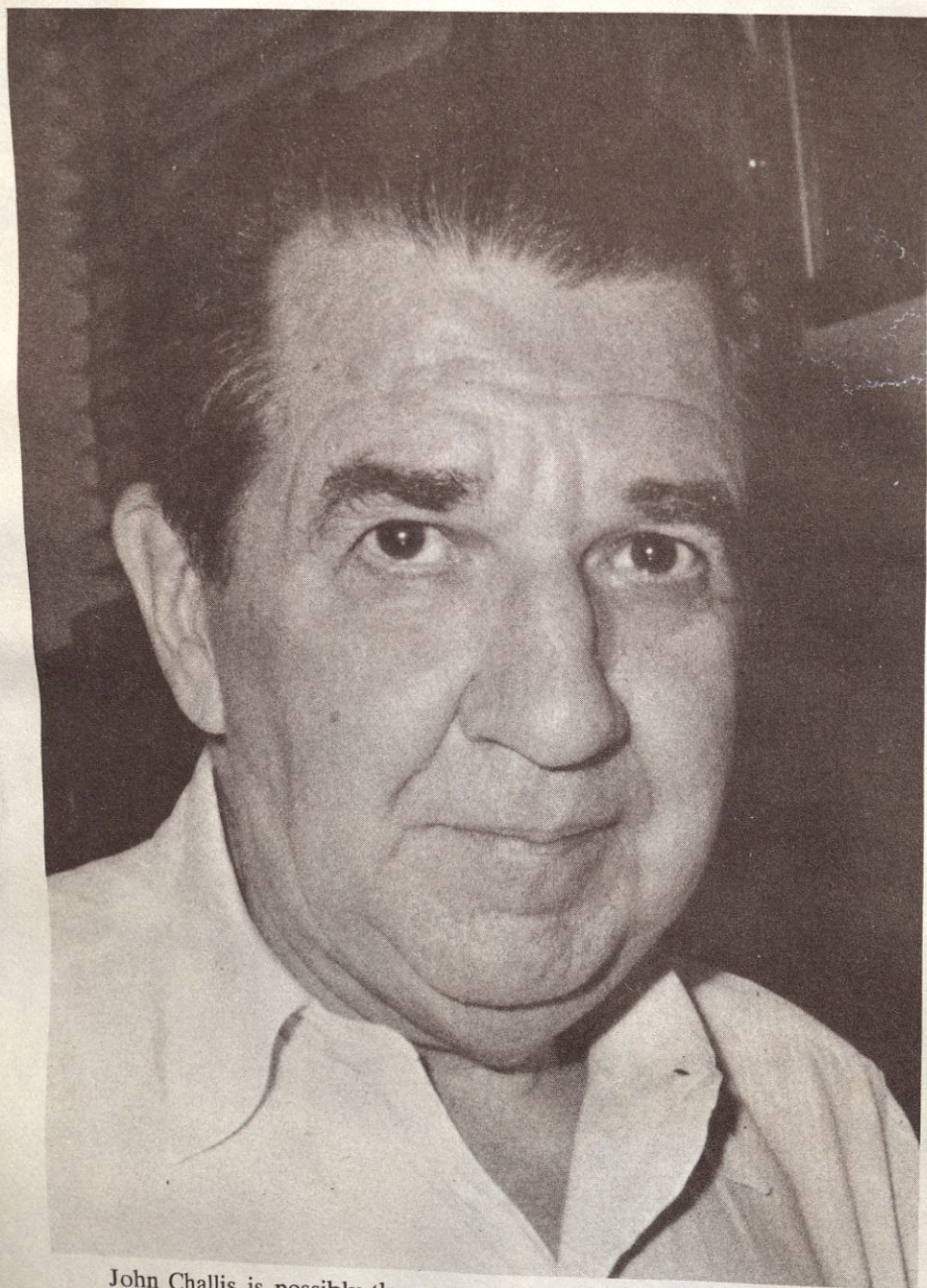


Portrait of a Builder

John Challis:



John Challis is possibly the most important harpsichord builder in America today. When John Challis started, and for many years after, he was the *only* harpsichord builder in America. He was building harpsichords before most people knew what the word meant. He built his first instrument in 1925 and has spent his

full time designing, building and playing harpsichords and clavichords ever since. He does not copy the work of others. He is a creator and an innovator, which makes him a controversial figure with builders who do copy. His knowledge of art, music, literature, physics, mechanics, science and medicine is phenomenal and those

few who are fortunate enough to visit with him in person find him an exceptional conversationalist.

Dr. John Brodsky, I.H.S. member, in a letter written to this publication, mentions his visit with John Challis.

"I met Mr. Challis on one occasion about a year ago in his home and shop, having had a letter of introduction from a mutual acquaintance. I have a fascinating hand written letter from him touching on some common aspects in the philosophy of both medicine and harpsichord making. He is quite a literate man and his mastery of his art is so profound as to allow magnificent success with quite unorthodox approaches utilizing the best that modern technology has to offer."

This letter assured me that one of the first builders we should interview for *The Harpsichord*, should be John Challis.

After several letters and telephone calls, a time and date was set for the interview.

I arrived in the early evening at the address of a large, clean, commercial-type building located in lower Manhattan in the section more generally known as Greenwich Village. It was a square building, about four stories high and resembled a municipal structure. It was dark by this time and the only light came from the top floor.

