

LOWE, CAROL LORAIN COPE, D.M.A. Norman Herzberg: An Icon of Bassoon Pedagogy. (2008)
Directed by Dr. Michael J. Burns. 137 pp.

Between 1970 and 2005 former students of Norman Herzberg held a majority of the bassoon positions in major orchestras throughout the United States. Herzberg's varied musical background, education, and work environment influenced the development of an individual approach to teaching the bassoon. His career was examined in order to discover any especially influential events and surroundings. His approach to teaching, his ideas regarding the music curriculum, and his views on reed styles, reed-making, and repertoire were explored in detail.

Herzberg's nearly 40 years of teaching at the University of Southern California produced a large number of excellent bassoon performers and teachers. His students comprise many of today's best-known bassoonists, employed as faculty members at respected music schools, and as members of elite performing organizations. Additionally, his performing career spanned nearly six decades playing as principal bassoon in major symphonies and the Los Angeles Chamber Orchestra, in hundreds of movies, television shows, and cartoons. His contributions to both bassoon pedagogy and performance have been enormous.

This study provides a resource for bassoon teachers and performers, enhancing the potential musical development and overall education of current and future bassoon students. This study will have application for music educators regardless of instrument.

NORMAN HERZBERG: AN ICON OF BASSOON PEDAGOGY

by

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A Dissertation Submitted to
The Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Musical Arts

Greensboro
2008

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ACKNOWLEDGEMENTS

This project would not have been possible without the generous help of many people. Primarily I must thank the Herzberg family; Norman, his wife Leah, and his children Steve, Gary, and Morna, for their support of this project. Mr. Herzberg graciously agreed to share his life story, thoughts, and philosophy with me during several interview sessions even though we had not previously met and I had no connection with any of his former students. A special note of thanks goes to Leah for her assistance in arranging our interviews in January 2007, for being such a warm and generous hostess during my week in California, and for allowing me to spend time with Norman when his health was so poor.

Herzberg students across the United States have provided a wealth of information regarding Herzberg's various exercises and reed-making techniques. I could not have gained this information without their help. They have been wonderful about answering my numerous emails with questions about those same exercises and techniques. Special thanks go to Hugh Michie and Arlen Fast. Hugh provided written descriptions of Herzberg's scale, interval, and long tone exercises; proofread the musical examples I created to illustrate the exercises, and sent me scans of the Paul Pierne etudes from the out-of-print *Nouvelle Technique de Basson*. Arlen sent detailed diagrams of a Herzberg reed, information on Herzberg's one-note and three-note exercises, and provided invaluable information on the various aspects of Herzberg's reed-making techniques. I would like to thank Scott Walzel for allowing me to interview him at the 2007 IDRS conference and for providing such detailed answers to Herzberg's 1987 Seminar Exam. I

am also grateful for the time and effort given by Kristen Marks Sonneborn, Duncan Massey, Roger Nye, Hugh Michie, Arlen Fast, Kathleen Reynolds, David Sogg, and Daniel Lipori in answering my questionnaire and helping me understand every aspect of Herzberg's teaching and his undying support for his students. I wish to thank Yoshiyuki Ishikawa for granting my interview request at the 2006 conference in Muncie, IN, and for the great deal of time he spent searching the archive of the IDRS list-serve to provide me with copies of Herzberg's many emails.¹

I would also like to express my sincere thanks to my committee chair, Dr. Michael J. Burns, and the rest of my committee, Dr. Donald Hodges, Dr. Kelly J. Burke, and Dr. Steven Stusek, for their support, patience, advice, and hours of proofreading. I thank my parents for supporting me in every endeavor and for giving me the confidence to take on any challenge. Finally, I thank my wonderful husband for his tireless support, love and understanding during this entire process.

¹ Yoshiyuki Ishikawa, bassoon professor at the University of Colorado – Boulder, is a former president of the International Double Reed Society and creator of the IDRS website.

PREFACE

INTRODUCTION

Bassoonist, Norman Herzberg (1916-2007), directly influenced a significant number of the professional bassoonists currently active in the United States today. During his thirty-seven years of teaching at the University of Southern California and twenty summers of teaching at the Music Academy of the West (Santa Barbara, California), Herzberg worked with dozens of students. At present count, thirty-one of his former students hold positions in major orchestras around the world.² This study included consultation with primary sources (Herzberg, his family, and his students) and secondary sources (Herzberg's colleagues and peers) in order to establish the basis for the astounding success of his students.

While Herzberg will be most remembered for his legacy of successful teaching, he also had a successful and diverse performance career. He spent many seasons as principal bassoon with the St. Louis Symphony before moving back to California where he recorded film, cartoon, and television music for Warner Brothers Studios. He was one of the founding members of the Los Angeles Chamber Orchestra and he performed under the baton of famed maestro Bruno Walter in a series of historic recordings on the Columbia label.³

² Norman Herzberg, interview by Yoshiyuki Ishikawa, April 28, 2002, Boulder, CO, *Memoirs: Teaching*. <http://www.idrs.org/Interviews/Herzberg/Herzberg.html> (accessed 20 April 2006), QuickTime movie.

³ Ronald Klimko, "I. D. R. S. Welcomes Four New Honorary Members," *The Double Reed* 16/3 (1993). <http://www.idrs.org/publications/DR/DR16.3/DR16.3.New.Honorary.html> (accessed February 10, 2008).

Herzberg's influence stemmed from his success as a highly talented performer as well as his brilliance as a pedagogue. His extensive background in orchestral performance and studio recording played a key role in developing his teaching curriculum. Any problem of execution during performance had to be solved immediately and learning how to solve his own problems with rapid efficiency became the foundation for the methods Herzberg employed to solve his students' problems.⁴ This study will present these methods in an effort to inform current and future musicians and educators. Figure 1 provides an overview of Herzberg's career.⁵

Figure 1. Overview of Career

DATES	EMPLOYER	POSITION
1939-1940	St. Louis Symphony	Second Bassoon
1940-1942	St. Louis Symphony	Principal Bassoon
1942-1945	Army Band, Connecticut	Principal Bassoon
1945-1946	freelance musician, NYC	Broadway shows
1946-1953	St. Louis Symphony	Principal Bassoon
1953-1954	freelance musician, LA	community orchestras
1968-1976	Los Angeles Chamber Orchestra	Principal Bassoon
1954- ca.1991	Warner Brothers Studios	Principal Bassoon
1953-1991	University of Southern California	Bassoon Professor

Purpose

This study began with a quest to determine the most successful trainer of orchestral bassoonists. My research revealed that the leading teacher was Herzberg with

⁴ Norman Herzberg, Norman Herzberg, interview by author, January 11, 2007, Encino, CA, interview 1, (recording and transcript, author's personal archive, Potsdam, NY).

⁵ Herzberg, interview 1.

thirty-one students currently performing in major orchestras.⁶ Herzberg's education, career, and various influences were investigated. The intent of this study is to provide a resource for bassoon teachers and performers, and to enhance the potential musical development and overall education of current and future bassoon students. It is hoped this study will have application for music educators regardless of instrument.

Research Questions

After Herzberg was selected to be the subject of this study, the following questions guided additional research:

1. Who were Herzberg's teachers?
2. What was his curriculum and how was it developed and instituted?
3. How did he structure lessons?
4. Did his career as a performer inform his teaching?
5. What was unique about Herzberg's teaching philosophy and/or methods?
6. What exercises and philosophy did Herzberg develop to facilitate successful bassoon teaching and performance?
7. What procedures did he utilize in teaching the concepts of tone, vibrato, articulation, intonation, finger technique (specifically flicking and half-hole), range, and musicianship?
8. What elements most directly influenced the success of Herzberg's students?
9. How have these teaching techniques influenced modern bassoon pedagogy?

⁶ This number was determined by researching personnel lists of major and regional orchestras in the United States from the 1970s to the present. It was possible to determine major teachers for 233 of the 304 bassoonists in the database created from these personnel lists. Although Sol Schoenbach was a close second with 30 students in the database, many of them are well-known teachers rather than orchestral musicians. Leonard Sharrow had 23 students currently performing, Stephen Maxym had 19, and Bernard Garfield had 19. Other prominent teachers included Harold Goltzer, George Goslee, K. David van Hoesen, Sherman Walt, and Hugh Cooper.

One method of research employed was distribution of a questionnaire to former Herzberg students. A copy of the questionnaire is included as Appendix B.

Summary

William Waterhouse's article, "Bassoon Performers and Teachers" includes a list of notable performers and teachers of our time.⁷ The list includes only two bassoonists from the USA, Norman Herzberg and Stephen Maxym.⁸ Norman Herzberg's nearly 40 years of teaching at the University of Southern California produced a large number of excellent bassoonists, both performers and teachers. His students comprise many of today's best known bassoonists, who are employed as faculty members at respected music schools, and are members of elite performing organizations in the United States.⁹ Additionally, his bassoon playing in hundreds of movies, television shows, and cartoons contributed to the constantly rising standard of bassoon playing in the United States. From principal bassoon of the St. Louis Symphony in the 1930s and 40s, to recordings with Bruno Walter and the Columbia Symphony, to principal bassoon in the Los Angeles Chamber Orchestra, to Los Angeles studio musician, his career spanned nearly six decades and his contributions to both bassoon pedagogy and performance have been enormous.¹⁰ His varied musical background, education, and work environment

⁷ William Waterhouse, "Bassoon, §8: Performers and teachers," Grove Music, ed. L. Macy (Accessed 11 August 2007), <http://www.grovemusic.com/shared/views/article.html>

⁸ Waterhouse, "Bassoon."

⁹ See Appendix A for a list of his most prominent students and their positions[0] of employment.

¹⁰ IDRS Who's Who, The Double Reed 21/2 (1998).

influenced the development of his individual approach to teaching the bassoon as well as many aspects of bassoon playing. His career was examined in order to discover any especially influential events and surroundings. His approach to teaching, his ideas regarding the music curriculum, and his views on reed styles, reed-making, and repertoire were explored in detail.

My one and only visit with Mr. Herzberg came in January of 2007. I emailed him in September of 2006 and requested an interview session for research on my dissertation. He happily granted my request and we set a date for after Christmas holidays during my winter break. Norman and his wife Leah were gracious hosts during my visit. I arrived in Encino on the evening of January 10. Norman and I spent two sessions each on the 11th, 12th, and 13th, one session on the 14th and one session on the 16th. The sessions were held in his home. I was privileged to see the prototype of his first reed profiler as well as several other machines made in the process of refining his system. We spent two sessions in Herzberg's reed room, an awe-inspiring place filled with boxes of cane dating back as early as the 1930s.

Bassoonists who studied with Mr. Herzberg know how fortunate they are. Most of us only knew him through his honorary membership in the *International Double Reed Society*, his postings to the IDRS list-serve, occasional classes and seminars at music programs including the Grand Teton Music Festival (Jackson Hole, Wyoming), Domaine Forget Music Academy (Quebec, Canada), and the Towson Bassoon Symposium

(Towson, Maryland).¹¹ His students carry on the legacy through their expert teaching and performances of the highest caliber. It is my hope that this volume will bring a deeper understanding of this great pedagogue to those he never knew.

¹¹ Herzberg, interview 1.

TABLE OF CONTENTS

	Page
LIST OF FIGURES	xiii
LIST OF MUSICAL EXAMPLES	xiv
CHAPTER	
I. LIFE AND CAREER	1
II. PEDAGOGICAL PHILOSOPHY	13
Audition Advice	16
Seminar (Group Instruction).....	17
Ensembles.....	17
Repertoire	19
Musician Training	20
Reed-making Instruction	21
Practice	22
Fundamentals.....	23
Use of the Speaker Keys (“Flicking”).....	25
Tone: Tastes, Opinions, and Variations	29
Vibrato.....	31
Use of the Tuner and Metronome.....	33
Equipment and Reeds.....	36
Selecting a Bocal	36
Old versus New	41
Projection.....	41
III. THE HERZBERG CURRICULUM.....	43
Etudes	44
IV. THE EXERCISES	50
Herzberg Scales	52
Herzberg Intervals	58
Herzberg Long Tones.....	60
One Note Exercise.....	65
Three Note Exercise	68

V. REEDS 75

Cane 76
Splitting the Cane 77
Four “Systems” 79
The Shape: Fold-over versus Flat 79
The Shape and Intonation 81
Wires: Tightness, Shape, and Placement 82
Collar (Shoulder) & Scoring 84
Forming the Tube 84
“Seasoning” the Reed Blank 85
The Herzberg Bevel 87
Adaptation of Bevel for non-Herzberg Shapers 88
Effect of Bevel on Three other Systems 89
Noticeable Results of Bevel 90
Preventing Blade Slippage 91
Scraping 91
Testing a Reed 92
General Thoughts 93
Measurements 93

VI. HERZBERG PROFILER AND SHAPER 98

VII. APPLICATION AND SUMMARY 103

BIBLIOGRAPHY 107

APPENDIX A: LIST OF HERZBERG STUDENTS 113

APPENDIX B: QUESTIONNAIRE FOR HERZBERG STUDENTS 118

LIST OF FIGURES

	Page
Figure 1. Overview of Career	vi
Figure 2. Diagram of the left thumb keys on the Heckel-system bassoon.	27
Figure 3. Progressive table of intervals employed for One Note Exercise.....	68
Figure 4. Progressive table of intervals employed for Three Note Exercise.	72
Figure 5. Diagram of possible shapes for tube cane.	78
Figure 6. Herzberg's suggestions on where to split the tubes for best result.	78
Figure 7. Herzberg reed (2003), Wire-side up, dimensions taken from the reed.....	95
Figure 8. Herzberg reed (2003), Wire-side up, dimensions taken from the reed.....	96
Figure 9. Herzberg reed (2003), Wire-side down, dimensions taken from the reed....	97
Figure 10. Photo of Herzberg System Flat Shaper	98
Figure 11. Photo of Herzberg System Profiler.....	99

LIST OF MUSICAL EXAMPLES

	Page
Example 1. Pitches that require use of the <i>speaker keys</i>	27
Example 2. Scale exercise one in the key of C major.....	52
Example 3: Scale exercise two in the key of C major.	53
Example 4. Scale exercise three in the key of C major.	54
Example 5. Scale exercise four in the key of C major.....	55
Example 6. Scale exercise five in the key of C major.	55
Example 7. Scale exercise six in the key of C major.....	56
Example 8. Scale exercise seven in the key of C major.	57
Example 9. Scale exercise eight in the key of C major.	57
Example 10. C major scale in thirds.	58
Example 11. C major scale in fourths.....	59
Example 12. C major scale in fifths.....	59
Example 13. Long tone exercise one on f-sharp.....	61
Example 14. Long tone exercise two on f-sharp.....	62
Example 15. Long tone exercise three on f-sharp.....	62
Example 16. Long tone exercise four on f-sharp.....	63
Example 17. Long tone exercise five on f-sharp.	63
Example 18. Long tone exercise six on f-sharp.....	64
Example 19. Long tone exercise seven on f-sharp.	64
Example 20. Exercises 1A and 1B for One Note Exercise.....	66

Example 21.	Exercises 2A and 2B for One Note Exercise.....	67
Example 22.	Exercises 3A and 3B for One Note Exercise.....	67
Example 23.	Selecting primary notes for Three Note Exercise.....	69
Example 24.	Selecting secondary notes for Three Note Exercise.	69
Example 25.	Exercise 1A for Three Note Exercise.	70
Example 26.	Exercise 1B for Three Note Exercise.	70
Example 27.	Exercise 2A for Three Note Exercise.	71
Example 28.	Exercise 2B for Three Note Exercise.	71
Example 29.	Exercise 3A for Three Note Exercise.	71
Example 30.	Exercise 3B for Three Note Exercise.	71
Example 31.	Alternate secondary notes for Three Note Exercise.	73
Example 32.	Exercise 1A using alternate secondary notes from Example 31.....	73
Example 33.	Exercise 1B using alternate secondary notes from Example 31.....	73

CHAPTER I

LIFE AND CAREER

Norman Herzberg was born in Cleveland, Ohio on March 24, 1916. He grew up a child of the Great Depression and his father died when Norman was only five years old. His family seemed to lean toward music so when his mother asked him what instrument he would like to play he chose the saxophone. During our first interview session Herzberg described his transition to the bassoon.

I started out with a little curved soprano saxophone. I took lessons on it but was no great shakes. But then when I went to junior high I got an alto sax, and during that period saxophone students were all over the place. The band and the orchestra at the school that I went to needed a bassoon player. They had one, who for some physical problems the doctor had told not to play it, so it fell to me. I started in about 1930.¹²

Herzberg credited the wonderful music programs in the Cleveland public schools and his Saturday morning lessons for giving him a strong start on the bassoon.

Our school had a marvelous orchestra and a marvelous band and we won national contests. . . . The lessons in Cleveland, the program we had was a Saturday morning school where you paid 50 cents a lesson and you got a private lesson from somebody in the Symphony, so that I wasn't being treated by some band director, but I was put on some right road.¹³

¹² Herzberg, interview 1.

¹³ Herzberg, interview 1.

During his senior year in high school Herzberg won the prestigious American Bandmasters Competition. The competition awarded a scholarship to the National Music Camp in Interlochen, Michigan. At Interlochen Herzberg met Vincent Pezzi (1887-1966) and Howard Hanson (1896-1981).¹⁴ Through his connections with Pezzi, bassoon professor at the Eastman School of Music, and Hanson, director of the Eastman School, Herzberg received a four-year scholarship to attend Eastman.¹⁵ When asked how he chose music as a career Herzberg replied, “Well you have to understand that during that time you had the choice of selling apples on the corner or getting a free education.”¹⁶ He went on to describe his first days at Eastman:

You have to understand there was no money during those periods. . . . I came to school with I think six pairs of shorts, about six pairs of socks, and one reed. I approached Pezzi my first lesson to let me buy one of his reeds and his answer was “No, you’re going to make your own.” He was a smart man.¹⁷

While a student at Eastman, Herzberg experienced his first audition for a professional orchestra.

¹⁴ Vincent Pezzi was both principal bassoonist of the Rochester Philharmonic and professor of bassoon at the Eastman School of Music for twenty-two years. In addition to his work as a composer, Howard Hanson was appointed the position of Director of the Eastman School of Music by George Eastman. He held that position from 1924 until 1964.

¹⁵ Norman Herzberg, interview by Yoshiyuki Ishikawa, April 28, 2002, Boulder, CO, *Memoirs: Early Career*. <http://www.idrs.org/Interviews/Herzberg/Herzberg.html> (accessed 20 April 2006), QuickTime movie. Herzberg attended the Eastman School from the fall of 1933 through the spring of 1937.

¹⁶ Herzberg, interview 1.

¹⁷ Herzberg, interview 1.

The conductor of the St. Louis Symphony came to Rochester to conduct the Rochester Philharmonic and he told my teacher he wanted to hear a bassoon player. I said “No I don’t want to, I’m still in school.” And I’ll never forget; he brought a pile of orchestral music. But what he really ruined me on, I couldn’t play it, I mean I’d never played that stuff before, was *Til Eulenspiegel*. . . . I can play the thing now, but at that time I couldn’t. So he got an idea of what I was like, and of course I didn’t get the job.¹⁸

Although Herzberg did not get the job in St. Louis, he left conductor Vladimir Golschmann with a favorable impression of his abilities.

