



MUSEUM CROWD CONTROL

BY STEVE KELLER, CPP

All too often, those of us in the amusement business, museums, specifically, think of crowd control as being relevant only to the comfort of our visitors and customers. How many people can we push through a blockbuster museum exhibition before the visitor complains about overcrowding? At what point does the crowd jeopardize the museum exhibit or store merchandise?

But there is more to this issue than just comfort and economics. The issue of public safety prevails. Those of us responsible for crowd control must develop our plans with safety as our foremost concern. And crowd control is a team effort. So who is on the team?

CROWD CONTROL--A TEAM CONCEPT

Everyone in your organization should be involved in the crowd control effort. Let's look at the typical museum exhibition as an example. Everyone plays a role in crowd control. The exhibit designer and curator play a critical role since their exhibit design and method of display can create bottlenecks, reduce traffic flow, or cause other problems. Administrators who budget for exhibits can cause or abate a crowd control hazard. Retail or gift shop employees and managers, and those responsible for the display of



merchandise in exhibit shops, can make or break your effort. ALL staff, from the volunteers and docents who guide your tours to the Guards who staff the galleries, are part of the team. And don't forget the important role played by the many people who never even see the exhibit gallery--like the security dispatcher, paramedic, etc.--who respond to problems, effectively or otherwise, after they occur.

PROBLEMS

So what problems can happen? Well, the list of problems that can occur in a crowded gallery is endless. Events such as a fire, power failure, or crime can certainly spook a crowd. But so can less dramatic events which cause simple, irrational panic due to overcrowding, problems with temperature, or even a rumor. It often takes very little to cause a group of unrelated individuals to panic and act as a crowd.

MAINTAINING CONTROL

Your job as a Security or Visitor Services Manager is to maintain control. But how can you do this once the crowd panics? How can you prevent panic in the first place?

Steve Keller is a security consultant specializing in museums, cultural institutions and historic sites with headquarters at 555 Granada Blvd. Suite G-3 Ormond Beach, Florida 32174 Tel. (386) 673-5034 Fax. (386) 673-5208 E-Mail steve@stevekeller.com



Training is your greatest tool. Once panic occurs in a crowd there is little that you can do to stop it. You might as well plan on major losses occurring in such an instance. In the museum setting such as in a crowded exhibit hall, losses can be personal, such death or great injury, as well as theft of damage to the collection. So you better take action before the problem occurs.

Training by the crowd control manager, usually the Security Director and his key staff, should include everyone in the organization remotely involved with the exhibition. Administrators must cooperate with exhibit design and funding. Curators must allow basic life safety considerations to be built into their exhibit space. Exhibit labels must be large and brief so that they do not cause bottlenecks as people crowd close to read them.

When exhibit objects are small or contain much detail, the number of objects in the galleries must be reduced. The amount of clear space in a gallery must remain consistent through out the exhibit galleries. Initial galleries must not contain important objects and not be displayed as densely as objects in later galleries. Small detailed objects should be avoided in early galleries since visitors tend to spend more time in these galleries than in later galleries. And audio tours, slide shows, and other educational materials must be conducive to good crowd control and should not contribute to bottlenecks or delays.

It is important that galleries be well lighted and that exit paths be clearly marked or identified. These paths need not necessarily be marked with obtrusive signs but visitors must always be able to distinguish between dead end paths and the exit path in a gallery so that they are comfortable at all times with their presence in the gallery. And while they are often said to detract from an attractive gallery design, lighted exit signs, rarely do detract. In fact, they are rarely noticed consciously by visitors but subconsciously they serve to comfort visitors by providing important information about direction of escape in a fire.

The presence of uniformed, highly visible gallery attendants, visible but unobtrusive fire detection and suppression equipment, an effective and obvious crowd control plan, and the appearance of a well managed building all help to develop visitor confidence. breeds trust, reduces "panic potential", and makes crowds easier to manage.

