

## HINTS FOR KEEPING YOUR PLANETARIUM OPEN

School and University budgets are gradually shrinking, and programs in all areas of study are being threatened. Certainly, our planetariums are not immune to these cutbacks. The following suggestions on how to help keep your planetarium open have been contributed by fellow GLPA members.

### School Planetariums

#### **Suggestions offered by Dr. Jeanne Bishop**

Always seek to maintain amicable relationships with those in charge, so there can be open communication through problem times.

Develop a contact network of teachers, principals, community members, board members, or other significant people involved in school functions who can write letters and speak for the value of the planetarium.

Know who (individuals or groups) has the power to close the planetarium. Direct information about how the planetarium fulfills school mission statements to these critical individuals.

#### If threatened with closure

Maintain a good image with media and other main school and community contacts, especially when issues of closure, such as lack of funds, other priorities, or ignorance of your program, are being discussed.

Try not to get outwardly angry. Show respect for people and their decisions. Adopt a fact-finding approach, and a positive demeanor. These will be outward and inward tools to confront the threat.

Behind the scenes, let people know of the possible or probable closing. Indicate to your teacher-parent network that it may be helpful to express their positive support. Do not talk to Board members or it will make you an adversary to administrators.

Make it easy for those who made the closing decision to reverse it. Suggest alternatives in which you are confident and positive will work.

#### **Suggestions offered by Dan Goins**

1. Give annual reports. For the first six years I attended the June school board meeting and gave a brief report on the year. I gave attendance numbers and the number of non-school groups attending. I also told about or showed them new homemade projectors I made that year. This emphasized how I accomplished programming without a budget, thus saving the corporation money while adding to the planetarium. All departments and programs in the system are now going through this annual report process. I have not given one for the last eight years. I did get noticed when the local newspaper covered my 100,000th visitor to the planetarium several years ago. Number 150,000 is coming up soon and I will get this event covered again.

2. Invite the school board to attend a program. When I interviewed for the planetarium position the board did not feel it could be used in grade school. I told them of other schools with elementary curricula. I gave them a specific example. During my third year the

school system was cutting back on "frills." This is when I hit on the idea of having one of my kindergarten programs live for the school board. I arranged for a group of kindergartners not to come during the regular visit from one of our elementary schools; the parents were asked to bring them to the planetarium on the board meeting night. The board met in a room next to the planetarium for their business meeting. They were in the planetarium before the students were brought in. After the program with the school board I did the same program with the parents who wanted to stay ... nearly all of the parents stayed. The board and the superintendent were very pleased with the results. I still hear about this when I see some of the old board members. They were equally pleased that I did the program again that evening for the parents.

3. Give talks to various groups around town. Many service organizations are looking for speakers. The public library often has programs and needs presenters.

4. Write for the local newspaper. Offer to write a brief monthly article for FREE. They like to have local writers who know what they are talking about to cover "science stuff."

5. Get on the local radio/TV station. Same idea as #4.

6. Become "part" of the local community. Get yourself involved with steps 3, 4, and 5. You want the community to feel as if they will miss you if worst comes to worst. Not only will the school be without a planetarium, but they will be without a *community resource*.

### **Suggestions offered by Dave DeRemer**

Try to develop a curriculum which is integrated into the school district science curriculum. Involve as many grade levels into this curriculum as possible. Send teachers activities which they can use in the classroom, then make sure the planetarium field trip directly correlates with their classroom studies.

Each year produce an annual report showing attendance figures for each grade level which has attended. The report should also show your yearly budget, and the amounts which are spent on each level. Show also how much income the planetarium produces through fees charged to public or private shows or out-of-the-district school shows.

Get the community involved! Present regular public programs, free or for a very minor fee, if possible. Keep current with the topics of these programs. The public is usually informed about current astronomy events, such as meteor showers, eclipses, shuttle missions, or comets, but wish they could learn more. This is our chance to pack in large audiences by satisfying public curiosity of an exciting current astronomy event.

Allow time for private groups to visit. Scouts, church groups, senior citizens, local pre-schools, birthday parties, and others are important visitors when keeping the community on your side. These groups usually don't mind paying a fee for these programs, and they can really add up. The additional income from these shows can really make a difference when districts are debating which programs to eliminate.

Allow visitors to sign up for your mailing list. Develop a yearly brochure and bulk mail rate. The mailing list involves your most important visitors, the ones that always return.

