Chapter 3:

Playgrounds and the Play Movement

The underlying theme of this book is designing the experience. Playgrounds and the play movement is a good place to start. The chapter begins with a discussion of Huizinga's principles of play. The chapter discusses the play movement which began in 1886 with the Boston Sands Garden and culminated with the Outdoor Resources Review Commission (ORRRC) Report in 1964. Although the ORRRC Report focuses on outdoor recreation and may seem to be more appropriate in the parks section, the National Recreation and Parks Association (NRPA) was an outgrowth of the ORRRC Report. NRPA has had primarily a community recreation focus with a focus on active recreation and parks and playgrounds within the local public sector. Supporting this point, Hartsoe (1998) notes that at the time of the merger, one-half of the Association of Park Executives (AIPE) membership were recreation administrators. Although the ORRRC report was the culminating event for both the park and recreation movements, it is appropriate to include it as the culminating event of the play movement.

An underlying theme of this textbook is designing the experience. The chapter raises the issue of the role of the individual in designing the experience on the playground. In addition, has the increased concern about safety removed challenge from the playground and has this tended to make playgrounds more boring. The chapter raises the question without definitively answering it.

Huizinga's Principles of Play

Conceptually and when discussing playgrounds, Johan Huizinga's principles of play is a good place to start. His principles can easily be applied to playgrounds and parks. He considered the principles ubiquitous and applied them to other setting including war, law and most aspects of culture. Huizinga's principles of play have been applied to park settings. In Chapter 6, Lukas (1996) discusses Huizinga's principles of play as an underlying principles in theme and amusement parks. His principles of play are equally applicable to the playground and traditional parks. The placards in this section are from an unpublished manuscript on Directed Play (Kauffman, 2009) that incorporates Huizinga's principles.

In his classic thesis on play, Huizinga suggests several criteria that define play (Huizinga, 1955). His first criteria of play is that play is **voluntary**. People choose to play. They choose to go to a park or playground. This includes traditional parks in the community as well as virtual playgrounds and places in the mind (e.g. phantasm).

The second and third criteria is that play is defined in terms of **time and space** (Figure 3.1). A playground or park is defined in terms of both time and space. Focusing on the component of space, there is a playground. It is defined by boundaries. Traditionally, a playground is a park with greenery, trees, slides and swings. According to Huizinga's principles, the playground can also be defined in terms of virtual space. Computer games are an example of a playground in virtual space. Or, taken a step further, the playground can be defined as the mind's phantasm where people picture scenes and objects created by their imagination. Again, the playground is defined by boundaries that creates a place separate from the outside world.

The third criteria is time. Working in conjunction with the place, the experience begins when a person steps onto the playground and it ends when they exit. This is true for virtually defined parks as well as those defined by physical space and boundaries. Although the playground is usually well defined in terms of time and space, this is not always the case. In today's society and as suggested in the Figure 3.1 caption, defining the playground may not always be as definitive as it may seem. If play doesn't end, the player is still on the playground.

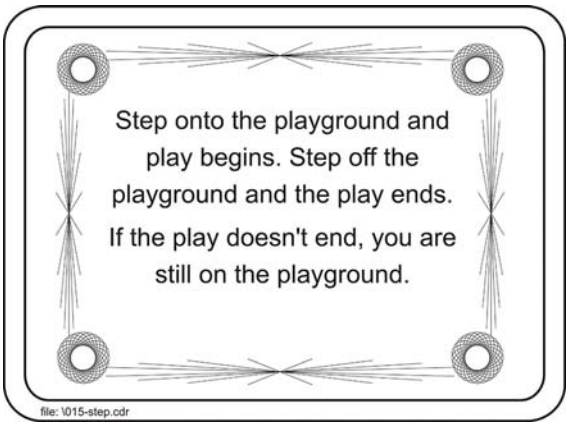

Figure 3.1: – Source: author [file: \015-STEP.cdr]

Fourth, which is really Huizinga's second point is that **play is not ordinary** or **real life** (Figure 3.2). Since a playground or park is defined in terms of time and space, it creates an experience that is different from the world outside the boundaries of the playground. It creates its own world that is different from the outside world. To those playing on the playground, their activity is very real and of course meaningful. To those standing off the playground, the play occurring on the playground is not ordinary or real life and is often considered frivolous. The Magic Kingdom at Disney World described in Chapter 1, epitomizes the magical experience created by the special place defined by the playground.

The playground can be virtual. A child is day dreaming. They hide it with an open book on their lap. The phantasm is the playground in the mind where a person day dreams. The child is playing on the playground in their mind. To them it is very real. A parent walks into the room and interrupts the day dreaming. To the parent, day dreaming is not ordinary or real life.

In a more traditional example, a child builds a castle in the sandbox or on the beach at the shore. For the child, creating the sand castle is very real. To the parent who is supervising the play, the play is not real life. It is merely child's play.

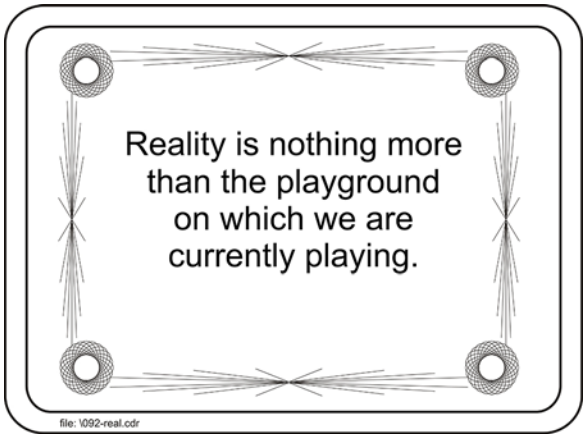

Figure 3.2: – Source: author [file: \092-REAL.cdr]

A park can be considered a playground. For the park visitor, the park experience is normally a different experience from the one outside of the park. It should be a pleasurable experience, traditionally defined by trees, meadows and water features. Examination of Birkenhead Park in the next chapter reveals that the greensward of meadows and cut grass found in the park is very different than the outside world of tenement homes in industrial Liverpool, England (see Figure 5.4 and Figure 5.5). In addition, Birkenhead Park, Central Park, Prospect Park and the other urban parks in this country have an underlying theme of bringing the greenery of parks into the urban environment.

Fifth, play creates an **experience** that is remembered. Memories are experiences remembered. Recreational engineering is the process of designing the park, facilities, and activities and program elements to create the desired experience. Memories are key to the experience.

Experiences are usually divided into pre-, actual, and post experiences. The post experience is often just as important as the actual park experience and often is more important because it is what people remember. It could be the focus of the day dreaming or it could be the sand castle built in the sandbox. In a park, it could be the rides in a theme park or the fantasy of travel into another world. It could be a pastoral experience in the greenery of an urban park or even the park atmosphere of a baseball park.

Sixth, play creates **order and it is order**. According to Huizinga, inside the play area, an absolute and peculiar order reigns. A form of organized and structured play, games epitomize the creation of order with their rules and regulations. Even if more than one child is creating the sand castle in the sandbox, they will create rules by which they operate. They will assign each other tasks and make decisions regarding the construction of castle. Reinforcing his principle of creating order, Huizinga differentiates between players who play the game but violates the rules and those who refuse to play the game by the rules. People violating the rules of the game are considered "cheaters" and a player who doesn't follow the rules are a "spoil-sport."