I rang the bell and waited. Within a minute, a quiet pleasant man appeared in the hallway of the first floor, came down the steps and opened the double doors. "Come in" he said in a friendly voice. "I will take you up to Mr. Challis."

We walked down the hall and entered a huge elevator, large enough

to hold a concert harpsichord. When we arrived on the top floor, he led me into a living room which probably measured 25 by 60 feet. The floor was covered with rare antique oriental carpets and two French crystal chandeliers hung from the high ceiling. Three Challis harpsichords stood at one end of the room and the rest of the room was furnished with comfortable antique chairs, lounges, tables and an extensive and excellent collection of original painting and sculpture. Within seconds John Challis appeared in the doorway at the far end of the room.

He greeted me warmly, offered me a Scotch on the rocks, and we started a tour of his building. I learned that he has always insisted on living within a few feet of his studios and shop. "Time spent in traveling is very often unproductive" he said. His apartment occupies much of the top floor of the building and the other floors contain his display rooms, workshop, storage, etc. The structure at one time had been a hospital which explained the oversized elevators and glazed brick interior walls in all but the living area.

We returned to the apartment and as we sat down, I asked him to tell us about his childhood.

JOHN CHALLIS: My father was a jeweler in the little town of Ypsilanti where we moved because my sister was going to go to college there. I, being thirteen years old, and younger, was elected by my father to help repair the clocks.

Unfortunately, I got the reputation after a time, of being able to repair any clock around the place. I delighted in repairing clocks other people had turned down. I took to it like a fish to water. But I also had other interests.

At about the same time, I took a much greater interest in playing the organ than the piano. I went to the organ teacher of the college and asked to take organ lessons. He looked at me and said "Your legs aren't long enough!" I demonstrated that by sitting on the edge of the bench, I could play and my feet could touch the pedals. I think my organ playing suffered somewhat at that time because I was just as interested in what was going on inside the organ as I was at the keyboard. Since the organ was not always in tune, I learned how to keep it in tune. Those were my first tuning lessons. These were to be helpful to me for many years to come. Of course, it's not very difficult to tune an organ. It has a nice, steady beat.

Then one bright day, my organ teacher took me to his studio and showed me a clavichord which had been made by Dolmetsch. I was then about 16 years old. I don't know exactly.

After that, the organ began to suffer a bit. I was very intrigued with the clavichord. So I tried to make one!

I found that one couldn't buy one at any price. The results of my first instrument were pretty crude.

By the time I had graduated from high school, Landowska came to Ypsilanti and played a concert. This was her first tour in this country, and this was the first time I had ever heard a harpsichord. Then all kinds of things got started in my head.

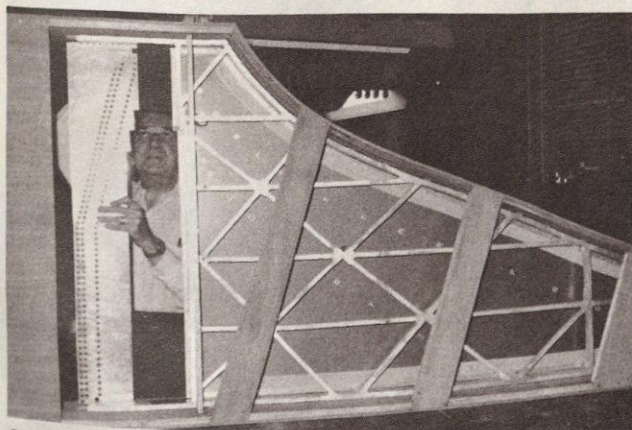
I couldn't get it off my mind. I thought about it day and night. But harpsichords were just as scarce as clavichords then. I had been in college for two years when I learned that my organ teacher was going to England and that he was going to go to the Dolmetsch factory. So I simply asked my teacher if he would ask Dolmetsch if I could go there and study with him. This idea came to me out of a clear sky!

My teacher went to Europe, asked Dolmetsch, and Dolmetsch said "Yes!"

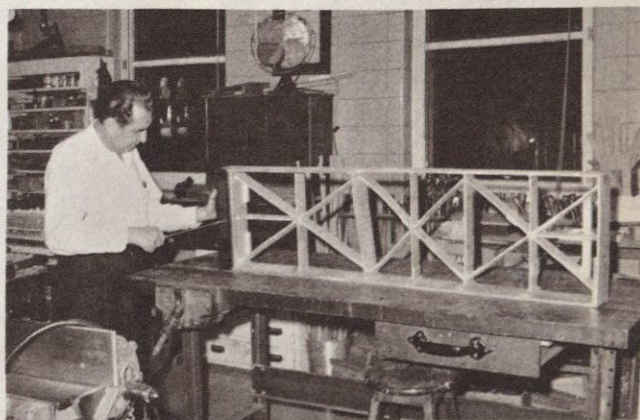
In less than two weeks after my instructor returned with the news, I was packed and on the boat for England! This was to everybody's astonishment . . . including my own. I stayed with Dolmetsch for four years.

THE HARPSICHORD: Did you find your first few months working for him a formidable situation?

JOHN CHALLIS: Look, when you are 19, nothing can scare you. I was too young to have any idea as to what I was getting into. If I had had the ghost of an idea of what I was getting into, I would have been so scared, I would have run in the opposite direction. But since I didn't know, I



Challis attaches metal pin block to cast metal frame. The metal soundboard and bridges are already in place.



A clavichord frame receives its pinblock. Notice the unique arrangement of the vertical bracing.

took care of the problems as they came along. Not the least of which is the beastly English climate.