Provide a variety of outreaches. Create a local astronomy club or become a member of it. Carry on observing sessions with students and their parents at the schools. Allow students to do special projects using planetarium multimedia equipment.

## Museum planetariums - suggestions offered by Dr. David Batch

Planetariums are seldom threatened with closure because they produce poor shows or offer inferior services. Insufficient operating funds are almost always the root of the problem. To the extent that the planetarium staff has the authority to attack the cause head on, they should seek increased operating funds by applying whatever methods seem reasonable to their situation. Raising or implementing fees for services is an obvious way to increase revenue but should not be the automatic response to a shortfall. The additional money is often not enough to keep the planetarium open, and raising fees can have undesirable political consequences. Raising fees is more a symbolic gesture that says, "we need help." Another less direct way of raising fees is to offer memberships, where a yearly flat fee allows members unlimited admission to shows.

Other methods of increasing operating funds require additional staff time, e.g. promotions, additional programming, outreach, grant writing. Undoubtedly surplus staff time is not available. Look to outside groups for volunteer support. Sources of assistance may include local teachers, regular attendees (do you keep a mailing list?), local astronomy club members, local media, business leaders, government officials at local, state, and federal levels.

Consider forming two structures if they are not already in place: a formal procedure for individuals and businesses to make financial contributions that offers appropriate tax benefits (perhaps a 'friends' group), and a planetarium advisory committee. Be clear and concise on what the committee is expected to do, and what authority they will have. Make certain each committee member understands his or her purpose for being on the committee.

To receive support, a planetarium must be perceived as worthwhile. Regular communication with all constituent groups is the key to fostering this perception. All superiors should receive periodic written information. Annual reports are an accepted method. Even if your boss did not require you to write the report, he or she is almost certain to read it. Use the report as an opportunity to highlight the planetarium's activities, accomplishments, and needs, as well as to outline future plans. Express gratitude for your superiors' support, even if it is less than you wish. (Remember to never miss an opportunity to publicly acknowledge the support of administrators. It will only strengthen your position.) Distribute the report as widely as possible. Colleagues and patrons will feel a greater sense of ownership in the planetarium if they receive copies of the annual reports.

Offer colleagues special opportunities to know about the planetarium. Be sure they receive information on public shows and activities. A notice sent to the individual is better than the same information posted on a bulletin board. Consider holding planetarium activities exclusively for the museum staff (and families). Be open to comments from others on staff and attempt to deal with all criticisms in an honest and professional manner. Bruised egos are always a threat.

Look for as many ways as possible to tell visitors about planetarium offerings (and needs), both while they are in your building and elsewhere. Handouts, signs, slides on the dome are a few of the common ways to communicate with potential clients. Solicit ideas from the visitors themselves.

Astronomy articles in newspapers, TV and radio interviews, and telephone recordings effectively reach people outside the planetarium. Take a tip from business and consider direct mail. A newsletter or information sheet sent to a well-selected mailing list can be most cost effective.

The decision to close a planetarium is usually not made overnight. The time to implement these suggestions is at the first indication of trouble or, ideally, before. Many of the ideas you will want to try require lead time to be effective. In the final assessment, be sure to keep a perspective. Know that no matter what you do or try or how much energy you expend, it may not be enough. Events may be beyond your control. Do the best you can under difficult circumstances and know the outcome is not a reflection of your ability or value as a person.

## College/university planetariums - suggestions offered by Dr. Dale Smith

It's individuals that count. The attitudes of the people in administrative positions are more important than structural support. If your administrators want to support you, they will make the structure work for you. If some administrator does not want to support you, he/she will not be persuaded by structural arguments. Therefore, keep the individuals above you on your side. Your most important ally is your department chair. If he/she is not on your side, there is probably little that you can do.

Write annual reports. Make sure your chair sees them. Send them to the appropriate person at a higher level, e.g. the dean, vice president, or president, whichever is right in your situation. Be honest in your reports, so you have credibility when you need it. Be vocal when necessary. If you don't speak up for yourself, no one else will. But don't cry wolf when there's no wolf.

Get your administrators to see your shows. Otherwise they will have little idea what you really do. A private showing for VIPs is okay, but it's better to have them at a public show, so they see the real thing. Extend personal invitations if necessary (as it probably will be).