In summary, Huizinga's principles of play can be applied to virtually any experience including playgrounds and parks. His principles are considered fundamental. In addition, this author adds another element of play. **The locus of control is with the player**. The player needs to be able to manipulate elements in their environment to help create the experience. In part, it returns to the first element where play is voluntary.

It is the player's daydream. The person daydreaming controls the elements in the daydream. The players create the sand castle. Dr. Marie Zakrzewska and the Boston Sand Garden movement epitomizes the creativity of the sandbox in the playground. Conversely, not being able to manipulate elements on the modern playground becomes an underlying theme that can result in boredom. In addition, it can be an underlying theme in parks. Traditionally, parks are designed by the park planner and often the visitor has limited control over the elements in the environment. This theme is picked up again in the chapter on vandalism.

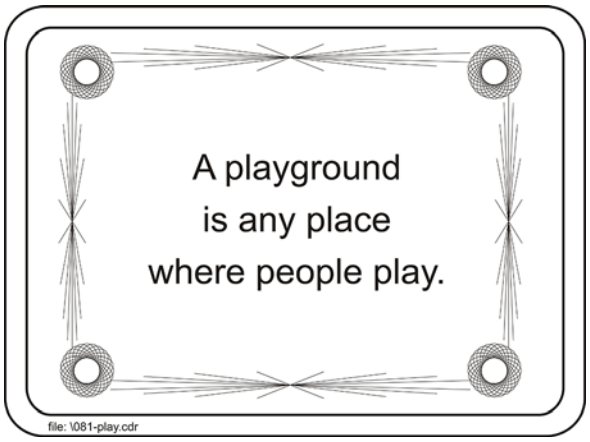

Figure 3.3: Definition of a Playground – And yes, it includes traditional parks and playgrounds. Source: author [file: \081-PLAY.cdr]

In terms of Huizinga's principles, a playground can be defined as "**A playground is any place where people play**" (Figure 3.3). The definition includes traditional playgrounds. However, it also includes parks and non-traditional playgrounds.

A Tale of Two Playgrounds

The Children's Garden is part of the Denver Botanic Gardens in Denver, Colorado. It is located next to the parking garage across the street from the main entrance. The Children's Garden is a tale of two playgrounds. One of the playgrounds embraces Huizinga's principles of play. The other less so. The Garden consists of two distinctly different playgrounds. Juxtaposed, the two playgrounds illustrate the fundamental importance of participants being able to manipulate elements in their environment to create the experience.

On this author's first visit to the Children's Garden, he didn't get past the first garden. The first garden is next to the entrance and is what a planner envisions the experience should be (Figure 3.4). It is a classic interpretive trail with trail signs like "What do you hear" with a graphic of an ear on the sign. The trails have railings and curbs. The first cynical impression was that it was preparing children for the botanic gardens across the street. The message was clear: "look but don't touch." There are no elements in the pictured environment which children can manipulate. Look, listen, but don't touch. The experience is that of the planner and not the child. It quickly becomes boring and there were few visitors seen in this section of the gardens. After a quick run through the gardens, most children were ready to go somewhere else. Usually, it was the second playground located behind Marmor Mountain.

Figure 3.4: Children's Garden – The "look but don't touch" portion of the Children's Garden. The group on the left is walking to other side of Marmor Mountain and a fun experience. Denver Botanic Garden, Denver, Colorado. Source: author [file: \DBG250.jpg]

On the second visit, this author had more time to spend at the Children's Garden. Behind the photographer in Figure 3.4 is Marmor Mountain. There is a foot bridge across the canyon which forms an entrance to and visual barrier of the second playground. It is why the second play area was missed on the first visit. The second play area is a child's delight. There is a small recirculating stream (Figure xx05). The children can dam it, wade in it, and simply play in it. In addition, there is a mud pit where the kids can play in the mud (Figure xx06). The children have the ability to manipulate elements (i.e. mud) in their environment. It is equivalent to the sandbox. It is fundamental to creativity and the learning process. And it is clear to even the casual observer that the children are having fun.

Figure 3.5: Children Playing in the Stream – Children have a chance to play in the recirculating stream. The children have the ability to manipulate elements in their environment. Children's Garden, Denver Botanic Garden, Denver, Colorado. Source: author [file: \DBG256.jpg]

It is a tale of two distinctly different experiences. The Children's Garden illustrates the fundamental design issue in designing parks as playgrounds. It is the issue of who designs the experience? Also, it illustrates the basic theme of this book. Is it the park designer or is it the participant? It is both. Regardless, playgrounds for both children and adults need to allow participants ways to manipulate elements in their environment to help create the experience. It facilitates creativity, learning, and fun. It is a theme that occurs again when discussing playground safety.

History of the Play Movement in the United States

Figure 3.6: Children Playing in the Mud – Children can play in the mud. Like a sandbox the children can manipulate elements in their environment. Children's Garden, Denver Botanic Garden, Denver, Colorado. Source: author [file: \DBG257.jpg]

Historically, the recreation and parks field is characterized by at least two distinct movements. These are "active" and "passive" recreation. Active recreation is associated with the recreation movement. It includes the play movement and community recreation. Passive recreation is associated with the parks movement. It is passive because the park designer is credited with designing the experience.

Normally, The Boston Sands Garden in 1886 is credited with the beginning of the playground movement. Also, it was influenced by the gymnastics movement in the 1850s. The movement culminated with the Outdoor Recreation Resource Review Commission (ORRRC) in 1964 and the creation of the National Recreation and Parks Association (NRPA) in 1965.

<b>**Mid 19th Century Gymnastics Movement**. Originating in Germany, during the 18th and 19th centuries, Hofmann (2015) indicates that the Turnen movement migrated to this country with the heavy Germanic immigration during the mid-nineteenth century (e.g. 1850s). Organized as clubs, the Turnen movement emphasized outdoor gymnastics grounds typical of the one pictured in Figure 3.7. Although the movement included exercises such as running, climbing, fencing, swimming and wrestling, it included many of the pieces of gymnastic equipment included in a gymnastics gym today. Although the movement had permeated some educational institutions during the early 1820s, it gained considerable impact with the political refugees migrating to this country from the 1848 revolution in Germany.

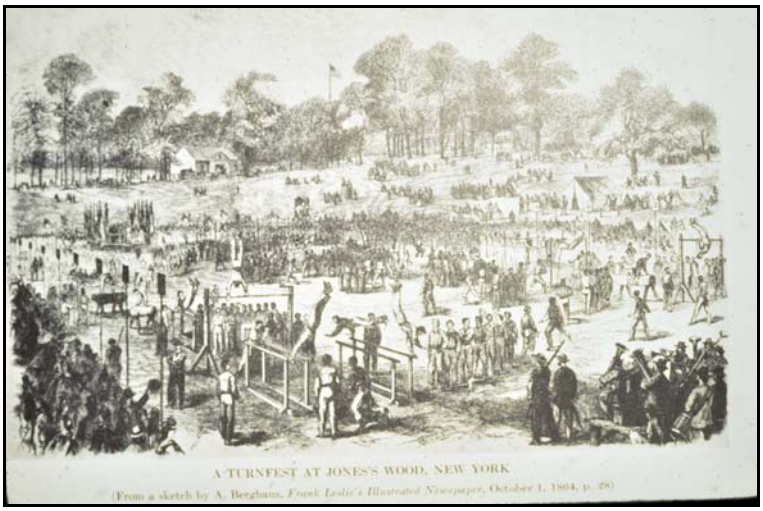

Figure 3.7: Gymnastics Movement – Contributing the first element of the "modern" playground, the gymnastics movement came to this country in the 1850s. This lithograph was take at Jones's Wood, New York in 1864. Note the modern gymnastics equipment used outdoors and the band playing in the foreground. Source: Source: Frank Leslie's Illustrated Newspaper [file: \JonesParkGymnastics[142].jpg]

<b>**Boston Sand Garden Movement – 1886** (Figure 3.8) The Play and Playground Encyclopedia reports that Dr. Marie Zakrzewska is credited with introducing the sand garden movement to this country. When visiting Berlin in 1885, she observed children playing in piles of sand that were dumped in the parks. The children played under the supervision of the police. She wrote a letter to

Kate Gannet Wells, the chairman of the executive committee of the Massachusetts Emergency and Hygiene Association (MEHA) which resulted in piles of sand being placed near the Parmeter Street Chapel and the West End Nursery in Boston. The encyclopedia reports that the sand gardens were placed in poor neighborhoods near settlement houses. By 1899, the sand gardens had grown to 21 gardens. The Boston sand gardens are generally credited with the beginning of the playground movement.

