

Department of Music and Performing Arts Professions  
The Steinhardt School of Education  
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Topic Proposal

**Implications of the Brannen-Cooper Kingma System Flute on Twenty-First Century  
Techniques, Repertoire and Performance Practice**

by

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## Statement of Topic

In 1995, one of the top flute-making companies, Brannen Brothers Flutemakers, Inc. started to manufacture the Brannen-Cooper Kingma System flute (“Kingma system flute”) commercially. It is the first C flute to produce a consistent quarter-tone scale through all registers with complete multiphonic venting employing Eva Kingma’s Key-on-Key system. The revolutionary design of this instrument has liberated the flute from its mechanical limitations of the past in achieving a complete range of sound production possibilities. This study will: 1) provide historical perspective on the development of the Kingma system flute in relation to flute history with emphasis on its Key-on-Key design and its ability to produce quarter-tones and complete sets of chromatic multiphonics, 2) explicate the Kingma system flute as a new sound generator by documenting original sonic resources such as chromatic quarter-steps and multiple sonorities, 3) investigate additional physical adjustments and technical demands that are required by playing the Kingma system flute in performances of existing repertoire and development of a new repertoire which will be commissioned by the researcher, and 4) based on the above findings, examine future implications of the Kingma system flute on transforming various aspects of flute performance practice in the twenty-first century.

## Significance of the Study

The early twentieth century was characterized by a musical revolution in compositional language, with new approaches to pitch organization, and expansion of the vocabulary of sound far beyond the expectations of the previous era. Among the various instruments for which composers began to explore all types of experimentation with music was the flute. The flute became accepted as a solo instrument, with rich potential for expressivity and new sound production capabilities. By the 1980s, extended techniques such as harmonics, key clicks, quarter-tones and multiphonics became the main expressive elements in the flute repertoire. However, with the increasing demands placed on the modern flute as a versatile instrument for the last two decades, contemporary performers and composers began to recognize the mechanical limitations inherent in the modern flute. The advent of the Kingma system flute has increased the capabilities of the modern flute and altered the technical limitations allowing additional sonic possibilities. The innovations of Kingma’s Key-on-Key system has changed and expanded the vocabulary of flute sound. The combinations of sounds are endless.

The Kingma system flute has a standard design of a Boehmsystem flute but with six extra keys added to the body of the French model(open-hole) flute using Eva Kingma's Key-on-Key system. In additions to the standard open holes on a French model flute, the new system allows players to vent most of the normally covered keys (keys of D, F#, G, A#, B and C) while still being able to function as a regular flute using standard fingerings.

While a French model flute can produce quarter steps by venting the open holes (keys of D#, E, F, G#, A) and shading (partially uncovering a perforated key while pressing the rim of the key) certain notes to produce quarter tones, the Kingma system flute is able to produce a complete chromatic quartertone scale with consistency through all registers without using any alternative fingerings or cross fingerings. Further, one of its most innovative capabilities is set multiphonic generation. Since the Kingma system flute is able to vent all of the normally closed keys on an open-hole model, it can systematically produce various sets of harmonic progressions of multiphonics by starting with fundamentals in the low register and moving chromatically up the scale as keys are sequentially vented.

It is the ultimate hope of the researcher that by introducing such a flexible and versatile instrument, production of multiphonics will eventually become a standard technique utilized by all flute players. As this technique becomes standard, the effect that it has on flute performance practice is ensured.

Currently, the Kingma system flute is unknown to the flute community and its repertoire is scarce since its first introduction in 1995. This study will document what the researcher considers as a meaningful step in the history of flute development since Boehm's invention in 1874. Although there is already a sizeable body of contemporary flute literature with extended techniques existing today due to proven excellence and reliability of the Boehm model, the researcher believes that what the Kingma system flute can offer due to its full rich sonorities flexibility and versatility to contemporary music is substantial and significant.

It is also the objective of this study to introduce the Kingma System flute and provide general information as a reference source on this instrument that is relevant to contemporary performers and composers. Areas of sound limitations will also be addressed. Based on the above findings, new works will be commissioned by the researcher for the Kingma System flute in hopes to incorporate and expand new sound resources as compositional tools and performance techniques.

## **Literature Review**

Due to the recent introduction of the Brannen-Cooper Kingma system flute, there are very few sources available that deal with the Kingma System flute itself except one published

article in 1995 by Anne La Berge titled "The Oston-Brannen Kingma System Flute". This particular model which La Berge described in the article at length was one of the first prototypes with which Bickford Brannen experimented under his personal label before he shifted the production line over to his company, Brannen Brothers Flutemakers, Inc. La Berge gave a detailed description of the new flute and its ability to produce quartertones. However, less was discussed with regard to its ability to produce multiphonics.

In addition, the pamphlet which Brannen Brothers offers to its prospective clients has the most extensive descriptions of the Kingma System flute. It is the most useful reference material to date on what the flute's capabilities are. The lack of literature on the Kingma system flute maybe because the instrument was only introduced to the public in 1995 and has not been widely exposed commercially since. Price of the instrument may also be a factor. However, the fact that no extensive scholarly documentation is available on the Kingma system flute makes a compelling argument for generating such a study.