They have fourteen different kinds of rain and, once in a long time, a little sunshine. It had a very bad effect on my health. I had one continual cold from October to May every year. I was in misery much of the time. But I was doing what I wanted to do. What Dolmetsch was doing was fascinating to me and very soon, I was doing everything there was to do in the way of making keyboard instruments from start to finish.

THE HARPSICHORD: Was it from Dolmetsch that you learned to be so quality conscious?

JOHN CHALLIS: Some of it came from Dolmetsch and part of it came from my father. My father was a most patient and kindly teacher. So I learned it from both. And then there is the necessity of the harpsichord itself. But there was one problem which had nothing to do with the harpsichord.

Dolmetsch lived in a small town about 40 miles outside London and in the most beautiful countryside imaginable, due mostly to the rain. My health just wouldn't take it. After four years I was forced to pack up my duds and

return to Ypsilanti if I were going to survive. There was no person more scared than I was.

I knew what wooden instruments were. I knew their problems in England which were nothing to the problems here in America. You can depend on the dampness there most of the time. Except now they are getting central heating and they must be having real problems.

By this time I had adopted my organ teacher as a second father. You see, my own father was not in the least bit musical. However, he was quite a mechanical genius. I could go into that in great lengths, but I won't.

When I talked to my organ teacher, Frederick Alexander, I wanted to know how I could make a living making these crazy instruments. Especially when nobody over here in America knew what they were. Not even the musicians. To them, it was some kind of funny thing that Bach used to play on. I wondered what I could do.

But as time went by, my first order came in, and I built my first American instrument. The order was from the college I went to in Ypsilanti. When it was finished, I had to play it before these people in a town of twelve or fourteen thousand

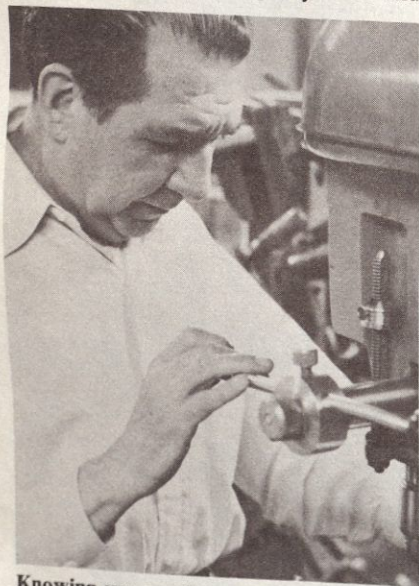
who had never heard one of these instruments before. And my job was not only to build it, but to play it so these people could hear it and enjoy it.

I did play it, and it was accepted. After that I was called upon to play various recitals. Once in a while, someone would come up to me and say quietly "I like the harpsichord" as if it were something one was not supposed to say. At that time there was only Manuel Williamson of Chicago who was playing the harpsichord in this country. This, of course, in addition to the three tours Landowska had made. The audiences were not too impressed by her tours. They were not yet ready for the harpsichord.

Once in a while, some foolish person would order an instrument, just enough to keep me busy. And then came the bank holiday!

All my money, the profits from my two instruments, was in the bank. I had just 12 cents in my pocket. No one who has not been through that depression can have an idea of what it was like.

Nothing moved. Everyone was totally in despair. But yet, it did have one advantage for me. There was a machinist in town who was out of



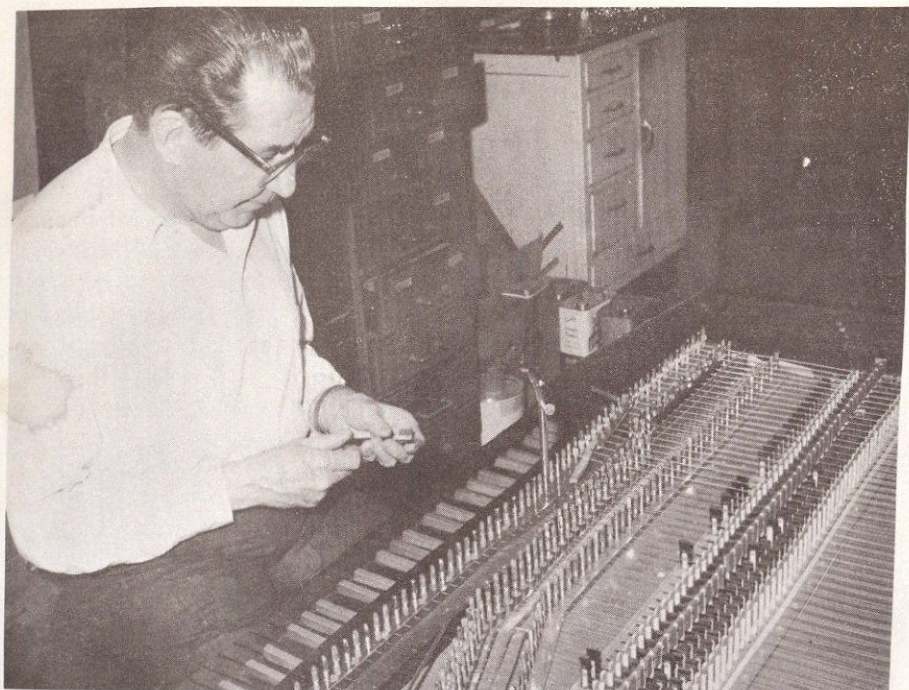
Knowing eyes scrutinize the cutting progress of a drill which is biting into a stainless steel pedal.



