

**STEEL GUITAR.** This Hawaiian guitar (*kitā kila*) is played by using a sliding steel bar (*kitā*: guitar; *kila*: steel), instead of the fingers, in stopping or pressing the strings against the frets to produce the desired notes or tones. The instrument is played by holding the bar in the left hand, between the thumb and middle finger, with index finger resting on the upper edge. The bar is placed against the string, over the fret designated to produce the appropriate tone, and oscillated to produce the vibrato or tremolo within the sustained pitch which distinguishes this instrument. Traditionally a lead melody instrument, the steel today either plays ornamented versions of the vocal line during instrumental interludes between verses (the vamp) or carries the entire vocal line as the featured solo.

### ORIGINS

Hawai'i, appropriately, has been accepted as the birthplace of the Hawaiian steel guitar. But precisely when, how, or by whom it was invented have been unsettled questions. There are three conflicting claims attributing the invention of the steel guitar to three different persons: James Hoa, Gabriel Davion, and Joseph Kekuku. Of this trio, Kekuku has been the most commonly mentioned as inventor of the steel—and the evidence is impressive—but it is nevertheless interesting to examine the claims for Hoa and Davion.

In the case of Hoa, the *Honolulu Advertiser* reported on January 24, 1932, a statement by David M. Kupihea ("a well-known resident of Honolulu") that "James Hoa invented the steel guitar in 1876." Kupihea stated: "In those days we had only the Spanish style guitars, and they were scarce. So we used to make our own instruments. I was a musician then even though I was just a youngster. Hoa was the first bandmaster and served under Kamehameha V, Lunalilo, and Kalakaua." He is quoted further as saying:

There was a professional guitarist here at the time. He was William Bradley, a barber. One of the things he did, and which roused the envy of the rest of the guitar players, was to play chimes on his guitar. Hoa practiced it and in experimenting discovered that the back of a metal comb could be used to block off the chords and to give the chime effect. Then he discovered that the back of a table knife—and finally a pocket knife—was still better.

Hoa practiced and worked with his guitar and experimented with knives, perfume bottles, and other hard substances which he used as the modern steel is used. We had lots of pilikia [trouble] getting bass strings for our guitars, so we used fish lines for the basses, and had regular steel strings for the treble.

Kupihea went on to say that "the steel guitar first came into popular use as a sensational feature of Hawaiian music at King Kalākaua's Jubilee celebration. Sweet Emalie, the most famous of all Hawaiian dancers, was the first to appear in the hula while playing an 'ukulele and with the accompani-

ment of the steel guitar and uke. I played the 'ukulele on that occasion and Gabriel Davion, whose son is now a well known musician here, played the steel."

Kupihea's story is suspect for a number of reasons. First, nowhere else has Hoa's name been mentioned as inventor of the steel guitar. Second, if he was referring to Hoa being the "first bandmaster" of the Royal Hawaiian Band, it is not true. Hoa was never, in fact, its bandmaster. Third, if Hoa had invented the steel in 1876, why has no one found any mention of it by King Kalākaua, Queen Lili'uokalani, Captain Henry Berger, and others? Berger, who was a keen student of music and a meticulous diary keeper, did not refer to it once. Fourth, no account so far of Kalākaua's Jubilee, which took place in 1886, indicates that the steel guitar was played.

The important point is that if Hoa indeed invented the steel guitar in 1876, why did no other Hawaiian musicians pick it up? It was not until the 1890s and thereafter that the steel guitar was popularized. This hiatus of 20 years is difficult to explain away—unless it is contended that Hoa merely experimented with a new technique but failed to perfect it, as did Joseph Kekuku later.

The Davion claim is a little more intriguing. The first and so far the only documented source of the story is a statement by the composer Charles E. King [see entry], who said during one of his radio station KGU broadcasts in the late 1930s (Southworth, 1971): "In 1884 I was living at Waihe'e, Maui, and there appeared in the village a group of musicians from Honolulu, one of whom was Gabriel Davion—a young man who was born in India, kidnapped by a sea-captain and finally brought to Honolulu. . . . This Davion attracted a great deal of attention because he had a new way of playing the guitar. . . . All the playing was done on one string, and the strings were not elevated by a bar."

