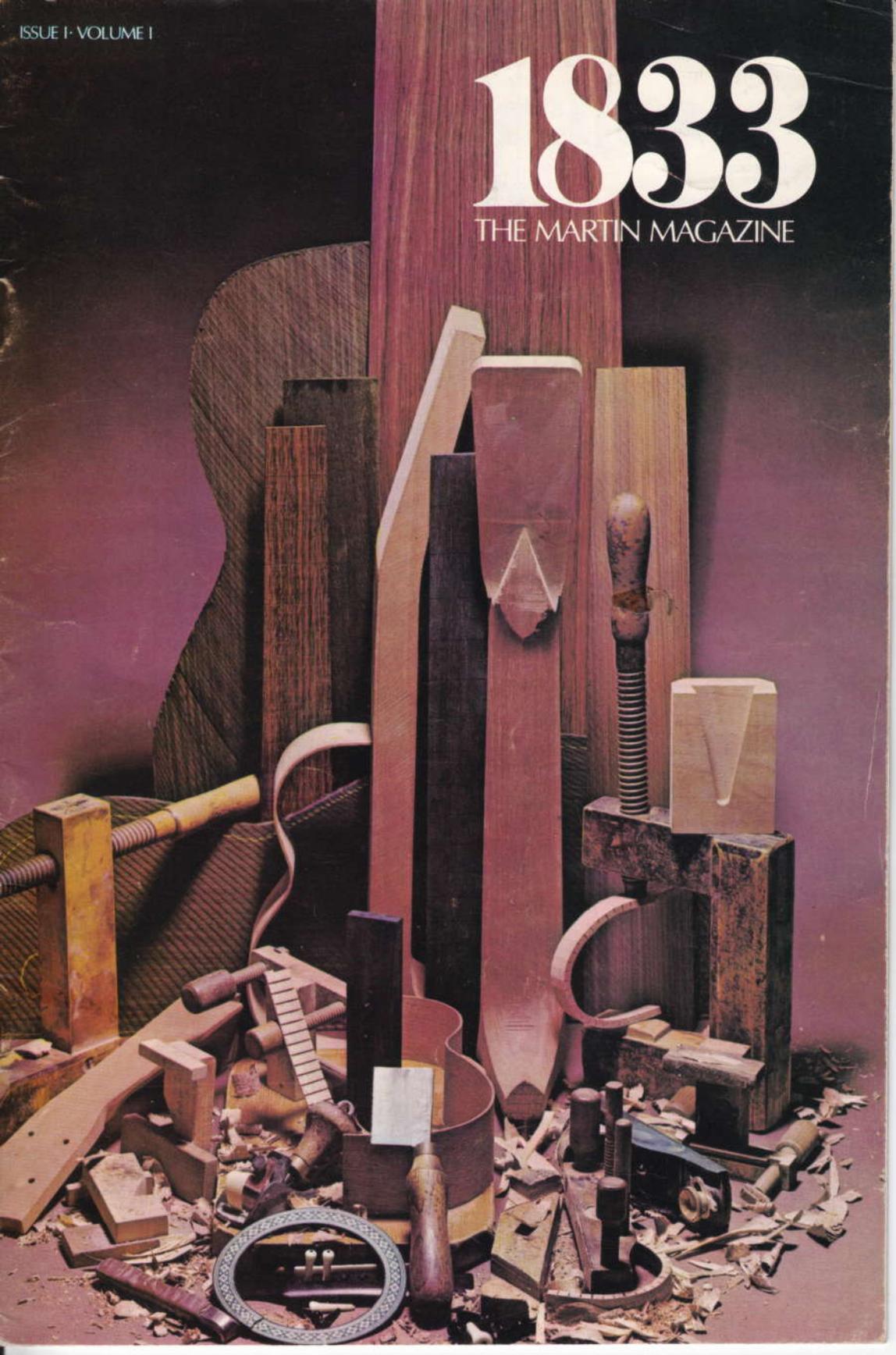


ISSUE 1 · VOLUME 1

1833

THE MARTIN MAGAZINE



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Published by
CF Martin & Co. Inc.
Nazareth, Pennsylvania

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Distribution: 1833 is intended for distribution in the USA only. Copies of Issue 1, Volume 1 have been printed and distributed as requests are received. 1833 is intended for distribution through Authorized Martin Dealers only. It is intended that 1833 will be published approximately four times a year. Contents of this publication may not be reprinted or duplicated without written permission of CF Martin & Co.

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For many years our friends have written to us for information on a number of subjects. Questions such as "When was my guitar built, and what did it sell for?" and "Where did the word Dreadnought come from" are typical.

We have enjoyed answering these letters and the thought occurred to us that a booklet featuring articles and information on the Martin Company would be of interest.

This first issue of "1833" is provided for you with the compliments of your authorized Martin dealer. We hope you enjoy reading it as much as we have enjoyed preparing it. Of course we will always be glad to hear from you, and any comments you may have on "1833" will be welcome.

By the way, the word "Dreadnought" comes from the British battleship launched in 1906. It was the first ship to have its main guns mounted in rotating turrets. Like our guitar, it was the first of its kind.