The thickness of the metal pinblock is easily visible in this photo of a Challis piano under construction.



The Challis piano receives all the painstaking detail of the Challis harpsichord or clavichord. Notice the beautiful joint work at the corners.



Preliminary voicing is done as the harpsichord progresses.

work. He had the time and I the enthusiasm. Between us we worked out a harpsichord frame which was constructed of welded steel.

THE HARPSICHORD: *What encouraged you to switch to steel?*

JOHN CHALLIS: Because harpsichords had always been made out of wood and I believed there could be something better. The old ones were not designed this way and I wanted to see if they could be improved upon.

The old ones could not be easily tuned, and when they were in tune, they didn't stay that way. I saw no reason why this was necessary. Dolmetsch did not use metal at all. He had done some experimentation but it was not successful. I had this background and experience with Dolmetsch so at least I knew what I could not do.

So we finished our first frame of welded steel. It was very strong and light. In design it was almost the

same as the frame I am now using. I built several instruments this way, but I found that it was difficult to adhere to strict tolerances with welded steel. The heat of the torch would warp the metal. I believe I made one portable, two octavinas and a one-manual using the welded steel. After this I thought that the best thing to do would be to make the frame out of cast aluminum which is strong, light and can be machined to very close tolerances.

I went to the foundry and asked them if it would be possible to cast such an object. They said that they needed a pattern. I made a wooden pattern and with great trembling, took it to the foundry. And in due time I had the first cast metal frame. At the same time, I was very much concerned with the pin block.

I was sure it was swelling and shrinking. I did all kinds of tricks to find out if it really was so and I discovered that it was quite definite that it really was swelling and shrinking. I happened to have some canvas type of Bakelite which was in the shop for some other uses. One day, I picked up a piece of scrap Bakelite, drilled a hole in it and put a tuning pin in the hole. The tuning pin worked beautifully. It didn't jump and creak and do all the things that it often does in wood. Then I wondered if it were strong enough. I put the Bakelite on my bench, took a hammer and bent the tuning pin over almost double and it held perfectly. No more wood after that demonstration. It was a great boon in helping to keep the instrument in tune and it was possible to tune much more rapidly. It was not necessary to fight the pins which you must do with many instruments which are being built today.

THE HARPSICHORD: *How did people learn about your harpsichords?*

JOHN CHALLIS: A few magazines got interested in what I was doing and wrote feature articles which helped. I have never advertised anywhere. From the very beginning I didn't think that the advertisements would ever reach the people I wanted



Challis' talented fingers wrap a tuning pin with carefully selected stringing wire. The pin is then inserted smoothly into the spacer shown.

to reach and I couldn't afford it anyway. I have made that my policy ever since. I never advertise. If my customers won't recommend my instruments, then I'd better get busy and do something about the instruments, not the advertising.

About that time the war came along. We really hadn't gotten completely over the depression, when the war appeared and my supply of metal was not as great as I could have wished it at that time. The Army didn't want me. My health was not good enough for that. So I made harpsichords through the war years and perfected them. During that time I did a great amount of experimenting.

I wanted to get rid of those terrible, sticking jacks that Shakespeare was talking about. They were always giving trouble. If I made them nice and tight in the winter, they would stick in the summer. And if I made them loose enough for the summer, they would be too loose to be accurate in the winter. Even long before that I developed slides of brass. However, that was not new. Brass slides had been used by Pleyel long ago, but I found a way to make them much easier and very accurate. I also discovered that even wooden jacks would work more smoothly in metal slides than they would in the usual wooden slides. But I also discovered that Bakelite would not make good jacks. It just would not work in the way I wanted it to work. Then the telephone rang.

I answered it with some difficulty and found it to be a wrong number. I was annoyed somewhat that I had been disturbed and as the other party hung up I slammed down the receiver. Suddenly it occurred to me.

Telephone receivers. I've known a lot of people to slam telephone receivers down and never known any one to ever break one. What are telephone receivers made of? Hard rubber. So I immediately bought myself some hard rubber and began experimenting with it. It would drill beautifully.

18 — *The Harpsichord*



The unique piano action requires days of adjusting before it is ready to be inserted into the instrument.

fully. Very nice, accurate holes. Much better than plastic. I felt this was the answer. But what could I use for a regulating screw?

It then occurred to me that the largest size watch screw holds the case together and was just the size I needed for my jacks. I went to my father and asked for an 18 size case screw. He gave it to me and I tried it in my new jack. It worked beautifully. The screw is designed with the very finest threads so I could get the minutest adjustment imaginable. So I immediately got all the size 18 case screws father had, which of course wasn't very many, and went to work with them.

I was delighted with the results, except that they weren't threaded quite long enough and they were a trifle too long. So I went to Chicago and took the train out to Elgin and asked them to make case screws for me with that slight modification. This they did. After that, all my jacks have been made from hard rubber.

Of course, even way back in 1935 I had given up hog bristle for tongue springs. I was already too wise, long before that, ever to use

metal springs. I had seen too many Pleyel jacks with metal springs all doubled up and not working. It was just at that time that nylon came out so I got some nylon monofilament and put them in. These worked beautifully. The hog bristles were sometimes eaten up by a little black bug that lives in carpets, but they didn't like the nylon. And on top of that, nylon was inexpensive. It was the only improvement I've ever made on the harpsichord that actually came out cheaper.

