WHEN DARKNESS LIGHTS THE WAY:

How the blind may function as specialists in movement and navigation

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WHEN DARKNESS LIGHTS THE WAY:

How the blind may function as specialists in movement and navigation

The intent of this report is to provide information to assist both blind individuals seeking to become effective specialists in nonvisual movement and navigation and also the instructors and supervisors of these blind trainees. I know from experience that both parties can find themselves at a loss in striving to develop and manage the logistics of nonvisual mobility instruction. This is not necessarily because nonvisual instruction is especially problematic. It's actually quite straightforward and sensible for the most part.

The primary reasons for the difficulties that may underlie nonvisual instruction stem from historical precedent. Nonvisual movement and navigation professions have, by and large, taken several decades to develop a repertoire of instructional approaches and knowledge. Due to the preponderance of sighted professionals in the field, this repertoire, with notable exceptions, is primarily based on visual methods and perspectives. The application of nonvisual approaches and perspectives has been relatively rare and has historically applied primarily to totally blind or blindfolded adults. For example, the long-standing traditions supporting blind cane travel instructors in agency settings have not been accessed to support visually impaired Orientation and Mobility Specialist trainees at traditional university programs who may be seeking certification through the Association for the Education and Rehabilitation of the Blind and Visually Impaired (A.E.R.). Because cane travel instruction has historically focused on blind or blindfolded adults, their methods and strategies, however effective, may arguably not apply to many areas of instruction covered by university settings, such as low vision training, and the broad student population including young children and the multiply. The blind seeking A.E.R. certification as O&M Specialists have thus not benefited from the same wealth of professional knowledge and experience that has supported their sighted counterparts. In like fashion, instructors and supervisors of would-be blind O&M Specialists in training have found themselves at odds to assist their blind trainees in developing effective, alternative approaches that are nonvisually based. The predicament has exasperated, frustrated, daunted, and discouraged many who are concerned with this issue.

This schism between vision based and nonvisual instructional competence eventually lead to the imposition of official sanctions against blind individuals seeking A.E.R. certification as O&M Specialists. Concurrently, many blind cane travel instructors developed successful and noteworthy practices as administrators, private or agency based instructors, rehabilitation counselors, and other positions where A.E.R. certification was not required. Even so, tension brewed around the issue of A.E.R. certification policies which were thought to be discriminatory by many. I suppose that one key reason for misunderstanding the nature and relevance of nonvisual approaches to instruction lies in the over acquaintance of sighted professionals with blind students needing instruction, rather than blind peers who have already reached competence. It seems to be a built-in factor of the blindness field that sighted professionals most often relate to the blind through a didactic, instructional mode where the blind individual is usually the recipient or beneficiary of the sighted professional's expertise. Quite simply, sighted professionals have been over-exposed to "the blind in need" by virtue of their roles as professionals. This unfortunate state of affairs has contributed faultlessly to the skewing of perspectives of those in the blindness field to the belief that the blind function below optimal capacity as a consequence of blindness. This is not just a function of sighted vs. nonsightedness; I have known many

blind people who hold these beliefs as well. While many professionals have managed to escape, the long-term implications and impact of this insidious trap have been devastating.

Fortunately, a new dawn crests the horizon. Certification policies have changed. With the growing recognition and appreciation of the successes of blind movement and navigation instructors, the receipt of national certification (now handled by ACVREP) by several blind individuals, and the development of a combined university and agency training program for blind O&M trainees, the professional controversy concerning blind instruction thankfully draws to an end. Recent surveys conducted by A.E.R. among its members indicate that only a small percentage of those in the O&M profession continue to cling to traditional preferences for visual based instructional approaches and perspectives. In truth, the question of whether the blind can teach optimal levels of movement and navigation competence has died in the face of recent demonstration and precedent. The question of interest now is "how is it done?"

All aspects of a quality, effective program of instruction for the diverse visually impaired population are fully manageable by nonvisual means with a minimum of special accommodations. I now assert this with the solemn assurance of having successfully completed and fulfilled all requirements of a University based, Orientation and Mobility Specialist training program, and obtaining certification in O&M 6 years ago. I have secured two unrestricted itinerant Orientation and Mobility positions in the public schools, as well as multiple private contracts with rehabilitation agencies, school districts, and private persons. I have recently co-founded and now operate a private agency called World Access for the Blind, which develops sensory enhancement technology and provides instructional, therapeutic, and enrichment services for visually impaired students and their families. I have traveled throughout the U.S. and other countries to provide services, and people have traveled to me from other countries to receive services. Most importantly, I am not alone in successfully functioning as a blind movement and navigation specialist; I stand with others.

In preparing this report, I have decided to focus my attention primarily on those issues that seem most salient to totally blind trainees and their supervisors. This is because the concerns that have pertained to nonvisual instruction have centered on the totally blind. I am totally blind and most of this report is based on my experiences as a trainee, instructor, program developer and coordinator, and supervisor of a blind O&M intern, as well as other instructors. However, I do include some information about how other blind people have conducted their specialty in movement and navigation. I also include what I can concerning strategies that an individual with low vision might employ to facilitate the use of their vision as instructors. This report is not intended to serve as a synthesis of others' techniques and styles. I see no way to encapsulate how others perform their jobs better than they, themselves, may already have done. Appendix B contains a list of original sources for more information. Though my approach to this report may result in the presentation of a relatively restricted and potentially biased view of this topic, I expect nonetheless that the information and perspectives presented here will at least contribute to the development of a comprehensive body of knowledge that will facilitate the success of blind people who wish to enter fields of movement and navigation.

1 SOME WORDS OF CARE

I'd like to start by recognizing openly that there are aspects to the understanding of vision based and nonvision based instruction which some people still find irksome and confusing. This is inevitable given the turbulent history surrounding these issues. Feelings still run hot and biases still run deep in some quarters. This report is not intended to judge. Even approaches that have been found inadequate may still be regarded as well intended opportunities for learning. There is no approach which can yet be upheld as without flaw. In a report like this, some distinctions between blind and sighted instruction cannot be avoided, though these are certainly not my emphasis. I'm not going to say that blind instruction is better or worse than sighted instruction. Everyone, blind or sighted, has strengths and weaknesses. During my first lesson of teaching cane technique, I was a mess. I kept stepping on my partner's cane, bumping his shoulder, and generally making a nuisance of myself. It was awful. One might have decided then and there that "blind guys just can't hack it." During that afternoon break, I did some serious soul searching about how to remedy this. At the same time, my partner struggled with issues about being an effective

instructor. His first go of instruction was wooden, stilted, and completely uninspiring. He was a total bore and not very informative. We both returned to each other that afternoon having largely worked out our distinct yet mutual struggles. There are a few marked areas where blind instructors are likely to find themselves handicapped in meeting critical instructional demands, and I say the same thing about sighted instructors. There is no question in my mind, for example, that a congenitally blind instructor will probably struggle more than a sighted instructor with some issues of vision training. Likewise, sighted instructors generally struggle more with optimizing sensory awareness and engendering positive, proactive attitudes in their students and the general public. It is fundamental to all our success to recognize that handicaps are simply challenges that can be managed. Is this not the foundation of what we propose to teach? A handicap is not a road block; it is an invitation to find another way. Any approach that recognizes and applies this truth will find success.

I also recognize that this report is based largely on one case - me. While this necessitates a somewhat narrow focus, it offers the opportunity to present a rich, detailed, and penetrating exposÈ of what I do and how I do what I do as an instructor totally blind from infancy. I am as honest as I can be, and I leave few stones unturned. However, as this report unfolds, I urge the reader to bear the following in mind. Though I consider myself to be pretty well acquainted with movement and navigation professions through many years of personal training, experience, observation, and research, most of my students have consisted of children and young adults who lost their vision some time before I began working with them and who had already received some instruction in movement and navigation before-hand. I have not worked with the elderly, and my work with the newly blind is scant. Therefore, I must make clear that what I present in this report is not intended to suggest that my approaches are the only way or even the best way to implement successful instruction. I recognize that student populations vary beyond my current experience. Furthermore, the variation of instructional talents, skills, and styles spans beyond measure. For example, one of my talents that figures prominently in my ability to monitor students and facilitate positive instruction is the strategic use of echolocation. My echo skills may be considered potent and very informative, and they serve me as an integral part of my capacity to monitor students effectively and travel efficiently. Commensurately, I talk about echolocation a lot in this report. This does not mean that echolocation stands as the single means to effective instruction anymore than vision does. I have known other blind individuals for whom echo ability may not serve as intensely as it does me, but who exercise very effective skills and talents. One individual observing my instruction learned by a brief touch on a student's backpack as much information about his gait patterns as I learned over the course of weeks. Also, while I am able to become quickly oriented to and immediately comfortable in new territory, I have known individuals whose skill surpassed my own in this area. There are countless skills and qualities that comprise effective instruction, which no one person can epitomize, and a countless diversity of students to which these may be applied.

This report is in no way intended as a "how to" manual. Rather, my intention is to share what I have learned in the hopes that it may help smooth the road for others. Blind instruction, due to its relative rarity, is still in its early stages of growth as a body of knowledge, and no single individual can address all the questions in all possible ways. I recognize and respect the many approaches taken to teaching movement and navigation including Cane Travel Instruction, Orientation and Mobility Specialization, Discovery training, and Guided training, to name a few. If those reading this report have aspirations of becoming a blind instructor in movement and navigation or training one, I welcome you and your perspectives to an uncharted realm, not altogether sparkling with polish, but nonetheless burgeoning with exciting promise and potential. Happy reading.

Finally, I do not intend to suggest that all blind individuals would make good instructors any more than all sighted people would. I've known plenty of sighted who would not make good candidates or whom should never have entered the field. Likewise, I've known plenty of blind people who might do well not to consider this avenue. Two blind individuals who shadowed me during my work have stated, "This is way too hard." Not having access to the standard conveniences of a car and printed information can require strong medal to manage the logistics of the job, especially in an itinerant position. The process of

monitoring student safety and technique can also be quite tricky under many circumstances, requiring strong powers of concentration, good instincts, refined perceptions, excellent people skills, a level head, and sound judgments. This is required of sighted instructors as well for optimum effectiveness, but sight affords the ability to accomplish many of the tasks more easily and with less stress. This isn't to discourage any blind person from taking this road; I have no regrets, and I welcome company. Nor is it to suggest that I exemplify all the fine qualities that make one an excellent instructor. I've made my share of mistakes. I'm just trying to present a realistic picture of what it takes. It isn't always easy, but it is always doable and with great rewards.

2 A LITTLE PERSONAL BACKGROUND

I wrote this section last in this report. I did not know what elements of my background, if any, would be relevant, but it struck me upon completion that some background information may help the reader to place this presentation in a useful context.

I was born in 1966, and I lost both eyes from retinoblastoma by the age of 13 months. I have always attended regular schools including preschool, though I was bused to a far away district until the 5th grade. From that point, I attended regular, neighborhood schools.

My movement skills are primarily self taught. My movement training was largely irregular and inconsistent. It was extremely limited and sporadic through my late preschool and elementary school years. Starting with junior high, movement training by O&M Specialists became more regular, but instructors came and went like leaves in the wind. I encountered six between the 7th and 12th grades. The experience was further complicated by my having developed many of my own techniques and strategies, which worked quite well, and my lack of willingness to relinquish them to formal training practices and protocols. I wouldn't trail walls or square-off; I rarely used sighted-guide; and you wouldn't have caught me with a cane outside mobility lessons. I had developed other skills to the point where I fancied myself not in need of formal training. I was already traveling far and wide independently, even insofar as orienting myself to unfamiliar neighborhoods and other environments. Most of my formal training, therefore, was fraught with conflict and strife. This is not to say that I had nothing to learn, but it was not possible to convince me of that at the time. Though my cane skills were considered quite good, I did not begin using one regularly until about the age of 24. This was after 6 years of traveling with a dog guide and deciding that a dog wasn't for me.

Some have raised questions about my decision to become a specialist in movement and navigation with O&M training and certification. "Is he out to prove something? What'll he try next, fly an airplane?" When one of my master teachers related this comment to me from a conversation he'd had with a colleague, I wondered about just how confused people could be about their job. Though I don't know a lot about airplanes, I know quite a bit about nonvisual movement and navigation. I fail to see any relationship between the two, other than airport travel. To my knowledge, pilots undergo a rather different course of training than O&M Specialists, and the job requirements are quite different.

As for trying to prove something, my decision to enter the movement and navigation field was an accident. I had completed a Developmental Psychology Master's thesis on the affects of echolocation training on movement and navigation in blind children, when I was asked to present my results to several forums. One of these was a California state wide O&M conference. After the presentation, the Director of the O&M training program at California State University, Los Angeles, asked me if I had ever considered becoming an O&M instructor. Though I had considered entering the field as a part-time consultant, I had given no thought to direct service delivery. My mind was quite set on acquiring a Ph.D. in clinical psychology. My goals were to work with abused children and their families and to become a policy activist. I'd not considered anything to do with blindness. But, after some thought and long discussions with the Director about issues relevant to blind O&M instruction, I decided to give it a try.

In addition to my Master's in Developmental Psychology, I currently hold a Master's in Special Education/Orientation and Mobility with national certification from ACVREP. I have also received a full training course from Dr. Leslie Kay, inventor of the Sonicguide, in the use of his ultrasonic sonar technology. I am currently in training for my V.I. credential, certification in assistive technology, and

certification in information counseling of the visually impaired. I have appeared almost a dozen times on National Television to demonstrate the effectiveness, teachability, and high potentials of sonic and ultrasonic echolocation, and nonvisual travel abilities. I have also given dozens of presentations and workshops throughout the U.S., Canada, and Mexico to parents, students, professionals, and the general public on echolocation and many other topics related to blindness. I am currently engaged in directing and developing a global organization to bring blind functioning throughout the world to levels that defy traditional expectations. Ultimately, I believe that the best way to learn is through sharing, and the best way to teach is through learning.

3 THE AFFECTS OF BLINDNESS ON PROFESSIONAL STYLE

One consideration regarding blind instruction deals with the way in which the lack or absence of vision may affect instructional perspectives and professional style. The diversity of styles makes it impossible to draw general conclusions about this. However, some broad generalities may be argued. In so doing, I would like to point out that I'm very open to alternative points of view, and that, once again, I do not hold myself as representing all blind instructors. While I am certainly biased in my preferences by my own blindness and experiences with the blindness field, I do not cast value judgments on any given style. I ask the reader please to consider my observations amicably as they are meant with no offense.

One area where my approach may differ in style, as a result of blindness, is a tendency to emphasize function over form. Because of the information schemes that sighted people can access so readily, I have observed a tendency for sighted professionals at large to judge the effectiveness of technique or strategy largely by its appearance. "The hand is positioned just so for trailing; the arm is held thus for good cane technique; the student should cross the street neatly between the crosswalk lines; the student looks funny when she clicks her tongue for echo cues." I could fill pages with this list. It is easy for sighted instructors to gain schematic information about a student's appearance at a glance and society is conditioned to make relatively rapid judgments based on these quickly acquired schemes. I do not have access to these schemes in such detail or with such immediacy. If I am to gain information about the effectiveness of technique, I must apply other strategies. I can readily apply the strategy of observing how the student functions in given situations. "The student moves safely along the wall; the student's cane facilitates efficient, safe movement; the student crosses streets efficiently and safely; the student navigates quickly and gracefully throughout complex environments." I can certainly gain access to necessary information to determine functional viability as discussed in subsequent sections, but I tend to pay less attention to how it looks and more attention to how it works in the long run.

In connection with the tendency to concentrate more on function than form, I tend not to use prescribed or regimented approaches to instruction. This may arise as much from my work primarily with children as it concerns my blindness; I've observed that many of the most highly functional blind children learned their skills without formal instruction or from instructors who used more client centered approaches. I raise this distinction in response to a lengthy checklist of functional abilities provided by one of the V.A. facilities to a low vision O&M intern applicant. The checklist required the monitoring of minute details from distances over a quarter of a block under darkened conditions. The application of such detailed perception would be congruent with a highly prescriptive instructional style which focused on exactitude of form. This style may certainly have its place, but it cannot be presumed to apply broadly to all circumstances anymore than any style can, and it cannot be presumed to yield the best results. Neither this applicant nor I, nor some fully sighted individuals could have held to the standards of this particular checklist. I, for one, simply have to apply different strategies and approaches to ensure student competence other than distant viewing. For a blind instructor, we may see that the instructional approach takes on more of a client centered tenor with strong discovery based components and requirements of flexibility. While such an approach may look very different from prescribed approaches, it should not be judged any less worthy or appropriate. Here, I would argue that the proof of effectiveness lies not in how the student looks when he travels, but how well he travels.

Another distinction that I'll raise here in terms of overall professional style concerns the remediation of visual functioning. Sighted people have a very rich access to the visual environment, while the blind may

have little or none. This will certainly affect how a blind instructor, myself namely, works with students toward remediating functional vision. Certainly I can use methods of becoming familiar with environments such as scoping them out in advance, but realistically, I often come across situations with which I am not familiar. I simply may not have access to what the student is seeing. Strategies for dealing with this will be discussed in great detail later. Here, I just want to say that my tendency as a blind instructor is to focus on general problem solving strategies with students, with the use of their vision as a tool to this end. For example, if I am address hunting with students, and I have not had a chance to scope out the addresses first as may be common when case loads are high, I may discuss with my student where addresses are likely to be placed. We may go through all the likely and unlikely places together until the student finally gets it. Or, if the student is trying to spot a land mark, I may enter into a discussion with the student about what he is seeing and how to make better sense of what he's seeing. I have usually found this approach to be very effective. It seems to build a firm sense of confidence in students about figuring things out. Knowledge is power. However, there are those cases when it flops, too. For example, when doing a bus lesson, I instructed a student to keep track of the bus numbers until he found the right one. If the buses are moving slowly, he has the vision to do this. However, when the bus came to a stop, he just couldn't find the route number - even though we had discussed where it would be. He just got confused by the other information on the side of the bus, and he couldn't isolate the correct number. The bus had moved before I could help him through the mess. A sighted instructor would have had the option of just pointing and saying, "Look, right there. See, you'll always find it there." I could not. I had to do additional bus lessons with him using buses that were at rest for him to figure out where to find the correct number. I've also encountered some difficulties in teaching students with mild cognitive delays how to use maps and directories. I have no trouble with sharp students, but slower students tend to require more direction than I can easily give. These lessons with such students require a lot more preparation on my part. Again, it is a different style that, like any other, has its merits and demerits.

The final distinction that I'll raise here is a delicate one - one that each blind person holds in a uniquely personal way. Yet, the issue among us is a common one. There is a common feeling among the blind, especially blind professionals, of having faced discrimination and prejudice at the hands of sighted people. Stories abound among the blind of debilitating and demoralizing experiences that have confronted them by professionals presumed to be acting in their best interest.

I will not belabor this point, nor will these concerns echo throughout this report which intends to be explanatory not commentative. Anyone who knows blind people has encountered this sentiment. I bring it up, because it may have implications for affecting how the blind and sighted interact in this field. Many blind people are regarded as embittered, resentful, unrealistic, and even hostile. Many sighted people are regarded as intractable, ignorant, and demeaning. In this reality, social tensions must be anticipated in educational and vocational settings, and professional forums. For example, the very first day of my training I encountered classmates who were bewildered and skeptical about my presence. As a fully functioning blind person, I took personal exception to many of the views and stances held by our texts and readings (which often paint the blind in negative fashion), but felt constrained in voicing my exceptions. Very well meaning faculty tended to dismiss me as "unusually talented" or "exceptional" with warnings "not to assume other students will be like Dan." The program coordinator took great pains to facilitate a positive and non-obstructed learning environment for me. The faculty even supported me when I insisted on taking my exams in class despite one or two who complained about the noise of my laptop keyboard. Even so, I often felt isolated and estranged. I remember one lengthy discussion held in class about ways to explain to a blind person how an upcoming door is to open. "If we say "the door opens toward you and to the left" couldn't that be confused to mean that the door knob is on the left? Shouldn't we say "the door opens toward you with the door knob on the left?" I recall the ensuing discussion taking at least 15 minutes. I felt demeaned on behalf of blind people everywhere. I asserted forcefully, "It's just a door. It's one of the oldest and simplest mechanisms on the planet," but few seemed responsive. I recall another occasion toward the end of our training during our daily living skills class. My peers generally had a lot

of fun with the experience of trying to learn simple domestic tasks under blindfold. The class was videotaped. After muddling through a blindfold dinner made by the class, we watched the tape. What was it that angered and depressed me? What was it that held me aloof from the good natured fun everyone was having? From where did my indignance arise? I don't propose necessarily that anything was wrong with the activity or with the enjoyment derived by my peers. Yet, I took the matter very much to heart. I don't consider myself especially prone to heart feelings. How could I be and set myself up as one of the first and few blind to enter the O&M profession if I were. However, I could not help feeling personally affronted by a room full of my peers chortling over a matter of livelihood and dignity for myself and many others "like me."

Since my training, I have been well received, but sometimes regarded with apprehension and incredulity. I recall my first A.E.R. convention. One of the big names came up to me a few days in and asked me if I really had my certification. "People are arguing about whether you could have gotten your certification," she said. I do not recall feeling alarmed, surprised, or affronted, but others in my place might well have been. Is it not possible for a blind professional to walk into a professional forum of his peers without murmurings and whisperings behind his back?

In a day and age when V.A. facilities still dismiss blind applicants as inadequate to the task without cause and members of the O&M listserve still make comments like, "I don't have a problem with blind people teaching O&M as long as its not on the streets," issues of tension and conflict will impact the disposition of some blind people entering training and ultimately entering this profession. Although many blind people may see the sense in questioning the means by which the blind might teach movement and navigation, the deep alienation results from the untested assumption that it could not be done. In a field that should be based on philosophies and strategies of adaptation, rigidities and short-sightedness have struck deep chords of dissonance. How can a blind student learn the skills of adaptation and positive thinking from a profession steeped in can'ts and shouldn'ts? I feel it necessary to spell out these issues, because the undercurrents betrayal are not lightly put aside, however well intentioned all may be. The rift that may be described between the sighted and the blind is not a gap, it is a wound, and a wound can only be healed when it is exposed. I hope this report can offer some common grounds and shared perspectives that may form the bases for some of this healing.

4 LAYING THE GROUND WORK

One of the greatest aids to my learning how to function effectively has involved a unbiased openness on the part of my training supervisors, master teachers, and employers. While all of us held questions about how a totally blind individual would execute some of the job functions, the key to finding the answers was the willingness to address the right questions. The question asked was not: "Can a blind person do this?" But rather: "How does a blind person do it?"

4.1 Expectations

During my training in the university, I was expected to learn and perform all functions as my classmates. While every effort was made to make pertinent information and resources accessible, no additional assistance or supervision was imposed on me beyond that received by my classmates. When first learning to scope out new areas, I often did this with supervisors or master teachers so that I could develop a sense for what environmental aspects might be relevant to various students' functioning and safety. During student teaching, master teachers provided most of the transportation of students for insurance reasons, but I was expected to provide transportation for myself. My student teaching sites were not chosen for their proximity to where I was living. In fact, one of them happened to necessitate one of the furthest commutes of all my classmates.

4.2 Skepticism?

One of my master teachers is a long-time member of the field and was a known skeptic about blind mobility instruction. When my supervisor first approached the individual about supervising me as a student teacher, he wanted to see how I had been evaluated by other supervisors. Then, he changed his mind and decided to allow me the same opportunity to learn as his other trainees.

When I first began working with him, he was rather tense about student safety. He plied me with respectful questions about how I would handle various scenarios with some of the students, and he scrutinized my work intently. The first day, which was an extra day that I'd put in for observation, he asked me to take over briefly with one of the students. This student possessed severe cognitive impairments with serious impulse control problems. In the space of a 20 minute lesson, the master teacher intervened twice - once to grab the student from leaping into a planter and the other to remove a flower from the student's mouth. Over lunch, the master teacher asked me straight-out if I would be able to maintain the safety of this student and others with similar behaviors. I told him that I didn't know, but that I was here to learn the answer to that question. I explained to him that I'd never worked with such a student before and that I'd taken this extra day to assess the matter and prepare needed strategies.

About 2 weeks afterward, the master teacher brought two things to my attention. First, he'd come to feel that my ability to maintain student safety was comparable to that of other trainees with whom he'd worked. The second was that he became aware that different interpretations could be made of my actions depending on one's mind set. For example, he was concerned that I would often allow the distance between myself and some students to increase well upon arm's reach. He expressed that it seemed that I was allowing myself to loose control over the lesson when I let students stray beyond my perceptual awareness. I assured him that I had not; that I was still aware of student position and technique from further distances. He asked me: "Is my visual perception that you loose contact with these students when they move out of reach inaccurate?" My answer was: "Yes." He had come to suppose that a blind person needed to be in physical contact with his environment in order to perceive it concretely, not realizing at first that audition could provide adequate information at much further distances.

The key to this master teacher's ability to work with me amiably and hold the same expectations of me as of his other trainees was his ability to maintain an open mind about what I might achieve and how I might achieve it. Toward the end of our term, he confided to me how he had wrestled with his a priori presumptions and concerns about blind mobility instructors. He told me that he challenged his own skepticism by asking the question: "How can we truly encourage our students to become everything they can if we assume limitations without openness to real possibilities?"

4.3 Liability

One of the biggest questions about hiring blind movement and navigation specialists concerns the handling of safety and liability issues. Would special insurance be required? Must all students and parents of students be specially informed of this circumstance? Should certain restrictions be imposed on the functioning of the blind specialist?

My training program supervisors did not appear to call any special attention to my presence in the program. They did not warn potential master teachers or intern supervisors that a blind trainee was coming, nor did they appear to distinguish me with special apprehensions or honors.

When I was hired into my first position, my supervisor called no special attention to my entrance into the district. She told parents and students that there would be a new instructor, but made no special point to mention my blindness. She decided that, if anyone had difficulty with it when they found out, they could go through the same channels that would be required if they had difficulty with any other instructor for any other reason. There were no special agreements, concessions, or qualifications.

5 MONITORING STUDENTS' TECHNIQUE AND SAFETY

This section concerns the monitoring of students for two purposes - the observation and remediation of skills and techniques and the preservation of student safety. Both purposes require a reliable and accurate awareness of the student's movements and the dynamic relationship between students and the environment.

Before entering this discussion, I would like to make clear my views about the role of the instructor in monitoring safety. I do not feel that it is necessarily in the best interest of the student for the instructor to act as "protector." Indeed, these roles can be mutually exclusive. We are responsible for student safety in two respects. First, as adults, we are, of course, responsible for the welfare of children. Second, we are responsible for facilitating the confidence of our students - not confidence in us to keep them safe, but

confidence in themselves. To this end, it may be appropriate to ensure that students do not come to harm. However, I feel it inappropriate for an instructor to shield students constantly from every possible scratch or bruise. I know a former student who is loosing his vision and is receiving blindfold training from an instructor who stops him from ever running into anything. This student complained to me - "How am I gonna learn anything if he keeps getting in the way?" This instructor is an "old timer" in the field; I find it surprising that he hasn't learned to let his students learn. Of course, I take every precaution to ensure student safety as will shortly be discussed, but I also permit my students the freedom to make mistakes. Life is often a better teacher than we can ever be.

It took some time for me to develop approaches to ensure safe learning. My lifetime's experience as a blind person seemed to allow me to grasp and apply concepts, knowledge, and perspectives relatively easily and quickly. I spent little time studying for exams and spent much time helping my classmates study. However, the time I saved by not having to study much for most of my exams was made up by trying to figure out how to manage proper and effective monitoring. Hundreds, perhaps thousands of hours and as many dollars, and my share of mistakes and headaches, went into this. Again, it didn't seem to me that my nonvisual means of instruction were inherently so much harder to execute or more problematic than those used by my sighted peers. The bulk of difficulty seemed to arise from the fact that none of us had much of a clue about the effective implementation of nonvisual strategies. I expect that in time, the rigors of blind instruction will subside with the accumulation of knowledge and understanding about nonvisual instructional strategies and techniques. Then, blind instructors may reap the same benefits of historical precedent and support that their sighted counterparts have enjoyed for years.

While both of my master teachers initially needed demonstration of my ability to ensure student safety, which I feel is perfectly reasonable, they both quickly came to the conclusion that my ability was as reliable as that of any student teacher. Toward the end of my student teaching terms, my master teachers backed off and allowed me as much reign with my students as was given to other student teachers. Even during the most complex lessons involving bus connections, crossing major thorough-fares, major business centers, and negotiating uneven terrain, neither of my master teachers ever intervened for reasons of impending danger.

5.1 Key Components of Monitoring

Five elements have become major components in my successfully monitoring students' safety and technique - attention, perceptual integration, perceptual contact with students, poise and preparation, and recognition of the need for extensive practice and refinement of instructional skills.

5.1.1 Attention

During my course of training, I observed that most of us trainees had to take special care to learn to intensify and sustain our attention to the significance and implications of students' movements and the interaction between students and the environment. My sighted classmates learned to intensify their attention to students by beholding their student and scanning their environment visually in a more deliberate and intent manner. The same was true for me, except for the part about the vision. As with other tasks, I learned to turn my remaining senses to heightening and deepening my attention to my students and their surrounding environment. Here, however, my degree of attention available for my students is intimately coupled with my own degree of travel competence. It is also related, though more distantly, to my degree of familiarity with the travel environment in so far as my travel confidence is often somewhat improved by familiarity.

Normally, when I travel, I concentrate my attention partly on my travel skills and techniques and partly on the dynamic relationship between myself and my environment. The more skillful and more aware I become, the less stringent is this process of concentration and generally, the more competently can I travel under highly demanding conditions such as strong wind, loud noise, or congestion. Also, the more familiar I am with the environment, the more attention I can spare for non-travel related tasks such as monitoring students.

When working with students, familiarity with an environment definitely helps me to free up my attention for student monitoring. However, I have learned that scoping out areas prior to lessons is often

unfeasible. When working with students, especially new students in novel environments as is common for a student teacher, I find myself unable to devote much conscious attention to my own movement and navigation. The faster or more unpredictable the student and more complex the environment, the more my travel skills must be automatic and instinctive. They were close to this point before, but with many students, the execution of my own skills has become, not second nature, but first nature to me.

It seems to me that sighted people don't really need to devote appreciable attention to their travel under most conditions; they seem easily able to maintain the focus of their mental resources upon monitoring and instructing students. This had to become likewise for me - that my conscious attention must remain on my students' functioning and safety, not my own. My own must, therefore, be assured by automatic and instinctive self-management.