Upon graduation from Eastman in the spring of 1937 Herzberg accepted a scholarship to train as principal bassoon for the National Orchestra Association in New York. The scholarship also provided lessons with Simon Kovar (1890-1970), second bassoonist of the New York Philharmonic, bassoon professor at the Julliard School, and at that time the most sought after bassoon teacher in the country.¹⁹

In 1938 the second bassoon position with the St. Louis Symphony came open and Golschmann decided to hear a few auditions while passing through New York. Herzberg was not interested in the position but agreed to take the audition upon Kovar’s insistence. Herzberg explained:

Then he came to New York, Golschmann did, as a guest conductor, and he approached the bassoon teacher, Kovar, to send him some students to try out for the second bassoon job. I didn’t want to go. I did NOT want to go. I had that very bad experience with him and I didn’t want to go. But

¹⁸ Herzberg, interview 1.

¹⁹ Herzberg, Norman. “Auditions: Past, Present and Future.” *Journal of the International Double Reed Society* 17. <http://www.idrs.org/Publications/Journal/JNL17/JNL17.Herzberg.Auditions.html> Additionally, Kovar taught at the Manhattan School of Music, the Teachers College of Columbia University, the Curtis Institute of Music, and at the Music Academy of the West.

Kovar said “You go. You go.” It was a second bassoon position and he said “You go, you’ll do alright.”²⁰

Herzberg recalled this audition during his 2002 interview with Yoshiyuki Ishikawa.

I was a very, very ambitious young bassoonist at the time and whatever solo he would ask me, “Do you know this?” I’d say, “Yes, I don’t need the music.” And I played the audition practically from memory, for the big solos, practically from memory. And the only thing he caught me on, and if you get a chance to look at it, take a look at the last page of *Roman Carnival Overture* because there are some octave skips and that was something that I, I couldn’t negotiate.²¹

Despite this small stumble, Golschmann offered the position to Herzberg upon completion of his audition whereupon Herzberg replied, “I am not interested in playing second bassoon,” and left.²² Golschmann, having decided he had to have Herzberg in his orchestra, called Kovar to see if Herzberg could be convinced to accept the position.

Herzberg explained:

Kovar got in touch with me a couple days later and said, “He says he’s got to have you.” I said “I’m not going to play second bassoon.” Kovar says to me, “What if he promises to put you on first bassoon the next year?” I said, “I don’t trust him, I don’t trust conductors.” Kovar says, “Norman you can trust him.” I said, “No I can’t, I don’t believe it.” Well Kovar kept insisting and insisting so finally I relented and I went to St. Louis on second bassoon for a year. And sure enough he advanced me to the first

²⁰ Herzberg, interview 1.

²¹ Herzberg, *Memoirs: Early Career*.

²² Herzberg, interview 1.

bassoon and the first bassoonist became the second bassoonist. And that was in 1939 and [19]40.²³

While studying with Kovar, Herzberg met Kovar's eldest daughter Leah. Leah, a student at the University of Wisconsin, had come home on a break when she and Norman met during one of Norman's bassoon lessons. When asked if it was love at first sight Herzberg replied, "Not especially, but my wife is an extremely sharp, wise girl; just wonderful!"²⁴ The couple was married in 1939 but spent their first year apart as Leah returned to Madison to complete her degree and Norman headed to St. Louis to play his first season with the St. Louis Symphony.²⁵

Herzberg called his time with the St. Louis Symphony a "romance."²⁶ The music provided complete satisfaction for Herzberg and his colleagues.

I just couldn't get over the career and I couldn't get over the experience and the music we played and the soloists we had. . . . We had remarkable people that are legendary and here I was a first and second year symphony player and I was just enjoying these people and you know they come out on the stage and you just, "My god, that's Rachmaninoff! . . . Beecham came as a conductor, and of course we had Golschmann who was a talented man who had learned the way to keep a conductor's job was to know the right people and to hell with learning your music. But as I say, the romance lasted for years!"²⁷

²³ Herzberg, *Early Career*.

²⁴ Herzberg, interview 1.

²⁵ Herzberg, interview 1.

²⁶ Herzberg, interview 1.

²⁷ Herzberg, interview 1.

With the advent of World War II, Herzberg spent some difficult years (1942-1945) in a Coast Guard band in Connecticut.

I went in to the Coast Guard and joined the Academy Band in New London, Connecticut, which was one of the worst experiences of my entire life! But of course I didn't play bassoon in the parades, I would play the cymbals. And I hated it so much that I crashed them all the time so I wouldn't have to hear the band. I'd just keep on banging those things and of course it helped me release many frustrations because the band was composed of many career men, who were literally drunks.²⁸

By the time Herzberg's tour of service in the Coast Guard ended in 1945 the new orchestra season had already commenced and his temporary replacement in St. Louis was already expecting another season of employment. Herzberg went to New York and spent an enjoyable year playing for Broadway stage shows including Franz Lehar's operetta *The Merry Widow* and a revival of the musical *Showboat* while he waited for the start of the next orchestra season when he would return to his former position in St. Louis.²⁹ Upon his return to St. Louis he began playing the summer season with the Municipal Opera.³⁰

Herzberg taught bassoon for the inaugural and second seasons of the Aspen Festival in Aspen, Colorado. His former teacher, Simon Kovar, had been offered the position and had accepted the offer but then changed his mind. Kovar had been teaching at the Music Academy of the West in Santa Barbara, California and decided he preferred

²⁸ Herzberg, *Early Career*.

²⁹ Herzberg, *Early Career*.

³⁰ Herzberg, interview 1.

to remain in that position. Kovar contacted Herzberg and insisted that he take the position and subsequently convinced the Aspen directors to hire Herzberg as his replacement. While teaching at the Aspen Festival he had only two students and was able to fill his remaining time playing chamber music with other faculty and fishing with Reginald Kell. He recalled, “I never caught any fish but that didn’t matter. Just standing in one of those beautiful Aspen rivers was enough to make it all worth it.”³¹

Although he loved his years with the St. Louis Symphony, the financial demands of raising a family and the educational needs of his three children necessitated a change. The St. Louis season included only twenty-three weeks of employment and the orchestra was always on the verge of bankruptcy.³² His earnings were supplemented by playing for the St. Louis Municipal Opera. While he relished the experience of preparing and performing a new operetta each week, the pay was simply not enough. He decided to move his family to California where the school systems were much better. He could see the television and film industry taking off and expected he could earn a good wage doing studio work.³³

During his early days in California Herzberg found that breaking in as a studio musician in Los Angeles was difficult and would take time. He ended up accepting engagements with community orchestras to earn money. Additionally, he tried to obtain employment in the airline industry but was unsuccessful. His first year in Los Angeles,

³¹ Herzberg, *Early Career*.

³² Herzberg, *Memoirs: Studio Scene*.

³³ Herzberg, interview 1.

during the Eisenhower/McCarthy era, he made \$32 as a freelance musician.³⁴ The family managed to get by on the meager earnings by living on money from the sale of their previous home. Herzberg praised his wife Leah for being “very shrewd about buying.”³⁵ He eventually won the first bassoon position with the Los Angeles Chamber Orchestra and, through contact with his former high school band director, was hired as the bassoon professor at the University of Southern California.

Around the same time Vladimir Golschmann called Herzberg and asked him to return to St. Louis. When he refused the offer Golschmann called his friend and Hollywood music director, Dimitri Tiomkin, and asked him to use Herzberg in his next film. Tiomkin obliged and Norman was hired to play for the 1955 Warner Brothers film *Land of the Pharaohs*. Herzberg was called to play for a few other films and quickly developed a reputation as a talented player. He was eventually given a contract with the Warner Brothers Studio. Gary Herzberg, Norman’s youngest son, recalled being at home when his father came home to the small apartment and announced, “We’re going out to dinner!” His older brother Steve asked, “What’s the occasion” and was answered with one word, “Money!”³⁶ Herzberg played for many films including *E.T.* and *Jaws*, and numerous popular cartoons including Bugs Bunny. While employed with Warner Brothers he continued to teach and freelance.³⁷

³⁴ Herzberg, *Studio Scene*.

³⁵ Herzberg, interview 1.

³⁶ Herzberg, interview by author, January 13, 2007, Encino, CA, interview 5, (recording and transcript, author’s personal archive, Potsdam, NY).

³⁷ Herzberg, interview 1.

In the 1950s several of the best LA studio musicians began getting together to perform on a series that became known as the Monday Night Concerts. The programming consisted primarily of contemporary works and provided a musical outlet for the talented studio musicians in contrast to their rather tedious and highly stressful studio work. While being interviewed by Yoshiyuki Ishikawa, Herzberg was candid about his time as a studio musician. “The music came from what we did outside of the studio, in the studio it was strictly a business.”³⁸ He also described his studio career as “95% boredom and 5% terror!”³⁹ The job was frustrating for him and he remembered many times when he would get a perfect take on his part only to have it destroyed by an error from someone else. Hard work on the part of the musicians was often covered by sound effects. “When you had a really difficult passage you never knew when a hurricane would be a part of the scene and cover up your hard work.”⁴⁰

Herzberg met bassoonist Don Christlieb (1912-2001) in the 1950s during a performance on the *Monday Night Concerts*. Christlieb was a well-known reed maker and their interactions sparked in Herzberg a life-long pursuit of better reed-making equipment and procedures. Throughout his career Herzberg continued to freelance with area orchestras as well as teach at USC.

Although Herzberg remained an active member of the International Double Reed Society and continued to pursue improvements in reed-making design and machinery, he

³⁸ Herzberg, Studio Scene.

³⁹ Herzberg, Studio Scene.

⁴⁰ Herzberg, *Studio Scene*

retired from performing and full-time teaching in 1991. His son Gary recalled the surprising event.

My dad had his 75th birthday and a few weeks later my mom calls my brother and says “I think your dad is sick.” Now, let me give you a little background. Our childhood in this living room was my dad in his boxer shorts and t-shirt practicing his bassoon four hours a day, scale exercises, all the long tones. We couldn’t even go on a vacation without him taking a bassoon. When he was on vacation, if he ever left without the bassoon, he was worried “did I lock the safe” you know, and so forth and so on. Four hours a day every day. We never really took a vacation until I was older and my brother and I drug him on vacation. Because the other thing was the business was such that you know he felt he needed to answer the call. So, every day of his life he practiced. He practiced what he preached. In other words you know, you don’t practice one day you know it; don’t practice a second day the conductor knows it; don’t practice a third day the whole world knows it. Ok, I’ve heard that one enough! . . . Two weeks after his birthday my mom called my brother and said “Your dad is sick.” And he says “What do you mean?” She said “I sort of sat it out, I waited a few days, a few days more thinking. I don’t know what to do. There must be something seriously wrong.” So my brother calls Dad and says “Dad, what’s the matter, how ya feeling?” Dad says “I’m feeling great.” “Well Mom says that you’re sick.” He says, “What’s she talking about?” “Well Mom says that you haven’t picked up your bassoon in two weeks!” He said, “I’ve had that monkey on my back for 67 years and I’m done!”⁴¹

During his retirement Herzberg continued to present seminars and master classes in the United States and Canada. Many of his former students continued to visit him for annual lessons. He began to share his ideas on bassoon playing and reed making with a wide audience of bassoonists via the list-serve of the International Double Reed Society. He also spent a great deal of time working with machinist Gary Carnan, modifying his

⁴¹ Herzberg, interview by author, January 13, 2007, Encino, CA, interview 5, (recording and transcript, author’s personal archive, Potsdam, NY).

original reed profiling machine. Herzberg announced production of his new machine in 2002.

The last year of Norman Herzberg's life was spent battling leukemia. Although his health was failing he continued to spend hours in his reed room working on the dozen or so already purchased profilers, sitting in boxes waiting to be measured, set up, tested, and shipped. He spent many hours on the phone and the internet discussing any and every aspect of bassoon playing.

When I contacted Mr. Herzberg in September of 2006 he agreed to let me interview him but cautioned that his health was not good. We agreed to meet in early January of 2007. I met Mr. and Mrs. Herzberg during the week of January 11, 2007. I made eight short visits to their home during that week. Mr. Herzberg was quite weak and could only speak for 45 minutes or so before tiring. Although visibly exhausted, he remained excited about our project to produce a text about his career and his highly successful teaching methods. He spoke warmly of his former students, their wonderful achievements, and the inestimable value of their contributions to the development of both his philosophy and methodology.

Mr. Herzberg lost his battle with leukemia on February 4, 2007. His former students organized a memorial service which was held on the campus of UCLA on May 27, 2007. The event was attended by scores of friends, former students, and colleagues and included performances of some of his most beloved works for bassoon, including

Milde's *Concert Study No. 27* and the famous bassoon octet transcription from *Funeral March of a Marionette* used for the television series "The Alfred Hitchcock Hour."⁴²

Over the course of his career Herzberg influenced the lives of countless bassoonists and musicians through his performances, recordings, and his teaching. His influence on the current generation of professional bassoonists will allow his legacy to continue far into the future.

⁴² This octet was one of the earliest pieces Herzberg recorded for the Warner Brothers Studios.

CHAPTER II

PEDAGOGICAL PHILOSOPHY

Herzberg developed and followed a strictly prescribed curriculum. However, he tailored his instruction through this curriculum to meet the individual needs of each student. He allowed his students to choose their own solo repertoire and pushed them each to take auditions as soon as they felt ready. He never forced a student to adhere to any preconceived idea of correct embouchure, posture, or vibrato and cared only about achieving a successful end result, complete mastery of the instrument. This complete mastery included the ability to play the entire range with exactly matched timbre and dynamic, pristine accuracy of intonation and execution, and absolute fluidity. He demanded the utmost dedication and concentration from his students and from himself. During every lesson he listened with keen awareness as each student worked their way through the detailed series of exercises and etudes. His observations and the resulting comments and suggestions addressed the specific needs of each student. While all students worked through the same progression of exercises and etudes, none ever felt they were being subjected to ‘cookie-cutter’ teaching or were receiving anything less than absolutely attentive instruction.⁴³

Herzberg was often asked to reveal the secret of his success as a teacher. In a 2007 interview he was asked if he was conscious of any direct influence of past

⁴³ Cookie-cutter teaching refers to a methodology of creating students as exact clones of the instructor.

instructors on his current teaching methods. He replied, “Oh boy! What they taught me is what I shouldn’t do!”⁴⁴ Although Herzberg had great admiration and respect for Pezzi and Kovar, he knew adapting their teaching method, or lack thereof, would not allow him to be successful. He admitted that although Pezzi was a very smart man, he had learned early on during his studies at Eastman that Pezzi would let him get away with anything. He called himself a “very bad student.”⁴⁵ He was often discouraged while studying with Kovar because Kovar had “absolutely no system” and would teach whatever came in to his mind on a given day.⁴⁶ There was no sense of progression from one topic or level to another. Kovar was also quite disorganized about scheduling lessons. “If he [Kovar] told you to come on Wednesday at 10 and you actually showed up at that time you would not be the only one. There would be someone else there and you would end up sitting around, waiting.”⁴⁷

In addition to being acutely aware of his teachers’ shortcomings, Herzberg was also frustrated by the number of well-known and highly-regarded bassoon teachers, especially of his generation, who spent lesson time teaching only phrasing or as he called it, “music.”⁴⁸ He explained his philosophy of teaching.

⁴⁴ Herzberg, interview by author, January 13, 2007, Encino, CA, interview 6, recording and transcript, author’s personal archive, Potsdam, NY.

⁴⁵ Herzberg, interview 6.

⁴⁶ Herzberg, interview 1.

⁴⁷ Herzberg, interview 1.

⁴⁸ Herzberg, *Memoirs: Teaching*.

I teach the bassoon primarily. I wasn't brought anywhere to teach phrasing of orchestral passages. I was brought because I knew how to trill b-flat; I knew the instrument, it was assumed. And gradually I evolved a discipline. It was; it is my ambition to teach people how to play the instrument. If I'm the bassoon teacher you can't expect me to just teach music, I've got to teach how you play the instrument.⁴⁹

To Herzberg teaching was a two-way street. He learned a great deal from his students and was constantly impressed by their abilities and the rapidity with which they developed their own ideas. He pointed out, "If you don't have a student who can reflect what you want or can't improve on what you want it's not going to be very much [fun], it'll be boring as hell."⁵⁰

Even with its inherent difficulties, Herzberg loved the bassoon and found it to be a magnificent instrument. He described the challenges, "It's three and a half octaves of anything people want. You have to play pianissimo in the lowest register and the highest register. You have to have technique from the bottom b-flat up to god knows where."⁵¹ For him the ingratiating qualities of the bassoon outweighed its difficulties, "It's like a human voice. We can sing! The bassoon handles vibrato beautifully and it homogenizes with any instrument."⁵²

⁴⁹ Herzberg, *Memoirs: Teaching*.

⁵⁰ Herzberg, *Memoirs: Teaching*.

⁵¹ Herzberg, *Memoirs: Teaching*.

⁵² Herzberg, *Memoirs: Teaching*.

Not all students who began with Herzberg at USC remained in his studio.

The bassoon by itself is a very beautiful instrument and it's unappreciated, and it's challenging. And because of its own challenge it prods you on to improve and keep on improving. And I always say that if the instrument were any easier the wrong people would play it. So, as a brotherhood of players bassoon players have something in common. My students would agree, and if they didn't our association didn't last. They would just leave and that was okay with me. Sometimes I'd throw them out; because, we had to appreciate the beauty and the possibilities, and the possibilities still go on.⁵³

According to Herzberg no other wind instrument had the latent possibilities that bassoonists were called on to develop. As a bassoonist he felt that by teaching in a university his duty was to develop to the fullest the talents of his students and the possibilities of the instrument.⁵⁴

Audition Advice

Herzberg acknowledged that he had no formula for getting a job. The advice he gave to his students was, "Play everything the best you can and be done with it."⁵⁵

Audition committees made up of string players and conductors judging bassoon applicants was a fallacy to Herzberg. He hated that these people were empowered to judge something they knew nothing about. Because of this he felt there was no formula for winning an audition. He had a formula for teaching his students to play the bassoon well and to keep improving but that was all he felt he could promise. Students taking

⁵³ Herzberg, *Memoirs: Teaching*.

⁵⁴ Herzberg, *Memoirs: Teaching*.

⁵⁵ Herzberg, *Memoirs: Teaching*.

auditions were reminded, “You must keep trying. You must, because I don’t have a formula, nobody has a formula, and there’s no telling when that day that choice will be you.”⁵⁶

Seminar (Group Instruction)

Herzberg required his students to attend his weekly seminar. This setting was particularly valuable because questions and answers would often come up in a group setting that would not arise in individual lessons. As such, these group sessions created beneficial interchange between the students as well as between the students and the teacher. It was also an excellent venue for guest artists. Herzberg was adamant these weekly seminars should be used to further the student’s education and not be a waste of time. “I don’t believe in just playing tapes for them to sit and pick their noses.”⁵⁷ The weekly classes covered material on reed making, orchestral repertoire, and recital preparation. A cumulative written final exam was given every semester. The exams required students to explain both broad concepts and fine details that had been covered.

Ensembles

Regarding the role of performing ensembles in music education Herzberg said, “The training of students in ensemble playing is the only way to demonstrate that the methods used in private lessons and seminar work.”⁵⁸ He believed there should be at

⁵⁶ Herzberg, *Memoirs: Teaching*.

⁵⁷ Herzberg, interview 5.

⁵⁸ Norman Herzberg, “Career Development: Generating the Art,” *The Double Reed* 13/2 (1990). <http://idrs.colorado.edu/Publications/DR/DR13.2/DR13.2.Herzberg.Career.html> (accessed 4 April 2006).

least one large orchestra and a chamber orchestra. In Herzberg's opinion wind bands had no value as musical training ensembles.