Every gallery employee--from the Guard to the Gallery Shop Clerk--should be trained on how to deal with a panic or emergency situation. In short, training should cut across every level in the museum and anyone having anything to do with the exhibit should be included and briefed on their role in crowd control. And above all, no employee regardless of rank, is above the responsibility for implementing the evacuation plan.



MAKING THEM LISTEN

Most employees respect the need for life safety training and will understand the need for crowd control considerations in their planning. But some will not. Some people recognize only those factors in their job which are important to them.

So what if you encounter a Gallery Shop Manager who worships the almighty dollar? So sell crowd control by explaining the economic advantages of having comfortable customers spend more time in his shop. What about the curator who wants small labels with small print for objects on display? Explain the importance of providing a controlled crowd flow through the gallery and the disadvantages of having to limit the number of visitors, due to bottlenecks, who will see his exhibit.

But it is most important that you train key gallery personnel as your front line of defense against problems which may occur in the gallery resulting from crowds. Since the primary result of most negative actions in the gallery is panic, all of your security personnel should be trained on the subject and how to deal with it. Most important, they should be trained on how to prevent it since few people can actually stop it once it occurs. It is the responsibility of the crowd control or security manager to impress upon each employee the consequences of a failure of the crowd control plan in an emergency.

PANIC

Panic is a sudden, unreasoning fear. It grips one member of the crowd and spreads quickly to others. The speed at which it spreads and the irrationality of the fear itself, separates panic from normal "garden variety" fear.

Security people should be trained to develop an automatic action and response to any situation which could lead to panic. The most effective form of training in this regard is to drill--over and over--with the security personnel so they can react without thinking on most situations. Redundancy is the key to success of this type of training.

People on the verge of panic are very susceptible to direction--any kind of direction--good or bad. The goal of your security force should be to seize that moment when the soon-to-be-panic-stricken visitor can be controlled.

Train your personnel to observe facial expressions of the crowd. What are they thinking? What are they about to do? Look for what has been called the "critical moment of silence" People on the verge of panic will stop --if only for a moment--while their brain makes an automatic, unconscious decision to flee or freeze. You've seen the look in animals confronted with danger. For a fleeting moment they stand silent, waiting for their thoughts to catch up with them. It is during this moment that your well trained staff can take control of the crowd. But a few seconds later, that ability to control may be lost forever.



During that critical moment of silence, people will follow a leader. Your people, uniformed people, are especially well suited as leaders since the uniform serves as a symbol to many people that the officer is well trained and can help. This fact does not have to be communicated verbally. A picture, as they say, is worth a thousand words.

Panic does not have to stem from a real situation. Panic can occur even if the visitor thinks that a danger exists and is about to overtake him. Your trained employee must recognize this and be ready to seize the opportunity even if he knows that there is no danger.

Communication

During the moment of stunned silence when people are faced with an emergency, they are quite rational. Studies show that people more often than not will react rationally rather than with total and complete panic. Interviews with people who escaped the MGM Grand fire in Las Vegas indicate that people reacted quite commendably through the ordeal. But the studies also support the theory that the people will follow a leader and look for one who will help them.

Communication between the leader and the followers is essential. Communication can be verbal or non-verbal. As we noted, the uniform speaks to the panic victim by expressing clearly the authority position of the Officer. Likewise, the uniform of a waiter can convey the fact that the waiter is familiar with the

burning hotel restaurant, that he has inside knowledge about exit paths--perhaps through the kitchen--and that he can help.

But verbal communication is critical. Also critical is the timing of that verbal communication. Communication is most effective if it comes during the period of stunned silence. While even the best trained security officer will be himself consumed in stunned silence, his training and conditioning should enable him to recover before the crowd recovers. And it is essential that he react immediately without a second of delay since there may remain only a second or two between the time he recovers and takes control of the crowd and the time when the crowd recovers and begins to flee in uncontrollable panic.

Verbal commands must be loud, distinct, and authoritative, crisp to the ear of the listener. Information must be accurate and articulate. The more concise the information, the more effective psychologically it will be in controlling the crowd and halting panic. "You! Go immediately to Stairwell 'A'" is an effective command when accompanied by distinct hand signals pointing to stairwell A. It is far more effective than a meek instruction to "exit via the stair".