Figure 3.8: Pile of Sand – Contrary to maintenance who planned to use the sand to make mortar, a pile of construction sand was too tempting for these day campers who found the sand pile to be a "sand garden" full of creativity. Bynden Wood Day Camp, Wernersville, Pennsylvania. Source: Source: author [file: \ByndenWood001.jpg]

In his book titled the Sand Pile, Hall (1897), a noted psychologist of the time, wrote about the impact of the sandbox on children. He noted its support of creativity and how it aided developmentally. The sandbox goes to the theme that the player can manipulate elements in the environment to be creative. Also, he noted that interest seemed to wain when children reached 14 years of age.

Coupled with elements of the gymnastics movement, the sandbox became the foundation of the modern playground. Add swings, seesaws, merry-go-round, and ballfields and the modern playground remained relatively unchanged until the 1960s. Second, the Boston sand gardens was part of the social welfare movement that aimed to improve conditions of tenets living in inner cities. Last, the play movement morphed into the recreation movement and what is termed "active recreation."

<b>**Playground Association of America (PPA).** Active recreation and the playground movement became supported by a national organization in 1906 with the creation of the Playground Association of America in 1906. Joseph Lee was the first director of the organization and is considered by many as the father of the recreation movement.

The PPA broadened its focus with a name change to the National Recreation Association. Its publication was titled *Recreation*. It remained relatively unchanged until the merger in 1965 with the formation of the National Recreation and Parks Association (NRPA).

<b>**Adventure Playgrounds** (Figure 3.9). C. Th. Sorensen, a Danish landscape and playground designer, is credited for the development of adventure playgrounds (Play and Playground Encyclopedia). He observed that children preferred to play with dirt, lumber and rocks rather than on the traditional playgrounds. What he observed is the creative aspect of play and the underlying theme of children being able to manipulate elements in their environment to create things. It is a variation of building the sand castle in the sandbox.

The encyclopedia of play and playgrounds noted that the first adventure playground was build in Endrup, Denmark in 1943. From there it migrated to London, England in 1946 through the efforts of Lady Allen of Hurtwood, a prominent British landscape architect and president of the World Organization for Early

Childhood Education. She called the playgrounds "junk playgrounds." Her concept was that the children should be provided with the tools, lumber, and bricks to build their forts and tree houses. There should be grass, puddles and hills. However, there should be no asphalt. It is unknown whether the previously mentioned Children's Garden at the Denver Botanic Garden is directly linked to the adventure playground movement (Figure 3.9). However, playing in the mud and damning the stream is consistent with tenets of the adventure playground movement.

Figure 3.9: Adventure Playgrounds – Adventure playgrounds allow children to be creative by manipulating elements in their play environment. Source: Internet [file: \AdvenPlaygrd[125].jpg]

As might be suspected, the adventure playground movement has met with some resistence in this country due to liability issues. In addition, it is interesting to juxtapose the playground safety standards later in this chapter with adventure playgrounds. Building forts with brick, lumber and other materials raises issues of building standards and in theory, potential hazards. However, close examination of Figure 3.5 and Figure 3.6 suggest that children can have a play environment typified by adventure playgrounds. A constant theme for recreation professionals is providing challenging, creative yet safe play experiences.

<b>**ORRRC Report** (Figure 3.10, Figure 3.11, and Figure 3.12). In 1958, Congress commissioned the Outdoor Recreation Resources Review Commission (ORRRC). Its purpose was contained in the Marion Clawson (1959) article titled "The Crisis in Outdoor Recreation" and then repeated more formally in the monograph titled "Prospective Demand for Outdoor Recreation" submitted as part of the ORRRC report (ORRRC Study Report 26, 1964). Politically, in order for the government to take action, they needed to show that there is a need or problem. The purpose of the ORRRC report was to document that there was a crisis in outdoor recreation, the title of Clawson's (1959) article. In the article, the stream crowded with anglers in Figure 3.10 exemplifies one of many examples of the crisis in outdoor recreation. The crisis was that the demand for outdoor recreation was growing at a rate that was outstripping the supply of these opportunities.

Figure 3.10: Crisis in Outdoor Recreation – Caption: "With so many anglers in one stream the trout probably move to give them room." The message is that demand is outstripping supply. Source: Clawson (1959) [file: \DBG257.jpg]

The purpose of the ORRRC Report was to provide the justification for government action to address the mismatch of supply and demand (Figure 3.11 and Figure 3.12). The objective was to increase the supply of outdoor resources. In the monograph, Clawson footnotes his 1959 article as part of the source material and uses the exponential growth in attendance at the national parks to demonstrated the growth in demand for outdoor recreation. Extrapolating the data, he projected growth to continue exponentially to the year 2000. More than sufficient justification was provided.

In Figure 3.12, actual attendance at the national parks was superimposed on the projected demand. Actual participation from 1976 to 2000 did not continue exponentially and tapered off. Actually, in his 1959 article, Clawson provided the limiting factors on growth. Initially, the growth in the middle class, growing affluence of the middle class, the creation of the interstate highway system and the return to the outdoors movement stimulated growth and then eventually limited it. Regardless, there was still a problem providing adequate supply of outdoor resources, and the ORRRC report justified that need.

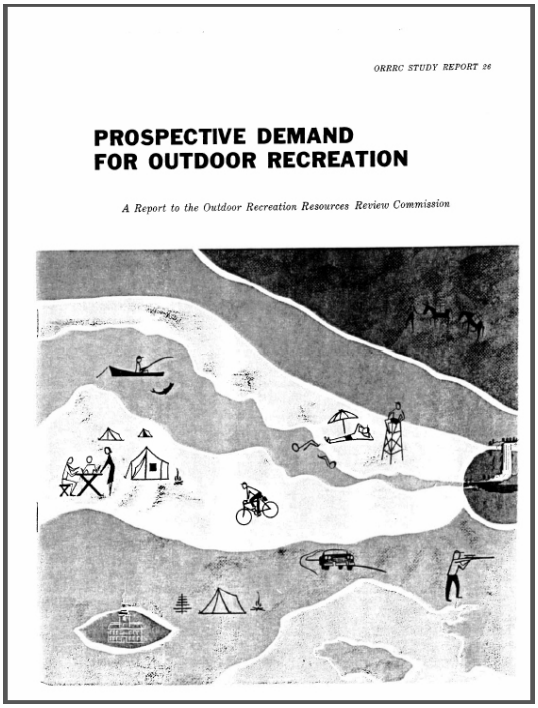

Figure 3.11: Perspective Demand for Outdoor Recreation – Volume 26 of the ORRRC Report advances Clawson's thesis that demand is outstripping supply and echos Clawson's (1959) article on the Crisis in Outdoor Recreation. Source: ORRRC Report [file: \ORRRC_Cover.jpg]

In framing the success of the Commission, it is important to view the Commission in the context of society at that time. The United States was nearing full employment and there was a focus in the country on leisure and leisure time. Industrially, the country was still number one as the other war torn countries were in the process of retooling. The tenor of the times and its focus on leisure is embodies in the following quote by Charles Brightbill.