Few administrators will care about the science content of what you do (even though that's what motivates you), but you are an excellent source of P.R. for your institution. They do care about that. Your campus probably has public music and theatre events, but you are almost surely the only regular public outlet of Arts & Sciences. If you are shut down, what is probably the largest academic division on your campus has no regular public outlet, and you can point that out.

Make sure that the quality of your work is impeccable. Since your planetarium work is not research that leads to refereed publications, it is probably seen by other scientists as "softer," as if it's not the real stuff. Of course it's different, and more akin structurally to how artists, musicians, and thespians exhibit creative work.

Your job is different from anyone else on campus. No one else will understand what your job really involves. Though you can try to make them understand, you probably won't succeed. But it's to your advantage if your work has an excellent reputation and it is known that you have to work very hard. Remember too that since no one else understands all your equipment, there is some mystique about how you can pull it all together. Let people be impressed by that.

No one else on campus will see themselves as a natural ally of yours. The scientists probably won't because the planetarium isn't "real" science. Other units won't either, because science is something apart. You need to make your own allies. Depending on your own predilections, you can see music, theatre, art, English, and technology as allies, as well as your campus media (i.e. A-V) people and of course various sciences. Work hard at forging these links. You need to take the initiative and the others need to be enlightened, but you can have some success.

It helps a lot to be a tenured faculty member rather than staff in having autonomy, open lines of communication, and job security.

Be involved with the planetarium community and let that be known. In this way you will be seen as part of a field, not as an isolated facility on the corner of the campus.

Report to the I.P.S. Executive Council

What can be done to assist planetariums threatened with closure?

This is not an easy question to answer, primarily since star theaters vary, not only size, but in ownership as well as philosophy of operation. Basically, all planetariums can fit into one of the following categories:

- (1) A planetarium which is its own entity (precious few of these around.)
- (2) A planetarium which is incorporated with a museum or other center.
- (3) A planetarium under the control and operation of a college or university.
- (4) A planetarium which is in a school or controlled by a school system.

There are, of course, variations and combinations of these assignments (i.e. - a star theater located in a public museum but which has staff members who are school system employees.)

It is probably safe to say with conviction, that regardless of size or type, the principal reason that a theater may be threatened with closure is one of a financial nature. The chances are fairly good with this assumption that the governing body responsible for providing the finances has suddenly realized that the planetarium under question has been or continues to be a liability. The chances are just as good that their opinion was formed WITHOUT much consideration of the educational, cultural or entertainment value in an esthetic sense.

Least threatened by this prospect is the planetarium which sits in a college, has no staff, and remains idle save for the few times during the year a professor brings an astronomy class in for a session on celestial navigation, etc. In short, a theater which costs little to operate may sit there woefully unused, but may be around for some time to come.

Most threatened by the prospect of being shut down are two types of operation:

- (a) school system planetariums which generate no revenue at all, and
- (b) other star theaters which depend to some degree on gate receipts to help defray operating expenses, and yet, for one reason or another continue to operate at a deficit.

To expand on a discussion of possible alternatives and courses of action to endangered planetariums, this report will consider each operation separately, since the possible solutions may not be applicable to both.

(a) CLOSURE OF A SCHOOL SYSTEM PLANETARIUM

A realistic observation of the financial status most school systems are in cannot exclude what is happening at the Federal level. Public education is receiving less and less assistance from Washington. This may be considered to be a highly biased political statement however, the truth of the matter is that Federal entitlement programs are slowly being replaced with the non-monetary urgings for school prayer. Where once this country via Title III and NSF grants, built many school star theaters, the memory of the glory days of assistance to science education has been replaced in Washington with insistence of more school discipline. (Discipline costs for a paddle are much less than the expense of science [and planetarium] equipment and supplies.)

CLOSURE OF A SCHOOL SYSTEM PLANETARIUM (continued)

One might suggest that the above observation is unfair and, moreover, unrelated. Yet, there is a connection. A few years back many school systems employed instructors who spent their entire day working in federal Title I and migrant programs. The salaries for these instructors were reimbursed, for the most part, by the government in Washington. Now there exists a situation where severe cutbacks in entitlement programs is a reality AND several of these teachers have now earned some form of tenure in their district. The money for their salaries must come from somewhere.

The financial crunch in some districts may be compounded if that district suffers an erosion of its tax base whether from population movement, (in the case of rural communities) from agricultural disaster, or (in urban locales) from the shutdown of industry.

