

FINAL REPORT

**For the good of the game ... a report on the
status of golfers with disabilities in America**

Submitted to the United States Golf Association Foundation

August, 1999

Introduction

The latest U.S. Census (1995)¹ revealed that approximately **20%, or over 54 million Americans**, have a disability. That figure does not account for the massive elderly population that experience difficulties in mobility and physical functioning due to the aging process. Over seven million Americans use permanent mobility assistive devices including wheelchairs, canes, and/or crutches.²

In 1999, the National Golf Foundation reported that 26.4 million Americans played golf. (approximately 12% of the U.S. population)³ Obviously the same percentage of people with disabilities do not currently play due to a number of factors. In 1995, the National Center on Accessibility and Clemson University conducted a random survey of persons with disabilities to determine experience, interest, and perceived barriers to playing golf. The following summarizes the major findings as reported by people with disabilities who participated in the study:

- 22% of the survey participants that played before their disability or accident are not currently playing
- 35% currently not playing or who have never played, would like to play golf

Respondents were asked what are the major barriers to their participation in golf: The responses are summarized below:

- Not knowing how to swing the golf club effectively (38%)
- No one knows how to teach them how to play (36%)
- Cost of equipment and greens fees (34%)
- Course staff don't know how to assist (31%)
- Lack of accessible golf course facilities (29%)
- Golf course staff not sensitive to people with disabilities (27%)
- Don't have anyone to play with (21%)
- Lack of independence on the course (20%)
- Require assistance to play (15%)

These findings are very similar to findings of the National Golf Foundation⁴ on other golfer segments. Based on this information, as well as information that had been compiled as a result of a series of National Forums on Accessible Golf⁵ conducted by Indiana University's National Center on Accessibility and Clemson University, the current study was designed to determine current golf operations' experiences with golfers who have disabilities; the perceptions and experiences that golfers with disabilities have had on the golf course; and the status of golf instruction programs that are introducing golfers with disabilities into the game. Personal interviews, written survey responses, and telephone interviews

were conducted to gather this information that is intended to be representative of the entire country. Based on data gathered from these various sources, the project goal was to develop materials that would assist golf operators in developing policies and practices that would provide effective customer service to golfers with disabilities.

Study Parameters

Participants in this study included golf course owners and operators, organizations that provide services for golfers with disabilities, and golfers with disabilities.

This report provides a summary of the study procedures and participant input from each of these three groups. The results are provided in three sections plus a comparative summary of all responses and a section on major recommendations. An Appendix is also included and contains various survey forms and outlines and other pertinent resource information.

- SECTION I: Golf Course Owners and Operators
- SECTION II: Organizations serving golfers with disabilities
- SECTION III: Golfers with disabilities
- SECTION IV: Comparative Summary of all surveys
- SECTION V: Combined Recommendations from all study respondents

Statistical Analysis of Data

The statistical package used to perform the study data analyses was SPSSPC+ (Norusis, 1994)⁶. An assessment of the distribution of the data helped to determine the appropriate parametric or non-parametric test. The decision was based upon the normality of the distribution (samples taken from a normally distributed population are themselves normally distributed) and the homogeneity of the variance (Kirk, 1995).⁷ The data was checked to insure that normality and homogeneity assumptions were not violated. Simple t-tests were used along with parametric measurements to understand the data.

The information from mailed surveys was combined with the interview data. The semi-structured interview guide was selected for this study because of its flexibility. Merriam (1988)⁸ states that the semi-structured interview format is used when specific information is favored. This is by using a guide of questions of the issues that the interviewer plans to explore. The exact wording of the questions or the order the questions are presented are not determined ahead of time (Krathwohl, 1987⁹;

Merriam, 1988). This form of interviewing allows the researcher to be flexible and responsive to the situation and to new ideas that come from the interviewing process (Patton, 1980).¹⁰ Consent was sought to audio-tape record the interview, and most participants agreed to the taping. Because there was some overlap in the questions, not all questions on the interview guide were asked directly of the respondents. Written notes were taken throughout the interview and field notes were recorded after each interview. A thank you letter for participating was sent to each participant one week after the interview.

The interviews were transcribed verbatim. A coding system for the anticipated categories of response was created to code the data. The data coding was also read and re-coded by a sociologist who holds a Ph.D. in research. High agreement in coding categories with a comparison rate of 95% between researchers was reached. The computer program NUD-IST (Non-numerical Unstructured Data Indexing, Searching and Theorizing) (Richards & Richards, 1991)¹¹ was used to assist in the analysis of the qualitative data. The qualitative data has been used to develop and enhance the data gathered from the surveys. The coding of the qualitative data parallels that of the categories of the surveys used for the research. This methodology allows the researchers to use triangulation in the data analysis. These two forms of data (survey and interview) were compared to create a deeper understanding of how golf course managers and people with disabilities may work together in achieving a common goal of accessibility and integration.

SECTION I: Golf Course Owners and Operators

Mailed survey

In December of 1999 a questionnaire was developed and pre-tested with golf operators and professionals in Indiana. It was then sent to a total of 50 public access golf facilities in Southwest Florida. The surveys were addressed to the owner/operator, General Manager, or Director of Golf. The intent was to insure that the surveys were completed by those in positions of authority and who had the authority to make decisions on policies for the golf course operation. Thirty one completed surveys were returned (77.5 %) which represents an excellent return rate for survey research. In February, 1999 nine additional surveys were completed by operators of golf courses in Utah, Missouri and South Carolina. A total of 40 completed written surveys were used in data analysis. The results from these questionnaires were used as baseline information to be compared

against results from personal interviews to be conducted later. The major findings from the mailed surveys indicated that:

- Almost all respondents were aware of the Americans with Disabilities Act and its application to golf courses.
- Most knew that the ADA applied to the golf course but didn't know how.
- Almost all of the golf course operators returning surveys indicated that lack of education regarding golfers with disabilities was a major concern and need.
- Almost all of the respondents indicated that they had concerns about the use of mobility devices on greens and tees.
- A majority were concerned that golfers with disabilities were not educated about golf and how to play the game.
- Most indicated that they had never seen a golfer with a disability play.
- Respondents who had golfers with disabilities at their course indicated that the most often request for an accommodation was to assist in getting golf clubs out of the vehicle.
- Very few courses reported having a written policy of guidelines for golfers with disabilities and their needs.

NOTE: Percentages of responses that include both mailed survey and personal interview input is included in the Executive Summary of this report (separate document).

The findings from returned written surveys are important when compared to more in-depth results of the three sets of interviews conducted (golf course operators, organizations who provide instruction to golfers with disabilities and golfers with disabilities) These will be discussed later in this report.