A leader addresses his subordinates face to face, looking them in the eye. This non-verbal communication imparts a feeling of confidence and control, and face to face communication with the crowd is important. And while it is a somewhat irrational prejudice, most people will react best in a panic



situation from orders barked from a tall, physically commanding Guard or leader. Since it seems useful that your crowd control personnel be able to see over the crowd, it might be appropriate to select individuals for this assignment who are physically and mentally suited for the job.

MOVING THE CROWD

A crowd moves according to what has been called the "Accordion Effect". It will stop and go as space permits. The end of the column of people will start moving well after the head of the column begins to move just like cars begin to move after the light changes. When the head of the column stops, the middle and end of the column eventually stop. Re-starting the column takes great effort at times, so the objective is to keep the front of the column moving when possible.

While a number of crowd flow rates have been published, it is commonly held that only 45 people will pass through a 22 inch wide aisle per minute. Let's assume that you have two 22 inch wide doorways as your exit paths and you have 1,000 people in your exhibit when an evacuation is ordered. Ninety people per minute can exit. It will take over 11 minutes for everyone to exit safely!

Crowds in a normal non-museum exit path generally move at a rate of 250 feet per minute. When the crowd is so great that they must "shuffle" to move, the rate is reduced to 145 feet per minute. These are movement rates and should not be used to estimate crowd capacity in an exhibit since they

do not account for the crowd being stopped to look at the art.

When a crowd encounters a set of stairs, the flow is reduced substantially. It is generally felt that an aisle width of 30 inches is required for single file exit on stairs.

In studying crowd control dynamics, one must take into account the natural tendency of Americans to desire "space". When people stand in a group, they tend to want an amount of vacant space around their bodies. This tendency, in fact, is cultural in nature. In Japan where space is greatly limited and crowds are more prevalent, the Japanese people require less space. It should be noted that the loss of this space surrounding a visitor to a museum gallery often results in the visitor becoming uncomfortable. Some say that they feel like they are losing control. This feeling is a contributing factor in the development of panic.

It should also be noted that crowds sway when they move. Even a loosely packed crowd sways, thus requiring additional space.

SOLUTIONS

So what else must be done to prevent panic and control museum crowds. First and foremost is good exhibit design. The marketing people and the creative people must meet to discuss a realistic plan. It is not possible for the exhibit designer to design a gallery exhibit for a small crowd when the marketing people will be required to sell tickets to more people than the room can handle.



The crowd control responsibility must never rest with someone with a vested interest in anything other than public safety. Give the crowd control responsibility to the person in charge of marketing and you create a situation where a conflict of interest exists. The crowd control coordinator should work for the Security Director whenever possible.

The visiting public should be oriented throughout their visit. They should be contained in a well lighted space, should each be given a reasonable amount of "personal space", and should be physically comfortable in regard to temperature and humidity. The exhibit flow route should be clearly marked using physical or psychological markers such as signs, the presence of Guards or attendants, or psychological barriers. It is a good idea to orient the visitor with a floor plan map on his exhibit brochure or on the wall prior to entering.

Obstructions to good crowd flow should be carefully considered and removed. Temporary obstructions such as wheelchairs, merchandise carts, etc. should be accommodated in a manner which does not negatively impact on crowd flow. If necessary, trained attendants should escort wheelchairs around, not through, crowds, and merchandise should be stocked before public hours.

Crowd control personnel should have three ways of communicating. They must have audible signals--spoken personally or over the radio-- as well as

inaudible signals. It is important that they have the ability to communicate across a large room using hand signals or other means and they should also have a series of confidential codes which they can use, verbally or silently, to signal for help. For example, should the need arise to call the police, it could cause panic to verbally call across the room or blare on a radio "Get me the police!" when a simple "Code Blue" might suffice.