To add insult to injury, there are some districts who must pay dearly for court settlements in cases of employment discrimination.

To make matters even worse, many school systems around the country are moving towards school based management. Principals of schools are being given more authority as to how monies allocated to their campus are to be spent. Where once a county may have set aside transportation monies to pay for busses used in a field trip to the planetarium, now these monies are school centered. (If, indeed the principal opts to place ANY of his money in a transportation account....and even if he does, the poor planetarium instructor for the first time now faces competition from a teacher who would rather send her class to Uncle Joe's Friendly Alligator Farm instead since the school now has to pay for the bus!)

Any school system which faces a combination of two or more of the above set backs is in financial trouble. It may very well be that such an administration may look upon its planetarium as a luxury it can no longer financially afford. Could the school system planetarium, as a collective group, be in trouble? It already is.

The question now is what, if anything, can be done to counter the threat of closure.

If the predicament is imminent, there is one ploy which experience has proven to be effective. Public pressure.

Most planetariums are well known in their communities. Even the small theater on occasion runs some public service program. Do not hesitate to ask members who attend your programs for help. Request that they write letters to individual school board members or make phone calls. Expand your list of prospective supporters to include teachers who are supportive of your efforts, professional associates in the community, important leaders whom you might know, personal friends and relatives. Don't forget to ask for letters of support from members within your regional group and others you know from association at IPS conferences.

School board members, as a group, are notorious for reacting to public pressure. More than one board has backtracked from closing a planetarium when besieged with phone calls and letters from all corners of the continental United States.

CLOSURE OF A SCHOOL SYSTEM PLANETARIUM (continued)

A note of caution, however. This method may work only once. If a star theater avoids shut down one year because of voiced support, and is threatened a few years later with the same confrontation, the powers that be may not react with as much surprise and may be better armed to thwart a second resurgence of opinion.

It is felt that the role IPS and its governing body should assume is one of support. Members of the executive council, when asked upon, should be willing to write letters to governing bodies of beleaguered institutions. These letters should, hopefully stress an opinion of the educational benefit of a star theater to the school system and the community.

There is, unfortunately, no guarantee that letters, even from IPS executive council members, will have the desired effect. Attacked planetariums should weigh the possibility that such letters from a wide span of individuals could generate an atmosphere of resentment that outsiders are trying to determine local action. There is a possibility that such support could do more harm than good.

For those theaters who do not feel the pressure of being under the gun, vigilance is still necessary. It is recommended that a school system planetarian offers his/her services to the broadest spectrum of students possible.

Examine the program structure that your theater is offering. Is it dated? Has a given presentation been around too long and are teachers beginning to tire of it? (There may be a direct proportion between disgruntled teachers and the number of trips to Uncle Joe's Farm!)

Make yourself visible and available to the schools which you serve. Do you publish a calendar of all your offerings during the year? Does that calendar include some neat artwork or cartoon? (Remember that a piece of paper with a drawing on it will tend to be read as opposed to straight typing.)

Do you have programs which you can take out to the schools as a guest lecturer in the classroom? Having students compute Bode's Law can be an exciting experience; have students construct a simple sundial corrected to your latitude, and start a discussion why the sundial is reading the 'wrong' time; or pace off a 611 ft. scale model of the solar system outside with the sun shrunk to the size of a golf ball. All of this can and is meaningful and exciting.

If you can afford the time to do these experiences away from the theater, and make the time you spend in the classroom an exciting venture for the students AND the teacher, they will be chomping at the bit to come to your programs.

In summation, do as much as you can to make you and your program as appealing as possible. A planetarium instructor who is in demand both in and out of the theater may very well be the one who is deemed by the administration as being INDESPENSABLE when the financial finger of doom begins its sweep.

REVENUE GENERATING STAR THEATERS

The problem of closure for public, college or museum centered planetariums is more complex, especially if these theaters are expected to generate funds from gate receipts to help offset expenses. A governing board may look upon this type of operation simply from the financial end of things, can consider abandoning the planetarium if gate receipts start dropping radically.