1. Personal Interviews

Personal interviews were conducted in Southwest Florida (Fort Myers, Cape Coral, Naples, Punta Gorda, Lehigh Acres and LaBelle) during January, 1999. Twenty-eight golf course managers/decision makers were

interviewed at their respective golf courses/offices. In addition, fifteen interviews using the same format, were conducted by Research Fellows of the National Center on Accessibility during the month of February. Five interviews each were conducted in Utah, Missouri, and South Carolina. Each interview was scripted to elicit responses relative to the experiences that golf course operators had had with golfers with disabilities; to determine the status of their current policies concerning golfers with disabilities; and to get a sense of their “perceptions” of golfers with disabilities as a) problems and/or concerns; b) a market segment, and c) a contributor or detractor of the economics of running a golf operation. Additionally, interviewees were asked to provide input as to what they felt would be most useful for them to receive as a result of this study, in order to prepare them in providing better customer service to golfers with disabilities.

Interview Protocols

Interviewees were given a packet of information on golfers with disabilities as well as information about the National Center on Accessibility. They were promised anonymity in their responses; and where permission was given, interviews were recorded. Each interview lasted between 20-30 minutes. The tapes were sent to the offices of the National Center on Accessibility, where they were transcribed, then erased. Information was anonymously put into a database for ease of extrapolation.

Summary Observations from Interviews¹

1.	Demographics	
	A.	Type of Golf Course
		1. Municipally owned and/or operated
		2. Privately owned Daily Fee
		3. University owned
		4. Resort Course
		<u>N</u>
		11
		27
		1
		9
	B.	Number of Holes per course
		1. 18 hole regulation
		2. 27 hole regulation
		3. 36 hole regulation
		4. Executive 18 hole
		29
		4
		3
		6

¹ Numbers don't total to actual number interviewed, since some interviewees managed more than one course listed. Also, the category of “Resort Course” is included, but those numbers are also included in the privately owned daily fee column.

C	Position of Respondents	
1.	Director of Golf or Head Golf Pro.	26
2.	General Manager	10
3.	Other	6
	a. Owner	
	b. Project Director	
	c. Recreation Supervisor (2)	
	d. Regional Director, Golf Course Maintenance Company	

2. Interview Data Summary-**Discussion**

A. Awareness of golfers with disabilities

Most golf operators had given little thought to issues related to golfers with disabilities. While most had seen golfers with physical conditions such as hip and knee replacements, only one had actually seen a golfer play out of a wheeled device (single rider cart). In most cases, those interviewed mainly had questions about golfers with disabilities; and the interviews took a decidedly educational twist. Because of the lack of actual contact with golfers with highly noticeable disabilities, i.e. those using mobility devices, the vast majority of those interviewed had no real idea or concept of how golfers with such disabilities play or would play the game. Several asked why people with disabilities would want to play golf.

B. Experiences

Few individuals interviewed had seen golfers with disabilities. Those that had, revealed little if any contact with them. Other than golfers with physical ailments that require no more than some type of a golf car accommodation, e.g. flagged cart signaling an exception to the golf car policy, they had not had requests for mobility device accommodations on tees and greens.

C. Accommodations provided

Flagging golf cars to signify to others that permission had been given to take the car into restricted areas (to others) was by far the most common accommodation provided for people with some type of mobility limitation. In almost all cases, golfer limitations related to physical difficulties due to age or surgery (knees and hips). It was interesting that either a flagging policy or simply allowing those asking for permission to take the carts in

otherwise restricted areas had gained almost universal use. In cases where flags were not used to identify exceptions to the cart policy of the day, some operators preferred magnetic signs placed on the front of golf cars. In some cases, use of the placard insert that is provided for group outings or to specify tee times was used. In other cases, the pro shop simply advised the starter, ranger, and/or on-course marshall that a specific cart had permission to be taken in areas where others were restricted. In a few cases, operators indicated that they made NO exceptions for golfers with disabilities.

A few comments regarding accommodations were; that they had already altered the golf course to make it easier to play, i.e. reduced carry from the tee box over a hazard, easier access to bunkers, etc. These actions were not directed at golfers with disabilities, but for the accommodation of members or other frequent players at a particular course. A few suggestions, such as limiting golfers with disabilities to specific tee times or not allowing more than two golfers with a disability in a foursome were reminiscent of attitudes and policies that have been directed at other golfing minorities such as women and juniors.

Finally, many golf professionals and golf course operators did have a recognition that times are changing, and they seemed supportive of new golf segments, including those with disabilities. A few were sensitive to issues such as flagged carts drawing unwanted and unneeded attention to golfers with disabilities; and that golfers with disabilities could probably teach other golfers about good customer service. The vast majority of those interviewed, however, could be characterized as patronizing (e.g. don't understand why people with disabilities would want to play golf; don't understand why they would want to get on the tees and greens, etc.); and they simply did not have enough information or contact with people with disabilities to know how to interact or to know exactly what they should do. In other words, they are not prepared to deal with the issues

D. Concerns

Golf Course operators interviewed expressed several concerns about golfers with disabilities, especially those using mobility devices. By far the most frequently mentioned concerns were:

- Pace of play
- Damage to the golf course
- Damage to greens
- Costs associated with making accessibility improvements (purchase of adapted or specialty equipment such as single rider golf cars)

The overriding perception of golf course operators was that people with disabilities will slow down play. While this perception is predictable based on the responses to A and B above, it demonstrates a lack of understanding at best and a stereotype at worst. While pace of play is obviously a major economic issue for golf course operators, the assumption that golfers with disabilities will slow down play has not been supported by research¹² or in practice as revealed by interviews with golfers with disabilities.

Damage to the golf course and damage to greens were often cited as concerns. Golf course damage refers primarily to carts not staying on paths when others are restricted, and damage to greens concerns relate specifically to taking assistive mobility devices onto the greens surface in order to complete the hole. Most operators cited wet or drought conditions and over-seeding as times when the use of carts on fairways and greens were of particular concern. Others cited new turfgrass situations as problems if vehicular traffic is allowed. Most concerns were due to lack of knowledge of types of devices that would be taken onto the greens surface. The lack of substantial research related to turfgrass impact of specially designed devices in comparison to mowing and other course maintenance equipment, as well as comparisons to damage done by the human footprint, spikes, and pull carts mitigates against substantiating or refuting these concerns. Frequency of wheeled devices on greens is also a major factor that operators (and research) have not considered.

Golf course operators were also concerned about the financial impact of making accommodations and golf course features accessible. Knowledge of accessibility requirements to the golf course was minimal. In fact, most golf course operators had heard of the Americans with Disabilities Act, but they had almost no knowledge of its requirements or associated costs. Most had never considered access to the parking lot (other than a few designated spaces), bag drop area, golf shop, half-way houses, snack bars, or on-course restroom facilities and shelters.