Preston C. Rishaw
Editor in Chief

Markneukirchen to Nazareth

The summer of 1964 was house cleaning time at the C. F. Martin North Street plant. The shiny new plant at the edge of town was ready to start building guitars and everybody was doing his best to pack tools and supplies for the move. As the old building began to empty out and dusty shelves were moved and attics explored, little bits of history began to pop up. An unfinished bowl mandolin body was found with each of the forty pieces of rosewood in the back carved to an intricate concaved shape and separated from the next piece by a strip of ivory. Nobody had ever seen one of these before. Who had made it and why wasn't it finished? And what about the faded, broken box that was labeled "Butter Stain"? C. F. Martin the III looked at it laying in the middle of his desk and said he thought it was the stain that was used to yellow faces in the period before 1900, but he couldn't be sure. He was only a boy at the time.

Looking at tangible pieces of the past, such as the mandolin body or the butter stain box, we can see that history has a way of running away from us when we aren't looking. Each time the Martin factory was moved, a bit of history was left behind. Martin has been building guitars for almost 140 years and existing guitars, even though some are extremely rare, give us a

running commentary of the historical development of the guitars themselves. But, what about the plants?

What about the different buildings that took raw wood in the back door and offered quality instruments at the front? This wasn't the only Martin plant to be vacated, and probably wouldn't be the last. What about the others? The buildings are hard to trace, but they're every bit as important as the guitars themselves.

The trail of rosewood sawdust leads back to Markneukirchen, Saxony, a small hamlet nestled in the hills near the present city of Dresden. The area was a haven for craftsmen and many of the houses served double duty as workshop and living quarters. Some of the finest goldsmiths, clock makers and violin makers lived and worked here. The violin makers were so numerous, and so certain of their trade, that they had even formed a craftsmans' guild, an early day form of labor union that restricted violin making to the members of the guild.

A new instrument began to drift into Saxony around 1800. A six string sound box which was plucked by the fingers, the guitar, was entirely different from the familiar violin. The Violin Guild ignored it because it was a commoner's



Old painting of the Village of Markneukirchen in Saxony. Artist unknown.

instrument and not in keeping with the social station of the guild.

Stuffy would be a good description of the Guild's attitude toward outsiders, but when one of the carpenters that built their shipping crates began making guitars and offering them for sale, the stuffiness turned to rage. Who did this Johann Georg Martin, a back room carpenter, think he was? A guitar isn't a chair or a shipping crate! Even if it isn't as fine as a violin, a guitar still requires a craftsman's touch. How can a common wood butcher expect to do it credit? He would bring shame upon the area's reputation for craftsmanship. Battle was joined and the Martins would feud with the Guild for years.



This building stands on the site of the original Cherry Hill factory built in 1839. The first Nazareth, Pa. location.

Georg Martin ignored the Guild and continued to experiment with guitars, while still relying on carpentry to keep food on his table. However, his son, Christian Friedrich, known as "Fritz", wanted to make music, not packing crates, so he journeyed to Vienna where he worked in the violin shop of Johann Stauffer. Stauffer also made guitars and Fritz Martin learned so quickly he became foreman. When he returned to his father's shop in Markneukirchen, he brought with him the talent and drive to create quality instruments. He took the craftsmanship of the violin maker and applied it to the guitar.

A visitor would find the Martins' shop small, only the size of a garage, and it was always crowded. Guitars were intermingled with furniture and packing crates, and the walls were lined with sturdy wooden benches. The brass ferrules in chisel and drawknife handles flickered in the candlelight, and one had to move carefully to keep from bumping into things in the half-light. Craftsmanship, however, is independent of its surroundings, and the Martins' reputation grew. Eventually, the Martins were taking too much business away from the local craftsmans' Guild to be ignored, and the Guild began to put pressure on them through the town elders.

Fritz could take it no longer. Tired of the senseless bickering, he packed his tools and left for a new life in America. There, he felt he could build what he liked, when he liked.

The good things in life don't necessarily come easy for an immigrant fresh off the boat. Fritz was a stranger in a strange land and had to establish his reputation as a superior craftsman all over again. In 1833 he opened a small importing and guitar shop at 196 Hudson Street in New York City and began doing what he knew best, bending and gluing wood until it made music.

The labels on some early New York Martin guitars mention "C. F. Martin, Upstairs" as a way of guiding prospective customers to the right door. His loft workshop was similar to many which still exist in the same area.

Typically you make your way up a narrow, sometimes steep, stairway to a paneled wooden door. Opening the door you step into a combination workshop and showroom, the two separated by a narrow display counter. Several men dressed in the coarse, rough clothes of immigrants, glance up as the door opens, returning almost immediately to their work. One stands to greet you and you notice his clothes are protected by a handmade full length apron. He brings out several very small, slender guitars, one with all the tuning machines on one side of the head, and another with a detachable neck. They are almost fragile looking and still carry the smell of the workshop, a cologne of rosewood dust and hot glue pots.

One of Fritz Martin's helpers in this Hudson Street shop was Henry Shatz, a former neighbor from Markneukirchen. Shatz left after a short time and bought a farm in Eastern Pennsylvania. The area was very reminiscent of Saxony with its rolling hills, Moravian community church, and immigrant population. Many letters from Shatz begged Christian to come to Pennsylvania, where he could escape the totally foreign atmosphere of New York and enjoy life as he had known it in Saxony.

By 1839 Shatz's letters and the problems of the city life made up Martin's mind. He would move his guitar making business to Pennsylvania but continue to sell them in New York. He sold the sales rights for his guitars to Ludecus and Wolter, a New York sales firm and bought eight acres of land in Cherry Hill, a tiny village, about 10 miles north of Easton, Pennsylvania on the edge of Nazareth. The Cherry Hill works was a combination of informal Saxon "cottage industry" and the business-like New York shop. The shop itself was connected to the house, but was completely separated from it by a wall. The guitar business was still very much a part of the Martin's family life, but now business was so strong they no longer had

to cut corners and could afford housing separate from the workshop.