The planetarium who faces such a reality must start asking some serious questions about the theater operation:

- (1) Has the planetarium taken advantage of local media to advertise its programming? Press releases to newspapers cost nothing in advertising expense, especially if done in the format the papers wish to see. Don't forget radio and television. These stations would probably be willing to air your spot IF YOU PRODUCE THE TAPE AND SLIDES.
- (2) Examine the times when you are offering public presentations. Opening the theater on a weekday for a show at 1:00 P.M. may draw in the retirees but will abandon the working families. Also watch out for your choice of evening presentations. Is your only public show offered on a night when a number of religious demoninations hold services?
- (3) What kind of programming are you offering to the public? (Here you may have to take a hard look at some personal prejudices you may have regarding star shows.) If you are of the ilk that insists the only type of planetarium presentation should be a live lecture concentrating on what the star machine is capable of projecting, you might be in the danger of alienating your audience against a return trip. You might be fascinated talking endlessly about Betelgeuse, however, is your audience willing to come back next month to hear the same treatise? Probably not!

Also, how long does a particular program remain in the theater? Someone who attends your program and knows that nothing new will not be offered for another four months won't bother to return until then. (This is not to say that a planetarium should offer something new every week. Considering how long it takes to produce anything of quality, such is not realistic. Yet, a theater should strive to offer variety as frequently as possible.)

Have you considered offering something in the realm of cosmic concerts? If the thought of rock musics blaring in your hallowed chamber turns the stomach, perhaps there is someone on your staff who would jump at the chance, if offered the responsibility of production. Remember that there is a potential audience of youths who would be willing to lay down hard cash for such a presentation. Who knows? An audience who appreciates a contemporary music presentation may very well return for a traditional star program. (More than one planetarium in the U.S. has been able to boast of black ink in the ledger column as a consequence of this type of programming.)

[There is a caution which should be noted here. Light shows for many of us are nothing new. It is sincerely hoped that no star theater becomes so engrossed with their lasers and capability of approaching the threshold of pain with the music that the traditional star show falls by the wayside. Light shows could have their place as a method of generating revenue, but with time they could also reach a point of saturation. Let us never forget the reason why the planetarium was erected in the first place.]

- (4) Have you, in an effort to hold down expenses, drawn upon as much volunteer help as possible? Your community may have a wealth of retired people, mechanically inclined, who would love nothing better than to help but some special effect together for you. The same thing may be true for the teenager who might be tired of the drivel offered on the idiot box and is waiting for someone to offer him or her a challenge. There is a wealth of talent out there. Your task is to find it.
- (5) What is your relationship with the administration which controls the financial strings? If you consider the board of directors your enemy, there might be an excellent chance that the feeling is mutual. When was the last time that you offered the powers that be a special showing of some new presentation BEFORE it is opened to the public...even if such a premier is at a time inconvenient to you? Remember that everyone likes to be considered special, even board members. Showing consideration to the bosses could very well result in reciprocal action.
- (6) Have you considered offering something unique like a subscription-based science fiction film festival during the summer? Many of the older sci-fi films are available for rental in 16 mm at reasonable rates. Advertising and showing a different film each week could be a profitable venture.

Perhaps you have tried all of the above steps as suggested, but find the threat of closure still looming in the not-so-distant future. What can be done? For this, there is no simple answer.

Perhaps letters of support from IPS officers and other installations might be beneficial. However, beware of the possibility of backfire as noted in the school section of this article.

There are circumstances which could be beyond anyone's help. Example: A theater constructed as a consequence of a grant or will from some benefactor who wished to remain in some way immortal, grandiose in size, expensive to maintain and (most importantly) situated somewhere there simply is not the population large enough to support its operation. If such is the case, the theater probably should not have been built in the first place. This is probably a losing cause and the people employed there might best start looking for jobs elsewhere.

One final suggestion. (This one has the potential of rubbing against egos.) If every positive effort has been made to save the theater from extinction but to no avail, it might be worth asking the administration to consider the advice of experts in the field who have a known track record of turning around a money losing proposition into the opposite. It could very well be that the powers that be would desire to have alternative suggestions presented to them and would be willing to look at the advice of an outsider.

Mike Ryan

The preceding Report was submitted to the IPS Executive Council in the mid-1980's and was conveyed to this publication by Dr. Jeanne Bishop, who also contributed the survey (see following page) taken at the Cleveland GLPA conference. Though completed several years ago, these items remain relevant today.

The material on the first four pages of this publication represents suggestions on planetarium operation by some current GLPA members. GLPA encourages suggestions from other members as well. Since the circumstances of each planetarium are unique, the Great Lakes Planetarium Association makes no claim that any suggestion will be applicable to or effective in a particular planetarium.