I have yet to be convinced they have any place in the curriculum for a career in music. My experience teaches me that bands have become ensembles for the usual overflow of clarinets, saxophones, brass players, and other instrumentalists who cannot be accommodated in the orchestras. Requiring serious bassoon students to devote school time to band playing wastes time far better spent studying the literature central to their future careers. I have yet to encounter anyone who wants to play in band.⁵⁹

Herzberg believed sections should rotate in school ensembles. He disagreed with conductors who felt they must have the best players playing principal at all times. Herzberg reminded such conductors that their goal should be to provide the best education possible for each student. Rotating sections allowed each student to learn what was involved in playing each role. He also believed in the benefits of having a reading orchestra, even if it included only winds and used two pianos to cover the missing string voices.⁶⁰

Herzberg's final suggestion regarding what to teach included "unionism and what it means to the life of every musician."⁶¹ He felt strongly that his students needed to understand the value of a cooperative union for a collective bargaining agreement,

⁵⁹ Herzberg, "Career Development."

⁶⁰ Herzberg, "Career Development."

⁶¹ Herzberg, "Career Development."

establishing benefits for musicians, working on negotiating committees, and various other activities that were part of life as an orchestral musician.⁶²

Repertoire

Herzberg had strong views on the use of technical studies and etudes in training the young musician. He believed that the bassoonist must have complete mastery of the instrument in order to perform artistically in any situation. He used a standard collection of etude books but used them in a very strict order and did not allow anyone to skip any of the etudes in the process.⁶³ Herzberg used etudes to teach the bassoon rather than excerpts. He acknowledged that many of his colleagues did not have the patience to teach etudes and preferred instead to teach “music” through orchestral excerpts. Herzberg argued this was not sufficient because the etudes he used provided a much greater challenge both musically and technically, than “any eight bar phrase from a Beethoven Symphony.”⁶⁴

Students were allowed to choose their own solo repertoire for recitals and Herzberg commented that he learned a lot of music that way.⁶⁵ The only piece Herzberg refused to let his students play was the *Sonate for Bassoon and Piano* by Paul Hindemith. Herzberg, not a fan of Hindemith, felt the piece was an insult to the dramatic character

⁶² Herzberg, “Career Development.”

⁶³ Herzberg’s progression of etude books is detailed in chapter three “The Curriculum.”

⁶⁴ Herzberg, interview 1.

⁶⁵ Herzberg, interview 5.

and versatility of the bassoon. He called the work “pallid and simple.”⁶⁶ In one of our early conversations Herzberg also declared his disdain for Hindemith’s *Kleine Kammermusik* for woodwind quintet.⁶⁷ It was unclear, however, whether his dislike of the work was due to a personal dislike of Hindemith, to his prior difficulties with the *Sonate*, or for purely musical reasons.

Musician Training

Another article written by Herzberg provides his views on what he considered necessary for the training of professional musicians.⁶⁸ A disciplined curriculum developed and prescribed by the teacher and regularity of lessons was critical. Optimally the student should be seen at least once a week and must be given clear assignments for each lesson.

Students must be trained to understand that the most important requirement for learning is practicing primarily for the purpose of detecting shortcomings and finding remedies for those shortcomings. When a student learns how to solve problems, a teacher is no longer necessary.⁶⁹

Students were given specific assignments for each lesson. Successful preparation of the assigned material was a clear sign to Herzberg that the student was practicing an

⁶⁶ Herzberg, interview 5.

⁶⁷ Norman Herzberg, interview by author, January 12, 2007, Encino, CA, interview 4, recording and transcript, author’s personal archive, Potsdam, NY.

⁶⁸ Norman Herzberg, “Career Development: Generating the Art,” *The Double Reed* 13/2 (1990). <http://idrs.colorado.edu/Publications/DR/DR13.2/DR13.2.Herzberg.Career.html> (accessed 4 April 2006).

⁶⁹ Herzberg, “Career Development.”

appropriate amount. He gave assignments that were hard and couldn't be learned the night before a lesson. When asked about these assignments Herzberg answered that he assigned three etudes each week, "I would give them three and they would only get through two of them so we held that over to the next week so they were pretty well packed. I wanted to keep them working and that's the way I did it."⁷⁰ He also made it a practice to move lessons around each week so the same person did not always have the last lesson of the day when Herzberg might be frustrated and not very patient.⁷¹ If he doubted a student's dedication to practice he would require the student to submit a week's worth of practice tapes. There were at least two students during Herzberg's career who decided to quit rather than make the tapes. However, Herzberg always listened to any tapes that were submitted, analyzing them to determine what practicing errors were inhibiting the student's progress.⁷²

Reed-making Instruction

Reed-making lessons were a crucial part of a Herzberg's curriculum.

Instruction in reed-making skills must be the teacher's responsibility and must never be delegated. Of course teaching bassoon is much more than teaching reed-making, but I think this essential part of a bassoonist's education deserves special mention. Reeds are the link through which one breathes life into the instrument. They are each performer's personally designed connection between the manufactured instrument and the realization of the physical, mental, and musical capabilities exercised in performance. As any performer improves, more demands are made on

⁷⁰ Herzberg, interview 5.

⁷¹ Herzberg, interview 1.

⁷² Herzberg, interview 6.

this critical element. A bassoon teacher, during the course of lessons, must know whether reeds are the cause of difficulties.⁷³

Specific information regarding Herzberg's reed-making techniques and measurements can be found in chapter five of this document. Information about the shaper/profiler system he developed can be found in chapter six.

Practice

In his article "The Study of Bassoon, Principles and Practices," Herzberg explained his belief that a performer must have command of his instrument before musical expression can occur.⁷⁴ Additionally, he stated, "Musically, all of us are, at the least, the sums of our musical experiences."⁷⁵ The article expressed his general philosophy of musical preparation. Herzberg believed that although we may try to be selective in the elements we incorporate into our playing, we are also subject to the whims and fancies of conductors and colleagues. Therefore, the performer must have absolute control of the instrument in order to meet any demand placed on him. Constant dedicated and attentive practice is the only means to that end. "Mastery of the bassoon is transitory and must be renewed daily." On any given day, variables such as the reed, the instrument, playing requirements, and performance setting as well as a myriad of other factors will influence the ease of success or failure.

⁷³ Herzberg, "Career Development."

⁷⁴ Norman Herzberg, "The Study of Bassoon, Principles and Practices."
<http://www.geocities.com/Vienna/Strasse/4852/bsnherzberg.html> (accessed 1 January 2008).

⁷⁵ Herzberg, "The Study of Bassoon."

We must learn to take advantage of the assets of our instrument and reeds, and must acquire skills to compensate for their liabilities. To execute what we aspire to as performers requires in daily practice, systematic, conscientious, and expert appraisal of our abilities and disabilities, emphasizing always a disciplined and focused diligence in overcoming our weaknesses.⁷⁶

Rigorous demands are placed on orchestral players due to the fact that one never knows when a conductor will ask a performer to play a passage in a manner different from what he anticipated and to which he had become accustomed. The demands made in rehearsals require versatility and the ability to respond immediately.⁷⁷

Fundamentals

Often as a teacher I have begun to work with students whose technical capabilities were so limited that their playing was bland and conservative. They were victims of misplaced priorities in their previous instruction.⁷⁸

In this quote from his article “The Study of Bassoon, Principles and Practices,” Herzberg described a situation all too common in the university setting. He saw young students being pushed to learn repertoire inappropriate for their current level of ability in order to participate in local and regional competitions. Because of this, instructors were relying on rote teaching and avoiding working on the basic elements of playing, such as rhythmic accuracy, intonation, and dynamics, in order to help their students learn their

⁷⁶ Herzberg, “The Study of Bassoon.”

⁷⁷ Herzberg, “The Study of Bassoon.”

⁷⁸ Herzberg, “The Study of Bassoon.”

contest music. Students should focus on the basics of music and musicianship until they are mastered. Command of these basics would, he believed, give the student the necessary flexibility to experiment with musical options and would allow them to incorporate their own personality into their musical expression. He believed the teacher was of equal responsibility in that task. A teacher had to be willing to drop any student that did not take his requirements seriously.⁷⁹

The scale patterns Herzberg required his students to learn were extensive and specific. The scales were to be played from the lowest to the highest note within the key signature available on the instrument. For example, low B is the lowest note in the key of C so the player began on low B and played up to high E or F (top of the treble staff). The student was to make a loop of these notes while playing a series of articulations. The student was to memorize the scale exercises to allow complete focus on aural analysis of his/her execution. In addition to this scale routine, his students played interval and long tone exercises on a daily basis.⁸⁰

Herzberg practiced these same exercises daily to assess himself “with tempo and response.”⁸¹ He did not believe in requiring his students to do something he was unwilling to do or try to do. Although he was never able to successfully double-tongue

⁷⁹ Herzberg, “The Study of Bassoon.”

⁸⁰ These exercises are presented with musical examples and detailed descriptions in chapter four.

⁸¹ Herzberg, interview 4.

or circular breathe, he did at least work to learn these techniques so that he could explain them to his students and understand the difficulties they might encounter.⁸²

In addition to practicing the correct materials, the student had to learn to diagnose errors and discover the cause of those errors. Herzberg said, “Practice must focus on that which cannot be done well, and must not be “playing” in the recreational sense.”⁸³ Too often students spend their practice either aimlessly playing this or that with no critical ear, or playing through the music they can already play. Neither of these methods would achieve successful results.

The essentials of practice fall into three categories: scales, long notes and intervals. During practicing of these essentials, sensitivity to and skill with reed correction develops. Reeds must be improved and not blamed. I believe that reeds must closely approach or be equal to the tasks you demand of them. Your playing skills must fill in the gaps that reeds leave open.⁸⁴

All of the fundamentals are of equal importance and should always be practiced with the aim of increasing one’s ability to create a musical result.

Use of the Speaker Keys (“Flicking”)

In addition to practicing the fundamentals (scales, intervals, and long notes), Herzberg was a firm believer, actually a west-coast convert, in the use of the *speaker keys*. *Speaker keys* are octave keys which when depressed immediately upon starting a

⁸² Herzberg, interview 4.

⁸³ Herzberg, “The Study of Bassoon.”

⁸⁴ Herzberg, “The Study of Bassoon.”

note, allow certain notes to produce a clearer attack than would be possible without depressing the additional key. “Years of Innocence, Ignorance, Neglect and Denial: The Importance of Speaker Key Use on the Bassoon,” chronicles Herzberg’s thirty year journey which led him to the inevitable conclusion that speaker keys must be incorporated as an integral part of technique on the bassoon.⁸⁵ He adopted a policy of mandatory speaker key use for all of his students and the article cited includes additional tips for their incorporation and use.

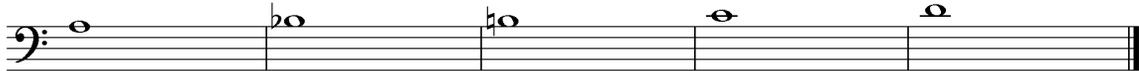
Herzberg referred to this technique as using the *speaker keys* instead of the often used term *flick keys* because he believed the word “flick” trivialized their importance. During the early part of his career he admitted to being ignorant of the value of this technique while at the same time being aware of certain technical problems beyond his ability to solve with consistency. Although Herzberg studied with three renowned and acclaimed bassoonists (Charles Kayser, contrabassoonist of the Cleveland Orchestra, Vincent Pezzi at Eastman, and Simon Kovar at Juilliard), use of speaker keys was seldom if ever mentioned and was certainly not emphasized. He admitted his early innocence of the “dangers and pitfalls of neglecting their use” until his innocence was demonstrated by numerous and successive performance errors.⁸⁶ Herzberg had noticed the increased difficulty of attacks on As and Bs at the top of the bass staff (see example 1). He attempted to correct the problem with additional scrapes on the reed. The additional

⁸⁵ Norman Herzberg, “Years of Innocence, Ignorance, Neglect and Denial: The Importance of Speaker Key Use on the Bassoon.” *The Double Reed* 18/3 (Winter, 1995): 53-63.

⁸⁶ Herzberg, “Years of Innocence,” 53.

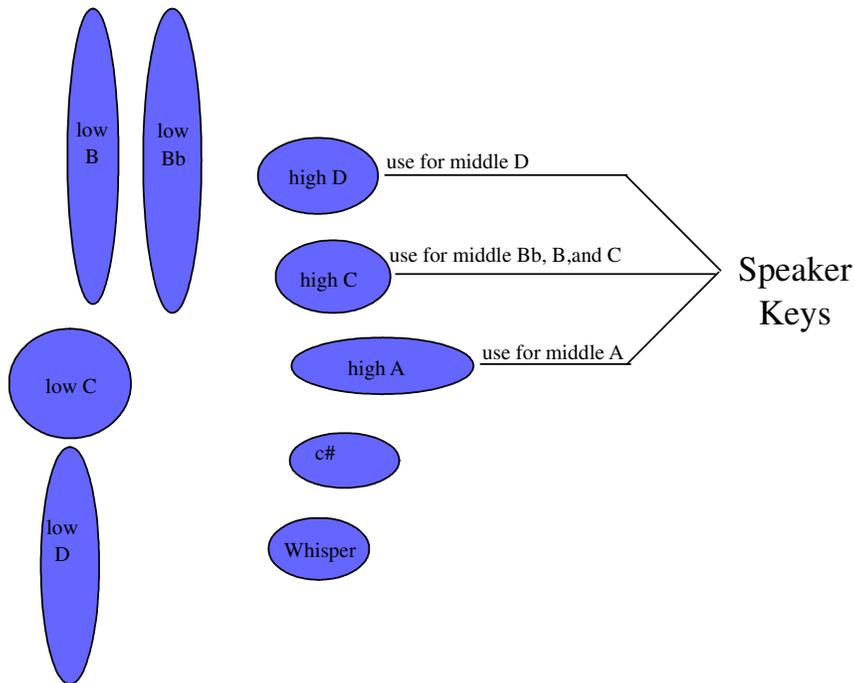
scrapes did not solve the problem of difficult attacks and created new problems elsewhere in the range.⁸⁷

Example 1. Pitches that require use of the *speaker keys*.



Herzberg was introduced to successful speaker key use when he moved to Los Angeles to do studio work (see figure 2).

Figure 2. Diagram of the left thumb keys on the Heckel-system bassoon.



⁸⁷ Herzberg, "Years of Innocence," 53-54.

All of the west coast bassoonists included the proper speaker key as part of their standard fingering for the notes at the top of the bass staff. Surprised by their efforts and greatly impressed with the cleanliness and accuracy of their attacks in this treacherous register, Herzberg described his epiphany.

As I began to record, I was somewhat surprised to see, as well as hear; the bassoonists make extensive and consistent use of the speaker keys. What fascinated me was that they never would play A, Bb, B natural, C and D in the middle register without simultaneously using the A speaker key for A, the high C key for Bb, for B natural, and for C, and the high D key for D. To add to my amazement, they had no difficulties with technical passages. Their left thumbs were as agile as any other finger on their hands! They certainly were not “thumb-tied.”⁸⁸

Several years later he had occasion to work with Frederick Moritz, then principal bassoon of the Los Angeles Philharmonic. Moritz commented on the problem Herzberg was having cracking his attacks on A and B. Although his initial reaction was to deny the problem, upon closer inspection he noticed the “crack” in the sound. “After closely listening to my playing, the light began to dawn. He was right! The end of thirty years of innocence, ignorance, neglect, and denial was at hand!”⁸⁹ What Herzberg had been taking for a normal attack on the notes in the middle register included an extraneous noise that was not acceptable. Diligent effort was needed to add the appropriate speaker key for each of the troublesome notes in the middle register. Successful incorporation of the technique evoked the following revelation:

⁸⁸ Herzberg, “Years of Ignorance,” 55.

⁸⁹ Herzberg, “Years of Ignorance,” 56.

As my ability to use the speaker keys increased, I found that I had developed security on any attack or slur at any dynamic in or to the middle register without making my reeds pay for it. The window of opportunity to attack and slur to the middle register opened wide! I became able to execute slurs cleanly, and attack the critical notes we are speaking of with assurance and with no hesitation or trepidation. . . . My scope of dynamics was enlarged because there was no danger in slurs, and no need to be cautious with attacks on notes in the middle register.⁹⁰

Tone: Tastes, Opinions, and Variations

In an email to Matthew Harvell in August of 2001 Herzberg described his concepts regarding a bassoonist's tone. Herzberg's philosophy was that the subject of bassoon tone could not be isolated because it was only one of the many integral parts of bassoon playing and study. He explained that he often asked his students to describe and define beauty and a beautiful tone; their answers were never to his satisfaction. He quoted a former student, in high school at the time of the encounter, who admitted to using his tone to cover up for a lack of dynamic range and faulty intonation. When Herzberg pointed out the deficiencies the student replied, "I know, Mr. Herzberg, but my tone always gets me through."⁹¹ Herzberg went on to explain additional criteria equally if not more important than tone. In his list of criteria, intonation was primary and must be agreed upon by any group of players if they are to play in tune. Response was included as Herzberg commented, "Without it we cannot play at the proper moment with

⁹⁰ Herzberg, "Years of Ignorance," 56.

⁹¹ Herzberg, email to Matthew Harvell, 20 August 2001, (TS, author's personal archive, Potsdam, NY). The unnamed student went on to study with Herzberg at USC, where he learned that tone was but one of the criteria for a competent bassoonist.

the dynamic required.”⁹² His long tone exercises were developed specifically to address those crucial elements.⁹³

There is no universally accepted standard for tone quality. Musical parameters can be scientifically measured and quantified with tools; the metronome (beat) can be used to measure response, a decibel meter measures loudness, and a tuner can measure intonation. There is no tool to measure tone quality. Therefore, according to Herzberg, criteria for tone quality cannot be established. He used the following analogy to make his point: “There can be no dictator who decrees the definition of a beautiful tone any more than there is one who can tell you what seasoning to use and how food must taste in your mouth.”⁹⁴ He continued by explaining that tone was literally a matter of taste and tastes vary. Therefore, a fine tone did not have to adhere to any single concept. He appreciated both mellow and bright tones. His favorite tone was that created by Leonard Sharrow. He described the tone as neutral – neither bright nor dark, but with a very lively attractive vibrato. The email to Harvell included a lengthy quote by bassoonist Archie Camden.⁹⁵ Camden, as well as others, believed vibrato should not be used in music of the classical period. Although Herzberg did not fully agree with that idea, he did believe a good bassoon tone had to be beautiful even without vibrato.⁹⁶

⁹² Herzberg, email to Harvell.

⁹³ Herzberg, email to Harvell.

⁹⁴ Herzberg, email to Harvell.

⁹⁵ Archie Camden, *Bassoon Technique*, (New York: Oxford University Press, 1962). The quote can be found at the beginning of the chapter titled “Vibrato, Rubato, and Bad Habits.”

⁹⁶ Herzberg, email to Harvell.

Continuing to tackle the difficult topic of bassoon tone, specifically what would help or hinder one's tone, he wrote another email. In it he described how his interactions with former Philadelphia Orchestra bassoonist Walter Guetter (1895-1937) influenced his philosophy of tone quality. On one occasion Mr. Guetter played Herzberg's set up, his reed, bocal, and instrument. Herzberg was surprised to hear that even with completely different equipment Guetter sounded like himself; there was no appreciable difference in tone quality. He determined that tone must be more closely related to the unique qualities of the performer rather than to the dimensions or scrape of the reed, or the instrument. A person's tone is the result of many influences including thickness of the lips, formation of the teeth, size of the mouth cavity and throat, and the individual's air pressure. Therefore, since individual tone qualities depended on many individual characteristics, external and internal, there could not be a formula which would allow duplication of a person's tone.⁹⁷

Vibrato

Bassoonist Leonard Sharrow taught Herzberg to create vibrato. He recalled, "I admired his tone quality to the extent that I insisted on knowing how he made his vibrato. I insisted!"⁹⁸ Herzberg demonstrated the technique by blowing short puffs of air and described it as being "like whistling on a long note."⁹⁹ The trick was to then speed it up.

