention index.		
ADVANTAGES OF CONTROL	The advantage of the retention index is to facilitate the orderly destruction of unwanted documents.		
DISADVANTAGES OF CONTROL	The disadvantage of the retention index is the time and effort required to develop, maintain, and use the index.		