Presentation Models
APPENDIX
Soundboard - The Hubbard Harpsichord Newsletter
*Queen Of All Instruments* by William F. Buckley Jr.
D. Jacques Way & Marc Ducornet Literature
Obituary - Vladimir Horowitz
HUBBARD WORKSHOP NEWS

Hass Update

Our March letter displayed a photograph of the immense framework of a German double-manual harpsichord, patterned after the instruments of the Hass family of Hamburg. That skeleton has now become the harpsichord dominating the Hubbard voicing room and about to issue its first sonorities. This latest design brings the total number of Hubbard & Broekman catalogue offerings to sixteen.

After long deliberation a simple decor was selected for the Hass. Its dark, chocolate brown exterior compliments the rich calamander, holly and walnut marquetry inlay of the keywell. Keyboards covered in bone are fronted by decorative rosewood arcades and...
CHRISTMAS OFFER

It is not everyone can boast a harpsichord kit under the tree. However, if you place your order by November 1 we can guarantee Christmas delivery. And if the Flemish Single- Manual Kit (insert) is on your Christmas list we offer a further incentive of 10% off on Christmas orders. Other Holiday suggestions are listed below.

SPECIAL OFFER

Flemish Single- Manual Harpsichord Kit (was $3150.00) . . . . . $2835.00

1734 SPINET RESTORED

"Josephus Mahoon Londini Fecit"

The most recent spinet to come under the eye and hand of Hendrik Broekman was built in London in 1734, the date inscribed on the bottom most key. The spinet was received in a state of moderate repair bearing witness to many previous hands.

Although the exterior is devoid of inlay, the lid and flap are handsomely mounted with pierced brass hinges and a scrolled brass hasp plate. It stands atop a cabriole Queen Anne base.

The keyboard of this delicate spinet rests between carved scrolled endblocks inlaid with boxwood. It is sumptuously and beautifully made, covered with thick slips of ivory and fronted by ivory arcades. The "skunktail" sharps are glued up sandwiches of ebony and ivory. Above the key-
Class, cont.

Cursiveness and patience made a positive and thoroughly pleasant expression on me. I feel I was privileged in being able to attend." Since then, similar week-long Hubbard workshops have been held outside Massachusetts, one at the University of New Mexico, Albuquerque, another at California Polytechnic State University in San Luis Obispo. Hubbard technical director, Hendrik Broekman, was instructor for both.

In Waltham we continue to host one-day workshop sessions. These are targeted at harpsichord and fortepiano owners looking for increased confidence in caring for their instruments. Held on haphazard Saturdays in the spring and fall, the classes offer theoretical and hands-on instruction in keyboard regulation, voicing, tuning, setting various temperaments and general instrument maintenance.

The November 19th class will expand this format to include kit builders who would like instruction in case painting, gilding bands and moldings, and applying French polish. Hendrik Broekman will present the session on regulation and repair; Peter Watchorn will cover techniques used in decorating and finishing the case.

If you would like to join the November 19 class, please fill in and return the form below:

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**REGISTRATION FORM**
Harpsichord Workshop Class
Saturday, November 19, 1988
9 AM - 4 PM
$75.00/PERSON (Work clothes suggested)

**VOICING, REGULATION, MINOR REPAIRS, TUNING**

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**DECORATION**

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**NAMES(S)______________**

**ADDRESS_________________________**

**CITY_________________STATE________ZIP_________**

Select one from each group below:

- I wish to attend Session I-a, 9-12 [ ]
- I wish to attend Session II-a, 9-12 [ ]
- I wish to attend Session I-b, 1-4 [ ]
- I wish to attend Session II-b, 1-4 [ ]

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**BULLETIN**

Between now and the end of the year Hubbard Harpsichords will be re-pricing both custom instruments and kits. Current prices (October 1987) will be in effect through December 30. If you would like to receive the current catalogue and price list please call (617) 894-3238.
CHRISTMAS OFFER

Soundboard

HUBBARD HARPSICHORDS, INC.
144 Moody Street
Waltham, MA 02154
Tel. (617) 894-3238

Brother Gregory Fryzel, O.F.M.
Franciscan Friars 333 East Paulding R
Ft. Wayne IN 46816

ADDRESS CORRECTION REQUESTED
HUBBARD HARPSICORDS GOES TO THE WHITE HOUSE (So to Speak)

The next time you hear period music performed at the White House you may recognize a Hubbard harpsichord.

Last year Hubbard Harpsichords received a commission from the United States Marine Band to build a French double-manual harpsichord. Happily, it was not to have wheels and stand tall with a marching band, but to be decorated in the Federal style and form part of a period ensemble that performs at the Library of Congress and in the White House.

Originally founded in 1798 by President John Adams, the first U.S. Marine Band consisted of a drum major, a fife major and 32 drums and fifes. From Jefferson's time to the present it has increased in number and today, nearly 200 years after its founding, the Marine Band numbers 140 pieces. Its members comprise a concert and marching band, a chamber orchestra, string ensembles, a dance band and Dixieland band, as well as several small chamber groups.

GERMAN HARPSICORD FEATURED AT BOSTON FESTIVAL IN JUNE

A large audience of Boston Early Music Festival visitors attended the June performance of works of J. S. Bach by harpsichordist Peter Watchorn. The concert was played on the Hubbard & Broekman Hass double. Following the concert and for the remainder of the Festival week the harpsichord was on display in the Hubbard room at the Park Plaza Hotel.

Interest in the 5-jack Hass was particularly keen among organists who were intrigued by its weighty 16' stop and incisive nasale, two registrations not found on the standard French double. The Hass' 6 1/2" octave span was an additional attraction for organists.

Until recently the harpsichord most often requested for solo recitals has been a 3-jack (or 4-jack) French double. However, it is now acknowledged that the music of Bach, Handel
YEAR END KIT CLEARANCE
10% OFF WHILE THEY LAST. GOOD THROUGH 12/31/89
CALL (617)894-3238 OR WRITE TO RESERVE YOUR KIT

WAS SALE

(1) Flemish Single-Manual Pre/Cut Kits
5 Kits Available........$3300 $2970

(2) English Bentside Spinet Pre/Cut Kit:
8 Kits Available........$2470 $2223

December 9, 1989

WORKSHOP CLASS IN HARPSICHORD MAINTENANCE

REGISTRATION FORM
Saturday Workshop with Hendrik Broekman,
Harpsichord voicing, tuning, regulation and minor repairs.
December 9, 1989. 9am - 4pm
FEE: $75.00/person

NAME(S) TELEPHONE

ADDRESS CITY STATE ZIP

HUBBARD HARPSICHORDS INC. 144 MOODY ST. WALTHAM, MA 02154 (617)894-3238

CALL IN TIME FOR TECHNICAL QUESTIONS M-F 12-1:00 PM
HELPFUL HINTS

TRANSPOSING PROCEDURE
Double-Manual Instruments

All stops should be turned on so that the dampers help support the jacks as the key ends pass beneath them. With the manuals coupled, play each note in turn to insure that the jacks are supported by the dampers. The transposing shim should be tipped up and pulled out. Supporting the lower end blocks with fingers (especially thumbs) and being sure that the end keys are not depressed, slide the keyboards slowly to their new position. Do not force. If the keyboards resist, a jack is caught somewhere, usually in the lowest or topmost set. This requires that the jack rail be taken off and the jack freed by lifting it up. Replace the transposing shim in the other side.

The instrument should be tuned to A-415 in low position. It should be transported with the action in low position (i.e., with the transposing shim at the treble end).

Kit builders interested in converting their instruments to transposers (single or double) are encouraged to write for instructions and parts. The procedure is straightforward consisting of removing the 2 topmost treble keys of the existing keyboard and refitting the F". The bass endblock is cut down, the treble endblock replaced, and a transposing shim added. Instruments dating from the mid-70's with front guided keyboards will require special instructions. Parts required total $65 for the single manual and $80 for the double manual.
1989 BOSTON EARLY MUSIC FESTIVAL & EXHIBITION
EARLY KEYBOARD INSTRUMENTS

Harpichords, Clavichords, Fortepianos

D. Jacques Way, Marc Ducornet & Associates
15 Williams Street, Box 151, Stonington, CT 06378  Telephone 203–535–1715
24, rue J.-J. Rousseau, 93100 Montreuil (Paris), France  Téléphone 1–48–PS1–9396
MAKERS OF THE WORLD FAMOUS ZUCKERMANN INSTRUMENT KITS
I built my first harpsichord in 1964, from one of the original kits designed by Wolfgang Zuckermann. To my eyes today it seems an odd little slant-sided thing, but thousands of those original Zuckermann harpsichords are still in existence, and even today they are not the worst harpsichords around. My wife, Katherine, who had given me the kit as a birthday present, made a ‘reverse’ keyboard for the instrument. When it was finished, Wolfgang offered to buy it. I made him a counter-offer, that he should write a book for my publishing company, October House, which had already published _The Harpsichord and Clavichord_ by Raymond Russell.

The result was _The Modern Harpsichord_, which became something of a best-seller in its day. Following close upon Frank Hubbard’s _Three Centuries of Harpsichord Making_, Wolfgang surveyed the current state of the art, and called for a return to the design, structures and techniques of the eighteenth century. He was particularly hard on the German factories that then dominated the field, and the book was banned in Germany.

While doing the research for his book in Europe, Wolfgang discovered that he was indeed a European and wanted to return there. He asked me to take over his company, Zuckermann Harpsichords, Inc., and we closed the deal on St Patrick’s Day 1970, at Stafford Barton, his historic estate in the West Country. Wolfgang has continued his relationship with our company until today, acting as a kind of European roving ambassador.

I had one great advantage over most other harpsichord makers of that time. I didn’t know anything, but I knew that I didn’t know anything. I looked for someone to teach me. Hugh Gough insisted that I should recruit William Hyman of Hoboken, who had just completed the Ripin harpsichord (now in the Boston Museum of Fine Arts), the Jacobs instrument (now in the Yale Museum of Musical Instruments), and the Fuller instrument (now in the Metropolitan Museum).

William Hyman had built a series of the most elaborately complicated plucking piano harpsichords ever made, but had then undergone a dramatic conversion to the classical eighteenth-century instrument. The results were astonishing in the richness and power of their tone, and a revelation in the security and perfection of the uncompromised classical action he used. In place of the complicated machinery of the ‘modern’ harpsichord, he used tapered wooden jacks in wood or leathered registers, and no screws at all! For the first time, in America at least, we had instruments that rivaled those of the ‘old masters’.

Until his untimely death in 1974, William Hyman was my teacher, master, advisor, and mentor. He was often exasperated at how slowly I was able to rid Zuckermann harpsichords of ‘modern’ materials and methods of manufacture. He was unhappy with our pianistic keyboards. He designed a French Double for us, but would not let
us make it until we could get rid of plywood, piano factory keyboards, and modern music wire. The 'sound in my head' was quite different from his. His sound was rich, almost oriental, I thought. I wanted something plainer and more powerful. But he was a great teacher, for when I got my own sound right, it also pleased him.

The Zuckermann kits through the years continued to explore the eighteenth-century way of doing things. The cases became lighter, depending on a balanced tension for their strength, instead of massive framing. Soundboards were tapered in thickness, and the jacks were tapered both in thickness and width. We introduced smooth, tapered tuning pins. Our 'soft' iron wire was soon used by everybody.

When William Hyman died in 1974, he had taken advances from thirty customers. By agreement with those customers, and with the consent of his wife, I undertook to finish off those thirty instruments, using parts and materials from his shop, and working as accurately as possible to his drawings. In sorting out the affairs of Hyman's estate I had the help of that princely gentleman of harpsichord makers, William Dowd.