During the 1839-1850 period, the official Martin sales outlet was at 385 Broadway in New York City, but guitars were sent all over the country. Business was good, but it must have kept many customers worried waiting to see if their new guitar would arrive in one large piece, or many small ones. All freight bounced across country in stagecoaches and freight wagons, and the word "fragile" didn't mean a thing. Few even knew what a guitar was, much less the muleskinners and dock workers who tossed them from wagon to wagon. Fritz was glad he had helped his father build packing crates because this background came in very handy.

In 1857 Martin bought a block of land in nearby Nazareth between North and High Streets. By this time, Nazareth was a sizeable community with a strong Moravian church and good freight connections. The access to quick postal service may have been a deciding factor for Christian's planning to move again, but he might also have been thinking how much more comfortable his family would be if closer to the church and social life in Nazareth. He built a two-story brick residence with a connecting work shop on the corner of Main and North Streets and moved his family and business into it in July of 1859. They had been in Cherry Hill for 20 years, a long time under most circumstances, but looking back from this vantage point, it looks rather short.

If Fritz had only known how historically important the move to Nazareth was, he might have been more careful in what he threw away. Maybe this was when he decided to throw away the remains of a guitar he had made at Stauffer's while in Vienna. It was broken and he couldn't find any curly maple for repairs. He had changed his thoughts many times about body shape since leaving Saxony, and in the move to Nazareth he may have left some of his old formblocks behind. During this move, and the others prior, how much Martin history was given away or left to rot in attics or forgotten hiding places?

Business cycles affect even guitar craftsmen and business was slow right after the move to Nazareth. In the 1860's, the prosperity that usually comes with war caught up with them and Martin guitars began to roam the countryside in the hands of soldiers a long way from home. Another business surge came in 1870 and the workshop filled to overflowing. In 1887, C. F. Martin became tired of not having enough elbow room, so he had the plant doubled in length. Except for that change, the original 1859 plant stands unchanged even today.

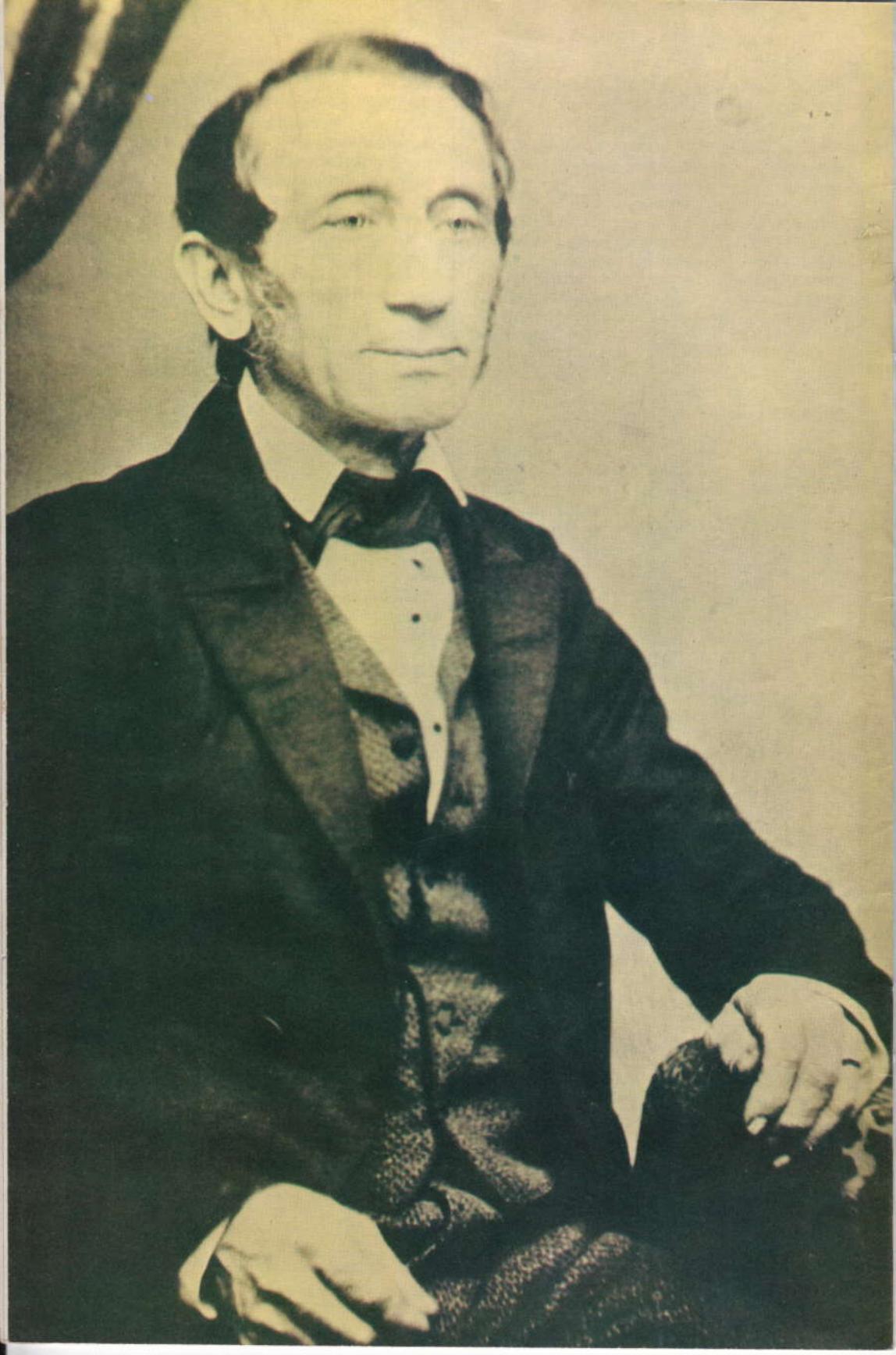
By 1898 the United States no longer had to worry about survival. It had become a settled, industrial, wealthy country and could afford to splurge on a fad or two. Guitars continued to gain in popularity but the mandolin, banjo and then the ukulele literally exploded. The demand for these instruments, especially the ukulele was so huge it didn't even make sense. Whether it made sense or not, Frank Henry Martin, the third generation leader of the Martin company, saw it as a golden opportunity to expand. Frank Martin was the first Martin to combine a head for business with the hands of a guitar maker and he used the ukulele and mandolin as the foundation to strengthen the Martin name across the nation. Even though the fads died, they had so established the company's reputation that further additions had to be made to the plant in 1917, 1924 and 1925.