Up until that time all my soundboards had been made out of Douglas Fir. During the First World War, Dolmetsch got stuck and was not able to get good spruce. They were making all the old-fashioned airplanes out of spruce. But Douglas fir, from the west coast of the United States was cheap and plentiful and he could get it. Being of a very inquiring mind he naturally tried making some soundboards out of it. He discovered that Douglas fir gave a much more powerful tone and as equally beautiful a tone as that of spruce. It could be bought in enormous logs without a flaw, without any difficulty at all. On top of that it was beautifully quartered. So all my instruments were made with Douglas fir soundboards.

August September October 1969

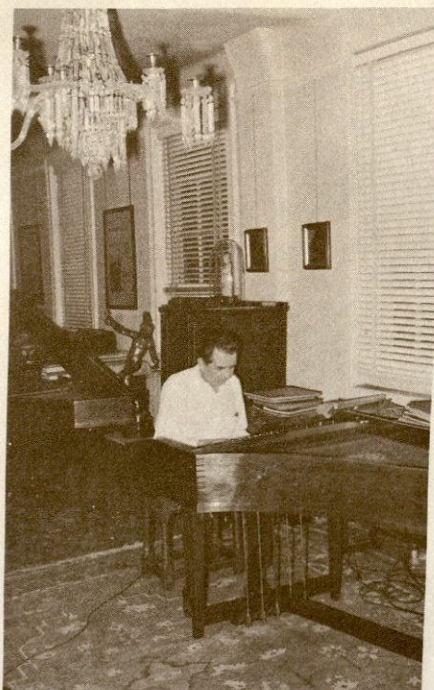
That wood, once it has been properly dried and seasoned is beautiful to work, much nicer to plane than spruce. And it turned out not only to give me a much richer tone, but it was amazingly more stable in tuning. I had built up a reputation for instruments which would stay in tune for longer than any harpsichord ever built. And at that time, no one had ever heard of a harpsichord with as powerful a tone as mine. So everything was just fine . . . or so I thought.

By 1946 when the war was over, some of my instruments began having troubles. I've always made a policy of exchanging instruments. If you start out with a small instrument, you can later exchange it for a larger model. Some of these instruments started coming back with glue joints in the soundboard which had pulled loose. Others were in such a condition I could pull them loose with my fingers. But there was a curious thing about the whole situation.

None of the other joints in any of the instruments came loose. Only the joints which were made out of fir. I got very upset.

In the shop was some old fir plywood which had been lying around for perhaps 10 years. I took a chisel to the plys and could peel them back, just like taking off old wallpaper. While this plywood was not the best in the world, since it was for making shipping cases, it was of good quality. I came to the conclusion that it was not my gluing that was at fault but that it was something in the nature of the fir.

Then I remembered that rancid smell you get in a lumber yard which is stacked with raw fir. I could detect that same rancid odor when I would open a harpsichord which had been closed for some time. I decided that there was some acid present which was indigenous with fir which attacked the glue joint just under the joint. The glue joint itself did not fail.



During our visit, the Challis living room contained 4 harpsichords. They were all being tested before being shipped to their new owners.

The glue was still there. It would tear slivers of wood loose, but the wood was rotten right under the glue. I suddenly got terribly frightened.

What could I do? There was just one thing for me to do.

I started making my soundboards out of spruce and nearly lost my reputation! The tone was weak, they were terribly unstable and wouldn't stay in tune. I was frantic. It was obvious this was not the solution to my problem.

About this same time I was also having trouble with getting top grade plywood. The plywood available was not well made and the covers of the instruments were giving me trouble. Everything seemed to go wrong.

The next time I was in Chicago I stopped in to see Mr. Kimball of the piano company and discussed the possibility of getting them to make me covers for my harpsichords. After all, the piano makers know what covers have to be. Mr. Kimball was very cooperative and agreed to start pro-

ducing covers for my instruments. They were beautiful, and we never had any trouble with them.

Later, when I had an occasion to be in Chicago again, I stopped in to see Mr. Kimball and tell him how well the covers were working. As we were talking he turned to me and said "During the war, there were times when we couldn't make pianos and we did other things. We did some experimental work and I want you to come in and try some instruments."

We went into a room which contained six Kimball uprights. I tried them and found that the three pianos on one side of the room seemed to sound better to me than the three pianos on the other side of the room. Mr. Kimball smiled at me and said: "Those three pianos you like have soundboards made of laminated wood and the other pianos don't.

"Well, you've convinced me" I replied. "I had thought of doing it for years but hadn't dare do it because I thought it would spoil the tone. You've demonstrated to me that it not only doesn't spoil the tone, it actually improves it. How do you glue them?" I asked.

"With phenolic glue."

And knowing what phenolic could do, I knew that nothing short of burning up the wood would make those joints separate. And that is what he had been using on the covers. They had a hot press for doing them.

I asked if he would be willing to make soundboards for my harpsichords and he said that he would. But he wanted to know what thickness to make them.

I didn't know. It was necessary to experiment with many thicknesses so he made them to my specifications. In due course of time the soundboards arrived and we put one in an instrument.

We found the same result as with the pianos. They were vastly superior to anything we had used up until that time. Moreover I knew these would never split. So I forgot the solid spruce and used spruce plywood. This restored the tone I had been getting out of fir without any of its drawbacks. And I got my reputation back before it had gotten entirely out of hand! Everything was working out well. I had just two problems left.