Other concerns expressed by golf course operators to a lesser extent included:

1. abuse of flagging policies
2. other players' (particularly members) reactions to golfers with disabilities (pace of play, wheeled devices on tees and greens)
3. allowing golfers with disabilities to take their own "devices and carts" on the course when policy prohibits others to do so

4. golfers' with disabilities level of knowledge of golf etiquette, e.g. where is it appropriate to take the golf cart
5. liability, e.g. for personal carts; single rider cars or simply concerns about people with disabilities getting injured on the golf course
6. afraid of law suits – not knowing what to do

All of these concerns were obviously legitimate ones. However, the overriding problem was a lack of understanding of accessibility law and of people with disabilities on the part of golf course owners and operators. The assumptions that were central to most of the concerns cited above were based on stereotypes, lack of information, and on unfounded speculation.

It is interesting to note that the most frequently cited concerns of golf course operators towards golfers with disabilities correspond very closely to the observations about golf operator concerns as reported in interviews of both golfers with disabilities and organizations that provide instruction and other services to golfers with disabilities as reported later in this report.

E. Needs

Education was expressed by the majority of those interviewed [and supported by returned mailed surveys] as the greatest need for golf course personnel relative to issues regarding golfers with disabilities. Education about people with disabilities; education about how they play golf; education about technology that is available; and education to assist golf course personnel in gaining an accurate perception of people with disabilities were clearly the areas that golf course personnel lack knowledge and information. In addition, there appeared to be a need and interest in receiving educational information that can be passed along to other [non-disabled] golfers to assist them in understanding the need for the golf course to provide accommodations for golfers with disabilities. Several people indicated that they would be interested in receiving guidelines [to be modified for their particular situation] on how to effectively accommodate golfers with disabilities. They would also like to see more written in golf related trade journals on these subjects and to learn what other courses are doing to accommodate golfers with disabilities.

Another major interest and need expressed by those interviewed was the development of objective information and data on the areas expressed as

concerns. Specifically, research/data on pace of play and single rider golf cars and turfgrass damage by assistive mobility devices [including single rider cars] were of greatest interest and would assist golf course operators in developing appropriate policies.

Additional needs expressed by owners, operators, and golf professionals included in this study were:

- The USGA should certify specifications and conditions that will allow carts on greens
- Guidelines are needed on how to “qualify” golfers with disabilities, i.e. “how do we know if they really qualify as a disabled person under the law?”
- There is a need to develop a procedure that will allow golf courses to determine under what conditions assistive mobility devices should receive exemptions from existing policies
- There is a need to develop a procedure that will allow golf courses to determine under what conditions assistive mobility devices will damage greens.
- Suggestions are needed as to how to make the pro-shop more accessible
- Requests for guidance on the number of single rider carts that are required [or should be provided] at golf courses
- Information is needed on resources that are available: instruction, therapy, carts, etc.
- There is a need to provide educational seminars at PGA section meetings.
- The USGA should fund/support the development of regionally designated, accessible, friendly golf courses (equipment, instruction)
- There is a need to provide information on how to make the golf course accessible.

- Information is needed to market the single rider golf car as a device designed to keep pace of play.

3. Conclusions

The personal interviews of golf course owners, operators and personnel conducted in Florida, Utah, Missouri, and South Carolina, revealed very similar results and are most likely fairly representative of golf courses operations throughout the country. Coupled with results of returned written surveys, interviews with organizations that provide instruction and other services for people with disabilities as well as the interviews of golfers with disabilities, a fairly clear picture has emerged relative to the national status of people with disabilities in the game of golf.

The following summary conclusions focus only on the results obtained from golf course operators.

- ① Golf course operators had very few experiences with golfers with disabilities, particularly those requiring accommodations and/or who use mobility devices.
- ② Golf course operators were generally amenable to accommodating golfers with disabilities, but had insufficient information, knowledge, or resources to know how to do that.
- ③ Due to of a lack of exposure to golfers with disabilities, most operators had not given much thought to what might be required to effectively accommodate this population. It has essentially been a non-issue.
- ④ The lack of knowledge of disabilities/exposure to people with disabilities has created attitudes among a large portion of the golf community that are stereotypical, not founded on fact, and not grounded in reality.
- ⑤ There was little evidence that the golf industry is impacting and/or educating golf course personnel at the grassroots level relative to a potentially significant new golf market.
- ⑥ Golf course owners and operators didn't view golfers with disabilities as a new market.
- ⑦ Most concerns expressed by golf course operators were rooted in lack of information and based on potentially adverse economic impact that golfers with disabilities will have on their golf operation.

- ⑧ Golf course operators were very interested in receiving more information, materials, and training that will better prepare them to serve golfers with disabilities.
- ⑨ Golf course operators would like to see objective data on issues such as pace of play, turf grass damage and single rider carts.
- ⑩ Golf course operators were interested in the USGA or other organizations providing guidelines that would assist them in setting policies relative to single rider carts, mobility devices on greens, and pace of play.

4. Recommendations

Rather than providing volumes of documentation and manuals, golf course operators will be more likely to read and keep available, precise information pieces such as brochures, alerts, and other succinct technical assistance information. Therefore, a series of timely, easy to read and attractive information pieces that provide information golf courses can easily understand and use is recommended. The first series should include the following topical information:

- Basic information on disabilities and how to appropriately interact with people who have disabilities
- Suggestions on how to make disability friendly modifications for enhanced access to parking areas, bag drops and proshop and other club house facilities
- Tips on how to “set up the course” for greater playability for golfers with disabilities
- Listing (names, phone numbers, Internet sites, addresses) of vendors of accessible products such as single rider carts and other assistive devices

Education, education and more education is a must. Until the golf industry takes the leadership in providing educational opportunities and incentives for golf personnel to become educated about the issues reported herein, progress will be extremely slow and the likelihood of uncomfortable encounters, complaints and even litigation remains high. Education needs to take the form of:

- a) The PGA of America embracing this as an area worthy of inclusion in their PGA golf professional education preparation programs (GTP).

- b) Colleges and universities offering the Professional Golf Management Programs including issues related to golfers with disabilities in their curriculum.
- c) Golf Industry media and publications providing a focused opportunity for dissemination of pertinent information on a **regular** basis.
- d) Opportunities for golf professionals to learn how to instruct golfers with disabilities and golf professionals taking the initiative to start programs of instruction, similar to those for women and juniors.