When I travel, I am conscious of maintaining a sphere of perceptual awareness that extends from me at its center. All of my senses extend themselves to seek, acquire, and process relevant information. When working with students, however, particularly very fragile, unpredictable, or sometimes highly functioning students, I find it necessary to de-center my awareness - to transfer the center of that perceptual sphere from myself to my student. At first the feeling was uncanny - almost mystical, as well as fatiguing. It was surprisingly difficult. I was never accustomed to processing information relevant to another person before, only myself. With practice, however, and intense effort, the process has become very manageable. I found that maneuvering a shopping cart in a store setting was an excellent way to foster the development of this de-centered perception. To do this, one definitely must extend ones perceptions well beyond typical boundaries in order to negotiate the environment without mishap. Pushing a wheel barrel through a congested environment can prove similarly useful.

5.1.2 Perceptual Integration

Traditionally as a lone traveler, I've depended primarily on my auditory sense for movement and navigation - most notably echolocation. In a fairly quiet environment, I can detect a sign post or person at about 6 feet, a curb at about 10 feet, a parked car or a tree at 15 or 20, and a building at hundreds of feet depending on the strength of the echo signal. I could walk into an unfamiliar parking lot and scout out the entrance to a novel building in minutes. Overhangs have rarely been a problem for me. I could even ride a bicycle unaccompanied through unfamiliar territory at moderate speeds.

However, as I worked with students, I found it necessary to heighten and broaden my connection with the environment in order to refine my awareness of all of its features and elements and to become aware of them at greater distances. On top of this, I had to learn to process information very quickly so that I could make rapid judgments about how to react or respond to sudden situations.

This need seems to be true for all O&M Specialist trainees. What does a beginning trainee do when a car suddenly barrels down on one of their students out of nowhere? I suspect that most handle such a situation okay. I know that some freeze; others are slow to react. Still others grab the student haphazardly and yank or thrust them out of harm's way. And there are those that don't see the danger until the master teacher jumps in. Student teachers must learn to hone their perceptions of the environment and their students' relation to it and quicken their judgments and reactions. My sighted classmates seemed to accomplish this by learning to scan more thoroughly and to process information in a different way - not just information that may be relevant to them, but also information that may impinge upon the safety of their student.

As a blind instructor in training, I learned the same art of vigilance, but in a different way - by bringing all of my senses to bear more intently on the environment and processing multi-sensory information more thoroughly. I found myself intensifying, deepening, and broadening my awareness of the environment in a way I had never needed before. I began using a longer cane (see appendix C-3), which increased my own safety as a traveler and allowed me to take in more information where seemed relevant. For a brief period I even took to sporadic use of a Mowatt sensor - a device about the size of a flashlight that vibrates as one approaches something. This was something that I'd hitherto never applied beyond my initial training in its use. The increased integration of information assisted me in three ways.

The first was to increase my available attention to my student by strengthening my own orientation. By processing and using information more efficiently than I'd ever done before, I found that my own orientation to and negotiation of my environment required less conscious thought. This is a real issue - especially working with unpredictable students or students who exhibit very different movement patterns than I do. For example, I often found students who moved very slowly to pose a challenge to my own orientation. Being a rather fast traveler, I found that I was accustomed to and relied on information coming to and passing by me at a fairly high speed. At first when scoping out environments for lessons, I traveled over them at my accustomed speed. Then, when students traveled much more slowly, I found that I had difficulty maintaining my own orientation, having been accustomed to negotiating the travel conditions at my own speed. Thus, I found it useful, though not always practical, to scope out environments at a speed more closely matching my students'. Also, I initially found it difficult at times to perform simple travel tasks with my students because my students often performed them at slower speeds. Linear travel could be especially challenging across open spaces, such as streets, wide walkways, parking areas, or outdoor plazas because I'd been accustomed to traveling these more quickly. I remember trying to teach a student how to follow a curving curb by using echolocation. This student walked so slowly that the changes in distance were too gradual to notice; I even had trouble with the exercise at those speeds. All of these problems are compounded by a slow student who is prone to veering. I found it difficult at first to sense veering at slow speeds. I became more conscious than ever of drawing upon more complex sensory information such as tactual and kinesthetic - the subtle sense of gradually turning, transverse cracks in the sidewalk, street gradients, sun positioning, air currents, etc. It was no longer useful to process just the same information that I had before, but to pull in more complex information to allow me to handle patterns of movement unusual to me. This was particularly the case while guiding students with unique or unusual gait patterns.

For instance, rounding the block is considered one of the most basic of orientation tasks, which I don't recall ever having trouble with. However, as I worked with this student, who possessed moderate cognitive, attentional, and spatial deficits, he veered constantly, exhibited no anticipation of obstacles and little facility to negotiate them, and seemed to possess little understanding of how his relationship to his environment could affect his safety. Monitoring his safety and remediating his technique in a light business area was a real challenge at first. In so doing, I lost track of where I was along the block. My student was veering so much, it made me a little dizzy. I laughed at myself when I checked my compass headings. I had almost failed to notice that we had turned a corner.

In another instance, I student-taught in a special education building that was circular and all tiled. The result was a lot of constant noise while working in the building, and only one, circular hallway. This hallway had classrooms and offices on either side and was joined at four points about a quarter arc from each one by hallways that lead to exits or recessed offices. There were no obvious landmarks, no braille numbers, and no unique shape or pattern to any given route. At first, I had no idea where I was in this place. Because I typically use echolocation to establish and maintain my alignment with parallel surfaces, I couldn't tell at first that the hall was circular. I could have walked forever and felt like I was going perfectly straight. Further, I could achieve no sense of where I was because the environment seemed featureless and distorted by the constant rush of reverberant noise. After awhile, though, I relaxed my echo senses of parallel surfaces and allowed my body to feel the gradual turn. Also, I became more acutely aware of subtle differences in the reverberant patterns of each of the four intersecting halls in order to gain a sense of where I was.

The second result was to allow me to anticipate, at greater distances, those environmental features that might affect my student. Minute details of the environment that might be inconsequential to me, which I could ignore with impunity traveling alone became significant when monitoring students both with regard to safety and lesson planning. Cracks in the sidewalk or high sidewalks, sprinkler heads to the sides of sidewalks, curbs or driveways, dogs, etc. required my minute attention. I found myself pulling in and processing staggering amounts of information at an alarming rate. For example, if I passed a fire hydrant, without noticing it while traveling alone, I had no reason to care. With students, I had to become aware of

fire hydrants and such, and I had to note my student's trajectory and whether his or her cane technique was sufficient to detect it. Typically, I would stand with my hand on the bolt nearest the student to soften impact should it occur. Also, overhangs that might not effect me might be a drag for someone taller. I also had to become aware of lighting conditions and how they might distract or suddenly impair the visual functioning of some students - something that I'd certainly never given a thought to in my own travels. I had to heighten my awareness of sun position, shading or shadows, visual clutter, faded crosswalk lines, etc. For information about optical phenomena, I found that a light probe often proved useful (see appendix C-2).

The third was to expedite my ability to become familiar with and to function in new environments. This was and is critical. In 30 weeks of student teaching and 6 years on the job, I've had to instruct students at dozens of school campus and work sites; dozens of light business and residential environments including travel without sidewalks, outdoor plazas and malls, parking lots, and hiking trails; and many complex indoor environments including stores, malls, and transit stations. Since I travel throughout the world, I've had to become familiar with the basic layouts of dozens of urban, suburban, and rural areas. One simply never knows in an itinerant position where one will end up or under what conditions one will be teaching.

5.1.3 Perceptual Contact with Students

When monitoring students, three criteria seem to apply in an instructor's selection and utilization of monitoring distances - facilitation of the student's natural and autonomous functioning, maintenance of student safety, and the perceptual/motor abilities of the instructor. For example, under most circumstances, a fully sighted instructor from remote distances may be able to monitor the majority of pertinent student/environment interactions, anticipate outcomes well in advance of urgency and intervene expediently if something looks like it might go wrong. As a totally blind instructor I may not possess the perceptual/motor capacity to monitor with this acuity at remote distances under many circumstances. In order to balance the three criteria, I must choose my monitoring positions and distances carefully, and I can implement specific strategies to maximize my options. There seem to be two primary principals that allow me to achieve and maintain perceptual contact with a student without remaining too much in their space - careful choice of position and distance, and making the student more perceivable.

5.1.3.1 Remote Contact

Unless the student is traveling in a very familiar area or one that is known to be free of hazards, or if the student possesses highly functional perceptual/motor skills, I usually strive to maintain perceptual contact with my students. I've found tactual contact to be almost entirely unnecessary for purposes of monitoring safety for most students - although young children and students with balance problems or developmental delays typically require close attention. Mostly, what I call "perceptual contact" takes the form of auditory rather than tactual.

First, in monitoring safety, I typically choose intermediate distances of about 5 to 10 feet. I must be beyond arm's reach if I'm to stay out of a student's way, but further than 13 feet can pose troublesome consequences with unpredictable students in noisy or congested environments. I reduce the distance when environmental constraints such as noise reduce my perception of the student or when I feel the need to increase my potential speed of interaction with a student. For example, if walking 10 to 15 feet ahead of a student along a sidewalk, I will allow the distance to decrease when approaching a driveway or street, or a particularly nasty obstacle, such as a fire hydrant or guywire. I typically select frontal or side positions for functionally blind, rear for students with low vision. (Frontal positions have historically been believed to interfere with the development of student self-reliance. I have not found this to be the case, and I discuss the matter thoroughly in section 5.3.) Frontal positions allow me to enter and scope the environment ahead of my student. In this way, I can anticipate what my student will encounter and act to intervene or mediate where necessary. Sometimes I will move quickly ahead of my student 30 feet or so to scope out the way, then move back closer to the student so that I can keep a closer eye on his progress. In this way I can monitor the area through which they're traveling and prepare for areas much further ahead. Side positions are okay if student/environment interactions are easily manageable. For functionally blind students, I often choose this position during light business travel where there's no park

way between sidewalk and street, while crossing driveways or streets, or while passing by or through parking areas. This allows me to interact more immediately with my student if need be and also enables fair ability to scope the environment ahead. I have also used my cane to extend my reach to a student in emergencies. It is often necessary to remain behind low vision students because they tend to spend too much of their attention on me if I am visible to them.

The second principal concerning the monitoring of student safety involves making the student more perceptually apparent to the blind instructor. If all students were transparent, sighted instructors would have to take steps to be sure that they could see their students under troublesome conditions, such as poor lighting, glare, or congestion. For me, the situation is similar. My student is not inaudible or undetectable. Generally, my awareness of a student is sufficient just by listening to their movements or cane, but it helps a lot if the student stands out more.

One of the most effective means that I've found to increase perceptibility is to attach a discrete noise maker to the student. A simple set of keys works extremely well (see appendix C-1.1). With young students I will sometimes add a Japanese bell to the keys for a clearer signal. (Japanese bells have the most distinctive rings.) This allows me virtually continuous auditory contact with my student and the ability to perceive their position to within a few inches at intermediate distances or much further when the environment is quiet. I suppose an instructor with residual vision could attach something highly visible to a student such as a bright reflector or safety light. For very young students, I may place bells on their shoes or pant legs. Bells imported from Japan are the best (see appendix C-1.3.1). For their generally small size, these bells seem to stand out most under noisy conditions.

Some young students or students with cognitive impairments may self-stim on the keys or just refuse to wear them. I had one autistic student refuse to wear anything, although he would let me attach a bell and remote beeper to his backpack. This beeper could be sounded remotely without upsetting the student. I've made adjustments according to necessity. One must maintain pretty close distances, or one could use a Mowatt or Poleron to help keep track of such students. For example, I once worked with a young girl who processed severe cognitive impairments. The lesson involved helping her learn to trail without manual prompting or guidance. The trouble was that this student would execute sudden, spontaneous movements such as hopping or twirling in any direction. Because of her small size and highly irregular cane technique, she was relatively difficult to track auditorily. She also did not respond well to placing noise makers such as bells on her, because she would become fully distracted by them. When instructing her I maintained a position in front of her while walking backward, and I aimed the Mowatt beam past her opposite the wall. This placed her between the beam and the wall, which assisted me in knowing instantly when she strayed from the wall. When working with her in open space, I simply kept the Mowatt trained on her. Looking back, I think I could have trained her to accept a bell or something, and I could have used my cane instead to keep her near the wall. I haven't used a Mowatt in at least 5 years, no matter how tricky the student.

When traveling in congested environments or in solo lessons, I may give the student a mechanical clicker. These clickers carry over great distances through noisy environments. If we should become separated by accident or by design, the student or I can signal each other using these clickers.

I experimented with the use of modified FM walkie-talkies which allowed the transmission of a continuous stream of music to the student. I could keep the sound just below environmental noise so that it was never distracting to the student, and I could adjust the volume remotely as environmental noise fluctuated. Because I was familiar with the music, it stood out even at fairly low volume. Generally, the students loved the idea. They thought the music was "cool." However, this strategy proved to be too awkward to maintain. Although these particular radios had a rated distance of up to a quarter of a mile, the practical range was only about 9 feet before interference became too troublesome. Also, the low audio fidelity of walkie-talkies required that the music be kept at a fairly low volume; otherwise distortion became annoying.

I have found two-way family radios to be very useful for maintaining communication with students. This makes it fairly easy to keep track of students should we ever become separated such as might happen

during bus or solo lessons. These walkie-talkies have a range of a mile or 2. They also sometimes possess a pager feature which causes the receiving unit to beep - allowing for easy auditory tracking under stringent conditions. If we ever become seriously separated, my students have my cellular phone number and are instructed in how to use it.

For two of my most unpredictable students, I created a retractable tether by which I could connect myself physically to them (see appendix C-5.4). One was the student who hopped and gyrated spontaneously, and the other was a low vision student who liked to leap into intersections without good judgment. It turned out that I never had to use this precaution for either student.

I have also used the Mowatt sensor when monitoring students from behind. From this position, it can be difficult to assess some of what lies ahead, so I use the sensors to scan the anterior environment over the student's shoulder or around the student. This is particularly useful with low vision students, with whom I generally maintain a position behind. However, again, I haven't found this device to be necessary for years.

Another blind O&M Specialist in training found some success with the use of talking sign technology. Essentially, this involves a transmitter that the student wears, and a receiver held or worn by the blind instructor. The transmitter can be set to transmit anything, a tone or message, to the receiver. Both units are unidirectional, which means that the signal is received most strongly when the receiver is pointed directly at the transmitter and is clearer with proximity. An instructor could theoretically use such technology to "home in" on a student's location.

Another important approach is to increase familiarity with students' movement styles and mannerisms. I'm not talking about trusting to probability. This is a matter of becoming profoundly attuned to a student's manner of walking, body movements, breathing patterns, oral mannerisms, and the type of clothes they are wearing - shoes, jackets, jewelry, etc. After a time, I can literally pick some students out of a crowd of people from yards away. I remember when first starting my student teaching, I became very worried that my students all used a feather-touch cane technique that was virtually inaudible, and they all seemed to walk with hardly a sound. One in particular seemed almost not present unless I stayed almost on top of him. But after a while, I noticed that each exhibited specific ways of planting his feet with characteristic scrapes or shuffles, or whatever, and one of them had a way of quietly snuffling to himself. Familiarity with this alone proved enough for me to double monitoring distances.

I have found visual assistance to be entirely unnecessary for the purposes of monitoring safety. The one mild exception to this concerned a student with relatively little vision loss who felt no need to be particularly wary around traffic because "drivers have to stop for you." I took him to an uncontrolled, high volume intersection, and asked him how he would cross the street. He explained that he would time his crossing to give drivers a chance to stop. On two occasions he indicated in error that it would be safe to cross. He just didn't have the spatial sense to time a crossing between cars or to estimate how long it would take a car to stop (assuming it did stop.) I wanted to let him cross and show him that he'd just get stuck in the middle of the street or narrowly avoid some critical accident, but I chickened out. The crossing was potentially lethal, and I did not trust my ability to maintain his safety. Instead, I sought to make arrangements for a traffic engineer to come out and show him personally how dangerous such a crossing could be. However, my desire for this assistance had nothing to do with the eyesight of the engineer, but rather the fact that he held specialized experience with traffic and should know best how to handle a hazardous situation of this sort. I would not have trusted any other sighted individual to assist me with this problem.

5.1.3.2 Discrete Tactual Contact

Tactual contact can also be viable. I know of one blind colleague who maintains light contact with her students much of the time and is able to gain much information about the nature of their travel without apparently disturbing their travel space. Her master teachers have raved about her. I may have a heavier hand than she, because I've found that tactual contact can be disruptive and distracting, especially to particular students. Young kids often just want to grab on when they feel a near presence, while others may recoil from nearness.

The occasional need for blind instructors to touch their students for information has been critiqued. It seems a common practice for instructors to touch blind student's hands, arms, shoulders, or back when communicating spatial information. Drawing an imaginary map on a student's hand or back seems to have been an accepted practice for as long as I can remember. It has also been common, though arguably less accepted, to handle student's arms or shoulders to indicate direction, or to orient student's hands or body to a phenomenon to be explored tactually.

Although I can monitor most aspects of student functioning auditorily given the appropriate range of strategies, there are occasions when I must touch my students in order to remain informed about some aspects of student functioning. Generally, these occasions arise under four circumstances - determining specific information about students' body position, remaining informed about specific aspects of cane and other techniques, assuring student safety under conditions of extreme noise or congestion, and when working with students who are highly unpredictable.

When I find tactual contact with my students necessary, I bear in mind the need to respect and preserve student space and comfort and to relate to students naturally and unobtrusively. To this end, I apply three techniques - prior explanation, discrete touching, and indirect physical contact.

5.1.3.2.1 Explanation

I always explain to my students in advance about all of my strategies and techniques for monitoring and instructing them, including the occasional need for touch. When working with children, I may also explain to other relevant parties, such as teachers and parents how and why I touch students.

5.1.3.2.2 Discrete Touching

I keep touching brief and intermittent. I also keep my touch light. Whenever possible, I use the back of my hand or arm, and I almost never touch the front of the student's body. When determining a student's facing or alignment, I may lightly touch each of the student's feet with my feet or cane to ascertain their foot position. If done well, this process need only take a second.

5.1.3.2.3 Indirect Physical Contact

I've found indirect physical contact to be a viable means of gaining important information. A light touch on a student's backpack, for example, can convey much about a student's gait and posture. Touching a student's cane or sleeve with care can clarify aspects of cane technique. I have also found that much may be learned about a student's gait patterns and posture while they are touching me, for instance, when I'm guiding them.

5.1.4 Poise and Preparation

There are several aspects that contribute to what I call "poise and preparation" - maintaining instructional poise, preparing all needed adaptations, preparing the training environment, and familiarization to training areas and situations.

5.1.4.1 Maintaining Instructional Poise

For me the term "poise" refers to a combination of continuous vigilance, ability to make rapid judgments, and readiness to take immediate action. As a blind instructor, I may have a reduced degree of warning before a potentially dangerous situation arises. I must, therefore, maintain my vigilance to all tell-tale clues, and I must maintain optimal monitoring positions to intervene as expediently as possible when the need arises.

When monitoring students, I have learned and continue to learn to maintain constant readiness and to keep myself poised to react immediately to any possibility. There are two reasons for this.

The first is that, as I've mentioned, I may not observe a potential danger approaching from a comfortable distance; I must be ready to react immediately upon the first sign or even the first extrapolations of a sign. I may not hear a car speeding toward us from a block away ready to run the red light, but as soon as that car reaches the intersection, I'll know, and I must respond immediately and with assurance.

I can remember one occasion when I was traveling with a young blind friend on an outing before I entered the Orientation and Mobility training program. As we crossed a street, a car came at us through the intersection. I couldn't tell if it had merely turned left out of sequence or ran the light, but I knew it was coming. Instead of grabbing my charge and running frantically to get away, I determined that I had the

time to ascertain exactly where the car was headed. I gripped my young friend's shoulder firmly, paused, and turned to face the oncoming car for the best perspective of where it was headed. When I determined this, I moved us expeditiously to safety.

The second reason is that, I have learned that students can be completely unpredictable. The lowest functioning student can make just the right move when one has every reason to suppose otherwise, and the finest students can really blow it against all apparent odds. As a student teacher, I had a student, who had always used accurate if overly cautious judgment when crossing streets, step right in front of a turning truck. I was ready for it, but it took me by surprise. Maintaining the constant assumption that anything can happen minimizes any potential surprises. I do not rely very much on educated guessing or predictions of student behavior. An instructor may come to know a student well enough with time to warrant reliance on that student's style of behavior and skill implementation. Indeed, to a great extent, instructors must come to rely on their trust and knowledge of a student's ability to function in various conditions if monitoring distances are to be increased for the sake of facilitating student independence. No instructor can monitor every inch of a student's progress from remote distances; they must trust in certain levels of student competence and patterns of behavior. However, my experience suggests that there are significant student populations whose actions and behaviors cannot be predicted - namely children, and many students with multiple disabilities. As the monitoring distances increase or poise is relaxed, the number of possible unknowns also increases. I try always to assume that any student could make the most basic mistake or unlikely move.

Before I proceed, I will emphasize both of these points by expanding my example about the student who stepped in front of a truck. The incident occurred during my first month of student teaching. The student waited for the right time to cross a four-way, lighted intersection with the parallel street to our left. A small truck (a pick-up or van) waited to turn right. I spotted the truck, but felt sure that this student, given his record of extreme caution, would let the truck go before attempting to cross. In retrospect, I recall maintaining my watch on the truck, but relaxing my stance and posture - feeling somehow that my student wouldn't move. Well, he moved. He stepped forward at the traffic surge, and the truck showed no sign of yielding.

Now, I had about a second to decide from among three choices - abort the crossing, instruct my student to pause, or allow my student to continue while taking appropriate measures and precautions to ensure his safety. Of course, the most conservative response would have been to abort or halt the crossing. In retrospect, halting the crossing was probably the most desirable decision under this circumstance. However, I believe in facilitating close and realistic interactions with traffic for the sake of maximizing the development of traffic wisdom, and quick, accurate, reflexive judgment. Despite this perspective, I had to fight the urge to grab my student and drag him ignominiously out of harm's way, and I forced myself to let him continue.

Now came the next question - How to facilitate the safe completion of this crossing. Though my student's decision to go had surprised me somewhat, I had been ready for the truck, and I quickly took-up a defensive position between it and my student. Although the truck had intended to accelerate rapidly, it had in fact gathered little speed and might still be coaxed to stop. I stepped ahead of my student - my left hand waving my cane with broad intent in the truck's windshield, and my right poised to stop my student in case the truck failed to yield. The truck cut it's acceleration and came to an abrupt stop within arm's reach. My student, a little startled, continued the crossing unshaken and without difficulty.

This example really illustrates both points. Though I could not anticipate what this driver would do, I was ready for him to do anything. My master teacher, for example, had the perceptual input to recognize ahead of time that the driver was "going to try to beat us to the punch," and would have used this information accordingly in his instruction. Though I did not have access to this information, I was nonetheless ready for him to do what he did. Such continual readiness has come from the amount of traveling that I've done around traffic. However, I still had a lot to learn about keeping tabs on students. I continually try to position myself and maintain continual preparation and vigilance accordingly. This does not necessarily mean close distances; I can monitor at distant and remote locations with the

application of specific strategies under proper circumstances. Although I often monitor totally blind students from in front, side monitoring is not uncommon - especially where there's no parkway between the student and the street, or where there may exist some other potential risk if the student should veer. When monitoring from the side, or from behind with low vision students, I typically use my cane in the hand opposite the student so that I can grab the student immediately if need be (although I rarely find the need to "grab" my students). When I was using the Mowatt, I had it attached to a retractable chain (see appendix C-5.4), so that if I needed that hand immediately, I could drop the Mowatt without loosing it or having it interfere with instruction.

5.1.4.2 Preparing All Needed Adaptations

I take pains to make sure that my adaptations are ready and reliable. If I'm using a remote beeper to help me keep track of a student, that beeper better beep when I call for it to do so. The same goes for the Walkie-talkies or cellular phone, the tape recorder, the Mowatt, or whatever. It wouldn't do for me to need a piece of equipment and have it not function. Suppose my cane broke. I'd still need to be able to function, so I carry a spare in the form of the retractable NFB cane (see appendix C-3). I also carry spare batteries of all types, and I make sure that all batteries and equipment are in working order before I begin a lesson. I also try to keep spare equipment around - remote locaters, Walkie-talkies, etc.

5.1.4.3 Preparing the Training Environment

With some students, it has paid off to take some measures to prepare the environment within reason to decrease its potential risk to the student or to the quality of instruction. I'm not too much into architectural modification for the accommodation of blindness when blindness is the only disability. I think it's unreasonable to expect that the public will ever be able or willing to meet all the needs of the blind as it does for the sighted. besides needs vary enormously from one blind person to another. I'm much more a proponent of the adequate application of skill to manage the environment. However, when a student is first starting out or has other problems, I've found it useful to make certain modifications ahead of time to increase safety. I recall one of my cognitively impaired students who would try to eat anything at hand. At first I had a hard time monitoring such activity continually. But, I knew of blind parents who were able to do so with their young children, so I knew it could be done. One answer was to remove potential temptations before her lessons. For example, her favorite eating place was a particular planter from which she would feast on dead flowers, if allowed. I would visit that planter before her lessons and remove all the dead flowers from her reach. In time, I also became familiar enough with her movements to be able to anticipate when and what she would grab. She never swallowed anything while under my instruction. Since this student, I have become much more sensitive to the movements of young ones that suggest intervention is in order.

5.1.4.4 Prior Familiarization with Training Areas and Situations

My classmates and I were taught the value of familiarizing ourselves to training environments and situations prior to executing lessons. This process can generally serve as an integral factor in the preparation and execution of effective lessons according to specific student needs and characteristics. I find that familiarization to training areas can constitute a significant facet of lesson preparation. Although I am able to function well in unfamiliar environments on my own, increased familiarity with training areas better enables me to focus my attention on my students' needs and safety. This is especially true regarding high volume traffic situations such as complex intersections and freeway access ramps, as well as non-controlled traffic areas such as parking lots and outdoor transit centers. This also goes for areas that are unusual or nonstandardized such as railroad crossings and rural environments. I recall an occasion when I was scoping out an intersection that was to be part of a student's route. I hadn't originally intended to do this, but I just happened to be in the area. It just so happened that this intersection used a sequence of traffic control that I'd never encountered. The left turn arrow came on, not before, but after the corresponding green light. Such a situation would certainly have caused me a little confused hesitation had I attempted to interpret this "on the fly" with one of my students. It would have been manageable, but a little awkward nonetheless. It is often possible to become familiar with environments prior to lesson execution since many environments are common such as students' neighborhoods, schools,

and favorite haunts. Also, when wanting to do lessons with students in areas novel to them, I often bring them into areas that are familiar to me such as my neighborhood and college campuses or places of business that I frequent.

In scoping out training areas for totally blind or very low vision students, I try to go over an area once. Using echolocation, a 62 inch cane, and careful observation, I can generally ascertain those elements of an environment that may hang-up a given student. In addition, I sometimes used a Mowatt or Poleron to assist with the detection of fire hydrants and other low profile objects. (Both devices were made available to me by the training program for testing and trial.) I have generally found a sighted assistant to be unnecessary in scoping out environments for totally blind or very low vision students. But, if one is available, I have them point out the location of critical hazards such as manholes and fire hydrants. These are the two most difficult items for me to catch in my own scoping.

When it comes to scoping out environments for students with higher visual functioning, a sighted assistant can become more necessary depending on the needs of the student and the nature of instruction. In situations that require students to analyze their environment in detail, such as in functional vision assessments, I have found it impossible to perceive, extrapolate, or intuit all necessary environmental cues that may be relevant to the functioning of a visual student. While the sleep shade approach may have utility for some students under some circumstances, I do not feel it's appropriate for all visual students under all circumstances. I cover these issues in depth in the section on perceptual assessment and instruction (section 7.3). Suffice it to say here that obtaining detailed visual references in a training area can impact the lesson in three major respects. It facilitates my awareness of what a student is looking at, it increases my ability to maintain control over the course of a lesson, and it facilitates the development and maintenance of the low vision student's respect for and trust in the blind instructor.

Having extolled the virtues of prior familiarization, I must now point out the practical difficulties involved in this process. I found that becoming intimately familiar with the training environment is often not feasible, especially when student teaching. Very often there just isn't enough time for a blind trainee to become intimately familiar with all the training areas of a case load in just 7 to 10 weeks before moving on to the next assignment. Also, a student may bring a need to an instructor's attention that must be addressed immediately. Therefore, I learned to implement some strategies that help me to gain quick and functional familiarity, and which enable student safety despite not being entirely familiar with the environment.

First, under most conditions of unfamiliarity, many of the monitoring strategies, positions, and distances discussed in this report permit me to ensure student safety and to provide adequate instruction. Under such circumstances, I find myself most reliant on my skill levels, as well as my range of travel experiences. I am much more inclined to maintain a forward position in areas with which I'm not familiar, and I generally keep my distances down to within 10 ft. When analyzing novel intersections with a student, I'm reliant on my ability to analyze an intersection very quickly. Also, if the intersection seems especially strange or hairy, I may actually cross ahead of my student and return. Before doing this, I will give a specific question or two to the student to consider in my absence, then discuss my student's answers on my return. Usually, I do not require more than a cycle or two to cross an intersection.

Second, I try to learn as much as possible from opportunities for casual observation of training areas. For example, sometimes, agency supervisors or personnel will provide courtesy tours and orientations to the work place for new employees. I'm careful to pay very close attention, and I ask key questions during such occasions. Also, I've taken opportunities to observe other instructors teach in areas that I know or suspect I will work in. For example, at one point during my internship, we needed to facilitate some reorientation for all the students in the agency after some massive reconstruction had been completed. I was already somewhat familiar with the new layout having been part of a general tour that had been given some time before. When the day came to reorient the students, I observed one of the instructors teaching one of the students. I was then able to join the ranks in teaching the rest of the students.

Third, I make every effort to pick everyone's available brain, including my students', about the area in question. I've found that asking students to show me what they know can often provide a valuable

framework that allows the acceleration of my understanding of areas with which they have some familiarity, as well as providing useful information about student functioning. Not incidentally, this approach also provides an effective bust for student confidence and competence. Young and newly blinded students in particular seem to love being "in charge." Also, the best way to learn something is often to teach it. The mail carriers, hired drivers, and bus drivers and information operators can sometimes serve as excellent resources. When orienting to indoor facilities such as malls, personnel at the information booth, marketing office, or security office can prove critical.