In the fall of 1974 we made our first shipment of harpsichord kits to Europe, and within a few years we were exporting about two thirds of everything we made. The Europeans had never seen the little slant-sided original Zuckermann harpsichord, but were quick to appreciate the integrity of our designs and materials. In that same year, Anthony Sidey introduced me to a young French harpsichord maker, Marc Ducornet, who became our agent for France, and eventually established the factory just outside Paris, which now supplies the European market.

Meanwhile, the kits were attracting a number of professional musicians and professional instrument makers in America, Europe, Japan, Australia, New Zealand. They were discovering that the kits were not 'kits', but carefully made parts of excellent quality, leading to finished instruments to which they could proudly put their own names as builders. A number of these chose to represent us in their own territories, and became a world-wide corps of Authorized Agents and Associates.

Today the kits are no longer the largest part of our business, although we continue faithful to the idea that anyone with a real desire to participate in the construction of his own instrument should be allowed to do so. I myself started as a 'kit builder', as did our Associates throughout the world. There is no better way to learn the essentials of the craft of instrument maker in these times when apprenticeships are impractical. Both professionals and amateurs have managed to make some magnificent instruments from those Zuckermann kits, and I hope they continue to do so.

But our main occupation today is the making of harpsichords, clavichords, and fortepianos for discriminating musicians and institutions all over the world who appreciate the craftsmanship of D. Jacques Way, Marc Ducornet & Associates.
EARLY KEYBOARD INSTRUMENTS
By D. Jacques Way, Marc Ducornet & Associates

This is a catalogue of custom instruments such as we have been making for more than 25 years. Every model shown here has been made many times, and each time it is made slightly different from the last time. Constant small improvements are incorporated — so that a Flemish XVI is quite different from a Flemish we made 20 years ago. In this I think we follow the old masters: I cannot find that they ever 'copied' anything, even themselves!

Our instruments have been singled out for great praise by performers, and by critics (who do not usually notice the instrument). "Tant de perfection tient du miracle," writes the critic for Le Monde de la musique of Paris. "Le splendide D. Jacques Way clavecin sonne comme bien peu de clavecins et fait étinceler courantes, sarabandes, gigues, et passe-pieds..." Another critic writes: "Si le D. Jacques Way de 1982, d'après un Hensch de 1760, n'avait un son si particulier, si lumineux, où le mécanisme est d'une discrétion souveraine..."

There are no 'secrets' to making fine instruments — or rather there is only one secret, and that is what you demand. "The instrument maker is condemned to build the sound he has in his head," William Hyman once said. "If that sound is confused, the instrument will be confused, lacking in focus. If you fail to get the sound you want, you start over again."

Making 'copies' of old instruments won't do. What you want to 'copy' is the ability to make an excellent musical instrument, not make a fake antique. Picasso once remarked, "Bad artists make copies; great artists steal." Meaning that they seize an idea and make it their own. Or, as William Hyman put it, "You only copy what you do not understand; when you understand, you can't be bothered with copying."

Until you 'get enough things right', no one thing can make much difference to the sound of an instrument. But once you get enough things right, everything makes a difference. To get enough things right, you must understand the music, the tradition, the materials. And you must be able to hear
and remember and think in terms of musical sound the way a composer thinks of his harmony and counterpoint. You can't do this sitting on a mountain top. You must work with the skilled musicians of your time, engage in a dialogue with them, teach them and be taught by them. And learn from the devil if he has aught to teach you.

You must have access to the finest materials. You can't use the wood you find in a lumberyard, nor wire from the hardware store.

And you must make enough instruments so you can compare, learn, and remember, but you must also seize upon the memory embodied in the traditions of your craft.

The design and structure of our instruments follows the tradition that has come down to us from the great instruments of the past. My point of view is that the harpsichord does not need to be re-invented any more than does the violin. We use tapered jacks controlled by leathered or milled wooden registers. Our soundboards are tapered and thinned as were those of the old instruments, and like the old builders, we age our soundboard wood for years on the shelf before we select the flitches and glue them together by hand. No plywood is used, not even for lids and bottoms. Our low-tensile wire is made especially for us. We use smooth, tapered tuning pins to protect the wrestplank.

Our actions are fully adjustable, but adjustable in the classic manner: they are meant to be set right and then left alone. Musical instrument are to play, not to fiddle with. 'Infinite adjustability' by means of screws provides an infinity of wrong adjustments, an an irresistible temptation to create them.

The point is, our instruments work. We have made enough of each model to know that the structure is sound, that the action is responsive, and the sound is in the great tradition of the past centuries. And through our world-wide network of Agents and Associates we can provide the service to guarantee that they will continue to work.

With constant research and improvement over the years, and by working with many of the world's greatest musicians, we have made these instruments by D. Jacques Way, Marc Ducornet & Associates the standard by which Early Keyboard Instruments are judged.
The French Double Harpsichord

The sound of this French Double is strong, with great depth and richness. (How did we ever come to imagine that a French harpsichord had to be weak, with an action for the spaghetti-fingered? Perhaps because some of the surviving antiques are badly strung and voiced, or because Couperin said that a child's harpsichord should be lightly quilled?)

The soundboard is Swiss pine that has been aged for twelve years. The tapered wooden jacks work in leathery registers. The soundboard is handsomely decorated in the French style. The Louis XVI stand is richly gilt, as are the moldings on top of the case and around the keyboard. There are wide gold bands on case and lid. Nothing has been spared to make this instrument as beautiful in appearance as it is in sound.

A recent release of the Bach Partitas (Trevor Pinnock on Deutsche Grammophon) gives a fair impression of the sound. One of our most distinguished American harpsichordists (who owns two of these) remarks, "I did not really make an impression on the critics until I had an instrument that filled the concert hall with sound so they could hear me properly."

The instrument shown on the front cover of this catalogue was made for the Juilliard School of Music in New York City. Similar instruments have been delivered to more than a dozen of the world's great conservatories.

We are proud to present this uncompromised interpretation of the French harpsichord of the late eighteenth century!

The price includes the standard decoration as shown (you may choose your own color scheme), padded covers for both the instrument and stand, all packed ready for shipment. We need at least six months from date of order. Each instrument is thoroughly played in and must meet with my approval, which can delay shipment for a month or so.

An optional cabriolet stand (Louis XV style) is available. With either stand, the legs can be stored inside the apron for ease of transportation.

Two keyboards, coupler, 2 x 8', 1 x 4', buff. FF-f', transposable. 93.5 x 36 in. (237 x 90.5 cm).
The Concert Double Harpsichord

This instrument might well be called *un clavecin Flamand à grand ravatement français*. In other words, a Flemish harpsichord enlarged to a full five octaves in the French manner.

This is not, however, a French harpsichord. The sound is simpler and bolder than the French timbre, perhaps better suited to contrast and blend with the string orchestra in concerti, and capable of more power as demanded by large spaces.

The range is FF–g″″ (that Scarlatti g″″!), although the g″″ is lost in the transposed (A 440) position, since this note is never needed for continuo or concerti.

The simple trestle stand and the simpler decoration makes this less expensive than the French Double, without any loss in musical quality. A soundboard painting is not included in the standard version, but may be had as an optional extra. (Indeed, some customers ask for a table stand and full French decoration, bringing the price up close to that of the French Double.) The inside of the case can also be mounted with Flemish block-printed papers.

In its standard version, this is the instrument of choice for an orchestra or institution that needs versatility, ease of movement, and rugged stability without sacrificing musical quality. The stand is demountable, and the natural wood finish of stand and music desk will bear hard usage without showing wear.

The wooden jacks work in milled wooden registers. The action is adjustable in the antique manner—i.e., the keyboards are raised and lowered to follow the case and the soundboard without having to twist a screw on the bottom of each jack. In this way the stagger and timing are preserved with one simple adjustment instead of 183!

A single-manual version is also available, disposed 2 x 8′, 1 x 4′, or 2 x 8′.

Two keyboards, coupler, 2 x 8′, 1 x 4′, buff. FF–g″″″, transposable. 93 x 37 in., (236 x 94.5 cm).
The Flemish Single & Double

Our original Flemish Harpsichord was a petit ravalement of the 45-note Ruckers instrument, with 52 notes and a short octave in the bass. But the short octave made a problem with transposition, and Bach did sometimes want a b flat or an e flat. So we enlarged the range to GG–d‴, and added an extra string for the transposed d‴. The result is a small harpsichord with clarity and power, and with a keyboard large enough for everything in the harpsichord literature save a few very late eighteenth-century works.

With the second keyboard, you have enough enough for all of J. S. Bach’s works, including The Italian Concerto and The Goldberg Variations.

In either version, this is probably the most popular harpsichord in the world today, and as many doubles as singles are bought.

The traditional disposition for a Flemish harpsichord was a single choir of strings at normal pitch, and a choir pitched an octave higher (8′ and 4′). The single choir of 8′ strings loaded the bridge lightly, and made possible a fairly heavy stringing; the 4′ choir added the ‘principal’ sound, analogous to the small 4′ pipe organ which bases its tonal design on a 4′ instead of an 8′ principal. (Indeed, if we want to understand harpsichord tone, we must look at contemporary organ practice). In the single-manual version, I prefer the 8′ and 4′ version, although 8′ and 8′ may be specified.

The Double, however, must have the 2 x 8′, 1 x 4′ disposition (and slightly lighter stringing). While we are still in Flanders with our scaling, we are really now in the realm of the French ravalement, invoking a different, eighteenth-century tonal design, based on the 2 x 8′ ensemble, with the 4′ choir adding color and emphasis.

Either version makes a completely successful instrument, with surprising strength and clarity in the bass. And the relatively small size makes this instrument extremely practical and transportable.

One, or two keyboards with coupler. Double 2 x 8′, 1 x 4′, buff; Single 1 x 8′, 1 x 4′, or 2 x 8′, 1 x 4′, buff. GG–d‴, transposable without loss of d′ 82/87 x 33 in. (209/221 x 84 cm)
The New German Harpsichord

The German Harpsichord has been little explored by modern builders, and German harpsichords are less well defined as a national style than the French or the Flemish, since there was no single dominating center of harpsichord making. The double bentside is often found but is not universal. Details of the woodworking are often Italianate. Both the short, brass scaling and the longer iron scaling were used. The one unifying theme of the German harpsichord, it seems to me, is to be found in the tonal concept based on the German organs, direct and powerful in speech, less vocal than the Italian tonal ideal, and less instrumental than the French.

But my intentions in designing this instrument were extremely practical in terms of today's needs. The disposition here is 2 x 8', strung entirely in brass, which allows the instrument to be small, yet powerful, and allows the maximum tuning stability. The casework is entirely in natural cherry — no painted finish to guard. The bottom is somewhat heavy, making it possible to eliminate a stand (the legs screw into the bottom and can be removed).

This is an instrument that can be easily carried between choir loft and chancel, or carried to a concert, excellent for continuo or accompaniment, with simple action that is easy to maintain. Two choirs of brass strings in unison make for ease of tuning. Handstops on the wrestplank allow for variety in timbre.

The American cherry is somewhat wild in grain, and we make no attempt to match or book the grain, but the effect is elegant. Key end blocks and cheek pieces are fret-sawn in the typical German Italianate style.

The normal keyboard position is centered at A 440; it transposes to the left for A 415.

As might be expected with so successful an instrument as a single, customers are now asking for a double. I can only say that I have it on the drawing board; perhaps when you read this I will have a price and specification.

Single keyboard, GG-d''', transposable without loss of d''', 2 x 8'. 78 x 35.5 in (198 x 90 cm)
The Italian Harpsichord

Inspired by the Grimaldi instrument in the Paris Conservatoire, but built as a combined 'inner-outer' to provide a sturdy case, music desk and lid, this makes a practical, rugged, yet handsome instrument for today's use. Nevertheless, the 'inner' case is composed of delicately carved mouldings and veneers of Italian cypress.

We have paid particular attention to the keyboard to maintain the crisp Italian attack: an Italian keyboard should have quite a different feel than a French or Flemish board. The naturals are boxwood, the sharps are pear. Cheek blocks are sculptured in an acanthus design.