Funding needs to be secured to answer the major questions that continue as the source of conjecture and speculation, but are not backed by data-based research. The major priorities for funding at this time include:

- a) build on the NCA pace of play study to continue to provide objective data on golfers with disabilities and pace of play
- b) build on the Rutgers University study¹³ on impact of mobility devices on turfgrass (greens). The key elements of this study need to focus on damage comparisons of specially designed mobility devices with:
 - 1) golf course maintenance equipment;
 - 2) with the human footprint;
 - 3) golf spikes;
 - 4) pull carts

Frequency of traffic must be considered integral to these studies.

- c) Single rider golf car effectiveness research-focused on safety; impact on pace of play; impact on golfer sociability; economic impact. This study needs to take on characteristics of a consumer product testing or underwriter laboratories study

Finally, there is a growing need for a golf *industry based* organization such as the USGA, PGA of America, National Golf Foundation, etc. to establish an office or division specifically devoted to promotion and education regarding golfers with disabilities. This office would provide a central information clearinghouse of products, resources, instruction, and other available technical assistance information for industry personnel. It is important that this be industry-based, as it has become evident in the course of this study, that organizations external to “the golf industry” are given little credibility and paid little attention to when it comes to these types of issues.

It is doubtful that until more golfers with disabilities begin showing up at our nation's public access golf courses, golf course personnel will become too concerned about issues involving golfers with disabilities. However, proactive measures can and should be taken and made available to our nation's 15,000 plus golf courses and other golf industry entities (e.g. practice facilities, equipment manufacturers, accessory vendors, etc.)

In its publication, "A Strategic Perspective on the Future of Golf" (1999), the National Golf Foundation failed to consider golfers with disabilities as part of the current or future golfing public or as a market target. In this 132 page report, golfers with disabilities were never mentioned.

During the 1999 Golf Course Superintendents Association of America Conference¹⁴ in Orlando, Florida, a panel of national golf organization leaders discussed the future of golf and the challenges facing the industry. Mr. Jim Ritts, then Commissioner of the LPGA, stated that there is a need to change the golf course culture. It is necessary to make it more friendly and inviting...particularly for new players. He further stated that new golfers don't know what to expect and that the golf course feels like a hostile environment. If that is true for golfers without disabilities, imagine how an individual with a disability must feel when going to the golf course for the **first time**.

SECTION II: Interviews with Organizations providing programs and/or instruction for golfers with disabilities

1. Introduction and Purpose

Telephone interviews were conducted during February, 1999 with eighteen organizations/individuals who conduct programs and/or provide instruction with golfers who have disabilities. A list of organizations and individuals providing these services was acquired through the courtesy of the Association of Disabled American Golfers (ADAG) in Denver, Colorado. Individuals and organizations selected to participate in the study were either known to the project director or were selected in consultation with the Executive Director of ADAG. Two screening questions were used to select participants. They were:

1. *Does your organization provide instruction/services for people with mobility impairments [use assistive mobility devices] relative to the game of golf?*
2. *Do you prepare golfers with disabilities to play golf on a regulation course, external to your programs?*

The purposes of these interviews were:

- To get representative national input on programs across the USA involved in getting individuals with disabilities into the game of golf.
- To determine the extent of available instruction and programming available for golfers with disabilities.
- To determine if instructional goals typically include encouraging people with disabilities to play golf independently on regulation golf courses.
- To provide a comparison of observations among golfers with disabilities; programs and organizations that serve golfers with disabilities; and the input received from golf course operators.

The questions asked were targeted specifically about golfers participating in their programs who:

- a) have the capability to play on a regulation golf course and
- b) have a mobility impairment requiring the need to use a personal assistive mobility device such as a cane, crutches, or wheelchair for mobility. These parameters were selected since, in many cases, these individuals may require some type of accommodation at the golf course in order to play.

The outline used for the telephone interviews is included in the Appendix of this report. The breakdown of interviewees by state and type of program/organization follows:

Profile of Organizations Interviewed: N=18

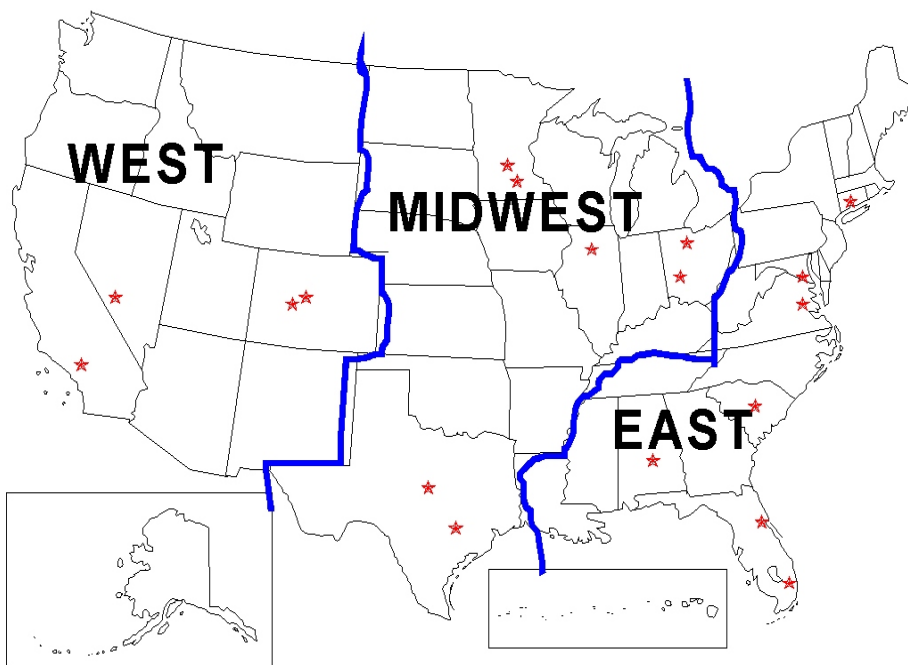
Rehabilitation-medical facility affiliated	5
Independent-private agency (or individual)	11
Public recreation agency	2
PG/LPGA golf professionals interviewed	7
Organizations with PGA/LPGA staff	10
Provide instruction only	8
Provide combination of instruction and competition	
Tournament opportunities	8
Provide or host competitions or tournaments only	2

Geographic Location:

West 4

MW 7 (one organization has affiliates in other states/regions)

E 7 (one organization has chapters in other states/regions)



2. Interview Data Summary-**Discussion**

A. Summary of organization (interviewees) characteristics

It was not the intent of this survey to locate and interview all organizations and/or individuals in the USA who were engaged in providing instruction and other services on golf with persons who have disabilities. Rather, a representative sample of “characteristic programs” was sought and achieved. As is shown in the information above, there are a wide range of organizations and individuals across the country that are introducing people with disabilities to the game of golf. However, it appears that in most cases, these programs or individuals are not singularly focused. That is, except in two of the programs that were included in the interviews, golf instruction or involvement with persons who have disabilities was not a full time effort. In most cases, it was a part of a larger program, or an activity done as a sideline to other full time employment obligations. Organizations interviewed had been in existence between 3 and 20 years, with an average of 7.9 years.