Although King was already in his sixties when he recounted his boyhood experience (he was only 10 years old in 1884) with Davion, he was still alert and his memory good. Since we cannot fault him on any other ground, his claim must be taken seriously. The fact that Davion came from India is significant, for he might well have learned the sliding technique using a rod or hard substance from Indian players of the *gōttuvādyam* [see entry]. It would have been a relatively simple matter of using it with a guitar. It is also worth noting that Kupihea mentions Davion as having played the steel guitar with James Hoa at Kalākaua's Jubilee. So Davion's talent was known to at least more than one person, if not many. Even if James Hoa did invent (or develop) the steel guitar as early as 1876, or Davion in 1884, still unexplained is the long gap between its first appearance and popularization by other Hawaiian guitarists—a period of 10 to 20 years.

With Joseph Kekuku, we have no such dilemma. The evidence is more plentiful and convincing that he not only discovered but developed and popularized the new steel guitar technique. There are numerous stories on record of the early attempts made by young Kekuku to develop the steel guitar. Kekuku himself is said to have told a guitar enthusiast in London in 1919

(while he was touring England with the *Bird of Paradise* company) that he produced his first steel guitar sound in 1885 at the age of 11. He was walking along the railway strumming his guitar, according to his story, when he picked up a bolt, slid it across the guitar strings, and effected the characteristic slur of the steel. He went home and practiced the sound with a penknife and, later, even the blade of a straight razor with the edge ground down.

Later, when he was an instructor at the Reids School of Popular Music in Chicago, Kekuku prepared a leaflet in which he wrote that he "originated the Hawaiian Steel Guitar method of playing in the year 1885 at the age of 11 years. At the time I was living in the village where I was born (in 1874), a place called Laie, only a short distance from Honolulu. It took me seven years to master the guitar as I had no teacher to show me and no books to refer to for information."

We have statements from his fellow students at Kamehameha School for Boys, where he had enrolled in 1889 at the age of 15, confirming his skills. Simeon Nawaa, who was ahead of Kekuku, said: "To our astonishment, Joe, besides playing the guitar the ordinary way, would shift to running a hair comb or tumbler on the strings producing a sweet sound, while Sam [his cousin], the accompanist, followed him on the violin." Tumblers, it should be noted, were also used by old-time slack key players to emphasize the slide on the string. [See *Slack Key Guitar*]

Kekuku progressed from bolt, pocket comb, knife, and tumbler to the steel bar which he designed and made himself in the school shop. According to John Padigan, his shop instructor, Kekuku spent many hours experimenting in the school's machine shop until he was satisfied with a slim cylinder of steel, about 4 inches long, which was convenient to hold in his left hand and noiseless as it slid along the strings. In developing his new-found technique, Kekuku raised the strings of his guitar to enable the steel bar to glide along without touching the frets. He also switched from gut to wire strings because they sustained the tones longer.

As this was happening in 1893-1894, Kekuku began to realize that his new style of playing was more than a novelty. He was determined to master the technique and, according to teachers and students, he worked hard at it. He showed off his playing for classmates and in concerts in Honolulu and thus began to popularize the steel guitar. Instrumental in this, too, were those of his classmates who had learned the new method and took it to their homes throughout the islands and tried it on their families and friends.

After leaving Kamehameha School, Kekuku became a musician and in 1904 left for the US mainland, as did many other Hawaiian musicians, to entertain. He toured not only the mainland but Europe as well. "Before kings and queens of different countries" he played his steel guitar in Europe between 1919 and 1927. Besides entertaining, he also taught in such cities as Chicago and Boston, where he seemed to have settled down. His wife wrote

in a letter dated January 1932, the year he died, that he was "a great teacher of the Steel Guitar and is the possessor of one of the most beautiful guitars in the world. He taught either by notes or numbers."