The 'outer' case is intended to be painted as a contrast with the natural finish of the cypress, but since the 'outer' case is made of spruce, many have elected to finish this clear. Vertical battens can be applied to the outer case, and of course a painted finish for the outer case can be as elaborate as you please — swags of flowers or strapwork would not be out of place.

The sound of an Italian should have a marked difference in timbre between the treble, middle, and bass. It is this that sorts out the counterpoint so well, and contrasts figures played in different parts of the range. We have maintained this 'non-homogenized' characteristic of the Italian harpsichord, which allows Scarlatti's sonatas to sparkle with great variety without 'tromping on the pedals' (changing stops).

An alternative version of this instrument is available, a true 'inner' case of solid cypress, with or without an outer case.

We have also made a number of five-octave Italians (GG–g'') as 'inner-outer' instruments.

And we have made hundreds of a Small Italian with a range of C/E–d''' with short and broken octave (with split sharps on the bottom two accidentals). These are made as 'inners' in Alaskan yellow cedar, with an optional outer case complete with music desk and lid.

Single keyboard, 2 x 8'. C/E–d'''', GG–d''', or GG–g'''''', 'inner'; or 'inner-outer' construction. 79/93/108 x 30/37/39 in. (200/235/274 x 76/94/100 cm).
Spinets, Virginals, Muselars

The small harpsichords, the triangular Spinets whether English or Continental, the Virginals whether Flemish or Italian, have always had a special fascination for me. First of all because they can be marvellous musical instrument in their own right. It is a mistake think of them as compromised, or inferior to the wing-shaped harpsichords. Each has its own sonority, its special timbre, and the small size of the soundboard allows them to be much more outspoken than the larger instruments. I'd rather own and play a good Spinet than a bad French Double, and for much of the earlier music these small instruments are all but indispensable.

Needless to say, these smaller keyboards are no handicap when playing the music written for them, and there is a lot of such music. The Fitzwilliam Virginal Book, Buxtehude, and Frescobaldi are all at home on these instruments. And where we have added a few more notes, almost the entire range of harpsichord music can be realized.

There is no room too small, it seems to me, for an English Bentside Spinet, or an Italian Box Virginal.

Our little Italian Virginal is only 4 feet long (122 cm), yet it will accompany a touring chorus, or handle the continuo for a small orchestra. The bass is stringy and nasal, but this blends perfectly with the middle and treble. The stand comes apart with wedges, and the whole thing can be carried on the seat of a small car.

C/E-49, 49 notes with short and broken octave. 48 x 20 in. (122 x 51 cm). The 'inner' parts are American cherry, with boxwood and pearwood keyboard.

The Large Italian Virginal (not shown) has 56 notes (GG-4), and keeps the deep plucking point that gives a round and booming bass. Several thousand of these were made, and it continues in demand by special order.

GG-4 chromatic, 56 notes. The 'inner' parts are of Alaskan yellow cedar, with boxwood and pearwood keyboard.
Our English Bentside Spinet (not shown) was inspired by an instrument in the Royal College, London. It is remarkable for the excellence of its bass, and the clarity and power of its tone. A very pretty instrument made of natural wood (cherry or alder) with handsome mouldings, and heavy brass hinges in the English manner.

**GC/BB-`d'`**, short octave, with split sharps in the bass, 54 notes. 67 x 24.5 in. (171 x 62.5 cm).

The Silbermann Spinet is closely derived from an instrument by Johann Heinrich Silbermann of Strasbourg (1767). The sound is full, simple, and clear with a supple touch to the keyboard. The sound is that of a harpsichord, not what you would expect of a spinet. The case is in French walnut, oiled and waxed. Paneled lid; the legs are hand carved with acanthus and rose motifs. A handsome instrument with full five octaves on the keyboard.

**FF-f'**`, chromatic. Ebony naturals, bone-slipped sharps. 77.5 x 28 in. (192 x 71.5 cm).

The French Spinet shown here is very much like the above, save that its painted case and simple turned legs invokes an earlier French style which is much less expensive to produce.

**FF-f'**`, transposable, ebony keyboard with bone-slipped sharps. 78.5 x 29 in. (193 x 74 cm).

The Muselar (Flemish Virginal) is a very special instrument with a great bronze-gold tone, quite unlike anything else among harpsichords. There are only 45 notes on the keyboard, yet the case is somewhat massive to resonate the full, booming bass and fluty treble. The bass of the right bridge is straight, to provide for a schnarwerk stop—little iron hooks that can be brought close to the bass strings to make a snarling sound.

The elaborate Flemish decoration, with marbled case, block-printed papers, and a bold, naive soundboard decoration are part of the fun.

**C/E-c''**, short octave bass, 45 notes. Keyboard with bone naturals and stained oak sharps, as in the antiques. Keyfronts in stamped leather. The turned stand in natural wood is demountable.
The Clavichords

The Clavicord is certainly the most expressive of all keyboard instruments. The player controls the loudness, the attack, and even the pitch to allow a discrete vibrato. It is suitable for all early keyboard music, and even the classical repertory including C. P. E. Bach, Haydn, and Mozart.

The softness of the sound is deceptive. Because the volume can be modulated with exquisite subtlety, the ear adjusts to the relative volume and what is only mezzo piano can sound like the crashing of the sea once your ear has adjusted.

We show here two clavichords: A large, five-octave instrument with a separate pair of strings for each note (unfretted), and a smaller, fretted clavicord where many of the strings are shared by two different notes on the keyboard. Each has its advantages. Pianistic literature will come more easily on the larger instrument. The smaller, fretted clavicord, with fewer strings on the bridge has an outspoken clarity of sound (and you will not be aware of the sharing of the strings).

The Five-Octave, Unfretted Clavicord has a case of rich natural mahogany, with handsome mouldings, a paneled lid, and an imposing turned stand. The keyboard has ebony naturals and bone-slipped sharps, and the keyboard dimensions favor a pianistic technique. There is a demountable fret-board, so you can play either with a firm bottom to the touch, or sink into the strings.

FF—f‴, chromatic, 61 notes. 64 x 18.5 in. (163 x 47 cm).

The Fretted Clavicord uses the double-fretted pattern, with A and D unfretted. The case and stand are in natural American cherry; the keyboard is boxwood with ebony sharps. This instrument is not quite small enough to tuck under your arm, but with a padded cover you could take it with you anywhere.

C—d‴, chromatic. 51 notes. 50 x 14 in. (127 x 35.5 cm).
The Fortepianos

Fortepianos have become the necessary keyboard instrument for music of the classical period, and even for Beethoven and Schubert. As someone has said, early music gets later and later. Recent recordings by Malcom Bilson of the Mozart concerti, and by John Gibbons have featured fortепиано made by us. More than sixty of our pianos are now in institutions and with professional musicians throughout the world.

A fortепиано can be voiced softly for an intimate room, or boldly to hold its own against an orchestra.

Our piano after Johann Andreas Stein follows very closely the typical casework and decoration, and scaling of that master's work, but we have provided the later, typically Viennese action with controlled escapement and voiceable hammers. This kein Nachdruck action gives control of the hammer all the way to the string, and widens the expressive range compared with the earlier Stein action.

Our piano after Anton Walter provides the early nineteenth-century action in a heavier case and heavier action (but not more difficult to play) but with only two more notes on the keyboard. The tonal color on the Walter is slightly darker, but the choice between the tone of the two instruments is a matter of taste, not musical quality. The photograph on the cover shows the instrument after Stein, with the delicate mouldings and a paneled lid. The instrument after Walter is plainer and more massive in appearance. The Stein model can be had either in mahogany or cherry. The Walter can be made in the wood of your choice.

Fortepiano after Johann Andreas Stein, FF–f, 61 notes, with hand-drawn moderator, sustain on knee pedal, back-check bar. Double-strung throughout. Pitch A 430 or A 440. 84 x 38 in. (213 x 96 cm).

Fortepiano after Anton Walter, FF–g, 63 notes. Moderator on left knee pedal, sustain on right. Adjustable back-check and let-off. Triple-strung in treble. Pitch at A 430 or A 440. 96 x 40 in. (244 x 102 cm).
To Order a Custom Instrument

Although we try to keep the parts for all the instruments in stock, no assembly on any instrument will be started without a firm order in hand and the receipt of a first payment corresponding to the Reservation of Parts amount shown on the price list. This initial payment is refundable at any time before actual decoration is begun. We like to have our customers visit and approve the playing but undecorated instrument, and can provide accommodations for that purpose. Upon approval of the playing instrument, purchase is completed to that point by paying the appropriate amount as shown in the price list. In effect, we are decorating the customer's instrument, and final payment for the decoration and finishing will be made before delivery.

Usually the soundboard decoration will be done by our own artist, since this must be completed before stringing. However, we are quite willing to cooperate with an outside artist on all phases of the decoration, including the soundboard painting.

Prices include packing and crating. Normally transportation will be paid by the customer upon receipt, but transportation can be prepaid by special arrangement. We do not collect sales taxes except for the state of Connecticut.

Canadian customers must make payment in U.S. dollar checks payable on any U.S. bank. U.S. funds payable on a Canadian bank cannot be accepted. Canadians do not pay duty on musical instruments, but will have to pay the Canadian sales tax. We prepare the appropriate forms, and you should not need the services of a customs broker.

Overseas customers must make payments in U.S. funds payable on a U.S. bank. Letters of credit and drafts on bill of lading will not be accepted. Shipment will be made by air freight, charges forward, and shipments will be insured unless the customer wishes otherwise. On shipments to South and Central America, the customer would be well advised to work with a local broker who understands import procedures.
The World Famous Zuckermann

INSTRUMENT KITS

The truth is that we don't make any 'kits'. What we make are custom instruments, finished instruments. But we will allow those who want to get involved in the making of their own instrument to take over at a certain stage and finish it off for themselves.

As you will see from the Price List, the cost of a partially finished instrument is considerably less than the finished price. But saving money should not be your principal motive for 'building your own instrument'. If you believe you are willing to suffer some of the work to save money, you will undoubtedly suffer, and perhaps not save any money at all. Making musical instruments is, I think, one of the most enjoyable occupations in the world. We do it because we enjoy it—because it’s fun. If you are not going to take pleasure in the considerable work involved, go do something you like to make the money to pay someone else to build your instrument.

Generosity is also a bad motive for building an instrument, unless you are also going to enjoy it. Don't make the mistake of giving someone something you hate!

Making an instrument is not primarily a 'woodworking' task. If you have a basement full of fancy power tools, make chairs and tables and cabinets. With some of the smaller instruments you take over at an early stage: we supply the flat pieces all precisely cut and moulded ready for assembly. With the larger instruments we supply you with the case rim assembled and the soundboard installed, thus guaranteeing the basic structure and the tonal potential of the instrument. You will have enough to do finishing and decorating the case, and installing the action.

Some customers have us carry the instrument through installation of the action (the Playing Instrument stage), leaving them only with the decoration. Others have us decorate the instrument, but leave them with the stringing and the action to do. In any case, you should plan to finish within
a year or so. A project that lies about unfinished for several years can have terrible consequences, including divorce of otherwise loving spouses.

We supply you with the complete parts (except for decorating materials, and we have kits for that), a full-size drawing, and a Construction Manual that is elaborately complete and is written in language you can understand. Nothing you are asked to do is hard labor, and no skill is required half so great as playing a simple prelude.

You will need some tools, most of which you already own. The Manual will advise of special tools needed with that instrument, and you should buy the best. You will need a place to work, and please let it not be a damp basement! Preferably a room you can close off temporarily; sanding a case can be dusty, and small parts tend to be lost before you get to them. But I built my first instrument in the middle of a one-room apartment. A pad of newspapers protected the dining table I used as a workbench.