In most cases, those interviewed indicated that they instructed people with disabilities who would likely never have the ability (physically or medically related) to actually play a regulation golf course independently. Yet it was encouraging and somewhat surprising that many clients of those interviewed (and who met the criteria of the study) do play independently on regulation courses. Approximately 40% of the clients of all those interviewed play on regulation golf courses. When organizations who only host or sponsor competitions are included, the number goes to 50% who actually play. Many of the interviewees stated that they do not have funding or staff (including volunteers) to successfully engage all of those interested in learning about golf and that one of the biggest obstacles was that they could not devote full time to it.

B. Teaching learning techniques and process

In most cases, interviewees stated that they have a defined process of introducing and instructing people with disabilities into the game and that it includes:

1. assessment of functional ability; select equipment
2. teaching basics of grip and swing with necessary modifications
3. practicing various types of golf shots
4. emphasis on the importance of practice and learning the etiquette of the game prior to playing
5. a progression from using any area (indoors or outdoors); to the

6. practice facilities; to instructional outings; to a supervised par 3 experience; to the regulation golf course when appropriate

At least one organization is in the process of publishing a manual for instructing golfers with disabilities. Other information cited by interviewees as being important in the instructional process included:

1. The importance of emphasizing the selection of appropriate tees (distances) to play from, depending upon ability level
2. The importance of pace of play on the golf course
3. The importance of communicating with the golf course prior to arrival regarding any accommodations that might be requested

C. Experiences/observations regarding golfers with disabilities on the course

Interviewees were asked to provide information and examples of the good and perhaps not so good experiences that they had had with golf course staff when first taking clients to the golf courses; OR to provide input as to experiences that their "clients" had reported back to them on their personal experiences when going to the golf course. They were asked, based on those experiences, what their perceptions were relative to concerns that golf courses have regarding golfers with disabilities.

Most people interviewed indicated that prior to taking an individual or group to a course, they would speak with the Director of Golf or Head Golf Professional. Many indicated that initially, attitudes towards bringing golfers to the course or practice facility was mixed (some positive, some negative), but that generally after exposure, they were welcomed by golf course operators. Most stated that they appear to be watched closely by golf personnel. It was unclear if this was due to curiosity, concern, or a combination. Those interviewed who were golf professionals indicated that having that status appeared to be very helpful when introducing golf course personnel to programs serving golfers with disabilities. A few people interviewed indicated that they do not allow their students who use wheeled devices to take them onto the greens.

The following represents interviewees perceptions regarding concerns that golf course operators have about golfers with disabilities playing at their facility. They are in order (most > least) of frequency mentioned:

- Pace of Play
- Damage to course (greens, tees, fairways, bunkers)
- Wheeled devices on greens
- Lack of information/education

- Liability
- Fear of the unknown
- People with disabilities having proper equipment to play (e.g. turf friendly wheeled devices)
- Education of the public-other golfers regarding golfers with disabilities

Interviewees strongly confirmed the observations/results of other interviews (golf course operators and golfers with disabilities) that most of the concerns cited were based on stereotypes and lack of exposure to golfers with disabilities.

D. Status and concerns of golfers with disabilities

As stated in Section 1 of this report, the personal interviews with owners and operators of golf courses in Florida, South Carolina, Missouri, and Utah revealed that very few golf course operators had had experiences with golfers requiring the use of assistive mobility devices to play. The following questions were then posed to organizations who are in the business of teaching golf and promoting it to golfers with disabilities:

In your opinion, why are there not more golfers with mobility impairments playing golf?

What are the major "barriers" to golfers with disabilities playing the game?

The results of these two questions were combined to provide the following results, which are listed in order of frequency (most > least)

- People with disabilities don't think that they can play. They are not familiar with golf or the opportunities that it provides.
- People with disabilities are intimidated by the golf course and golf personnel, they don't know if they will be allowed to play.
- Lack of confidence in their abilities.
- No exposure to the game.
- Lack of instruction available.
- Golf staff attitudes, ignorance, need for education.
- Attitudes of the general public towards them, including other non-disabled golfers
- Specialized equipment not available.
- Instructors don't go to the course with them after teaching them to play.

- Courses not built for them.
- More therapists are needed to promote golf with their clients.
- People with disabilities worry about offending people.
- Golfers with disabilities are not learning about etiquette, pace of play, etc.
- It is a hassle just getting to the course (transportation, logistics).
- There just are not a large number of individuals in this category (mobility impaired).

A review of the above comments suggests that there are both internal (personal) and external (societal) barriers that are limiting people with disabilities in getting into the game. The personal barriers are largely based on both a lack of information about the game, and what is available to people with disabilities, as well as concerns about their own abilities and how they would be accepted into a game that has had a past aura of elitism.

The perceived societal barriers are very similar to the real life experiences encountered by people with disabilities in other life activities. They include attitudinal barriers, physical barriers, and lack of perceived opportunity, all factors that continue to make it difficult for individuals with disabilities to be fully included in our society.

Suggestions to enhance the status of golfers with disabilities:

Those interviewed were asked what they felt would be the most useful information for golf course operations to have to enhance the inclusion of golfers with disabilities into the game. Again, the summary of the responses are included below in order of frequency:

- Education of golf course staff on becoming sensitized to people with disabilities and on the general characteristics of disability
- More information on equipment and resources available (e.g. single rider golf cars): Research – specifications – policies – required numbers – procedures for renting – effect on sociability
- More consistent policies related to golfers with disabilities across the country- e.g.can's and cant's; on course policies regarding mobility devices; flagging policies; reduced yardage on course
- How to make accessibility improvements to club house, pro shop, and golf course

- Information on what others are doing to accommodate golfers with disabilities
- View it as a new market to bring others into the game (including family and friends of golfers with disabilities)
- Information on what IS ACCEPTABLE equipment for golfers with disabilities

E. Conclusions

The telephone interviews of representative organizations providing instruction and other services (e.g. tournaments, outings, etc.) to golfers with disabilities revealed a number of interesting facts that can be boiled down to a few conclusions. Coupled with results of interviews with golf course operators as well as the interviews of golfers with disabilities, a fairly clear picture has emerged relative to the national status of people with disabilities in the game of golf.