Fourth, when working with low vision students, I've learned to question them thoroughly about what they see. This serves both to provide me with a sense of how they use their vision, as well as a preview of an area or situation. With this, I may be able to direct the course of a lesson. This approach is often very effective, but it can backfiring. If a visual traveler has poor spatial processing or reading skills, or has difficulty making sense of visual clutter, I've found it difficult to assist them without some advanced familiarization to the visual nature of the situation.

Fifth, I will try to obtain maps of training areas and have them described or raised if feasible. I have found, for example, that 5 minutes of an office secretary's time with a map can do wonders for my understanding of a school's layout. For street layouts, I will generally have maps described by a reader or member of the Chamber of Commerce. If one has the funds, a GPS map is an excellent resource. Also, use of Braille-to-graphics systems or tactile enhancement machines can provide a quick and dirty method of making simple maps accessible. Such technology can be used to render maps from Atlas Speaks into tactile formats. The labeling tends to get really messed up, but the layouts thus rendered can still be very useful.

Finally, if I am very familiar with a student, familiarity with the environment may be less necessary or may even get in the way of the lesson. I am a strong proponent of personal discovery. A student's ability to travel on her own through personal, self-directed, strategic discovery with little reliance on others is paramount. I believe that many of my students often benefit from just going out and looking for something, without the security of a sighted guardian angel hovering nearby to bail them out at a moment's need. On one occasion, I conducted a lesson with a student to locate a favorite restaurant. I hadn't had the opportunity to go over the area first, but I asked around and gathered a pretty good idea about where it was and what some of the situational factors might be. I also knew that the student was very capable and had a vague idea about where he was going. I let him find the place with minimal guidance, starting from the point of doing his own investigation about where he was going. I remained with him for company and for some occasional strategic questioning, but he did it on his own. He was both reluctant and intrigued by the prospect of striking out without a sighted on-looker to point the way. He was successful, even in the face of some unexpected construction. Later, I heard from one of his teachers that he was very impressed that two blind guys could just up and strike out into the unknown by themselves.

Even given these strategies and perspectives and the application of reliable skills, I find that instructing under some circumstances with certain students can prove unproductive and even hazardous if done without proper familiarization. Orienting students with dog guides or students with orientation problems to new areas absolutely requires me to go over that area thoroughly in advance. Conducting orientations "on the fly" can work beautifully with higher functioning students without dog guides and often provides them with a very rich instructional experience. However, this process just seems to confuse and frustrate students who have difficulty grasping self-orientation skills, and dog guides don't handle that process well.

Also, working with low vision students sometimes requires me to scout out the area ahead of time using some form of sighted assistance occasionally. This is especially true when orienting a low vision student to a new area because the cues often most pertinent to them are visual. When orienting to a school or shopping center, I should know where all the major signs, visual landmarks, and other visual features are so that I can facilitate my students' attention to these points.

Prior familiarization to new areas is also very helpful in preparation for assessments - especially when assessing low vision students. If, in the prior interview, a student appears to be particularly competent, one may be able to use a combination of structured discovery and seeing aloud methods to gain enormously useful information on the fly, but the risks for something going wrong are high. Even on those occasions when I have found the need to conduct assessments on the fly in this fashion, I have not been completely satisfied with the results, and I usually have to return to the student under more structured circumstances to fill in some informational gaps. (Assessment strategies are covered in detail in section 6.3.)

Finally, I endeavor to give top priority to familiarization to high volume and non-controlled traffic situations such as freeway access ramps, parking lots, transit centers, and environments that are unusual or nonstandard such as railroad crossings. I generally put off lessons involving such situations until I've had the chance to explore them. Or, if a need is immediate, I will typically insist that a student waits until I've examined the area before going through it with the student.

5.1.5 Practice

Very simply, practice improves performance. I have found it indispensable to practice often and continuously - to practice movement and navigation skills, as well as practicing and refining strategies for student monitoring.

Practicing movement and navigation has helped me to heighten my skills virtually to the point of automation and instinct, so more of my attention can be focused on my students. Here, my long time refusal to use a human guide in favor of the application of my own travel skills has really paid off. In so doing, I came into the program already with some experience in keeping track of a companion while managing my own mobility. Also, my budget and off-beat travel needs have historically forced me to depend more on public transit than private drivers or taxi services. This has provided me the opportunity to hone my urban travel skills - especially concerning the negotiation of unfamiliar urban environments. Finally, I've always enjoyed walking, and I've relished every opportunity to travel in and explore residential and rural communities. I've found such experiences critical to movement and navigation development - especially in learning new areas quickly and in being able to function well in unfamiliar areas.

When going through training, I also practiced the specific processes of monitoring as much as possible. I solicited volunteers from among my classmates to work with me. A few of them relished the opportunity to have some extra instruction under the blindfold and particularly to receive it from the perspective of a long-time, blind traveler. Also, I intentionally spent extra time in student teaching. When we were first starting out, I noticed that monitoring all aspects of student functioning was difficult for many of us. Evaluating and remediating in-step, arc width and height, hand position, line of travel, and anticipating potential hazards seemed to be quite a handful. On the whole, I think my classmates got the hang of monitoring much more quickly than I. I think that most of the delay for me arose from having to figure out how to monitor - devising strategies and developing techniques as I proceeded. However, I also expended considerable effort in expanding my perceptions, speeding my reactions, and honing my judgments.

I first noticed that simple guiding was a little troublesome. While several of us had some trouble with it, I think I took the longest to catch on. I just wasn't at all accustomed to ensuring clearance for another individual. Also, when people are being guided, they like to talk. It drove me nuts to maintain clearance for myself and my student while trying to carry on intelligent and productive conversation. I never ran a student into or off of anything, but I certainly experienced much difficulty maintaining my own clearance. Encounters between me and objects, stumbling along borders, and brushing against shorelines were common at first, but are rare now. Initially, I practiced guiding by ensuring clearance for a large piece of luggage - pretending it was a student. In truth, I don't use guiding much with students, because I believe guiding impairs learning and fosters dependence.

I also experienced some struggle integrating my students' presence into my own sphere of perception. It was really hard at first to concentrate on my student and my surroundings. I remember the first time I had

to teach a blindfolded classmate how to cross left turn arrows. On the first crossing, I misjudged the arrow. When traveling alone, I've rarely made such errors and never since with a student. However, at that initial attempt my perceptions just seemed warped or over-extended by the presence of and responsibility for my student.

I had similar difficulty keeping track of which corner we were on while boxing a four-way intersection with students. Somehow, the simple process of counting to four seemed to elude me when working with students. It was they who often first realized that we'd finished the circuit, while I pretended to pretend ignorance. At times, I actually had to go through the trouble of land marking the initial corner or using my compass to verify our location.

Probably the biggest hassle was learning how to stay out of the student's way. When monitoring students while using a cane myself, it was very difficult at first to keep my cane from touching their cane or from getting entangled in their legs. Also, it was difficult for me at first to maintain close enough distances to monitor subtleties in student technique without jostling or bumping them, crowding them, or getting in the way of their cane.

This last was probably the biggest drag. I remember my first attempt to monitor a classmate. I was a total oaf - tripping over the cane, bumping shoulders; it was worse than when I first learned to dance. However, with a little time and practice, I became quite a good dancer. The same is true about monitoring discretely. Changing positions around students while staying clear of their cane was just really hard at first, but it quickly got easier.

Though I am generally able to avoid obstructive contact with my students, I look at such incidence as learning experiences for my students. The public itself does not always seem much concerned about staying out of the way of a student's cane, so if I should get in its way from time to time, I don't sweat it. It's just another learning experience for students.

In retrospect, I wish I had used a shorter, lighter cane during the first few months of learning to monitor my students. I am 5 feet 7 inches tall. I used a 62 inch Autofold cable cane in the beginning, because it gave me better coverage and was intensely sturdy. However, it's length and weight made learning the finer points of discrete monitoring awfully cumbersome. A 58 inch cane of a polymer type (fiberglass, carbon fiber, or graphite), would have been more appropriate for starting out. Indeed, the durability and lightness of a graphite cane seems to serve best under most circumstances. Nowadays, I use a 58 inch rigid, Ultralight graphite cane from California Canes because of its lightness and maneuverability. With as much traveling as I do, the lightness really pays off over time.

Another area that required considerable practice was the use of my cane in the left hand. As I've mentioned, I prefer to use my cane in the hand opposite my student. This requires off-handed cane use about 50% of the time. Fortunately, I'd begun practicing this art before entering the program. The initial, negative impact of off-handed cane use on my overall mobility astonished me. It was almost like learning cane technique all over again, though much faster. I was amazed at how difficult I found applying simple processes of orientation while struggling to manage the cane in the left hand. I became accustomed to it quickly enough, but to this day I must switch back to the right hand under situations that require my full concentration. For example, I once became momentarily separated from a low vision student by an array of street furniture. I was traveling nearest the curb with the street on our left, so my cane was in my left hand. Between the noise of the traffic and the cane in my off-hand, I found that I couldn't call up an acoustic mental picture of the array of obstacles and negotiate it back to my student. Instinctively I switched my cane back to the right hand momentarily, and the whole layout of the situation suddenly became clear and easy to manage.

When student teaching, I found the need to practice maintaining my orientation while walking at very slow speeds and while veering in odd directions. As I noted earlier, I found it troublesome to maintain my own orientation while traveling with students whose movement styles were much slower or otherwise different from mine. An exercise that helped me was to learn new areas while walking slowly through them. Also, I would practice traveling in various environments while carrying bulky or heavy items or

under conditions of strong wind. Such circumstances tend to affect my kinesthetic senses in a way that roughly simulates travel according to incompatible movement styles.

Practice is a continuous process, even today. Just as a sighted instructor must practice under the blindfold periodically to maintain adequate instructional competence, so I must practice my awareness exercises - like carrying luggage or managing a shopping cart, to keep my instructional competence sharp.

When addressing the matter of blind instructors monitoring students' safety and technique, the question arises: How can a blind instructor adequately judge and respond expediently to interactions between the student and the environment, while minimizing perceptual contact with the student? The issue is thus two-fold - ensuring student safety, and reducing perceptual contact between student and instructor.

When monitoring the travel safety of students who are blind or have very low vision, I often maintain a position forward of the student and at distances from about 6 to 15 feet or more. In this way, I am aware of the nature of the environment before my student, and I can react accordingly. While walking in front of a student, I can maintain an awareness of my student's course and whether or not his cane will cover him upon reaching an obstacle or sudden change in terrain. Familiarity with a student's gait patterns, cane technique, and environment, as well as my use of a 58 inch cane (see appendix C-3) makes monitoring a student easier, but I do not require these factors in order to monitor effectively.

When I sense an obstacle, I may pause briefly at that point, turn, and observe my student carefully. If I am convinced that the student either won't contact the obstacle or that contact won't prove hazardous due to proper cane coverage, lack of speed, or a non-stringent obstacle, I'll continue on ahead. If it looks risky, I exercise a number of options. I may warn the student in an appropriate manner (e.g., "widen arc," "be sure you're listening carefully," etc.), or I may stop at the obstacle and wait for the student to draw nearer. If its something like a pole, tree, or fire hydrant, I may position myself on the opposite side of the obstacle from the student and ensure that the collision won't be too painful by placing my hand on the object at an appropriate level so that the student's face or knee won't suffer injury.

5.2 A Little About Terrain Irregularities

A few special notes concerning drop-offs: The question has been raised whether a blind instructor could fail to perceive sudden terrain changes or irregularities such as an odd rent in the path, or an open manhole cover. The answer is yes, it is possible, even by the conditions under which I typically monitor my students. If the anomaly is small, it is theoretically possible for my foot and cane to miss it, leaving my student vulnerable. However, I believe that the chances of a student coming to harm by such an event under my supervision are very remote. There are four levels of safety that protect the student here.

First, by the time students are advanced enough in their training to work in unfamiliar environments, I would expect that their cane technique and coordination are good enough to protect them from such occurrences. After all, our goal is to foster independent travel, not reliance on supervision by others. Perhaps I would be more cautious than others in ascertaining that students' travel skills were adequate to keep them safe, and I am also quite adamant about student capacity for independent travel.

In addition, I do often take the time to become familiar with the training environment and its potential hazards. I've said that, as a student teacher, it was common for me not to be familiar with travel areas. Once I began my own practice, however, training environments became much more regular.

Next, since I often maintain a line of travel directly in front of my student and unknown terrain, I would have to walk right over such an irregularity - missing it with both my feet and my cane - in order for a student to approach harm. The student would then have to miss the phenomenon with his cane and step right into it before possibly coming to harm. I do not use a conventional two-point touch cane technique when I travel. My technique more resembles a light constant contact called feather touch. I walk in-step and in rhythm, but the tip quietly and very lightly glides across the ground without leaving it. I find that this technique is more efficient than two-point touch under most conditions, and it affords much better feedback. I can even use it while hiking over broken terrain. Therefore, I consider the chances of missing an open manhole cover to be remote. Others do not. Someone told me that they thought my chances of actually detecting a manhole, for example, were about 10%. Not long after this, I casually located about six manholes in the span of two blocks on my way to a student. While I concede the possibility that I may

have missed one or two (and I wasn't really looking very hard), I can't fathom that there could have been 10 times that number. I've walked across a great many closed manholes in my time, and I don't think that there are appreciably more manholes in the world than those I've detected in my travels.
Finally, I must say that in all my travels, perhaps tens of thousands of miles of walking, I have encountered three open manholes. One I sensed from the sound of rushing water and a draft welling up from its reverberating depths. There was a workman at another. The last, in fact, I walked right over without noticing as a student teacher during a lesson with one of my high school students. It was a small, shallow one, located along some broken and uneven sidewalk. I had reverted to two-point touch for that instant to accommodate the broken terrain. Now, I would not have to make this adjustment. My cane missed it, and I stepped right over it. Then, my student's cane missed it, and he stepped right over it. My master teacher noticed, but my supervisor missed it, as she had glanced down at her clipboard to make a note.

5.3 Instructor Position and Facilitating Self-Reliance

As I've discussed, I often take forward positions and intermediate distances when monitoring students. Such a style of monitoring as I've described raises concerns about three principal issues - functional reliance on the instructor, emotional reliance on the instructor, and natural interactions with the public.

5.3.1 Facilitating Functional Self-reliance

The most common position for most instructors seems to be behind the student. The traditional view seems to have been that a rear position reduces cues to the student that may artificially govern or prompt student functioning. I would also argue that this position affords the best vantage point for sighted instructors to observe the student and monitor technique, as visual perception is geared ideally for forward viewing. Though it may have been supposed that rear positions optimize student independence, it is surely not coincidental that rear positions also address the need for sighted instructors to have forward perspective. In contrast, the nature of auditory perception is not frontal, but spherical. Auditory acuity is almost as functional from behind as in front. Therefore, a blind instructor may find it about as easy to monitor a student's course and trajectory effectively from a forward position as from behind the student. The proverbial "eyes in the back of the head" pretty well holds truth for a blind instructor. So, if I maintain positions beside or in front of a student, will the student just develop a habit of cuing off my movements and not hone his own perceptions and skills? If so, what would a student learn about independent travel by doing this?
Since auditory perception readily encompasses a full 360 degree field, a blind student may have nearly as much awareness of instructor movements behind as in front. It matters little to the blind whether auditory stimuli occur from behind or in front.
For example, I remember when I was assessing one of my thesis participants as he walked a line along a black top path. The intent was to compare how straight his line was with vs. without parallel echo cues. In this case, there were no echo cues, but to the left there was an expanse of grass. While conducting the test, his instructor walked a long on the grass as silently as possible and about 10 feet behind him. His line was perfectly straight. I asked the instructor to remain still for the next few trials, explaining that I thought she was cuing him to a straight line by walking a long behind him. She expressed skepticism that he could cue off such a "quiet" and remote stimulus, but she consented. He veered into the grass over the next two trials.
In another example, one of my master teachers expressed concern that one of my students might be cuing off my movements in front of him. During a later lesson between my master teacher and that student, my master teacher monitored the student from behind the left, then the right shoulder. He observed that the student tended to veer to the left or right accordingly.
In any event after all is said and done, there may be times with some students when providing forward cues may be instructive. Depending on the lesson objectives and the needs of a student, providing a beacon for some students to follow may teach them a great deal about perceiving and responding to lines of reference.

Nonetheless, when it comes time for a student to hone internal skills of self-reliance, I apply several strategies for discouraging functional reliance on me. I often move in ways that keep students from relying on my position. For example, I may deliberately take whatever line of travel they're taking or deliberately take an erratic course of travel. Students quickly learn not to play "follow the leader", which is something they should be learning anyway. But for specific circumstances, they should base their travel decisions on their own internal frames of reference and judgments, not on other people's. If the student persists in attaching his functioning to mine, he finds himself following me off a curb, up a driveway, or into a tree if he's not careful. Also, when it comes to drop-offs, I may stop, but I can throw some students off by continuing my foot steps and cane movements while standing in place. Students eventually become wise to this trick, as it should be, but again, it engenders that sense of watching oneself.

5.3.2 Facilitating Emotional Self-reliance

The next concern revolves around reducing students' emotional reliance on the instructor, so that they may learn to become self-reliant. Since it seems that a blind instructor generally requires closer distances between them and their students for monitoring safety, it has been supposed that a blind instructor might not be able to reduce perceptual contact sufficiently to provide the student with a feeling of increasing self-reliance. Here, I think two points are worth making.

First, I think that it may be imprudent to suppose that an instructor can really "hide" from their students so easily just by increasing the distance. Is it as easy to hide from perceptive blind clients as may often be supposed? I propose that it may often be the job of the instructor to facilitate perceptual processing to the point where hiding from a client for long periods is challenging. I have to say that, while I was going through instruction, I rarely lost track of my instructors for more than brief periods. I had a student recently who almost always knew where my master teacher was no matter what position or distance he took or how quietly he moved.

While fully realizing that many of my students can track my movements if they really want to, I do take steps to discourage their active interest in my position. Often, I maintain a frontal distance of between 6 and 15 feet depending on my familiarity with the student and the environment. However, I've felt comfortable observing from as far ahead as 30 feet with some students under quiet, non-congested conditions. With advanced students, or in environments that are relatively self-contained or free of hazards, such as stores and malls, I may let students go off by themselves entirely, only checking in with them from time to time at check points or via four-way radio. As a student teacher I rarely became familiar enough with my students to feel comfortable monitoring and potentially intervening from remote distances.

Also, I use several methods for reducing my perceptual apparency to students depending on lesson objectives. I sometimes put duck tape on the tip of my cane, &/or use a feather touch with tip just off the ground. When walking, I may synchronize my steps with my students'. And, in general, I know how to walk to minimize sound - walking on tip toe or planting my feet squarely heel to toe, being careful not to scrape, shuffle, or slide my feet. A single grain of dirt or a dry leaf or twig caught between the shoe and pavement sends out a sonic beacon for anyone listening. I guess I'm not above walking barefoot when I feel the need. I never walk on the parkway if silence is the objective. The belief that walking on the grass softens foot steps is incorrect. Grass rustles, whereas pavement conveys little impression. It is extremely difficult to achieve silent movement over grass or foliage.

The choice of environment can also reduce perceptual apparency. I may deliberately choose noisy or congested environments, while taking steps (previously described) to ensure that I can track a student's position and monitor as needed. Under complex environments, I may get away with keeping fairly close distances without a student's constant awareness of my position.

Second, while promoting the development of self-reliance is vital, perhaps it is worth keeping in mind that this whole business of reducing perceptual apparency to promote independence is largely just a game of make-believe, and many students seem to know this. I certainly did even as young as 12. Students may well be aware that the instructor is generally looking on, poised to intervene should anything go

wrong. On those occasions when instructors may choose truly to let a client go forth independently, sighted and blind instructor alike then must rely on their assessment of student competence. As instructional distance increases, the ability for any instructor to monitor continuously and to intervene readily decreases.

However, given all that, I've found tremendous success in traveling with students into unfamiliar areas and letting them know that I wasn't familiar. I make them take responsibility for the travel plans and execution, and they know there's no sighted person to "bail them out" if things should go awry. They seem to get the best of both worlds - an experienced blind person to ensure immediate safety and facilitate problem solving where necessary, and a blind person who's functioning is subject to the same problem solving logistics as their own. Thus, the message to the student isn't, "I'm around to use my vision to help you out if you really need me," but rather, "I can do this blind, and so can you, and you need to in order to complete the lesson." I conducted one lesson with a student in which we decided to find a store. He knew approximately where it was, as did I from calling and getting directions and looking it up on a map. However, I'd never actually been there before. I role played with my student that I was a blind college student new in town, and I really needed someone to show me around. I had him problem solve the whole thing and explain every step to me. I occasionally presented some possible courses of action, and I let him choose from among them and take responsibility for those decisions. During this lesson, I walked mostly beside and a little ahead. The beauty of it was that it wasn't contrived but very real. Since we conducted this lesson together, my student was in reality totally safe, but was truly responsible in a realistic way for executing the necessary processes to find his destination. He had a blast.

Of course, such an approach can also back-fire. I recall a lesson with that very same student where the objective was to plan and execute a trip to Baskin Robins. When we reached the bus stop, the bus driver misdirected my student. My familiarity with that particular area was poor, so I became as lost as my student when he tried to put wrong directions into effect. Because this was intended to be a "fun" lesson since it was our last, I took over from there - problem solving the way to our destination and explaining carefully every course of action that I took. although the original lesson objectives were somewhat mislaid, the lesson may still be considered successful in that it posed very realistic problems, and it required the application of realistic solutions.

My final word on facilitating self-reliance concerns the ability to teach by example. My students almost unanimously express appreciation for being able to avail the experiential knowledge of a blind individual successful in his craft. They frequently ask me, "How do you do this?" They seem greatly assured that they know a blind professional who can demonstrate by example that what they are striving to learn can be learned. There are no excuses about "I can't do this" around me, at least, none that hold up very well. Students learn in every lesson with me that they need not depend on the eyes of others for their well-being, and this realization carries life-altering impact. This is true for both totally blind and partially sighted. In fact, it is sometimes the partially sighted students who are the most impressed. The lesson here seems to be that if someone can be self-reliant without any vision, then they, with some vision, should be able to manage. (I talk more extensively about working with low vision students in sections 7.1 and 11.)

5.3.3 Facilitating Natural Interactions Between Student and Public

The final concern deals with the effect of a nearby blind instructor on the nature of interactions between the student and the public. Let's face it - One blind person walking down the street causes quite a stir; two may cause a commotion.

When we first started blindfold training, we had no idea how this was going to work. It was evident that I, posing as the blind instructor, would not be able to just "blend in." They had me monitor my partner in a solo lesson while trying not to affect public interaction. It became immediately apparent that the public generally reacted in one of two ways to my presence. Typically, members of the public either treated my partner as though I wasn't there, or they treated us as one entity. My presence certainly did not detour the public from offering assistance to my students as was sometimes the case with my sighted classmates posing as instructors. For example, my partner walked into a store and requested directions to a

destination. The woman started to explain how to get there, but then decided to leave her store and take my partner across the street to the destination. She asked my partner once if I needed assistance, and my partner assured her that I was fine. Fully 95% of this woman's attention seemed focused on my partner and away from me. On other occasions, someone might come up and ask, "You guys need help?"; but on these occasions my partner handled the situations, diverting the exchange exclusively to her.

What we saw in blindfold training has held true in my practice since. In fact, even when I am present with the student in providing direct instruction, the public often approaches us with goodly intentions, never imagining me to be in an instructor role. Again, these are situations in which my students are encouraged to handle the public - either accepting assistance if appropriate or explaining patiently, and sometimes insistently, that I am their instructor. Occasionally, if my students are shy or otherwise slow to respond, the public's attention turns from them to me - requiring me to respond. However, the vast majority of interactions between my students and the public do not seem to be deflected, diverted, or otherwise negatively affected by my presence.

There are a few strategies that I use to facilitate natural public interaction. First, I instruct my students to handle all interactions with the public themselves. When public interaction is needed or impending, I drop back physically behind or away from the student, and I project disinterest and detachment by turning and showing interest in something else. I've observed that sighted people often have a hard time engaging someone with whom no eye contact can be made. This leaves only my student to deal with. I may also increase distances if the environment and student skill permit. I was familiar enough with my blindfold partner's movements and with the environment that I monitored her waiting to cross a street from a position seated behind her on a retaining wall. I kept my head down and cane concealed, and I fiddled with something - checked my watch, combed my hair, tied my shoes, or whatever. The nice thing was that I could monitor my student and traffic tolerably well from that distance auditorily, while affecting complete detachment. When the light was about to change, I would arise and stand poised for anything to happen. When she started to cross, I followed her across at a closer distance.

Since then, I've learned to carry two canes - the California Cane (see appendix C-3) for standard use and an NFB retractable cane (see appendix C-3). The latter cane collapses instantly to a small, easily concealed cylinder, and it extends instantly for immediate use. When wanting to appear inconspicuous, I may resort to using this cane. I can collapse and conceal it in scant seconds if I want to seem like just another person for a time, then expand it immediately when the need arises. This strategy is particularly useful during bus travel or waiting at street crossings.

5.4 Monitoring Student and Environmental Variables

This section discusses how a blind instructor can monitor all aspects of student safety. However, before embarking on this discussion, I feel it necessary to summarize my views on "prescripted" vs. "free" movement. My views on this subject have a lot to do with my strategies for teaching. Movement according to prescribed patterns is not natural to higher order life forms. Humans in particular learn their body awareness, self to object relationships, and environmental interaction experientially through facilitated discovery and self-correction. Parents of most mammals teach their young how to survive, but mammals learn movement primarily through play. Humans oversee this process mainly to ensure safety, but movement would be learned just as well, maybe better, without adult monitoring. The blind often suffer from a tremendous excess of monitoring and browbeating about "shoulds" and "shouldn'ts." What should be a simple process of going from here to there has been formulated into prescripted patterns called "skills." In my mind, this process resembles the society's run by "It" in "A Wrinkle in Time." For the blind, movement has become a series of "dos" and "don'ts," about how to hold a person's elbow, how to find a doorway and open a door, how to sit in a chair, how to pour a liquid, how to position one's arms when one is walking, and how to hold a cane and where it's tip should be at any given moment. I even knew one instructor who told the parents how the children should be dressed "for safety." Of course there are certain conventions and skills that blind people can and should make use of, but the over prescription of conventions and rules of movement have come to impede rather than facilitate the development (or, in the case of adults, restoration) of free movement. Too much prescription leads to apprehensions in the

student about "doing it the right way." There movements become slow, mechanical, and often restricted. One parent complained to me about one day in church, the young man refused to approach the pulpit for communion without someone along because he "didn't know the route." When people learn to drive, they are taught the rules of the road, but no one gets on them about how to open the car door, where to put their keys, how to hold the stirring wheel, how to fill the tank, and how to sit in the driver's seat. Those details are left up to each individual to decide. It should be thus with the blind, and I bring this philosophy into my teaching and my work with families.

5.4.1 Observing Students and Traffic

besides familiarizing myself with the streets ahead of time whenever possible, the execution of this skill for me is almost wholly related to my ability to analyze and cross intersections. My own ability must be effective before I can hope to extend my bubble of surveillance to include another. Also, I must have such a degree of awareness as to be able deliberately to allow a student to veer, without letting them veer too far or into impending danger. I will let advanced students veer quite far before intervening, but I must keep close attention on how much is too much and under what circumstances. I must then be able to re-establish proper alignment.

Keeping track of student position is not an issue; I apply the same techniques described earlier. I do not depend on verbal contact for tracking student position. My attention is usually fixed on traffic, not communication, and so should my students'. Of course, I provide necessary information about line of travel, traffic patterns, and the like where appropriate, but I generally do not expect much from my students in the way of verbal communication while crossing streets. They should be concentrating their attention on receiving and processing information, not communication. The exception involves low vision students, when I request specific descriptions of where they're looking.

My instructor distance is typically a yard or less at heavily trafficked intersections, but my position may vary depending on the student and crossing. When I first began working with students, I positioned myself more or less between the student and potential traffic in a lane by lane fashion. Thus, when crossing clockwise with the parallel street on the right, I started out directly behind the student, moved to the right side as the student approached the middle of the street, and pulled out a little in front as the student approached the far curb. When crossing counterclockwise with the parallel street on the left, I started out to the left and behind, moved to the front as the student approached the left turn lane, then dropped back and moved to the right as the student approached the curb where perpendicular traffic may turn in front of the student. Now, I am generally able to monitor adequately from behind throughout most crossings, though I may change positions as circumstances warrant. With low vision students, I have always monitored from behind, but I move from side to side depending on where traffic may come from. I always use my cane in the hand that's between traffic and my student. Because I use such a sturdy cane, I can and have used it to extend my reach to a student to remediate veer or to stop a student. I've also used it flamboyantly to alert traffic of our presence in tight situations. For example, if a student makes a poor judgment when to go, I may let my student go so that he experiences the sensation of inaccurate judgment, thus gaining the opportunity to problem solve. Meanwhile, I direct or warn traffic with my cane while assisting the student as needed.

I think that the instructor must know whether or not a student has stepped off a curb and begun a street crossing immediately as the event occurs. At the speed some blind people walk - myself for example - 2 seconds, as has been suggested within the A.E.R. Competency Checklist, could take one well into the path of moving traffic. Also, as long as I implement all requisite strategies and techniques, the only way I could fail to notice a student walking off a curb within a second or 2 is if the curb was well blended by design or obscurity, such as snow, and there was, at the same time, no perpendicular traffic. In this way, both myself and my student could walk well into the street (assuming few or no traffic cues) without either of us knowing it. This has happened to me once or twice in my own travels when traffic cues were lacking, but it has never happened with a student. With students, I am especially careful to process all environmental cues. In any event, this state of affairs is extremely unlikely in the presence of

perpendicular traffic, so it really is of little concern. If it ever does happen, I would consider the event yet another learning opportunity for the student.

5.4.2 Observing Student Alignment

When determining alignment, of course my own line must be impeccable. I may discretely check the student's feet with the outsides of my own feet and the student's shoulders with a brush across the student's back. I also ask low vision students how clearly they can see the crosswalk and take what they say with a grain of salt. Before crossing intersections with new low vision students, I may scope out the intersection with a sighted person to obtain, among other things, the clarity and style of crosswalks. There are rumors of light probes and spot meters that might accomplish this without sighted assistance, but they run in the hundreds of dollars, and I have not yet gotten my hands on one.

In truth, I've found that initial alignment is not nearly so important as maintaining direction while crossing. This truth holds different implications for blind traveler vs. blind instructor. As a traveler, I rarely take more than a second or 2 to determine my alignment; I use a multitude of cues while crossing to maintain my direction - street topography, parallel traffic, stopped perpendicular traffic, and echolocation of the curb and features at the opposite corner.