My telephone number is printed in the Construction Manual, and I hope you will call me if you have any problems — that's how I learn to write better manuals. Believe me, I care more than you do that you wind up with a successful, beautiful instrument.

I should warn you that instrument making is addictive — many of our customers have built two, three, or half a dozen instruments, finding it more fun to build than to play. Which is the idea, of course.

In the notes that follow, you will find that there are several categories of kits. Some are practical for the first-time builder. With others, it would be wise to have built a simpler instrument first. If you are building for the first time, you will find that building a simple instrument first more than saves enough time on the larger instrument when you come to it. With some of the instruments I assume that you have made a simpler one first, and so do not lecture you in the Construction Manual about how to glue and clamp and string, jack, and voice. The problem here is not difficulty, but the amount of time it takes. If you have already made a Flemish Single, a French Double will take you less than half the time than if you were starting with the larger instrument for your first essay.

But I don't forbid customers to start where they please. I am always available by phone, and the local Agents are standing by. D J W
A number of our instruments require a painted finish, which distresses some of those building for the first time. I suppose because they think of unpainted furniture on which you slop a few coats of latex paint. But the painted finish is an honorable and very beautiful craft, and the careful, even brush strokes are 'part of the picture'—which is why I advise you not to think of spraying the paint. We do not want to eliminate the evidence of the human person as craftsman. Musical instruments are not bathtubs or automobiles! And harpsichords are not ugly, massive pianos whose ungainliness must be hidden by making them shiny and black!

We have developed a Case Painting Kit which supplies you with the materials for achieving a perfectly smooth surface on which to paint (paint does not hide imperfections in the surface, but reveals them). The Painting Kit also gives you something you will not be able to buy in your local paint store, a decent (if somewhat expensive) brush. And open-coat aluminum oxide sandpaper which works so much better than the brown paper covered with round sand. The paint we supply is made from ground earth pigments, not the insipid dyes used to make those thousands of awful colors you find in the paint stores these days. We teach you how to make a beautiful painted surface of which you will be proud.

We also have Soundboard Decorating Kits, Gilding Kits (for the gold bands and mouldings on the French harpsichord), and Flemish papers for decorating Flemish instruments in the traditional style.

Some good advice. Do not try to make a musical instrument blend into your decorating scheme. If you have chartreuse or wine-red drapes, don't paint your harpsichord chartreuse or wine-red. A musical instrument is beautiful in its own right, not part of the background. If your decorating scheme cannot contain beautiful things, there is something wrong with the scheme.

And don't be tempted to over-elaborate the decoration of your instrument. There is a tradition and history here that has evolved into a kind of taste and rightness. These instruments connect us with a glorious past that should in some sense inform the present. Not that we want to make fake antiques, but that we want to understand and honor an important part of our cultural heritage.
The Fretted Clavichord Kit

The easiest, perhaps, for the first-time builder. The parts come to you unassembled, but accurately cut. You glue them together, then sand and finish the beautiful wood, perhaps with a rubbed oil finish. There are a number of holes to drill, strings to apply, and the keyboard to finish off; the natural key covers are already applied, but you must glue on the sharps, set the tangents, and weave the listing cloth. About 40 hours. A nice optional touch is to carve the key levers. The attractive cabriole stand must be glued together and finished to complete an attractive and useful instrument.

Any early keyboard instrument will have to be tuned, and the player must learn to do it himself. The Fretted Clavichord is a good place to start. Once the tangents are properly set tuning is quite easy here. Tuning is a mechanical chore that does not require pitch memory or musical ability. When the strings are out of tune they 'beat'—make a pulse like wow-wow-wow. You tune by eliminating the beats, or controlling their frequency.

The Italian Box Virginal Kit

The case work here is as simple as for the Fretted Clavichord above, but cutting neat holes in the soundboard for the jacks to work in requires care. Once the soundboard is glued in, there are pretty veneers and mouldings to apply which created the illusion of an 'inner' instrument enclosed in an 'outer' case. The 'inner' parts are cherry, and you will paint the 'outer' case and stand to contrast with the natural wood of the 'inner'. Again there are holes to drill, and strings to apply. And a keyboard to finish off handsomely. Once the jacks are fitted in those slots you have cut in the soundboard, you must 'voice' the little Delrin quills that pluck the strings. Voicing is an art requiring musical taste, and this little Virginal is a good place to begin learning how.

You will need about 60 hours, I think, part of which is spent in sanding and painting 'outer' case and stand.
The Five-Octave Clavichord Kit

An essay in beautiful cabinet making. The parts come to you flat and must be assembled, but the Construction Manual is complete for first-time builders. Most large clavichords that have survived from the eighteenth century have warped and twisted; the instrument died out before it was completely invented! We have devised a stressed-skin construction that keeps this instrument straight and gives it great stability. The mahogany mouldings and paneled lid repay careful finishing, either in rubbed oil and wax, or French polish. You will need about 200 hours.

The English Bentside Spinet Kit

This is not shown in the illustrations, and is only available on special order (which means you may have to wait until enough orders have accumulated to make a batch). We made hundreds of these, but they sold so slowly that I let it go out of stock — whereupon everybody and his aunt wanted one. We have made two small runs, and will make more as needed. 200 hours.

The Small Italian Harpsichord Kit

Another instrument revived from the past. We made hundreds of these, and the owners loved them — once they had them built. The bass is a short octave (C/E, with two split sharps), which means it does not transpose, and there are only 49 notes. But the instrument only weighs 32 lbs! A big guitar with keyboard, with a wonderful sound for early music and for continuo. Installing the bentside is something of a challenge, since it bends in dry. But with patience it can be done.

The Alaskan yellow cedar of the case takes on a rich brown color with age. Many who built this instrument came back to us for an outer case, and we can supply the parts for one. About 150 hours.
This, by a small margin over the Flemish Double, must be the most popular harpsichord in the world today, and its construction should be well within your abilities as a first-time instrument. It comes to you with the case rim assembled and the soundboard installed (but professional builders who want to do their own soundboard work may do so on special order).

Even so, you have 200 to 300 hours of work to do. It is traditional with the Flemish and French instruments that the soundboard be 'flowered', i.e., have a painted floral decoration as though flowers, wreaths, or even bugs and butterflies were strewn at random over the soundboard beneath the strings. And Flemish soundboards have dark blue scalloped border, and arabesques among the flowers.

To encourage you to decorate your soundboard, we asked Sheila Barnes to write a Soundboard Painting Manual to teach you how. This is not 'art', but decoration, so if you have an artist friend, do not think of asking him or her to do it. They will try to be 'original' and 'artistic', no doubt, and spoil the whole effect. The Manual tells you how to trace the patterns and flowers (they are naive and stylized), and how to paint the flowers. It is a matter of following directions, not of 'artistic talent'.

But you need not decorate your soundboard—many do not. A bare soundboard and a simple, one-color paint job will still yield a handsome instrument. I'd much rather you moved along rapidly to achieve a playing instrument than get bogged down with the decoration.

There are lots of holes to drill, and strings to put on, and a keyboard to finish so it feels grateful under the fingers. You will have to cut the jacks to fit, and then voice and regulate, which will be easier if you have been precise in setting the pins that hold the strings.

You have a choice about the disposition of the two choirs of strings. The traditional disposition is 8' and 4' (one choir at normal pitch, the second quire pitched an octave higher). Some will prefer to have both choirs of strings at the same pitch, which makes tuning a little easier and less often necessary. About 175 hours, not counting the time you spend thinking.
The construction of the instrument is very similar to the Flemish Single, save that you have three choirs of strings, and a second keyboard to mount. The upper keyboard plays only the 'front', or shorter choir of 8' strings; the lower keyboard plays the longer 'back 8', and the 4' choir (if you wish). By means of a coupler, you can play all three choirs from the lower keyboard. You can thus have a considerable variety of sound, and make instantaneous changes between the keyboards, or play a dialogue with one hand on the upper and one on the lower. Some of the greatest pieces of harpsichord literature require two keyboards (The Goldberg Variations, The Italian Concerto) but there are not many of these. The best reason for have two keyboards is that you have all the resources of the instrument in the form that is easiest to play.

The range (as with the Single) is GG–d‴, enough notes for all of Bach and for everything else in the literature save for a few pieces written late in the eighteenth century. So this smaller instrument does almost everything that a big five-octave does—and with much less expense and difficulty in moving it about. It is no wonder we sell almost as many of these as we do the Single. Builders report that they need about 225 hours.

The traditional decoration for a Flemish harpsichord is to cover the inside of the case with those Flemish block-printed papers you see in the color illustration. Peter Mactaggart in England has cut the traditional patterns in wood, and printed them on the right kind of paper (I don't have much use for the cheap, offset imitations you sometimes see).

The traditional decoration also called for a band of 'marble' around the case. This is marbling as an idea, not an attempt to fool the eye. The 'marbling' is quite easy to do—one method is simply to wad up a rag and daub it on. But I quite like these Flemish instruments with a simple plain paint job in a handsome color. When Flemish instruments were rebuilt by the French and English in the eighteenth century, they usually applied a French or English decorative scheme. We certainly have a right to the taste of our own time, and need not be tyrannized by antiquity.
The Concert Double Kit  You Should Make A Smaller One First

This instrument was developed primarily for professional builders. It is not really more difficult than the Flemish Double, but the Construction Manual is not written to tell you all the things a first-time builder ought to know, and this instrument costs more money.

All the same, it's a bargain as large harpsichords go, considering its concert-hall tone, and the 63-note keyboard, great for Scarlatti. Wooden jacks are standard, and it meets every professional requirement for your main instrument. If you want to try it as a first-time instrument, I'll supply you with a Construction Primer. As with the smaller Flemish instruments, the soundboard is installed. About 250 hours.

The Large Italian Kit  As Above, Nice Woodworking on the 'Inner'

Another instrument designed with the professional builder in mind, but not too difficult. The cypress 'inner' parts require careful mitering and fitting, and you might like to try some woodcarving on the case cheeks. Several builders have succeeded with this as a first-time project. The soundboard is installed, and you only have two rows of jacks to fit. Decoration of the 'outer' case can be as elaborate as you like. About 200 hours.

The New German Kit  Fine Finishing of a Natural Wood Needed

We go rather far with this kit, including the veneering of the wrestplank and fret-sawing the cheeks and stop levers. The soundboard is installed, of course. I would be tempted to finish the cherry with French polish, although hand-rubbed oil and wax would also be handsome. There are only two choirs of strings and jacks. Several of these have been made by 'committees' for churches, and successfully. Not much you can do wrong that can't be put right. If this is the right instrument for you, go ahead. About 100 hours.
**The Muselar Kit**  
*A Special Essay in Antique Decoration*

I don't think there is any point in building this except as a reproduction of one of the classic historical instruments. That means, so far as the decoration is concerned a marbled band around the case, Flemish papers on the interior, a soundboard decoration in the traditional style, and mottoes on the lid and fall board. A very special instrument that no one really needs, but that those who own one will not part with. Decorate a Small Flemish First. The parts come to you flat, and you must assemble. The instructions assume a knowledge of instrument making. I'd say 300 hours.

**The French Spinet Kit**  
*Easiest of the 'Professional' Kits*

The soundboard is installed, and you have a little work to do to finish the woodworking, a simple paint job, and of course the action must be installed. To write and print an elaborate Manual for a first-time builder is expensive, and this is a somewhat special instrument. I think I can talk you through this one, if you really want to try it as a first instrument. Marc Ducornet designed it for professional builders. About 50 hours.