I needed some way of making a soundboard that would not shrink or swell. Because these soundboards, even out of plywood, would get wider in the summer and narrower in the winter. Just enough to throw out the adjustment of jacks at each end. The jacks in the middle would very often stay in adjustment but the ends would go. And it was obvious that the soundboard could be the only thing that was throwing the instrument out of tune with changes of weather. I had to find something to use in making soundboards which did not change with either normal temperature and humidity fluctuations.

So I tried using metal.

My first attempts at using metal for soundboards produced the most dismal, ghastly, hopeless tone you could imagine. And honestly, it seemed I would just have to give up. They would not work. I could not get a good tone out of them. But for some reason, I couldn't give it up.

I would put it aside and before I knew it I was coming back to it again. I tried all the wildest things I could imagine. But every once in a while out of something we tried I would find something that showed signs of being better. And then I would try something else. Just when we had reached the point when I thought we had gone as far as we could go, I received a letter from Dr. and Mrs. Harold Gleason.

They had bought a clavichord from me years before, moved to Florida and now they wanted a harpsichord. I wrote to them and told

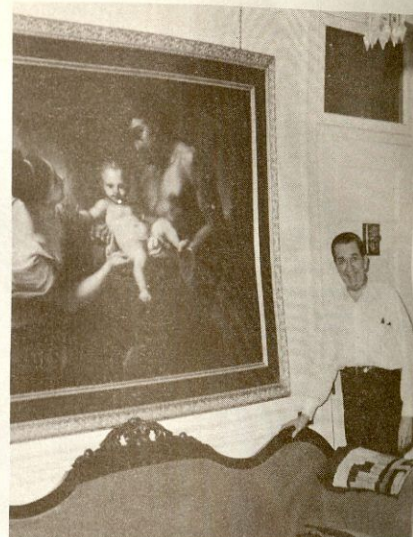
them that I never make harpsichords for Florida. The climate is impossible. However, I suggested that a laminated soundboard might hold up. I didn't know. It was then that I wished we had something better than leather for plectrums, especially for that hot, damp climate. I knew the leathers would mildew. But, in the end, I told them I would build an instrument for them and if it didn't work in their climate, they could send it back. So I sent them an instrument.

By the following summer they wrote that the instrument wasn't playable and they wanted to know what to do. Naturally I told them to send the instrument back and I would return their money. They said they didn't want their money, they wanted a harpsichord. Now what was I to do? They had me in a corner. I asked them to give me six months to produce an instrument that would work.

I went back to the shop and reviewed everything we had done with metal to see if there wasn't some way we could make it work. Again, I had it on my mind night and day. I labored long hours and finally produced an instrument which was rather good. At least it was a great deal better than no harpsichord at all. I forwarded the instrument to them and asked that they return the first instrument. I also asked that they watch the instrument carefully and send me frequent reports on how it was working.

The first thing they had to say was that they were astounded at how well it stayed in tune. They hadn't tuned it in three months and it was still in good tune. The instrument was most satisfactory.

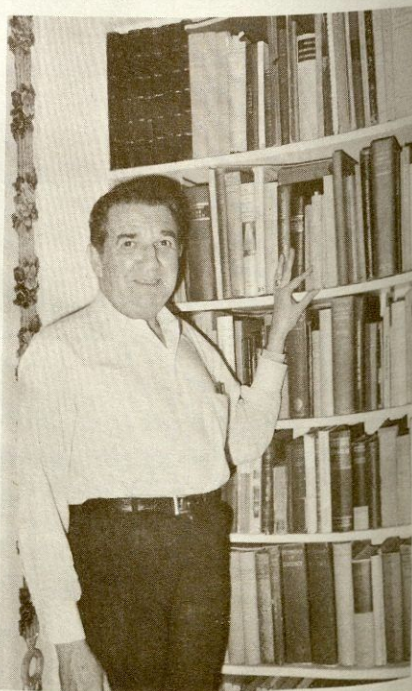
For five years I learned all I could about metallurgy. I studied every book I could get my hands on. I wanted to be able to talk with metallurgists in their own language. And I studied plastics so I could talk with the plastics people in their own language. And that's what I did. I met with these people at every opportunity



John Challis' talent extends into many fields as this restored painting in his apartment shows.

and experimented endlessly. I spent thousands of dollars in time. I would not be satisfied with less than the best. Finally I discovered the right combination that sounded as well as my wooden soundboards. This opened up a whole new series of questions for me.

I had to know how a soundboard worked. With wood, you can muddle along for centuries without really finding out how a soundboard operates. I have spent much time studying all the old theories as to



A section of the library of books on harpsichords, clavichords, organs and art.

how they believed their soundboards produced sound. Now I know that their theories are all wrong. It is a more complex series of vibrations than anybody suspects. And the right alloy is the answer.

I have tried to keep this under my hat as much as possible. Because, when I introduced metal frames a great howl went up: "That monster is ruining the harpsichord!" I had gone through that torture many years before. Now, I knew that when I introduced metal soundboards they would absolutely tear me apart.

For fifteen years before this time my order list had been so long that I had to keep people waiting for at least two years before I could deliver their instrument. But when the news got out that "that ogre in Detroit" was making soundboards out of metal, people cancelled orders right and left!

That summer I made a practice of keeping an instrument around all the time and a few people would come around and play or listen. "Why it's beautiful!" they would say. "It sings much longer than wood and has a much more beautiful tone than wood." I would tell them that there was nothing to dampen the tone as there is in wood. All the vibrations are converted into sound.