This process of direction maintenance has proved invaluable in my monitoring. Many students don't align their bodies very well. It is not uncommon to find that student's feet, shoulders, and head are pointed in different directions, and this may not change much for many students. Therefore, it may not be readily possible to determine by observation how well a student is aligning. For this reason, I concentrate as much attention on instructing students how to maintain direction as I do on establishing initial alignment.

The problem of determining alignment is often made worse, though, with low vision students. They often do not align their bodies in preparation for a crossing, but turn their bodies in whatever way is necessary to ensure for them a proper view of the traffic. I had one student who deliberately stood facing diagonally across the intersection until the moment of crossing, because that's how he felt most aware of traffic.

5.4.3 Monitoring Cane Technique

This section discusses how a blind instructor can monitor all the conventions of traditional and modified cane technique. I should say first, however, that as a cane user for many years and instructor of many cane users, I have come to realize that cane technique cannot be rigidified, and prescriptions should be applied loosely. Its functional reliability is not much linked to how it looks. Perfect or "proper" cane technique is little defined by hand-centering, arm position, in-step, in rhythm, cane length, foot placement, or arc width and height. It is defined instead by how effectively and safely it allows the student to travel. It is a personal thing and situationally dependent. To this end, cane technique can be fairly easily monitored by how well it facilitates effective travel for a given student in the general course of travel. If the student stumbles or runs into stuff, his cane technique probably needs work. While certain forms may offer some power to predict function, I generally find form to be a poor predictor of function. For example, while I walk in-step and in rhythm, I do not travel with hand centered or arm extended, I do not use two-point touch most of the time, and I do not use any "standard" cane length. One might identify my technique as "poor" from its lack of conventional form. Yet, I have traveled hundreds of miles through every imaginable environment including twisting mountain cliff sides, beach, running streams, desert, and even my young nephew's bedroom without mishap, and I walk pretty fast. This isn't to say that my technique is better than everyone else's, but it suggests that we must allow technique to adjust to student needs and styles. The cane must come to fit the student, not the other way around. So, when I teach and monitor technique, I am not a stickler for form, but rather function.

When monitoring cane technique, different aspects are of relevance depending on the technique being monitored - two-point touch, verification, etc. In general, we're looking at hand position, lateral and forward coverage, arc height, wrist action, rhythm, and step to name most.

I have found that most aspects of most cane techniques can be effectively monitored with minimal and intermittent tactual contact given quiet, non-reverberant environments while traveling over sound-making surfaces. The type of surface that is optimal depends on the specific technique being taught. I find that hard surfaces, such as tile or concrete, help to convey accurate information when teaching touch

technique. Carpet can make listening to touch technique difficult, but may be excellent for constant contact or verification with tip on ground. Tile impede listening for constant contact or verification, unless the tile is textured.

I've found some differences between teaching cane technique from the very beginning vs. remediating students' technique after they've had training. When teaching cane technique from the very beginning, I pretty much go through many of the traditional steps and procedures for monitoring and instructing. When first explaining and defining arc, I can tell arc width and height by listening to the position and intensity of cane taps from behind and in front of the student. If I suspect that the arc is too high, I may position my cane horizontally as a guide above my student's cane tip. A similar approach can be used to help determine and define arc width. The student's cane taps need not be loud for me to monitor technique under quiet circumstances. In fact, I tend to use and teach a very light tap. It helps much if these exercises are performed on hard surfaces in a quiet, non-reverberant environment, such as across the blacktop in the school yard or in parking lots. Touching the arm, wrist, sleeve, and cane shaft lightly from time to time can convey a lot of information about hand position - especially when teaching verification. For more discrete contact, a short length of fishing line clipped to the student's sleeve or tied to the cane shaft near the grip can be used to convey useful information about cane and hand position. The blind instructor need not hold on to the fishing line continuously, but just grasp it lightly from time to time for assessment of technique. Even so, most information can be elicited by auditory means.

When teaching touch techniques, I've found success in affixing a small, metal hose clamp just above the tip of the cane such that when the hand drops too low, the clamp instead of the tip starts to hit the ground. One can also dangle a small, metallic item - a washer, key, or bell housing (with clapper removed) from the cane shaft just above the tip using fishing line. The item must be set so that it touches the ground only when the cane the student's hand drops too low. This strategy can be adapted also for alerting the instructor if the tip is too high, such as when teaching verification with a feather touch.

I've found that such strategies can be valuable in providing automatic, non-instructor dependent feedback to students. The sound of the item alerts the student immediately, continuously, and automatically of any problems with the technique and allows the student to self-correct. Such strategies place control in the hands of the student, rather than relegating a student always to respond to the will of the instructor - "hand a little higher," "be sure you keep that tip up", or "see if you can get that tip to stay closer to the ground." Such strategies can promote active participation in rather than reactive responses to the process of training.

Hand-centeredness is also a common concern, and it can be spot checked very easily and unobtrusively by tactual means. But, I de-emphasize hand-centeredness. As one who's used a cane regularly for many years, I can attest firmly that the human wrist was not designed to bend back repeatedly as far as it must to maintain even, lateral coverage from a hand-centered position. Occupational therapists will support my assertion. I understand all the reasons for hand centeredness, and I explain them to my students. But, I would sooner work on means for maintaining even coverage and straight line travel with a slightly off-centered hand. When monitoring, I don't really care too much about the lateral position of their hand, as long as their coverage is even, and they remain well oriented.

In-step is perhaps the most difficult aspect for me to monitor. I can hear it with some students, and I can anticipate it with most. It is not, for example, uncommon for a beginning student to go out of step when their cane sticks or strikes something. I may ask them at that point if they are out of step. A light touch on the back of the thigh or hip, or sometimes the shoulder depending on the student, communicates instantly whether they are in-step. To borrow a strategy from a blind colleague, I may also synchronize my cane movements with those of my student - maintaining my own cane movement and rhythm with theirs, keeping track of which foot went forward first. This works okay for drills in uncomplicated environments and primarily with adults who have a stride similar to my own. I cannot maintain continual vigilance with most students concerning their in-step, but it is easy to spot check regularly and easy to anticipate with many students.

When monitoring the integration of all of these aspects, I have found it almost essential to take some time to become familiar with students' movement patterns and cane sound. When starting out with a student who's had prior training, I may run a few drills just to get the sense of what they're doing and take it from there. Though some experienced blind travel trainers claim to be able to pin down the facets of a new student's cane skills within seconds, it takes me a few minutes to settle into a new student's style.

While monitoring cane technique on the move, I start out by assuming many different positions depending on what seems to convey the best information from that student and the current environment - behind, beside, and in front. Of course, in very beginning stages, we're working in simple environments with which I can readily familiarize myself. Therefore, I have little concern about maintaining occasional rearward positions. However, there are occasions in which I must monitor new students in environments unfamiliar to me. In these cases, I monitor most commonly in front. I repeatedly run well ahead of my student, keeping track of their alignment, while scouting for dangers or hazards. Then, I return closer to them, crouch down close to the ground to bring my ears nearest the cane and allow them to approach almost to me. I then repeat the exercise or assume other positions as needed for as far as my previous survey of the environment. Students have not complained of disruption from all this moving around.

5.4.4 Stairs and Escalators

My instructor position concerning stair travel is much the same as other instructors' - behind the student when ascending and in front when descending. Actually, I'm told that my position is impeccable when descending. I am able to descend the stairs fully backward with my full attention and poise toward my student.

As my student travels stairs, I can tell by listening where a student's feet are with respect to the stairs. Familiarity with student and stairs facilitates this. Also, I may lightly brush the side and toe of my student's foot with my own as my student positions himself at the top of the stairs.

Here, in order to monitor cane position, I must touch the student's cane and arm. A light touch along the cane shaft and student's elbow or wrist is enough to tell me how effectively the student is using his cane. When monitoring from in front, I may also touch his cane tip lightly with my own.

When teaching stair travel, I usually put away my own cane so that I may keep both hands free. However, when monitoring stair travel during the normal course of travel, I descend the stairs backward as usual, with my cane positioned diagonally in front of me between me and the student. I keep one hand free to monitor &/or catch the student if need be. I could drop or toss the cane aside at an instant if necessary, but the cane itself can also serve as a barrier to help catch a student.

Concerning escalator travel, I take an approach that may seem unconventional. I do not generally try to teach students to place their foot exactly on the stair of the escalator as it goes passed, unless the student has specific balance or orthopedic issues that require this. I find that this method of form exactness presence the student with needless frustration and often heightens apprehensions. I teach students to step on the thing as it moves forward and to adjust their footing as they move forward. They may move up or down a step to ensure their footing as necessary. Only a few trials are usually necessary for students to get comfortable. Over time I can help students to adjust their gracefulness as they desire. Of course, one can only monitor effectively from beside or behind. Forward monitoring is possible only when the instructor knows for certain that the student will go. Otherwise, the instructor may find himself carried away from his apprehensive or hesitant student. Again, one can monitor appropriate cane position with a light hand on the shaft or the tip of one's own cane.

5.4.5 Gait and Postural Issues

I handle gait and postural issues with discretion. As I discuss in a later section (7.1.6), I maintain that we are not Physical or Occupational Therapists. Gait and postural remediation is not fundamental to our training. While we are as capable as the next guy of judging, in a general sense, whether posture is good or bad and whether there are gait problems, I've not encountered anyone in this profession, blind or not, capable of remediating poor posture or gait patterns very well. A sighted instructor can certainly monitor poor posture continuously and with little effort, whereas a blind instructor may find this more challenging. Bells and audible levelers can be placed at certain points on the body to give continuous feedback to both

student and instructor about when posture has gone awry. An occasional, strategic touch can also convey necessary information to the blind instructor. As a behaviorist, though, I can assure the reader that something as basic as posture and gait can only be remediated if the student desires it. The key is to motivate the student to participate in the remediation process. A blind instructor is at no loss here. I have found that, when students take pride and develop confidence in themselves, they tend to begin carrying themselves automatically with greater poise and dignity. In addition, when a student becomes a more active person, whether in sports or more regular travel, their gait patterns will improve.

Having said that, there are some specific remediations that I've found effective. With head-down posture, I "have trouble hearing" students who talk with their head down or who don't look at me when they speak. Eventually, students get tired of me constantly saying "I'm sorry, I couldn't understand you" that they begin adopting the habit of holding themselves more appropriately when speaking. I pass this little trick on to all who interact with the student, so we have carry over. Also, with students who drag their feet or walk in some other awkward way, I simply stop the lesson until the student corrects their gait. Or, I may continue walking, forcing them to maintain a brisk pace to keep up. I show them the correct gait, first. Sometimes, I'll teach a student how to monitor my gait or posture. Then, we may also play the game of having them correct me when I slack. This makes them more conscious of their own.

Eye poking is a tough one, and I think it's tough for us all. It seems that the only way is either to check periodically to see if it's happening or to tie a bell to one or both wrists so hand position can be monitored. Still, knowing when it's happening does not approach resolving it. No matter how well we can perceive where the hands are, we've all doubtless learned the ineffectiveness of nagging the student incessantly. This approach does little more than frustrate all concerned and land the student with feelings of personal inadequacy which have nothing to do with the behavior. Also, it can cause the student to shut down their interest in what other people have to say. They learn to filter out the constant "hands down" and "stop poking." They respond to the nagging, but with little conscious awareness. There are two effective ways to curb self-stimming.

One is to have sure the student is engaged in alternative tasks that are more purposeful. Self-stimming is an adaptive response to the need to move, which all children have. If movements are restricted either by internal perception or external restrictions, self-stimming will occur in any child. We curb self-stimming by improving movement competence and encouraging the child to stay active and purposefully engaged. Since all behaviors serve some purpose to the organism one cannot extinguish behavior unless that behavior is replaced by another that serves a similar purpose.

The other way is to help the student become aware of and concerned about how their behaviors affect the perceptions of other people. For students entering adolescence, peer pressure is one of the most effective ways to curb self-stimming. Once students care about how other people perceive them, we usually see a marked reduction of awkward behaviors.

5.4.6 Special Circumstances

Questions have arisen about monitoring students who are unsteady, in wheelchairs, or using walkers. Any instructor needs to be extra cautious and circumspect when working with students who have balance problems. These individuals can fall hard and suddenly with little warning. I have found it necessary to stay fairly close to such students, sometimes maintaining a light touch on the back of the shoulder. In these cases, much can be gained by listening to the sounds of their footsteps, their cane use, their breathing, and the way they talk when speaking. In general, I don't really sweat an occasional fall. If they happen frequently and appear to be a result of serious balance issues, and consult with a Physical Therapist. When working with one student who had been mistakenly kept on a walker for 12 years, I promised him that he "will not fall." I wanted him to feel comfortable and safe. He did fall from time to time, but only after I began to withdraw from him. I mostly worked with him in areas that I'd carefully scouted out for feasibility, so the student was quite safe. He eventually went on to hiking unsupported in mountainous terrain.

Generally speaking, students using walkers travel quite slowly, and the noise of the walker makes them easy to track and monitor.

For students in wheelchairs, one can "tag" the wheelchair by placing a Japanese bell on the rim of one or both wheels (see Appendix C-1.3.2) or zip tie (see C-1.5.2). This can allow the blind instructor to track the wheeled student very easily, even from another wheeled vehicle.

5.5 A Little About Solo Lessons

I wish to enter a final note about executing solo lessons. These involve the careful coordination and application of all the above techniques, perspectives, and strategies, plus a few. I would only conduct solo lessons if I was well familiar with the student and the environment.

There are some environments that are conducive to accommodating solo lessons. These include environments that may yield much richness and complexity, but are self-contained with little real danger - malls, department stores, indoor transit centers and airports, amusement parks, public parks and play areas, museums, outdoor plazas, college campuses, etc. Most environments may yield solo material, as long as I've prepared for it. I rarely conduct a solo lesson without walkie-talkies, and I always give my students my cell phone number. As noted earlier, I can maintain contact with students up to a mile or so with two-way family radios. This gives students a sense of independence, while also maintaining an acceptable level of security for both student and instructor. In this day and age, given the increased attention to liability concerns especially working with children, these precautions might seem prudent for any instructor, blind or not. It seems that many instructors refrain from conducting solo lessons and even discourage independent mobility outside of instruction. I hear too many stories of students being asked to leave their canes at school or even worse, not to use them at all outside mobility lessons. I argue this as an extremely negative turn and precautions such as those discussed can address critical instructional imperatives, while maintaining student safety.

6 UTILIZING STUDENT RELATED RESOURCES

This section addresses the instructor's ability to locate, access, and make effective use of documentation and materials related to students. Such materials include student records and reports, assessment instruments, instructional materials, etc. This section also addresses the instructor's ability to select and utilize such materials in the planning and execution of lessons, as well as the selection of assessment and instructional sites and settings.

There are two issues especially salient to blindness - access to information, and access to efficient transportation. Student related materials are available almost exclusively in visual media. Further, the process of selecting and obtaining materials, together with the selection and utilization of appropriate sites and settings, typically requires efficient and flexible transportation over a great many miles. Details on the logistics of acquiring, managing, and funding necessary adaptations are presented in appendix A. This section discusses the adaptations that may best be applied to different purposes.

6.1 Accessing Student Records and Instructional Materials

Information access issues are paramount here for the blind instructor. There's a lot of information and written material which needs to be accessed quickly, efficiently, and sometimes at a moment's notice. Information access adaptations may be said to fall into three areas - reader services, access technology, and transcription services. These adaptations can enable a blind instructor to handle all necessary materials with full effect, but probably not without headache.

6.1.1 Readers

Probably the most flexible of these adaptation options involves the use of readers. Readers may be hired, occasionally solicited from the work place or community, or they may be affiliated with a dedicated service. Readers may be especially good at quickly rummaging through reams of files and scanning documentation, filling out forms, and maintaining paperwork. They are often available at a moment's notice depending on availability and scheduling considerations. Reader services such as Recordings for the Blind and Dyslexic will also read large volumes of material on to tape upon request. The reading quality is usually good, but months may pass before receiving taped materials. Readers may not be well suited to accessing information that the instructor needs to use in the field and in direct contact with students such as assessment instruments. Such instruments seem to require the instructor to be able to move freely throughout the material in a hands-on way. The use of a reader under such circumstances

may prove awkward and ponderous. Also, a lot of jargon is often used with which the reader must be made familiar.

6.1.2 Access Technology

Access technology simply refers to devices that facilitate or enable access to materials. These may include input devices such as optical scanners, process devices such as a computer, and output devices such as a large monitor, screen readers, Braille embossers, and refreshable Braille displays and note takers. In general, printed data can be input to a computer using a scanner, translated by the computer into speech, Braille, or text enlargement, and output to an alternative device. In this way, a blind instructor can gain access to many forms of printed information, as long as they are able to take the time, commission someone to do it, or work for an agency that provides this service.

Present technology does have its limitations regarding what can be translated, though. Poor photocopy or faxes may yield marginal results, and handwritten material is uninterpretable. Also materials depicted in charts, graphs, or tables require more complicated and expensive means to represent. Many student related materials fall into these categories. Doctor's reports and I.E.P.'s are commonly handwritten, and assessment instruments and results are often depicted in graphs and charts. Still, I have found that much material is accessible through the use of a computer. Progress reports, many correspondences, and instructional texts are typically machine printed or typed, and they are laid out simply. Also, more facilities are striving to enter all of their data into computers, because this really facilitates access for everyone. It is now common for people to write assessment reports on computer, and I just ask them for their digital copy. These are almost always accessible. In this vain, the near future will see increasing professional material made available in digital media and over the internet.

6.1.3 Transcription Services

Transcribers are especially well suited to making materials that are too complicated or elusive for any other technique accessible. Assessment instruments are a prime example. Since blind O&M instructors are rare, little attempt has been made to ensure that assessment instruments exist in accessible formats. It must be borne in mind that transcription can take time, and it can add up to considerable expense.

6.2 Selecting Instructional Materials and Settings

I've found that information access and rapid transportation issues may hold equal sway as the most stringent barriers confronting the blind instructor. The search for and evaluation of instructional materials and appropriate sites can take one far and wide and require one to access incidental materials on a regular basis. In addition to utilizing all appropriate information access agents, I have found it necessary to utilize all available transportation options including buses and shuttles, A.D.A. paratransit services, rapid rail, taxis, private drivers, rides with friends and relatives, lifts with colleagues and coworkers, the occasional hitching of a ride with kindly passers-by, and lots of walking. Of course, when I am with students, I exercise considerable discretion about transportation choices. There is no "hitching" and private drivers must provide proof of insurance and DMV print-outs. I also make an effort to use cab drivers with whom I am familiar. If one's level of functioning and motivation are high enough, one might include bicycling, skate boarding, scooters, and running to this list.

When searching for instructional materials and settings, the first step for any instructor is to develop some ideas about what one is looking for. A quick browse through the yellow pages, a Thomas Guide, and an internet search can spur the creative juices to flowing. Then, for a sighted instructor, a jump in the car, and a tour of the local establishments and community districts can furnish a wealth of answers fast.

I recall an assignment in my training program where we had to put together our own mobility kit. This was to include items that we felt would be useful in our instruction. Most of my classmates went browsing. While they may have held a general idea of what they needed, they relied heavily on items catching their eye to spur ideas as they browsed through all the local toy stores and specialty shops. This technique also seemed to work well for them when planning assessment routes and selecting instructional settings. The car became a vehicle for gaining ideas and finding answers quickly.

These answers are available and accessible to the blind instructor also, but I found that more advanced planning and cogitating makes the difference. First, I found it useful to consider thoroughly and

specifically what I was looking for. I found my long-term acquaintance with the blindness field and the O&M curriculum invaluable here. I thought long and hard about what I'd need. I also found it useful to browse through adaptive catalogs - many of which are available in accessible media nowadays. I even listened carefully to what my classmates were finding and where they found it. Then, when I had my list, I ordered what I needed through catalogs; accompanied relatives, friends, and classmates on shopping sprees, and obtained items by public and paratransportation. Private drivers would certainly have been useful, but I did not at that time have funding available to cover them, so I took the cheaper way. I suppose I could also have accompanied my classmates more regularly on their jaunts through the town, but I've never been much of a socialite, and I tend to do things in my own time and in my own way. The independent attitude has its advantages, but it is not without its drawbacks. Now, I am as likely to use private drivers as other means. A blind instructor still under a Department of Rehab would be able to obtain funding for a private driver to assist in a training program.

When scouting out instructional settings, advanced planning seems to hold similar benefits for the blind instructor. There are many sources to tap for information.

One may start with maps. Maps may be either read, transcribed into verbal or tactile media, or accessed through accessible computer software, telecommunication systems like TELL-ME, or GPS systems. In truth, verbal representations of maps may pose problems for the blind instructor for getting general layouts or feels for various areas. When using a reader, one needs to be sure that the reader possesses an understanding of what one is looking for, and this may not be easy. In fact, it may not be easy even to find a reader who understands maps very well. Digital maps are great for gathering specific information about aerial features, but their spoken nature seems to preclude access to the broader perspective. They're great for getting specific route information, like getting from a bus stop to a student's school or house, or planning routes from a student's house to school, work, or establishments around the area. Tactile maps are great for me on those extremely rare occasions when I can get them. They are slow and difficult to make, though technology is making even this easier. It is possible to print digital maps in tactile formats.

Of greater benefit may be simply picking the brains of others familiar with the area. Such people may include store workers, mailmen, bus and cab drivers, even students and their families, and perhaps best of all, mobility instructors who've formerly worked the area. One may also take a little tour with a driver who knows the area, as long as one makes clear what one is looking for.

The City Planning Office can also be of use when looking for particular types of streets or intersections. I have found them to be helpful when the circumstances are explained.

Once some game plans are established about where one should concentrate attention, it is just a matter of strategic planning and scheduling with all available transportation options to get to the candidate sites. It may also be useful to have a sighted person along if one is scouting out the site for a low vision student. I have found it useful just to ask around an area until I got the information I needed, but this can really be the long way to go.

Of course, once a good site or sites have been found, the logistics of transporting students and materials to and from the area must be managed. This can be handled in several ways.

First, I tend to use public or paratransportation much of the time. It may be argued that public and paratransportation can take from valuable lesson time. When I anticipate this to be true, I may use a driver or cab. However, I've found several benefits to sticking largely with public and paratransportation options. These benefits are discussed in detail in a later section on public transportation (section 8.7). Suffice it to say here that students become immersed in a transportation process that is likely to be most realistically meaningful to them. They learn intimately that life can be managed without a driver's license, and that time can be used efficiently while traveling.

Second, when I must use materials that are too cumbersome to carry from site to site, I make arrangements to keep them where I am going to work with a student. Either I keep the materials at a student's school or home, or I arrange for a driver to help transport them.

6.3 Administering Assessments

In order to administer an assessment, an assessment must be available to administer or one must at least have a good idea what one is looking for. In our training program, we were given one assignment which I found challenging from an access standpoint. We were asked to design our own assessment instrument. It's a wonderful exercise. While I had scanned and accessed parts of various assessment tools, I could not just browse through assessment libraries to pull pieces and parts together from other assessments. I basically found it most instrumental to design my instrument from scratch based on my personal and professional knowledge of blind functioning.

In my practice I have not placed much emphasis on using pre-designed assessment instruments, so I don't really miss their lack of availability. I am familiar with many instruments through readings, personal contacts with designers, contact with other professionals, and limited access. I have not felt that any of the tools with which I've come into contact yield very tenable results. Normative data are rare to nonexistent, quantification is usually impossible which makes progress difficult to measure, the instruments often assume a very low level of functioning, they often rely too heavily on skills rather than abilities, and they often focus on disability rather than ability. I have written more extensively in other papers, so I won't belabor the point here. I my company, World Access for the Blind, is designing an instrument under my direction which will address all these areas.

While assessment instruments may be transcribed into accessible media such as Braille, large print, or whatever, this can be a lengthy, involved, and expensive process. Also, the process may have to be repeated every time one changes work affiliations or several instruments may need to be transcribed for diverse needs.

Among the most common tools of the trade when administering assessments are the clipboard, and the notebook. Instructors often keep their assessment instrument neatly on their little device, and they are able to flip freely through pages, fill in the blanks, and jot down whatever notes seem appropriate. Whether conducting a personal, sit-down interview or assessing a student's functioning during travel, instructors can typically observe the student and record information without much trouble.

The visually impaired instructor can do likewise, but by the application of very different approaches. While assessment instruments may be rendered into Braille or large print, such instruments may be of little benefit to the visually impaired instructor working in the field. While standard assessment instruments may consist of a few pages to a small volume, the Braille or large print version may come to anywhere from one mid-sized volume to several large tomes. Forget about the clipboard; a wheel barrel might be more like it. While Braille, large print, or magnification devices may enable the visually impaired instructor to conduct fine interviews from a chair and tabletop, such interviews often require the instructor to come to the student - necessitating the logistics of hauling around copious amounts of material. Furthermore, these approaches may not enable the evaluation of student functioning while on the move. Braille or magnification do not lend themselves well to filling in the blanks or jotting down notes while in motion. Also, the visually impaired instructor will typically require one hand for using a mobility device such as a cane, dog guide, or other travel aid - pretty much precluding the ability to manage a cumbersome paper task. Finally, the effort involved in such a task may impede the visually impaired instructor from exercising the requisite attention and concentration to observe the details of student functioning, to maintain positive interaction with students, and to assure student safety. However, I've found effectiveness in the application of several alternative approaches.

First, I should note that a Braille or large print assessment instrument may be very well worthwhile in at least allowing the visually impaired instructor to become intimately familiar with the instrument. One may wish to give priority to familiarization with in-house instruments (that is instruments already being used by the employer) so that documentation can remain fairly consistent with that of others associated with the employer. Once familiar, the instructor can devise a brief outline of the instrument consisting of key points, prompts, things to look for, etc. This outline can be written on index cards which can be kept on a large ring for easy manipulation. I embossed one of my assessments on to 11.5 by 11 inch Braille paper, which I cut in half and attached to my shirt for easy access. I have also entered assessment notes into a portable note taker.

Portable note taking devices may hold significant advantages over hard copy. They can hold a great deal of material in a small space, the material can be easily and quickly accessed, and information on students can be readily entered with little trouble. Filling in the blanks becomes possible though it's still easier to jot down notes free form and sift them into the appropriate blanks later. I use Braille output, because speech output can be distracting to students as well as to me when I'm trying to listen for information. Though note takers are great for retrieving and accessing material, I have still found the task of data entry while on the move cumbersome. I often remember important information and jot it down at a good stopping place. I also use a voice recorder for entering data and notes. I simply speak the necessary information surreptitiously into the recorder as needed. I use a digital voice recorder, because it allows me to access my notes very quickly and efficiently, but a small cassette recorder works well, too.

One may also administer assessments from memory. This approach may be frowned upon, as it risks the instructor missing something critical. If this happens, the instructor must either return to the student for the missing piece of information or just do one's best with what one has - either of which is unprofessional. However, these risks can be minimized. One can attain intimate familiarity with what to look for by long and in-depth experience with the field, &/or by creating a viable assessment instrument from scratch. One can also apply a good memory to the task if one is accustomed or trained to commit large amounts of information and concepts to memory. In addition, one can keep scant notes and reminders as prompts, as well as taking down information conveniently as needed. If an individual can utilize such an approach, and some occasions allow this more readily than others, it can definitely free up the instructor's attention to the student and to the assessment process. It can also allow the instructor to be flexible and responsive to the unique contextual needs of students.

Assessment is a process, not just a series of discrete steps. Some of the best information can be obtained by a flexible, informal approach. In the standard teaching profession, formalized classroom assessments are often frowned upon, because they often yield restricted information, and it can be difficult to apply the results to the whole student population. Student variation is sovereign. In the standard teaching profession, the process of assessment by contextual observation and interaction with students is called "authentic assessment." This process may involve formal instruments or approaches, but is always coupled with a lot of hands on, non-formalized involvement. I believe this approach holds much utility in the movement and navigation professions where student diversity is extremely broad, and student needs may be extensive and unconventional.

6.4 My First Real Functional Vision Assessment

During our training program, we had to relocate in small groups for a 3 month internship. One of our assignments was to design and implement a functional vision assessment from scratch. Though the training program had placed extensive emphasis on functional vision assessment and training, this was the first full-blown functional vision assessment in which we trainees were encouraged to perform with minimal coaching. Initially, I was not at all familiar with the city in which the assessment was to be conducted, and by chance, most of my previous student teaching experience had constituted work with functionally blind students. The prospect of designing and conducting a quality functional vision assessment was quite daunting.

The first blow came when we were told that we had to conduct the assessment in a specific location. This was a blow to me, because that location, while only about 20 minutes away from the intern site by car, was almost 2 hours away by bus, and I did not have access to paratransportation at that time. However, my classmate and I were able to share rides much of the time, and we decided to combine our efforts to develop suitable assessments. This was especially nice for me because she happened to have lived in that area for some time in the past and was quite familiar with it.