The following conclusions relate only to the interviews with organizations who provide services to golfers with disabilities:

- Programs providing instruction for golfers with disabilities are growing.
- Instructional programs are both rehabilitation and medical facility based as well as based without organizational affiliation.
- Most programs that are not medically based are being conducted by PGA and/or LPGA golf professionals.
- Most programs include individuals with disabilities that have the physical ability to play golf on a regulation golf course.
- Most instructional programs are not conducted on a full time basis and there are not enough programs to provide an introduction into the game for people with disabilities.
- Most organizations providing instruction and other services for golfers with disabilities believe that in general, people with disabilities are apprehensive, intimidated by golf courses, and lack information about the potential of the game of golf in their lives.

- Most organizations providing instruction for golfers with disabilities feel that the greatest concerns of golf course operators relative to golfers with disabilities is pace of play and damage to the golf course by wheeled devices.
- Most organizations feel more has to be done to test and demonstrate the effectiveness of adaptive golf equipment, especially single rider golf cars.
- There is little if any sharing and/or coordination of instructional programs for golfers with disabilities throughout the country. There is no national information source for information to assist people with disabilities to know who and what is available.

F. Recommendations

A national clearinghouse of information is required to provide people with disabilities information as to where they can receive instruction or other services on golf specifically designed to meet their unique needs. A conference should be funded to gather organizations currently involved or planning involvement in the instruction of golfers with disabilities . The purpose of the conference should be to:

- a) share information
- b) develop a national strategy (or create a membership alliance organization)
- c) publish a proceedings

An Internet site should be funded, developed and maintained exclusively as an information resource for listings of available instruction and resources nationally.

A site assessment informational tool (golf course rating system) needs to be created to promote increased accessibility to the golf course and other site amenities. Training should be provided to golfers with disabilities to conduct assessments in their local area (voluntary basis with approval and on request of the golf course.)

SECTION III: Interviews with Golfers with disabilities

Introduction and Purpose

Telephone interviews were conducted during March, 1999 with 17 individuals who are disabled and who actively play the game of golf on regulation golf courses. Names were obtained through the courtesy of the Association of Disabled American Golfers (ADAG) in Denver, Colorado. Individuals and organizations selected to participate in the study were either known to the Project Director or were selected in consultation with the Executive Director of ADAG. Two screening questions were used to select participants. They were:

- 1. Do you play golf independently on a regulation golf course?
and*
- 2. Do you use any type of a device to play golf (wheelchair,
crutches, single rider cart, etc.)?*

The purposes of these interviews were:

- To get representative national input on the experiences that golfers with disabilities have had when going to public access golf courses
- To get feedback from those who use mobility devices as to any concerns or issues that they feel should be addressed, and
- To provide a comparison of observations among golfers with disabilities; programs, and organizations that serve golfers with disabilities and the input received from golf course operators.

The questions asked were targeted specifically around their experiences and opinions regarding golf course accessibility and policies, as well as opinions as to the status of people with disabilities getting into the game of golf. The outline used for the telephone interviews is included in the Appendix of this report.

The following graphic and tables provide a breakdown of interviewees by state and personal characteristics.



Survey participants Characteristics:

Disability:

Paraplegia	11
Post Polio	3
Muscular disease	2
Amputee	1

Assistive device(s) used to play golf:

Single rider golf car	7
Crutches	4
Scooter	3
Manual wheel chair	2 (modified tires and casters)
Other powered device	1

Golf handicap:

USGA index (7)	Range- 0-36.9 ^a
^a Estimated Average 18 hole score (10 responses)	Range- mid 80's to 100 ^b

^a One respondent was a Class A PGA golf professional

% who played golf prior to disability	88%
Mean # years playing since disability years-25 years	8.5 years Range: 3.5
Average number of golf rounds per week	2.1 rounds Range: .5 – 4

1. Interview Data Summary-**Discussion**

A. Summary of survey participant characteristics

One of the major purposes of interviewing golfers with mobility impairments was to compare their perceptions of their golfing experiences to those observations reported by golf course owners and operators and by organizations/individuals providing golf instruction or other services for golfers with disabilities. Therefore, the selection criteria for golfers having disabilities was fairly precise relative to type of disability [i.e. mobility impairment, use of assistive device(s)] and their status as an individual who actively participates in the game of golf. The characteristics of golfers who participated in the survey, would qualify them to be considered as “committed golfers” using the National Golf Foundation’s definitions¹⁵

B. Accommodations requested/needed

In addition to the information provided above, survey participants were asked if they required/requested an “accommodation” to play the game. All of the respondents used their own mobility device (i.e. not golf course owned) to play the game. In addition, 50% indicated that they call ahead to inform or request an accommodation. In some cases, “call-aheads” were necessary only on golf courses where the golfer had not previously played. The purpose of these calls was to give and receive information that would make the golf experience positive for all. Types of information requested included questions about golf course cart policies (cart path only, 90 degree rule, etc.), flagging policies, and use of their personal devices on the golf course. Two golfers indicated that they required no accommodation (crutch and prostheses users).

C. Personal experiences with golf course personnel

Many respondents (38%) felt that their experiences at golf courses were more positive now than in years past. In most cases this was due to their returning to the same course, and therefore there was less of a need to discuss their accommodation needs with course personnel.

^b Those without a USGA handicap index gave a range of estimated 18 hole scores. Two respondents indicated that they generally play only 9 holes at a time.

About 50% of those interviewed indicated that they feel that they are still watched closely by golf course staff, and that other golfers remain very curious and uninformed about golfers with disabilities. Almost all (92%) made comments that could be construed as still having negative experiences or at least experiences that are largely dissimilar to golfers without disabilities. These include [paraphrased]:

- “...bad attitudes of golf course staff”
- “...watch me like a hawk”
- “...edict from the Director of Golf is “NO CARTS ON GREENS”
- “...continue to be denied access to all of the golf course”
- “...problem with charging me a trail fee for the use of my device”
- “...always have to prove no damage to course”
- “...creates a loss of self esteem”
- “...harassment from the ranger”

D. Golf Course concerns about golfers with disabilities

As with the interviews of golf and organizational personnel, golfers with disabilities were asked if, from their experiences, golf course personnel have concerns regarding people with disabilities playing on their course. Just as in the other sets of interviews, the most frequent responses were that a) golf course operators/decision makers are mostly concerned about damage to greens (77%). This was followed closely by concerns around pace of play (62%). Many (38%) also mentioned that they felt golf course operators were concerned about liability issues. Most frequently mentioned were concerns about bringing personal golf carts onto the course and about hurting themselves. Other concerns cited included:

- fear of law suits
- anticipation of problems from the beginning, e.g. slow play
- just plain SHOCK and fear when seeing a golfer with disability
- costs to make accessibility accommodations
- concerns about how many people with disabilities will show up to play

E. Perception of needs

Golfers with disabilities were asked about their perception regarding information that they felt might be useful/helpful for golf course owners, operators, and other staff to have regarding golfers with disabilities. The overwhelming response was that education is most needed throughout. The specific responses in order of highest frequency mentioned included:

- education *about* people with disabilities

- instructional programs/clinics to teach golf course staff how to interact with and instruct golfers with disabilities
- education about disability law and golf course responsibility under the law
- a primer on the ADA
- education to alleviate golf course staff' fears of golfers with disabilities; and education for non-disabled golfers about golfers with disabilities

Other suggestions related to education included information that would provide golf course personnel with the understanding that people with disabilities *CAN* play and are knowledgeable about golf, and that they need to realize that the frequency of play by golfers with disabilities will not be great.