**The Stein Fortepiano Kit**  
*Everyone is a First-Timer With This One*

I had to write an elaborately complete manual for this instrument since nobody had ever built a fortepiano before. The parts come to you flat, and you must do all the building. Although the parts are accurately cut, moulded and milled, you must have some skills as a woodworker to succeed. And you must be prepared to build a precision machine of wood and felt and wire and leather. Professional piano technicians who want to explore the history of their craft have had great fun with this. There is even a bit of veneering to do around the case rim. Certainly a challenging project for the right person. At least 400 hours.
The French Double Kit

We have been supplying parts for this instrument to professional builders for several years, but have not listed it in our catalogue of kits. Marc Ducornet and I had long discussions about allowing amateurs to build this instrument. The investment in time and money are considerable, and I am not willing to have this instrument made in a less elaborate version. The design, construction, and decoration are in the high tradition of the French late eighteenth century, and nobody needs this instrument unless he really needs it—as the chief tool of a professional career, or as evidence of the ultimate in taste and appreciation of the instrument makers art.

But a number of our amateur customers have shown real professional skill in other instruments they have made. To deny them the right to work on this instrument would be a denial of the basic premise on which the kits are based.

I personally thin and install the soundboard to protect this instrument’s reputation for matchless tone, but the builder must see to the voicing and regulation, and is of course responsible for the appearance.

Which Harpsichord?

If you ask this question, it is obvious that you do not need the French Double! Which instrument you need depends on what you are going to use it for. The little Italian Virginal and the Muselar are very special, perhaps only interesting to a professional musician, or the dedicated amateur who already has his Flemish or Concert Double, and wants to explore the earlier music on an appropriate instrument.

If you are taking lessons, or planning to do so, your teacher will probably want you to have the GG–d”’ keyboard. If you are already proficient on the piano, and want to explore the more difficult harpsichord music, then probably a Flemish Double is the least you should think of, and you may want to consider the Concert Double, which makes available that portion of
the classical repertory that was written to be played either on the harpsichord or the early piano; the fortepiano and the late harpsichord shared the five-octave, F–f‴ keyboard, as did the large clavichords.

Of course, if your interest is chiefly in the building rather than the playing, then you will choose according to the interesting problems of construction and decoration.

And if Haydn and Mozart are your passion, you will want to experience the instrument they wrote for, the fortepiano, which is quite different from the modern piano.

If you are a young professional musician looking for the tool that you will be using on the concert stage, I rather think that building your own French Double, or fortepiano, is too much of a good thing. Instrument making is a passion and a preoccupation that is at odds with the passion for playing that must consume the professional musician. Yet two of the most handsomely decorated French Doubles I know were painted and gilded by one of our great professional harpsichordists.

How to Order a Kit

In the Price List you will find a column Reservation of Parts. This gives the price of the kits in their least expensive form. Send us a check for that amount of money (personal checks are acceptable). You will pay for the transportation on delivery.

We try to keep a supply of parts on hand, but for those kits that require assembly of case and installation of the soundboard we need several weeks before shipping. If the delay will be greater than this, we will notify you, and if the schedule is unacceptable, prompt refund will be made.

If we are to make a playing or a finished instrument, we will notify you when further payments are to be made.

As mentioned in the Price List, customers outside the United States must send a dollar check payable on any U. S. bank.

Shipment will be made by motor freight in North America, and by air freight overseas.
Guarantees and Refunds

All instruments and parts are guaranteed against shortage or unusable defect, but you must make your claim within one year after receipt. Parts damaged by customers can be replaced at cost.

Unopened packages may be returned for a complete refund, less transportation charges (if any). If our sealed cartons have been opened, we must charge for inspection and repacking, replacement of missing parts, and transportation, all of which will be deducted from the refund.

Shipping Information

Small packages are shipped by United Parcel Service, but kits and instruments are too large for U.P.S., and must go by motor freight. Small parts are sent carriage paid if check accompanies order. Freight charges will be collected by the carrier on delivery. A Flemish harpsichord will cost from $35 to $100, depending on distance.

Be sure to give us a complete address for shipping. Only U.S. mail can be delivered to a P.O. Box number. Give street address or rural delivery instructions, and also ZIP code. Also give us your telephone number. Our carriers are instructed to call you before delivery to arrange a convenient time. If carrier is forced to make a second attempt at delivery, he will charge you for it. There will usually be only one person on the truck, and the driver cannot leave his vehicle for inside deliveries. If left to himself, he will be tempted to drop the carton on a corner, which could lead to damage. Inspect your shipment before signing a receipt. The carrier is liable for damage in transit.

If you accept delivery in Stonington, you are obligated to pay the Connecticut sales tax of 7.5 percent, which will usually be more than the cost of shipping. We do not collect out-of-state sales taxes.

Canadian Shipments are exempted from duty (Tariff Item 5975501), but you will be required to pay the sales tax. We supply MA forms with invoice. Please note that Canadian orders must be paid for with U.S. dollar funds, payable on any U.S. bank.
The Associates and Agents of
D. Jacques Way & Marc Ducornet

We rather pride ourselves on doing things in the old-fashioned way among this community of craftsmen known as D. Jacques Way, Marc Ducornet & Associates. The modern ideal seems to be a lone critter working all alone on a mountain top, the solitary, often suffering, pure 'artist', proud to be self-taught in everything. But during the 'three centuries' the great instruments were made by professionals who had learned their craft as apprentices working under a master, and among journeymen. In factories, if you will. And if the master had more than three orders for an instrument, he cut out a batch of wrestplanks and other case parts while he was about it. Mass production if you will. I think we can be certain that they also availed themselves of the best tools they could find, and labor-saving machinery, the high technology of their times.

Efficiency and economy of production are not 'modern' ideas, just age-old common sense.

And so, in the eighteenth-century manner, we have workshops with journeymen and apprentices, and a 'master' in each shop, atelier, factory, call it what you will. One in Stonington, Connecticut, and another in Montreuil-sous-bois, which is about a hundred steps from the Paris city line. D. Jacques Way looks after things in Stonington, and Marc Ducornet tends to the Paris shop.

In each factory, there are about a dozen workers, all of whom have been with us for a long time, making a career of instrument-building. When a customer comes to try out his new harpsichord or fortepiano, they down tools and gather around to hear him play, and to hear his criticisms of their work. The instrument is theirs as much as Marc's or mine.

And around the world there are about fifty other Associates, each with his own workshop, which are extensions of our factories. Each of these far-
flung Associates has spent tin 2 in the factories, demonstrating that he belongs in our community of craftsmen, and that he is a fully qualified instrument maker in his own right.

Carey Beebe, who keeps his shop just outside of Sydney, Australia, spends about every other summer in Stonington, making instruments for his customers down under. Tae Ioka of Osaka spent a whole summer with us several years ago. Ferdinando Granziera comes up to Paris from Milan several times a year, and Henk van Schevikoven comes down from Helsinki. Kevin Fryer comes once a year from San Francisco, and Neil Roberts and Tony Brazier come from Los Angeles. Gerald Self will come from San Antonio this summer, as will David Calhoun from Seattle. Etc.

By sharing our experiences, we all learn to make better instruments. The Associates have, through the years, taught me more than I have been able to teach them.

All of our instruments have their beginning either in the Paris or the Stonington factory. Some will be finished off completely at the factory. Most of them, however, will be finished off to the customer's specifications by an Associate working in his own shop. There are many advantages to this two-tier system of manufacture. Most important to our customers is that they can deal with their own maker close at hand. All our instruments are guaranteed against defect of manufacture, and it is the local Associates who make that guarantee good.

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The column under Reservation of Parts gives the price of the instrument when sold as a Zuckermann Instrument Kit.
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<td>The Walter Fortepiano</td>
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QUEEN OF ALL INSTRUMENTS

An amateur player recounts his long love affair with the harpsichord.

By William F. Buckley Jr.

At a National Review Christmas party. For 10 years or so, until a year ago, the guest performer was Fernando Valentii, once designated (in Time magazine) as "the most exciting" recitalist alive, performing on the harpsichord. Then the cancer hit (from which, happily, he is in remission) and, of course, he was making no commitments for the indefinite future. I thought of asking Judith Norell, not only a brilliant musician, but also a courageous one, as witness that for a couple of years she consented to be my teacher. But I thought that to present another harpsichordist would skirt insouciance—too much like the King is dead, long live the King. Better something completely different. Michael Sleeper, the president of the Caramoor music center near Katonah, N.Y., suggested Richard Vogt, Caramoor's choral director, who arrived, on a snowy Friday in December, at our place in Manhattan with an incredible 13 performers—singers, a cellist, a harpsichord accompanist, and a clarinetist.

Later that night, I measured the reactions of an audience of about 80—staff and friends of the magazine. The reaction to Valentii had always been more than merely courteous. He weaves his wonders so engagingly that even those who had never before heard the instrument knew that a magic of sorts was being brewed. But one simply has to acknowledge that there are more popular forms of music, and these carried the day when the happy and talented choristers sang and played, everything from old English madrigals to "O Little Town of Bethlehem." The harpsichord is not, in my opinion, a difficult

William F. Buckley Jr. is editor of National Review and author of the current best seller "Atlantic High."

From above, a French harpsichord (c. 1670) has a reversed keyboard with black naturals and white sharps and flats.

Before her death in 1959, Wanda Landowska's personality and playing won a new audience for the harpsichord.
The harpsichord is two keyboards, as seen in this undated engraving, can pluck different sets of strings, separately or simultaneously.

This instrument was built (c. 1590) by Antwerp's master harpsichord maker, Hans Ruckers, whose descendants followed suit for 100 years. Ruckers were known for their beauty of tone.

(Continued on Page 32)
Soler and Scarlatti, Bach and Handel had written was, for a very dark age, held to be forever anarchonized. The Western world was at the peak, unobtrusively the age of romance. Schubert was already there, and even Chopin would soon be born; but then the world was still on the rise, and things were stirring. Turner and Goya exhibiting, and the artist's vision was of a pretty girl, just like a modern French Impressionist, though the girl could be sad and, in opera, was often expected to commit suicide. The relative austerity of the relatively arts-above-all harpsichord was something people were entirely disposed to discard, in favor of the mellifluous, sound-variable piano.

But it is nevertheless safe to say that the piano was, so to speak, the evolutionary next step in the development of the harpsichord, as one might say that the DC-3 was the outgrowth of the DC-1. It is the beginning of knowledge of the harpsichord to know that it is a different instrument from the piano. Just as a chair is a different instrument from a bench, so a harpsichord is a different instrument from a piano. Or put it another way, the end of the harpsichord might well have been dictated, along around 1800, not so much by the perfection of the piano, as by the desuetude of the Baroque music. The early sonatas of Beethoven were written for the harpsichord. His later sonatas could not even be played on a harpsichord (Beethoven was now absolutely depending, for the communication of his thought, on a pedal that sustained notes that had already been struck, by fingers now otherwise occupied; and electronic devices from pianissimo — pp — to fortissimo — ff). It is more accurate to think in terms, not of a better mouse-trap having replaced its predecessor, than of the awakening of exclusivist artistic appetites apparent only at the beginning of the 19th century, when it was apparent that the old musical and technical skills. But as has been noted by Courtenay Cauble, the learned contemporary teacher, harpsichord authority and technician, comments, a fine harpsichord performance is the skill of bringing the "musical contraption of the instrument" into contact with equal "musical contraption of the instrument." In contrast to the piano, the harpsichord has a distinctive, highly complex contraption, which substantially limits a performer's interpretation. Moreover, the means by which the sounds are produced impose severe restrictions on how the performer can express musical textures and lines. And only certain kinds of sound lend themselves at all to harpsichord performance.