Then I started to get orders from a different group of people. They would tell me that they couldn't face the thought of having a harpsichord that they had to constantly tune. Now that one was available which was truly stable, they wanted to own a harpsichord. Now my order list is longer than ever. However, there are still some people who have a very deep prejudice against my improvements. They claim that the tone I produce is not an accurate 18th century tone.

I must admit that this is somewhat true. But I have never found an 18th century instrument that I have played that had a tone I would consider beautiful. Long before that, in



Metal bridges arch gracefully over the gleaming soundboard of a harpsichord under construction.

designing instruments, I did not use 18th century scales because I found that it was not musically satisfactory and I did not want to produce less than the finest instrument possible. But speaking of satisfaction, I was still not satisfied with the plectra. I felt there must be something better than leather.

So in 1946, I went to the U. S. Rubber Company and asked them if they could supply me with rubber that would make a good plectrum. I was fortunate to be able to contact a man in their experimental department who immediately produced a slab of rubber of a very special composition which he thought might solve my problem. I took it back, cut it into strips and installed it.

It worked beautifully from the very first pluck. It required a little more accurate cutting, but it was lovely. I tried one instrument with it and found that it had all the beauty of leather but with none of the disadvantages. Of course, I had no idea what would happen in time. And time is important to a harpsichord. Rubber is an organic substance and a plectrum takes a fantastic beating. A plectrum made of steel will not last more than one day. It will break right off due to metal fatigue. So what

would this do to rubber? In order to find out I played the instrument a good deal and watched it carefully.

After about three months it began to get louder. And continued to get louder. One day a plectrum cracked. Something was happening. The rubber was getting harder. I still have some of that rubber in my shop which I have had now for more than 20 years. It looks fine on the surface, but underneath it has disintegrated. There was only one thing I could do.

With a tear in my eye, I pulled out all the rubber plectra and replaced them with leather. This was just one of the experiments I conducted. I used everything I could think of. Some plastics were durable but would stretch. Others were beautiful at first, but would start to harden under use and after just several hours playing, you couldn't get the plectrum past the string. Then if you would stop playing, the next day they would be back in their original beautiful condition again. Other materials would be either too hard or too soft. I tried Delrin when it first came out and found it too hard. Oh, I could get a thin quill tone if I cut it enough, but I didn't want that quality of sound. I wanted a full, rich tone that would respond to your fingers. Quill won't do it and neither will Delrin. I tried everything. Even Teflon. I had one Teflon plectra instrument that went to Japan. Now I have a material so new it doesn't even have a name. Just a number. It is beautiful. The response is what I have been looking for, for years. I am now using it in two instruments and so far it is holding up beautifully. Time will tell whether I will use it in my new instruments.

THE HARPSICHORD: What do you look for when you are listening for quality of tone?

JOHN CHALLIS: When one spends as many years as I have in voicing instruments, the ear becomes very sensitive to tone. Of course on top of that, I used to play professionally. When my health began failing, I was

unable to stand the strain of doing concert tours, but I knew the literature. I knew what was needed. And I knew that this was a harpsichord that would play all periods of harpsichord music. No one can afford to have a harpsichord for each musical era and country. Of course, we are not sure what quality of tone composers liked. There are no instruments left which were owned by important composers until you get up to the time of Mozart.

If you made a survey of the average pianos in use today and then said that this is the type of instrument played by Horowitz you would be very wrong. Horowitz wouldn't be caught dead playing the average piano of today. He has the finest piano Steinway can possibly make. This is also true of organists as far back as we have any records.

Our great organists did not play on average instruments. Bach insisted on the very best. He knew his instruments well. He was hired to examine new instruments and he gave very intelligent reports on the quality of the organ. He was probably the most knowledgeable composer when it came to instruments who has ever lived. And second to Bach was Scarlatti.

However, when it came to the harpsichord we do not have even one instrument that he ever played on so we don't know what he liked or preferred. And this is true with all our other great composers for the harpsichord. There is, however, a very great possibility that they played on the very finest instruments which were available at that time. And it is also conceivable that they used the very latest instrument. They did not use museum pieces.

This is true with fine pianists today. Of the ten leading pianists playing today, the oldest piano now being used is one played by Rubinstein. His piano was made in October 1966. All the other pianos used for concerts are newer than that. These artists have the pick of any piano they want. In



Late at night, when much of New York is sleeping, John Challis can often be found in front of his favorite instrument, the harpsichord.

the case of Steinway they have many instruments which the artist may use. And they always pick the new ones. There is a reason for this.

It is a known fact that with a wooden soundboard it is at its most brilliant when it is brand new. After that, it disintegrates with astounding rapidity. Now, with the harpsichord, if you are plucking with quills, this loss of brilliance is not too noticeable. But when you are plucking with leather, this becomes very obvious early in the life of the instrument. There are many instruments which I loved when they were made, but 10 years later I hated. This is why I wanted to create a soundboard that would remain the same. That would never change. I want plectra that are the same. I love permanence, just as I do in a painting. This large painting behind me was done in 1760. It has suffered a little from age, but very little. The artist used the very best materials he could discover and he applied them with great care. Because he insisted on quality back in 1760, I am able to enjoy the results of his talent 200 years later.