There are more articles devoted to Eva Kingma's open-hole alto and bass flutes where her revolutionary idea of Key-on-Key system was first realized. Both Ann La Berge and John Fonville each contributed a short article in 1990 and 1991 in Flutist Quarterly. Without providing any specific information on the flutes themselves in the article titled, "Eva Kingma - Open-Hole Alto and Bass Flutes", La Berge instead provided biographical information on their inventor, Eva Kingma, who is a vital force in the creation of the Brannen-Cooper Kingma System flute. Flutists/Composers such as Robert Dick, Will Offerman and Jos Zwaanenburg were also mentioned for their early involvement in the makings of the flutes. These names are significant in tracing back the history of the development of the new system. Fonville's article, "The Quarter Tone Alto Flute by Eva Kingma," focused on the mechanical part of the system. A comparison between the design of Fonville's own C quartertone flute and Kingma's open-hole design on the alto flute was given. It should be noted that Fonville's statement that Kingma's mechanisms on the larger flutes are completely transferable to the C flute was proven false when, in 1994, Kingma could not transfer her design onto a smaller size C flute and went to Bickford Brannen for advice.

Besides the above-mentioned primary source on the new flute, Eva Kingma herself posted an interview on her website in Dutch, <http://www.kingmaflutes.com>, regarding her invention of the Key-on-Key system. Information presented there again is mainly biographical; no detailed technical information was given on the instrument. She also had an article published with the Traversieres magazine in French about her theory on flute making in general.

Further resources and background information for the Kingma system flute will be collected through direct correspondences and interviews with Bickford Brannen in Boston, the one who successfully incorporated Kingma's key-on-key design to the regular Boehm system flute; Eva Kingma in Amsterdam, and other performers/composers who contributed their helpful feedback in the early development stages of the system such as John Fonville, Robert Dick and Ann La Berge. Brannen Brothers' official website, <http://www.brannenflutes.com/flutists.html> has a list of the current active performers/composers that are currently using Kingma System as their main performing instrument worldwide. This list will be especially helpful in obtaining additional information and surveys on the views of the instrument.

Kingma's Key-on-Key system was also mentioned in the dissertations of John Edward Davis and Andrea Redcay in 1997. Both studies focus their investigations on the development of the alto flute from the Renaissance period to present. Each has provided valuable facts and information on Eva Kingma's contribution to contemporary music by inventing the Key-on-Key system for the larger flutes. While Redcay focuses her research on the historical perspective of the instrument, John Edward Davis's dissertation examines the alto flute design with that of the C flute and its ability to produce extended techniques. At the end of the dissertation, he presented a 52-page list on the existing available multiphonics for the plateau (closed-hole) alto flute. Although the focus of the dissertation is on alto flute in general, the investigation on extended techniques also applies to the C flute since both instruments are built based on the same fingering system and mechanical concept. Limitations on quartertone productions are also discussed at length for both the C flute and the G alto flute. The discussion is especially relevant to the proposed study since one of the investigations of the proposed study is on the flexibility of the Kingma system flute to produce complete quartertone scales.

The number of scholarly studies pertaining specifically to extended techniques for flute since the second half of the twentieth century is substantial. The earliest investigations on extended flute techniques were conducted by Bruno Bartolozzi in 1966 and John C. Heiss between 1966 and 1972. Both scholars' inquiries on the production of multiphonics during the 1960s validate the existence of the extended techniques at that time and recognize the emerging trend of incorporating such techniques as compositional tools and expressive devices. Both authors have inspired additional researchers to participate in the explorations of new sounds for the flute.

The influence of the pioneering work on exploring the extended techniques of Bartolozzi and Heiss is apparent from the pedagogical literature that was published during the following decade. Works such as Sheridan Stokes and Richard Condon's Special Effects for Flute in 1970, James Pellerite's Modern Guide to Fingering (2<sup>nd</sup> edition) in 1972, Thomas Howell's The Avant-Garde Flute; a Handbook for Composers and Flutists in 1974, Robert Dick's The Other Flute: A Performance Manual of Contemporary Techniques in 1975, Aurele Nicolet's Pro Musica Nova: Studies for Playing Avant-Garde Music for Flute in 1975 and Pierre-Yves Artaud's Present Day Flutes in 1980, have all uniformly indicated a strong demand on the introduction and instructions of the extended flute techniques among the flute community, and enthusiastic attitudes toward the subject as valid means of musical expressions. Howell provided an impressive collection of 1,826 multiphonic fingerings for the modern flute and a fingering chart for a 31-tone microtonal scale in his book. However, the accuracy of the collection and the practicality of his microtonal scale were later questioned by Dick in his article, Multiphonic Sourcebooks, on Larry Krantz's FLUTE discussion group over the WWW.