Two of the principal limitations of the harpsichord performance, Buxtehude, or a harpsichord performer willing to accept his instrument as a willful rather than a willing partner, the result is, in Buxtehude's case, simply horrifying. A classical attitude toward artistic production — illustrated so well, for instance, in many of Igor Stravinsky's neo-classical works, as Cauble points out — is that a work of art gains increasing vigor and beauty as the artist focuses his energies by imposing on himself more and more demanding limitations. Some pianos, harpsichord music — for instance, compositions of Rameau and Couperin — is so idiomatic that it is unsuccessful when played on the harpsichord, even the versatile piano. Other Baroque compositions — Bach's keyboard works, for instance — are in fact more successfully reinterpreted by a modern pianist without doing violence to their inherent musicality, take on, under the fingers of a skilled harpsichordist, a shape and meaning uniquely theirs. Without the use of a sustaining pedal, for instance, and, thus, without dramatic increases or diminutions in volume, the music requires, once again, a different shaping. Bach's "Chromatic Fantasy and Fugue" can be played on the harpsichord, clavichord, piano and organ, and is exquisitely beautiful in each case. But the effect on the sound and the shape, and the nature of the excitement, are different in each case. A modern listener can choose whether to consider the piano or the harpsichord's — is more congenial to his taste. But it remains a fact that, to many listeners, the experience of Cauble's "tripartite marriage of composer, instrument, and performer," done by the harpsichord, is not just revelation, but anquite irresistible joy.

During the last years of the century, the music of Johann Sebastian Bach by giving three concerts on successive Tuesday. He would play his "Clavierubung," which includes the Six Partitas, the "Goldberg" Variations, the "Chromatic Fantasy and Fugue," and four duets.

I had played the piano, rather seriously as a boy and a long time, but always with a love and an instrument purchased more of my enthusiasm than of my time: which is merciful, because those without skill in art are miserably misled if deluded into believing they can become serious artists, practicing however, with the instrument's effect is putter. I had an upright piano at Yale (cost, $100), and my attraction to the music of Bach led me to purchase it for the use of the piano and the technique of the instruments.

So attended these concerts and heard a harpsichord performance in an auditorium for the first time. During the spring of that year, my father had made me a graduation gift. John Chaliss received a check for $1,000, and I received a beautiful little clavichord, the drawing-room contemporary of the harpsichord, back in its golden years. What surprised me was a telephone call, the day after the instrument arrived, from Ralph Kirkpatrick, asking whether he might come to my rooms to try out my clavichord. John Chaliss had written to say that he had experimented with the instrument's bridge, which lies across the soundboard, flattening the back of the strings, and Chaliss wanted Kirkpatrick's reaction to its effectiveness.

In those days (and even today, though to a lesser extent), harpsichord makers and performers made up a tight little fraternity, comparable to the computer engineers and builders of 20 and 15 years ago in California and Boston, though less competitive. The finest harpsichord building, are not very high (the artistic stakes are infinite). Someday someone should write "The Soul of the New Harpsichord," and tell the story of the restoration of the harpsichord, an achievement of the 20th century.

I remember both the excitement of meeting Ralph Kirkpatrick, then in his 30's, and the prospected anxiety after he sat down to play. He held a cigarette holder with lit cigarette in his lips. It must have been eradicate. Surely, it was with malice aforethought that he permitted the exhalation of his burning cigarette to grow to advanced detumescence, reaching the point where you become furtively cer that its long, dirty ashes would fall into the clavichord's womb, all over your delicate little wooden keys and brass tongs. But then — suddenly — the fingers of one of his hands,

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therefore wholly engaged in the nimble articulation of complicated fugues, runs and trills, were unaccountably free. With them he would non-chalantly transport the ciga-
rette holder from his lips to the astray part of the instrument, tap it, detaching the ash, and return to the key-
board, to accompany his other hand, which had never stopped playing.

It was, under the circumstances, with special excite-
tment that I went with my wife to Sprague Hall, filled with the occasion with my students, faculty and townfolk. We sat for the beginning of the five hours of the Kirkpatrick recital, which we would hear in the course of the fortnight. The experience was dazzling on several counts. There was the music: unusual, to the inex-
perienced ear; stringed, con-
trived, subtle, seductive; en-
gaging, finally. The music, rococo; at times somnolently seductive, at other times gaudy and bul-
lent. Finally, overpower-

And virtuosity. It would be five hours of music pro-
foundly intimate, but with a power for the most part, cannot be hummed — because you can-
not hum two, let alone three, or four melodies at the same time. And so much of the music of the Baroque period is contrapuntal — vertical music, they call it; because, on the page, the column of melodies, so differ-
ent from the single-line melo-
dy, with accompanying chords. The awe would mount.

On the evening after the second concert, Kirkpatrick played Variations. They are, argu-
ably, the most difficult single keyboard work ever written. I attended a reception for the artist, and in conversation, once again, with the gentleman who, a few months earlier, had tried out my Chalisa. “When I asked reverently, ‘did you commit yourself to giving these three concerts?’”

“Ah,” said Kirkpatrick, master-of-fact, “smiling easily,” “it was last spring, in Italy.”

“When,” I persevered, “did you practice the ‘Gold-
berg’?”

“Oh,” said Kirkpatrick, vis-
ibly struggling to remem-
ber a detail so inconsequen-
tial: “I was busy… From Perugia to Rome.”

Since I think with the speed of light, I reasoned that Kirk-
patrick had spent the entire summer riding buses every day from Rome to Perugia — you know, the kind of thing genius-eccentrics do, when they run out of convention-
ality — with one of those key-
board simulatores on his lap, practicing away for the 300, 400 hours it would take to master the “Goldberg.” I asked if he had used such a keyboard? He looked at me, perplexed. “Oh, no,” he said. “I thought the ‘Goldberg’ on that ride.”

“Wait a minute,” I said sternly, bringing the conver-
sation to attention. “I am … asking … you. When last did you actually play the ‘Goldberg’?”,

“Oh,” he said noninforma-
tely, “I think it was when I was still at Harvard. I was 21, I think.” I wandered away, and have wandered ever since away from such fonts of im-
mortality, awestruck. Al-
though I assume there are complementary talents in the piano world, the impact of that epiphany stayed with me, and I thought for the first time about the infinite com-
plexity of a mind that could recall so formidable a compo-
sition as the “Goldberg.” I know then and there that no human achievement I was likely to encounter would ever dwarf, in my estimation, this one. And the harpsichord was his chosen instrument. Kirkpatrick had begun on the piano, and switched to the harpsichord as a student at Harvard. That he should have done so was terribly impor-
tant to me.

During that year and the year or two after, the musical world suddenly found itself in the lap of Wanda Landowska. Although in her 70’s, Madame Landowska had just released “The Well-Tempered Clav-
ier.” It was rapturously re-
ceived, which did not surprise her, as I learned in the sum-
mer of 1950 when I visited her home in Lakeville, Conn., only five miles from my own home. The first words of the 4-foot-binch tier were: “You ahref favorite weep my ‘Veli-Tempered’ record-

ings?” I told her I was. She widened her eyes: “My, I agree, though — that’s the way they were.

It is hard to overestimate the influence of Landowska. For a while, she was virtually alone as a harpsichord per-
former. Her musicality com-

- •

bined with a sense of theater, concerning which I say in the chaste afteryears of the harpsichord explosion of the 1950’s and 1960’s, there has been some reservation. You see, in the harpsichord you have more than one register, as they are called. The concert instrument normally has two key-

boards. The lower of these plucks a set of strings at a given point along their length, producing the lower eight-foot sound. This is the basic harpsichord sound. But if you depress a note on the upper keyboard, you hear a slightly different sound, be-
cause a different string is being twanged by the plucker (which is called a plectrum). The plectrum is here clamped under a different point of that other string, evoking the same pitch, but of a differ-
ent quality — more nasal, stringier, mutier, whatever. By depressing a “coupler,” you can, by striking only the lower keyboard eight-footer, simultaneously depress the same note in the upper key-
board. It goes without saying that the two timbres should complement each other, in agreeable harmony.

But you are hardly done. The lower eight can also be struck, but this time using the buffer stop, the sound is damped, giving off a pizzicato sound. This is an ei-
ether-or situation: but if you wanted softness and clarity, you could pitch the same note on the upper keyboard, using the regular eight-foot, while on the lower keyboard you can depress it in the ‘soft’ buff mode. A third al-
ternative is to shift to the peau de buffle (buffalo hide) which gives you a dreamy-
soft version of the regular eight. A third set of strings is pitched an octave higher than the eight-footers, and called the four-foot. Mostly at this time, the performer will simultaneously engage the four-foot and the four-four, producing a more solid sound.

Now: Wanda Landowska (and indeed a lot of her im-
mediate successors, most prominently Kirkpatrick, and Valentini) regularly used yet another set of strings, those pitched one octave below the eight-foot. Now strike a chord and it will sound almost like an organ roll: the equivalent of three pianists playing with perfect coordination on three octaves. The sound produced by Landowska was wonder-
fully varied, with substantial reliance on the 16-foot, using every conceivable combina-
tion of registers. By the late 1960’s, the use of a 16-foot register had become musi-
cally unfashionable. Why? For historical, practical and aesthetic reasons. Only a few harpsichords, late in their epoch, had 16-foot registers. To supply the 16-foot, it is re-
quired that the instrument be stretched out in length consi-
derable, and that heavy strings be used. The tempi-

tation to add the extra effi-
cacy of the 16-foot tends to overwhelm many performers’ taste: and, then, the sound of the 16-

foot can affect adversely that of the other strings, ex-
cept where a perfect balance is provided, by numerous craftsmen—rare.

The provision of the 16-foot register, I barge in to say, is only in part justified. I walked once into the Unitar-
ian Church in Weston, Conn to hear Fernando Valenti record the sonatas of Soler, and he was using the famous Challis on which he had recorded the 50 long-playing records. It is true that sometimes the sound was that of an organ. It is true that the sound of a harpsichord working was indistinct. The sound was, well, perfect. I’d have shot anyone who threatened to take away Fernando’s 16-foot.

The sound of an individual note of the harpsichord does not, if you are measuring decibels, increase measura-
bly by pounding on it. Dyn-
amic effects are therefore the consequence of balance: of rhythm and timing; of deli-
icate releases; of notes prop-
erly sung. One can hear more from hearing someone with these requisite skills, perform-
ing on a fine instrument, is the pleasure of petit point.

□

A friend was present at the Frick Collection at what proved to be the last public perfor-

ance of Landowska. She was playing an obscure sonata by Fisher (J. A., 1744-
1791). It happened to have hap-
pened to be having. So that he knew it when what was being played suddenly ceased to be Fisher, com-

mencing Landowska, improvising. My friend was concerned. What was she up to? Memory lapse? But, we work being, no, you know. The audience did not react, and in due course she was back, playing what Fisher wrote.

The concert program was the famous “Chromatic Fantas-
ty and Fugue.” As was her habit, Landowska bowed her head simply before begin-
ning, bringing her hands — extended — to her lips, as if in prayer. Then the right hand was raised dramatically, as if some master blow were about to come. Suddenly she stopped, wheeling thoughtfully about to ad-
dress her audience in her high-sounding, high-pitched voice:

“Ladies and gentlemen, last night I had a visitor. It was Poppa Bach. We spoke. I told him, and he said the next time I must try. So tonight, I will use a different fingering and maybe this time it will not be too confusing. I want to play my incompara-
ble recording.”
Vladimir Horowitz, 86, Virtuoso Pianist, Dies

BY BERNARD HOLLAND
Special to The New York Times

NEW YORK, Nov. 5 — Vladimir Horowitz, the eccentric virtuoso of the piano whose extraordinary personality and skill overwhelmed six decades of concert audiences, died suddenly today at his home in Manhattan, apparently of a heart attack. Though standard biographies list his birth date as Oct. 1, 1904, Mr. Horowitz recently celebrated what he called his 86th birthday.

Held in awe by aficionados of the instrument, Mr. Horowitz virtually cornered the market on celebrity among 20th-century pianists. His presence hovered over several generations of pianists who followed him.

"He Knew All the Repertory"

"He touched every musician who ever heard him," the American pianist Murray Perahia said today. Mr. Perahia, who was at the Horowitz home when he died, added: "He knew all the repertory and could play pieces he hadn't done in 20 years — Beethoven, Scriabin, Chopin. He always counseled me to be freer, but he was upset when people tried to imitate his style. He didn't like the terms Classical or Romantic. He simply said to play from the heart."