⁹⁷ Herzberg, "Tone, Moennig, and Guetter," *IDRS list-serve* (TS, author's personal archive, Potsdam, NY).

⁹⁸ Herzberg, interview by author, January 12, 2007, Encino, CA, interview 3, (recording and transcript, author's personal archive, Potsdam, NY).

⁹⁹ Herzberg, interview 3.

Sharrow told Herzberg he would know he had learned the technique when he didn't have to make an effort to do it anymore. Herzberg admitted to practicing his new vibrato for hours down in the furnace room of his apartment building, so as not to disturb anyone, until he felt comfortable with the technique.¹⁰⁰

After many years of playing Herzberg determined that vibrato depended on many factors.

One very important factor is the resistance you are blowing against. The higher the resistance the less the undulations are, and justifiably so. In the low register, where there is no/very little resistance, the vibrato is slower which is natural. And the higher you went with resistance the vibrato becomes much more subtle. I also involve my reeds with it too because resistance also has to do with reeds.¹⁰¹

Some students came to Herzberg with what he called a natural vibrato.

I've had a new student come in to SC, sit down and play with a beautiful vibrato and not know what they were doing. And if they don't know what they're doing I'll be darned if I'm going to tell them because it's just beautiful. So, there is what one might call a, for want of better words, natural vibrato.¹⁰²

Herzberg worked to determine how this natural vibrato was being produced by observing the student's face and neck closely. He felt the student's throat and jaw while they were playing but was never able to discover the source of the vibrations.¹⁰³

¹⁰⁰ Herzberg, interview 3.

¹⁰¹ Herzberg, interview 3.

¹⁰² Herzberg, interview 3.

¹⁰³ Herzberg, interview 3.

Creation of vibrato using the lips or jaw was also acceptable to Herzberg if it was well done.

If it was nice I would never change it. Now my authority for that is Maurice Allard who gave a lecture in Canada many years ago. I wasn't at the lecture, but I did read about it. And Maurice Allard says "of course the only vibrato is a lip vibrato."¹⁰⁴ So I became far more liberal about vibrato.¹⁰⁵

However, if a student came to him with a "nanny goat" vibrato, one that was very fast and narrow, he felt he had to get rid of it. He did this by having the student play long tones without vibrato until the offending wobble disappeared.¹⁰⁶

This final bit of advice was offered to the author most adamantly.

If you come upon a student who is really a beginner and starts playing for you with a lovely vibrato, SHUT UP about it because it's a gift. I don't know how they do it. I struggled with vibrato that I wanted all my life. But, there were times when it would just come right and it pleased me no end.¹⁰⁷

Use of the Tuner and Metronome

In March of 1997 Herzberg offered the following comment, "In my opinion tuners combined with the metronome are essential tools in the pursuit of the many skills

¹⁰⁴ Herzberg, interview 3.

¹⁰⁵ Herzberg, interview 3.

¹⁰⁶ This type of rapid vibrato was the accepted norm before the 1980s. Herzberg was careful not to offend a student who came to him with an offensive vibrato, knowing the student had probably learned it from one of his peers. He didn't mention vibrato but would instead have the student begin with long tones with no vibrato and then introduced the air stream vibrato.

¹⁰⁷ Herzberg, interview 3.

and insights necessary to maintain and improve one's abilities on the bassoon."¹⁰⁸ He used the tuner to develop an acute awareness of the pitch tendencies for each note under any condition of dynamic or articulation. It was not his goal to play "perfectly in tune," but rather to be so intimate with the tendency of each note so as to be able to adjust accurately for any situation.¹⁰⁹

The tuner and metronome were always to be used for Herzberg's long tone exercises.

When you combine a metronome with the long tone practice, it introduces an essential impersonal discipline to the exercise. In working on long tones you should not just play when you want to, at the dynamics you want to, without checking on your intonation.¹¹⁰

The metronome creates the "command," when to produce the dynamic requested, and the tuner analyzes the note upon the instant of attack, while sustaining, and at the release. The tuner is used to analyze pitch during a crescendo or diminuendo, or in a series of articulations. The goal was to learn and create a mental catalog of how each note reacted to every articulation and dynamic.¹¹¹

A tuner was used to train the embouchure and the ear in order to learn to play accurately without the tuner. Herzberg noted a popular tendency to discount the

¹⁰⁸ Herzberg, "The Use of the Tuner," *IDRS list-serve*, March 1997, (TS, author's personal archive, Potsdam, NY).

¹⁰⁹ Herzberg, "Use of the Tuner."

¹¹⁰ Herzberg, "Use of the Tuner."

¹¹¹ Herzberg, "Use of the Tuner."

intonation of a particular note in favor of its most resonant placement. He used middle C as an example.

I have found that a flat middle C can be more resonant than its proper intonation. Adopting the tone that produces the most resonance rather than its correct intonation is a fatal preference, and can lead to the habit of disregarding intonation in favor of “resonance.” I know of a case where a fine bassoonist insists on playing his Bb in the middle register on the flat side because it “sounds better,” and he insists that others adjust to it.¹¹²

A tuner “will keep one from making that unacceptable choice.”¹¹³ He continued, “You must become accustomed to the “sound” of good intonation and practice accordingly. The resonance you want can be safely attained by other methods while keeping the intonation within bounds.”¹¹⁴

Herzberg’s philosophy of teaching with regard to use of the tuner was summarized during an interview with the author.

Recently, in a conversation with one of my former pupils who is in one of the major symphonies, he remarked that during their studies with me, I kept my students honest. I do have a great deal of affection for my students, but I don’t trust them without checking. I have found that it requires attention to their assignments, a constant listening to their practice of the fundamentals, and use of many “tools” to develop integrity in their playing. One of the most important teaching tools, in my opinion, is the tuner.¹¹⁵

¹¹² Herzberg, “Use of the Tuner.”

¹¹³ Herzberg, “Use of the Tuner.”

¹¹⁴ Herzberg, “Use of the Tuner.”

¹¹⁵ Herzberg, “Use of the Tuner.”

Equipment and Reeds

Every performer should have mechanical knowledge of his instrument and be adept at basic skills of instrument repair. A bassoonist should constantly be searching for better equipment, including instruments, bocals and reeds. Frustration on the bassoon is often traceable to difficulties with equipment, whether it is a leaking instrument, a poor quality bocal, or an inadequate reed. Reeds are most often the source of any problem that may arise. Herzberg explained, “Having good reeds at hand requires that we make large quantities; most cane is unpredictable, and there is safety only in numbers.”¹¹⁶

Selecting a Bocal

Herzberg developed a rigorous procedure for testing bocals.¹¹⁷ He preferred to play on the best equipment available and was constantly trying new bocals in order to find the best match for his bassoon. He described his obsession, “Any time anyone had a bocal for sale I tried it, and if I liked it I bought it, regardless of whether I needed a bocal or not.”¹¹⁸ Regarding the procedure he explained, “The test must be simple, it must be convincing, and it must be definitive.”¹¹⁹

There were several rules to be followed. The first rule was that any identifying marks, letters, numbers, or brand name had to be covered. Secondly, the performer

¹¹⁶ Herzberg, “The Study of Bassoon.”

¹¹⁷ Herzberg wrote notes describing the philosophy behind the procedure as well as the steps involved. These notes were given to the author with the express intent that they be used in this document.

¹¹⁸ Herzberg, “Bocal Test 1” *IDRS list-serve*, (TS, author’s personal archive, Potsdam, NY).

¹¹⁹ Herzberg, “Bocal Test 1.”

himself was to be the primary and ultimate person making the decision. Herzberg explained, “No friend, spouse, colleague, conductor, or any other listener should indicate approval or disapproval while the test is proceeding.”¹²⁰ He preferred the test to be done without an audience of any kind. The bassoonist was to use the bocal he was currently playing on as a standard for comparison. The same notes should be the test passage for each bocal being tried. The test should be played immediately on each bocal without any additional notes or prior attempts whatsoever.¹²¹

The procedure Herzberg described worked whether testing one bocal or several. When testing bocals the player should compare the first bocal to be tested with the bocal he is accustomed to playing and whose qualities he already knows. According to Herzberg this would allow the bocal being tested to exhibit its own qualities since the player could neither alter nor temper them as he played. The test between two bocals should be repeated only once if needed. Repeated playing on the trial bocal will dilute the objectivity of the test. As the player becomes more familiar with the new bocal he will try to color its qualities to fit his tastes. The trial bocal must speak for itself without influence from the player. In Herzberg’s words, “The differences can be stark and the qualities of the better bocal will be apparent. So will the lesser qualities of each.”¹²² The player should then select the better of the two bocals and set the lesser one aside. The player then selects the next bocal to be tested; comparing it to the better bocal from the

¹²⁰ Herzberg, “Bocal Test 1.”

¹²¹ Herzberg, “Bocal Test 1.”

¹²² Herzberg, “Bocal Test 1.”

first test. The player should use exactly the same notes when testing the second pair of bocals as was used in the first test. At the end of the second test the player must choose the better of the two bocals and again set the lesser one aside. The third test would be between a new bocal and the better of the two bocals from test number two. This process can theoretically be continued indefinitely. However the player should realize that at some point his concentration and interest will begin to diminish. The number of bocals that can be tested successfully in a given period will vary based on the individual player.¹²³

Certain notes and passages were used when conducting bocal trials. Herzberg preferred to use a simple arpeggio encompassing the entire range of the instrument. He chose to play a Bb major arpeggio starting on low Bb, going up to high D, and returning to low Bb. His instructions included the following information: “The arpeggio is to be slurred as far as one can go in one breath, then taking a breath and continuing. The dynamic should be mezzo-forte.”¹²⁴ He chose the Bb arpeggio because it could be played easily and from memory, thus avoiding the distraction of having to read notes from a page. Herzberg realized that a complicated passage would require the player to focus on notes rather than the bocal’s performance. By concentrating on the bocal’s tendencies the player could determine whether it helped or hindered performance compared to the known tendencies of his current bocal.¹²⁵

¹²³ Herzberg, “Bocal Test 1.”

¹²⁴ Herzberg, “Bocal Test 2,” (TS, Herzberg’s notes from email to IDRS list-serve, author’s personal archive, Potsdam, NY).

¹²⁵ Herzberg, “Bocal Test 2.”

When describing his procedure Herzberg cautioned that the player be sure to make a subtle crescendo while ascending to the tenor register, Bb at the top of the staff to the F immediately above, is full bodied with no diminuendo. The player should pay close attention to the pitch of the tenor Bb as it is often sharp in a crescendo or when articulated. The bocal is a good one if it resists those tendencies. The D just above the staff tends to be low in fuller dynamics. If the tone hole is reamed to raise this pitch, the octave below will become too sharp. Herzberg used the third movement solo from Mahler's *Symphony No. 1* to test the stability of these Ds. If the bocal is good it will support the pitch in upper register "with little help even in a crescendo."¹²⁶ The F above the staff is often flat especially in a crescendo. A good bocal will reduce this tendency. The high D will also remain full in tone with a good bocal. Herzberg acknowledged that scraping on the reed can mitigate these tendencies. He pointed out, however, that a good bocal would limit the amount of scraping necessary to stabilize the pitch of these trouble notes.¹²⁷

One key element of the test is that there must be absolutely no additional playing between each trial. The player should play the arpeggio from top to bottom. The tone quality should be full throughout with no diminuendo. The player will then switch to the second bocal and play the exact same arpeggio with equal attention to fullness of tone and accuracy of intonation. The arpeggio may be played once more on each of the

¹²⁶ Herzberg, "Bocal Test 2."

¹²⁷ Herzberg, "Bocal Test 2."

bocals. If there is still no apparent difference or the new bocal is not as good as the current bocal it should be placed aside.¹²⁸

After the player has tested all of the new bocals and has selected the best from the lot, the new bocal is then to be tested against the player's current bocal using a series of excerpts. Herzberg suggested playing the excerpts from memory to allow full attention to be focused on tone and intonation. He also suggested playing each with your eyes closed to eliminate any visual distractions. Three standard excerpts were used by Herzberg for this phase of the trial; the solo from the second movement of Tchaikovsky's *Symphony No. 4*, the *Berceuse* from Stravinsky's *Firebird*, and the solo from Ravel's *Bolero*. He agreed there were other solos, such as the opening of the second movement of the Mozart *Concerto in Bb, K. 191* as well as the opening theme from the Weber *Concerto in F*, which would be adequate as well. Each solo should be played as though at an audition with everything riding on one rendition. Play the Tchaikovsky solo once on the familiar bocal and then once on the new bocal. Continue the test with each of the other two passages. Herzberg did not have an uncomplicated excerpt to suggest for testing the lower register of the bassoon. Instead he suggested playing an F major scale from open F down to the low Bb to check the lowest octave of the bassoon. After playing all of the excerpts, one of the bocals should stand above the other. Each of Herzberg's carefully made choices had been verified over time and he often found himself lending these "favorite bocals" to colleagues time and time again.¹²⁹

¹²⁸ Herzberg, "Bocal Test 2."

¹²⁹ Herzberg, "Bocal Test 2."

A bocal should never be chosen by its brand name, letter or number code, or date of creation. Not all similarly numbered bocals played at the same pitch. Herzberg cautioned not to get rid of a familiar bocal after purchasing a new one in the event one might wish to return to the former bocal. Herzberg's final words of wisdom on the topic were, "A bocal is useless if it does not meet your standards when you test it. If a bocal survives the tests I have evolved it is worth every cent you will have to pay."¹³⁰

Old versus New

Herzberg's search for the best possible equipment led him to purchase and play on new Heckel bassoons from each series beginning with the 7000s and ending with the 12000 series. In an email to the International Double Reed Society Herzberg argued against using the older bassoons. Herzberg felt strongly that playing an old Heckel was not a wise choice. He argued that Heckel had received input and complaints from prominent bassoonists around the world and made changes in their instruments over time in reaction to this input. Each change was made to solve a previous issue and anyone who played an old Heckel was wasting valuable time and effort struggling to overcome issues that had been solved in the newer models.¹³¹

Projection

Herzberg's thoughts on a variety of factors which influence projection were presented in an email to the IDRS list-serve in 1998. The email was a form of rebuttal to

¹³⁰ Herzberg, "Bocal Test 2."

¹³¹ Herzberg, "Old Bassoons," *IDRS list-serve*, (TS, author's personal archive, Potsdam, NY).

a current discussion of various makes and models of bassoons and their merits regarding projection in an orchestral setting. In Herzberg's opinion successful projection was most often due to the sensitivity of the conductor and the accompanying musicians. The acoustics in a concert hall were always a major factor. Another major influence in bassoon projection was orchestration. He recalled a speech by the famous French bassoonist Maurice Allard (1923-2004) at the Toronto IDRS Conference in which Allard mentioned that he had always to turn up the volume to hear the bassoon in a Brahms Symphony. Herzberg explained, "One great virtue of the bassoon is its compatibility with other instruments."¹³² He continued, "The virtue of compatibility becomes its curse in the case of Allard's reference to the Brahms Symphonies."¹³³ The solo range of the bassoon falls in the middle of the orchestra, neither soprano nor bass. It lies sandwiched in the middle of the harmony and does not have the advantage of the oboe, flute, or clarinet that very often plays on top of the harmony. After a certain stage of advancement, every final judgment must be made by the player. Anyone a player might turn to for a definitive decision about an instrument will eventually leave the scene and the player will be left to deal with that decision twenty-four hours a day. Herzberg concluded, "With the best of intentions, no manufacturer of bassoons can produce an instrument for all reasons."¹³⁴

¹³² Herzberg, "Projection Factors 1998," *IDRS list-serve*, (TS, author's personal archive, Potsdam, NY).

¹³³ Herzberg, "Projection."

¹³⁴ Herzberg, "Projection."

CHAPTER III

THE HERZBERG CURRICULUM

The curriculum developed by Herzberg consisted of a detailed series of scale, interval, and long tone exercises and a prescribed collection of etude books. The scale, interval, and long tone exercises he developed were written to address specific areas of weakness or difficulty common to bassoon players.¹³⁵ All but the most diligent and advanced students spent at least half of every lesson on the exercises alone. The etude books were to be learned in a specific order and every etude in each of the books was assigned. Challenging etudes test a performer's control of articulation, response, intonation, tone, expression, and stamina and the music included in the books chosen by Herzberg is some of the most difficult passagework written for the bassoon. Therefore, his students would develop and improve much more rapidly by working on etudes and his exercises than by working on solos and excerpts. Any solo or excerpt might have three or four difficult spots but these etudes challenge the player from start to finish. Solo material was not heard in the lesson until adequate progress through the exercises was noted and the assigned etudes had been performed to his satisfaction. If an exercise or an etude was not adequately prepared it was added to the list of materials to be heard the next week. The highest level of preparation and performance was demanded by Herzberg

¹³⁵ These exercises are the subject of chapter four.

and those who chose not to adhere to the curriculum were not allowed to continue in his studio.

Etudes

The curriculum included a specific progression of etude books. Students worked out of more than one etude book at a time and every student, regardless of his level, began with the *25 Studies in Scales and Chords, op. 24* composed by Ludwig Milde (1849-1913). Each etude in the book was assigned and skipping was not allowed. The reason for this, Herzberg explained, was that he didn't know what a student could or could not do unless he heard every exercise.¹³⁶ He also insisted on the use of standard fingerings to achieve the best possible intonation and strength of tone. In his words, "There is no point in trying to avoid a technical difficulty by changing a fingering. After all, what do we practice scales for?"¹³⁷ His goal was to use the same set of standard fingerings for every passage in order to solidify control over tone, timbre, and accuracy.¹³⁸ The etudes in this volume of Milde studies are paired by key signature.

¹³⁶ Herzberg, *Memoirs: Teaching*.

¹³⁷ Herzberg, *Memoirs: Teaching*.

¹³⁸ Herzberg, interview 2. This point was stressed specifically in opposition to the practices of Lewis Hugh Cooper (1920-2007), bassoon professor at the University of Michigan. Cooper required his students to learn the Milde *Scale Studies* using both standard and alternate fingerings. Herzberg found this practice to be an absurd waste of time and detrimental to his goal of achieving an even tone and flawless intonation across the range of the instrument. Herzberg said, "You can't depend on the technique unless you're able to depend on those [consistent fingerings]."

The odd numbered etudes are based on scale patterns and the even etudes are based on arpeggios. The author has found that these etudes, as written, present quite a challenge to most freshmen. However, Herzberg took them a step further. Since all but two of the etudes are written in sixteenths he had his students practice them using the articulation patterns from his scale exercises (all articulated, slur three tongue one, slur two tongue two, etc.). Although this required a great deal of practice time, it provided his students with a high level of success when playing the etudes as printed.¹³⁹

After the *Milde 25 Studies* were successfully completed the student would begin working out a set of etude books by Marius Piard. Etudes in Volume One of Piard's *Quatre Vingt Dix Etudes* are based on scale patterns within a single key. Volume two of the set includes etudes based on arpeggiated patterns and disjointed intervals within a single key. Both volumes include frequent changes in meter and rhythmic grouping. The challenging tempos, added by Maurice Allard, were in Herzberg's opinion, key to the usefulness of these etudes. All students were required to play the etudes up to Allard's mark.¹⁴⁰

Next was the *Twenty Melodious Studies* by Alberto Orefici. These studies are more melodic than the *Milde* and include combinations of steps, small skips, and large leaps with a variety of articulations. The studies include a variety of tempi and challenge the student to develop both lyricism and technique.

¹³⁹ Herzberg, interview 3.

¹⁴⁰ Herzberg, interview 3.

