

WORKBOOK 13.1 PPS CHARACTERISTICS



Purpose: To present information about the three most important characteristics of an effective physical protection system

In *Module 12: Security Force Operations*, you examined the three primary physical protection system functions: detection and assessment, delay, and response. Now you will examine how these three functions create the foundation for an effective physical protection system.

Characteristic	Description
Protection-in-depth	<ul style="list-style-type: none"> ▪ Some agencies refer to this as a “layered defense.” ▪ Definition: a characteristic of an effective physical protection system that requires an intruder to avoid or defeat a number of protective devices in sequence to reach an objective or target. ▪ For example, an intruder might have to defeat one sensor and penetrate two separate barriers before gaining entry to critical asset areas, such as a secure vault room where classified information is stored: <ul style="list-style-type: none"> • The actions and time required to penetrate each of these layers may not be equal and the effectiveness of each may be different. • However, each will require a separate and distinct act by the intruder moving along a path to the objective. ▪ A physical protection system that provides protection-in-depth produces the following effects on the intruder: <ul style="list-style-type: none"> • Increases an intruder's uncertainty about the system • Requires more extensive preparation by an intruder prior to attacking the system • Creates additional steps where the intruder may fail or choose to abort the mission
Minimum consequences of component failure	<ul style="list-style-type: none"> ▪ Definition: a characteristic of an effective physical protection system that provides contingency plans so that the system can continue to operate even after a component fails. ▪ It is unlikely that a complex system will ever be developed and operated that does not experience some component failure during its lifetime. ▪ Causes of component failure in a physical protection system are numerous and be as diverse as: <ul style="list-style-type: none"> • Environmental factors (which may be expected). • Intruder actions beyond the scope of the threat used in the system design. ▪ Although it is important to know the cause of component failure in order to restore the system to normal operation, it is more important that contingency plans are provided so the system can

Characteristic	Description
	<p>continue to operate after a component fails.</p> <ul style="list-style-type: none"> ▪ In some cases, it is highly desirable to require portions of these contingency plans to be carried out automatically (so that back-up equipment takes over disabled equipment functions). ▪ For example, in the event an intruder disables the primary power source of a public service utility company, generators or batteries can be used to power the security system. ▪ Some component failures may require aid from sources outside the facility in order to minimize the impact of the failure. ▪ For example, the use of local law enforcement to supplement security personnel at times of higher alert status — in this case, the component failure is the temporary lack of sufficient response forces under new threat conditions.
Balanced protection	<ul style="list-style-type: none"> ▪ Definition: a characteristic of an effective physical protection system that ensures no matter how a terrorist intruder attempts to accomplish the attack goal, the intruder will encounter effective elements of the physical protection system. ▪ For example, consider the barrier surface that surrounds a room. This surface may consist of: <ul style="list-style-type: none"> • Walls, floors, and ceilings of several types. • Doors of several types; equipment hatches on floors and ceilings. • Heating, ventilation, and air conditioning openings with various types of grilles. ▪ For a completely balanced system, the minimum time to penetrate each of these barriers would be equal and the minimum probability of detecting penetration of each of these barriers should be equal. ▪ Complete balance is probably not possible or desirable. <ul style="list-style-type: none"> • Certain elements, such as walls, may be extremely resistant to penetration, not because of physical protection requirements but due to structural or safety requirements. • Door, hatch, and grille delays may be considerably less resistant than wall delays and still be adequate. ▪ There is no advantage in over-designing by installing a costly door that would take several minutes to penetrate with explosives, if the wall around the door is standard drywall that an intruder could penetrate in a few seconds with hand tools.