At the turn of the century, shop personnel were looked upon as some of the best paid in Nazareth because they made 12 cents an hour. The foremen were considered to be bordering on wealthy with their 20 cents an hour. Although they worked in better conditions, they still used the same basic tools and techniques Christian Friedrich Martin had brought over from Saxony 70 years earlier. At first they had to depend on fading sunlight, or kerosene lanterns for light, but that changed around 1900 when a newfangled invention from New Jersey was installed. It was called the electric light bulb.

One day the workers looked up from their



1930 photo shows the North street plant built in 1858 and still in use today.



benches to see ground being broken behind the plant for a small brick structure. Sitting next to its foundation was this strange-looking device of cast metal with pipes and fins. As work progressed, the workers saw this steam engine connected to the main building by a long shaft. Soon a bewildering arrangement of overhead shafts and pulleys sprouted from this main shaft. When the steam engine was running, it turned the shafts, and mechanization had come to the guitar-making world. Saws, sanders and drills meant some hand operations could now be done in a fraction of the usual time.

Even though the C. F. Martin and Company of 1890 was considered to be a major Nazareth employer, with fifteen employees and a payroll of over \$75 a week, it hadn't really changed from the back room operation it had been in Saxony. It was still a small family business and was operated as such. The workmen all lived close and would go home for coffee break and lunch. Nazareth was still dominated by immigrants and they held tightly to old world ideas of community life and responsibility. The Martins fitted into this atmosphere well. After all, Saxony wasn't that far behind them. It was a very relaxed, informal company and the family unit and Moravian community figured heavily in schedules and planning.

The original 1859 North Street plant had been built to produce approximately 200 guitars a year and to house six workers. The additions through the 1920's raised production to 3,000 and the work force to 75. Then, the physical facilities remained unchanged as yearly production climbed to 5,000 by 1960. By then the buildings were practically bulging at the seams and Martin had reached the practical limits of the North Street site. A new plant had to be built or there wouldn't be room to move around in the old one.

When the attorney was researching the title for the land needed for the new plant, he came across the name "C. F. Martin" on the list of former owners. Apparently this same piece of land, situated on the northeast corner of Nazareth, had attracted the attention of a Martin once before, in 1850. Perhaps C. F. Martin thought about moving there when he left Cherry Hill, but changed his mind in favor of the North Street location.

And so, after 105 years, the North Street plant no longer produced guitars, but it wasn't idle for long. A new acoustics research lab is now making its ancient walls hum with curious sounds as signal generators and monitors are switched on. The North Street plant is still an important part of the Martin guitar.

The new plant was occupied in 1964 but it was only six years before another large addition was needed. World-wide demand for Martin guitars just won't let the buildings stay

one size. The east and south ends of the new building were moved out so that the present facilities cover 62,000 sq. ft. and house over 240 people.



Inside the North street plant during World War II, worker is Anna Shook performing tasks formerly done by men.

The new plant is a long, long way from a dark, cluttered back room workshop in Markneukirchen. Yearly production is over 20,000 and so many advances have been made in technology that Georg and Christian would be amazed. For example, to control wood shrinkage the entire plant is kept at a constant 35-45% humidity and 72-77° depending on the season. The humidity and temperature are monitored on a central control board and corrected daily. The air is kept free of saw dust by a gigantic vacuum system that uses a 150 horsepower electric motor and a four foot fan. Yet, benches still sit end to end with one worker at each bench doing what can only be done by hand.

It would be interesting to take Georg and his son Friedrich on a plant tour today. They would be amazed at the perfect finish the spray gun can produce in only seconds, where it took them hours of brushing and sanding. The precise veneer saws and high speed jointers would remind them how often the old hand planes would chatter at the last second and ruin a piece of wood.

The high-light of the tour would be when they walked among the displays in the museum. Friedrich might stop between two of the plexiglass cases, one containing a new D-45 and the other a slim guitar he himself had made in 1834 in New York. Switching his gaze from one instrument to the other, he might remark, "The tools and techniques have changed and the guitars are bigger and more robust than mine. So much has changed, but I'm pleased to see the new plants and tools have taken my guitars in the right direction. Yes, I'm happy to see the name Martin has survived so well."