Many harpsichordists today are content to make copies of old instruments. I don't make copies. I could, but I would be reproducing many of the errors which appeared in old in-

struments. Many of those instruments lacked a singing quality in the treble. They might have a lovely, boomy bass, but the bass didn't go with the treble. And neither the bass or treble would go with the middle. In my instruments I work very hard to see that the treble and bass are compatible. They work with each other, not against each other.

The poor tonal balance shows up most often in old instruments, or copies, when the artist plays slow music. It is very noticeable then. I find that many people who play copies of old instruments select pieces of music which are very fast. And when they play fast, they play extremely fast in order to give the instrument more excitement. They don't have much other choice. The old instruments don't have the sustaining qualities to hold tones. This is a great loss for there is much beautiful music which is slow. The slow fugues for example. Then there is another whole chapter that has proved fascinating.

During the war I began thinking about making a pedal harpsichord. Being an organist and a harpsichordist, I couldn't help being aware that there was a lot of music that Bach wrote and which is always played on the organ that was not really organ music. The big toccatas that people have been storming through for years are not

organ style. But I knew that I could never be sure unless I built a pedal harpsichord and played these so-called organ pieces to hear what these actually sounded like. So I started one.

There are no old pedal harpsichords in existence. There is a pedal clavichord, and there are many old harpsichords which have holes drilled under the keyboard which were used with cables or rods to couple the manual to the pedals under the instrument, but no harpsichords with independent pedals. And that was the kind I wanted. Since I had nothing to study, I had to work out the entire design myself. I did this and built the instrument.

The results were exciting. But since the pedals were simply another harpsichord, the volume was the same as the manuals above. They had to be more powerful, since, after all, the pedal parts are stronger than the manual parts. It took months of additional work, but I was able to correct the condition and I ended up with my own pedal harpsichord.

A little time later, E. Power Biggs dropped in when he learned that I had a pedal harpsichord. He sat down, played it, commented on its quality and went on his way.

About six months later, he came back and told me that he couldn't take my pedal harpsichord off his mind. And he asked me if I would make him one. Suddenly, I got scared!

I didn't know whether I had the courage to do it. After thinking it over, I told him that I would see what I could do for him. I had so many orders ahead that I knew it would take some time.

Together we worked out the stop arrangement so it would be most convenient for him. And he would stop in from time to time and we would go over the progress of the instrument, make changes and improvements.

Before I had time to start on the big instrument that would go over the pedals, I awoke one morning with every muscle in my body throbbing like a toothache. I was in the most tortured pain possible and it lasted

for six months. No one knew what to do.

Doctors could do nothing for me and I wondered if I would ever be able to work again. Then, one of my closest friends, a physician, was able to stop the pain in just two days of treatment.

I still have a slight tremble in my hands which is not noticeable until I start certain movements. I have had to devise ways to overcome this difficulty, but I am back at work now, working every day.

It was some time later that I finished the Biggs harpsichord, crated it and shipped it to Mr. Biggs. After he received it he called me long distance on the telephone. He told me he had just unpacked it and wanted me to be the first to hear him play. He played Ives Variations on America and what made it so appropriate, it was the Fourth of July.

Later, he contacted me to tell me that he had his pedal harpsichord in his own home and enjoys playing it first thing in the morning. He mentioned that he was not only using it to practice 18th century music but modern music as well. He said that he could find almost nothing he could play on it. Then he told me that he had opened a book of popular modern pieces and was having so much fun with them that he had decided to record them on the harpsichord.

I didn't know what to think. Had his enthusiasm bubbled over? Had he gone too far? I just didn't know.

He wanted to know if I would be free in the next month. He was taking the harpsichord to New York for the recording session and he wanted me to be on hand. I made the arrangements to meet him, but I still had rather grave doubts about the success of the project.

The day arrived, the instrument was set up and the recording session began. Biggs had not been playing more than five minutes before the recording engineer, me, Biggs and all of us were having the time of our lives.

And the record was a grand success. They featured Biggs and my instrument on the record jacket in a very humorous manner. It will always bring back fond memories of that day.

THE HARPSICHORD: Do you think you will accept any more orders for pedal harpsichords?

JOHN CHALLIS: I have already made another one for Gordon Jeffery of London, Ontario.

THE HARPSICHORD: Mr. Jeffery is one of our Harpsichord Society Members. Is his instrument similar to the one you built for Mr. Biggs?

JOHN CHALLIS: In some respects, yes, but Mr. Jeffery's instrument is a larger and more complex instrument. The Biggs harpsichord was made with 16, 8 and 4 on the pedals and the Jeffery's instrument is 16, 8, 4 and 2 on the pedals. Since the pedals do not couple with the manual, he thought a two foot stop on the pedals would be very handy. At the time I thought this would be a very expensive extravagance. Whenever you add to something which is already very complex, it isn't just adding one thing, it is adding perhaps three or four times the complexity compounding itself with each new thing you add. Then there is a problem of space. There is a law I have never been able to break . . . two things can not occupy the same place at the same time. The demands of the 2 foot conflicted with the demands of the rest of the instrument. I had to find ways to do this without making compromises. It really had me going. He also requested a four foot register on the upper keyboard as well as the lower. Of course we had done that before, so that was just a matter of facing complexities. This we did, and now the instrument is at home in London, Ontario.

THE HARPSICHORD: Thank you very much, Mr. Challis for sharing your experiences with us.

JOHN CHALLIS: You are very welcome. I hope I have been of some help to new, young builders. I would not want to deny them the pleasure I have had. ☺