Those surveys also indicated that golf courses need [frequency of responses in ()]:

- A. to provide single rider golf carts at the course (38%)
 - B. research data (objective information) on damage to golf courses by assistive devices (38%)
 - C. to eliminate the physical barriers on the course and amenities such as the pro shop (23%)
 - D. more media attention to publicize golfers with disabilities as a viable market (23%)
 - E. to provide other adaptive equipment such as clubs, or need to know where to get them
- F. Barriers that prohibit or create obstacles for people with mobility impairments to play golf

Golfers with disabilities identified a number of physical and/or policy barriers that make it either physically difficult or create psychological barriers to golfers. Those most frequently mentioned were:

- a. The bag drop is too far from the club house or pro shop
- b. Policies restricting golf cars from going into the parking lot
- c. Not providing needed assistance
- d. Courses not allowing golfers with disabilities to keep their personal carts at the course
- e. Ignorance of golf course operators relative to the needs of golfers with disabilities
- f. Not allowing an assistive device on the green—decision pre-determined and not based on any facts

g. Reasons why more people with disabilities don't play the game

Over the course of this study, it became very apparent that few golf course operators had experiences with golfers with mobility impairments or with golfers who might require some type of accommodation to play the game. As this study developed, this appeared to be a critical question and therefore was asked both of study participants representing organizations providing golf instruction, as well as golfers with disabilities.

Golfers with disabilities expressed a number of reasons why they felt that more people with disabilities are not playing the game. These results along with those of the other two surveys have some interesting and important ramifications for all who are interested in this issue as well as for the golf course industry as a whole. These implications will be discussed later in this report.

The following responses are in order of frequency ():

- Sixty nine percent (69%) of the respondents indicated that golf is simply not an activity that has been marketed to people with disability. The majority of people with disabilities simply have never been exposed to the game as a possible personal leisure activity for themselves.
- Respondents (46%) felt that people with disabilities don't believe that golf is a game that they can physically participate in. They don't know that the technology is available for them to do so.
- People with disabilities do not feel welcomed on the golf course (46%).
- There simply are not enough people with disabilities out there with the physical capability to play golf (31%).

Other comments receiving multiple responses included (paraphrased):

...“lack of accommodation by golf courses, e.g. bag drop location, being able to take cart to parking lot, etc.”

...“equipment is expensive (especially single rider cars)”

...“physical barriers on the course (e.g. terrain, restrooms)”

...“people fearful (personal safety)”

...“lack self-esteem”

Comments mentioned at least once included:

people with disabilities don't believe they can keep up with pace of play;
lack of equipment;
they view the game as elitist;
they are scared of technology;
rehabilitation programs are not introducing their clients to the game of golf

H. Conclusions

The interviews of golfers with mobility impairments revealed many of the same results as did interviews with golf course operators and interviews with organizations providing instruction and other services for golfers with disabilities. Combined, the results taken from all study participants provide a fairly clear picture relative to the national status of people with disabilities in the game of golf.

The following conclusions relate only to the interviews with golfers who have mobility impairments.

- Golfers with disabilities continue to feel that they have to “justify and defend” their right to play when going to golf courses, particularly when they go to a course that they have not played before.
- There was almost unanimous consensus among golfers with disabilities that the major need is more education for golf course staff regarding disabilities.
- The lack of people with disabilities actually going to golf courses to play is a major reason why there are still substantial concerns about them on the part of golf course personnel.
- The lack of inclusion of “golf” as a part of the rehabilitation program is a major reason why so few people with disabilities play golf.
- The lack of available information on assistive technology that enables golfers with mobility impairments to play the game is a factor in people with disabilities feeling that golf is “out of their reach.”

- Golf course policies and accessibility issues create barriers to participation that discourage people with disabilities from playing the game. These factors make golfers with disabilities feel unwelcome.

I. Recommendations

If the number of golfers with disabilities is to increase, information and education about the game to the potential market is essential. The following strategies would be useful in developing a greater awareness and understanding of the potentials of golf for people with disabilities.

Create a greater awareness of golf as a viable activity for people with disabilities via mailings to all rehabilitation centers and Veterans Administration hospitals in the United States

Conduct an “instructional tour” for the above to introduce the game to people with disabilities. Funding to establish this tour would be required to send accomplished golfers with disabilities to regional locations to demonstrate and inform rehabilitation professionals and prospective players about the benefits of the game. Included would be skills demonstrations, presentations on assistive technology, and education about the etiquette of the game

Develop a promotional program to assist junior golf programs around the country market to and include juniors with disabilities in their programs

Collect and disseminate case examples of experiences that golfers with disabilities have had on golf courses, and how potential confrontational situations with golf course personnel have been successfully resolved

SECTION IV: Comparative summary among all surveys

During the period of December, 1998 and April, 1999, the National Center on Accessibility conducted survey research to determine the status of people with disabilities participating in the game of golf. The primary target for the research was public access golf courses (daily fee, municipal). Both written surveys and personal interviews of golf course operators and owners were conducted. In addition, and primarily in order to compare the information that had been collected from golf courses, telephone interviews were conducted with both golfers with disabilities and with organizations who provide instruction and other programs for golfers with disabilities.

The information collected from the telephone interviews (golfers with disabilities and with the organizations that provide instruction and other services for golfers with disabilities) were compared with the information collected from both mailed surveys and personal interviews with golf course operators and owners. The responses of the two different groups of telephone interviews were also cross analyzed.

Following is the summary of two major data comparisons:

1. Information from telephone interviews with golfers with disabilities and the organizations that provide instruction and other services for golfers with disabilities.
2. The combined information from 1 above with the results of interviews and surveys of golf course owners and operators.