The Search for Sound



Mounting the transducer

In one corner of the room a guitar is caught in the classic pose of a mad scientist's victim. It hangs from a steel framework while wires leading into the bridge force it to make music. A small microphone over the soundhole funnels the music into a nearby stack of instruments which waves needles wildly as bright lines appear on a green cathode tube. A stylus magically etches its way across graph paper writing down the sounds. This is guitar research in the twenty-first century.

In 1859 this same gray paneled room was part of the original C. F. Martin plant and ways of

selecting wood, gluing braces, and a myriad of other traditional techniques for quality guitar building originated here. Nothing has changed, this room still seeks to build a stronger, better sounding guitar. Today this is Martin's acoustic brain box, a research lab run by Don Thompson, a young Canadian who has a PhD in mathematics. Thompson was stricken with rosewood fever and came to work for Martin as a research assistant to John Huber, the gentleman who first brought state of the art research techniques into Martin guitar making. Huber moved to Europe to handle some marketing chores for Martin, leaving Thompson the task of unscrambling the truths and tales involving guitars. Now, Thompson plays his Hewlett-Packard calculator as much as he does his D-35.

The room is not what usually pops into mind when acoustics research is mentioned. No acoustically damped baffles project from the walls, the ceiling is covered with pipes not perforated tile, and Thompson doesn't wear the traditional white smock. A Stroboconn electronic instrument tuner sits on a desk next to a faceless guitar that has three necks laying inside. A huge rack dominates one side of the room and cradles a couple dozen guitars in various stages of finish and non-finish. Wires snake back and forth across the floor connecting an inadequate number of sockets with electrical monitors and control panels. In the midst of it a low stool stands guard over a music rack holding sheet music for somebody's etude in something or other. Don Thompson sits on that stool and throws out blue sparks as he talks excitedly about guitars.

What's he trying to do? Nothing complicated, he's just trying to learn everything possible about guitars. That formidable task forces him to search in two different directions; forward and backward. First he is trying to reduce a hundred years of learning to meaningful numbers. He is feeding thousands of bits of intangible information through a computer, cross checking them until they become tangible. At the same time he is looking forward into areas never before touched.

Has his research revealed a secret to sound hidden in some part of the guitar? No way, says Thompson. While certain parts of a guitar are naturally more important to the final sound than others, there is no one "most important" part. They can't be separated, in fact or in theory. A guitar is one big shake-box, a maze of interrelated vibrations that feed through one part and into the next. Making even a small change in any part of a guitar changes the way that part vibrates and the entire relationship is thrown out of kilter. That's what all the instruments are for. They record what happens when something is changed.



Transducer mounted on bridge

Thompson bugs a guitar with a small recording microphone and then feeds in a known type of vibration via a bridge-mounted exciter. The microphone picks up the vibration after it has gone through the guitar. Thompson can change parts of the guitar and then have a record of how these changes affected the vibration coming out.

When it gets down to actually making a guitar, Thompson is glad to single out one aspect as being "most important". The basic design notwithstanding, he feels the area that literally makes or breaks a guitar is the type and quality of wood used. How does he select his wood? He readily admits you can't beat the experienced eye. You have to live with wood to get to know it. Wood is a living, growing material, and each tree, and each piece out of that tree is totally unique. Every single piece must be judged individually. For instance, Thompson says spruce is generally best when its grain is fairly tight and straight, but this isn't always the case. If the grain gets too close together, it may not vibrate as well as a seemingly inferior piece with wider grain. The name of the game is vibration. The face must be flexible enough to vibrate freely, but still have enough strength so the strings can pull on it for hundreds of years without reducing it to splinters. The strength-to-weight ratio, the balance of exactly how much pulling the face will take, versus how much it weighs, is the critical number. Unfortunately, not many trees have a strength-to-weight ratio stamped on them.

Since the face is only a fraction of an inch thick, it couldn't possibly take the 190 pounds pull of modern steel strings without a little help from some internal bracing. This bracing, its size and pattern, presents one of the other great unknowns of guitar making. For centuries everybody who has been seriously addicted to guitar making has searched for a brace pattern that is strong but light. The perfect brace pattern is what lies at the other end of the guitar maker's rainbow, but nobody's found it yet. The perfect pattern for face bracing is so hard to find because it has to do so much more than just add strength. It also has to channel

the bridge vibrations out into the face. Put the braces one place and you have one sound, glue them someplace else and the guitar sounds entirely different. If strength were the only thing needed, there wouldn't be any problem, but then the face would be so over-strengthened it would vibrate like a cement block.

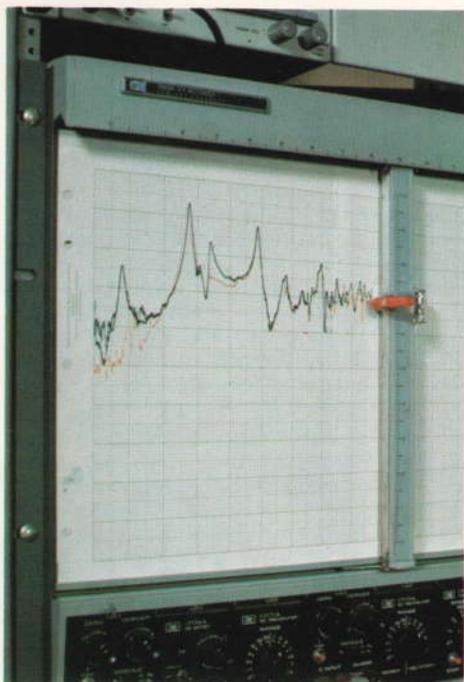
The Martin brace pattern hasn't changed much over the past century, they think they've found the answer, but today in the storage rack in Don Thompson's acoustical playpen a number of guitars hide some really weird bracing patterns. These guitars are several years old and will stay in the Martin plant indefinitely while Thompson keeps track of how time affects the sound.