Develop a system of management controls. Know in advance who will order an evacuation and who will not order one. Know the role of Security personnel at all levels and the role of management above the level of the security director. Develop a plan to communicate with outside authorities such as police and fire and make sure that dispatchers know what message needs to be imparted to responding authorities. For example, it is an entirely different situation for the fire department to respond to a museum which is barely occupied as compared to one which is full of thousands of people. If that museum were, say, a children's museum, the situation changes even more.

Be ready and able to control the media. Rumors and misinformation can cause panic to develop or the spread. Assign one articulate spokesman who can provide information which will be accepted as truthful by the press or the public.

Security people and all non-security people in a crowd control situation must understand the importance of



discipline and cooperation, particularly in an emergency. Non-security people are not used to reacting on a brisk, often impolite order from a superior. But in an emergency, they must understand that there is never enough time to say "please".

Maintain a staff presence close to any potential problem. Many museums establish a command post or control room within the exhibition, then fail to staff it with their best person. Crowd control is a major responsibility and requires a competent, dynamic individual who spends his time "on the floor" rather than in the office. Crowd control staff must be well equipped with walkie-talkies, and the control room should be able to reach all key personnel instantly. The command post should be equipped with first aid and rescue tools, plans and blueprints, ample phones and phone lines, and other important equipment appropriate for the situation. If there are case alarms or audible alarms on perimeter doors, be sure that someone is nearby with a key to reset accidental alarms.

CONFIDENCE AND AUTHORITY

The key to crowd control is confidence and authority. People will obey an authority figure in an emergency if they have confidence in him. Confidence is as contagious as panic but the authority figure must act quickly or panic will overcome his ability to seize control.

The key to confidence rests with your crowd control program under the direction of the security manager. You

may be able to bluff during normal circumstances but during an emergency when panic is about to set in, the bluff ends, confidence is false, discipline breaks down, authority crumbles, and panic sets in. The real final key to authority and confidence rests with the security manager responsible for crowd control.

THE BASIC RULES FOR MUSEUM SPECIAL EXHIBITION CROWD CONTROL

1. The room(s) must be large enough to accommodate the crowds which have to be accommodated. The designer must take a realistic attitude. If he spends a hundred thousand dollars on the exhibit design but the design can not accommodate enough people to pay for the exhibit budget without unsafe overcrowding of the space, the exhibit is not well managed.
2. Visitors should be admitted to exhibitions by some orderly system such as "timed entry". With timed entry, visitors purchase a ticket which entitles them to enter the exhibit at a pre-determined "time window". Once inside, they may stay as long as they wish but entry must occur "by appointment". Great care should be given to accurately estimating exhibit capacity. If you err in your estimate, err on the side of underestimating the capacity of the exhibit. Once sold, you cannot "unsell" advance sale tickets. In defining how many people can enter a museum exhibit at any given time under a timed entry system, do not assume that the same number of people can enter each 30 minute entry



period. During the first entry period, 9:00 am to 9:30 am, for example, the gallery will be empty and will immediately absorb the crowd like a dry sponge absorbs water. But once the gallery is crowded, the number who can be admitted drops to the "normal" level. Be certain to accurately assess the impact of tours on your ability to accommodate timed entry visitors. When you tell visitors to enter between 9:00 am and 9:30 am, you should plan on 80% of them arriving between 8:45 am and 9:00 am. Be ready and willing to admit people early if crowds permit. But tour groups tend to arrive on time and all at once. They make a very negative impact on crowd flow. The rule is that you can accommodate 100 people per entry time who are unrelated members of the general public much better than you can accommodate 100 members of an organized group who arrive together.

3. Visitors arriving for an exhibit should be directed to an audio visual presentation or orientation which is located outside the exhibit space and in an area where it will not contribute to the exhibit congestion. The orientation program should be so designed that it will be equally effective and interesting as a pre-exhibit orientation or a post-exhibit epilogue. If necessary, it can be used by the crowd control coordinator to absorb large groups of people as a crowd control tool if galleries or holding areas become congested.