However difficult it may be on the surface to reconcile these three conflicting claims, it is reasonable to argue that Hoa, Davion, and Kekuku may have discovered the technique independently. After all, Hawaiians had had the guitar by the early 1800s and had been innovative guitarists. By the last quarter of the century, the slack key style had probably already appeared and the shift from that, including the use of a tumbler to produce a slide effect, to the steel guitar technique would not have been difficult. Others may have stumbled upon the new steel technique, too, without having been noticed. It would not be the first time the title of inventor has had to be shared.

At any rate, Kekuku's position has been strengthened by documentation and publicity. Perhaps similar efforts should be made to document the Davion story. Its possible connection with India's *gōttuvādyam* might prove to be a significant case of cross-cultural musical influence. It is interesting to note in this regard that the musicologist Helen Roberts, commenting on the "uniqueness" of the steel guitar technique, compared it to a similar Japanese stringed instrument and to a musical bow of certain African tribes north and south of the Congo (currently Zaire) who use a shell or knife blade to play it. (She did not mention the Indian *gōttuvādyam*.)

## DEVELOPMENT

Three important elements went into the development of the steel guitar: mechanical innovations, new tunings, and techniques or styles of playing. The basic instrument was the acoustic Spanish guitar, but the new sound required at least three simple mechanical innovations. The first was the bar, which was made of steel (such as Joe Kekuku's), ivory, and other hard substances. Because of its availability and sound-producing qualities, however, the steel bar was preferred. The second innovation was an adapter placed over the top fret in order to raise the strings of the guitar by about a quarter inch so as to eliminate the noise caused by the bar coming in contact with the frets. The adapter was usually made from a piece of wood. The third and last mechanical addition developed in this earliest stage by Hawaiians was the pick. While Spanish guitar players could use fingers or fingernails, the steel guitarist needed a harder material than bare fingers to get a "bite."

So Kekuku and his contemporaries designed finger and thumb picks cut out of metal and shaped to fit their fingers.

Milton Brown and His Musical Brownies, may have been the first to play a steel guitar loud enough to be heard above the other instruments of a big dance band.

The principle of the electric steel guitar is fairly simple. Instead of sound and volume depending upon the construction of the body of the instrument or resonators, as in the National and dobro, the strings pass over a series of small electric magnets which pick up the string vibrations. These vibrations in turn disturb the electric impulses passing between the points of the magnets and are converted into sound by tubes in an amplifier in the same way a radio set works.

The first electric guitar to be marketed was the Rickenbacker—and it created a sensation. Called the “frying pan” or “pancake” because of its shape, it had a circular cast-aluminum sound box and a single neck, with an electric pickup and volume control but no tone control. Its big sound, tone clarity, maximum sustainment of notes, and new technical and stylistic possibilities made many instant converts. In Hawai‘i, despite its high cost—\$69.50 per instrument without the amplifier—sales were lively.

But by the late 1930s, the Rickenbacker was overtaken by other models, such as the National and Gibson, shaped like a “biscuit box,” which we now associate with the steel guitar. The new design consisted of a wide fret board, an electric pickup, and strings raised high above the board. The new models had either six or eight strings and were equipped with four legs. This change not only brought about clearer amplification; it freed the guitarist’s legs and opened the way for more strings, multiple necks—and pedals.

The addition of pedals was the major innovation in the development of the electric guitar. Although the inventor of the pedal device remains obscure, one of the first to develop it was Ernest Tavares, a Hawai‘i-born guitarist who played with Harry Owens’ orchestra. Gibson produced one of the earliest pedal steel guitars in 1940—the Electraharp, which had six pedals. A decade later a pedal rack across the front of the guitar’s legs was added, then knee levers, and then “split” pedals. To this increasingly complex instrument were added two or three necks with 9 to 12 strings plus other technical appurtenances which made it all but unrecognizable to those familiar with the Hawaiian acoustic guitar.

Pedal guitarists use both feet and knees in addition to their hands to play. The right foot controls the volume pedal while the left foot hovers above a row of pedals, each of which stretches or loosens a given string or set of strings. The knees are also used to change pitch through a series of levers. With the left hand, guitarists use a thick, heavy bar in very small motions and with their right they pick out the chords. A player operating 8 to 10 foot and knee pedals on a 10-string multineck guitar gives the appearance of a man doing the polka.