Comparative Data: Golfers with disabilities and Organizations serving golfers with disabilities

In analyzing the results of the telephone interviews conducted with these two groups, it was apparent that:

- a) organizations providing services for golfers with disabilities were more interested in issues directed more at golfers with disabilities and organizational goals
- b) golfers with disabilities focused the large majority of their concerns/issues directly at the golf course

Organizational representatives generally believed that golfers with disabilities are apprehensive and intimidated by golf courses. They lacked information about the

potential of the game of golf for them. On the other hand, golfers with disabilities focused on the continuing need to have to justify and defend their right to play to golf course operators. Organizations that provide instruction and other services to golfers with disabilities generally felt that more has to be done to test and demonstrate the effectiveness of adaptive equipment, especially single rider cars in order to get the golf course to buy into golfers with disabilities playing on their course. They believed that the greatest concern of golf course operators was on the pace of play of golfers with disabilities, and closely followed by potential damage to the golf course by wheeled devices. Golfers with disabilities generally had a little different perspective on the issue of “convincing golf course operators”. Their overwhelming response was that the golf course staff needs education on disability and related issues. Golfers were more concerned about getting information on adaptive equipment and single rider carts to golfers with disabilities as opposed to the golf course operator. Golfers with disabilities felt that one reason for the small number of golfers with disabilities was that rehabilitation programs do not include golf as a part of their reintegration programs and therefore people with disabilities were unaware of assistive devices that were available that would enable them to play the game. Unlike the organizational responses, golfers with disabilities felt that the lack of golfers with disabilities was the biggest reason that golf course personnel had concerns—they just had not had contact and fear the unknown.

Several themes were rather consistent in the responses from the two groups (golfers and organizations) responding to the telephone interviews:

1. Nationally, people with mobility impairments were not being systematically exposed to the game of golf, the technology that was available and the instruction that was available to learn the game.
2. People with disabilities were generally wary and intimidated by golf courses and golf course staff. Instructional programs were not sufficiently developed nor were there enough programs to adequately expose both the potential golfer and the golf course staff to each other.
3. Golf course operators and owners have had little exposure to golfers with disabilities and were lacking needed education and information on who they were (golfers with disabilities), how they played, and what their obligations and rights were.
4. Golf course owners and operators were largely unaware of the requirements for golf course accessibility. They did not have policies in place for golfers with disabilities.

Comparative Data: Golfers with disabilities-Organizations serving golfers with disabilities with golf course operators-owners

The primary focus of this study was to determine if and how golf courses were accommodating golfers with disabilities and to learn about their experiences and concerns. While more interviews were conducted with golf course operators and owners (43), the interviews with organizations and golfers with disabilities were designed to determine if there are common successess, issues and concerns among all groups. The following summarizes both common themes as well as perceived differences, between the interviews with golf course operators/owners and the combined results of the organization and golfer interviews.

The most common theme among all three groups had to do with the need for education of golf course personnel to better understand and prepare to accommodate golfers with disabilities. Literally all individuals interviewed in the study indicated that owners/operators indicated that they needed more education and information.

In large measure, golf course owners indicated that they did not know much about golfers with disabilities because they had had little experience with them. Interviewees from organizations serving golfers with disabilities and the golfers themselves indicated that golf course owners/operators just weren't interested and hadn't taken the time to become knowledgeable about accommodating golfers with disabilities.

Golfers with disabilities indicated that they had seen improvement in the last few years in acceptance at golf courses, but for the most part that acceptance was tied to familiarity, i.e. it was much higher among golf courses that they had played before. On the other hand, interviews with golf course owners and operators who had never had a golfer with a mobility impairment at their course, revealed that they were willing to accommodate them and would welcome them to their course.

Not surprisingly, golf course owners/operators listed their biggest concerns as pace of play and damage to the course by wheeled devices. Since almost none of the people interviewed had ever seen a golfer using a wheeled device, their concerns were obviously based on perception and lack of knowledge regarding new technologies. Interviewees from organizations that provide instruction and other services to golfers with disabilities were almost identical to those of the owners/operators. Over half of those interviewed (organizations) were PGA or LPGA members. On the other hand, golfers with disabilities felt that golf course personnel anticipated problems such as slow play and course damage, without

any past experience to base their concerns. Recognizing that golf course operators were concerned about course damage, golfers with disabilities were more interested in getting objective [research] data on damage to courses by wheeled devices.

Operators and owners generally had some type of policy in place for accommodating golfers with limited mobility (knee and hip replacements most notably). In most cases they provided flags for the golf car to signify to others that it was allowed to go in areas where other carts were prohibited. There was considerable concern about the abuse of flagging policies, i.e. flags being requested by golfers who really didn't need them. Golfers with disabilities felt that the biggest issue here was that golf courses were more concerned about how many people with disabilities would show up to play.

SECTION V: Major combined recommendations from all study participants

1. Major golf organizations (PGA, LPGA, USGA, NGF, GCOAA, GCSAA) that provide education of industry wide personnel should undertake a **major** initiative to include integral components regarding golfers with disabilities in their educational programs. These initiatives must include more than educational sessions at industry related conferences, conventions and seminars. They should be integrated into certification, instruction and continuing education programs. These should include apprentice programs, university based programs, junior golf programs, and other industry based development programs.
2. Golf media (print, electronic and visual) should commit to consistent coverage of issues and facts about golfers with disabilities. They should cease or at least limit publishing “feel good” stories that sensationalize the accomplishments of golfers with disabilities beyond what they would publish about golfers without disabilities. These types of stories only tend to perpetuate stereotypes.
3. Educational materials that focus on customer service related to golfers with disabilities should be produced and made available to all golf facilities in the USA. These materials should focus on specific ways to effectively accommodate golfers with disabilities, such as how to set up the course for easier playability; how to eliminate physical barriers on the course and in and around the practice and built facilities; case studies of how other golf courses have and are successfully including golfers with disabilities; and instructional tips and information as to how to locate resources such as single rider golf cars and equipment.
4. Definitive research should be funded on pace of play; impact of wheeled and other mobility devices on the course, single rider golf cars, effective instructional techniques, equipment effectiveness, and product testing. To be effective, this research should be conducted by an independent agency which is not a stakeholder in the outcomes, but should be done so in consultation with entities that are stakeholders.
5. A site assessment tool should be developed that would provide golf course and facility managers with the ability to conduct physical assessments of their properties to insure compliance with accessibility legislation.

6. A major information and marketing campaign should be developed and focused nationally on getting people with disabilities interested in golf. This campaign should be a combined effort of the USGA and major rehabilitation organizations in the USA, such as the Paralyzed Veterans of America; U.S. Department of Veterans Affairs; major children's hospitals and rehabilitation centers such as St. Jude Children's Research Hospital and major rehabilitation centers such as the Sheppard Center and Craig Hospital.

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