This arrangement worked okay for a while, but it became apparent to me that our students were so different from each other that very different assessments were required to provide useful and accurate information about them. Her student was a woman quite advanced in years with very low vision. My student was fresh out of high school and had roughly 20/70 in both eyes. While her assessment route could be relatively short and simple, I determined that in order to be effective, mine had to be the most

god-awfully complex route I could come up with. Forthwith, my classmate and I pretty much went our separate ways.
I wanted to see how much of the assessment route I could plan without hired help. This was partly because my finances were short as a student with a major bill for recent adaptive equipment acquisition and repair, but also because I wanted to try to prepare myself for every possible contingency in the real working environment. Suppose I would have to prepare an assessment at the last minute someday without a chance to schedule assistance. So, I picked the brains of a few people who knew the area, and I went traipsing about the city.
It didn't work out very well. I simply could not gain access to a sufficient amount of information on my own to allow me to manage an assessment of a student with so much vision and who possessed some mild communication disorders. Further, the whole process was quite time consuming. I was at length called in by my intern supervisor who expressed the need for me to "get it done!"
I wracked my brain. I had earlier checked to see about placing an add for drivers in the local paper. I refrained because the paper wanted an ungodly fortune to do so. However, upon checking further with the Chamber of Commerce, I found a paper even more localized to the area that charged substantially less. So, I placed the add. I also considered whether any of my friends or relatives would be interested in taking a constructive stroll through a rather nice area with lots to do. The problem was that all these people lived quite far from the area and many were suffering from illnesses or recovering from recent health proms. It just so happened, however, that a friend of mine, recovering from major surgery, wanted a diversion. So, I paid for gas, and we went on a tour together.
I already had an idea of the route I wanted, but I needed more information about specific features - the nature and location of signage, useful markings, possible distractions, etc. It took about 6 hours to acquire the amount of information that I felt would be useful. She simply described what I needed to know, and I recorded her descriptions on tape. Then, I transcribed the notes into Braille.
Here came another set of logistical challenges. How would I manage my notes, data entry, and observation of my student who, it must be said, was a hand-full? My notes were copious and fairly complex (see appendix D). They included key features, things to watch for, and other information depending on the circumstance.
I decided to emboss my notes on to 11.5 by 11 inch paper, then cut the paper in half to form a set of large cards about 5.5 by 11.5. I affixed these at the top left and right corners to large rings and clipped them upside down by their bottom edges to my shirt front. I could then scan each page and, when done with that page, release that page from the clip so that I could easily go on to the next page.
This worked okay, but the process of managing wind blown Braille in a set of very complex travel situations while observing a hyperactive student, combined with my inexperience, stretched my resources considerably. In fact, I did not notice until the last leg of the assessment when I put my notes away that my student had been using binoculars to assist him in reading signage. He had never used them before and never even mentioned that he had them despite my probing interviews. What a drag and right in front of my supervisor! Oh well. At least my supervisor sympathized with me when she saw how difficult it was to get good information from this student. She assured me that this wouldn't be an easy student for anyone to work with.
The assessment still yielded enormous amounts of useful information and, combined with my experience with the student in prior lessons, I was able to put together a thorough assessment report. On the whole, the experience, for a first time run, was successful.
Nowadays, with a wealth of instructor experience behind me, the matter of low vision assessment is fairly straightforward. I don't necessarily have to prepare so intensely for each student because I've developed familiarity with a wide range of areas that I can use. I have not found the need to maintain detailed Braille notes since that experience.

6.5 Maintaining Records, Reports, and Other Paperwork

One small note is worth mentioning concerning the keeping of records and writing reports. A blind instructor may enjoy one luxury denied their sighted counterparts. Because I use other agents to do the

driving for me, I am free to work while I travel. Though public transportation often extends my work day compared to that of others, I am able to keep on top of most of my paperwork and phone calls while traveling. Indeed, about 90% of this report was composed while in transit. I even complete some of it while walking. Though I can't actually devote much attention to reading and writing, note takers provide fairly automated spell checking features which require little direct attention.

One bothersome snag rests in the I.E.P. forms often being pre-fabricated and requiring blanks to be filled in by hand. Often when filling out forms, I just scan the forms into the computer and fill them out from the keyboard. At length, I convinced school districts and other agencies to let me design a form comparable to theirs on the computer and fill it out by my own hand. I even offer them the digital file. Many agencies appreciate this, because they prefer to keep their records on computer. If an agency insists on having their own form, then I just submit my information on one of my layouts and let them worry about transferring it to their forms.

7 PERCEPTUAL ASSESSMENT AND INSTRUCTION

7.1 Residual Vision

The broad range of degrees and types of vision, together with an infinitude of capacities and styles of visual functioning, make vision assessment and training challenging for any instructor. When discussing blind instructors, several questions often arise concerning the logistics - How does a blind instructor adequately observe relevant visual behaviors such as eye/head movement? How does a blind instructor apprehend and utilize visual environmental cues to facilitate the development of visual functioning? How does a congenitally blind instructor apply an understanding of the nature of vision to the facilitation of visual functioning?

To be sure, I find the nonvisual processes behind assessment and instruction of visual functioning to be among the trickiest and most touchy to implement. To my knowledge, no human being can get inside another person's head and know what he sees (short of a visual evoked potential). Assessing visual functioning seems to require two main functions of the instructor. The instructor must be able to perceive or gain access to student behaviors that are relevant to visual functioning, and the instructor must be able to comprehend and apply the meaning of such behaviors. To understand and facilitate visual functioning, we must employ techniques that allow us to draw educated inferences about what a person sees and apply significance to these inferences. To this end, I find seven strategies to be instrumental - familiarization with the student, developing good communication, familiarization with pertinent instructional environments and settings, control over instructional materials and paradigms, strategic use of sighted assistance, and setting appropriate limits.

7.1.1 Familiarity with Students

I make every effort to become as familiar with a student and with the student's condition as possible, while striving to maintain openness about what an assessment may reveal. For example, one student's medical records indicated a visual acuity of count fingers at 3 feet. Functional observations, however, revealed that his travel vision was good enough to allow him to travel without a cane under many circumstances. He could read inch high letters from about a foot, and he could read street signs from about 20 feet with a 10X30 monocular.

Still, familiarity with student records helps me to anticipate what to watch for and helps me to plan how I will conduct my observations. For example, if I find that a student has vision only in the left eye or exhibits lower field loss, I may concentrate my monitoring attention to the right or pay greater attention to ground level issues. Such information may also alert me to listen for head movement to help me determine scanning patterns.

While extensive preliminary preparation is often not possible, I take pains to gather all available information from student records, interviews with related parties, and from the student. Before even stepping outside with a student, I may spend an hour or so just getting to know the student and gaining insight into the student's perspective on his own vision loss. I've found that students' perspective on the nature of their vision can be the most informative tool to go by. For example, one student I worked with had aniridia and glaucoma. On paper, he showed a 20/50 acuity with left, lower field loss, and light

adaptation problems. But the nature of his problem was so complex and so dependent on moment to moment environmental variables, that understanding his vision and formulating possible solutions absolutely required extensive discussion.

After doing the preliminary work, I'll usually take time on a walk or two with a student to get the feel for how they move and how they interact with their environment. Given sufficient time to acquaint myself with these aspects of student functioning, I can become sensitive to fairly minute movements.

For example, when working with students on strategic traffic scanning, I can usually tell from behind where a student is looking (or not looking) by having the student state where they are looking, while I listen to the direction of their voice. I also draw meaning from student comments and from their physical interaction with traffic. For instance, one student with 20/20 vision and tracking problems appeared to be looking in all the right places, but frequently commented with concern on the flashing "don't walk" sign. I instructed him to understand that once he's stepped off the curb, nothing else matters but the traffic.

One of my more impetuous students with low vision required me to keep her from potential harm about every other lesson. We simply drilled and repeated concepts over and over again. In a year's time she went from being able to express little idea about the systematic movement of traffic, to crossing fairly safely.

On another occasion, I was working with a student who had 20/70 vision in both eyes, but who could get lost in a few square blocks. During a lesson on finding his way out of a department store, I noticed that he wasn't really looking where he was going. My attention had been caught by an odd way in which his keys jingled, the direction of his voice as he spoke, and a slightly oblique echo from his shoulders which suggested an upper body turn. I asked him what he was looking at, and he exclaimed that some T-shirts looked just like some that his Mom makes.

Familiarity can also allow me to work with nonverbal students by helping me to understand what motivates them. For example, I soon came to realize that one fairly unresponsive student with little expressive or receptive language was excited by bright colors that moved, and she was particularly enamored by a bright red wagon. She would follow it anywhere. How convenient. When assessing her, I used this wagon and a huge, bright orange therapy ball as primary stimuli. One of the tests for distance thresholds involved walking quietly on blacktop in random patterns around her while carrying the wagon and increasing the distance from her. I let her reach the wagon from time to time. She consistently followed the wagon unless the distance between us exceeded a certain amount; then she lost interest. Also, by hiding the wagon after making her aware that it was near, I could gage how she navigated unknown, complex space, and at what distance she would recognize a familiar object. By using the therapy ball, I was able to gage how well she could track and follow a moving object.

It should be born in mind that, for me at least, there are limits to the subtlety of movements that I can discern. I cannot discern subtle responses such as eye turn, nonverbalized facial expressions, and pupillary responses. In such situations I use a spotter. I'm told that the use of a spotter with nonverbal students is not uncommon. Such students often require much attention to motivate, maintain focus, and manage behaviors. It is difficult, if not impossible, for one individual to manage the assessment tools, manage the student, and take down accurate data all at once.

7.1.2 Good Communication

I tend to draw heavily on good communication with students to facilitate my ability to understand what they see. I take the ever proliferating "see aloud" procedures very seriously. And, as I mentioned earlier, I tap deeply into students' perspectives on what and how they see.

Perhaps one of the most striking examples of the power of this approach comes from my work with the student who had aniridia and glaucoma. As I mentioned earlier, his condition was so involved that I spent several hours discussing it with him before I felt a working knowledge of it. He described the world in terms of cavorting blurs of searing energy. He complained that at times the world would seem to dissolve into balls of fire. He could literally see waves of light undulating between glimmering objects. A pair of dark Corning filters helped, but they either weren't dark enough at times, or they were too dark. I

recommended that he get into the habit of wearing a visor, and he told me that this helped a lot. He had two main concerns.

His first concern was traffic. Though he could see objects fairly clearly under ideal conditions, the intensity and cast of lighting, together with the brightness of colors could cause the traffic to blur into a commotion difficult to decipher. So troublesome was this problem that we discussed the possibility of learning to manage streets entirely without the use of his vision. However, my concern about this was several fold. First, the likelihood existed that he would retain usable vision for quite some while. Since he was very much a "visual" person, it seemed most expedient to address his problems primarily (though not exclusively) in visual terms. Second, I felt certain that, in time, this young man would obtain a driver's license, one way or the other. Given his visual acuities together with his ingenuity and motivation, it seemed likely that he would find a way to pass the requisite examinations. Then, he would go onto the roads with some competence, but facing some very serious problems. I'm no driving instructor, but it seemed to me that if he was to drive, then he should have as much visual experience with traffic as possible. Even if he learned to cross streets without vision, I did not feel that the experience would help him behind the wheel. So, I began by teaching him strategic traffic scanning so that he could isolate the danger areas, thereby reducing his confusion. Next, with his help, we developed a technique which involved his concentrating his central vision on dull, nonaversive objects in the environment, and using his peripheral vision to scan for traffic. He called the dull objects "focal points." Upon approaching an intersection, he would take a moment to pick out two or three focal points. Then, as he crossed, he would shift his central gaze from one focal point to the next so that the traffic danger points were always in his peripheral view. I realize that as his glaucoma advances and his fields constrict, this technique may fail him in time. However, it worked for him at the time, and the conquering of one set of trials can lead readily to the conquering of another.

His second concern involved shopping. He explained that the fluorescent lighting in stores, together with all the "cheery bright colors," sapped his energy to the point of causing physical illness. Again, with his help, we developed several techniques to minimize discomfort. The first involved focusing his attention on colors that were nonaversive, while scanning peripherally for desired items. If he needed to read something, he could look long enough to read it, then look away. The other technique arose, with his bringing to my attention, that he hated opening up the store freezers to get items, because the light that popped on bothered him extremely. We worked out that if he noted the location of the item before opening the freezer door, he could look away or close his eyes and select the item with kinesthetic planning.

It may seem odd to have a person blind from early infancy teaching a sighted person how to see, but my work with this student seemed to find round success. I attribute this, not necessarily to being such a great instructor, but to establishing good, mutual communication. I was fortunate that this student was extremely bright and articulate. In truth, he taught me more about light and color than has any other set of experiences.

Of course, reliance on communication can also backfire. I'm reminded of one low vision student who hated mobility and wanted little to do with any adaptive devices. I had reason to suppose that her monocular might be too powerful for her - that she might benefit by a little less magnification and a wider field. When I procured a bunch of monoculars for her to try, she did not cooperate. She was elusive about helping me select suitable targets. Once we got that figured out, she insisted tersely that all the monoculars looked the same to her and none of them were any help. I suspected that her observations were partly due to lack of interest but also from a need to view eccentrically. She had reverse R.P. and, though she scanned wonderfully while traveling, she may not have been using her best vision with magnification devices. I was daunted by the prospect of teaching eccentric viewing to an uncooperative student. Fortunately, there was a low vision eye care specialist at that facility who was eager to help in this area.

7.1.3 Familiarity with Instructional Environments and Settings

Whenever possible, and it isn't always possible, I try to familiarize myself with the environment and setting in which assessment and lessons will take place. Familiarization can impact the instructional experience in three ways.

First, it facilitates my awareness of what a student is looking at. It enables me to understand better what elements of an environment may confuse a student, and it improves my ability to remediate such situations.

I remember on one occasion, a student of mine saw a sign for an outdoor mall that I'd instructed him to look for. But, instead of going toward the mall, he went in the opposite direction. I questioned and prompted, but he just kept insisting that an arrow pointed in "that" direction. I didn't know what he was talking about, and I could not encourage him to try looking for the mall in the other direction, even though he could plainly see the first few establishments there. Although I had scoped out this area quite thoroughly with sighted assistance, I had not been informed of a small sign that said "parking" separate from the mall sign, but with a huge arrow connected to the mall sign pointing away from the mall.

Second, it increases my ability to maintain control over the course of a lesson. Although the perceptions of a low vision student may extend beyond my own, such a student may nonetheless labor beneath an under-developed sense of how to use that information effectively. It can be easy for a low vision student to become side tracked or mislead by their awareness of environmental elements that lie beyond my perceptions. I have found it very helpful to develop a clear awareness of what those elements are so that I can anticipate confusion and remediate as appropriate.

During my first quarter of student teaching, I worked with a student who was reported to have 20/50 vision in one eye. I had planned a bus lesson to a shopping center to locate several establishments and purchase several items. I had scoped the area out briefly before working with him, but I didn't anticipate much difficulty. My totally blind students were able to accomplish such a task fairly readily, so I made the naive mistake of supposing that a low vision student should have little problem. The fact was, however, that this student became very confused by what he saw, and he found it difficult to elicit or make effective use of public assistance. He kept going to different establishments at random, and he really couldn't scan effectively for signage. On one occasion, I was sure that he would see the big sign saying "RADIO SHACK." However, I had not elicited details about the sign's height and location when I reviewed the area; the high placement of the sign made its presence potentially unapparent to a low vision student with reading difficulties from close-up. One had to stand back away from it for the best perspective. He couldn't find it, and I was at a loss as to how to instruct him at that time.

The third respect has to do with the development and maintenance of the low vision student's respect for and trust in the blind instructor. A student needs to feel that there's something to be gained from instruction. In my experience, it is often difficult at first for visual students to accept that there's anything to be learned from a blind instructor. This supposition may find verification when a visual student cannot count on the blind instructor to address the student's travel needs. I have found that familiarity with an environment can give a blind instructor the functional edge that visual students can appreciate.

About 3 months into my first job, I decided to help a low vision student figure out how to get from his house to a down town shopping center. While I'd had little time to orient myself to the area, I was able to make the time to examine one of the key intersections in detail. This was fortunate, because the intersection was one of the most complex in that county with left turn arrows and separate right turn lanes. Not only did it take me a few minutes to grasp the layout and figure out how best to help the student negotiate the crossing, but the advanced warning gave me the opportunity to consider how or if to prepare this student for this crossing. In truth, I felt the crossing was beyond him at the time, but I wanted to expose him to it anyway. When he got there, he flatly refused to have anything to do with it - insisting that blind people couldn't make such a crossing. I took out the walkie-talkies and told him that I would cross alone a few times while explaining to him what I was doing as I went. This process relieved much of his concern. He supposed that if a blind person could do it safely, then someone with vision should be able to manage. By the end of the 2 hour lesson, I couldn't pull him away from the intersection, so great was his excitement and enthusiasm for his new found ability.

7.1.4 Control Over Instructional Materials, Adaptations, and Paradigms

In addition to familiarity with travel environments and settings, familiarity with and appropriate adaptation of instructional materials also lends much to instruction. Common tests such as the Snellen chart, the Lighthouse picture cards, and the big E for field testing can be labeled or raised on the back side so that a visually impaired instructor knows what the student is looking at. I also use common items that are familiar to me such as Braille playing cards; Braille monopoly cards and money; and paper money and coins. (Many students like working with money.) Monoculars can be tactually marked as to strength and viewing angle, and can also be marked around the cylinder for approximate focus at various distances.

The implementation of adaptive technology can also provide visual information about the environment to facilitate the assessment and instructional process. Light probes and color detectors, for example, can provide ready information about the intensity and focus of lighting in a given area, and they can give information about the contrast variation of surfaces (see appendix C-2). These are especially useful under non-sunny conditions such as at night or indoors, where there is no warmth to alert the blind instructor of the nature of the area lighting. With such technology, I can distinguish variations in lighting, approximate position of light sources, and contrast variations in travel or wall surfaces.

A blind instructor can also employ certain paradigms that make clear where the student is or isn't looking. One such paradigm that I find especially useful is what I call "stimulus shift." It involves using stimuli for visual training that can be suddenly changed. The student, while attending to the stimuli, must state when the stimuli change. In this way, the instructor knows when the student isn't paying attention by how quickly the student is able to state the shift.

For example, in implementing tracking and fixation exercises for students, I may use a couple tricks. One involves the use of a self-designed, straight boom with a clip on the end (see appendix C-5.5). I can put pairs of items back to back such as cards, money, pictures, or whatever. The student is asked to follow the item as it is moved through the air and to state when the item shifts. The shift can happen instantly by simple rotating the boom between thumb and fore-finger. If the student delays in stating the shift, then one may infer that the student was not following the target. The principal is similar to a magic trick I came across as a kid. It was a small paddle with one star on one side and two stars on the other. The handle of the paddle was held between thumb and fore-finger. With a quick movement, the paddle could be made to rotate faster than the eye could follow, making it appear as though the stars had suddenly changed number. One may also use a laser pointer to generate a spot on a large surface (APPENDIX C-4.2). The student is instructed to follow the spot and to state when the spot disappears.

Another paradigm is the scavenger hunt. This technique is not uncommon. The instructor places a bunch of items around an area and instructs the student to find each item. The student receives instruction as needed to improve performance. A nice thing about this paradigm is that a blind instructor can gage scanning patterns based on which items the student tends to find or miss.

A similar paradigm is hide and seek. The instructor hides from the low vision student, but in such a way that the low vision student would find the instructor by looking strategically. By hiding in different places and under different circumstances, an instructor can gage how the student is looking and what the student is likely to respond to. For example, does the student notice contrast or movement more readily? Does the student take stock of his environment to infer where an individual might be hiding? Does a student scan the visible environment efficiently?

7.1.5 Strategic Use of Sighted Assistance

While my use of sighted assistance in preparation for or aid in direct service to students is rare, I have found that its strategic use can go a long way. Vision is great for quickly providing information about the location and nature of signage, vast spatial layouts, layouts of establishments in a given area, and color/contrast schemes. For example, a blind instructor may find it useful to consult with someone to find out what is in an unfamiliar shopping center before he plans a lesson there. The structured discovery method can work just as well or better with a student in such a setting. But, suppose the instructor wanted to plan a lesson for a student to find a particular thing. Or, suppose the instructor was planning an assessment. It

might be helpful for the instructor to determine ahead of time whether the shopping center contains the desired elements.

Sighted assistance comes in many forms. These can include specially hired personnel such as readers or drivers, establishment workers, interested passers-by, friends and relatives, colleagues and coworkers, master teachers, and even students and their relatives. I've used them all.

I will often conduct lessons in the presence of students' parents or other professionals, so they understand what we're doing and why. Sometimes, I will use what they see to help the lesson along. For example, once I conducted a monocular lesson for a student with his father and brothers along. This student, who at first took no interest in the monocular, suddenly took interest as his brothers took interest. We practiced reading street signs, searching for license plates, and scouting out addresses. I got a good sense of what strength was appropriate and found that, with the right strength, this student was more inclined than before to use his monocular.

I've often used drivers to help me scout around for a suitable intersection to conduct a lesson or to get a quick layout of an area. I simply tell the driver what I'm looking for, and we go from there. Once, while mapping out a high school, a couple of students volunteered their time to show me around. On another occasion, I had an Amtrak ticket agent help me to show a low vision student how to use the call board to plan his trips and anticipate train arrivals. I've had students show me how big letters were that they could read. I even had a student's family once accompany my student and I into their neighborhood while I conducted a monocular lesson. This had been a last minute scheduling, and I didn't know the neighborhood at all. I simply instructed the family on what kinds of signage to look for, and we practiced reading them with different monoculars until the student found one he liked. The family was enthusiastic to learn about magnification devices and to acquaint themselves with the first blind instructor they'd ever encountered.

Another particularly useful resource is other low vision students. I have used low vision students to help plan or conduct lessons for other low vision students. Both learn from the experience. For example, I had one student who had relatively high acuities, but he had ocular-motor problems and was a bit on the slow side. We worked on locating addresses along a few city blocks. I instructed him how to locate the addresses and with my coaching, he found all but one. (We never found the one, but we were able to deduce the one from the numeric pattern of the others.) I took notes on each location. Then, I took another student with less vision but more brains whom I instructed in the same task using my notes from the previous student. Both lessons were very effective for both students. I have also pared students together, and enlisted the strengths of each to help the other. In general, students really enjoy the exercise, and they seem to find it very fruitful.

7.1.6 Setting Limits

While I find that a blind instructor can teach visual skills effectively, there are times that the actual job requirements may stretch one's performance. For example, while modern Orientation and Mobility Specialists are trained in the instruction of visual efficiency, we are not uncommonly called upon to perform functions that might fall more appropriately under the rubric of vision therapy or optometric examination. Or, while movement and navigation instructors are not specially trained in the remediation of anomalous gait, posture, foot placement, physical behaviors, or social graces, we are often called upon to address these issues. While I strive to maintain flexibility according to student needs, I bear in mind that I am a specialist in movement and navigation. I am not a Physical or Occupational Therapist, or Low Vision Eye Care Specialist, and I will not be made to wear all of those hats. For instance, on one occasion, a very low functioning student had difficulty walking due to neurological problems and recent surgery on her leg. I felt that remediating this situation was beyond my expertise, so I contacted her Physical Therapist who hadn't seen her in many months. The P.T. said that this student essentially needed to be taught how to walk again and tried to give me pointers. I refused to provide such instruction without strong support and consultation from the Physical Therapist. Indeed, I told my supervisor that I would not provide further instruction without regular consultation from the P.T. for the next several months at least.

I am very strong toward consultation and collaboration. I believe that no one person knows it all. Blind or sighted, we need to know when to tap the specialized knowledge and expertise of others for the sake of our students. We should also recognize when we can provide specialized knowledge to others. For example, on one occasion, Optometrists at a center I was working for had a difficult time assessing the visual acuity of a young autistic student. They just couldn't tell what he could see. My psychology background emphasized autism, and my special ed background emphasized alternative assessment practices. I instructed them in the use of a scavenger paradigm in which they placed toys of various sizes and distances around an open expanse of lawn and observed which toys he noticed from what distances. Using this paradigm, these Optometrists were finally able to arrive at an acuity rating that they felt was valid.

7.2 Nonvisual Functioning

While one might suppose that a blind instructor may face disadvantages in the instruction of visual skills, one might also suppose that a blind instructor may exercise advantages in the instruction of nonvisual skills. While a given blind individual may or may not make a good teacher, a blind individual is likely to bring to instruction a lengthy and intense experience in nonvisual functioning. While no two instructors are alike, blind or sighted, I think that my blindness may motivate me to differentiate my instruction from others in two main respects when it comes to perceptual functioning.

The first seems to be that I place an emphasis on perceptual development and integration. I believe that perceptual capacity provides the best foundation upon which to develop and utilize skills, because it maximizes the amount and quality of information which the student can use to govern the application of skills. It is more difficult to make effective decisions when one lacks information. The more information is available to the traveler, the more effectively he can apply his skills to travel. I spend much time on just developing awareness and utilization of all remaining senses and teaching skills within the context and framework of this awareness. A single sensation - the whiff of an aroma, drop of a leaf, a single footstep, the brief flash of a bright color - can convey volumes of information about the environment to the astute traveler. I strive to ensure that my students have access to and can apply the significance of this information.

The second, seems to be that I emphasize auditory assessment and training much more intensely than seems commonly done. While assessment reports may be replete with information about visual functioning, rarely have I seen much specific information about auditory, tactual, or kinesthetic functioning. I try to be meticulous about assessing and providing such information, and I seem to be deft about getting to the root of related issues with given students. Most particularly distinctive seems to be my systematic training of the strategic use of echolocation toward the enhancement of mobility functioning. Also, I place great emphasis on attention to surface gradients and characteristics for use in orientation. For example, I do not teach street crossings without thoroughly acquainting students with street topography, but more about that in section 8.6.

8 INSTRUCTION IN SKILLS, TECHNIQUES, AND CONCEPTS

This section addresses how effectively the instructor facilitates the development of movement and navigation skills and techniques. I do not elucidate on all of the instructional strategies that I use, except where my blindness may encourage them to differ from those more commonly used. For the most part, what I do seems much the same as what other people do, but some distinctions may be worth noting. The operative word here is "may." I've not located enough information to allow conclusive research into how Movement and Navigation Specialists do their job. I base the following distinctions on my personal, as well as my professional involvement in the field. I have observed dozens of specialists work with students, and I've read extensively into the field literature. I've also picked the brains of many blind individuals about the training they received. In any event, the intention here is not so much to draw attention to distinctions between types of instructors, but rather to share approaches and perspectives. Some of those that I hold may prove useful.

8.1 Some Key Distinctions

One apparent distinction is that I concentrate heavily on, not just the training of skills and techniques, but the specific inculcation of a set of independent, pro-functional, and self-liberating attitudes and perspectives about blindness. I question that the learning of skills and techniques alone necessarily brings about these perspectives or the optimization of competence. I am now certain that such perspectives are critical to the development and successful implementation of skills and techniques to the highest levels of functioning. Don't we find that the motivated students are usually the ones who advance most rapidly? Many highly motivated blind people have advanced without professional instruction and others may fair the worst for it. Many blind artisans taught themselves how to manage their craft without special instruction. One blind friend taught himself all his daily living skills including barbecuing. I've encountered professionals who will not teaching open flame cooking to blind students, because "open flames are dangerous to blind people." It can be similar with movement and navigation. Therefore, I devote much effort to stirring these motivational forces to flame. I am intent on helping the student and all relevant parties to understand that blindness must be conceptualized as an alternative lifestyle, not one that should be disabling or restrictive. The learning process is compromised as long as this perspective is not understood. I keep in mind that students only spend a very brief time with me, and they are subject for all the remainder to the deleterious misconceptions and assumptions of a society that is focused on visual styles of functioning. I believe that the truth of these perspectives must reach into every aspect of the student's life, or whatever I teach may not go very far. Raising this approach to other instructors has often met concerns about not having enough time to schedule family visits or visits with other professionals. Some work sites don't even want to pay for consultation. In my experience, an hour spent with the family can equal 5 or 10 hours spent with a student if a mutual exchange of understanding occurs. besides serving as an example of this truth, I acquaint the student with other visually impaired individuals who have wrought success in their lives, and I stress that there's nothing special about such individuals' ability to succeed that the student can't learn to apply. Therefore, I rarely work with a student without acquainting myself and some of my compatriots when possible, with family members, friends, and other professionals pertinent to the student. Upon each family visit, I write up a brief report that summarizes the main points of our discussions and my findings in my work with the student that day, so that important points are not forgotten and can be digested more thoroughly. I include copies of these write ups in the student's file for the benefit of future instructors and other professionals.

A second area in which my instructional approach may distinguish itself is that I am perhaps less inclined to push students to use nonvisual or low vision skills or devices if they are strongly resistant. I may set down certain ground rules about use while crossing major streets and such. However, I know from experience that an instructor will never convince a reluctant student to apply skills and equipment. I, myself, was vehemently opposed to using the cane until I entered college. There are too many legitimate arguments against use of unusual devices and techniques that are significant to some students. For example, the cane, without question, diminishes the student in the eyes of the world at large, and it sets the student apart as, among other things, an inferior. This is an irrefutable reality, and nothing I say will ever make a student assume this burden if they do not wish it. A student can only bear the use of specialized skills and devices when they are personally ready. So, rather than try to push the student into something they're not ready for, I simply conduct my lessons as normal. I may not even require a student to use specialized equipment or skills during lessons. Or, if I do, I may respect the student's self-consciousness and encourage him to use it in private - in nonpublic places or areas well outside the student's "stomping grounds." However, the student is still expected to perform functionally and safely under all of life's travel circumstances. I make no special accommodations for students who don't have or won't use the devices they need. If the student experiences difficulty in a given situation, I won't put them on the spot, but conversation may wander around to ways in which functioning might improve. In addition, the student is continually exposed to my use of just about every adaptive measure available. So far, students have typically grown gradually appreciative of the use of adaptive measures for the improvement of their functioning. Their self-consciousness seems to shift from concerns about society's complexes about blindness to being able to function gracefully and successfully. Applying this approach,

I have seen students progress from never even carrying a cane or monocular to spontaneously choosing to use such devices during lessons.
Another possible distinction is that, when teaching skills, I try very hard to involve and integrate all modes of perception into the process. I know that this concept is stated popularly, but I find nonetheless that the vast majority of instructional styles that I've encountered seem to focus most heavily on the tactual and more recently, the visual. The auditory, for instance, seems to get de-emphasized. For example, I have rarely read an O&M assessment that talks very much about a student's audition. I think this may result partly from the fact that sighted people, with good reason, tend to cling to every vestige of their vision when vision is compromised, and when vision is occluded, they tend to become extremely tactual. It is as though they try to re-establish the concrete, tangible perception that vision had given them. Since I strive to utilize the full gamut of heightened perception during my functioning, I take very seriously the application of this approach to the instruction of my students. Specific examples of this approach are covered in the corresponding skill sections.
In working with students in various environments, a blind instructor may fall under certain constraints to schedule certain students in certain ways depending on distance, location, timing, availability of public transportation, etc. While drivers can always fill in these gaps to tighten up a schedule, drivers cannot be over used at the risk of incurring unwarranted expenses. Therefore, I tend to flex my time to work with many students after school and during weekends when acceptable. This frees up time to get to and from students by the use of public transportation without laboring under tight schedule restrictions. This may take some doing with some districts and agencies who try to impose restrictions on when and where a student may be seen for "insurance reasons.", but I've always found it manageable when necessary. I just inform the district or agency that these are the only times and places in which the necessary instruction can take place, and no one has ever argued the point with me. Also, I tend to work closer to locations that are central to students' lives - school, home, work, etc. I may be more likely to plan lessons in areas where student's need to develop a comfort level now than to whisk a student off to the "ideal" place. Students must learn to embrace all environments, and I take pains to see that students are competent to master the widest range that I can conceive. However, I try to avoid orchestrating scenarios in which, for example, students learn how to travel the quintessential residential block beautifully but can't travel outside their own yard, because they live in a rural setting. If students can't travel well around familiar settings, are they likely to marshal the skills to travel beyond them? I try to tackle the immediate needs first, even if they may deviate from the ideal sequence. So far, it seems to work well. Once students are comfortable about traveling in areas most critical to their functioning, they often seem ready and eager to expand outward. When that happens, we can utilize rapid, long range public transportation options such as trains or express buses or scheduling private drivers.
With many students, I may also focus attention on the instruction of the auditory as well as the tactual/ kinesthetic cues of functional cane technique. For instance, I may have the student walk along behind me with hands on my shoulders while I exaggerate good vs. poor technique and have the student tell me which is which.