Electrification brought about not only mechanical developments but also changes in tuning and playing technique and style. From the basic open A and E tunings of the acoustic guitarists, the new steel men developed an al-

most infinite number of tunings. With the addition of multiple necks, a variety of different tunings could be used at once. And the pedal steel guitar, by altering the pitch of the strings, opened up many more full chord possibilities.

Playing techniques and styles were also changed, if not revolutionized. The old staccato pickin’ style was supplanted by what might be called “*nahe-nahe*” or sweet style using more slides, chord suspensions, and prolonged tremolos—a style reminiscent of the playing of Dick McIntire made possible by the electrified steel. With the capability of volume control, Hawaiian steel guitarists developed a characteristic style of attacking a pitch on the string accompanied by various degrees of dynamic changes, especially when it is executed with a slide. The manipulation of the loudness and softness on the attack still is a very individual trademark of such contemporary players as David “Feet” Rogers of the Sons of Hawaii.

On the US mainland, steel guitarists such as Bob Dunn, Ted Daffian, and the famed Leon McAuliffe turned the steel into both a rhythm and a lead instrument. Dunn introduced his quick, percussive picking and volume swell to imitate brass instruments. Roy Wiggins, who was the first electric steel player to become widely known, playing behind a Nashville artist, and who was deeply interested in preserving Hawaiian melody and technique, originated the bar vibrato “crying” sound. Jerry Byrd, who like Wiggins was devoted to Hawaiian songs and techniques, developed an exceptionally smooth and fluid sound by avoiding the “tinkling” ornamentation of his peers. And, as Daniel Kahn put it, by “using the volume pedal with discretion, he fashioned a pure, mellow style which made the electric steel palatable to ‘uptown’ audiences.”

Although the steel guitar was always a lead instrument, with amplification achieved through the magic of electricity it became the centerpiece in the Hawaiian ensemble. It could now be heard along with an array of musical ornaments that no other instrument could match. Every Hawaiian group had a steel player whose importance was confirmed by the fact that he received the most pay.

Hawaiian steel guitarists, however, could not accept all the consequences of electrification—particularly certain aspects of the pedal steel. With their multiple pedals, levers, necks, and sophisticated technology demanding a knowledge of mechanics and engineering, the advanced pedal steel models have not often appeared in Hawaiian ensembles. Basically, the reasons have been more practical than aesthetic or philosophical. For one thing, these models are too inconvenient to move around, especially for the many musicians in Hawai‘i who play mostly casual dates. They are, moreover, expensive, costing as much as \$2000. And for many they are simply too complicated to play. More than one guitarist feels that heavy technology has reduced the personality of the instrument and lessened the importance of techniques and nuances that took years to develop and master. And, some have argued, the new music machines do not necessarily enhance the Hawaiian feeling of island music. Nevertheless, such outstanding Hawaiian

steel men as Jules Ah See, Ernest Tavares, and Billy Hew Len have used pedal steel guitars to play Hawaiian music. The consensus in Hawai'i seems to be that while it depends on the individual player and the type of music, generally speaking, the pedal steel guitar has limited practical use in playing Hawaiian music.

### POPULARIZATION

In Hawai'i, the steel guitar caught on in the late 1890s or early 1900s, for by then we hear of steel guitar playing as part of the Hawaiian music scene. Joe Kekuku, of course, is the first steel guitarist we hear about demonstrating his new discovery in private jam sessions and programs before his fellow Kamehameha students and public audiences in Honolulu. Pale K. Lua, a contemporary and friend of Kekuku (both were born and raised in the town of Lā'ie), must have been playing the steel by the turn of the century. Frank Ferera, another contemporary, was playing the steel, too, prior to 1902 when he left for the US mainland. We also know that in 1899 either Tom Hennessey or July Paka played the steel guitar when they made their first recording for Edison in San Francisco.