> "Leisure is related directly to the advance of science in industrial technology or work performance. Gains made in work efficiency are reflected quickly in leisure. Industrial progress means more production, which in turn, usually results in a higher standard of living. Thus people have not only more leisure but also more money to spend during leisure." (Brightbill, 1960)

In summary, the outcome of the ORRRC Report was monumental and represents the unification of the recreation and parks movement. Society was focused on leisure. The middle class was growing and becoming mor affluent. Highways and transportation were becoming more dependable. Demand for outdoor resources was increasing at a rate far exceeding the supply. There was a problem that the government and the recreation and parks movement needed to address and solve. ORRRC did its job.

<c>***Land and Water Conservation Fund***. In terms of supply and demand, the ORRRC Report concluded that supply for outdoor resources lagged far behind the demand. The Land and Water Conservation Fund provided the funding for providing these resources to the States and Federal land managers. Funding of the fund was provided by sales of Federal lands and off-shore oil leasing rights.

<c>***Bureau of Outdoor Recreation (BOR)***. As with any bureaucracy, there needs to be an agency that oversees the dispersing of the funds and coordinates activities to address the problem, in this case the need to increase outdoor recreational opportunities. The Bureau of Outdoor Recreation was created for this purpose. It was housed in the Department of Interior. It is worthy to note that the BOR was not a cabinet level agency. In 1977, the BOR was absorbed into the newly created Heritage Conservation and Recreation Service (HCRS).

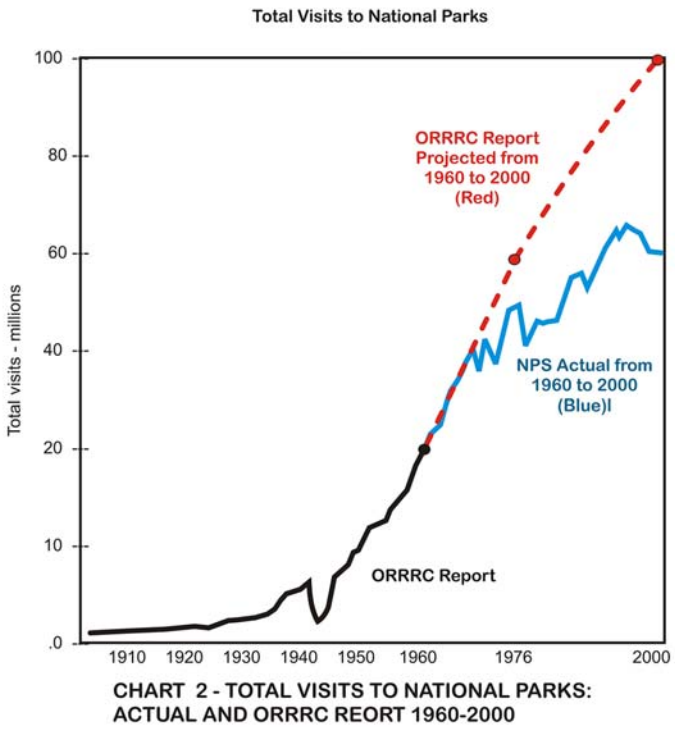

Figure 3.12: National Park Service Attendance and Projected Demand – Clawson uses the exponential growth in attendance at national parks to justify the crisis in outdoor recreation. Demand is projected to the year 2000. Source: ORRRC Report [file: \ORRRC_ProjectedVsActual.jpg]

<c>***State Comprehensive Outdoor Recreation Plan (SCORP).*** The Land and Water Conservation Fund provided funding according to a formula to the Federal land managing agencies (e.g. Forest Service, BLM, NPS, etc.) and to the states to increase the supply of outdoor opportunities. As is usually the case, funding from the Federal government has a "hook" associated with it. In order to receive funding, the hook was that the states were required to complete a State Comprehensive Outdoor Recreation Plan. The purpose of SCORP was to determine the supply and demand of outdoor recreation needs within the states.

<c>***Legislation***. Consistent with society's interest in leisure, there was a plethora of Federal legislation passed. Along with the Land and Water Conservation Fund, there was the passage of the following acts: Wilderness Act of 1964 and 1968, National Trails Act of 1968, Wild and Scenic Rivers Act of 1968. Extending the significance and impact of this legislation, the Wilderness Act and the Wild and Scenic Rivers Acts became model legislation emulated by the states.

<c>***President's Commission on Americans Outdoors.*** There was a desire to recreate the magic that surrounded the ORRRC Report and to do it again. The Commission on Americans Outdoors published its report in January 1987. There were several take-aways from the report. First, the main thesis of the report was that the Federal government couldn't do it alone and the concept of developing "partnerships" gained acceptance. Second, the health and fitness movement had eclipsed the recreation and parks movement and in 1987, the recreation and parks movement considered itself as a subset of the health movement. "Wellness" was the new operative term. Third, there was a foundational shift between the environmental and the recreation and parks movements. At its core, the environmental movement would was content to exclude outdoor recreationists from the parks. Parks are for animals, not people. For the most part, the recreation and parks interests still sought to provide outdoor recreation opportunities for people. The lack of unity between the two interests was evident in the report. In conclusion, the primary take-away was that although there was societal support for outdoor recreation, society had moved on to address other societal issues, namely health and wellness and the environment. The President's

Commission on American's Outdoor had some success, but unfortunately, less so than ORRRC.

<c>***Significance of ORRRC Report***. The outcome of the ORRRC Report was that it created a lot of institutions and programs that are still in place today. The institutions are carrying out their mission today. The legislative mandates enacted are being carried out today also. In this respect the ORRRC Report was a watershed landmark for the recreation and park movement. It was the culmination of the play movement that began in 1886 and of the parks movement that began on or before 1872. In the 1960s the country was united behind the leisure movement. The movement was unified. The significance and impact of the ORRRC report cannot be overstated.

<b>**National Recreation and Parks Association (NRPA)**. The creation of NRPA was an outgrowth of the ORRRC Report (Hartsoe, 1998). In addition to the creation of a Federal agency and a funding source, there was a need for one organization to speak nationally for the field. With a grant from the Rockefeller Foundation five organizations merged to form a single entity, the National Recreation and Park Association (NRPA) on August 14, 1965. On the recreation side is was the culmination of the play movement beginning in 1886. On the park side, it represents the culmination of the park movement beginning in 1872 with the Yellowstone Act. over a 100 year movement in this country. The five organizations were the National Recreation Association (NRA), American Institute of Park Executives (AIPE), American Recreation Society (ARS) the National Conference on State Parks (NCSP), and the American Association of Zoological Parks and Aquariums (an affiliate of AIPE).