These etudes were followed by etudes of Carl Jacobi (1891-1952), *Six Bassoon Etudes, Op. 15*. This volume of etudes, originally published by Henry Lemoine, was later edited and published as the *Six Caprices*.¹⁴¹ However, students were told to avoid the new edition by International Music due to editorial changes to the articulations and dynamics made by one of Herzberg's esteemed peers.¹⁴² According to Herzberg these changes simplified some of the more difficult passages and thereby decreased the value of the etudes.

26 Melodious Studies, op. 15 by Eugène Jancourt (1815-1901) was the next volume in Herzberg's curriculum. Again Herzberg specified none of the etudes were to be skipped by anyone. These etudes were used so that Herzberg could see how well his students applied what they did in the first half hour of the lesson and what their own musicality would supply.¹⁴³

The Jancourt etudes were followed by the *18 Studies for Bassoon* by Giovanni Battista Gambaro (1780 ca. – 1850 ca.). Students were asked to pencil in expression markings "because the thematic material was trite" and Herzberg wanted them to work to make the etudes interesting. He made certain that students played their own markings by reading along with them. Herzberg commented, "They are not easy and you'll get to like them, I guarantee it."¹⁴⁴

¹⁴¹ Jacobi, Carl, and Bernard Garfield. *6 Caprices for Bassoon*. New York: International Music, 1957.

¹⁴² Herzberg, interview 4.

¹⁴³ Herzberg, interview 4.

¹⁴⁴ Herzberg, *Memoirs: Teaching*.

The next book of etudes was Orefici's *Bravura Studies*. These etudes were described by Herzberg as "wonderful but difficult."¹⁴⁵ He recalled hearing past performances by his students during seminar that took his breath away. He also explained that, although it bothered his colleagues on the examination committee, he required his students to play only etudes for their examination auditions. When asked by his colleagues why they only played etudes instead of Mozart he replied, "Because they are all alone from top to bottom."¹⁴⁶ There are twelve etudes in the *Bravura Studies*.

Twenty Etudes by Paul Pierné (1874-1952), volume II of *Nouvelle Technique du Basson* by Gustave Dhérin and Pierné was the next selection in the curriculum. Hugh Michie, second bassoonist with the Cincinnati Symphony provided the following anecdote regarding the Pierné etudes.

It should be noted that [Herzberg] liked this etude book very much. Number 13 titled *Étude* is particularly famous (or infamous). He had his students set the metronome at 80 (which is marked) and required that the whole etude be played in one breath. It is all 16th notes and not particularly hard, but to do it in one breath is a challenge. Critics said it was just macho nonsense, but Mr. H loved to expand our limits. He wanted to stretch the control and concentration we had while under duress. It was very effective.¹⁴⁷

The etudes of Umberto Bertoni (1883-1953) and Marcel Bitsch (b. 1921) were included next in Herzberg's curriculum. Scott Walzel, second bassoonist of the Dallas

¹⁴⁵ Herzberg, interview 4.

¹⁴⁶ Herzberg, interview 4.

¹⁴⁷ Hugh Michie, email to author, January 7, 2008.

Symphony, remembered working on the Bertoni, Orefici, and Bitsch at the end of his studies with Herzberg.

He loved the Bertoni and so did I. They were great atonal etudes to work on and challenging in the sense of making music out of something somewhat abstract. The Orefici Bravura were technically very challenging and required a lot of slow practice with the metronome. The Bitsch are just really hard! The first is somewhat easy, but the rest of them are a variation on the first one and [are] extremely difficult.¹⁴⁸

The penultimate book in Herzberg's curriculum is a book of twentieth century etudes by Pierre Max Dubois (1930-1995). These twelve etudes require technical control beyond what is achievable by all but the most dedicated of bassoonists. Maurice Allard edited the already demanding etudes, adding articulations and tempo markings. Herzberg described the Dubois etudes.

There are some wonderful, wonderful studies by Dubois. Get that book and I dare you to read it at the Allard tempo. But these things, these challenges are what push you even further. I've had some students play those things at the written tempo and I just couldn't see how they did it. I tried my best but, it taught me you push your technique a little further and a little further.¹⁴⁹

Students ended their studies with Milde's *Concert Studies, Op. 26*. In Herzberg's opinion most students in other studios began working on these advanced etudes far too soon, often immediately after the *Studies in Scales and Chords, op. 24*. Herzberg considered the *Concert Studies* to be the "epitome of bassoon music" and did not allow

¹⁴⁸ Scott Walzel, email to author, January 19, 2008.

¹⁴⁹ Herzberg, interview 5.

them to be approached until the student was adequately prepared.¹⁵⁰ This preparation came only from completing every etude in all of the books in his curriculum. In his view they were the best examples of romantic music in the bassoon repertoire. He expressed his fondness for the studies, “I love romantic music, unabashed, that kind of music is my music!”¹⁵¹

¹⁵⁰ Herzberg, *Memoirs: Teaching*.

¹⁵¹ Herzberg, *Memoirs: Teaching*.”

CHAPTER IV

THE EXERCISES

Herzberg developed comprehensive daily exercises which are not only the heart of his pedagogical philosophy but, according to most if not all of his students, the reason for their performance success. The exercises are to be taken seriously and performed with the utmost concentration and attention to detail. Clarity, accuracy, and absolute evenness of tone across the entire range of the instrument are the goals for each of the exercises.¹⁵²

All these versions are not for any musical value at all. You have to learn to maintain the intensity on each version, NO diminuendo. I found that people will give diminuendos; they make the difficult part softer. So you have to maintain that intensity.¹⁵³

The first twenty to twenty-five minutes of every lesson were spent on these exercises. The primary goal was complete technical mastery of the instrument. Such mastery would allow effortlessly flawless execution, the foundation of artistic performance. With a solid foundation in place the performer can focus on crafting lines with eloquent lyricism or creating a beautiful turn of phrase.¹⁵⁴

¹⁵² Herzberg, interview 4.

¹⁵³ Herzberg, interview 4.

¹⁵⁴ Herzberg, interview 4.

The exercises are to be played without music. Playing the exercises from memory allows the student to focus on listening for accuracy of intonation, clarity and evenness of articulation, and steady volume. Notes on a page distract the performer and often shift the focus to processing information with the eyes instead of the ears.¹⁵⁵

The most common patterns of articulation are used over the course of scale exercises. The interval and long tone exercises are played with a legato slur. While the inclusion of the directive “legato” along with the slur may seem redundant, Herzberg meant for the exercises to be slurred without any hint of grouping by interval or finger combination; absolutely legato.¹⁵⁶

It is possible to learn the notes/fingerings for each of these exercises without tremendous effort. The key, however, is in executing each one with no discernable change in dynamic throughout the range and with complete consistency of articulation. There was no given speed requirement for the scales. When asked if he required a certain speed Herzberg commented:

You know that’s a very, very good question. I didn’t, but I’d sit next to a student and if they hurried or if they went slowly I would notice it. But it would be too subtle. So, I think it would have been better to use a metronome.¹⁵⁷

¹⁵⁵ Musical examples have been created and included in this document as a replacement for the aural example Herzberg would have provided for his students. Each of the scale and interval examples provided are in the key of C major and assume a range of B-flat¹ to E⁵. The exercises were adapted by Herzberg to fit the range of each student.

¹⁵⁶ Herzberg, interview 4.

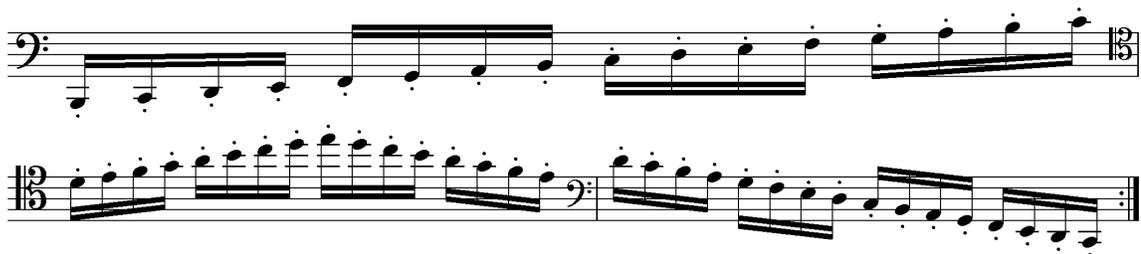
¹⁵⁷ Herzberg, interview 3.

Herzberg Scales

Each scale exercise is to be repeated three times. The top note for each exercise will depend upon the performer's range and must allow the player to begin each repetition of the exercise on the strongest beat of the bar. The first time through each scale pattern is to be played slowly and with full volume. The second time should be played somewhat faster and mezzo forte. The third repetition should be as fast and as soft as possible. With each repetition the attention should remain on absolute accuracy and evenness of tone. The variety of articulations and dynamics as well as the extremes of range also serve to test the reed for consistency of response and ease of tone production. While describing the exercises Herzberg explained, "Now what I'm talking about is putting pressure on you and the reed response. And you've got to figure out how to fix it."¹⁵⁸

The first scale exercise addresses one of the biggest challenges for the bassoonist by requiring all notes to be articulated cleanly, even at the extremes of range (see example 2).

Example 2. Scale exercise one in the key of C major.



¹⁵⁸ Herzberg, interview 3.

Herzberg began with this articulation because he knew it was the most difficult and required the most practice time and attention. The beginning note for this exercise is simply the lowest note on the instrument that lies within the key to be practiced. The lowest note on the instrument within the key of C is low B so that becomes the starting pitch. The scale should ascend to the highest note in the performer's range that will create a loop at the end of the scale without omitting any of the lowest register notes.¹⁵⁹

The second scale exercise begins on the second lowest note within the key, or one note within the key higher than the first exercise (see example 3).

Example 3: Scale exercise two in the key of C major.



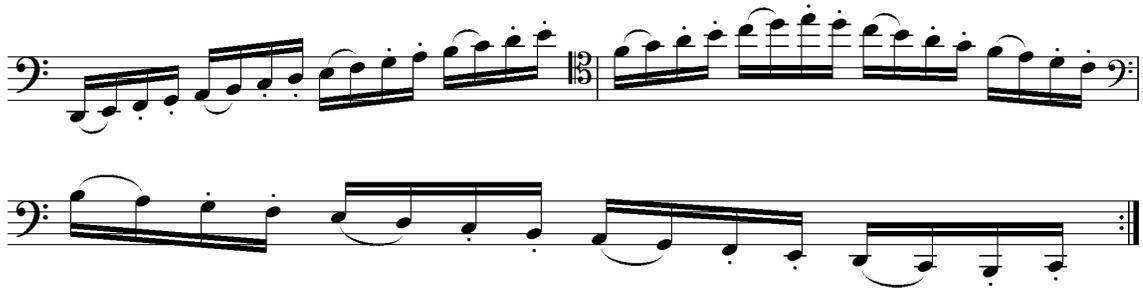
In C major the second exercise would begin on low C (c^2). The turnaround at the top should include the highest note that will create a smooth loop at the end of the scale. Again the exercise is to be repeated three times, beginning slowly and forte and moving

¹⁵⁹ The examples provided present the scale exercises in the key of C major for a student whose range includes high e (e^5). Specific pitches will be referenced according to their octave with c^1 being the lowest note on the piano keyboard, c^2 being the lowest C on the bassoon, and c^4 being middle C on the piano.

to as fast and soft as possible. The challenge for exercise two is keeping the same intensity on the articulated pitch as for the slurred notes.¹⁶⁰

Scale exercise three begins on the third lowest note in the instrument's range that lies within the key (see example 4).

Example 4. Scale exercise three in the key of C major.



The articulation is two slurred pitches followed by two tongued notes. The higher starting pitch allows (requires) the performer to include the lowest register pitches at the end of the scale before returning to repeat the loop. There should be no variance of articulation between the last two notes of each group and the dynamic must remain constant across the range of the exercise.¹⁶¹

¹⁶⁰ Herzberg, interview 3.

¹⁶¹ Herzberg, interview 3.

Slurring in groups of four sixteenths is the pattern for scale exercise four (see example 5).

Example 5. Scale exercise four in the key of C major.



The articulation on every fifth note must not disrupt the flow or dynamic of the scale.

This version begins one note higher, within the key, than the previous exercise and leaves room to add the lower register notes at the end of the scale before the repeat.¹⁶²

Scale exercise five shifts to eighth-note triplets and is to be played with the first eighth note of each triplet articulated and the second and third eighth notes slurred (see example 6).

Example 6. Scale exercise five in the key of C major.



¹⁶² Herzberg, interview 4.

Care must be taken to divide the three notes of each triplet equally within the pulse. The articulation of the first and second notes of each triplet must match, and the third eighth must be the same dynamic as the articulated eighths. The lowest notes are included at the end of the scale before the repeat.¹⁶³

Scale exercise six continues with the eighth-note triplets and changes the articulation so that the first two eighths are slurred and the third is tongued (see example 7).

Example 7. Scale exercise six in the key of C major.



The performer must be certain to divide the triplet evenly, match the dynamic of the slurred second eighth to that of the articulated first and third eighths. Make certain the third eighth does not get “bumped” or stand out due to the staccato articulation after the slur.¹⁶⁴

¹⁶³ Herzberg, interview 4.

¹⁶⁴ Herzberg, interview 4.

Each repetition of scale exercise seven is to be slurred from beginning to end (see example 8).

Example 8. Scale exercise seven in the key of C major.



The goal is to maintain the dynamic level in the upper and lower octaves and match tone quality across the range of the scale.¹⁶⁵

The final version of the scale exercise returns to duple eighth-notes and is to be played slurred by pairs of eighths (see example 9).

Example 9. Scale exercise eight in the key of C major.



The performer should avoid any diminuendo on or clipping of the second eighth-note in each pair. Articulations should match and dynamic and tone should remain steady throughout the exercise.

¹⁶⁵ Herzberg, interview 3.

Herzberg Intervals

The interval exercises are rather self-explanatory. Each pattern is under one slur unless you repeat a pitch at the top or bottom. In example 10 the top pitch is repeated and must be rearticulated for rhythmic clarity. The key is to execute the intervals in a steady stream of glassy smoothness, avoiding the temptation to create groupings of any kind. The pattern of ascending thirds also includes descending seconds and that the descending thirds also include ascending seconds (see example 10).¹⁶⁶

Example 10. C major scale in thirds.

The musical notation for Example 10 consists of three systems of staves. The first system is in bass clef, 4/4 time, and features a single slur over the entire line. The second system is in alto clef, 3/4 time, and features two slurs, one over the first half and one over the second half of the line. The third system is in bass clef, 3/4 time, and features a single slur over the entire line. The notation consists of eighth and sixteenth notes forming ascending and descending thirds.

¹⁶⁶ Herzberg, interview 4.

Smoothness is again the key when playing scales in fourths (see example 11). There should be no hint of grouping by the beat or the bar. Note that scales in fourths include thirds as well.¹⁶⁷

Example 11. C major scale in fourths.

When a student practices scales in fifths they are also working fourths (see example 12). Listen for even tone, accurate intonation, and be sure to keep the dynamic level constant.

Example 12. C major scale in fifths.

¹⁶⁷ Herzberg, interview 4.

If a mistake is made during a scale or interval exercise, a small loop should be created from notes surrounding the error. The loop should be repeated in order to correct the error. The following analogy was used by Herzberg to describe the idea to his students, “I always tell my students it’s like having a bad transmission – you don’t fix the whole transmission, you find the part that is worn.”¹⁶⁸ Once the error has been corrected the scale or interval pattern should be continued to its conclusion.

Herzberg Long Tones

The reason for practicing long tones is to gain consistency over a long period of time. Most people who play long tones simply sit with a tuner and sustain one pitch as long as possible before it is necessary to breathe. Some people even go so far as to add dynamic shaping. For Herzberg long tones were a means for gaining control of specific pitches, preferably “bad” notes. Herzberg did not see the point in practicing anything that was already easy for the player to accomplish. That was a waste of time and Herzberg considered it to be “doodling” instead of actual practice.¹⁶⁹ He created a series of exercises which vary in articulation, length of note, and dynamic so that his students would eventually learn to control any given pitch in any circumstance. Again the primary goal for each of the exercises is to produce the notes with flawless intonation.

¹⁶⁸ Herzberg, interview 3.

¹⁶⁹ During the interview sessions in which we discussed these exercises Herzberg would ask me to choose a starting note. If I suggested one that he didn’t have trouble with he would ask me why. My response was always “unstable intonation” or “difficulty of attack” to which he would respond, “Oh that’s your reed.” He would insist that we use only notes that were truly difficult to control, such as low D, or the f-sharp used in the printed exercises here. He simply refused to waste his time on something that was too easy.

The second goal is to achieve consistency of articulation whether the note is preceded by another note or by silence.¹⁷⁰

Long tone exercise one looks deceptively simple (see example 13).

Example 13. Long tone exercise one on f-sharp.

♩=60

ppp *simile*

The goal is to develop the security of a pianissimo attack at the correct pitch. Every note should sound exactly the same with a perfectly crisp articulation and a tone that is clear and in tune. The metronome marking is included to introduce the element of timing to an already difficult task. A conductor (the metronome here) tells you when you are to play; the orchestral player does not get to decide for himself very often.¹⁷¹

¹⁷⁰ Herzberg, interview by author, January 11, 2007, Encino, CA, interview 2, (recording and transcript, author's personal archive, Potsdam, NY).

¹⁷¹ Herzberg, interview 2.

Long tone exercise two introduces changing dynamics by adding a crescendo over bars three and four followed by a two-bar decrescendo (see example 14). The first bar and the last bar are to be played as softly as possible.¹⁷²

Example 14. Long tone exercise two on f-sharp.

♩=60 with Legato articulation

The third long tone exercise begins to look a little more like a conventional long tone exercise, except that each of the beats is softly articulated (see example 15).

Example 15. Long tone exercise three on f-sharp.

♩=60

The articulation must be precise, consistent, and absolutely in time. There should be no change in dynamic throughout the exercise and the volume should be as soft as possible.¹⁷³

¹⁷² Herzberg, interview 2.

¹⁷³ Herzberg, interview 2.

Long tone exercise four is a repeat of exercise three with the addition of controlled dynamic shaping (see example 16).

Example 16. Long tone exercise four on f-sharp.

The player should begin the exercise as softly as possible and hold the dynamic for one measure, crescendo from the second to the third measure, decrescendo from the third to the fourth measure, and hold the softest possible dynamic throughout the fourth measure. The player is reminded that the long tone exercises can be performed in any meter, simply add or subtract quarter notes as appropriate.

Each note in exercise five should be held for exactly two counts by the metronome (see example 17).

Example 17. Long tone exercise five on f-sharp.

The attack must be precise and the intonation must not change between the extremes of dynamic. The goal is to gain control of each entrance so that the volume does not affect

the accuracy of intonation or the clarity of each articulation. Make the dynamics as extreme as possible.¹⁷⁴

The last two long tone exercises are shown below in 6/4 meter (see example 18).

Example 18. Long tone exercise six on f-sharp.

♩=60

ppp *ppp*

They can however, be adapted to any length of note or any meter to allow the performer to fit the exercise to match the scheme of an excerpt or solo piece he might be learning. Playing these exercises with a tuner is necessary to make certain the intonation of the note remains the same throughout its duration. Hold the first and last bars steady at the softest dynamic possible and spread the crescendo and decrescendo evenly over the middle twelve beats for exercise six.

In exercise seven the idea is again for each bar to be the same length, to be determined by the performer (see example 19).

Example 19. Long tone exercise seven on f-sharp.

♩=60

fff *ppp* *ppp* *fff*

¹⁷⁴ Herzberg, interview 2.

The crescendo and decrescendo are to be spread evenly across the first and final bars while remaining as soft as possible for the middle two bars. Putting the crescendo in the final bar requires a great deal of breath support.¹⁷⁵

Former Herzberg student Arlen Fast provided the following additional instructions.