Other Hawaiian guitarists had learned to play the steel about the turn of the century or shortly thereafter. Herman Bishaw, David Kaili, Ben Hokea, George E. K. Awai, and Walter Kolomoku, all of whom were only slightly younger than Kekuku, had left Hawai'i by 1915 for long musical tours of the US mainland, Canada, and the Orient. Top Hawaiian musicians better known for feats other than their guitar playing, such as Ernest Kaai, had also learned the steel technique about this time. In short, within 20 years after Kekuku's invention, the steel guitar was firmly established in the land of its birth, and by 1920 a second generation of Hawaiian steel guitarists—Sol Hoopii, Dick McIntire, Ben Nawahi, Sam Ku West, Jim Goldstein, and others—had appeared.

From Hawai'i the steel guitar moved to the US mainland and then to other parts of the world where it became synonymous with Hawaiian music. The steel guitar was introduced to the mainland early—in 1899 by July Paka, in 1902 by Frank Ferera, and in 1904 by Joe Kekuku himself, followed by almost every notable Hawaiian steel guitarist over the next two or three decades. Some, like Joe Kekuku, Pale K. Lua, Frank Ferera, and Ben Hokea, never returned to Hawai'i. They went as steel guitarists and played in vaudeville, chautauquas, clubs and theaters, expositions, and so on, throughout the US and Canada. Great numbers of people in small towns and big cities first heard the steel and Hawaiian music in this way. Many of these troubadours settled down long enough in major cities in America and Europe to teach or open up music studios for the steel guitar: Kekuku in Detroit, Hokea in Toronto and Ottawa, Kolomoku in New York.

By then, 1920 or so, the steel guitar was part of the Hawaiian music craze that was sweeping the American continent. Hawaiian musicians and music publishers put out instruction books for steel guitar playing. Many offered

correspondence courses with various attractive bonuses for completion, including steel guitars. Mail order houses began to sell thousands of guitars—first acoustic, then amplified—plus folios of popular songs. The Oahu Company, for example, during the 1930s sold guitars, lessons, and sheet music to millions of people around the world.

The phonograph, radio, and movies were the principal media in popularizing the steel guitar nationally and internationally. The trickle of steel recordings started in the early 1900s turned into a torrent in the 1920s and 1930s. Frank Ferera, Pale K. Lua, Sol Hoopii, Jim and Bob, Ben Nawahi, and many others became well-known recording artists. Through their records, which were distributed throughout Europe and Asia, they became the mentors of steel guitarists where teachers were not available. The haunting, emotive strains of steel guitar music traveled by air waves into the homes of millions of radio listeners throughout the world. By the mid-thirties radio stations in Halifax, Hilversum, Tokyo, Batavia (Jakarta), and in many cities throughout the United States were carrying regular programs of Hawaiian music dominated by the sound of the steel. The steel guitar was also featured in movies. Even in American silent films the instrument furnished the mood music for such stars as Mary Pickford; in talkies, Sol Hoopii, Danny Stewart, Dick McIntire, Andy Iona, and other steel guitarists starred in *Bird of Paradise*, *Waikiki Wedding*, and *Sing Me a Song of the Islands*.

The unique and exotic sound of the steel guitar captivated musicians and music lovers all over the world. It may well be true that the internationalization of Hawaiian music [see entry] was due largely to the steel guitar. Thousands of people learned to play the steel—from Tokyo to Calcutta, from Paris to London, from Mexico City to Sydney. Many turned professional and became by almost any standard outstanding Hawaiian steel guitarists: Bill Buysman and Rudi Wairata in Holland; Harry Brooker, Billy Bell, Kealoha Life, Peter Hodgkinson, and many others in England; George de Fretes in Indonesia; Onni Gideon in Finland; Yukihiro Haida, Buckie Shirakata, Poss Miyazaki, and Makoto Shiraishi in Japan; William Miles, Roland Peachey, Ken Ufton, and Billy Reid in Canada; Garney Nyss in India; Yngve Stoor in Sweden. And wherever Hawaiian combos were formed, they were always organized around a steel guitar. For the international audience, the steel guitar and Hawaiian music were one and the same.