4. Signage leading to the exhibition and ticketing areas must be visible.

While it is not acceptable for museum signage to be obtrusive or distasteful, a fact of life is that signs will only work if they are seen and read. Signage must be concise and brief but they must communicate. If they are too brief, they are ineffective. Within the exhibition, signage is necessary where large crowds need to be directed. This becomes unnecessary if the exhibit is well designed and the flow is obvious. Exit signs are required by law and common sense. They should never be covered or obliterated by a curator who finds them obtrusive. People die from covered or obliterated exit signs and the person who covers them and the person who orders them covered are guilty of both civil and criminal violations, possibly including, homicide.

5. Holding areas must be large and spacious. Visitors must be given something to do so it is wise that an exhibition brochure be distributed in the holding area. Pre-exhibit didactic material should be graphic in nature giving those forced to stand in waiting lines something to look out but allowing those who may enter the exhibit without a delay a feeling that they didn't miss anything.

6. Holding areas consisting of ropes and stanchions should be designed with flexibility. Ropes should be capable of being re-strung so that visitors may take the short route during times when crowds are small or travel through longer holding aisles when crowds increase.

7. The holding area and the ticket taking, catalog sales, and audio tour



sales must be carefully designed under the control of the crowd control coordinator. It is desirable to hold people briefly in front of the sales area of your desk. It is desirable to contain catalog sale and audio tour desks within the same immediate area. This stimulates sales of both catalogs and audio tours. Visitors who feel that they can walk immediately into the exhibit hall are not as likely to stop and buy a catalog or rent an audio tour as they would be if they were held for a few seconds in front of the sales desk.

8. Sales desks at the holding area must be adequately staffed so that they can handle the volume of sales without slowing down entry during times when the crowd control people must accommodate large groups of people. An "escape route" must be designed from the holding area so that crowd control people can allow those not wishing to buy a catalog or rent a tour to bypass those at the desk who are doing so. But since this bypass route negatively impacts sales and reduces the educational value of the exhibit by denying availability of a catalog and a tour, it should be used sparingly. All audio tours are not alike. One type of tour requires only that the visitor reach out and receive a phone-like handset. Anyone who has ever talked on a phone will know by looking at it how it is used. Further explanation can and should be brief. Other systems require that a tape recorder be "outfitted" to the visitor. Attendants must place the recorder strap over the shoulder of the visitor and teach them how it is used. This takes time and reduces crowd flow

potential. This type of tour device requires larger battery charging racks and reduces floor space.

9. The exhibit gallery must have wide aisles and sufficient free space so that visitors feel comfortable. Designers should note that most building codes require that the number of people in the gallery space be governed by the amount of clear floor space not used by exhibits and by the widths of doorways. If the floor space is reduced substantially by walls and cases, codes may limit the number of people you can admit at any given time to view the exhibit. A common mistake by exhibit designers is the reduction of the doorway width due to the addition of decorative moldings or the construction of new walls and new doorways. Fire inspectors look very closely at the reduction of door widths and some of the most notable major exhibitions of the decade at some of the larger museums nearly were cancelled or postponed by fire inspectors unhappy that designers, unaware or unconcerned by city fire codes, failed to preserve doorways and exiting paths.

10. The first gallery in a series of galleries should be sparse. It should never contain the more important items in the exhibit and should include items which need not be pondered. Visitors to exhibitions spend more time in early galleries than in later galleries. They look more closely at initial objects than at later objects. The density of objects in any gallery must be carefully controlled and galleries with more important objects or



objects which might require more time for viewing will be more crowded. Curators and designers should not estimate the time a member of the public will take viewing objects by assessing the artistic importance of an object. There simply is no correlation. The less artistically inclined security director can usually identify "crowd pleasers" better than the professionally trained curator who judges each object by a different, more refined standard. Gold attracts more attention than canvass. A Rembrandt attracts more attention than a better work by a lesser known artist. That is why King Tut was more popular than most other exhibits.

11. Objects in early galleries should not be small or detailed. For example, in an art museum exhibit, paintings or large sculptures are better than prints or small decorative arts in initial galleries.