From the perspective of this book, there needs to be some commonality among the different organizations and their constituents. The association represents the union of the active (recreation) and passive (parks) movements. Active recreation is under the general purview of recreation programming and not covered here. The primary focus of the National Recreation Association and American Recreation Society is on "active recreation." "Passive recreation" and the design of space are the primary focus of this textbook. The next chapter focuses on the English landscape movement which because of Olmsted's trip to England, transferred the English Landscape movement to this country. Historically, the American Institute of Park Executives and the National Conference on State Parks focus on the park movement.

The American Association of Zoological Parks and Aquariums was an affiliate of AIPE. They joined with NRPA at its formation, but subsequently left the association. Although not a lot has been written on zoological parks from a design perspective, zoological parks and aquariums have a lot in common with parks in general. For this reason, a section on zoological parks is included in chapter 6.

In contrast, theme and amusement parks may be considered the orphan child of the park movement. At the time of the merger in 1965, they were not directly represented in the formation of NRPA. Although seemingly in stark contrast with the English landscape movement and traditional parks, closer inspection reveals that theme and amusement parks actually have a lot in common with more traditional parks. For this reason, the history of theme and amusement parks are also discussed in Chapter 6.

<b>**Lifecycle of Social Movements.** Sociologists have studied the lifecycle of social movements where they emerge, grow and become institutionalized. Studies have gravitated to four general stages or phases in the lifecycle of social movements (e.g. McAdams, et al 1996, and Christensen, 2009). In the preliminary or "emergence phase," people become aware of the issue or problem. Leaders emerge. The second stage is the "coalescence phase." In it people organize and increase their awareness regarding the issues. The third stage is "institutionalization" or bureaucratization phase. The authors suggest that the movement is carried out by formal organizations and trained staff. The last phase "decline" occurs five ways: repression (i.e. active suppression by authorities), co-optation (i.e. opponents buying off the leaders

of the movement), success, failure, and establishment within the mainstream.

With some modification, the four stages can be applied to the recreation movement in this chapter, and the development of the national parks, the Forest Service and the Wilderness movements in the following chapter. In terms of the recreation movement the playground movement began in the 1888 with the Boston sandbox movement. During the emergence stage, leaders emerged including Dr. Marie Zakrzewska, Joseph Lee and Luther Gulick. The movement entered the coalescence stage with the creation of the Playground Association of America (PPA) in 1906. The organization advocated for community playgrounds and recreation. It could be argued that with the creation of the PPA, the movement had entered the bureaucratization stage with its trained leadership. However, it is easier to suggest that the movement entered the institutionalization phase with the publishing of the ORRRC Report which resulted in legislation, the creation of NRPA, the BOR and the Land and Water Conservation fund. These creations became established within the mainstream of society suggesting a decline phase of success.

Playground Safety – The Dirty Dozen

"The Dirty Dozen: 12 Playground Hazzards – Are they hiding in your child's playground?" is a brochure published by the National Recreation and Parks Association (NRPA) in conjunction with the National Playground Safety Institute (NPSI). Although the brochure has gone through several renditions, its content remains relatively unchanged. This author was responsible for the layout and graphics used in the original brochure. Most of the text in this section is from the original brochure as are the graphics.

As noted later in this section, the Dirty Dozen illustrates how a comprehensive brochure can be taken and evolved into a playground inspection instrument and used in report writing. The twelve categories can easily form the major categories of the inspection instrument.

<b>**General Environmental Concerns**. This section is not included as one of the twelve playground hazards in the dirty dozen. However, it is included in the Kutska (1999) publication. It focuses on the general environment surrounding the playground.

Some general environment considerations include the following. There should be signs on the road next to the playground notifying driver of the playground. There should be a sign with regulations presented at the entrances to the playground. Seating and benches should be in good condition. Any poisonous plants should be removed from the area. This includes poison ivy. Shaded areas should be provided. If needed a fence can be provided on the border within 100 feet of the playground. The purpose of the fence is to protect potential participants from hazzard lying outside of the playground. Prior to

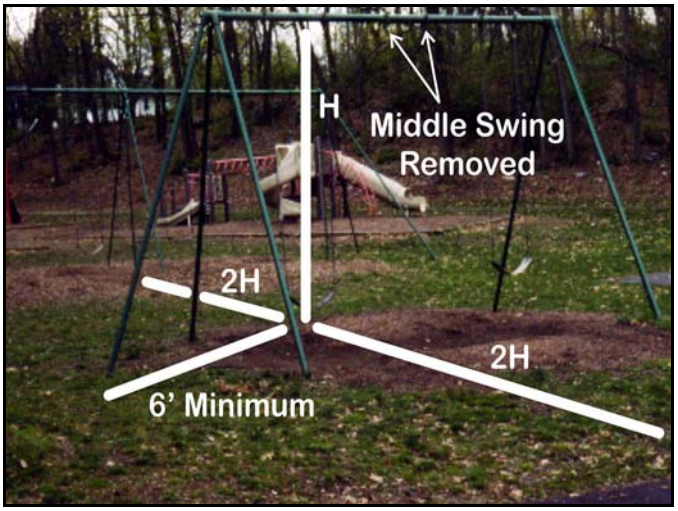

Figure 3.13: Inadequate Mulch – The swing set has inadequate surfacing and the surfacing doesn't extend throughout the fall zones. A maintenance issue, the depth of mulch under the swings needs to be restored. Removal of the center swing is acceptable to bring it into conformance. Wyomissing Playground, Wyomissing, PA. Source: author [file: \PL_FallZones.jpg]

building the playground, the area should be free of any toxic materials and preservatives. Once constructed, the playground should be free of any toxic materials and preservatives.

<b>**Improper Protective Surfacing** (Figure 3.13). The surface or ground under and around the playground equipment should be soft enough to cushion a fall. Improper surfacing material under playground equipment is the leading cause of playground related injuries. Over seventy percent of all accidents on playgrounds are from children falling. Hard surfaces such as concrete, blacktop, packed earth or grass are not acceptable. A fall onto one of these hard surfaces could be life threatening.

There are many surfaces that offer protection from falls. Acceptable surfaces are hardwood fiber/mulch, sand, and pea gravel. These surfaces must be maintained at a depth of twelve inches, be free of standing water and debris, and not be allowed to become compacted. There are also synthetic or rubber tiles and mats that are appropriate for use under play equipment. They provide suitable remedial surfacing over asphalt, hardwood floors and other hard surfaces (see Figure 3.27 and Figure 3.28).

<b>**Inadequate Fall Zones** (Figure 3.14 and Figure 3.15). A fall zone or use zone is the area under and around the playground equipment where a child might fall. A fall zone should be covered with protective surfacing material and extend a minimum of six feet in all directions from the edge of stationary play equipment such as climbers and chin up bars.