8.2 Basic Skills Instruction

One key aspect of my instructional approach that may stand as somewhat distinctive is that I spend little time and attention on basic skills. Depending on the unique needs of the student, I'm not likely to spend more than a few minutes on human guide, trailing, or protective techniques. The reason for this is three-fold.
First, I know from experience that such techniques are likely to play a minimal role in the overall scheme of truly functional travel for many students. Given what is rarely enough time to teach everything as an Movement and Navigation Specialist, I concentrate on those skills, techniques, and perspectives that seem to facilitate the development of capabilities that really bring a student to freedom, grace, assurance, and independence.
Second, I think that concentration on such skills may be disrespectful to the student's dignity and the development of an autonomous approach to living. I believe that protracted instruction on how to open

and close a door, how to sit in a chair, how to touch a wall, the intricacies of cane design, and the like, boarder on insolence to the dignity and sovereignty of our students.
Third, while basic skills may have the advantage of being immediately and easily applicable to facilitating basic functioning, I do not believe that they form an essential foundation for the development of more advanced skills and techniques. I do believe that certain perceptual capacities and attitudes underlie the development of advanced functioning, but I think this has little to do with traditional basic skills.

8.3 Dropped Objects

One area perhaps worth addressing is the instruction of retrieving dropped objects. The actual technique that I teach is probably much the same as is typical. One small distinction may lie in the addition of using the cane as a search tool. One can cover a very large area quickly by placing the length of the cane flat along the ground and sweeping it in a circular motion by the grip. When the cane strikes the object, the student can trace the shaft of the cane to the object. In teaching these techniques, however, one might wonder what would happen when the blind instructor can't find the object either. Suppose the object rolls or skitters away unexpectedly. How would a blind instructor instruct the student to find the object without spending undue time in the process? One solution is to choose objects that don't roll too much. However, the reality is that objects will occasionally get away from blind people. The blind instructor deals with this in a realistic way should it happen, and that becomes an important part of the lesson.

8.4 Cardinal Directions

When it comes to teaching cardinal directions, the only real possible distinction here is mild. While I believe it is important for students to develop an internal sense of cardinal orientation, I emphasize actual training with a Braille or talking compass. I feel that the compass provides an objective, dependable set of references that are invaluable to the orientation of many blind individuals. Sailors and orienteers rarely practice their craft without their compasses, because the compass provides them with references in the absence of other environmental markings such as signs. Why should the blind traveler practice any differently? Blindness tends to isolate one from many of the references that are made readily available to the sighted, so why not make use of the objective, infallible references that a compass provides? I rarely leave home without mine.

8.5 Numbering Systems

The instruction of numbering systems is fairly straightforward. The only distinction may be that I try to make sure my students are able to read numbers that are accessible, whether in print or Braille. Many printed numbers are presented on raised or engraved placards even without Braille, and I take the time to teach my students to find and read them. Just asking someone isn't always efficient. The ability to read available information can not only speed the process of finding a destination, but can also increase one's autonomy in doing so.
In teaching travel skills in various environments, I find that my attitude may differ slightly from convention. I do not believe that a blind person must necessarily depend on pre-orientation to a new area before becoming able to travel through it independently. I believe that blind individuals can learn to travel unaccompanied from any given point to any other given point with a minimum of assistance prior to or during the process. This process does include the traditional approach of acquiring as much information and direction prior to traveling, and it also includes strategic (but not over use) of public assistance. However, it need not necessitate the use of pre-orientation to new areas or the heavy use of public assistance all along the way. The next section addresses some specific ways in which I try to facilitate this. Here, I will say that, once again, I apply techniques and strategies consistent with the structured discovery method. I often do not feed my students information about a new environment, but instruct them in the ways of finding out the information that they need for themselves. I do not refer to "learning the route" but rather "finding a way," because I feel that optimal mobility is not a matter of following prescribed routes, but applying skills and awareness to move as one wishes.

8.6 Sensory Awareness Training

When working with totally blind or very low vision students, I think I may emphasize the development and integration of auditory, kinesthetic, and tactual skills more than may be typical. When it comes to

hearing, I take many of my students through a systematic program of echolocation training to facilitate the development of their ability to perceive objects and features in their environment from a distance and to apply this perception to the enhancement of their mobility. For example, when locating a new establishment, I may teach a student the following steps: First, walk into the parking lot, usually away from the sound of street traffic. Second, create an echo signal and listen for echoes from the building and, while avoiding parked cars and watching out for traffic, head toward that reflection. Third, walk along the building line until an entrance is heard. This can be presented by the opening of a door or the hollow reflections from an entrance alcove. Trailing may also find an entrance, and asking someone "which way to get in" can speed the process.

When teaching street crossing, for a students having difficulty with alignment, I may start by using a stimulus transfer paradigm. This involves having students cross residential streets toward a constant noise such as static from a transistor radio tuned between stations. Students learn to use this sound as a beacon to help them direct their alignment. Thus, they get a sense of proper alignment. These cues include echolocation of the opposite curb, echoes from street furniture and other structures on the opposite corner, terrain cues such as street cambre and drainage channels, and parallel traffic. Over time, I decrease the volume of the noise to facilitate the utilization of these other cues. Before too long, many students are crossing very straight with no beacon - hardly realizing that the beacon has been gradually diminished to zero.

I apply tactual/kinesthetic skills strongly to the establishment and maintenance of alignment during all forms of travel. For example, when teaching sidewalk travel, I may teach a student sidewalk topography. Sidewalks are generally comprised of rectangular panels of cement laid end to end. Each joint is denoted by a tactile crack. In wide sidewalks such as those found in light business areas, panels are laid end to end, and parallel to each other. These cracks can be used to maintain a continuous awareness of alignment while walking. I've already mentioned the use of gradients to assist alignment while crossing streets. I tell students that streets are designed to channel water out of the way of traffic by the use of slopes and gullies. Most streets slope downward away from a crown that runs along the middle to gutters or depressions that run along either side. This is called the cambre of the street. At intersections, these depressions tend to mark the point past which a pedestrian begins to enter lanes of parallel traffic. This scheme is not fool-proof, but it is very reliable. Perception of these features can work to "channel" blind pedestrians out of traffic's way as well as water. I've found that many colleagues do not seem to attribute much significance to these tactual/kinesthetic cues. In my program, we were all asked to create a model intersection to use with students. I was the only one out of 12 students who created one that represented street cambre, and indeed, I have never encountered another of its like.

8.7 Transportation

As concerns the teaching of transportation, my students generally become intimately familiar with all transportation options, because I use them all during my work with them. This includes the standard busing, rail, paratransit, and taxi options, but it also includes strategic management of private drivers and the development of perceptual/motor skills to use bicycles, scooters, and skate boards. Such options can be quite viable for low vision or highly sensitive blind travelers - especially around small towns where public transportation options may be sparse. My students travel with me in the way of nondrivers and often participate in the logistics of the whole process. I don't usually have to spend much time on specific training in the use of public or paratransportation, because my students develop a strong familiarity with it over the whole course of training. Also, I've found that my grasp of nondriving transportation management enables me to impart a level of knowledge to students that they've not encountered in instructors who drive. No one understands the ins and outs and work-arounds of public or paratransportation like someone who uses them regularly.

Though some in the field might broach concerns that this method of transporting students may limit students' exposure to instructional settings due to length of time and fixed routes, I do use cabs and private drivers when necessary to ensure diverse exposure. Further, my students seem to gain in a number of specific ways from this approach.

First, these are options that are likely to be most realistic for most students. We tend to travel the way they will likely travel in life. Students are frequently exposed to and involved in the process of public transportation logistics. I hardly have to spend extra time on the methods, because students tend to soak them in over the course of time.

Students also learn intimately and through continued example and exposure that life really is manageable without the all-mighty driver's license. It may be a pain sometimes and dreadfully inconvenient. I have been stuck with students on street corners after missing a bus or being unable to reach a driver. On such occasions, I whip out the cell phone and call a cab or have the student find a phone and call the cab. Either way, they learn that options exist for most contingencies, and a little care goes a very long way.

Finally, I make sure that time is put to good use during transport. There are many skills and concepts that can be taught and reviewed during transport so that the time is not wasted. Also, if appropriate, we may spend some of the time catching a student up on some homework. The student learns how to make efficient use of the time spent while traveling by public means.

I approach solo public transportation lessons in several ways. If the student is very low vision or totally blind, I may board the bus discretely and stay out of the student's way. If the student is not, then I can hire a driver to follow the bus to its destination if need be.

To stay in touch with students about their situation and to provide students with opportunities to seek counsel, I may provide them with a two-way radio with a range of about 2 miles. This enables me to keep track of how students are doing and allows them to get in touch with me if they have need. They are also given my cell phone number and some change to be used if we become too far separated.

8.8 Concepts

In order to teach concepts, the instructor must have some understanding of the given concepts and be able to communicate that understanding articulately. It can be argued that a blind instructor may lack a firm grounding in some concepts, while maintaining a superior grasp of others. In truth, I don't think anyone has a full grasp of all concepts that can be taught. Sighted instructors, for example, may lack a firm grounding in the details underlying auditory spatial perception or the perceptual relevance of terrain gradients. At the same time my environmental concepts, though extremely functional, sometimes lack specific knowledge.

For example, I recall a set of lessons in which I proposed to teach a low vision student how to use his vision to find a grocery store and shop independently. I discovered that I lacked knowledge of the visual details to instruct him to tune into salient features that would denote the location of the store. Finally, I directed his attention to the shopping carts, but these were auditory as well as visual. When we got into the store, I had expected to teach him how to zero in on salient features that would help him find what he was looking for. Then, if he couldn't locate the specific items, he could ask a nearby clerk or customer for some assistance. Again, I found that I really didn't have a solid sense of what visual features would be most salient to him. I hadn't really done my homework. Later, I consulted another low vision student who was very proficient at using her vision to shop. I had her teach me what features she used to guide her. The exchange was helpful to us both. She was gratified that her knowledge was useful to others. I was able to use this information to help the students in subsequent lessons.

9 ADAPTABILITY AND FLEXIBILITY

Every instructor is called upon to make sudden changes of planning when unforeseen or adverse circumstances suddenly arise. These difficulties can take many forms. It can be argued that blind instructors may struggle with greater susceptibility to some of life's monkey wrenches. What does a blind instructor do when faced with an unexpected construction zone, or a late bus, or a sudden down pour? These are legitimate questions. I begin by responding: "What do blind students do when faced by such circumstances?" A blind instructor starts by modeling for students how to handle life's sudden curves without the benefit of sight. There isn't always a convenient sign or car to swoop in to save the day. A seasoned blind traveler often meets the world's challenges without conventional conveniences and luxuries, but with only his ingenuity, determination, and resourcefulness.

It is rare that adverse weather or unexpected environmental noise affects my travel very much. When I do encounter especially stringent situations, I either elicit assistance or more likely, I find another way around. When I am with students, I pretty much conduct myself in the same way and instruct them to do likewise.

On one occasion, for example, I was orienting a student to a new junior high school campus. I'd only had about half an hour earlier that day to become familiar with the general layout and with some relationships and routes that would be especially significant to him. Travel on this campus was somewhat complicated by several construction zones resulting from a recent earthquake. We were on our way off campus when, suddenly, the bell rang, and all bedlam broke loose as hoards of students scurried hither and yon. Yes, before very long my sense of direction became slightly skewed, and my student was completely baffled. I took out my compass, provided some quick instruction to the student on how to use it to remediate this situation, and we resumed our course with accuracy.

On another occasion, I was working with a totally blind hearing impaired student inside a building on developing echolocation skills. When the fire alarm went off directly above our heads, my head nearly exploded. I was literally stunned. Others besides me have complained about the insane volume of this alarm. It took me several seconds to recollect myself and much concentration to direct our way out of the building. My student seemed little affected. While I am usually able to weather loud noise in short bursts when I must, this particular experience took an exhausting toll on me. Though I was able to marshal the wherewithal to complete the lesson with adequate success, it took me about half an hour afterward to feel fully revived.

From time to time, it happens while crossing an intersection with a student that terrible noises arise. This rarely affects my awareness of traffic much, but it can affect my awareness of students' relationship to traffic. Under such circumstances I move closer to my student so that I can hear their movements better. If the student is "tagged" with a good signal such as a set of keys, I have no problem maintaining awareness of where he is. In extreme circumstances, I may establish light, physical contact with the student for the remainder of the crossing. This has only happened on two occasions - when the light changed on us midway through the crossing. We ended up positioning ourselves at the middle of the street between opposing lanes to wait for the light to turn again in our favor. On these occasions, I maintained a firm grip on my students' shoulder both to be sure that they were positioned safely and to communicate assurance of safety.

Occasionally, situations arise in which I might take certain chances while traveling alone that I will not risk to students. For example, in conditions of extreme wind, rain, or other adverse conditions, my perception of traffic may put me beyond a comfortable margin of safety. As an autonomous person, I may decide to make the crossings anyway. These are personal choices that I feel comfortable making as an extremely seasoned traveler who feels able to manage any situation that may arise, however suddenly. However, when a comfortable margin of safety has been exceeded, I will not compromise student safety. I will find another way or even abort the lesson. At times construction noise has been too loud that I would make the decision to cross at a different point with a student.

On only one occasion did a situation arise that I believed could have compromised a student's safety, only I was alone at that time. I was crossing an especially wide intersection that was unfamiliar to me. About half way across, a jet soared overhead making such a din that I lost all sense of traffic and gained no clue about the location of the opposite curb of which I would ordinarily maintain awareness through echolocation. I simply fell back on my tactile awareness of street cambre and used this alone to complete the crossing. Danger might have arisen if a renegade driver had gone to hit me with my failing to notice the oncoming car through all the noise. With all sense of track cues obliterated, I might also have veered into parallel traffic if the street cambre had mislead me. If I had been with the student, chances are that I'd have had some familiarity with the intersection. Either way, I might have chosen to abort the crossing and return along a known path to the starting point. With a familiar low vision student, I might have trusted the vision of the student to complete the crossing safely if this seemed appropriate.

In dealing with sudden difficulties or adverse conditions, constrictions around transportation can limit the degree of flexibility that a nondriving instructor may exercise. If a lesson goes sour, for example, it is sometimes best to just cut the lesson short or whisk the student off for a bite to eat or something. Without a car, this can be difficult.

My response to this concern is two-fold. First, I carry a cell phone and if the need should arise, I can usually have a cab or driver available in less than 20 minutes. Second, if students are to learn how to function efficiently under the constraints that life will confront them with, they must be exposed regularly to those constraints and be supported in working out the logistics of negotiating them. In my daily life, if I'm a long way from home, and I suddenly get tired or irritable, my transportation options may not allow me to just drop everything and get myself home in a convenient hurry. I may have to weather the situation until it passes. It will be the same for my students, and the best time to learn this is now.

This also applies to another example of a difficulty on my part at being flexible. I see many of my students after school. When I pick them up, they often have their backpacks and materials with them and, as we all should know, blind students can have a lot of materials. A sighted instructor just packs it all away in the car and picks it up again when the lesson is over. When you don't have a car, you can't do that. My students and I must often carry all our materials around with us wherever we go if no other haven presence itself. Sometimes I can store materials in a driver's car and pick them up again when the driver returns to get us, but that's uncommon. This can be a drag, and some students have complained, but frankly, that's life. Most of my students will never have cars, and they'll always be in a position to have to bear the weight of their stuff. One must develop the fortitude to do this and again, the best time is now.

As concerns training students with Dog Guides and other mobility aids, I am personally fortunate in this area by having had a dog guide for several years and having been trained in and exposed to a variety of ETA'S. Every blind person will bring into their practice a different background and set of experiences. Such experiences figure prominently into my perspective on and instruction of various approaches. I am quite facile by experience and exposure in working with students in a variety of movement and navigation approaches including Dog Guides, ultrasonic sonar, and global positioning.

10 COMMUNICATION WITH STUDENTS DURING TRAVEL

Questions have been raised about how blind instructors might gage student fatigue, discomfort, or the nonverbal expression of need or desire. While these matters have faced me with a few challenges, I feel the need to make a critical point. The idea is often tossed about that the majority of communication occurs nonverbally; (the figure thrown about is often 80 to 90 %). As a psychologist, I can assure the reader that there is no valid, reliable way to quantify such a claim. If this claim were true, than so many deaf people wouldn't suffer so much from communication barriers. When this point comes up during my delivery of presentations, I often stop vocalizing and just continue my presentation with just lip movements and gesture. It doesn't take long before the audience at large expresses confusion, frustration, and disconnection from me.

It is true that sensitive sighted instructors can make fair assessments of student disposition from a distance with little personal contact, and this may prove advantageous at times. When conducting lessons where I'm at a distance from students, I rely on familiarity with the student to anticipate reactions. If I have reason to expect problems, hesitation, noncharacteristic changes in movement patterns, or other behaviors can raise obvious warnings that something may be up. I may also, as noted earlier (5.4), give the student a walkie-talkie or some other means such as a clicker to call my attention should the student feel the need. This puts control in the hands of the student who need not rely on the instructor's decision to swoop in to save the day.

In working with low or nonverbal students, it generally takes me a good while to understand some of the subtleties of students' nonverbal expressions. For example, during my first month of student teaching, I had a student who was fully able to communicate verbally, but was extremely reticent to do so. His linguistic skills seemed to be present, but their fluent use was somehow suppressed. During our second or third lesson, I was role playing and explaining the logistics of bus travel. During our interaction, I was

aware that he was fidgeting a bit, but not knowing the student and being inexperienced, I didn't attribute significance to this. I did not realize that my student was gradually wetting his pants. He had needed to go to the bathroom, but so suppressed was his willingness to say something that he had half wet his pants before speaking his concern.

My response to that scenario is two-fold. First, if I'd had more experience with that student and with teaching in general, I would have seen the need to attribute more significance to this student's nonverbal expressions. I might have at least asked him if anything was wrong. Secondly and perhaps more importantly, this student should develop the wherewithal to let someone know a simple thing like needing to go to the bathroom, rather than always waiting for someone else to anticipate and respond to his needs. I don't think that robbing his development of the freedom to direct his course and fulfill his own needs by pandering to his reluctance to empower himself is doing him any favors. Even if I had known full well what his need was, it is my practice to wait for him to experience the consequences of not making his need clear to me with the expectation that he would learn to take more control.

In any event, there are many clues, verbal and nonverbal, that are fully available to the experienced and attuned blind individual. I can often tell which way a person is pointing by the turn of their head or the sound of arm movement. The tone and inflection of voice or changes in diction speak volumes beyond what is actually said. I recall one blind colleague facing a somewhat hostile group of sighted mobility instructors was asked, "how will you know if a student gets tired or uncomfortable?" The answer was really so elementary that she stood at a loss at first how to respond. Being a very capable mother of four, she is very well accustomed to reading the subtleties of verbal as well as nonverbal expression. Body movements, changes in breath, pauses in speaking or action, changes in gait, and knowing behaviors however subtle, are just a few clues that a blind person can work with. In my experience, they have almost invariably been enough. I recall working with one 10-year-old student during my second quarter of student teaching. This was perhaps my third or fourth session with this student. This student was a pretty good traveler, but became frustrated easily when faced with challenges. At a particular street crossing he became to tense up, and he started to shut down. He said something, and something in his voice told me that he was on the verge of crying. Still standing at the corner, I brought up a subject which had little to do with what we were doing. He became engaged, and his fears lightened. I then backed off a bit, and I casually reminded him that he could go when ready and not to worry about anything. The student was now relaxed and able to make a sound judgment. Afterward, my master teacher asked me why I'd handled the student that way. He said that once this student reached that point, the lesson could usually be considered more or less over. He said that he usually just talked the student through the difficulty. I explained that, when on the verge of tears, especially for boys approaching puberty, one needs a bit of personal and psychological space to pull oneself together. The master teacher said that he learned something from me that day.

Nonverbal styles of communication may, however, elude some blind individuals. It is certainly possible to learn tactile signing, but this may not be effective for all students. One may be able to teach students to utilize and respond to more physical forms of communication, but this doesn't work with everyone. Here, there are two options.

The first is to conduct lessons in the presence of an aid who often has intimate knowledge of the student's communication style. This has two advantages. For one, it clues the aid into the nature of mobility issues - something that I take pains to make others aware of anyway. If the aid spends most of everyday with the student, it make sense that the aid understand the process of helping the student to develop necessary skills. Also, after spending time with the student and aid, the instructor may, at length, develop a good sense of the student's communication style, and learn to work within those parameters. The next option, if all else fails, is to refer the student to someone else who may be more familiar with signing practices or have a higher comfort level with nonverbal communication styles.

When it comes to perceiving a student's interaction with the public from a distance, one can use one- or two-way radios. One can, for example, hook up a one-way broadcasting microphone to a student and

listen through a receiver to what the student encounters. One can then discuss the nature of encounters and interactions later.

11 FACILITATING POSITIVE INTERACTION WITH STUDENTS

As may be obvious, it seems that the key to constructive interaction is good communication. I find that the issues surrounding the establishment and maintenance of constructive interaction tend to differ somewhat between working with functionally blind and partially sighted students.

I find that students who are blind or nearly blind are generally enthusiastic and very gratified to work with me. They seem to value and respect my input very highly and often express real excitement at the prospect of working with a blind instructor. One student even refused to work with any other instructor but me and insisted that his school district specially contract with me to work with him. I usually establish comradery with students which generally seems greatly to facilitate the learning process. Occasionally I get a student who is a little leery at first to work with a blind instructor, or who expresses certain competitive tendencies. In my experience, this typically passes quickly. I have nothing to prove and nothing to hide. My intentions toward my students are pure, and students sense this and respond favorably to this.

The story tends to differ somewhat when working with partially sighted students. Often, partially sighted students have difficulty grasping the idea that there's anything to learn from a blind instructor. They may assume the same patronizing role that sighted people so often find necessary, or they may want to take care of the blind instructor. I am usually very direct from the beginning in expressing that these students need to watch for themselves, not me. I tell them that I've traveled successfully and without undue mishap for a very long time, and that there's little they can offer me to improve that. In general, they get the picture after a few lessons. They come to realize that, though their vision may put them in touch with many aspects of the environment that are denied me, there is still much to be learned from me.

I recall one student with 20/70 vision who just wanted to guide, assist, and warn about every little crack in the sidewalk. Before long, while he remained inclined to help and prompt, he would look to me for counsel about finding his way around new places or finding new adaptations to improve his functioning. He came to respect my experience and my ability to find my way quickly around any area. Often, I helped him to use his vision to get him out of sticky situations. He seemed to find this invaluable.

Another student with quite low vision badgered me for months to teach him echolocation. Though his vision was perfectly adequate for travel, it suffered dearly under darkened conditions. He felt from having watched me that his functioning could greatly improve at night if he could perceive things the way I do.

A third student with progressive vision loss who resented everything to do with blindness including me, eventually came to enjoy working with me. Though he maintained a competitive edge when dealing with me, he also came to respect my judgments, and he often sought my advice. For example, even after he began working with another instructor, he specifically requested that I orient him to the larger community when his new instructor failed to do so.

Once I feel low vision students respects and trust me, I may request them to use their vision to assist me in some ways - to read things, for instance. Some students seem to feel privileged to provide me with help, and when I ask it of them they work hard to accommodate.

In truth, most low vision students in my experience come to find it a real relief to work with a blind instructor, because the prognosis is not good for many of them, and they can see by my example that life will be fully manageable should they lose their vision. Others seem inspired by my successful functioning as a totally blind person to use their remaining vision to greater effect. For a few others, however, my presence seems to offer an emotional threat. These do not dare face the prospect of loosing their vision, and dealing with me faces them with just that prospect. These students often try to avoid me and are very defensive about learning nonvisual skills. I find it necessary to treat such students very delicately' and with time, they may come around.

12 ISSUES OF REASONABLE ACCOMMODATIONS FOR TRAINING PROGRAMS AND EMPLOYERS

The question has often arisen - What reasonable accommodations are necessary for blind movement and navigation trainees and employees, and who is responsible? In helping to answer this question, we can fall back on the mandates set down by the ADA. However, we all know that these mandates are largely open to interpretation. Should there be special entrance or exit criteria for training programs? What accommodations, if any, should be considered necessary and reasonable for training and employment? Should there be any special considerations at all? Might these issues be addressed differently in varying settings (E.G., universities vs. agency training centers, or V.A. hospitals vs. school or rehab sites)? In answering this question, I propose an approach that I call "equal standards."

The equal standards approach simply proposes that all trainees and employees are held to a similar standard of expectation, requirement, and performance with regard to critical functions. We focus our concern on what duties are executed, not how they are executed. And we address the challenges faced by blind people with no more or less consideration than we address the challenges faced by sighted people. For example, as one of the first blind trainees, I needed additional practice to develop adequate instructional strategies. The faculty supported my recruitment of classmates for this purpose. Faculty also took a few hours of extra time to assist me with visual efficiency training and developing strategies for scoping out new training areas. This may become less necessary for other blind trainees as a body of "how-to" knowledge develops and proliferates for blind instructors. Likewise, some of my classmates also received reasonable assistance and support. One, who struggled with English as a second language, was given extra faculty support to learn and understand lecture material. Another, whose blindness skills were developing very slowly under blindfold, required extra training time. Another required additional reassurance by the faculty as she found the program intensely stressful. Two others required alternative internship placements when their placements fell through at the last minute. These are just the examples that I know about.

As concerns my employment, again, I think my accommodations have remained very reasonable. I have needed flexibility in my scheduling to account for transportation issues. Also, one job site provided me with a 15% increase in transportation reimbursement to account for the added expense. In return, I made my work hours extremely flexible to accommodate the needs of the agency (often working week-ends and late evenings), and I made my blindness expertise available in areas outside my specific job duties. Accommodations granted other employees included flexible use of company vehicles, generous maternity leave, assistance for people who couldn't lift or carry (we had infants and nonambulatory children in our program who needed to be lifted), and generous support for personal matters such as family emergencies. One employer took part of a day to show me around some of the training sites, but again, this courtesy was extended to every starting employee.

When we apply an approach of equal standards, we recognize that anyone can require reasonable accommodations in order to maximize their performance. I do not think that my instructors or employers have found my accommodation requirements to be excessive.

12.1 Entrance Criteria and Hiring

Those who apply to training programs or for hire in whatever setting presumably encounter some screening process. Information about each applicant's background is collected, and each applicant faces an interview. This information is reviewed. A decision is made about each applicant's likelihood for success, and his potential contribution to students, to the profession, and to the hiring agency. Essentially, an educated guess is made about whether or not each applicant will be able to manage the course work and job duties.

The ongoing performance of trainees and employees is further evaluated. Quite simply, the trainee or employee needs to be able to execute certain functions in order to succeed as an instructor. If it is determined that they cannot execute these functions, then it would be imprudent for that trainee or employee to continue. At such a point, that individual may be counseled out of a program or terminated from a job.

For training programs, the sticky part comes when a trainee refuses to leave despite counsel. Depending on the exit process at a given institute or agency, a stubborn trainee might hang on for a long time until poor grades document lack of success.

In these respects, blind trainees and employees are not different from anyone else. They, too, need to be able to perform an array of functions in order to be successful instructors. Concerns might be raised about the specific skills that a blind applicant or trainee might need in order to be successful. This report discusses those skills and abilities that I consider to be important. But, these are difficult to determine decisively and even more difficult to measure objectively. And, any such screening approach might have to be administered to all equally. It may be considered reasonable to expect that a blind applicant will need, for instance, excellent travel skills in order to accomplish the job functions well. Sighted people need them, too. Is it appropriate to administer a specialized assessment to blind applicants that examines their travel skills and estimates the potential to which these skills may be developed? It seems not. We wouldn't normally consider assessing sighted applicants in this way, because it is assumed that the travel skills for sighted applicants will be sufficient. One of my classmates had three car accidents during the year of our program. Would it have been appropriate to implicate her driving record as regards student safety? This might be appropriate at a job site but probably not a training facility. Other classmates had difficulty walking long distances. Many were afraid to conduct night assessments. Again, accommodation issues arise for all, and all are addressed as necessary. There seems little reason to single out the blind for special attention. Given equal consideration, if they can make the grade like everyone else, then they can pass to the next level like anyone else.

A logical and appropriate course of action is to make sure that students know exactly what the program and the profession are going to require and allow each applicant to decide whether he or she is a good fit. Further, it is advisable to evaluate all trainees according to their ability to learn the course material and perform the functions of the job. Evaluation procedures could be made sensitive to travel issues for blind and sighted alike. It would seem that movement and navigation instruction requires competent movement on the part of the instructor. It isn't for every blind person any more than it is for every sighted person for the same or different reasons. I have known of at least one student who complained that she had to help her sighted O&M instructor find her car after a mall lesson. There are plenty of other reasons other than travel that may prohibit blind and sighted alike from being effective. There could be health problems, personal problems, financial matters, or unforeseen disasters faced by applicants. All need attention.

It seems, then, that the issue of specialized criteria is moot, since everyone brings a unique set of issues to training or employment. By holding everyone to equal standards, we are equally fair to all.

12.2 Reasonable Accommodations

As above, the issues are really nonspecialized. For example, when we provide information in Braille to a blind person, this is sometimes called a "special" or "reasonable" accommodation. Yet, all we're really doing is ensuring that the blind person has the same access to the same information that everyone else has access to. In actuality, we are not doing anything special for the blind individual that isn't likewise being done for every sighted person. That is, we're providing the same material in a readable format to all. It's just a matter of minority vs. majority. The accommodation is, therefore, equal not special.

In this vain, I think the key to this discussion lies in the consideration of those steps that are commonly taken by professors, supervisors, and employers to facilitate the performance of everyone under their responsibility, sighted, blind, learning disabled, foreign, expectant mother's, individuals with full time jobs or families, distant learners, people with health issues, or just people with whatever challenges. When working with trainees and employees who face challenges, it is customary for professors and supervisors to help them meet these challenges when there is sufficient supposition that they can master the material and contribution favorably.