He reaches over and picks out a seemingly standard 000-28 and hands it over for inspection. The only clue that all is not what it seems is the lack of a head decal. Glancing at the rack a second time shows that none of the guitars have a Martin serial number. This is Martin's policy so if one of the experimental guitars should somehow escape from the lab, it can't be passed off as a regular production instrument.

Otherwise, the 000-28 is just another 000-28, that is until a pick rattles across the strings. It has that mellow, booming, thirty year old sound that makes your fingers itch, yet it is only a couple years old. Thompson grins because not only does it have a strange bracing



Guitar ready for testing



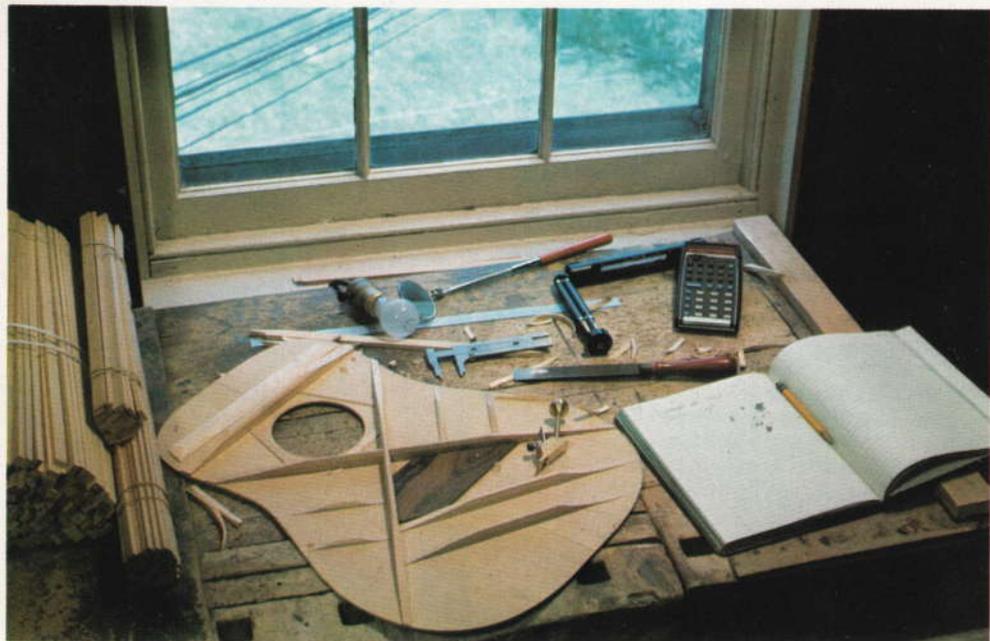
Audio signature

pattern, but the face isn't even spruce. It looks like spruce, it sounds like spruce, but it's actually a completely different type of wood. This wood can be used when, and if, the quality of available spruce goes downhill.

A guitar is certainly not all face so a question was asked about the importance of the back. Once again, the simple answer doesn't exist, it's buried in the complex interplay between parts of the guitar. He's willing to commit himself to saying that the back is important, but he won't stop there. Contrary to some theories floating around, Thompson says a rigid back isn't necessarily the best one. It must flex, but only in a certain way. If it moves at the wrong time, it can fight against the vibrating top and kill a fair amount of sound. In that respect, it's almost as important as the face.

Has Don Thompson found the answers to guide the next century of guitar makers? Not on your tintage! If you ask, he'll say he's just beginning to figure out the questions, much less the answers. But, at least he's trying. He's taking scientific tools and applying them to a very non-scientific field. Guitar making is an art, but it's an art that would benefit from having numbers placed on some of the unknowns. Although there are probably some purists who would rather see guitar making remain a black art, most experts agree that for any appreciable progress to be made science is going to have to come to the rescue. That's what Don Thompson and Martin's little gray room is all about . . . giving the fine art of guitar making a little helping hand.

Old tools and new tools

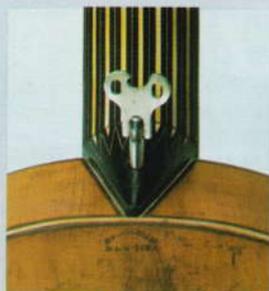


The Stauffer

One of the earliest examples of Martin craftsmanship. It was made about 1833-34 and has a body of birds-eye maple with a spruce top. From the Martin collection.

Guitars of this design are known to us as "Stauffer" models. C. F. Martin, Sr. was formerly a foreman in the factory of Johann Stauffer of Vienna. Some Martin guitars had features which indicated the Stauffer influence, notably the body shape and scroll head as on this example.