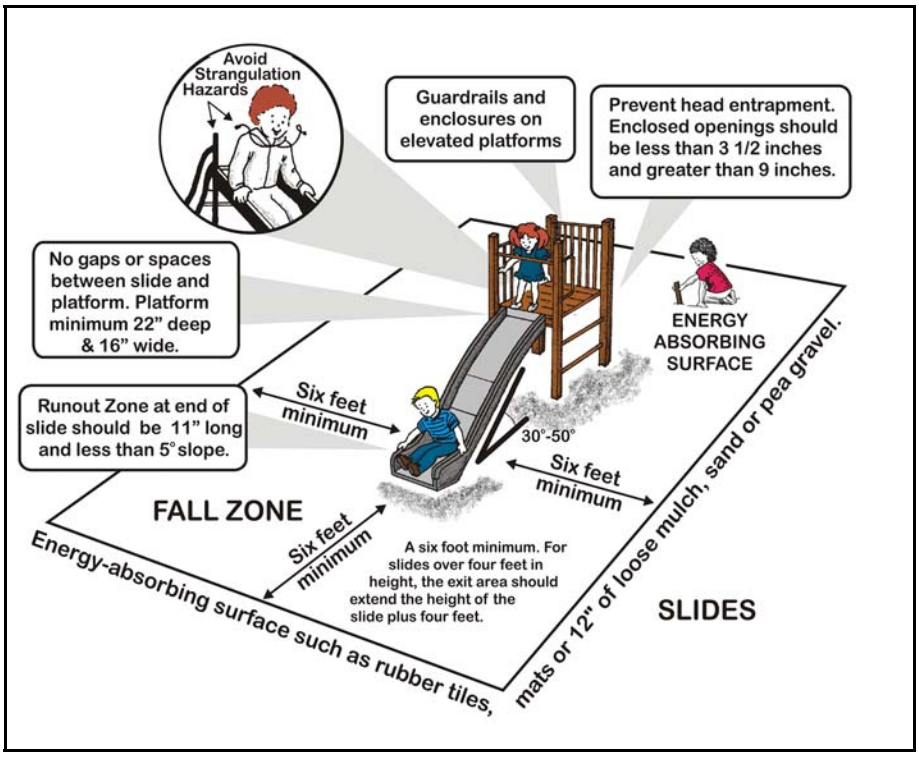

Figure 3.14: Slides – This diagram includes fall zones and other requirements for slides.
Source: author and Dirty Dozen [file: \PL_Slides.cdr]

The fall zone at the bottom or exit area of a slide should extend a minimum of six feet from the end of the slide for slides four feet or less in height (Figure 3.14). For slides higher than four feet, take the entrance

height of the slide and add four feet to determine how far the surfacing should extend from the end of the slide. In addition, there should be a flat platform at the top of the slide with minimum dimensions of 22 inches deep and 16 inches wide for tots ages 5-12. The angle of the slide should be between 30º to 50º with the ground. The run-out of the slide should be at least 11 inches in length and have an angle of less than five degrees. This reduces the likelihood of the child exiting the slide and impacting their back by falling to the ground.

Swings require a much greater fall zone than slides and other equipment (Figure 3.15). The fall zone should extend two times the height of the pivot or swing hanger in front of and behind the swings seats. The fall zone should also extend a minimum of six feet to the side of the support structure. Also, there should be no more than two swings per bay. This allows egress or access to the swing. Close inspection of the swing in Figure 3.15, reveals that the third center swing was removed. This is an acceptable practice. In addition, the swing pictured does not have adequate fall zones and surfacing protection.

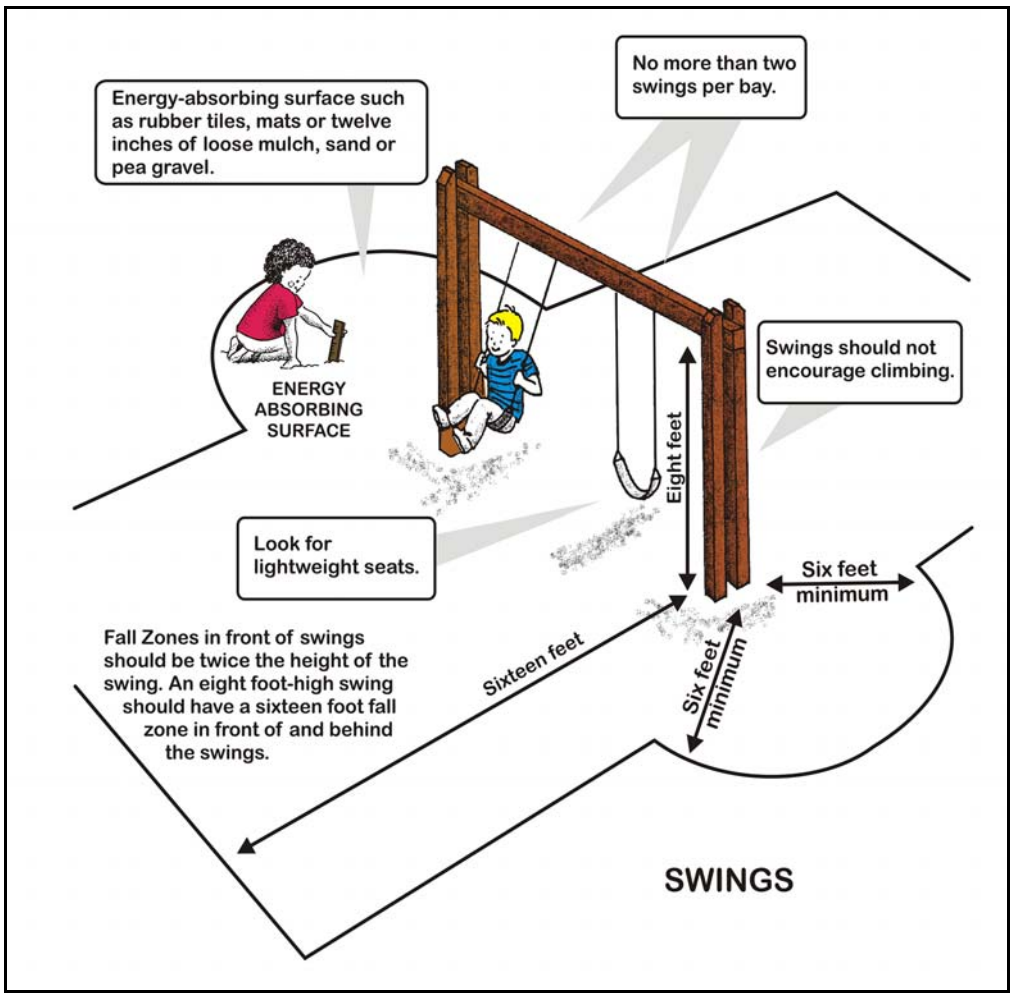

Figure 3.15: Swings – This diagram includes fall zones and other requirements for swings. Source: author and Dirty Dozen [file: \PL_Swings.cdr]

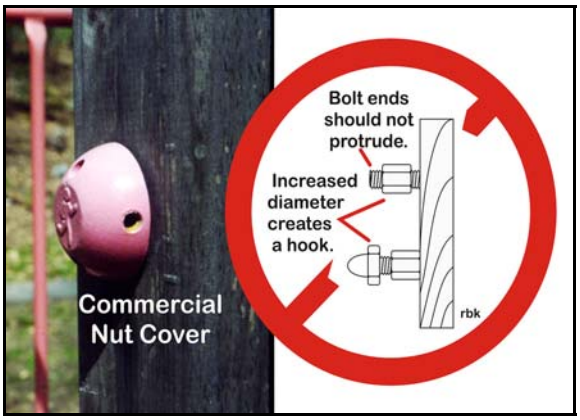

Figure 3.16: Protrusions – Nuts and bolts can create a protrusion hazard. Pictured is a commercial cover that reduces the likelihood of an entanglement. Source: author and Dirty Dozen [file: \PL_Protrusion02.cdr]

Figure 3.17: Head Entrapment – The head of tots (5-12) is bigger than their shoulders. A potential head entrapment exists if a 3.5"x6" rectangle (shoulders) can pass through an opening but a 9" circle (head) can't. Source: author [file: \PL_HeadEntrapment.jpg]

<b>**Protrusions** (Figure 3.16). A protrusion hazard is a component or piece of hardware that might be capable of impaling or cutting a child if a child should fall against the hazard. Some protrusions are also capable of catching strings or items of clothing which might be worn around a child's neck. This type of entanglement is especially hazardous because it might result in strangulation. Examples of protrusion and entanglement hazards include bolt ends that extend more than two threads beyond the face of the nut, hardware configurations that form a hook or leave a gap or space between components and open "S" type hooks. Rungs or handholds that protrude outward from a support structure may be gap or space between components and open "S" type hooks. Rungs or handholds that protrude outward from a support structure may be capable of penetrating the eye socket. Special attention should be paid to the area at the top of slides and sliding devices. Ropes should be anchored securely at both ends and not be capable of forming a loop or a noose.