Among them, Dick's The Other Flute: A Performance Manual of Contemporary Techniques, with its second edition in 1989, presents the most comprehensive and detailed description of the proper fingers, oral cavity shape, embouchure size, and air direction and speed for producing special effects such as harmonics, microtones, glissandi, multiple sonorities, flutter tones, percussive sounds, whisper tones, jet whistles, signing and playing, and circular breathing. The reference manual also attempts to standardize the notations for these new found sonorities. Another extremely helpful reference material is Dick's other publication, Tone Development through Extended Techniques in 1986 with its detailed narrative discussions of how to generate various extended techniques in respect of the actual physical demands and adjustments while simultaneously developing the power, color and control of the tone for traditional flute playing. These publications will serve as the primary technical reference for the study particularly for producing quartertones and multiphonics on the Kingma system flute.

A recent burst of studies on extended flute techniques from 1980 to 1998 include dissertations by Kathleen A. Bondurant, Roberta Brokaw, Sydney Reed Carlson, Lisa M. Cella Michael Jerome Davis, Alejandro Sanchez-Escuer, Carol Gertude Isaac, Ann Rita Linard, Rebecca Rae Meador, Brooks de Wetter-Smith, and Morya Elaine Willis. These scholars devote their inquiries to studies either on the extended techniques themselves or the pedagogy and applications of extended flute techniques in the flute repertoire of the twentieth century

and their effects on various aspects of performance practice. Notation and interpretation for the extended techniques are also merging concerns among scholars.

While Brokaw and Meador center their studies exclusively on the techniques themselves, Sanchez-Escuer extends his examinations on extended techniques to alto and bass flutes. De Wetter-Smith provides a valuable repertoire list on extended techniques from 1966 to 1976. Carlson, Davis, Issac and Linard focus the investigations on the compositions of Robert Aitken, Robert Dick, John Heiss and Harvey Sollberger. These studies will provide information needed for the proposed study in regards to the historical development, repertoire, performance practice and analyses of the extended techniques in general.

The Development of the Modern Flute by Nancy Toffin 1979 offers a comprehensive historical account of flute development with abundant references on the evolution of the flute from the Middle Ages, through Boehm's invention, and into the twentieth century. Toff also discusses in depth each technical change in flute design and its concomitant effect on compositional techniques and performance practices which serves as a relevant resource for the proposed study. It provides crucial background information on the modifications that were made to the mechanism of the Boehm system since the 1940s. Although the book is considered outdated on reporting the most recent flute development to date since it was published in 1979, the historical information of the book remains valuable. Other books such as Philip Bate's The Flute: A Study of Its History, Development and Construction in 1969 and Raymond Meylan's The Flute in 1988 also provide comparable historical information on the flute development in general. Ardal Powell's The Flute in 2002 is considered the most accurate and complete investigation on the modern flute to date. It is also the first published book to acknowledge the creative design of the Kingma system flute. Unlike Toff's book, the text focuses on the history of flutes and flutists in a social context. Powell illustrates the inter-relationship among the instrument, its players, its repertoire, and performance practices together through the past millennium of changing musical styles and practices. These books will serve as groundwork for the proposed study to continue documenting the evolution of flute design and validate the significance of the inventions of the Kingma system flute.

Other miscellaneous supportive information can be found on the internet. Helen Bledsoe posted a list of published repertoire that utilizes extended techniques under the well-known Larry Krantz Flute Pages, <http://www.larrykrantz.com/etrep.htm>. This can be particularly helpful in identifying the existing extended technique repertoire for solo flute in addition to the works that were discussed in the above-mentioned dissertations. Andrew Botros from The University of New South Wales, Sydney, Australia has created The Virtual

Boehm Flute over the Internet that predicts the multiphonics, microtones and alternative fingerings. Its purpose is to offer the contemporary flutists an easier way to search for alternative and multiphonic fingerings which may be less awkward to finger and/or more in tune. However, not all of the fingerings suggested by the virtual flute are executable after the initial use by the researcher. Robert Dick Flute Corner page under Larry Krantz's website, <http://www.larrykrantz.com/wel2.htm> is valuable. It contains Dick's personal comments on various performing issues on contemporary flute playing. His instructional cassettes on most of his compositions will also be relevant to the study. They contain explicit instructional descriptions on achieving various extended techniques with actual playing examples.

## **Method**

This study will incorporate the descriptive, historical and qualitative research methods and live interviews as tools to document the history of the Brannen-Cooper Kingma system flute. Since very little has been written on the subject ever since its introduction in 1995, the interviews will provide valuable facts on the invention of the instrument. The survey of the existing contemporary flute literature will be limited to solo flute compositions that involve quartertones and multiphonics but not excluding from other extended techniques. The research will include an analysis using an eclectic method on one of the commissioned works.



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May, 1992 Purchase	Bachelor of Fine Arts. State University of New York, College at Magna Cum Laude
May, 1988	High School Diploma w/ Concentration in Flute Performance North Carolina School of the Arts

----- Performance Experiences -----

March,2000	Flutist,INMC Tour in Germany & Poland w/ Dr. Dinu Ghezzo
February,2000	Flutist,Tulane University & LSU Tour w/ Dr. Esther Lamneck
May,1999	Flutist,NYU Composers Seminar w/ Dr. Dinu Ghezzo
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----- Work History -----

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March, 2001	OfficeManager
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