When considered in this context, blindness need not be singled out as requiring specialized attention any more than other challenges should. For one thing, there is no way to predict what accommodations will be needed by a given blind person in a given circumstance any more than they can be predicted for a sighted person. I, for example, required and received minimal accommodations other than access to

academic materials. I was supported in recruiting my classmates for extra blindfold work and in seeking extra student teaching time. I also received a few extra hours of low vision work and environmental scoping practice from my supervisors. Actually, my supervisors offered more help in scoping out areas for training than was necessary. Also, my master teachers occasionally assisted with transportation when convenient. I found no other accommodations to be necessary. However, the story might well be different for someone else. My intern, for example, conducted her internship in urban environments with which she was largely unfamiliar having grown up in a small town. Also, she had never lived on her own or managed complex transportation schedules. She had much to learn before she came into position to execute her internship successfully. The question arises - do we give her the extra time or attention needed to bring her up-to-speed? A sighted intern, after all, has relatively easy access to community resources including transportation and is at every advantage in becoming "at home" in new territory. Once again, the matter comes down to equivalent standards. Various kinds of support are commonly provided to trainees who face all manner of challenges in order to optimize their success. Most of my classmates needed far more attention than I in developing conceptual knowledge, blindfold performance, learning terminologies, understanding the O&M curriculum, etc. Any viable blind trainee, whatever his needs or challenges, is likely to bring strengths and assets to the program, his students, and the profession based on a wealth of personal knowledge. Though my intern needed much remediation and orientation to bring her urban travel skills up to par and establish familiarity with the new environs, the gains made by her students were marked and noticeable. One parent commented, for instance, on how her son was using his cane so much better. Many students, parents, and staff, grieved her leaving the center, and her professors, though they may gripe occasionally about her challenges as did I, were at no loss of words to extol her assets. Indeed, I hear that she has been much less challenging than other trainees to pass through that program. I might just as well have received an intern with limited English, or someone afraid to drive freeways, or someone uncomfortable working with very young children. In all cases, I would have been obliged to accommodate for the sake of optimizing their training.

In a way, this "equal standards" approach may leave the matter too open for the comfort level of some. However, I think that any imposition of difference threatens to open the Pandora's box of discrimination, accusation, and more political brew-ha-ha. Haven't we all had enough "brew-ha-ha" for one century? If we just accept that everyone needs whatever they need to be successful, and we accommodate those needs for everyone within reason, with the expectation of facilitating success, than blindness isn't the issue.

I am hesitant to give suggestions about what might be reasonable accommodations, because, if any are required, they will vary between trainees and circumstances. However, I will hazard a few thoughts. I just want to make clear that I do not intend to suggest that any or all of these thoughts will pertain to any or all blind trainees.

1. Opportunities for extra practicum. It is possible that blind trainees will want extra time to refine the perceptual/motor skills necessary to accomplish all that we've talked about effectively. I certainly did, as did a few of my sighted classmates.

2. Some additional instruction. Some blind trainees may wish to receive a few hours of additional instruction in specific areas such as scoping out environments, low vision assessment and instruction, visual concepts, etc. Again, this all depends on the blind trainee's background.

3. Orientation. It might be reasonable to extend some orientation services to assist the blind trainee in becoming quickly familiar with new environments or environment types. It may be well within the ability of the blind trainee to do this themselves without assistance. However, it is likely that the blind trainee's presumed limited access to efficient transportation, maps, literature, signage, and other community resources may cause the blind trainee to take longer than his classmates to become familiar and comfortable with student teaching and training areas. Since these placements occur over brief periods (6 to 15 weeks), the time necessary for the blind trainee to familiarize himself properly may take away from the time in placement. I needed a few extra afternoons and an hour or 2 of attention to become familiar with my placements. My intern required several weeks. If the trainee is still a rehab client, then this resource may be tapped for this purpose.

4. Some compensation for transportation. Sighted trainees are not usually compensated for transportation. However, for a blind trainee to get around efficiently in the short time spans of practicum placements, he may need to make over use of taxis and private drivers. Once the trainee becomes an employee, there are ways of reimbursing these expenses through tax deductions and job site mileage reimbursement (see appendix A-3.) And, with familiarity and control over one's own student schedule, one can make best use of lower cost transportation options. Until then, however, transportation expenses and restrictions can become bothersome to trainees. Again, rehab agencies may serve here.
5. Mobility or perceptual skills remediation. Perhaps even the most experienced travelers may need a brush up in certain specific areas. Again, such a person may be able to do their own brush up, but it may be quicker with an assist, and time can be of the essence in these programs. There are a few perceptual skills such as auditory distance detection, echolocation, gradient perception, object to object relations, auditory tracking, visual concepts, etc. that are likely to be useful to a blind instructor that a trainee might need some brush up on.

12.3 Who's Responsible?

Now, having made these suggestions, it is reasonable to address the question of responsibility. Is not the blind trainee or employee responsible for ensuring that they develop the skills needed to get through the program and do the job? The answer, of course, is "yes." A blind trainee is as responsible for pulling it all together and making it work as anyone else. That is why I propose the equal standards approach. This approach assumes that professors and supervisors will provide the additional assistance necessary, within reason, to facilitate success in their trainees and employees. As long as needs or challenges are not unreasonable, and as long as it is clear that the trainee or employee will contribute appreciably to students and the profession, than this assumption is appropriate. The only question remaining, then, is "What is reasonable?" This has always been the question, and it cannot be answered readily and objectively. It is a case by case matter. As with all applicants, supervisors or professors are left to hope that blind applicants will be responsible for assessing their own strengths and weaknesses, and be responsible for managing them. When equal standards are applied, the blind applicant needn't stand out. If he can do the job, great. If he can't, then he goes the way of everyone else who can't.

13 PROFESSIONAL CONDUCT

There are a few issues here that may pertain specifically to the blind instructor. For one thing, I find that parties relevant to students and other related professionals seem thrilled to have the opportunity to pick the brain of a willing blind instructor. Many feel at much of a loss to deal adequately with a visually impaired student, and they generally trust deeply in the knowledge and competence of a blind instructor. I have been asked to give many presentations, workshops, and in-services on blindness issues. Parents in particular, with few exceptions, have expressed eagerness and relief to have a blind instructor impart his knowledge and experience to them and their children. They've often never associated closely with another blind individual and seem to relish deeply interaction with one who is open and responsive. So eager they often are for this exposure, that they will bend over backward to seek to provide what ever accommodations the instructor might need to get the job done. In fact, I worked with one student whose parents contacted a blindness agency specifically searching for a blind instructor and who initially offered me twice my fee. Parents and professionals seem to appreciate first hand that the future for their children and students is not bleak, and knowing this carries immense implication for them. Further, I seem to have a knack for imparting the need for and reality of independent functioning, and that ability seems to help parents and family members to begin treating the blind children as respectable productive family members.

I have had three parents show reluctance to have me work with their children. Two of the parents were simply concerned about safety. Once I explained how I do things, they were willing to give it a try. The third was an emotional case of being unable to accept that his son's blindness was permanent. By being a blind adult, I represented his greatest fear, that his son's blindness would stay with him for the rest of his life. At first, he wouldn't even talk to me or acknowledge me directly. But, after time and exposure and

his wife assuring him that he was passing up an opportunity of a lifetime for his son, he became reservedly cordial. He even offered me a ride once from his home back to my agency.

Another issue perhaps worth noting is that a blind professional may be seen as a great wealth of information and may be asked to wear many hats - Braille teacher and transcriber, Assistive Technology Specialist, and presenter. I am a movement and navigation instructor specifically certified as an Orientation and Mobility Specialist; yet, I have been asked to sit on technology committees, to Braille materials, to provide advanced Braille instruction, etc. My intern also found this to be so in our agency placement. While I'm usually a little flattered and always happy to oblige, I've found it sometimes troublesome not to let other requests interfere with my primary job duties.

Developing and maintaining professional relationships has gone well for me with but a few small exceptions. Other movement and navigation specialists occasionally seem to keep a certain distance from me or regard me with apprehension. In our training program, we had to log 20 hours of observation experience. I found it occasionally difficult to find instructors who would let me observe them. At one agency, it took weeks before one of several would return my persistent phone calls. This experience was common with my classmates. However, when one finally did return my call and agreed to meet me, she explained to me over lunch that mobility instructors can find my level of functioning and my assurance in what I do and believe intimidating. She then asked me for a critique of her performance. I had not considered that possibility until then, and it has been brought again to my attention once or twice since. A few mobility instructors have appeared to feel threatened by my presence, as though I would stand critical of them.

One issue has arisen recently - Students and their families quickly come to feel a comradery with me as a blind person who "really knows what's up." They share with others what they are learning and what I'm like to work with. Before long, others want to work with me, also. They may request my services, even though they may have instructors already. Understandably, this has lead to certain grumbling among local professionals. Though no one has approached me directly with their concerns, these concerns have been relayed to me through others. I have passed the message on that I am open to being addressed with any concerns, but I still wait to be directly approached.

Occasions have also arisen concerning the advice I may give to blind people. I have functioned as a blind person all my life. My blindness skills are extremely effective and virtually impeccable. I have traveled competently in just about every imaginable circumstance from the most complex freeway access intersections, to difficult and remote wilderness terrain, to casual urban travel from a bicycle. I make such activities as mountaineering and mountain biking a part of my sensory enhancement curriculum. I taught myself most of what I know, plus I have the additional background in perceptual psychology. Consequently, my approaches are often unconventional and nontraditional. When asked for advice or counsel, I find I often say things that run counter to what may be taught by other instructors. This has landed me in awkward situations. Once, a former student's parents approached me with a problem their son was having with using sighted guide. This student had lost his vision, half of his hearing, and a lot of his balance from meningitis. He found traditional forms of sighted guide to be uncomfortable, and those guiding him complained of feeling pulled off balance by him. I evaluated the situation and suggested that the student try placing a hand on the shoulder of his guide, rather than grasping the elbow. It was my judgment that this would result in a more stable dyad, and I assured them that the "shoulder" technique is not uncommon among teenage boys who use sighted guide. The following day, I received a phone call from a most irate instructor demanding what right I had to say anything at all about technique and insisting that what I said had no merit at all: "it isn't taught in any textbook." When I reminded her that I was the one who stepped in to work with this student fresh out of the hospital, because she chose to wait, and I was the one who moved him through his recovery and besides I don't teach mobility from a "textbook," things got really nasty. I do not withhold advice that I consider appropriate. But, I have come to approach matters with greater delicacy. I will ask the individual what they have been taught and why that seems not to work for them. I will explain to the person why the current method was taught to them (if I know). I may then suggest what has worked for me or others, clarifying that this is only my

experience. I will inform them why it is that their instructor may disagree with what I have suggested. If appropriate, I will contact the instructor to inform them of my conversation with that student.

In truth, while I am rarely openly critical of individuals, I am extremely critical of the movement and navigation professions at large, as I am with many professions - especially the "helping" professions. I feel that we would all, myself included, do well by ourselves and our clients to examine our attitudes and our behavior toward our clients more critically. For example, I have always been critical of the assumption, held too often even by movement specialists, that level of functioning can be anticipated by level of vision or visa-versa, that level of vision may be easily deduced by level of functioning. How often have I been annoyed by the assumption that I must have some vision because I "do so well?"

During my internship, many students came through the agency - many of whom were newly blind. All were students who needed help to develop their skills in some respect. If not, they might have had little reason to be there. In general, the lower the vision, the more help was needed with things like mobility and daily living. The more vision one looses, the more one seems to require learning to adapt to the loss. Consciously, I knew that this was not strictly a matter of the degree of remaining vision, but of experience. Right? Obviously, blind people who are experienced and have adapted do fine. I was to discover a serious breach in my own attitudes and expectations.

During the last days of my residency, a student came into the agency for a 3 day visit. I encountered him only intermittently. He used a cane, he learned to get around the agency immediately, and he conducted himself with grace and assurance. I really didn't think anything of it. But, one day, the gentleman called to me by name in the hallway and asked if I could help him track down one of the staff who was late for an appointment. I asked him if he would be able to read the schedule board, and he said yes. On our way to the schedule board, I noticed his gait was even and smooth, his path of travel was accurate, and he moved with awareness, ease, and confidence. I began, almost unconsciously, to make tentative estimates about his functional style which, unknown to me, attached itself to degree of vision. I guess that stuck in my mind, because I'd overheard him say that his primary interest in coming was for the improvement of his mobility. He could read the schedule board, his orientation was fine, he moved with ease, and he called me by name in the hall with very little previous acquaintance. I wondered what his mobility needs were.

When we approached the board, he reached out to touch it. He asked if it was in Braille. I chuckled ruefully and said that they hadn't come that far, yet. He replied that he couldn't read it, then. After a moment's awkward hesitation, I asked him how much vision he had. He said that he was totally blind. I was utterly dumb-struck - not by his high level of performance, but by the fact that I had made such an elementary blunder I was shocked and mortified, and the worst was yet to come. I swear to the All Mighty Powers that be - would that they had only taken my tongue - that the next words from my mouth - so help me - were: "YOU DO SO WELL!"

I immediately refocused my mind and composed myself to deal with my grievous error. I asked him what he hoped to get out of mobility training. He explained that he had been raised on the farm in the open country. There, he learned to work the land, ride horses and bicycles and to conduct all manner of recreation and business. He could find his way around open land and country towns easily. However, he wished to gain employment in the city, and urban streets and sidewalks baffled him.

Upon deep reflection of my misconduct, I realized that the nature of our work as educators and rehabilitators may bring us continuously into contact with the correlational pattern of vision to functioning. We're brought constantly into contact with people who, due to inexperience with vision loss, fumble and flounder helplessly through severe functional tangles. Very simply, the more vision one looses, the more time and experience may be required to regain functioning. We also come into contact with a preponderance of "scholarly" literature which is erroneously based on these same apparent correlations. By virtue of our role as educators and rehabilitators, we often do not come into contact with blind people who really have it together, because we're so involved with helping those in need get it together. We as instructors, especially in residential agencies, are constantly exposed to this artificially produced correlation, and we apparently can all too easily fall into negative and destructive attitude and

response patterns. These patterns tend to be based on deficit models, rather than models of adaptation and compensation. I considered that, if such a thing could happen to me, one who felt he always stood staunchly for the power of nonvisual functioning, in just a matter of a few months, what might it do to someone over the course of 5, 10, 20, or 40 years.

If I hadn't opened myself to learning painfully from this experience, I might still hold subtle attitudes that could under-mine my effectiveness as an instructor, destructive in facilitating the autonomy of my students. For example, one of my recent students, in addition to total blindness, possesses an artificial leg from the knee down. When I was first introduced, I wondered how this leg might affect his balance, reaction time and recovery, line of travel, etc. It was perhaps wise to wonder for the sake of considering properly how my instruction might best take is special needs into account. However, if I had tried to anticipate or presume his needs prematurely, I'd have run the risk of falsely projecting my perceptions of his needs on to him, thereby coloring erroneously the nature of my personal and instructional interactions with him. I managed to catch myself, put all presumption aside, and let him show me his abilities and needs. It turned out that, not only is the leg of no appreciable concern in his travel competence, but he is among the most athletic of any of my students.

As with other helping professions, the movement and navigation professions hold a high responsibility to those they serve, and I feel this field still has something to learn about fulfilling this responsibility. While I believe that instructors vary in their capacity to facilitate optimal student functioning, I also know that each of us has much to learn, and much to share.

APPENDIX A
MANAGING INFORMATION ACCESS AND TRANSPORTATION

Among all the requirements of my job, information access and transportation have imposed the biggest headaches. But, they are manageable, and efficiently so. This appendix discusses the logistics of acquiring, preparing, and financing services, personnel, and equipment. Managing issues of confidentiality and liability are also addressed.

A-1 Acquisition

A-1.1 Public Sources

Their are many public services of readers, transcribers, and transportation. Where readers and transcribers are concerned, many public agencies provide voluntary services or services for fee. Recordings for the Blind and Dyslexic will read books and articles on to tape free of charge, but the turn around time can extend from 3 to 6 months. Other local agencies often provide volunteer reader or transcription services, and they can often refer those interested to other available services. National Braille Press publishes a list of voluntary and paid transcription services nation wide.

Where transportation is concerned, I make use of anything and everything available in a local area. A conversation with the local transportation authority can be enlightening. One option that may be emerging for blind individuals are the A.D.A. paratransportation or Access services. Such services are county run and vary widely from county to county. Under the best of circumstances, one can simply call the service and schedule a vehicle with short notice to pick them up and take them wherever they need to go. The worse case scenario can be pretty awful.

These paratransportation services were first conceptualized for those who possess disabilities that flatly prohibit them from using the large bus system. Blindness was not thought to qualify, because blindness alone does not impair the functioning of the rest of the body. One still possesses working arms and legs with which to get to and from bus stops, and on and off buses. However, I've known many blind and visually impaired people able to receive Access service by emphasizing, falsely or not, the safety issues involved in visually impaired people traipsing about near traffic, and the mobility issues involved in finding one's way through complex areas.

For myself, I was very clear about my abilities, but I pointed out several accessibility issues concerning nonvisual interaction with the big bus system. While I assured them that interaction was certainly manageable, I argued that inaccessible signage and bus schedules definitely threatened to place visually

impaired individuals at a marked disadvantage in locating bus stops and correct buses, especially at multiple bus transit zones, underground rail stations, freeway stops, and in unfamiliar areas. (See APPENDIX E for details on A.D.A. accommodation issues regarding public transportation for the visually impaired.) Their response was to provide me with a conditional service, which means that in scheduling an access trip, the equivalent bus trip must require two or more buses. It's better than nothing and has revolutionized my ability to provide itinerant and private contract services.

A-1.2 Private Sources

Private sources come in many forms - community members, friends and relatives, colleagues and coworkers, formal volunteers, and interested passers-by. As a rule, I am reticent to make heavy use of voluntary help for two reasons. First, I generally find that I get what I pay for. The second is that one cannot expect the rendering of voluntary service without the implicit expectation of recompense. besides that, everyone else has their own business to take care of. I have born witness to the uncomplimentary way in which coworkers may talk about their blind colleagues who over use their acquisition of voluntary service. Still, I've found that secretaries and office workers in particular are eager to spare a moment to help out, and I'm always open to returning the favor. For example, though I make regular use of secretaries to acquire and read file information, I always type and prepare my own work which spares them the need.

I have found on many occasions that parents are eager to assist with transportation. Two stay-at-home moms even insisted repeatedly that I allow them to assist with transportation. One argued: "You are such a good instructor that I don't want transportation problems to interfere with teaching my son or any other child." I've always made clear to parents by word and example that I could manage my own transportation, but it's not hard to see what a headache it can be for a nondriver. It took long and careful consideration (and a good, long look at my pocket book) before I consented to such offers. I only take up such offers once I establish that I can manage regardless.

Accepting such offers could be considered unprofessional and certainly unconventional. I believe that professionalism is largely based on social conventions that are somewhat arbitrary. Those in my position have not been provided conventional means (such as efficient modes of transportation) to accomplish conventional life tasks (such as making a living). It's easy to be "conventional" when one has all the "conventions" available. Otherwise, one may need to make discrete use of nonconventional methods to maintain adequate performance of conventional activities. I say "discrete" because it may require the application of extensive personal resources to maintain productive, professional relationships with parents and students under these conditions. However, doing so is actually congruent with my instructional philosophy.

I believe that specialized interventions are greatly enhanced by close and regular involvement with the family. By interacting so closely with families, I have been afforded extremely productive opportunities to observe and influence family/student relationships and dynamics. Also, parents and students just love to take the opportunity while in transit to pick a blind man's brain about blindness. And let's face it, such opportunities are rare to nonexistent for many families and have been considered invaluable by most of those with whom I've had contact.

Probably my most common resources come from the community. I've found that placing an add in the local paper usually yields a good response. Because papers charge by the word or line, I keep adds brief and usually run them on Sundays for maximum response. The add might go something like this: "Blind teacher needs [reader or driver] with own insured vehicle for [given area]. I stress "own insured vehicle" because it limits the number of responses which can be copious. I also try to refer respondents to a voice mail or messaging system, so that I can sort through them and select who seems worth calling back. One can tell a lot from a message. I typically won't deal with someone whose grasp of English is tenuous or who doesn't sound like they can find their way out of their driveway.

When I make contact with individuals, I don't require a formal application, but I do present a contract of employment. (A version of this contract is present in APPENDIX D.) It explains all of the terms and responsibilities of employment.

A-2 Preparation

I have found it necessary to provide some training or at least direction, if I am to expect personnel to read, drive, and transcribe according to my needs. For example, many readers have never seen an I.E.P. or doctor's report and may have difficulty conveying the relevant points efficiently. I take time to explain to readers how the forms and reports are laid out, what some of the jargon is and which sections are and aren't generally important. For this, I need to be familiar with these forms. It is useful to take extra time during training or at the beginning of the job to become familiar with form layouts. I stress doing this at the beginning, because things may become too hectic to worry much about it later, but not having done so may come to haunt the unprepared professional. This is also true for anyone providing visual information about environments. I try to make very clear what kinds of information I need and what doesn't really matter.

When it comes to transcribers, I've found them pretty good at rendering materials into readable formats. However, I prefer transcribers who are willing and able to use technology to assist them in their work. In particular, I prefer to have my materials available on disk as well as hardcopy, because it's easy to get copies that way and such material may be loaded into a portable note taker for viewing. Also, computerized technology can provide a quick and efficient way to generate tactile graphics. They may not have the textural pizzazz of hand made graphics, but they are easily replicated and relatively quick to generate. They can also be very precise.

With drivers, I try to provide very specific directions to where we are going, and I provide them with phone numbers where they can contact me in case of problems. I don't provide driving instruction, but I have, on occasion, provided pointers about reading maps and honing orientation skills.

A-3 Managing the Expense

This section may be of great interest to the reader, because all these adaptations can add up to one mother of an expense. Who should bear the expense for accommodations is a question that often arises when discussing blind employees. One philosophy is that the blind deserve the same treatment as everyone else. Society doesn't spend all kinds of extra money on the sighted, so the blind may expect similar treatment. It is respectable to the blind to expect them to stand on their own like others. Another philosophy posits that, in order for the blind to be treated like everyone else, they need the same access to the same resources and materials as everyone else. Resources made available to the sighted should be made likewise available to the blind. This isn't a matter of differential treatment, but equal treatment. Whichever side of the coin one upholds, someone somewhere has to pay the bill, and it can be extravagant. However, let me assure you that the expense is manageable.

First, all disability related job expenses are eligible for compensation for as long as one is receiving S.S.I., and all are tax deductible whether the expenses are job related or not. These are deductible under medical needs for tax purposes. Such expenses may include readers, transportation, adaptive equipment, etc. I even write off my cellular phone, because it plays an essential part in managing my transportation and in allowing me to maintain my job efficiency while spending extended time on public transportation. One simply has to keep all records and receipts of expenditures. Receipts will only be viewed if an audit is required.

If taxis are used frequently, the expenses can mount high and fast. Costs may range from $1.50 to $2 per mile or more, not including tip or initial cab entry fees. Some cab companies may offer up to a 10% discount if you start an account with the company - especially if rides occur at regular times such as between home and work. A few cab companies also offer coupons (e.g., $1 off for a trip over $5). These savings can add up over time.

State rehabilitation agencies may also be willing to foot the bill for some of these expenses, and for students, Disabled Student Services provides readers. While they do not provide drivers, they may not ask too many questions about the specific services that the reader provided.

In addition, public agencies usually provide some compensation for work related mileage - often based on IRS standards. This amount is currently 34 cents per mile. While this compensation may not add up to the cost of a driver or cab, one should apply for the same reimbursement no matter what form of

transportation is used. Since public transportation, paratransportation, and the occasional free ride fall well below this allotted reimbursement, the extra typically pays off most transportation expenses otherwise incurred.
One may also be in the occasional position to enlist voluntary assistance. Colleagues and coworkers, friends and relatives, student parents, and formal volunteers can defray significant expense. A ride with a coworker to a few I.E.P.'s can cut transportation expenses in half for a whole month. However, a stern warning is in order. One can use up one's welcome quickly. As I've alluded to earlier, people, especially coworkers, are often protective of their space and time. People like to be valued for who they are, not what they can do for others. I recently heard of a visually impaired man whose neighbors began avoiding him like the plague for fear that they'd be asked for a ride "again." An individual professional standing can be decimated by indiscriminate use of voluntary assistance.
I also keep in mind the fact that when being transported, I can put that time to productive use. Given the length of time public transportation can take and the havoc that it can play with one's schedule, it is imperative that time be managed with utmost efficiency. I get about 90% of my paperwork and program planning done while I travel. I completed most of this project while in transit. If time is money, then I bring in a healthy income by doing work while traveling.
There's one last perspective that I find most reassuring. One may suppose, based on IRS calculations, that the cost of owning and operating a car averages about 34 cents per mile. This includes automotive maintenance, gas, insurance, registration, anti-theft measures, and the cost of the car itself. Over a 5 month period, I kept track of my transportation expenses mile per mile and compared them to the expenses that would have accrued had I used my own car. I even included $50 a month for my cell phone. At the end of the 5 months, I had saved nearly $1100 by not operating my own car. This realization has made the occasional $30 to $50 cab trip much more palatable.
Taking all of these factors into account, I've not found myself much in the hole when it comes to affording transportation, and I've found myself usually able to cover a large geographic area fairly efficiently. The management of all these factors can take some getting use to and can amount to quite a headache, but it seems to pay off.
When it comes to readers, some state departments of education offer full or partial reimbursement to school districts for providing reader services to blind teachers. The district simply must classify the blind teacher as a classroom teacher to receive reimbursement.
When it comes to adaptive equipment there are several options. First, once again, all equipment is tax deductible or S.S.I. compensated. Some blindness agencies subsidize a portion of the job related equipment that blind individuals need to optimize job functioning. Needless to say, this can amount to a substantial savings. Finally, there are several options for financing the remainder of the expense. Student loans are excellent for this. They are low interest and relatively easy to get. A price quote and letter authorizing the need for the equipment is usually required. Next, some blind organizations such as the American Council of the Blind, the National Federation of the Blind, and the American Foundation for the Blind make low interest loans available for the purchase of some adaptive equipment. Finally, an increasing number of vendors and manufacturers offer leasing and financing options, but the interest rate can be quite high.
One may also exercise the option of striking a deal with the hiring agency about providing the necessary services or equipment, but I have found it prudent to take time to prove one's worth before pursuing this course. Once this is done, agencies may offer the sky as the limit. In my case, my agency provided my department with an accessible computer system. besides my use, the computer system serves multiple functions for other instructors including scan to Braille and student training. My agency also voluntarily provides a $100 per month transportation allowance.

A-4 Confidentiality and Liability

Issues of student confidentiality primarily regard readers and transcribers. The Education Codes require that all personnel be cleared by the presiding agency and by parents before gaining access to student files.

Therefore, special measures must be taken before allowing readers or transcribers to view files that are specifically relevant to students.

One can clear the reader through agency procedures - granting them access as an affiliate of the agency. If the instructor hires and pays the reader, then the reader may be processed as an agency volunteer. If the agency hires and pays the reader, then the reader is processed as an agency employee. Either way, the reader (or transcriber) is treated as an affiliate of the agency. Finger printing and a background check usually constitute the minimum of processing.

For both readers and transcribers, there are a few options. One can obtain signed consent from the parents to allow a third party to view documents under supervision of the instruction. One can also have a secretary copy the material, blotting out or removing students' names and any other personal references.

When it comes to liability, we're talking about a couple of issues - general concerns that are posed in reference to a blind instructor working in the public sector, and drivers.

Some have raised questions about whether or not additional liability concerns are relevant to blind instructors in the public sector. Who would be responsible if something happened? What if a parent or student didn't want to work with a blind instructor? The best response to these concerns that I've encountered was given by my first employer. They simply took the position that if I was properly credentialed and certified, then I was in every way equivalent to any other credentialed, certified instructor. There was no presumption that something special or extra needed to be done to ensure instructional safety or competence. Further, if parents or students raised concerns about working with me, then they would simply be directed through all the same channels that would be relevant to any other instructor facing the same concerns. It does happen, from time to time, that a student doesn't want to work with a particular instructor. This happened once to one of my master teachers when a female student felt uncomfortable working with a male instructor. In my current position, we have had one or two parents reluctant to allow their daughters to be taught by male instructors. A student may have any number of reasons not to work with an instructor - temperament, gender, race, religion, hair color, or whatever. Most agencies or institutions have procedures to handle such grievances which are equally applicable to blind instructors. On the two occasions when parents have raised concerns about student safety, a simple explanatory conference proved satisfactory to put apprehensions to rest.

Concerning drivers, when I first began my position as an itinerant instructor, my biggest concern was how to gain clearance for transporting students by private driver. The answer turned out to be simple at first. Since most school districts have a volunteer policy for using parents to transport students during field trips (which essentially requires some level of car insurance), we just applied that same criteria to private drivers. It worked fine until one parent refused to allow their child to be transported by someone they didn't know. Now, these parents did offer to provide transportation, but it made me realize that drivers should undergo the same level of clearance that anyone working with children should undergo. This includes finger prints, background checks, T.B. testing, etc.

In addition to these approaches to liability, it must be recognized that public and professional opinion, however enlightened, are likely to be more fragile when it comes to blind instruction. Although accidents happen from time to time during instruction, the first serious accident that befalls a student under the care of a blind instructor may threaten to throw this whole matter right back into the dark ages of controversy. Blindness could be implicated as a contributing factor in the incident. Since, by its nature, the O&M profession is fraught with risks, I carry my own top level, professional and general liability insurance. It's not very expensive, and it allows me to rest a little easier at night.

APPENDIX B
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APPENDIX C
INSTRUCTIONAL RESOURCES, AIDS, AND MATERIALS

This appendix discusses all of the equipment that I have found to facilitate my competence as a blind movement and navigation instructor. Where feasible, I cover all the details about specifically what equipment was tried and found useful or not useful, the nature of the equipment, who distributes the equipment, and what adaptations if any were made to the equipment and why. [Concerning the adaptations, I enlisted the assistance of an engineering technician through school.]

C-1 Auditory Stimulus Enhancers

The purpose of auditory stimulus enhancers is to highlight auditorally important features of the instructional environment so that they may be more easily perceived nonvisually. The most important "feature" is the student of which the blind instructor must keep careful track. Other features, though, may include moving elements such as balls or obscured elements such as a thrown or concealed item. The blind instructor may need to keep track of such items to facilitate student interaction with them and may do so by attaching certain noise makers to the items as discussed in up-coming sections.