Figure 3.18: Inadequate Spacing – A minimum of 12 feet between pieces of equipment allows for circulation around the equipment. The swing pictured on the right requires even more space. It requires a fall zone twice the height of the swings. Frostburg, MD. Source: author [file: \PL_OverlappingFallZones.cdr]

<b>**Entrapment** (Figure 3.17). Tots 5-6 years of age have larger heads than their shoulders. Crawling through openings feet first that are above the ground can result in a situation where the shoulders pass through the opening but the head doesn't. The result is a potential head entrapment. The following is the test for a head entrapment. If a 3.5 inch by 6 inch rectangle passes through the opening (i.e. the tot's shoulders), but a nine inch diameter circle does not (i.e. the tot's head), there is a potential for head entrapment. This occurs for 95% of the 5-6 year old tots. Where the ground forms the lower boundary of the opening, it is not considered to be a potential entrapment. Pay special attention to openings at the top

of a slide, openings between platforms and openings on climbers where the distance between rungs might be less than nine inches.

<b>**Insufficient Spacing** (Figure 3.18). Improper spacing between pieces of play equipment can cause overcrowding of a play area which may create several hazards. Fall zones for equipment that is higher than twenty-four inches above the ground cannot overlap. Therefore there should be a minimum of twelve feet in between two play structures. This provides room for children to circulate and prevents the possibility of a child failing off of one structure and striking another structure. Swings and other pieces of moving equipment require more space and should be located in an area away from other structures.

<b>**Trip Hazards** (Figure 3.19). Trip hazards are created by play structure components or items on the playground. Exposed concrete footings, abrupt changes in surface elevations, containment borders, tree roots, tree stumps and rocks are all common trip hazards that are often found in a play environment. The exposed footers in Figure 0330 are the result of inadequate surfacing. Twelve inches of mulch would solve the problem. Invariably this becomes a maintenance issue of maintaining the correct depth of the mulch.

Figure 3.19: Trip Hazards – The exposed footer pose a trip hazard. Twelve inches of mulch would solve the problem. Source: author [file: \PL_Footers.cdr]

<b>**Supervision** (Figure 3.20). The supervision of a playground environment directly relates to the overall safety of the environment. A play area should be designed so that it is easy for a parent or care-giver to observe the children at play. Young children are constantly challenging their own abilities, very often not being able to recognize potential hazards. It is estimated that over forty percent of all playground injuries are directly related to lack of supervision in some way. Parents must supervise their children in some way on the playground!

The bench in Figure 3.20 provides inadequate supervision for two reasons. First, the bench is located in the fall zone of the swing and is itself a hazard. Twice the height of the swing extended horizontally easily extends past the bench. Because of its closeness to the swings, it does not provide adequate general supervision of the swings. A person sitting on the swing cannot survey the entire swing area let alone the area behind the swing. As a footnote, the swing, bench and other playground equipment at the Mt. Pleasant playground have been removed and replaced with updated play equipment.

<b>**Age-Inappropriate Activities.** Children's developmental needs vary greatly from age two to age twelve. In an effort to provide a challenging and safe play environment for all ages it is important to make sure that the equipment in the playground setting is appropriate for the age of the intended user. Areas for pre-school age children should be separate from areas intended for school age children.

<b>**Lack of Maintenance** (Figure 3.21 and Figure 3.22). In order for playgrounds to remain in a "safe" condition, a program of systematic preventive maintenance must be present. There should be no missing, broken or worn-out components. All hardware should be secure. The wood, metal, or plastic should not show signs of fatigue or deterioration. All parts should be stable with no apparent signs of loosening. The surfacing material must also be maintained. If mulch or similar material is used, it is displaced by children on swings, slides and other apparatuses. Maintenance needs to fill in the depressions. Also, check for signs of vandalism.

Figure 3.20: Inadequate Supervision – The bench provides inadequate supervision of the swings let alone the area behind the bench. Mt. Pleasant Playground, Frostburg, Maryland. Source: author [file: \MtP001.jpg]

The first example is of a frozen bearing (Figure 3.21). A systematic maintenance inspection should assess the frozen bearing, the wear, and correct the situation. The frozen bearing has caused the new swivel point at the “S” clamp. Friction wears the “S” clamp thin and in time it will fatigue. There is little excuse if it fatigues and someone is injured. It is clear that it is a long term situation that hasn’t been corrected.

In the second example, the plastic covered chain need to be replaced (Figure 3.22). The plastic covered chain makes it difficulty to visually inspect. The water penetrates the cracks and facilitates the rusting of the chain. The plastic covered chain is initially visually appealing, it quickly becomes a maintenance issue.

<b>**Pinch, Crush, Shearing and Sharp Edge Hazards**. Components in the play environment should be inspected to make sure that there are no sharp edges or points that could cut skin. Moving components such as suspension bridges, track rides, merry-go-rounds, seesaws and some swings should be checked to make sure that there are no moving parts or mechanisms that might crush or pinch a child's finger.

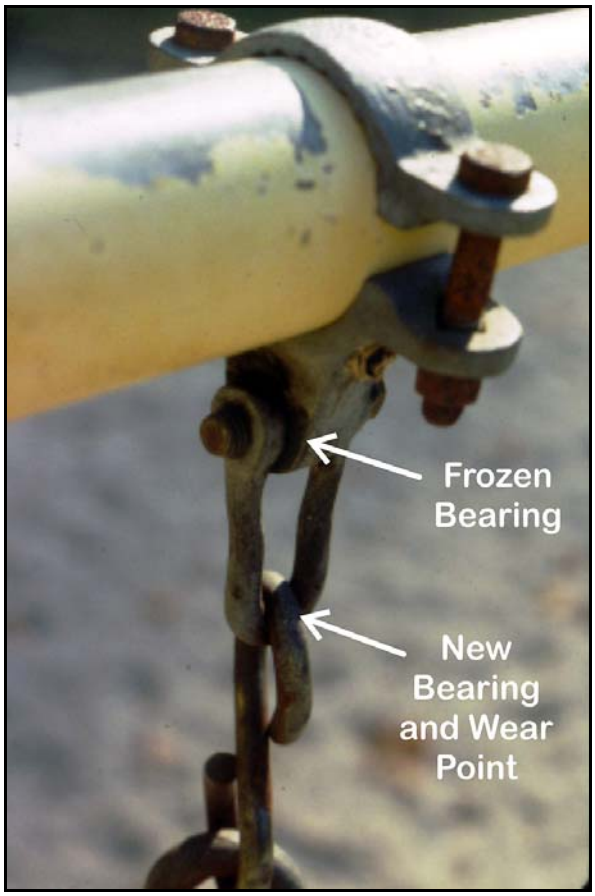

Figure 3.21: Frozen Bearing – Close inspection reveals a frozen bearing. This creates a new bearing and wear point on the “S” hook. Source: author [file: \PL_Bearing.jpg]