Reached in Tokyo today, another prominent American pianist, Emanuel Ax, said: "I knew people who worshiped Horowitz, as I did, and I knew people who hated him. But no one was indifferent. He brought the idea of excitement in piano playing to a higher pitch than anyone I've ever heard. For me the fascinating thing was a sense of complete control, and on the other hand, the feeling that everything was just on the verge of going haywire."

Vladimir Horowitz in his East 94th Street town house in 1986.

never did go over that line, but there was the sense of an unbelievable energy being harnessed, and the feeling that if he ever let it go, it would burn up the hall."

The pianist André Watts said today that Mr. Horowitz "was like a demon, barely under control out there on stage."

Indeed, Mr. Horowitz's playing of such standards as Tchaikovsky's First Concerto and the Rachmaninoff Third electrified listeners. He was also famous for his high-powered versions of Mussorgsky's "Pictures at an Exhibition," Sousa's "Stars and Stripes Forever" and the Liszt Sonata.

Harold C. Schonberg, long the senior music critic for The New York Times and the author of "The Great Pianists," wrote: "As a technician Horowitz was one of the most honest in the history of modern pianism. He achieved his dazzling effects by fingers

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alone, using the pedal sparingly. Notes of scales could not be more evenly matched (his Scarlatti was technically fabulous); chords could not be attacked more precisely; octaves could not be sharper or more exciting; leaps could not be hit more accurately.

"No matter how difficult and complicated the piece, Horowitz would make it sound easy. And above all there were his stupendous fortissimos — that orchestral body of tone that only Horowitz could produce."

"Colors and Contrasts"

Of himself, Mr. Horowitz once said, "The most important thing is to transform the piano from a percussive instrument into a singing instrument... a singing tone is made up of shadows and colors and contrast. The secret lies mainly in contrasts."

The Horowitz style was not admired by all. He was sometimes viewed with despair by critics who thought his highly personalized interpretations ignored composers' intentions. In the New Grove Dictionary of Music, Michael Steinberg wrote, "Horowitz illustrates that an astounding instrumental gift carries no guarantee about musical understanding." The composer and critic Virgil Thomson called Mr. Horowitz "a master of distortion and exaggeration."

Mr. Horowitz was not overly worried by accusations of textual infidelity. "When I sit at the keyboard," he said, "I never know how I will play something. I play the way I feel at the moment. The head, the intellect, is only the controlling factor of music making. It is not a guide. The guide is your feelings. Chopin never played his own pieces the same way twice."

A: another time Mr. Horowitz said: "I am a 19th-century Romantic. I am the last. I take terrible risks. Because my playing is very clear, when I make a mistake, you hear it. But the score is not a bible, and I am never afraid to dare. The music is behind those dots. You search for it, and that is what I mean by the grand manner. I play, so to speak, from the other side of the score, looking back."

"The Evolution of a Myth"

Yet even into Mr. Horowitz's late '70s and early '80s — when he made a heavily publicized and carefully orchestrated comeback in the concert world — he retained the ability to extract '60s of either extraordinary brilliance or extraordinary delicacy. In his concert appearances during the 1920's and 30's, Mr. Horowitz's ability to create excitement in whatever he did on stage made him an almost mythical figure — a status only enlarged by his personal eccentricities and flair for attracting public attention.

Even his frequent retirements from performing had a romantic appeal to mass audiences. A man known for the frailty of his nerves, Mr. Horowitz quit playing in public four times — between 1938 and 1938, from 1953 to 1965, from 1968 to 1974 and from 1983 to 1985. This seemed only to sharpen his public's appetite. When Mr. Horowitz did play, he drove a hard bargain: his personal piano from his Manhattan living room accompanied him; concerts were at 4 P.M. and only on Sunday. Advance teams redecorated his hotel rooms to make him feel less estranged from the comfort of home; his own food was cooked to his taste.

Mr. Horowitz's last withdrawal from the concert circuit came after a series of uneven performances in the early 1980's — ones which he subsequently blamed on overmedication. But in the last four years of his life, he became virtually a one-man industry in the concert business — with a much-publicized tour of the Soviet Union, performances in Europe and America, all linked with compact disk recordings, videotapes, television programs and
films. His return to Moscow and Leningrad in 1986, after a 61-year absence, became a major media event reported around the world.

**Born Into a Musical Family**

He was named Vladimir Horowitz when he was born in Kiev, in the Ukraine, into a prosperous and cultured family. His father was an engineer. His mother and sister, Regina, were pianists, a brother, Georg, a violinist. Mr. Horowitz altered the first letter of the family name for his Berlin debut in 1928.

Lessons on the piano at home began at age 3, then formal training at 6. He studied both the piano and composition at the Kiev Conservatory and in his early years leaned more toward a life of composing. His musical talent was apparent from an early age.

The Bolshevik Revolution in 1917 pushed Mr. Horowitz onto the concert stage. In the political upheaval, his family members lost most of their possessions, and Mr. Horowitz began playing piano recitals to earn money, food, and clothing for them. He performed 15 times in Kharkov during the 1922-23 season with great success and subsequently went out on a 70-concert tour (playing 200 different works).

In 1925, Mr. Horowitz induced Soviet authorities to allow him a student's visa for foreign travel, but on arrival in Western Europe, he ignored schools and plunged instead into a two-year tour of Europe. Audiences loved him and critics compared him to Anton Rubinstein and Busoni. Mr. Horowitz was brought to America by Arthur Judson, the all-powerful impresario of the era. Early in 1928, Mr. Horowitz played the Tchaikovsky First with the New York Philharmonic under Sir Thomas Beecham.

Olin Downes, then a critic for The New York Times, described his reception as “the wildest welcome a pianist has received in many seasons in New York.” The performance, wrote Downes, was “a whirlwind of virtuoso interpretation, amazing technique, irresistible youth, electrifying temperament.”

**The Many Cancellations**

This temperament contributed to his numerous retirements from the stage and the frequency with which he called off scheduled appearances. One frustrated manager said that handling date changes and cancellations for Mr. Horowitz was a full-time job. The pianist, Hollywood actor and all-round wit Oscar Levant — also known for his high-strung behavior — once proposed a full-page ad that would read: “Messrs. Horowitz and Levant wish to announce that they still have a few cancellations for next season.”

The pianist insisted that he was not neurotic, only high-strung, and blamed his disaffection for concert performances on the rigors of travel.

“For me, playing the piano is the easiest thing in the world,” he said in 1975. “It’s all the things around playing that drive me crazy.” At about the same time, he said: “I could play every day. It is the moving that is the big deal for me. I have to take my own cook because I can’t eat hotel food. I don’t eat meat. I’m not sick. It’s just a belief.”

In addition to the cook, he took along a machine to purify water: “Every place has a different kind of water, and I don’t want foreign chemicals in me,” he explained.

In 1935, Mr. Horowitz played nearly 100 recitals. Immensely fatigued, he had a particularly slow recovery from an appendectomy, a result of which was the first of his several withdrawals from the concert stage. For the next two years, he lived in France and Switzerland, where he studied alone. He began to play again in 1938, first in Zurich, then in Paris. In 1940 he returned to the United States and renewed his American career with a recital at Carnegie Hall.

**Playing for the War Effort**

In 1942, he was the highest paid concert artist in the country. Two years later, he was awarded American citizenship. During World War II, the pianist appeared with Toscanini in many war-bond concerts, and in 1945 he fashioned his celebrated transcription of Sousa’s “Stars and Stripes Forever” for a patriotic rally in Central Park.

After the war, he continued an active career, recording and giving concerts throughout the world. In 1953, he celebrated the 25th anniversary of his American debut with a concert at Carnegie Hall, later recorded and issued on a two-record RCA Victor set. Then he went into a retirement that lasted 12 years.

Years later, Mr. Horowitz explained his disappearance to an interviewer. “The doctors said that I was overworked — that I needed a rest. I thought I would take a year’s sabbatical. It was wonderful. When it was over, I thought I’d take another one. I saw friends and played cards and I talked philosophy and I read books and I listened to all kinds of music.”

Ten years passed this way. Although several recordings were issued during this period, including some of the pianist’s best, he was tantalizingly inaccessible to the public, and the Horowitz mystique grew.
Mr. Horowitz began to seriously consider a return to the stage in 1964. He began playing "tryout" concerts for an invited group of friends at Carnegie Hall. Finally he announced a date — May 9, 1965. The tickets went on sale at 10 A.M. on April 26. A line had begun to form the previous morning; by midnight, it had grown to 270 people, and by 7:30 on the morning of the 26th, there were 1,500 people waiting in line for tickets. The night before had been damp and cold, and Mr. Horowitz, touched by the devotion of his audience, had sent 100 cups of coffee to the waiting fans.

The Return Concert

When Mr. Horowitz stepped out on the stage of Carnegie Hall, the audience rose to offer a stomping, cheering, standing ovation. The concert was highly charged but successful and was later released in a two-record set on Columbia Masterworks.

He played a few select concerts in the following years and recorded a television recital that was broadcast nationwide in 1958. Then he retired again. After shock therapy in late 1973, which apparently revitalized him, Mr. Horowitz began to give concerts regularly in 1974. On Nov. 17 of that year, he played the first piano recital at the new Metropolitan Opera House at Lincoln Center. In 1975 he made a rare appearance as a collaborative pianist, accompanying the baritone Dietrich Fischer-Dieskau in Schumann's "Dichterliebe" and playing chamber music with the cellist Mstislav Rostropovich and the violinist Isaac Stern in a benefit concert for Carnegie Hall.

Mr. Horowitz never did much teaching and, by all accounts, was not particularly adept. His best known pupils were Byron Janis, Gary Graffman and Ronald Turini; Mr. Turini was said to be his favorite. Other students included Alexander Fiorillo, Coleman Blumfield and Ivan Davis.

In 1976 he announced that he would contribute his services to the Mannes College of Music, where he worked briefly with Dean Kramer. However, when Rise Stevens resigned as the president of the school, Mr. Horowitz immediately withdrew from the faculty.

First Recording Was in 1928

Mr. Horowitz made his first recordings in 1928 for RCA Victor; he remained with the company until 1962, when he moved to Columbia Records. In 1975, he returned to RCA, where he remained until the mid-1980's, when he began to record for Deutsche Grammophon.

His records cover a wide spectrum of music. A disk of Clementi sonatas, recorded at his home in 1954, is widely credited with helping to establish a new audience for the composer, and he did much to popularize the sonatas of Domenico Scarlatti.

Peter Gelf, his manager, said Mr. Horowitz had been in good health recently. He had been recording again, using the living room of his East 94th Street town house as a sound studio. Less than three weeks ago, he signed albums at a midtown Manhattan record store.

Mr. Horowitz's last appearances as a performer were in the spring of 1987 when he played in West Berlin, Amsterdam and Hamburg. His last American concerts were in the fall of 1986 when he played at Lincoln Center and helped celebrate the reopening of a refurbished Carnegie Hall.

Thomas Frost, who was Mr. Horowitz's record producer for many years, made about 15 recordings with the pianist, said today that the last recording session with Mr. Horowitz was on Nov. 1. "We had been working since Oct. 20 — a Haydn sonata, some Chopin, and the Liszt-Wagner 'Liebestod' were some of the pieces. Though we probably needed two more sessions, I have a gut feeling there is enough more or less note-perfect material for a complete record. We were very close to finishing.''

'He Was Such a Communicator'

Mr. Frost, who said that Mr. Horowitz had been playing "very well up to the end," remarked also on the social nature of his recording sessions. "He was such a communicator that he welcomed visitors in the recording studio," Mr. Frost said. "He hated to record in short sections and would do so only under duress. His artistry was
worked out in the larger details. Those things came on the spur of the moment."