PLANETARIUM CLOSING SURVEY

At the GLPA conference I distributed the following questionnaire, prepared by Sam Storch (GLPA member from Brooklyn) and myself. Sam initiated this project and he presents a tabulation and analysis here-J.Bishop

Tabulation

Total Responses: 32

1. Are you currently employed as a staff member of a planetarium? (yes,no) 29 yes= 90.6% 3 no= 3.4%
2. Have you personally experienced the closing of a planetarium? (yes, no; explain if yours or another) 24 no, 5 another, 1 his/her own, volunteer job.
3. If you have experienced a closing, what type of facility was this? (school, museum, other-explain) 5 school, 2 other, no explanation.
4. If you work in a planetarium now, what type of facility is this? (school, museum, other-explain) 17 school, 5 museum, 6 college-Univ., 1 unlabelled.
5. Has your present facility ever been threatened with a closing? (yes-explain, no) 23 no, 7 yes-no explanations given.
6. Which features do you perceive to have:

A	B	C	
18	1	0	1. economic considerations by a Board or administration with authority above that of the planetarium staff.
3	2	10	2. closing of the school, museum, or other building containing the planetarium-facility.
0	3	13	3. architectural problems in the planetarium or its parent building.
0	3	13	4. vandalism in the planetarium or its parent building.
3	9	5	5. extreme deterioration of the projector or other aspects of the planetarium facility.
4	8	5	6. difficulties in transporting students to school planetarium programs.
2	4	10	7. retirement, resignation of a long-time planetarium director.
2	5	10	8. dissatisfaction of an administration with a planetarium director or staff.
0	6	10	9. retirement of an administrator or group of administrators previously supportive of planetarium activities.
4	5	9	10. lack of teacher, public, or community interest which resulted in poor program attendance.
<u>5 total</u>			11. Others: Explain (1) mismanagement by inexperienced director, (2) poor staff relations with those outside the planetarium, (3) legal costs and effect on budget availability, (4) lawsuit with school board corp., (5) day-to-day cost of operation.

Pos.	Neg.	
20	0	A. Encourage newspapers and other media to "cover" the planetarium's activities.
10	1	B. Offer one or more special programs for the Board and higher administration which control finances of the planetarium.
10	0	C. Survey audiences to learn what topics are most desired for presentation and subsequently adjust programs to findings.
17	1	D. Prepare detailed written planetarium curricula and year-end reports, widely distributed, illustrating goals, numbers of programs given, types of programs given, and conclusions about effectiveness of offerings.
9	1	E. Increase evaluation techniques: teacher evaluation (verbal and written), public evaluation (verbal and written), and student (verbal, written opinion, and written quizzes either at the planetarium or back in classrooms).
11	0	F. Find out the interests and goals of the Board and administration which control the planetarium and adjust planetarium programs and other activities to better match with them.
14	0	G. Request that a letter (or letters) from one or more community members enthusiastic about the planetarium's benefits be sent to the Board or higher administration.
9	0	H. Request that a letter (or letters) from administrators in the state educational system sympathetic to planetarium operation be sent to the Board or higher administration.
9	1	I. Request that a letter (or letters) from the President or other officers of the Great Lakes Planetarium Association or other professional organizations be sent to the Board or higher administration.

Other: explain: No responses to question 6 = 12 papers  
 No responses to question 7 = 9 papers  
 No response to either question 6 or 7 = 6,  
all of which had answered NO to question 3!!!

8. Do you think that this topic, planetarium closings and what might be done, should be a panel at a future GLPA meeting? yes 10, no 2  
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Analysis of the Planetarium closing survey completed at the Cleveland GLPA mtg.

The attached reproductions of the questionnaire provide the tabulations of the responses received. Note that, since no institutional affiliation was requested, it is entirely possible that more than one staffer from a given planetarium has had responses included. Thus, these tabulations should be approached with caution.

The first items are self-explanatory, and should be compared to the membership breakdown characteristics of GLPA. Not all the item totals hereafter add up to the number of papers received (32), since some papers had one or more blanks.

Which factors are considered to be important or influential in closing a planetarium? Economic considerations far outweigh all others. The next highest totals were for deterioration and breakdown, and for problems with transportation (items 5 and 6 respectively).