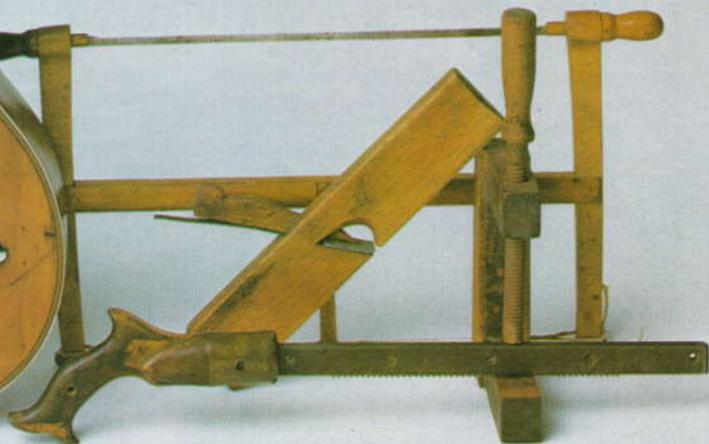
An unusual feature of this guitar is the neck ornamentation. Ivory strips contrast sharply with the basic black to make an attractive pattern. Also shown are some of the old tools used in constructing early Martin guitars.



A clock key adjusts the floating neck, which pivots on a wooden bar just below the top.



This hand-engraved plate backs up the tuning gears. Note that all six are on one side.





Care and Feeding

When somebody says they're going to put something into storage, we all have visions of attics and cobwebs. In the case of a guitar, this is not only wrong, but means we don't have a true understanding of how "storage" applies to guitars. If we want to get nitpicking about it, we can say a guitar is in storage any time it isn't actually being played. A D-28 leaning against the wall is being stored just the same as the old New Yorker that's upstairs wallowing in moth balls and Great Grand Dad's shirts. Using this definition, it's not hard to see that a guitar is actually in storage most of its life. This being the case, we have to be constantly thinking about what we can do to keep it in a good storage environment.

There are a million things that can affect a guitar, but most of them, like not leaving it out in the rain, are obvious. However, the two really important factors that can make life miserable for a guitar are neither that easy to see nor understand. These two are temperature and humidity.

Temperature and humidity are important because of the way guitars are made. If they were built out of two-by-fours, like a house, temperature and humidity wouldn't be such a big deal. However, guitars that sound like houses aren't in very great demand, so they are made of very thin, extremely high quality wood that will vibrate easily and evenly. The strings compound the problem because they are pulling like crazy on the face which in turn pulls on everything else. Humidity and temperature can easily upset the balance.

Everyone knows when wood gets wet, it swells, and it shrinks when it dries out. This is

why doors stick in wet weather. A guitar does exactly the same thing, it swells and shrinks as the moisture content of the wood changes. Wood doesn't need to actually get wet to gain moisture content because it's hygroscopic, it takes moisture from the air. If the local humidity goes up and the temperature stays the same, the wood starts soaking up moisture. It eventually reaches a point where it will stop taking on moisture until the humidity goes even higher. When the relative humidity comes back down, the wood dries out. All this time it is expanding or shrinking.

Gradual changes in the moisture content of the air won't cause too many problems because wood gains and loses moisture slowly, taking around 36 hours to equalize. However, if the local humidity takes a dive, all sorts of things start happening. When the relative humidity drops drastically, say from 80% to 30%, and stays there, a guitar loses a lot of moisture in a hurry. The wood tries to shrink, but, because of bracing and other glued joints, not all of it can shrink the same amount. If part of it shrinks and the rest doesn't, a crack may occur, or at least glue joints will try to open.

Damaging humidity drops are rare in nature, but it takes no effort at all on our part to unknowingly put our guitar in a storage environment that does exactly the same thing. Hanging a guitar on the wall puts it higher in the room which means it's also at a higher temperature, and heat has a drying effect, especially gas heat. Just think how your nose feels in the morning, if the heat was left on overnight. Your guitar feels the same way. Dry! It's also easy to accidentally lean it on a wall over a baseboard heater or similar source of heat that will elevate the temperature and drop the moisture content of the wood. Of such things are cracks made!

Too much humidity, unless it's really high, like in the tropics, won't hurt a guitar, although it can cause face swelling which raises the end of the fingerboard by the soundhole and can cause fret buzz. The same swelling raises the bridge, making the guitar harder to play. High humidity combined with high temperature will weaken glue joints, and bridges have been known to loosen and pull off. If a guitar has been in a high humidity situation and the humidity is dropped rapidly, like driving into the desert, the drying effect is more severe and cracks and open joints are almost guaranteed. Driving cross-country has probably caused more split faces and opened more glued joints than any other single cause.

Okay, so far we've hit all the facts which point towards an early doom for all guitars. Now, we have to figure out a way to solve the problem. Actually if you keep your guitar in its case as you should, it's quite easy to take care of

humidity changes by using some of the goodies science has given us. For one thing, we can use a dessicant, a material that absorbs moisture, to keep the local humidity down. The most common is called silica gel and can be bought in packs that fit a case's string pocket nicely.

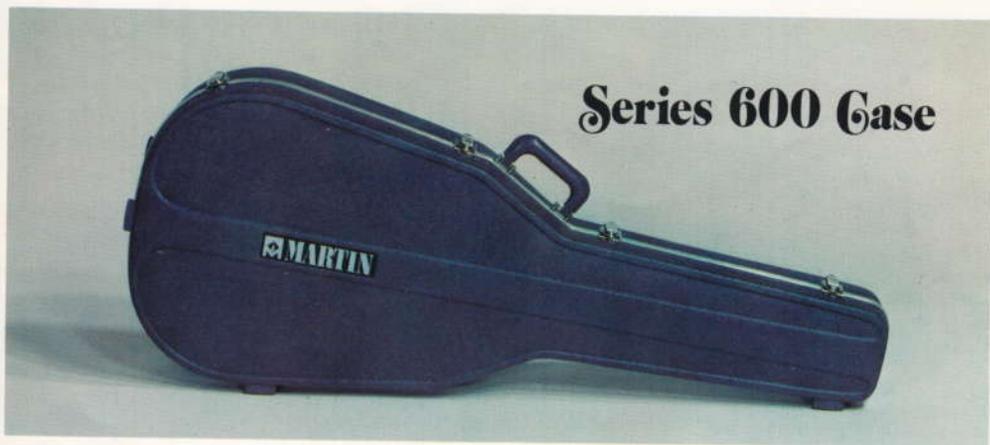
Controlling a dry atmosphere is even easier. The traditional, although messy, way to keep a guitar from drying out is to keep a raw potato half in the guitar case. As the potato dries out, it gives up moisture, which the guitar soaks up. A more modern approach is to put a damp