First, pick the note you want to work on. Go through all of these exercises on that note. A complete set of exercises on two different notes is enough for one day. It is important to use the tuner to train the ear. Don't use it as an idiot box. You have to correlate tone color that you hear with the correct pitch for any dynamic level, and you have to NOT stare at the tuner, but rather use it as a reference tool to train your ear so that you know what you are listening for.¹⁷⁶

One Note Exercise

The goal of this exercise is to gain control of the more difficult notes on the bassoon. This exercise can be created around any pitch and will address problems with instability of attack and intonation as well as fingering issues. The exercises include two rhythmic patterns; pattern A consists of quarter notes, with the metronome set at 60 to the quarter note, that are to be played slowly, with extreme evenness of tone and accuracy of intonation. Pattern B is a series of alternating eighth notes which begins at 60 to the quarter note and gradually increases in tempo and decreases in dynamic until the player reaches the limit of accurate execution. The pitch pattern is based upon expanding intervals away from a central problem note, beginning with the half-step and expanding

¹⁷⁵ Herzberg, interview 2.

¹⁷⁶ Arlen Fast, research questionnaire, (TS, author's personal archive, Potsdam, NY).

to an octave. For purposes of explanation and demonstration the note addressed will be c-sharp in the bass staff (c-sharp³).¹⁷⁷

Exercise one surrounds the problem note by a half-step in each direction (see example 20).

Example 20. Exercises 1A and 1B for One Note Exercise.

A. ♩=60

B. *pp* *ff*

f *ppp*

accel. to maximum.

Pattern A, four quarter notes, begins on the third line D, is followed by c-sharp, continues down to B natural and returns to the c-sharp. This pattern is repeated in pianissimo until good control and consistency are achieved. The exercise is then repeated in forte until the same goal is reached. Pattern B uses the same pitches as pattern A but sets them as eighth notes. Pattern B should begin slowly and *forte*. The player then accelerates while in diminuendo until the limit of accuracy is reached.¹⁷⁸

¹⁷⁷ Arlen Fast, email to author, May 26, 2007.

¹⁷⁸ Fast, email, May 26, 2007.

Exercise 2A and 2B replace the half-step with the whole-step (see example 21).

Example 21. Exercises 2A and 2B for One Note Exercise.

A. ♩=60

B.

pp *ff*

f *ppp*

accel. to maximum.

Exercises 3A and 3B replace the whole-steps with minor thirds (see example 22).

Example 22. Exercises 3A and 3B for One Note Exercise.

A. ♩=60

B.

pp *ff*

f *ppp*

accel. to maximum.

Figure 3 shows the progression of intervals to be used in the additional patterns of the One Note Exercise.

Figure 3. Progressive table of intervals employed for One Note Exercise.

Exercise #1	A & B	Minor Second
Exercise #2	A & B	Major Second
Exercise #3	A & B	Minor Third
Exercise #4	A & B	Major Third
Exercise #5	A & B	Perfect Fourth
Exercise #6	A & B	Diminished Fifth
Exercise #7	A & B	Perfect Fifth
Exercise #8	A & B	Minor Sixth
Exercise #9	A & B	Major Sixth
Exercise #10	A & B	Minor Seventh
Exercise #11	A & B	Major Seventh
Exercise #12	A & B	Octave

Three Note Exercise

Like all of Herzberg's exercises, the goal for the Three Note Exercise is to gain better control over problem notes. You must first choose three primary notes. The first of the three primary notes can be any unstable pitch, anywhere in the range. The second note can be either higher or lower than the first but should be a note that is difficult to

slur to from the first note. The third note can be higher or lower than the second and should be difficult to slur to from the second of the primary notes. Three possible pitches for this exercise are shown below (see example 23).

Example 23. Selecting primary notes for Three Note Exercise.



This collection of pitches addresses the ascending slur. However, any combination of ascending or descending intervals will work for this exercise.¹⁷⁹

Once the primary pitches have been selected the player then assigns either an up or down arrow to each pitch (see example 24).

Example 24. Selecting secondary notes for Three Note Exercise.



The player is cautioned not to assign an up arrow to a primary note in the top octave or a down arrow to a note in the lowest octave. Either of these assignments would prevent execution of the complete exercise.¹⁸⁰ For notes in the middle two octaves any combination of up or down arrows can be assigned. Remember, the goal is to make the exercise as difficult as possible.

¹⁷⁹ Herzberg, interview 2; Fast, email, May 26, 2007.

¹⁸⁰ Ab² is the lowest in the range and can therefore, only be assigned an up arrow. If the third note, F₄, is the highest F in the player's range, only a down arrow may be assigned.

The secondary notes are determined by the arrows. The up arrow indicates the secondary note should be above the primary note and the down arrow indicates the secondary note should be below the primary note. There are two basic exercises; pattern A is a series of slow, legato quarter notes that are to be played in pianissimo and then in forte (see example 25).

Example 25. Exercise 1A for Three Note Exercise.

Slowly ♩=60

1st time *pp*
2nd time *ff*

The goal is to achieve a perfectly smooth slur while matching strength of tone on all notes and absolute accuracy of intonation. Pattern B shifts to an eighth-note triplet that begins slowly and accelerates to the fastest speed possible (see example 26).

Example 26. Exercise 1B for Three Note Exercise.

*begin slowly; introduce gradual accelerando with each repetition

The player must maintain focus on absolutely accurate intonation, evenness of tone, and clarity of execution. Exercise 1 incorporates the half-step.¹⁸¹

¹⁸¹ Herzberg, interview 2.

Exercise 2 replaces the half-step with the whole-step (see examples 27 and 28).

Example 27. Exercise 2A for Three Note Exercise.

Slowly ♩=60

1st time *pp*
2nd time *ff*

Example 28. Exercise 2B for Three Note Exercise.

*Begin slowly; introduce gradual accelerando with each repetition.

Exercise 3 expands the whole-step to a minor third (see examples 29 and 30).

Example 29. Exercise 3A for Three Note Exercise.

Slowly ♩=60

1st time *pp*
2nd time *ff*

Example 30. Exercise 3B for Three Note Exercise.

*Begin slowly; introduce gradual accelerando with each repetition.

Figure 4 shows the progression of intervals for the Three Note Exercise.

Figure 4. Progressive table of intervals employed for Three Note Exercise.

Exercise #1	A & B	Minor Second
Exercise #2	A & B	Major Second
Exercise #3	A & B	Minor Third
Exercise #4	A & B	Major Third
Exercise #5	A & B	Perfect Fourth
Exercise #6	A & B	Diminished Fifth
Exercise #7	A & B	Perfect Fifth
Exercise #8	A & B	Minor Sixth
Exercise #9	A & B	Major Sixth
Exercise #10	A & B	Minor Seventh
Exercise #11	A & B	Major Seventh
Exercise #12	A & B	Octave

address accuracy of intonation, evenness of tone, steadiness of dynamic, and clarity of articulation in every moment.

CHAPTER V

REEDS

Anyone who studied with Herzberg knows the extent of his reed making knowledge and prowess. He saw the reed as the link between the performer and the instrument and knew it could either help or hinder a player's efforts. In order to create a reed that meets your needs one must understand how the many variables and parameters affect the performance of the reed. Herzberg set about to discover what worked best for him and made certain his students knew the reason behind their choice for each variable.¹⁸² He understood the absolute necessity for good reeds. However, he was quick to remind his students that no matter how exceptional a reed might be it could never replace practice as the most important step to be taken toward achieving success.¹⁸³

Herzberg's early reed lessons with Vincent Pezzi and his experiences with reed making equipment were a cause of great frustration to him. Pezzi showed Herzberg how to create copies of his reeds but did not explain why the wires needed to be where they were, why the blades needed to be trimmed as he did, or how the measurements affected the pitch, tone, or response.¹⁸⁴ In order to adapt Pezzi's reed style to one that worked best for him Herzberg experimented with wire placement, trimming of the blades, the shape,

¹⁸² Herzberg, interview 6.

¹⁸³ Norman Herzberg, "The Bevel and Wire Placement Relationship," email to IDRS list-serve, January 7, 2000, (TS, author's personal archive, Potsdam, NY).

¹⁸⁴ Herzberg, interview 6.

the profile, and the measurements of length and width of the tube and the blade. He understood early on the necessity for absolute accuracy and consistency in achieving predictable results when working with cane. The tools currently available could not give precise or consistent results and could not be adapted to mitigate certain variables in the cane.

For the first thirty years (since 1933) my reed-making was done by hand. The tools that I used were common. I have a foldover [sic] shaper, plaque, knives, files, mandrels, reamers, and a chopping block. During the years that I was making reeds completely with hand tools, I learned that the riddles of good cane could not be solved or predicted and that hand trimming reeds in a symmetrical pattern could not be done consistently.¹⁸⁵

Herzberg knew he would have to develop his own tools to meet his demanding requirements.¹⁸⁶ (Additional information regarding the tools he developed can be found in chapter six.)

Cane

Donati cane was Herzberg's brand of choice and he kept boxes of it from different years. The oldest cane in his collection was from 1932 and the newest was from 1970.¹⁸⁷ When asked his opinion on aging cane he replied that he saw no difference in results

¹⁸⁵ Yoshiyuki Ishikawa, "Innovations of Herzberg Profiler/Shaper, The Symmetrical Machine," *The Double Reed* 27/3 (2004): 45-52.

¹⁸⁶ Herzberg, interview 6.

¹⁸⁷ Norman Herzberg, interview by author, January 14, 2007, Encino, CA, interview 8, (recording and transcript, author's personal archive, Potsdam, NY).

when making reeds from the 1932 cane versus reeds from the 1970 cane.¹⁸⁸ If a piece of cane had an obvious flaw he would toss it immediately. He had no time to waste trying to “rescue” a poor specimen of cane. He explained the difference between good and bad cane, “A good piece of cane is one that can be trimmed and adjusted with predictable results and that “keeps” its trimming and adjusting. Poor cane must be constantly worked on until there is no longer any trimming or adjusting possible.”¹⁸⁹ Regarding his collection of well-aged cane he said, “If anyone tells you cane gets old, don’t believe them!”¹⁹⁰

Splitting the Cane

J.M. Heinrich’s article titled “The Bassoon Reed: An Analysis of its Construction, Aesthetic, Mechanical, and Botanical Aspects” influenced Herzberg.¹⁹¹ Joelle Amar’s translation of this article appeared in the 1979 issue of the *Journal of the International Double Reed Society*. Arlen Fast described his conversations with Herzberg regarding the best method for splitting tube cane.

In the article, Heinrich shows that cane doesn’t usually grow exactly round, and that it often has some form of an elliptical shape. He advocated splitting the cane so that each piece had a constant curve to its outside diameter. Norman adopted this thinking, and so did I, along with all his other students (I presume). I don’t know of any other article which

¹⁸⁸ Herzberg, interview 8. Herzberg’s comment is interesting when you consider the “greenest cane” he used was from 1970 and had already aged 37 years.

¹⁸⁹ Norman Herzberg, “Reedmaking Method,” email to IDRS list-serve, November 12, 1999 (TS, author’s personal archive, Potsdam, NY).

¹⁹⁰ Herzberg, interview 8.

¹⁹¹ Fast, email to author, January 18, 2008.

was influential to Norman the way this one was. We had long discussions though about exactly how to achieve the correct splits that Heinrich advocated, and Norman was always asking me what methods I used. Ultimately, cane is even more irregular than Heinrich suggests, and the solution to the splitting problem came when I abandoned the idea that cane is reliably elliptical. The radius gage I developed finally allowed me to identify the pieces I really wanted out of a tube, and I'm glad Norman saw the gage in its finished form before he died.¹⁹²

Diagrams of tube cane were often included on Herzberg's seminar exams.¹⁹³ The students were to identify where each tube should be split to produce the best results.

Figure 5 provides an example from Herzberg's seminar exam from the fall of 1985.

Figure 6 illustrates the correct answers from an exam graded by Herzberg.

Figure 5. Diagram of possible shapes for tube cane.

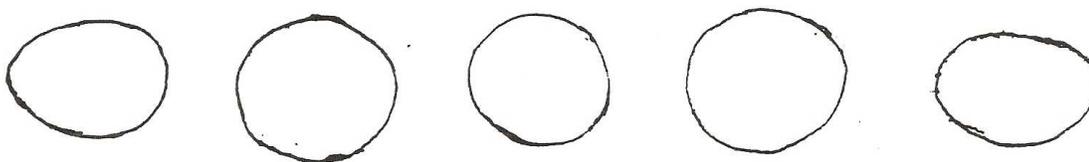
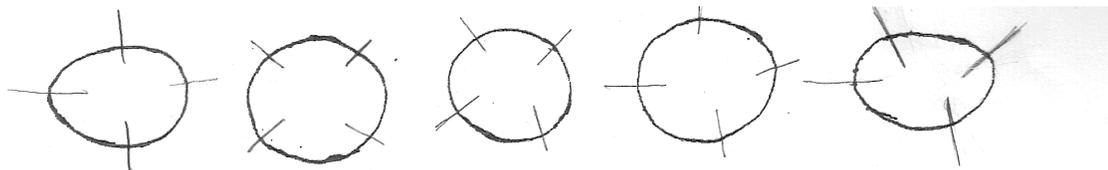


Figure 6. Herzberg's suggestions on where to split the tubes for best result.¹⁹⁴



¹⁹² Arlen Fast, email to author, January 16, 2008.

¹⁹³ Norman Herzberg, USC Seminar Exams, various years, (TS, author's personal archive, Potsdam, NY).

¹⁹⁴ Kristen Sonneborn, research questionnaire (MS, author's personal archive, Potsdam, NY).

Four “Systems”

According to Herzberg there are four systems to contend with when making and adjusting reeds. Those systems were shape, wire placement, bevel, and thickness in trimming. He wrote, “Since we cannot alter or even choose cane composition, the four systems are my main ways to adjust the cane variables.”¹⁹⁵ He continued, “Each of those have definite effects on reeds and with responsive cane and measurements we can approximate reeds that are commensurate with our needs.”¹⁹⁶ He also pointed out, “Of course our needs change as we improve by certain practice disciplines and the requirements of our colleagues, conductors, and most of all by our own desires to reach higher standards.”¹⁹⁷ There were rigorous methods for maintaining the integrity of each of the four systems and managing the effect of each system on the other three.

The Shape: Fold-over versus Flat

There are two basic types of cane shapers available, the fold-over model and the flat model. Herzberg’s insistence on accuracy and consistency led him to prefer the flat shaper over the fold-over type. He had issues with many of the marketed shapers, no matter the type, because they simply were not machined with precision. Often times the flare on the left side was not the same as the flare on the right side of the shaper tip. This

¹⁹⁵ Norman Herzberg, “The Bevel,” email to IDRS list-serve, November 16, 1999, (TS, author’s personal archive, Potsdam, NY).

¹⁹⁶ Herzberg, “The Bevel.”

¹⁹⁷ Herzberg, “The Bevel.”

inaccuracy would lead to uneven blades, causing slippage and leaking.¹⁹⁸ In addition to his general complaints about the inaccuracy of available shapers, Herzberg wrote about the flaws inherent in the fold-over model. “There is the problem of the clamping of the cane so that all of its natural curve is forced to hug all of the face of the foldover shaper. That is assuming the faces match each other to close tolerances.”¹⁹⁹ Cane will tend to curl or buckle when folded over against the face of the shaper. Unless the cane can be held absolutely flat against the shaper, consistency in the finished shape cannot be obtained. The angle of the knife also introduces an element of variability. The knife must be held absolutely perpendicular to the tip of the shaper. Any amount of angle will cause the knife to cut into the face of reed blade. This variability will result in poor quality reeds with “unequal cane blades and throats, slippage in the blanks, and reeds with various widths.”²⁰⁰

These issues led Herzberg to develop a precision flat shaper. The flat shaper allows the cane to remain in its natural flat state without the stress of being folded. The interior surface of the flat shaper matches the contour of the gouged cane, allowing the cane to lie flat against the shaper face at all times. The cane is clamped tightly between two matching sections of the shaper. This setup allows cane to be removed precisely and consistently from one piece of gouged cane to the next.²⁰¹ Yoshiyuki Ishikawa and

¹⁹⁸ Herzberg, “The Herzberg Flat Shaper Advantages,” email to IDRS list-serve, (TS, author’s personal archive, Potsdam, NY).

¹⁹⁹ Herzberg, “Flat Shaper.”

²⁰⁰ Herzberg, “Flat Shaper.”

²⁰¹ Herzberg, interview 1.

several of his students at the University of Colorado compared the Herzberg system to the collection of profilers and shapers already owned by their school. Ishikawa had the following to say about the accuracy of Herzberg's shaper.

Unlike ordinary straight shapers, Herzberg's shaper is a precise heavy-duty straight shaper. It has been cut with computer-controlled mill so that the cane which is formed is perfectly symmetrical, within .002 of an inch, and the two blades precisely match when folded, with absolutely no overlap. Out of 30 shapers in the collection, Herzberg's shaper is the only tool that is capable of cutting a symmetrical shape.²⁰²

The Shape and Intonation

In developing his shaper Herzberg felt he had to make certain it had dimensions that would always help bassoonists, especially with regard to intonation. A variety of shapers was already available for purchase when he began to develop his own shaper. He understood that with the variety available, each bassoonist would have his own preference as to which shape worked best for his set up. He knew many bassoonists liked a wide shape but believed more would be attracted to the benefits of a narrower shape. He attributed several of the typical difficulties in bassoon playing to the use of a wide shape.²⁰³

Wide shapers do well in the lower half of the bassoon, from middle Bb (top of bass staff) down. Even then, however, you must be careful in trimming that the third space E does not go flat or collapse. Wide shapers make notes in the "money register" (the fourth from middle C up to F) too flat. This can be helped with wire adjustments but the more you pinch the

²⁰² Ishikawa, "Innovations," 47.

²⁰³ Herzberg, "Flat Shaper."

first and second wires the higher the arch in the blade will become, creating additional pressure on the sides of blade. The high register is also difficult on a wide shape. If you want to brighten the tone of a wide shape by trimming the middle of tip, this will make the pitch go flat and possibly the E and C# will collapse. The narrow shape eliminates those faults which is why I designed it.²⁰⁴

Wires: Tightness, Shape, and Placement

Proper wire placement, tightness, and shape are crucial to a reed's performance. The wires control the opening of the tip, the arch of the blades, and the shape of the tube. The tip opening affects the response, the arch of the blades affects the resistance, and the shape of the tube affects the intonation and tone quality.²⁰⁵ Like most bassoonists, Herzberg used 22-gauge brass wire. Each wire is to be wrapped tightly around the tube of the reed, "If it is tight – a subtle squeeze or downward pressure can produce the small adjustment necessary to make the reed just right." He also pointed out that a tight wire would sustain any minor adjustment and hold it. Loose wires have little if any ability to control the tone, pitch, or response of the reed. They also introduce an element of inconsistency when adjusted. A tight wire can be adjusted and then returned to its previous shape if necessary. It is not possible to control the exact shape of a loosely wrapped wire. Herzberg answered the complaint made by some bassoonists that tight wires choke the tone of a reed saying, "The "choking" can easily be removed with appropriate trimming of the blade, thereby improving the attack and the tone."²⁰⁶

²⁰⁴ Herzberg, "Flat Shaper."

²⁰⁵ Norman Herzberg, "Loose Wires," email to IDRS list-serve, February 19, 2005 (TS, author's personal archive, Potsdam, NY.)

²⁰⁶ Herzberg, "Loose Wires."