C-1.1 Remote Sounders

C-1.1.1 Review

A remote sounder is anything that can be caused to make a sound by a remote controlled signal. One of the most common uses for remote sounders is locating ones keys, causing a door chime to ring by wireless means, looking for one's luggage, tracking down a pet, or setting off an alarm remotely. Some two-way radios also have a remote sounding feature called "paging," or "calling." I've found that these types of devices are many and varied, and they come and go like the wind. I have updated this section three times, but have had to revise each time having made it available to people because of how frequently things change. I, therefore, no longer provide references to specific distributors or devices. A good time to look is during the Christmas season. Radio Shack and other electronic "gismo" shops, specialty shops, on-line, and independence distributors such as Anne Moris Enterprises, Maxy-Aids, L.S.&S., Independent Living Aids, etc. are a start.

These devices typically consist of two components - a remote transmitter, and a receiver/emitter which emits a sound when activated by the remote transmitter. Some may be activated by a distinctive sound such as a clap or whistle, but I recommend against these. There range is limited, and they are unreliable in noisy environments. Sound feedback can vary from pleasant beeps or chime sounds, to ear-splitting

shrieks that would wake the dead. The sound emitters can also vary in size; they can often be found quite small as they are often intended to fit conveniently on a key-ring. The range of activation typically runs from about 20 to 50 ft, although some remote alarms can run several hundred. Family band two-way radios may allow paging up to 2 miles. The receiver/emitters can typically be activated even around corners and through walls, although walls and corners reduce the range. The greater the rated maximum range, the more reliable is the device at close range.

C-1.1.2 Purpose

When I wish to clarify the exact location of my student under very noisy or highly congested conditions, I simply press the remote and listen for the sound emitter. The emitter need not be distracting to a student, nor disruptive to the public. Many emitters sound very much like a pager signal. Most kids rather like it. The typically compact size of the emitter allows discrete placement on a key-ring, belt-loop, pocket, or waist band.

Also, I attach the small emitter to objects to give them auditory presence. These may be items meant for retrieval such as balls or objects intended for localization such as a curb, pillar, or corner of a building. I can also attach different radio receivers to different points in space and cause each to emit a tone from a different channel to help clarify spatial layouts for some students.

C-1.2 Keys

C-1.2.1 Review

Of importance here was to maximize the "jingle" factor of the keys. For this, I chose keys rather than bells or other noise makers for most students, because keys are a perfectly acceptable item to wear, and they tend not to draw too much attention. Also, students don't seem to mind them. I found that the number and arrangement of keys was significant. Too many or too few keys don't jingle very much. Also, one ring was not as jingly as several rings hooked together. I finally settled on three rings linked together with two to four keys on each. I also found it best to hang the larger keys toward the inside and the smaller keys toward the outside of each ring. Play with the arrangement until you find what you like. I then hang the whole thing from a chain about 4 inches long, because this further increases the jingling. The chain is attached to a clip which clips to the student's belt loop or pocket. It's good to have it at the hip, just in front of the leg.

Surprisingly, this simple system does have a few complications. First, it's somewhat dependent on what people wear. If they don't have belt loops or have pockets, I use paper clips or belt clips to fasten the keys. Some students wear their shirts untucked, which tends to dampen the sound of the keys when I hang them from the student's waist band. In this event, it helps to clip or pin the keys to the bottom hem of the shirt or to the hip pocket. If a student really doesn't want the keys visible or dangling around, a Japanese bell or two placed in a pocket can often suffice (see APPENDIX C-1.3).

C-1.2.2 Purpose

This set-up allows me not only to track my student's movements, but also to distinguish my student readily from other people. It also allows me to tell instantly when my student stops, starts, or turns. Also, when my student stands still, it facilitates my ability to monitor body language. This set-up works very well under any but very noisy environments, although the gait patterns of some students may lessen the jingling.

C-1.3 Bells

C-1.3.1 Review

Not all bells ring alike. I had to look around for quite a while to find bells that rang quietly enough to be inconspicuous, yet still penetrated ambient noise. Bells imported from Japan seem to work the best for their small size. I don't know why, but they just penetrate very noisy environments for many yards - even if kept in a student's pocket. I first became acquainted with these special bells while sitting in the library studying. I heard this quiet, high pitched bell wondering all over the place, and I was easily able to track it for hundreds of feet. This intrigued me, since at the time I was working on this student tracking problem. When I heard the bell headed out the door, I immediately dropped what I was doing and ran after it. I chased it through throngs of bustling students, intent on discovering its origin and where I could

get more. At last I caught up with it and blocked its passage. As amiably as possible under these abrupt circumstances, I inquired what was making that wonderful ringing sound and where I could find something like it. The meek, nervous voice of a small, oriental girl gave me the answer I needed. I urge anyone who uses audition to keep track of students' whereabouts not to under estimate the power of these bells. They can be found at many Japanese markets on key chains and noses of small, stuffed animals. Japanese bells can be purchased from a Japanese market, usually sold with key-chains and other trinkets. In lieu of these wonderful Japanese bells, jingle type bells can work okay, but one must be selective about one's choice. I had to examine quite a few before I came to some that I liked. I used two - a large and a small. I pried the housing of the larger one open and removed the clapper-element. Then, I placed a much smaller bell inside the larger and closed the housing. This provides a richer sound. Jingle bells can be purchased from arts and craft stores.

C-1.3.2 Purpose

Sometimes I use bells to clarify the location of very young students. Young students are often less likely to be distracted by bells than keys, and bells are not age inappropriate for young students. In addition, a bell may be affixed easily and unobtrusively to shoe laces or pant legs. A Japanese bell may be hidden among the keys on a key-ring to enhance the stimulus inconspicuously. For students that don't like to wear keys, a Japanese bell or two may still suffice even when placed in a pocket. I may also tie a bell to a tether ball - to the rope just above the ball, to clarify the location of the ball. A bell can also be fastened to the rims of the wheels on a wheelchair or tricycle to cause the vehicle to make noise as it moves, allowing the blind instructor to track the student more easily. A zip tie (see Appendix C-1.5) makes an excellent fastener for this purpose.

C-1.4 Transmitter/Receiver Systems

C-1.4.1 Review

There are a variety of unlicensed two-way radios available to the general public. Radio Shack distributes a convenient assortment, but other radio outlets may carry units to suit given needs. Modern two-way radios in this genre are typically light, small, and inexpensive. They often come with call features that can be used to page the receiving unit, and incorporate an automatic squelch feature to filter out unwanted noise and interference. Blind users must check to see if the radio's features are accessible, as these devices, like so many others, are coming to use display menus.

There are also some fully battery operated, one-way units. These generally fall into the baby monitor category, but they can be used to listen into a student's progress from a-far to, for example, monitor public interactions. The transmitter contains a microphone and sends a continuous signal to the receiver. The range is about 300 feet. When the units exceed or otherwise fall out of touch, the receiver may alert the user by beeping.

C-1.4.2 Purpose

The standard two-way set-up can be used to keep in touch unobtrusively with students when separated during solo lessons or otherwise. Concerning work with partially sighted students, while I tend to maintain more distant positions from them, I also need to know what they see. This set-up allows me to keep my distance and allows them to speak what they see. The call feature can provide a beacon with which to locate a student if need be.

The two-way feature is also useful in solo lessons. I can literally tell my student to run a number of errands and meet me at a particular location. If we lose each other, we can use the walkie-talkies to locate each other. By using an additional one-way set-up on a different channel with continuous feedback, I can hear and monitor what my student is experiencing on a receiver of my own. This can be especially useful for monitoring public interactions. No student has ever complained or shown signs of being distracted by these set-ups.

C-1.5 Zip Ties or Cable Ties

C-1.5.1 Review

Zip ties, also called cable ties, are plastic or nylon fasteners used to bundle cables or other elongated hardware together. The tail of the tie is inserted into a one-way fastener and pulled into a tight loop

around the bundle to hold it firmly and permanently together. They are virtually unbreakable, requiring a sharp blade to remove the tie once fixed. They come in different links and widths for different applications. These can be purchased from any hardware store or electronics store.

C-1.5.2 Purpose

Although these make excellent fasteners (e.g. affixing a bell to the rim of a wheel (see Appendix C-1.3), they are not discussed in the "Clips, Holders, and Fasteners" section (C-5), because they are not used as fasteners in this context. They are used to cause a rotating wheel such as on a tricycle, bicycle, or wheelchair to make noise. When affixed around the frame near the center of the wheel, the tail of the tie brushes across the spokes of the wheel in a rhythmic fashion. The affect is similar to the playing card that kids used to affix to the rear forks of their bicycles to make a motor cycle sound. The zip tie can be adjusted to cause more or less noise. If adjusted to a light sound, the affect can be quite musical on the right kind of spokes. This arrangement can allow a blind instructor to keep easy track of a student on a wheeled vehicle, and most students like the affect if it isn't too loud.

C-2 Light Probes and Detectors

C-2.1 Review

I examined four light detectors - the Smith-Kettlewell light probe, the Kentucky light probe for the blind, the Rover Seeing Aid, and the Say-On light detector. There may be others that have come out since then which are not covered here.

Of these four devices, the least useful to me is the Say-On. It is designed strictly to indicate the presence of light. It conveys little about intensity or direction and is not very sensitive.

The other three devices compared closely to each other in terms of their usefulness. They are all quite sensitive to small amounts of light at remote distances and all are quite compact.

Both the Kentucky Light Probe and the Smith-Kettlewell Light Probe convey information auditorily via the use of a tone that rises with the intensity and proximity of light. This method conveys information about whether the lights are ACCORDING driven (powered lighting) or DC driven (battery driven or sunlight). This tone pulsates with electronic lighting because of the 60 Hz cycle.

Of the three, the Kentucky Light Probe seemed to be the most sensitive. It is also the least expensive (about $10) and requires the least power (two triple-A's). However, it comes disassembled and does not include an adjuster for sensitivity. The Smith-Kettlewell Probe runs off a 9-volt. It has variable sensitivity to adjust for very bright or dim lighting and is very compact. However, I found that it stopped working within a few months of purchase. I went through two of them before giving up.

The Rover Seeing Aid, manufactured by the Possibilities Company, is the most expensive (about $100), the least light sensitive (but not by much), and has the highest power requirements (12-volt lithium). However, it is also one of the most clever. Instead of using audible tone feedback, it uses electric pulsation. The pulses increase in frequency with proximity or intensity of light. At first, the experience can be extremely uncomfortable, but I got used to it very quickly. It's advantage is that one does not have to devote one's audition to interpreting signals. Audible signals become easily drowned by ambient noise, and tactile signals aren't perceptible to passers-by or students. Unfortunately, tactile pulsation doesn't allow as great a definition to the perception of light variation. Audition can perceive fine variation in frequencies ranging all the way up to 10 kHz easily. Tactile perception of pulses is not as sensitive and won't go beyond about 100 Hz. This means that information from the Roving Seeing Aid simply isn't as defined as from other devices - something like the difference between the Mowatt and the Poleron. However, there's much utility for a tactual display in noisy environments or when one doesn't want audible sounds. The Rover is also housed in a pistol grip chassis which is the most ergonomic. The Rover also allows four levels of sensitivity.

C-2.2 Purpose

I have used light probes to help distinguish contrast variations in surfaces and variations in lighting for low vision assessment. Also, they're useful for scoping out lighting conditions for assessment of low partial vision &/or night vision evaluations. They can also be useful to gage current lighting levels to understand student performance.

Interestingly, the Rover Seeing Aid is not marketed as a simple light probe, but as an ETA. Possibilities claims that this device can be used to detect patterns of light reflecting from surfaces and use this information to establish and maintain orientation in near and far spaces. They claim that one can scan the device across an environment and get a sense of position, distance, and basic composition of surfaces even 100's of feet away - that one can use the device to detect and follow path boundaries and other environmental features. With several hours of practice, I was not able to use this device for anything more than the detection of gross differences in contrast. The device seemed too susceptible to changes in lighting and surface characteristics. The nature of what one perceives with the device changes drastically according to the position and intensity of the light source. In a way, this is the device's strength as well as its weakness. The device captures an essence of the true visual world by being sensitive to lighting conditions. However, it made for very confusing and inconsistent results. It is possible, though, that an adventitiously blind person might grasp the devices utility more instinctively. It is also possible that much more training and experience is necessary to gain for utility from the device. In this case, a comprehensive training course should accompany the device.

C-3 Canes and Tips

C-3.1 Review

There are two canes that I use in my instruction - a rigid California Canes, Ultralight Graphite Cane, and an NFB Retractable Cane.

The California Ultralight Graphite Cane comes in folding and rigid versions. This cane has the advantage of being quite light, and quite durable. Indeed, the Ultralight is the lightest cane I've ever used. The California Graphite rigid cane is probably the strongest, and I've used. Also, the company guarantees their canes for 2 years. This company also manufactures three tips - standard, tear-drop shaped, and roller. I like the standard and tear-drop because they last three times as long as regular nylon tips, and they don't roughen with use; they just get smaller. This means that they don't stick on carpeting because of roughness or burs in the used material. I like the tear-drops much better than the marshmallow or mushroom, because they glide more readily and more quietly across uneven surfaces, and they don't catch on the lips of stair risers. The steal tip becomes very rough with use and falls apart quickly.

The NFB Retractable Cane is light and much more compact, but is also flimsy by comparison and can be much more expensive depending on the material of the cane. It comes in two materials - fiberglass ($23) and carbon fiber ($35). While both materials are quite strong and very light, carbon fiber is slightly heavier and is said to be the stronger of the two. Despite its flimsy construction, it has many advantages that may be applicable. It's light as a feather, is very easily and quickly collapsed and expanded, and is extremely compact. It collapses into itself to form a small, easily stored cylinder. When desired, it expands with a flip of the wrist to full extension. It is the most tactually conductive of any collapsible cane I've examined (including the Autofold/Hicore cable cane), and its steal tip creates a sharp resonance that is wonderful for echolocation. Unfortunately, I went through three steal tips in about as many months.

C-3.2 Purpose

I use different canes for different purposes. I use the California as my standard cane for traveling and instructing, because it's very light and sturdy. I use the NFB Retractable Cane as a convenient spare or if I have need to collapse or expand the cane quickly. Some students require my use of both hands, so I put my cane away. However, I may wish to have my cane available immediately; this is the cane of choice in such situations. Also, if I want to monitor a student inconspicuously in public, I can collapse and conceal this cane easily.

C-4 Instructional Aids

C-4.1 Braille and Talking Compasses

C-4.1.1 Review

I found two adapted compasses currently available - braille, and talking.

The braille compass is the smaller and less expensive of the two ($45). It fits easily into a small pocket. When closed, it must be held flat and allowed a few seconds to spin. It often helps to tap it on the bottom

or jiggle it slightly. When the hinged cover is lifted, the disk locks into place so that it can be read. It displays an arrow for north, and the letters e, s, and w for east, south, and west respectively.
The talking compass is about twice as large and costs about $65. While holding it flat, one must press a button on the top. The compass then speaks the direction in which it is pointing. It pronounces eight cardinal points including north, south, east, west, northeast, northwest, southeast, and southwest. It also allows selection between two languages which can be chosen at the time of purchase. It runs off of two n-cell batteries.

C-4.1.2 Purpose

The purpose of the compass is to teach cardinal directions. I found the talking compass particularly useful, because it gives a dynamic read out if the button is held down while moving; it continues to state where it is pointing. Sighted children can see the arrow on a standard compass move as it continues to face objective north while in motion, but blind kids don't have this luxury. This compass gives them a sense of objective cardinal points that remain fixed.

C-4.2 Laser Pointer

C-4.2.1 Review

The device I use projects a red spot up to 300 feet onto just about any surface. It has two settings, pulsating, and continuous. There is also a version that only emits a continuous spot, but I found that the flashing spot catches some students' attention better. One must also be careful when using it around others, because the beam can be hazardous to the eyes if look at directly.

C-4.2.2 Purpose

I used a laser pointer primarily in doing visual assessments and exercises with fairly highly visual students. In tracking, spotting, or fixation exercises, I could check their attentiveness by turning the spot off or on and instructing the student to tell me when the spot disappeared. If he couldn't, it meant he'd lost the spot.

C-4.3 Auditory Enhancement

My favorite source for recreational equipment containing auditory stimuli is Sport Time. They seem to distribute the widest variety of quality equipment for use by those with a range of disabilities.
One of my favorites is the Durabeep Ball. This is a rubber utility ball about the size of a soccer ball, with a beep centered in its interior. While the ball is a little heavy, it acts pretty much like a normal ball. The beeper does require small modification to increase its durability. This simply involves placing an aluminum washer at each end of the chassis and recessing the on/off button with a large nut that can be purchased from any automotive parts store.
However, most times I now just put the ball in a spare plastic bag grocery or department store bag (officially called a "T-shirt bags"). If you tie the handles so the bag is very loose around the ball, it generally provides enough auditory feedback for most games under most circumstances. I prefer to use basketballs pumped to capacity because they bounce the best. This little trick even work well on balloons and beach balls.

C-5 Clips, Holders, and Fasteners

C-5.1 Belt Packs and Back Packs

Blind movement instructors don't have the luxury of carrying all their things around with them in the car. A good sized back pack, therefore, is essential. Even if it isn't carried around on lessons, it's a must when going from site to site. I recommend a mountaineering backpack with waist and chest straps and aluminum stays. Any sporting goods store will have a wide selection, and sometimes you can find good deals at the swap-meet. Though these are more expensive, they take much less of a tool on the wearer. Sometimes the instructor may even have to carry the student's things just to keep the peace. We can't just toss it into the back of the car; it's got to go somewhere, and the student may be very disgruntled to carry it around all afternoon.
For carrying on lessons, a belt pack is great. I prefer to keep my hands free at all times, so my belt pack has many pouches, large and small, and rings to hang things from. I bought mine from an army surplus store.

C-5.2 Universal Belt Clips

C-5.2.1 Review

Radio Shack distributes two universal belt clips - one made of plastic and the other of metal. Both cost about $4. The plastic is a molded clip and comes with a highly adhesive two way tape that will hold to just about anything. The metal is simply made from a polished strip of steel folded in two. It comes with velcro strips which may be used to affix the clips to a wide variety of items. I prefer the steel clip as it is the more reliable. The steel belt clips are difficult to find, though, and they may require special ordering. Also, since steel is a ferric metal, these clips cannot be affixed to the backs of compasses without disturbing their magnetic orientation.

C-5.2.2 Adaptations

Both clips are too loose. They'll slip right off anything you try to clip them to. However, the steel belt clip can be tightened by applying vice-grips to the folded end and pressing it down until the two flaps touch firmly together. This makes the steel one very reliable.

C-5.3 Safety Pins

C-5.3.1 Review and Purpose

I found it useful to carry around several sizes of safety pins - very small, medium, and very large. I often use them to affix items to clothing or fabric that would not permit a clip.

C-5.3.2 Adaptation

I modified the safety pins as follows to decrease the risks around young children.

1) I snipped off the very tip of the pin with a pair of wire cutters. This made it less likely that a child could jab himself injuriously with the pin.

2) I bent the side of the pin with the clasp slightly so that the side of the pin that had the point would sit more deeply into the clasp - making it less likely to come undone.

3) I pinched the clasp slightly more closed so that the pin would be even less likely to come undone.

C-5.4 Retractable Key Reels

C-5.4.1 Review

These are flat, round housings which contain a spring-loaded chain hooked to a key ring. A belt clip is mounted on the back. It's designed to keep keys in easy reach. You grab, pull, use, and let go; the keys return to their spot at your waist. I've only been able to find them at dedicated hardware stores.

There are several manufacturers, but two basic sizes - large and small. The large is typically heavy duty and made of strong metal. The chain is about 2 feet long, and the spring-reel will support about half-a-pound. The small is typically made of plastic with a nylon string. It's string may be 18 inches long and won't likely support more than 2 or 3 ounces.

C-5.4.2 Purpose

One can use the large key reel to hold a Mowatt or Poleron by clipping it to a belt, and let the unit dangle. The reel holds the Mowatt in place, but the Poleron starts to unreel because it's slightly heavier. When the unit is needed, one just reaches for it, and it's there. When one no longer needs it or when one requires the immediate use of that hand to, say, stop a student from being run over by a bus, one can just drop the unit, and it returns to position automatically.

I used the small one as part of a retractable tether for my more unpredictable students. I wanted a tether that would look inconspicuous, in not be binding to my students' movements. I made a loop of clear, 20 pounds test fishing line and hooked it with a rubber band to the key reel. I affixed the key reel to my student. In this way When the need arises, I can hold the fishing line and feel my student's movements. Because everything is so elastic between the rubber band and the retractable reel, the student tends not to feel bound or confined. Also, because of the clear fishing line and small key ring, the tether is not visibly obvious. Finally, the loop is short and very light, so when I'm not holding it, it rests against the back of my student's waist without encumbrance.

C-5.5 Extendable Gripper

This hand-made device consisted of a medium size alligator clip mounted with the supplied screw to the end of a standard, TV antenna. Pains were taken to position the clip so that its teeth ran in direct line with the antenna.
I used this little to present items to my students at a distance from my hand - usually for visual assessments or exercises. For example, during a visual tracking exercise, I might place two cards back to back in the clip and present them in motion to my student with instructions to follow the card. Since I couldn't always tell when my student was following the card, I'd give him further instructions to tell me when the card changes. Then, throughout the exercises, I would twirl the antenna so that the card would change. After a few practice runs, if the student failed to mention the change, it meant that he hadn't been looking or lost track of it.
The straight antenna allows the card to be turned very quickly and in place. This method can also be used for exercises in fixation or visual field testing.

C-5.6 Stationery Clips and Clasps

I've found large and giant paper clips to be a cheap and easy way to hang items from pants, shirt pockets, and basketball nets. Paper clips are especially desirable when the item needing attachment cannot be readily mounted to a belt clip. Other means include bulldog clips and binder clips. I often use the clips from the backs of ID tags. I've not been able to find a resource for the clips, but one can buy the tags and rip the clips off. They are small and hold tightly.

C-5.7 Batteries

I won't go over board about the batteries. I just want to say, buy re-chargeable batteries, and a charger. It's well worth it. Not only will you always know that your batteries are fully charged, but you'll go through a lot of batteries if you don't - 9-volts, double-A's, triple-A's, n-cells, etc. You'll truly regret the first time you run out of batteries for an important piece of equipment.

APPENDIX D
FUNCTIONAL VISION ASSESSMENT NOTES

This appendix contains the notes for my first, real functional vision assessment. The Braille formatting is represented here almost exactly as I used it. The lines represent page breaks. In the actual Braille, I used many more abbreviations. I've left many of these out, because they made more sense in grade two than they would in print.
"rt" = route information
"inst" = instructions to client
"dc" = descriptive info for me
"pre" = preliminary info

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pre-1 Begin midblok along nth side of
California between 6th and 5th facing 5th.
inst-1.1 Id up-coming intersection type, and
traffic sgnl.
rt-1 Go straight 'til 5th St. Pause.
dc-1.1 Street sgns are located on CA
medians.
inst-1.2 Id the traffic sgnl, and whether the
street is 1- or 2-way.
dc-1.2 5th is 1-way nth.

---

rt-2 Cross to corner with the news pper stand (sw).
Walk along CA (wst along sth side) 'til
addres 420. Pause.
dc-2 2nd one wst of 5th; broad entrance.

inst-2.1 (Wait for student to notice both places. If not, then) point out both places where 420 appears.
dc-2.1a Number above entrance is dark brown on beige.
dc-2.1b Number on riser of first step is white on blak.
inst-2.2 Id upcoming intersection and traffic sgnl.

---

rt-3 Continue along CA 'til 4th St.
inst-3.1 Say when you can tel wht type of street it is; 1- or 2-wy.
rt-4 Cros 4th, and turn lft (sth) onto 4th. Continue to Wilshire, and say if 1- or 2-wy. Locate Mike Carusoe's on corner.
inst-4.1 Tel wht kind of stor this might be.
dc-4.1 Mike Carusoe's hs sgns below the eves on 4th and Wilshire at the corner. Main entrance is on Wilshire--first wst of 4th.
inst-4.2 Where's Western Federl Bank?
dc-4.2 The word "federl" is partially covered by trees; easiest to see from the corner.

---

rt-5 Continue along Wilshire to 3rd Street Promenade.
inst-5.1 (After crosing alley) id establshment directly across street. Read sgns on windows.
dc-5.1 In smal print on different windows "bar", "seafood", "capachino", "xpreso."
inst-5.2 What's the name of this place?
dc-5.2 In larger cursv on a larger window in the middle "pentola."
inst-5.3 Read the addres.
dc-5.3 312 clearly in white on blak awning above double doors.

---

inst-5.4 (When reaching bakery) id the building nxt to the restaurant across street, and read the name.
dc-5.4 Trees occlude the wording, but "Barne's and Noble's Book Sellers" is unoccluded beside the trees.
inst-5.5 (When reaching Lens Crafters),
dc-5.5 Last building in the blok.
inst-5.6 Locate and read the addres, and id some of the lenses in the windows.
dc-5.6 Addres is smal, off white on white above the door.
inst-5.7 Id "Barne's and Noble's" if he couldn't before, which should be easier from this angle.

____
rt-6 Go to the 3rd St. Promenade.
dc-6a "3rd Street Promenade" sthest corner.
dc-6b "Wilshire" sthwst.
inst-6.1 Id establshment on the right (sthest).
dc-6.1 "JC Penny's" is occluded by trees, but he might have seen "J P" from across the street.

____
rt-7 Trvl the length of the Promenade. Find a payphone, and 4 specific establshments.
dc-7a Directory ne Arizona St..
dc-7b Payphone is midblok est across from Johnny Roket's hammberger, between Bravo's and Lesa's.
inst-7.1 The first establishment is Inner Space at 1225.
dc-7.1 Just a few places sth of Wilshire with avantgard music.

____
inst-7.2 Then My Way Shoes at 1234.
dc-7.2a Not long after 1225.
dc-7.2b "my way shoes" is over windows.
dc-7.2c 1234 is mirrored (glas on glas) above the double doors.
inst-7.3 Nxt is the UCLA Xtension Office at 1338. Pik up a free catalog.
dc-7.3a Wst side: sth of a recesed minimall and Starbuk's cafe
dc-7.3b Est side: across from disny stor, before large, recesed entrance to big dog sports wear.
dc-7.3c Catalogs are on right as noted on door.

____
inst-8 What street is this; 1- or 2-wy?
dc-8a "Santa Monica boulevard sw.
dc-8b Santa Monica Place across Broadway which is 1-way w.
rt-8 Enter Santa Monica Place through the nth entrance at the food court.
inst-8.1 Here, it may help to use your compas.
inst-8.2 Let's grab something to eat.
inst-8.3 Find the bathrooms, the payphone,
dc-8.3a Located on the wst sd just sth of the food court just before Robinson's in a hallwy, just nth of a plastic obelisk.

____
dc-8.3b Around the wst side comes the tiled column with bathroom and phone sgns.
dc-8.3c Around the est side comes 3 large

columns on the right, the first and 3rd with trashcans,
the 3rd with cans on either sd. The bathroom
column is the 4th, smaller.
  inst-8.4 And the Management Office.
  dc-8.4a The directory is somewhat sth of the
bathrooms, and a bit est.
  dc-8.4b The 5th column hs a plxiglas
case, then comes one with no tile. The
directory's just beyond this.
____
  dc-8.4c-1 395 "persnl and professionl."
  dc-8.4c-2 Nth 3rd lvl across from macy's
  dc-8.4d-1 Up escalatrs are sth and est
of the directory, just wst of the fountains. Go right and
around to go up.
  dc-8.4d-2 Go right off escalatrs, wst
along nth side.
  dc-8.4d-3 Pas leather. Corador grows
qiet; leave fountains behind and right.
  dc-8.4d-4 Pas warehouse and radio shak.
  dc-8.4d-5 3 plnters in friendnt of macy's
  dc-8.4d-6 Go dn reverberant hal to lft
of Macy's. 3rd and last door on lft.
____
  inst-8.5 Please look for the office number.
  dc-8.5 395 is incnspicuous at top, lft
corner of window in lavender.
  inst-8.6 Get a directory or brochure.
  dc-9.1 The down escalatrs are est of the
fountains. Go lft and around to go down.
  dc-9.2 To leave, go lft off dn escalatrs.
  rt-10 Turn lft after leaving the mal. Walk
to Broadway. Pause.
  rt-11 Cros Broadway here, then turn right
and cros 4th.
  dc-11.1 Nth along 4th is lft turn arrow.
  rt-12 From here, find your way bak to the start.

APPENDIX E
CONTRACT FOR DRIVER EMPLOYMENT

Terms

Unless agreed otherwise, the driver will receive $0.50 for each mile driven relative to the employer's need. This includes miles incurred from the driver's home or starting location of similar distance, back to the driver's home or destination of equivalent distance. Miles are added if the driver has pre-scheduled the need to be at a starting or ending point further away than the home.

Driver's will receive $5 per hour for time the driver is called upon to wait away from home for the employee. The driver is free to do as desired with this time (unless the employer calls upon the driver to perform other duties), as long as the driver is available for the employer at the pre-arranged time. The driver receives no payment for miles driven during this time, unless these miles are incurred while executing tasks assigned by the employee.

Obligations

This is not a long term contract. The driver is only obligated to meet appointments or perform tasks specifically agreed upon. The driver is free to suspend or resume availability at will, so long as all previously agreed upon duties have been performed. The driver must arrive to all appointments in a timely manner, and carry out all assigned duties responsibly. If a situation arises in which the driver cannot make appointments or carry out duties, the driver is expected to notify the employer as soon as possible, &/or make other arrangements when possible to ensure performance of duties.

The employer must make every attempt to schedule appointments and duties with as much advanced notice to the driver as possible. The employer must also provide clear and accurate directions to given destinations or provide clear and ready means for the driver to obtain necessary directions such as maps or contact phone numbers. The employer may, according to need, attempt to schedule last minute appointments or duties, or change appointed schedules and duties at the last minute, and the driver may respond at his or her discretion. if the employer must reschedule or change duties at the last minute, the employer must make every attempt to alert the driver. The driver will receive payment for all time and mileage incurred as a result of miss-information or delayed notice.

Liability

The driver shall bear all consequences of negative incidents that occur while on duty, except when the employer can clearly be held liable.

Requirements

[All costs incurred directly relative to the following items (including time, mileage, and item costs) will be reimbursed by the employer.]

Written proof of driver's license.

Written proof of driver's insurance.

D.M.V. print out.

Driver may be asked for T.B. test proof.

Driver may be asked for a finger print check.

Driver may be asked for letters of reference.

DRIVER'S SIGNATURE: ___________________________________

EMPLOYER'S SIGNATURE: _________________________________