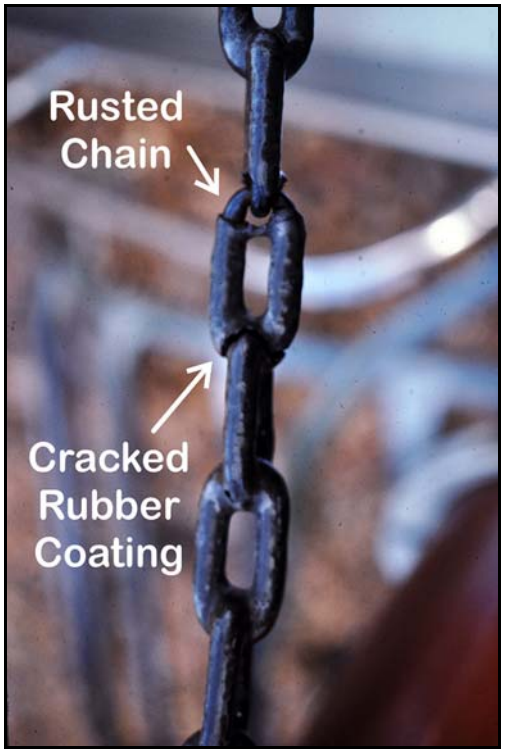

Figure 3.22: Plastic Coated Chair – The plastic coating cracks. Trapped water rusts chain. Visual observation is difficult. Replace chain. Source: author [file: \PL_PlasticCoatedChain.jpg]

sufficiently thick to encourage sitting on top of it.

<b>**<u>Equipment Not Recommended</u>** (Figure 3.25, Figure 3.26 & Figure 3.27). Due to accidents associated with the following types of equipment, the Consumer Product Safety Commission has recommended that they not be used on public playgrounds. The Commission recommends not using heavy swings, animal figure swings, and multiple occupancy/glider swings (Figure 3.25). Also, free swinging ropes that may fray or form a loop should be avoided. Swinging exercise rings and trapeze bars are considered athletic equipment and not recommended for public playgrounds. Overhead hanging rings that have a short amount of chain and are intended for use as a ring trek (generally four to eight rings) are allowed on public playground equipment.

<b>**<u>Guardrails</u>** (Figure 3.23 and Figure 3.24). Elevated surfaces such as platforms, ramps, and bridgeways should have guardrails that would prevent accidental falls. Pre-school age children are more at risk from falls and equipment intended for this age group should have guardrails on elevated surfaces higher than twenty inches. Equipment intended for school-age children should have guardrails on elevated surfaces higher than thirty inches.

Children like to climb. Once the children climbed the outdoor climbing wall, they sat atop the climbing wall (Figure 3.24). It is not unexpected and the climbing wall is

Figure 3.23: Barriers – On elevated platforms, barriers should be a minimum of 38" high and should not encourage climbing on them. Frostburg, MD. Source: author [file: \DSC_0061.jpg]

Figure 3.24: Outdoor Climbing Wall – Not surprisingly, the outdoor climbing wall encourages sitting on top of the wall. Roosevelt Park, San Antonio, Texas. Source: author [file: \Bouldering001.jpg]

Other equipment that should be avoided includes outdated and converted equipment. Many accidents have been associated with the Giant Woolley (Figure 3.26). If one is present, it should be disabled and removed.

Often parks become repositories of used military equipment and artifacts (Figure 3.27). Since the playground standards are performance based standards, they can be applied to multiple situations. With a little bit more attention, the jet airplane pictured could pass the standards. The asphalt surfacing is clearly inappropriate and rubberized mats could be installed. Fall zones can be accommodated. Pinch, crush, shear and sharp ends have mostly been eliminated.

Figure 3.25: Animal Seats – Not quite an animal seat, these seats have a similar mass. Knocked out teeth and concussions are common injuries. Mt Pleasant Playground, Frostburg, MD. Source: author [file: \MtP016.jpg]

Figure 3.26: Giant Woolley – The Giant Woolley has caused numerous injuries and if present on a playground, it should be disabled and removed. Mt Pleasant Playground, Frostburg, MD. Source: author [file: \DSC_0022.jpg]

The second issue with the jet airplane is the sign which says “Please stay off airplane.” Essentially, there are three choices. Remove the airplane so that no one can climb on it. Second, put a fence around it to prevent access. Or last, bring it into conformity with the playground standards. As previously noted, the jet airplane standard not being met deals with surfacing.

Figure 3.27: Converted Equipment – Constitution Park, Cumberland, MD. Source: author [file: \MtP013.jpg]

Performance Standards Applied to Non-playground Situations (Figure 3.28 and Figure 3.29). The playground safety standards can be applied to numerous play situations not found on traditional playgrounds. Since the playground standards are performance based, they can be applied to these situations. Fall zones and surfacing apply to the Killer Whales play area at the Loveland Living Planet Aquarium (Figure 3.28). Simply put, if children are playing on the whales, the choices are to remove the whales or bring the play area into conformity with the standards. Children are clearly playing on the whales. The main issue here was the thickness of the shock absorbing surfacing.

Figure 3.28: Friendly Killer Whales – Play areas present themselves in seemingly non-play areas. Children are definitely climbing and playing on the whales. The surfacing and fall zones need to be considered. Salt Lake City, Utah. Source: author [file: \LLPA007_KillerWhales.jpg]

Figure 3.29: Bouldering Rock – The bouldering rock outside of REI demonstrates the application of the safety standards to non-playground play. The fall zone is adequate and the pea gravel is an appropriate surfacing. Denver, Colorado. Source: author [file: \rei07boulder.jpg]

The second example is a bouldering rock outside of REI in Denver (Figure 3.29). The playground standards were incorporated into its construction. The fall zone is adequate and the surfacing is pea gravel of a suitable depth.

<b>**Inspection and Report Writing**. The Dirty Dozen brochure provides a good example of how a brochure can be converted into an inspection instrument and a written report. The Dirty Dozen brochure covers twelve areas of playground safety. The twelve categories and the content of the brochure can easily provide the foundation of a playground inspection instrument used to periodically inspect playgrounds (Dirty Dozen). Add to the instrument the name of the playground, the date and the inspector. If needed, the more comprehensive publication by Kenneth Kutska et al (1999) *Playground Safety Is No Accident: Developing a Public Playground Safety and Maintenance Program*. If a report is needed the twelve categories form the major headings and the content form the content of the report.

Summary

The underlying theme of this book is about designing the experience. Play and playgrounds are fundamental to designing this experience. The chapter begins with laying the foundation with a discussion of Huizinga's principles of play. The playground is defined by time and space. Hopefully, it is a special place separate from the outside world. Everyone plays. Play is not just for children. However, play is instrumental in the growth and development of children.

Next, the chapter reviews the play movement from a historical perspective. The movement culminated with the Outdoor Recreation Review Commission, their report and the creation of the National Recreation and Parks Association. In 1964, the country was focused on leisure. The impact of the Commission and its report was significant and altered the trajectory of the movement. The play movement had reached national significance.

The chapter concludes with a review of the playground safety standards. It brings the discussion full circle. The question the reader needs to consider is whether in the name of safety, the standards remove challenge and creativity from the playground. It is an open ended question. Although they don't seek to limit creativity, they may do so. Remember, participants need to be able to modify elements in their environment to help create the desired experience.

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