The shape of each wire on the reed tube is important as well. Herzberg believed the second and third wires should always be round and tight. The first wire was often more oval in shape but could be more round if that was the player's preference. The round second wire allows the reed to have strength in the blades, creating resistance to blow against while retaining ease of attack. It helps keep the tone full and the pitch high enough in the usually flat and often thin middle range, C⁴ to F⁴ above the bass staff. A round second wire could cause problems with sharpness in the lowest octave but these, Herzberg said, could most often be solved by relaxing the embouchure and/or scraping the bottom half of the reed. If low register sharpness could not be remedied through trimming or with the embouchure Herzberg conceded that a slight flattening of the second wire would be needed.²⁰⁷

Correct placement of the wires on the reed would optimize the effect of any possible adjustments to those wires.²⁰⁸ In a July 2000 email to the IDRS list-serve Herzberg explained, "The placement of the wires is a critical element in determining the ability of the wires to play their part in the beveling process. Only general principles can apply to wire placement because of the variety of shapers and their measurements."²⁰⁹ The placement of the first wire is determined by locating the spot on the shaper where the

²⁰⁷ Norman Herzberg, "The Bevel and Variations," email to IDRS list-serve, November 30, 1999, (TS, author's personal archive, Potsdam, NY).

²⁰⁸ The wire placements discussed were determined based on the specific parameters of Herzberg's flat shaper. However, although these exact measurements may not work for other shapers, the principle behind their selection can be applied to any shaper.

²⁰⁹ Herzberg, "The Bevel and Wire Placement," email to IDRS list-serve, July 7, 2007, (TS, author's personal archive, Potsdam, NY).

blade begins to flare outward. The first wire should be placed $1/16^{\text{th}}$ of an inch above this flare. The second wire should be placed $5/16^{\text{ths}}$ of an inch below the first wire and the third wire should be placed in the center of the legs of “V” created by the bevel (see below). For the short bevel ($3/8^{\text{ths}}$ inch from bottom of the reed) the third wire would be placed $3/16^{\text{ths}}$ of an inch from the bottom of the reed.²¹⁰

Collar (Shoulder) & Scoring

The collar marks the meeting of the tube and the blade. The shoulder on a Herzberg reed was between .036 and .037 of an inch thick.²¹¹ If not created by the profiler, the collar was to be cut in before the shaped cane was folded. Scoring of the tube should begin $3/16^{\text{ths}}$ of an inch below the collar and the scoring marks should be evenly spaced across each half of the tube.²¹²

Forming the Tube

After scoring, Herzberg would fold the piece of cane at the longitudinal center of the blade. A temporary first wire was put on the cane to maintain alignment of the tube. The first wire should be placed one inch from the bottom of the tube. The folded cane was then wrapped with wet cotton string (butcher’s twine or packing string) down the length of the tube. The forming mandrel was heated and inserted into the end of the tube. Twisting of the reed or the mandrel as the mandrel was inserted into the tube was avoided

²¹⁰ Herzberg, “Reedmaking Method.”

²¹¹ Herzberg, “High Register Response,” email to IDRS list-serve, February 17, 2007 (TS, author’s personal archive, Potsdam, NY).

²¹² Kathleen Reynolds, research questionnaire, (TS, author’s personal archive, Potsdam, NY).

because such twisting would result in slipped blades.²¹³ Once the mandrel was in as far as it would go, Herzberg used a pair of pliers to squeeze the sides of the tube, forming it to the shape of the mandrel tip. He continued squeezing the bottom of the tube and pushing the mandrel farther into the tube until the bottom of the tube reached the correct point on the mandrel. Additional squeezing of the tube with the pliers would continue until the sides of the tube came together.²¹⁴

“Seasoning” the Reed Blank

Once the blank had been wrapped in its string cocoon, with the first wire in place and the tube formed to the mandrel, the blank was left to sit on the mandrel, or transferred to a matching mandrel pin, for at least two weeks to “season.” Inspiration for this step came from the previously mentioned article on reed making written by Heinrich in which he described an experiment using a piece of paper.²¹⁵

If you take a piece of paper and roll it into a cylinder but immediately let it go, the paper will go right back to its original flat state. However if you keep the paper in the cylinder by wrapping it with bands and let it sit for a day or two it will retain its new rolled shape once the bands are removed.

The experiment with the paper could be easily compared to the process a flat piece of cane undergoes when formed to match the round shape of the mandrel. Allowing the

²¹³ Herzberg, interview 8.

²¹⁴ Reynolds, questionnaire.

²¹⁵ J. M. Heinrich, “The Bassoon Reed: An Analysis of its Construction, Aesthetic Mechanical and Botanical Aspects,” trans. Joelle Amar, *Journal of the International Double Reed Society* 7 (Fall 1979).

cocooned blank to dry on a mandrel pin for two weeks would allow the blank to permanently assume the shape and contour of the mandrel. As the wet blank dried in the cocoon any shrinkage would take place. The mandrel pin inside the tube would allow the shrinking blank to retain its proper shape.²¹⁶

Herzberg compared the aged wood used to build houses, furniture, or fine instruments to the aged cane needed for successful reed making. Green wood changes dramatically as it dries and ages. The processes used in cutting, planing, and drilling into the wood gradually expose its interior surfaces to the air. In reed making, splitting, gouging, and profiling the cane exposes pulp formerly covered by bark. The density of the pulp changes as it seasons and dries. The changes continue when the flat piece of cane is formed into a reed blank using the mandrel and wire. These steps radically change the way the cane grew in nature and severely distort its original condition. “Because we make all these changes when adapting cane to our use we must let it settle before trimming.”²¹⁷ Keeping the reed in a cocoon while drying it on a mandrel allowed it to “get used to its new form” and come to a settled state. After drying for two weeks the mandrel was removed and Herzberg could rest assured the tube would remain stable.²¹⁸

²¹⁶ Herzberg, “Reedmaking Method.”

²¹⁷ Herzberg, “Reedmaking Method.”

²¹⁸ Herzberg, “Reedmaking Method.”

The Herzberg Bevel

Once the blank had dried for two weeks Herzberg would remove the string and the temporary first wire and open the blank, exposing the inside of the tube. The reed blank must be dry for this procedure. For the short bevel he would put a pencil mark at 3/8ths of an inch above the bottom of the reed on each of the four tube rails. This mark would indicate where to start the bevel. He would then take a file and remove the sharp points of pulp from the tube rails starting at the 3/8ths mark and continuing to the bottom of the reed. He was careful not to remove any of the bark. Doing so would result in a tube that was too small to fit on the bocal.²¹⁹

Bassoonist Richard Kandetski asked Herzberg if his blanks ever came apart at the tip when attempting the beveling procedure. He answered the question in an email to the IDRS list-serve.

My blanks are very thin at the fold line (five-thousandths of an inch) and if handled correctly will stay intact. If they do separate I bevel each half and then carefully put them back together, lining up at the shoulders, and wind string up to where the second wire would go. I place on the second wire (easiest to install first because the tube is round there), then 3rd wire, and then the first wire (usually oval).²²⁰

The bevel procedure is the same for Herzberg's long bevel except that that starting place would be higher up on the tube at a place to be selected by the reed maker. Herzberg suggested there were benefits to the longer bevel and that a successful bevel

²¹⁹ Herzberg, "The Bevel."

²²⁰ Norman Herzberg, "Response to Richard Kandetzki," email to IDRS list-serve, November 15, 1999 (TS, author's personal archive, Potsdam, NY).

could be cut anywhere from the point of the short bevel up to the second wire. However, he cautioned that beveling any higher on the tube would create a blank that leaked.²²¹

Adaptation of Bevel for non-Herzberg Shapers

The bevel technique described above works quite well when used with Herzberg's precision flat shaper. The shaper was designed with a slight flare at the bottom end of the tube. This flare insured there would be enough bark to create a substantial tube even after beveling. Bassoonist Matthew Harvell found a way to adapt Herzberg's bevel for use with other shapers.

Your shaper has a very nice flare at the butt of the reed to help accommodate the bevel. Most shapers (especially any of the standard Rieger shapers) do not have anywhere near enough flare to do it properly. However, in showing several others this procedure I have found that if one is very, very careful it can be done by ever so slightly beveling the very end of the tube beyond the pulp and into the bark. One can then place the third wire more toward the butt than we who use your shaper need in order to enhance the bevel even further. As you mention, great care is then required in reaming the reed as the tube wall can be quite thin (about a 32nd or so after reaming) but with a proper wrap and good coating of Duco over the wrap I have never seen anyone have problems. Of course a thicker gouge would also help by providing more of a fulcrum against which the bevel can work.²²²

²²¹ Herzberg, "The Bevel and Variations."

²²² Matthew Harvell, email to Norman Herzberg, November 16, 1999, (TS, author's personal archive, Potsdam, NY).

Effect of Bevel on Three other Systems

Wires

The third wire will stay round regardless of the bevel used. It must be round to allow a proper fit on the bocal. Unless following Harvell's previous suggestion, one should be sure to remove only pulp and not the bark when doing any sort of bevel. Removing bark will make the tube opening too small to allow reaming for a proper fit on bocal.²²³

The second wire will remain round for both the short and long bevel unless special help is needed to lower the pitch of notes in the bottom octave. A round second wire provides strength and fullness of tone in the "money register" (C4 up to F4) often used in orchestral solos.²²⁴

The first wire will need to be flattened slightly to achieve a comfortable playing opening when using the short bevel. This will allow the reed to have ease of response and will lessen the amount of lip pressure required to control the reed. If after initial playing on the reed the tip opening has closed too much the first wire may need to be rounded slightly.²²⁵

²²³ Herzberg, "The Bevel and Variations."

²²⁴ Herzberg, "The Bevel and Variations."

²²⁵ Herzberg, "The Bevel and Variations."

The first wire will need to become more round as the length of the bevel increases. This will allow the blades to have a strong arch, creating a resistant reed which will need a good deal of trimming in the front half of the blades.²²⁶

Trimming

The round second wire needed for the short bevel will raise the already sharp notes in the lowest octave of the bassoon. Trimming cane from the back half of the reed will lower the pitch of these notes.²²⁷

Shape

The short bevel is especially good for bassoonists using a shape with a wider flare. The wider flare keeps the pitch low in the bottom register and helps with low note response. The short bevel raises the pitch in the middle register, typically very flat on a wide shape, and eases high note response which can be a challenge with a wide reed.²²⁸

Noticeable Results of Bevel

Tip opening

The short bevel will create reeds with a large tip opening. The first wire will have to be flattened to achieve a playable tip opening. The short bevel creates less pressure

²²⁶ Herzberg, "The Bevel and Variations."

²²⁷ Herzberg, "The Bevel and Wire Placement Relationship."

²²⁸ Herzberg, "The Bevel and Wire Placement Relationship."

between the two blades reducing the need to scrape the tip for response. A short bevel reed will have a lower pitch due to the flattened first wire.²²⁹

The long bevel creates a reed with a smaller tip opening. The first wire will need to be rounded to achieve a playable tip opening. The long bevel allows the two blades to press strongly against each other and the pitch will be higher due to the round first wire.²³⁰

Preventing Blade Slippage

Blade slippage is a problem most reed makers try to avoid. The following solution was offered by Herzberg to minimize slippage when using his beveling technique. After completing the bevel he would take a piece of fine sandpaper, 400 to 600 grit, and lightly sand off the sharp edges on the inside tube rails. He would sand from the beginning of the bevel up to the mark for the first wire. This slightly flattened surface would allow more contact area for the rails when the tube was re-wired and thus minimize blade slippage.²³¹

Scraping

The following short quote summarized Herzberg's general philosophy on scraping reeds.

²²⁹ Herzberg, "Reedmaking Method."

²³⁰ Herzberg, "Reedmaking Method."

²³¹ Herzberg, interview 8.

I make reeds from the front to the back. The heavier it is in the front the lesser sensitivity it has but you've got to really slap it. However, to correct this you just thin the tip. After I get halfway down if the reed isn't responding to what I'm doing it probably never will."²³²

His goal was to try to make the two blades equal. He recalled watching Pezzi analyze his first reeds, "Pezzi had a sensitive thumb and would run his thumb down each blade and say "that's right, or "no this is too, too stiff on this side" and to correct it you would weaken the stronger side."²³³

Testing a Reed

These ideas on testing reeds were rooted in Herzberg's career as a performing bassoonist. He stressed playing controlled patterns of scales, arpeggios, and long tones in order to demonstrate how the reed would respond under real playing conditions. He offered the following advice to novice reed makers.

I would be remiss if I did not emphasize that proper bassoon practice is necessary in order to be an accomplished reed maker. Your reeds will be better only when you make demands on them and those demands are defined by your playing deficiencies. Practicing reveals shortcomings and knowledge of reed making can help eliminate difficulties. As you become a better performer your reeds must improve. Proper practice must include disciplined routines for scales, intervals, and long tones. Trying a reed by random playing does not define it as much as scales with different articulations over the whole range of the bassoon, long tones on problematic pitches and slurred intervals over the range of the instrument."²³⁴

²³² Herzberg, interview 6.

²³³ Herzberg, interview 6.

²³⁴ Herzberg, "The Bevel and Wire Placement Relationship."

General Thoughts

1. Reeds do not have to crow to be good. I have had bad reeds that crow and good ones that didn't. I can make any reed crow; it doesn't mean they're all good.
2. All of the wires must be tight.
3. The second wire must be round.
4. Trimming of the reed should be done in the upper half.
5. The thickness of the reed at the shoulder should be .036 to .037 of an inch.
6. Start the bevel at 3/8ths of an inch from the bottom of the tube.
7. Security is knowing that you have a large reserve, over 100, of seasoned blanks from which to choose.²³⁵

Measurements

The following reed diagrams are courtesy of Arlen Fast, contrabassoonist of the New York Philharmonic and former Herzberg student. He included the following story with the diagrams.

In August of 2003, I spent almost a month in Southern California, and while there I spent quite a bit of time at Norman and Leah's house. I showed him my new Fast System Contrabassoon, and we discussed reeds and reed making, as well as tools, at length.

In the process of many discussions, Norman showed me his reed board, where he had dozens of reeds stored. They all had their tips cut, but no knife work had been done to them. He had me play one after another, and when I found one I particularly liked, he said "It's yours." The pictures on the following pages are of that reed. I have not done any scraping to it; it is just as the profiler cut it.

²³⁵ Herzberg, email to IDRS list-serve, February 17, 2005, (TS, author's personal archive, Potsdam, NY).

This reed was made when Norman was 87 years old. It is from Donati cane, but I don't know what year. Norman had Donati cane going all the way back to the 1930's. Page 2 (figures 7 and 8) of this document shows the "wire up" side of the reed, with dimensions noted. Page 3 (figure 9) shows the "wire down" side. It is notated 038 A, which I think indicates the thickness in inches at the back of the reed, and the fact that it was made with the A pattern of the new generation of profilers which he was assembling at that time.

What I don't know about this reed is the collar placement in relation to the fold over point, before the tip was cut. This would have to be approximated by the width measurements at the tip and collar, given on page 3 (figure 9). The measurement of the height of the tube in front of the first wire is .220".²³⁶

²³⁶ Arlen Fast, email to author, May 26, 2007.

Figure 7. Herzberg reed (2003), Wire-side up, dimensions taken from the reed.

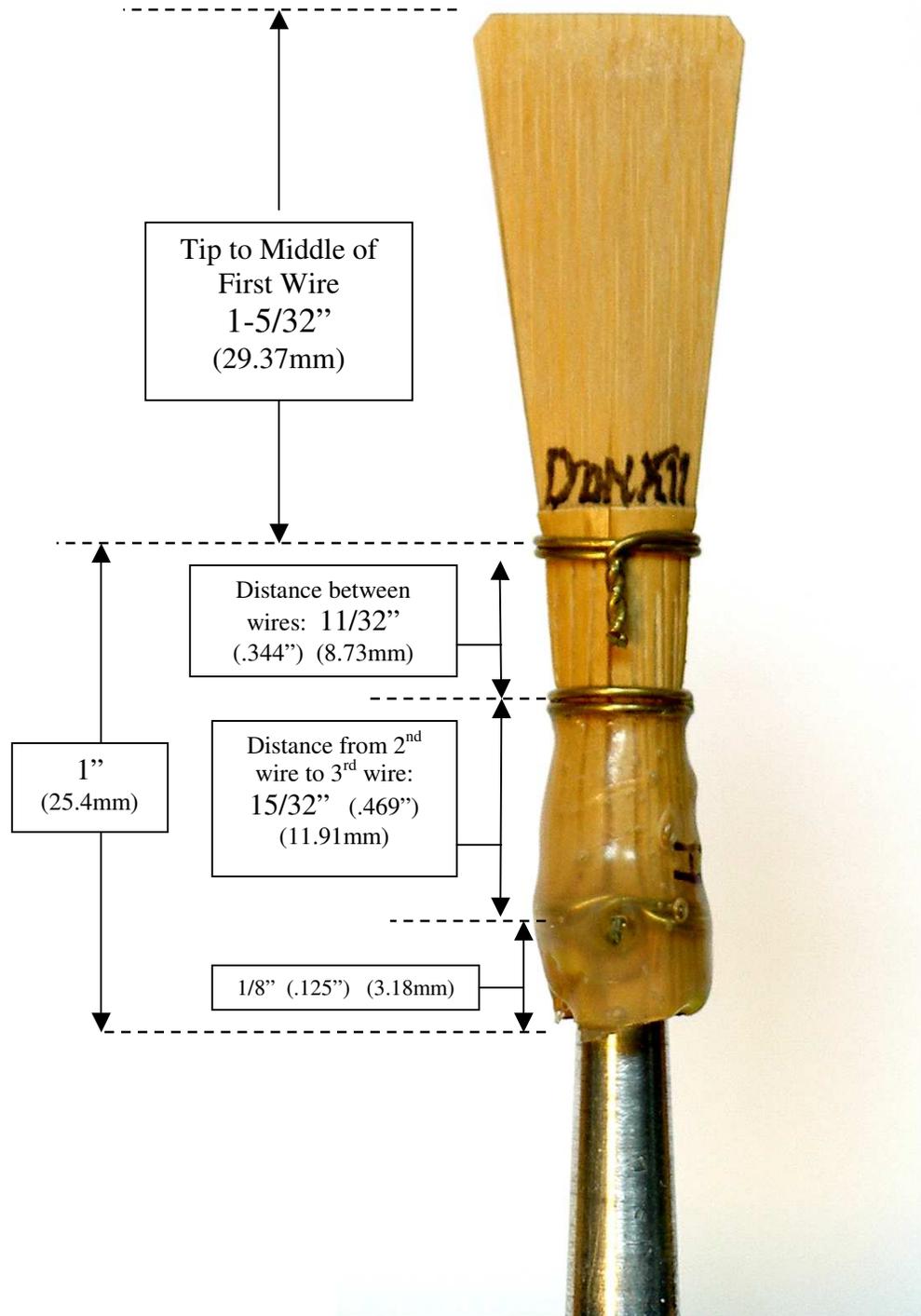


Figure 8. Herzberg reed (2003), Wire-side up, dimensions taken from the reed.