The Hawaiian steel guitar achieved its greatest popularity in the United States, however, and its most significant impact was upon American music. In fact, the steel guitar was probably the first "foreign" musical import to gain a foothold in American pop music. The American musicians most influenced by the steel guitar have been the white country musicians and the black bottleneck guitarists and singers who played the blues. Jimmie Rodgers, Cliff Carlisle, Pat Patterson, and Roy Smeck among the former and Son House, Cryin' Sam Collins, and Robert Johnson among the latter, were all heavily indebted to the Hawaiian steel guitar. Such renowned steel players as Leon McAuliffe, Jerry Byrd, and Roy Wiggins, who helped to create the "Nashville" sound, were devoted to Hawaiian technique and feeling.

## DECLINE AND REVIVAL

From its apogee of popularity in the 1930s, the Hawaiian steel guitar experienced a steady decline in popular interest around the world. This decline paralleled that of Hawaiian music, and some believe that there is a definite cause-and-effect relationship. U. A. Shilstra of Toronto (who has produced the Maple Record Company's series of steel guitar music [see *Canada, Hawaiian Music In*]) argues that there is a direct correlation and believes that only a revival of the steel guitar could lead to greater interest in Hawaiian music.

This view may very well apply in the international context where the steel guitar has been equated with Hawaiian music. To the general public, a Hawaiian combo without the steel would be unthinkable. The view may not be applicable to Hawai'i, however, where the steel guitar has been regarded as only one of several lead instruments in the Hawaiian ensemble—an important one to be sure, but not preeminent and certainly not indispensable. In other words, in Hawai'i it is not unthinkable to play Hawaiian music without the steel guitar.

Not surprisingly, then, the steel guitar has also suffered a genuine decline in Hawai'i. It is not easy to pinpoint the beginning of this decline, but it clearly coincided with the invasion of rock and roll into the islands in the 1950s and 1960s. By the beginning of the 1970s the steel guitar had reached its nadir. The number of active professional steel guitarists was very small, and their median age was high—in other words, there were very few younger players emerging. Only a handful of Hawaiian music ensembles were in fact using the steel guitar. And the sales of both steel guitar records and instruments were inconsequential.

Even when Hawaiian music began to experience a local revival in the early 1970s, it was not the steel but the slack key guitar that led the way. This trend was readily demonstrated by the increase in slack key artists and performances and by the much larger numbers of people who took up slack key, bought slack key records, and attended concerts. Thus locally, Hawaiian music is not identified with any single instrument. Just as steel guitar once had its day, slack key guitar was to have its own measure of popularity.

Nonetheless, interest in steel guitar has begun to grow with the general revitalization of Hawaiian music. This resurgence has been due partly to the efforts of The Hawaiian Music Foundation through its concerts—especially its historic all-steel guitar concert in 1973 and its Hālau with classes in steel guitar. (Incidentally, one of the teachers is former Nashville artist Jerry Byrd, who now resides in Hawai'i.)

As a result of these and other efforts, steel guitar is making a comeback locally. The Hālau has graduated more students in steel guitar than Hawai'i

has seen in many years. For the first time in a long time, records featuring the steel guitar have been produced and marketed—such as Jerry Byrd's "Steel Guitar Hawaiian Style" released in 1976 by Lehua (SL 7023). The sales of both records and instruments have inched upward. And more and more groups have reincorporated the steel guitar into their ensembles, although there are others, such as the Sons of Hawaii, who have always retained the steel as an essential part of their sound.

The future of the steel guitar in the land of its birth looks brighter now than it did a decade ago. Its continued rise depends ultimately on capturing the interest of the music public, especially the young people, and by more teaching, promoting, and composing better songs and arrangements for the steel guitar. If the steel is to regain its former glory, it may have to share the spotlight now with slack key guitar; indeed, the future of both may well depend on how effectively they can be blended into a new, contemporary sound.

The revival of the steel guitar should give new meaning to the statement by Helen Roberts that "this invention of the Hawaiian schoolboy is the most significant contribution by Hawai'i to music."

—Donald D. Kilolani Mitchell and GSK

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