sponge in a Boy Scout soap dish you've drilled full of holes and keep it in the case.

Temperature itself can cause problems in the finish. Obviously, getting too hot will blister it, but getting a guitar too cold and then allowing it to warm to room temperature too quickly may cause the finish to crack, or craze. If you've exposed it to extreme cold, leave it in the case so it will warm up slowly.

So, when you turn around and lean your guitar against the couch, remember that it's in storage, and only you can see that it's in safe storage.

Series 600 Case



And speaking of storage. Martin now offers a portable bank vault for guitars called the Series 600 case. The Series 600 reaches into the future and uses vacuum formed ABS plastic for the outer shell and form fitting rigid foam for the lining. Instead of the guitar just lying there free to rattle around, the foam molds itself to

the guitar and holds it tight. The resilient outer shell is practically indestructible and is easily cleaned.

What does this mini-vault weigh? A mere 9½ pounds. The Series 600 is now included with every guitar Martin sells and it looks like it may be the answer to most storage problems.

Music Education & Guitars

Remember in kindergarten when you had a choice of being a virtuoso on bell, triangle or wood block? Well, those days may be on the way out, if Robert Guertin, music education director for C. F. Martin, has anything to do about it.

Guertin, along with Rudolph Foglia of San Jose State College, has developed a program of music education that uses the guitar as the cornerstone for first understanding music, and then making it. Their program begins by getting away from the wood block-syndrome in elementary school and progresses through junior grades and high school where the guitar would be included in string ensembles and orchestras.

The main thrust of the elementary program is

aimed at drawing children closer to music by removing all physical barriers and making the teacher easier to relate to. Guertin feels the guitar will appeal to students and will give the teacher more freedom to mingle with them.

Guertin admits that the biggest problem in getting this program off the ground is teaching the teachers, not the students. To help teachers learn to play the guitar, as well as teach it, Guertin and Foglia have been conducting seminars, some as long as six weeks, for teachers. They have also qualified other teachers to conduct these sessions. The program is offered to schools as a complete package, including teaching manuals, music books and teacher seminars.

Questions & Answers

Q I have found some blistering on the sides of my guitar where I pack the strap when it's in the case. What is causing this?

A Many guitar straps use synthetic leathers, vinyls and plastics that are subject to a phenomena known as "plasticiser migration". This is nothing more than the release of some of the solvents stored up in the material during manufacture. These solvents can easily damage most lacquer finishes. To prevent this use only a good grade leather strap.

Q I looked down the neck of my guitar the other day and it appeared to be bowed. How do I fix this?

A Without seeing your guitar it's difficult to say, but in all probability, unless you've been using barbed wire for strings and let the guitar get too hot, there is no actual neck bow. Sometimes the lower end of the fingerboard is raised because humidity has caused some swelling of the brace under the fingerboard. This gives the illusion of a bowed neck. If it is bad enough to cause fret buzz, it should be returned to the factory for repair. If no buzz is heard, ignore it.

The correct way to check for a bowed neck is to fret the string at the 12th and 1st frets and see how much gap there is at the 5th fret. There should be about .015" (1/4 the thickness of a penny) clearance between the fret and the string. Any more could be called neck bow. Again, if it is so bad it makes the guitar difficult to play, return it to the factory for repair under the terms of the warranty.

Q I have a D-28 serial number 69,222. How old is it?

A Your guitar was made in 1938. Watch for a complete list of Martin serial numbers in a coming issue.

Q I have a Martin classic guitar, a 00-18G. I have been using nylon strings on it, but I would like to use some sort of steel ones now. What type should I use?

A Classic guitars, of any make, are built much lighter than steel string models to take advantage of the vibrating characteristics of classic, or "gut", strings. Steel strings exert much more stress on the guitar top and neck, so if they are used on a classic guitar there is a high probability that the face will be distorted and the neck bowed.

If you are absolutely certain you need the "sound" of steel strings, it is possible to replace nylon treble strings (the unwound ones) with extremely lightweight strings of the "silk and steel" variety. These will give you some of the sound but very little of the stress. But, this should only be done if your guitar is in excellent condition. Your 00-18G should handle these strings with no problem.

Q I checked my guitar in on an airliner last week and the ticket agent made me loosen the strings. Is that because of the altitude or pressurization changes?

A No, the altitude and pressurization don't affect the guitar. The strings should be loosened because there's a good possibility the guitar will be damaged in transit. If the strings are loose, then the damage won't spread. To protect your instrument, don't check it in like a piece of baggage. If you can't carry it on board and put it in a coat closet, then carry it to the gate yourself and have it hand carried to the baggage compartment. Airline conveyor systems can't tell a guitar from a duffel bag and will crunch a guitar without even half trying. Avoid the conveyor at all costs.