When they dined out together after some of the recent sessions, Mr. Horowitz told Mr. Frost of plans for further concerts. "He was looking forward to a lot of activity," Mr. Frost said. "There were no physical complaints; his doctors told him he had the blood pressure of a much younger person."

Watching over Mr. Horowitz's health, as well as almost every aspect of his life, was his wife, Wanda Toscanini Horowitz, whom he met in 1933 after an invitation from her father, Arturo Toscanini, to be the soloist in the Beethoven "Emperor" Concerto. They married the same year. A daughter, Sonya, was born in 1934, and died in 1975. From their Manhattan home, Mrs. Horowitz took a central role in her husband's activities. Mr. Horowitz settled permanently in the United States in 1940.

Leonard Bernstein addressed a letter to Mrs. Horowitz today that reads as follows: "I just heard that Volodya is dead. I send you loving sympathy, but let me add my admiration for you and your long years of devotion to this amazing man. He was not only a super-
pianist but a super-musician with all the mental fallibilities such geniuses have. You cared for him and guarded him through a series of neurotic crises the world may never know nor understand; and you returned him to us time and again, refreshed, renewed and ever greater."

The White House said in a statement late today: "We are saddened at the loss of this world renowned musician.

We extend our sympathies to his family. His musical legacy will continue to live on."

Mr. Horowitz was awarded the Medal of Freedom in 1986 by President Ronald Reagan, after the pianist's return from his Soviet tour.

Mr. Gelb indicated today Mrs. Horowitz's wish that her husband be buried in the Toscanini family plot in Milan, Italy.
Vladimir Horowitz, above left, with his wife, Wanda, daughter of Arturo Toscanini, as he prepared for a Carnegie Hall recital in 1943. Above right, the pianist bowed to the audience after a Carnegie Hall recital in 1965.

Horowitz on stage in 1986 in Leningrad, where he performed after a 61-year absence. Below, he acknowledged applause after playing in 1986 at the gala reopening of Carnegie Hall.

No being taken out of his East 94th Street town house in 1985 en route to a studio session. Horowitz at the White House in 1986 after being awarded the Medal of Freedom.
GLOSSARY
from Zuckermann
Adjustment screw  the jack screw regulating the amount of plectrum projection.
Arcade  the keyfront on many antique keyboards and modern copies, which consists of a series of round arches formed by a rotating cutter.
Back eight foot  the row of jacks farthest from the player, activated by the lower manual, which pluck the string a distance from the nut and thus produce a fluty tone.
Back rail  the rear cross member of the key frame, covered with cloth or felt (back rail felts).
Balance pin  the pin passing through the center of a key, acting as its pivot.
Balance rail  the central cross member of the key frame, carrying the balance pins.
Bearing  the downward or sideward thrust of strings on bridge or nut. Also the guide octave in which a temperament is set.
Beat  the waxing and waning caused when two notes are sounded which are not in exact mathematical relationships. When an A-440 v.p.s. and an A-444 v.p.s. are sounded together they will produce 4 beats per second.
Belly rail  the harpsichord frame member running under the front edge of the soundboard. The bellyrail and pinblock edge form the gap which contains the action.
Bentside  the curved or right hand side of the harpsichord case. On some instruments the "bentside" is not curved.
Box slide  the type of jack slide or register which is deep enough to hold the jacks upright without requiring a lower guide.
Bridge  the curved strip glued to the soundboard over which the strings pass. The bridge transmits the string's vibrations to the soundboard.
Bridge pin  the pin driven into the bridge to position the strings and define the end of the string's vibrating segment.
Bristle  the jack spring whose function it is to return the tongue after it glides around the string upon the jack's return after plucking. Originally made of hog's bristle, this spring is now usually made of nylon or music wire, but is often still called a bristle.
Buff stop  a series of leather or felt pads mounted on a rail, which create a pizzicato or harp effect when brought into contact with a set of strings. This stop is called harp stop in England and Lautenzug in Germany, which is sometimes erroneously translated as "lute" stop. In Germany the buff on a 16' is called a theoibo stop.
Cap moulding  the moulding on the upper edge of Italian harpsichords.
Capstan  a heavy screw with four holes in its head used for regulating the position of action parts such as jack slides.
Cembalo  the German term for harpsichord.
Cheek  the short side piece in a harpsichord case, to the right of the keyboard.
Clavecin  the French term for harpsichord.
Clavichord  a rectangular keyboard instrument possessing metal blades (tangents) which strike the string, but unlike piano hammers have no escapement action.
Coupler  a device connecting the upper keyboard to the lower, so that strings normally played from the upper keyboard can be added to registers played on the lower keyboard.
Cutoff bar  the largest soundboard rib, usually placed diagonally to the spine, and roughly parallel to bridge and bentside.
Coupler dog  an upright prong either mounted on the lower keys or hanging from the upper keys which connects the two keyboards.
Covered strings  bass strings which have a soft wire winding wrapped around a hard wire core to increase their weight. Such strings are needed when the bass is shortened from its natural or ideal length.
Dampener the felt pad on the jack which damps the string.
Delrin a modern plastic often used in harpsichord plectra.
Dip see "key dip."
Disposition the arrangements of stops on a harpsichord.
Ducke the German term for jack.
Dog see "coupler dog."
Dogleg jack a jack which can be operated from both the upper and lower keyboard.
Double harpsichord an instrument with two manuals.
Double virginal an instrument possessing two virginals, one in 8' and one in 4' pitch.
Down bearing the amount of downwards pressure exerted by the strings.
Eight foot a set of strings in a harpsichord tuned to normal pitch (at unison with the piano). The term derives from organ building where the pipe for note CC is eight feet long.
End pin the vertical lower screw on the jack which regulates its height.
Equal tempered tuning the modern setting of the temperament dividing the octave into 12 equal semi-tones.
Foreshortening the shortening of the bass strings so that they deviate from the mathematical ideal of doubling the length of each octave.
Four foot a set of strings tuned an octave higher than 8 foot or normal pitch.
Frame the inner structural members in a harpsichord case.
Front rail the front cross member of the key frame.
Front pin the key pin driven into the front rail which serves to guide the key in many modern keyboards.
Gap the space between belly rail and pinblock which contains the action.
Ghosting the faint sound produced when the plectra of a set of jacks brushes the strings when in the "off" position.
Half hitch see "half stop."
Half stop a mechanism allowing a set of jacks to pluck at half strength (near their plectra's tip) to produce a soft or piano tone.
Hand stop a hand operated mechanism for changing registration.
Harp stop see "buff stop."
Harpichord a plucked instrument possessing strings running parallel to the spine, as distinguished from virginals and spinets.
Hitchpin the pin holding the string at its terminus beyond the bridge.
Hitchpin rail the strip of wood or metal containing the hitchpins.
Inner case the harpsichord proper in Italian instruments with a separate outer case. In some modern harpsichords, a complete inner frame.
Jack the plucking device in a harpsichord, spinet or virginal.
Jack guide see "lower guide."
Jack rail the bar with a felted or cushioned underside, which is positioned above the jacks to limit their upward motion.
Jack slide the narrow rail with punched slots which serves as the upper guide for the jacks, and whose motion allows the jack to be brought in and out of play.
Jack spring see "bristle."
Just scale the scale in which the string length is doubled for each successive octave.
Keyboard the unit comprising the key levers mounted on the key frame.
Key blocks the wooden blocks at either end of the keyboard.
Key button a block of wood on some modern keyboards, with a rectangular, felted slot through which the balance pin passes at the top of the key.
Key dip the amount a key travels downwards at its front.
Key frame the structure supporting the key levers.
Key front the vertical front of natural keys.
Key lever the actual key, especially the part hidden under the action.
Key top the covering applied to a natural key.
Knee

in Italian harpsichords, a triangular brace holding the case sides.

Knee lever

a device operated by the player’s knee, to change registration.

Lid stick

the stick which props up the lid.

Liner

the strip running along the case to which the soundboard is glued.

Lock strip

the board in front of the keyboard which often holds a lock.

Lower guide

the fixed lower rail through which the jack bottoms or end pins pass.

Lute stop

a row of jacks plucking very close to the nut and producing a nasal tone; not to be confused with the buff stop.

Machine stop

a device operated by pedal or knee lever which allows a shift in several registers at once for a sudden piano effect.

Manual

a keyboard.

Meantone tuning

a tuning system used in most of the early music, in which thirds were beatless and fifths were considerably narrowed.

Music wire

the thin steel wire used for stringing in harpsichords.

Name batten

a narrow strip of wood above the keys screwed to the pinblock, which often bears the maker’s name.

Name board

the board above the keys running the width of the instrument.

 Naturals

any of the octave’s seven keys with wide tops, reaching to the front. The “white keys” as distinguished from the “black” keys called “sharps” or “accidentals.”

Nut

the front bridge, usually glued to the pinblock near the line of jacks.

Overspun strings

see “covered strings.”

Peau de buffle

buffalo hide; a stop using this soft leather which strokes rather than plucks.

Pedal

a foot operated device to change the stops.

Pedal harpsichord

a harpsichord possessing an organ pedal board which can be operated by the player’s feet.

Pinblock

the hardwood, laminated, or metal block holding the tuning pins.

Pitch c

the pitch of c, an octave above middle C, used as the standard for comparing length of scale in harpsichords.

Plectrum

the piece of quill, leather or plastic projecting from the jack, which actually does the plucking.

Plucking point

the point at which a string is plucked, relative to the overall length of the string.

Punchings

the small felt or paper washers which regulate key dip and key level.

Push coupler

see “shove coupler.”

Quill

the material (i.e., crow and raven) used for plucking on the old harpsichords. Also, any plectrum.

Quint

a set of strings tuned a fifth (or an octave and a fifth) above 8′ pitch.

Rack

the board in back of the keyboard with vertical cuts in which the keys were guided on antique instruments.

Ravinement

the French term for the change of Flemish harpsichords to a wider compass and more useful disposition.

Register

see “jack slide.”

Rib

the bar glued to the underside of the soundboard at an angle to the cutoff bar.

Rose

the ornamental rosette set into the soundboard.

Scale

the string lengths of an instrument, generally expressed by citing the length of c′.

Sharp

Any one of the octave’s five accidental keys which do not reach to the front.

Short octave

on antique instruments, the lowest octave in which some keys have been omitted, and others are tuned to lower notes to extend the range.

Shove coupler

a keyboard coupler which is disengaged by pulling the upper keyboard toward the player and engaged by shoving the keyboard backwards.

Sixteen foot stop

a set of strings tuned an octave below 8′ pitch; also the row of jacks which plays such a set.
Soundboard  the thin vibrating board underneath the strings, which carries the bridge.

Spine  the straight (left) side of a harpsichord.

Spinet  the triangular or polygonal harpsichord with strings running at an angle to the front.

Square  an oblong-shaped instrument, generally an early piano.

Stop  a row of jacks (like the 8' or 4'), or a device (like the buff stop) which is capable of altering the tone.

String band  the width and outline of the space which the strings occupy.

Tail  the small rear case piece which forms the end of the harpsichord.

Tangent  a metal blade which strikes the string in a clavichord.

Tongue  the pivoting member of the jack carrying the plectrum.

Tuning hammer  the wrench used to turn the tuning pins; sometimes used to tap in the pins.

Tuning pin  the steel pin with a threaded bottom and square head which holds the string at one end.

Unisons  two notes, or sets of strings, of the same pitch.

Venetian swell  a stop operating a lid with Venetian slats which could be opened when playing for loud-soft effects.

Virginal  an oblong harpsichord with strings running parallel to the front.

Voicing  the operation of shaping the plectra to achieve the optimum sound from a harpsichord.

Wrest plank  see "pinblock."
Illustrations


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70-72 - Hubbard, plates XXXI-XXXII, XLI.


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76 - Palmer, p. 100.

77 - Palmer, p. 143.

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105-118 - Courtesy of Gregory S. Fryzel.

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