12. The design of early galleries should be more straight forward. Visitors need to become oriented to moving through a gallery and the traffic plan should be apparent from the beginning of the exhibit.

13. Guards should be placed and visible at transition points in the exhibit, i.e., wherever visitors have a choice of direction, wherever they need to be politely "expedited" to the next gallery, or wherever they may need to be held, waiting for the gallery to clear.

14. Gallery designs should avoid appearing like a "maze". If walls and

cases must create a maze-like effect, then try to allow for visibility through double-sided cases.

15. Security requirements should be known in advance. Do not design an exhibit without input from the security manager or you may find out that much of your important floor space will be taken up with ropes and stanchions, rails in front of exhibits, or for other purposes.

16. Allow ample escape routes for emergency and handicap use. While they do not have to be highly visible, they should be apparent to the visitor.

17. Avoid having an exhibition move between floors, on stairs, or through non-exhibition areas.

18. Added crowds cause lower visibility. Therefore, cases must be designed for improved security.

19. Audio tour stops should be as brief as possible and must be clearly marked. When you are trying to accommodate a lot of people in a small space, it is not possible to wait for people to find the tour stop. It is better to have one slightly longer stop in a single gallery than several short messages. The first audio tour message should begin immediately while the visitor is still at the sales booth. Thus, wands which are not working can be returned to the attendant before the visitor leaves the sales booth.

20. The audio tour drop-off point should be so located as to permit



return of the wands to the sales area without requiring that the cart of recorders or wands be moved through the crowd pattern.

21 The exhibit space should accommodate an exhibit control room, a first aid station, and, when possible, rest rooms.

22. Retail operations at the end of an exhibit often cause bottlenecks. Allow for an escape route around the store and use it when necessary to "vent" the crowd to safety. Staff the store with sufficient staff to accommodate visitors so crowds can move freely.

23. Remember when estimating crowd capacity that different people have different interests in the collection and will move at different rates. Normally, "things average themselves out". The mix of people in a gallery enables you to predict an average time the average visitor will spend in an exhibit. But if your exhibit population consists of groups of people with like interests, this may cause difficulty with your estimates. School groups generally move more quickly through museum exhibits than the population at large. Museum "Members", presumably more interested, take more time looking at exhibits. Art scholars or art students may spend all day in the exhibit and may remain together. If you set aside blocks of time for "Member Viewing" or for school groups, remember to compensate in your estimates.

24. Consider rules to prohibit strollers and other obstructions in the exhibit. One stroller takes the space of several

people and causes serious delays in a crowded gallery. Consideration should be given to prohibiting lectures or unofficial tour groups which may cause delays or bottlenecks.

25. One person should control all ticketing to the exhibit. It is impossible to maintain control if tickets are being distributed by various sources to the press, visiting scholars, and others. It should be recognized that it will be necessary to give free passes to these individuals and these free passes should be taken into consideration in estimating the number of tickets which can be sold. But the distribution of tickets should be under the control of the security manager responsible for crowd control. Experience has shown that everyone wants to attend a major art exhibit at the same time: 1:00 p.m. on the last Saturday afternoon of the exhibit. Free passes will snowball and you could find yourself with more people at your door for free admission than you can accommodate all day.

26. It is often necessary to provide crowd control on the exterior of museum buildings due to their location in public parks or gathering places. While human crowd control people are preferable to physical barriers, the people should be supplemented by an inventory of police type barricades and even snow fencing. Snow fencing is one of the most effective temporary barriers available and can be used to protect garden plantings, fountains, etc. During festivals on the museum grounds, consider draining fountains which might become an attractive nuisance to groups of children or



teenagers. And when it is essential that very large groups of people be physically separated from an entire building or portion of a building, consider parking a row of busses bumper to bumper around the protected area providing an almost impenetrable barrier.

27. Large festivals with large crowds often create a situation where public services cannot reach the museum. Police, firefighters and paramedics cannot approach a museum building through a half million people. When such dangerous situations are anticipated, consider providing space to public agencies on the museum grounds for official command posts where contingents of police and firemen can remain on call until needed.