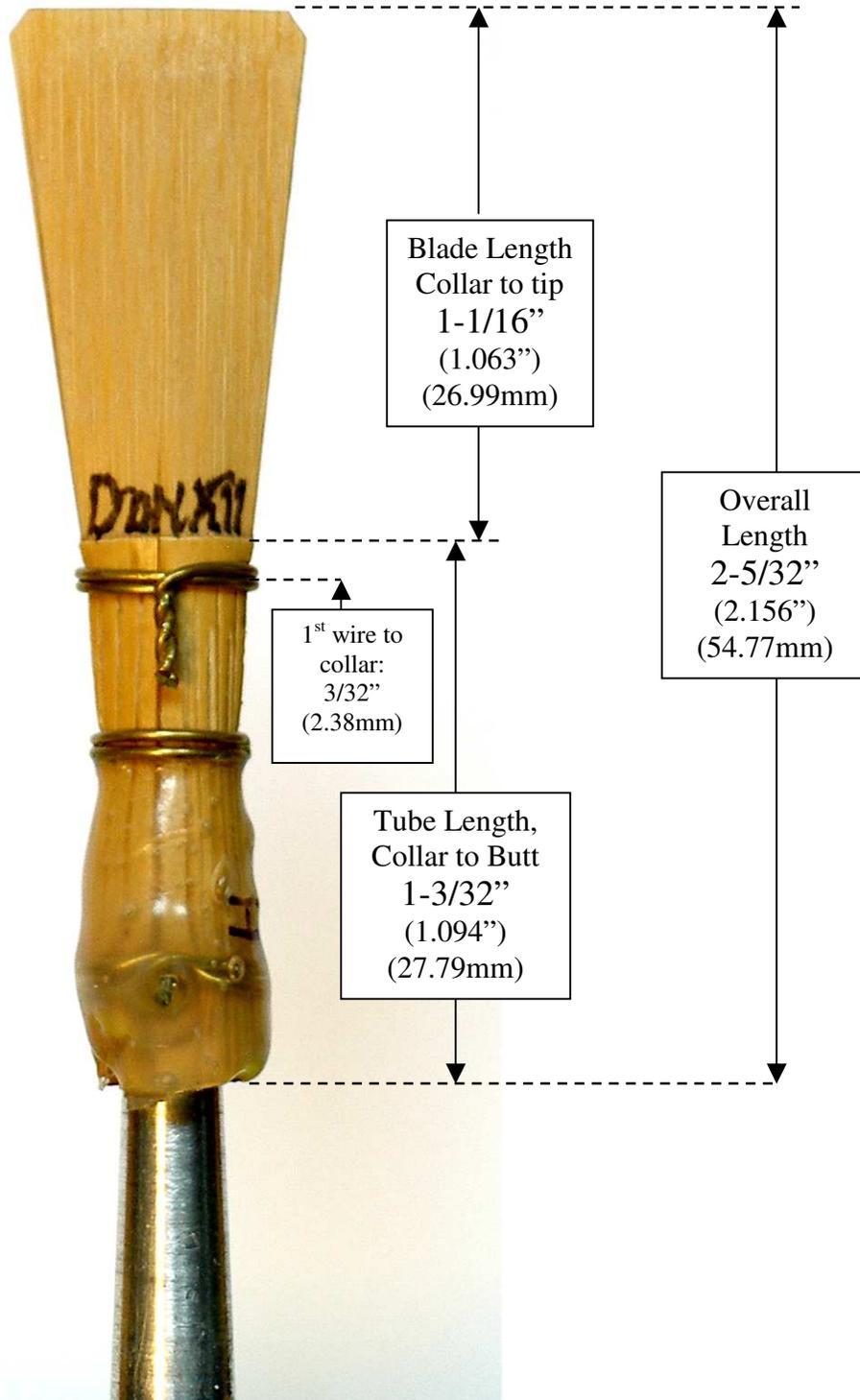


Figure 9. Herzberg reed (2003), Wire-side down, dimensions taken from the reed.



CHAPTER VI

HERZBERG PROFILER AND SHAPER

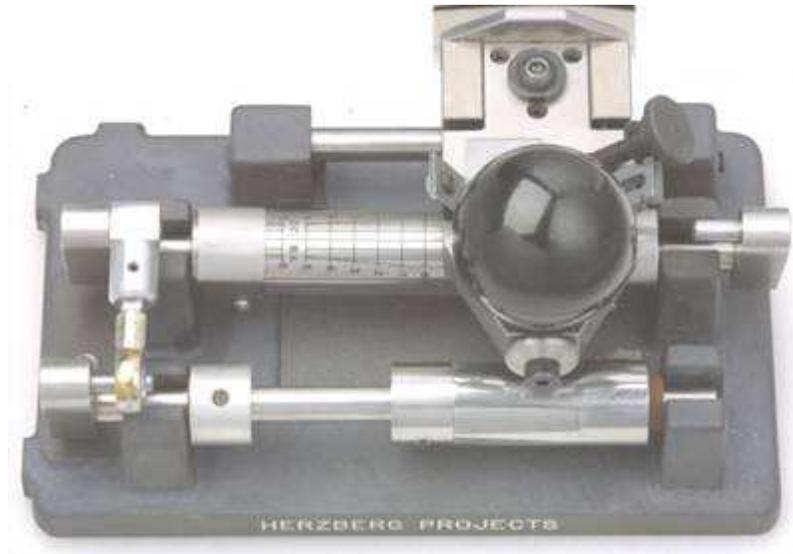
Over a period of many years Herzberg developed his own profiling machine and a matching flat shaper. The process of realizing his design was exhausting, expensive, and often frustrating.²³⁷ The biggest obstacle was finding a competent machinist to build the tools. Machine shops are set up to make large numbers of parts but Herzberg's original order was for only twenty-five profilers. In addition, the measurements had to be much more precise than usually required from other designers. The machinists Herzberg approached did not understand the need for such precise specifications and saw little use for the machine itself. It took Herzberg an investment of twenty years and a great deal of his own money to develop his reed-making system, the matched set of profiler (Figure 10) and shaper (Figure 11).

Figure 10. Photo of Herzberg System Flat Shaper



²³⁷ Norman Herzberg, interview by Yoshiyuki Ishikawa, April 28, 2002, Boulder, CO, *Memoirs: Profiler*. <http://www.idrs.org/Interviews/Herzberg/Herzberg.html> (accessed 20 April 2006), QuickTime movie.

Figure 11. Photo of Herzberg System Profiler.



His first machine was commercially available in 1981 but was virtually impossible to obtain due to the high demand and small number of machines produced. In 2002 Herzberg marketed an updated model with a number of improvements. Sixty of the new machines were produced and all had been sold at the time of Herzberg's death.

Herzberg's Profiler/Shaper system is highly prized for its meticulous design, craftsmanship, and for the flexibility it allows the reed-maker. Many bassoonists believe the system to be the best equipment one can buy because it provides a much higher level of control over the numerous variables in reed-making. Several of Herzberg's former students were asked if they use his profiler/shaper system and the nearly unanimous answer was "absolutely." The only reason given for not using one was the high price. The primary reason Herzberg's machine was preferred over others on the market was accuracy. Kristen Sonneborn, principal bassoonist of the Naples Philharmonic, explained

her appreciation for the machine, “It’s so accurate. The only variable is the cane. You can tell a bad reed (piece of cane) immediately, and get many more good reeds which play almost as soon as you snip the tip.”²³⁸

The shaper has two cutting notches that line up with spots on the profiler, allowing the shaped cane to be precisely centered on the cane barrel of the profiler. Arlen Fast, contrabassoonist of the New York Philharmonic, found the accuracy of alignment from shaper to profiler one of the systems’ most important features, “I consider that aspect to be so critical that I modified my gouging machine so that I can identify the center of the gouge, and then align the center of the gouge onto the center of the shape and profile.”²³⁹

In the previously mentioned comparison study between the Herzberg system and the collection of profilers and shapers already owned by Ishikawa’s studio at the University of Colorado Herzberg’s machine was deemed by far the best.

The profiling system that Herzberg developed is a Profiler/Shaper combination that is capable of cutting a perfectly symmetrical pattern on cane. A symmetrical pattern is defined as a scrape that has an absolute and exact mirror of patterns in the four fundamental regions of a reed. Each region represents one longitudinal half of one side of the blade. The profiler is capable of scraping cane in increments of .001 of an inch anywhere on the cane blade.²⁴⁰

²³⁸Kristen Sonneborn, research questionnaire, (TS, author’s personal archive, Potsdam, NY).

²³⁹ Arlen Fast, research questionnaire, (TS, author’s personal archive, Potsdam, NY).

²⁴⁰ Ishikawa, “Innovations,” 46.

Hugh Michie, second bassoonist with the Cincinnati Symphony, uses the Herzberg system.

I use it all the time. The best and most important feature is its accuracy. It is by far the most accurate machine on the market. The tolerances are so small. From one point to another, there is only a thousandths or less or a difference. Also, I like the cam patterns. He has 3, A, B, & C.²⁴¹

The system allows great flexibility in customizing specific parameters of the reed. The profiler has three interchangeable cam patterns. Additionally, the cam can be moved closer or further from the tip to allow its user to clip more or less from the tip area, thus creating a wider or narrower reed. Ishikawa describes the versatility of the machine, “The master cam has three patterns. Each pattern may be used independently or in combination for a total of seven different cam patterns.” He continued, “By moving the cam longitudinally in increments of .5mm, the machine is capable of exactly duplicating the seven cam pattern variations on 20 different blade lengths, thereby producing 140 trim variations!” He pointed out, “By using a dial caliper the cam could be moved at even smaller increments.”²⁴² Ishikawa’s article, published in Volume 27, No. 3 of *The Double Reed*, goes into great detail describing the machine’s accuracy, versatility, and precise construction. Although Ishikawa was not a student of Herzberg, the article demonstrates his obvious approval of and appreciation for the system Herzberg developed.

²⁴¹ Hugh Michie, research questionnaire, (TS, author’s personal archive, Potsdam, NY).

²⁴² Ishikawa, “Innovations,” 48.

One-on-one training sessions were offered by Herzberg to anyone who purchased the machine. Ishikawa described these sessions as “invaluable” and explained that individuals who had been fortunate enough to take advantage of the instruction gained much knowledge about the machine and Herzberg’s philosophy and techniques for reed making.”²⁴³ He continued with comments about the machine itself.

The value of any profiler is measured by the ability of the machine to produce consistently reeds that require a minimum amount of time to hand trim. All profilers and tip finishers are designed to duplicate reeds created initially by manually scraping and shaping the cane.²⁴⁴

He stated that the machine designed by Herzberg far exceeded the ability to duplicate a reed and that no other machine in his collection or on the market was capable of such precise scraping. His claim that “There is nothing that comes close to Herzberg’s profiler in its overall functionality, detail and accuracy of construction and flexibility of design” is quite an endorsement.²⁴⁵

²⁴³ Ishikawa, “Innovations,” 50.

²⁴⁴ Ishikawa, “Innovations,” 50-51.

²⁴⁵ Ishikawa, “Innovations,” 51.

CHAPTER VII

APPLICATION AND SUMMARY

Norman Herzberg directly influenced a significant number of the professional bassoonists currently active in the United States today. While teaching at the University of Southern California and at music camps in the United States and Canada he worked with dozens of students. In addition to his legacy of successful teaching, Herzberg will be remembered through his many recordings made for Warner Brothers Studios, various orchestras, and chamber ensembles. He was a highly talented performer and a brilliant pedagogue. His extensive background in orchestral performance and studio recording played a key role in developing his teaching curriculum. Any problem of execution during performance had to be solved immediately. Learning how to solve his own problems with rapid efficiency became the foundation for the methods he employed to solve his students' problems.

The detailed curriculum developed by Herzberg included exercises and etudes. The exercises were a comprehensive set of daily scale, interval, and long tone exercises created to address every possible difficulty encountered on the bassoon. The etudes were chosen from an extensive collection of etude books by composers including: Milde, Bertoni, Orefici, Jancourt, Bitsch, Dubois, Pierne, Piard, and Gambaro, encompassing music from the classical and romantic periods as well as the twentieth century. While his colleagues taught music through the performance of orchestral excerpts and solo

repertoire, Herzberg preferred to teach the bassoon through his exercises and etudes. He believed that orchestral excerpts did not adequately challenge his students; the same can not be said for the etudes he assigned.

Herzberg's success as a performer as well as the success of his students stemmed from their focus on the fundamentals of performance – intonation, tone, dynamics, articulation, and individual expression. The daily scale, interval, and long tone exercises can be easily adapted to fit the range of other instruments and the systematic progression through a select series of etude books could be modeled with a carefully considered substitution of materials. Lessons were structured to place primary emphasis on the daily exercises by spending the first twenty or so minutes on them in each lesson. Three to four etudes were assigned each week and these were heard after the exercises. In these etudes Herzberg expected the student to demonstrate carefully crafted musical expression as well as control of the instrument gained through the daily exercises. Remaining lesson time was spent on solo repertoire or excerpts as appropriate. This lesson plan could be followed in any studio with no need for adaptation.

Herzberg's career was spent searching for ways to make the bassoon easier to play. He purchased and played a new instrument from each of the Heckel series made during his career (from 7000 to 12000). He was constantly testing new bocals and would buy any and all that passed his rigorous testing. His primary focus however was to improve the process for making reeds by improving the accuracy of the tools involved. He created two profiling systems, one in 1981, the other in 2002. The 2002 model is arguably the best machine available. The accuracy of this machine reached a level

previously unheard of in machines of its kind. The integrated system of profiler and shaper developed by Herzberg allows the user to create blanks with absolute consistency. In addition, the machines' three cam patterns and various means of adjustment provide the reed maker with great flexibility.

Not surprisingly, Herzberg's methods have application beyond the realm of bassoon playing. His approach: use of a self-developed, prescribed curriculum; individualized instruction for each student; deep commitment to the success and well-being of each student; intimate knowledge of the necessary equipment; and a constant demand for the highest level of dedication and concentration from himself and his students can be applied to the study of any instrument at any level. As a student Herzberg was frustrated by his teachers' lack of organization and planning. Over the years he studied numerous etudes books and selected those he felt offered the greatest technical and musical challenges for inclusion in his curriculum. He knew the purpose of each etude and refused to let his students skip even one etude from any of the books in his curriculum. As a performer Herzberg was aware of the many technical challenges presented by the bassoon and he developed detailed exercises to address each of these challenges. He tailored his comments and suggestions to the current needs of each student and felt comfortable avoiding topics such as tone and vibrato if a student was having success in those areas without his intervention. He understood the mechanics of the bassoon and knew how to perform routine maintenance and repair and insisted his students gain at least functional knowledge in this area. His vast understanding of the bassoon reed and its many variables was carefully imparted in loving detail to each

student. He refused to work with any student less than adequately dedicated to the task of becoming an orchestral bassoonist. He was extremely proud of his students and gratefully acknowledged their invaluable contributions toward the development of his curriculum and philosophy.

On January 12, 2007 Mr. Herzberg ended our third interview session by saying, “You know in a way it’s very good thing that you’re here, because I’ve gone along in my life not thinking about the past.” He was proud of the reed making equipment he had created, very proud of his former students and their successes, and especially proud of the three lovely children he and his wife Leah raised. Two simple words are not enough to express the profound gratitude felt by those bassoonists and musicians influenced by the life and career of Norman Herzberg, but, it is all we have.

Thank you Norman.

Norman Herzberg passed away in Encino, California on February 4, 2007.

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APPENDIX A

LIST OF HERZBERG STUDENTS

New York Philharmonic

Roger Nye
Arlen Fast

Los Angeles Philharmonic

Michele Grego, Cal State Long Beach
Patricia Kindel, UC Santa Barbara

Philadelphia Orchestra

Angela Anderson, Temple Univ.

Chicago Symphony

William Buchman, DePaul Univ.

Detroit Symphony

Robert Williams, Wayne State
Marcus Schoon, Wayne State

Cincinnati Symphony

Hugh Michie

Pittsburgh Symphony

David Sogg, Duquesne Univ.
James Rodgers

Dallas Symphony

Scott Walzel, U. of Texas at Dallas

Seattle Symphony

Seth Krinsky, U. of Washington

St. Paul Chamber Orchestra

Charles Ullery, U. of Minnesota

San Diego Symphony

Ryan Simmons

Houston Symphony (former members)

Ben Kamins, Rice University
Karen Pierson, Ohio State Univ.

Naples Philharmonic

Kristen Marks Sonneborn

Buffalo Philharmonic

Glenn Einschlag, U. of Buffalo

Rochester Philharmonic

Abraham Weiss

San Antonio Symphony

Sharon Kuster

Dallas Opera Orchestra

Kathleen Reynolds, U. of North Texas

Minnesota Orchestra

Mark Kelley, St. Olaf College

Kansas City Symphony

Marita Abner, U. Missouri-Kansas City

Tasmania Symphony

Lisa Storchheim

Others

Gregory Barbar, acting second bassoon with San Francisco Symphony

Charles Coker, Los Angeles Opera and freelance artist

Michael Dicker, Illinois State former Associate Principal Bassoon of the Gelsenkirchen
Philharmonic

Terry Ewell, bassoon professor and Dean of Towson State School of Music

Richard Ramey, Univ. of Arkansas; former member of Grand Rapids Symphony

APPENDIX B

QUESTIONNAIRE FOR HERZBERG STUDENTS

NORMAN HERZBERG: AN ICON OF BASSOON PEDAGOGY

Research Questionnaire:

1. Please tell me where and when you studied with Mr. Herzberg:

2. Your name: _____

Occupation: _____

3. Your teaching positions held (add additional lines as needed)

Dates _____

Dates _____

Dates _____

4. Your playing positions held (add additional lines as needed).

Dates _____

Dates _____

Dates _____

5. Please describe how Mr. Herzberg influenced you as a bassoonist/musician. Be as specific as possible. (Feel free to add space as needed).

6. I am interested in learning more about the specific techniques/methods employed by Mr. Herzberg. If you worked with Mr. Herzberg on any of the areas listed below, please provide details regarding his approach. Please include any remembrances of any descriptions/explanations he used, exercises he employed, and any additional information you think was important:

- a) Vibrato
- b) Tone/Intonation
- c) Finger technique
- d) Articulation
- e) Reed-making
- f) Musicianship
- g) Rhythm
- h) Posture and Support of instrument
- i) Hand position
- j) Other

7. Mr. Herzberg and I spent a good portion of our time talking about his ideas for long tones, scales, and intervals. Please describe your interactions/experiences with these exercises and their effect on your playing. I realize Mr. Herzberg was adamant these exercises were to be played by ear rather than written down, but for presentation purposes I would appreciate any efforts to write out examples of these exercises in the way you used them.
8. Mr. Herzberg had strong ideas about the progression through various etude collections. Please provide a list of the etude books you worked from/completed during your studies with him, as well as a general number of etudes you prepared each semester.
9. Please answer the following questions regarding recitals presented as a student.
 - a) How many recitals did you present?
 - b) At what level of education were you when you presented each recital?
 - c) Were these recitals required for your degree?
 - d) How was your recital repertoire selected (teacher's choice/ student's choice/ mutual input and discussion)?
10. How did Mr. Herzberg help you prepare for auditions? How did you determine when to start taking non-school related auditions (teacher's choice / student's choice / mutual input and discussion)?
11. Did Mr. Herzberg help you to become an independent musician, able to learn new pieces on your own? If so, how was this achieved?
12. What solo material did you study as an undergraduate? As a graduate student? How much freedom were you allowed in selecting your solo repertoire?
13. If music was chosen for you, were you told the reason for each selection? If so, do you remember any of the reasons behind the selections? Please share them if possible.
14. What technical exercises/scales were emphasized and/or required? Was there a speed requirement for scales?
15. How often did you have lessons with Mr. Herzberg? How long did the lessons last? Were you encouraged to observe lessons of other students?
16. Please describe your reed-making experiences with Mr. Herzberg. Did you have weekly sessions? Were you required to make a certain number of blanks/reeds each week? If so, what was the number required? If not, approximately how many reeds did you make each week? How proficient were you at making reeds before studying with Mr. Herzberg? And after?

17. Do you use the Herzberg profiler & shaper? If so, what do you find to be the best/most important features of this equipment?

18. What do you think is most important to know about Mr. Herzberg as a teacher, as a bassoonist, and as a person?