

The Bridge and the Tone of a Banjo

Walter Grover, Vice-President of A. D. Grover & Son, Inc., Manufacturer of Musical Instrument Accessories, Gives Some of the Fundamentals of Banjo Bridge Construction, and Points Out the Important Part This Section Plays in the Ultimate Tone of the Instrument

THE rapidly growing demand for bridges of the better type for the tenor banjo and banjo-uke leads us to believe not only that sales of these instruments are rapidly increasing but also that the players are becoming more educated on the subject of bridges. In the days when the five-string banjo led the banjo family in volume of sales, sales of non-tip bridges were very large. On this instrument the string tension is very slight, and the bridge has a very strong tendency to tip over and also to move forward away from the tailpiece. Accordingly, a large percentage of banjo players felt that they could not get along without a non-tip bridge, which is so constructed that it cannot tip over.

The banjo-uke of to-day resembles the old favorite, the five-string banjo, in two respects: gut or silk strings are used for the most part, and the tension on the strings as compared with the tension on tenor banjo strings is very slight. For this reason, banjo-uke players greatly appreciate the rigid construction of the non-tip bridge, for banjo-ukes are to-day our fastest sellers.

To-day there are any number of bridges on the market, differing from each other greatly in design, thickness, amount of wood and material. The layman cannot help but wonder at this variety, particularly when he considers that all violin bridges are, apparently, quite similar. It may be of interest to some to learn what our twenty-five years' experience in making banjo bridges has taught us.

The most important point, we believe, is the kind and quality of wood used. We have found that the only wood that will produce the desired quality and volume of tone is curly maple, and it must be very hard and well seasoned, that is, dry. In this respect, banjo bridge and violin bridge requirements are exactly the same. Violin makers have recognized this important fact for a great many years, in fact, ever since the first violins were made. It is interesting to note this result: practically every violin made to-day, except the very cheapest, either in this country or in foreign countries, is equipped with a bridge of hard curly maple.

Still to Learn

American banjo makers, however, have not yet learned this important point, largely due to the fact, we believe, that only a few of them have any real players or instrument testers in their employ. It is a fact that is well known to any good banjoist that many American factories turn out banjos that retail for from \$20 to \$50 equipped with a roughly made bridge of soft, stringy maple, or in some cases, of a wood that is dyed to resemble rosewood or ebony. These instruments, in many cases, would produce a fairly good tone were it not for the bridge, which is incapable of conducting the tone vibrations from the strings to the sounding board of the banjo. Thus, for the sake of saving a very small fraction of a cent per banjo, manufacturers put out instruments that will never produce a good tone until a good bridge is substituted for the poor one. We have demonstrated the above facts to several banjo manufacturers who make "commercial" lines, with the result that we are selling plain two-legged bridges that are made of hard, curly maple, and are correctly slotted, cut and designed, to many of these manufacturers at a very slight increase in cost over the "shredded wheat" bridges that they formerly turned out from scrap material which they hated to throw away. Using cheap bridges is perhaps

the worst form of economy in which a banjo maker can indulge, for a saving of a hundred dollars a year on such an item can easily do a manufacturer's business thousands of dollars' worth of harm in that time.

Second Important Factor

The second point of importance, we believe, is that of design and weight. Since one depends upon the other, these two factors may be considered together. There are a few bridges made that are too light to produce a full tone but the general error is in the other direction. A very large number of bridges made to-day are much too heavy to enable the instrument to produce a tone that has both volume and snap. To-day the professional banjoist insists on a bridge with an ebony top or insert. It is rather difficult to glue a top of ebony on a maple bridge without making the bridge fairly thick at the top and at the point where the ebony is glued to the bridge. If this ebony top is thin, it soon comes off the maple base, rendering the bridge useless. In order to avoid this, many manufacturers are using an ebony top bridge that will stand a lot of wear, but which is too heavy to produce a snappy, penetrating tone.

An Example

The writer happened to be in the store of a New York dealer recently on the day when a new model tenor banjo arrived from a manufacturer. This was a de luxe model that retailed for more than \$250. The instrument represented a beautiful example of the woodworker's art, the metal parts were gold plated and the wood was inlaid with considerable mother-of-pearl. The dealer and several salesmen had been trying out the instrument, and they were greatly disappointed with the tone. They had done several things to try to improve the banjo. They had put on a new set of strings and a different tailpiece that put more tension on the strings, and they had tightened the head almost to the breaking point. The banjo was equipped with a finely made ebony top bridge of fancy and attractive design, but there was a lot of wood in this particular bridge. The writer suggested that they try a lighter bridge on the instrument. They did so, and the tone then produced made it difficult to believe that one was hearing the same instrument, the improvement was so marked.

The old style two-legged bridge of light weight is disliked by many players and manufacturers because the small bearing surface of the bridge on the head and the great tension of the strings cause the feet of the bridge to sink into the head to a noticeable extent. The natural move is to increase the bearing surface, make the feet wider. This is being done quite generally, but many sacrifice tone by so doing, for they put too much wood into the bridge. If more wood is put into the bridge at one point, it must be taken out at another, or the tone will be rounder and less penetrating.

To finish up with the requirements of a bridge, we will say that the bridge should be slotted at the correct intervals to meet with the requirements of the particular banjo on which it is to be used, so that the strings will be carried in the correct alignment from the nut to the bridge, and, moreover, these slots should be deep enough so the strings will not fly up out of the slots when the instrument is plucked or stroked vigorously. However, the slots should not be deep enough to "bury" the string, for the string so imprisoned cannot vi-

brate sufficiently at the bridge to produce the desired tone. Of course, as the tenor banjo is played to-day, the tendency is for the strings to work their way down into the wood after fifty or a hundred hours of playing, even though the bridge has an ebony top. The only thing a professional tenor banjoist who is a hard worker can do in this case is to change his bridge frequently. By "frequently" we mean at least once a month, and in the case of an exceptionally strong player, once a week. As soon as the strings become "buried," the tone suffers.

Few Realize

That few professional players realize the importance of keeping a perfect bridge on a banjo is well illustrated by the following incident. A few months ago a friend of the writer was playing a vaudeville engagement at one of the Keith theatres in New York. We went down to hear his act, and after the show he came up to our house and brought his instrument with him. His banjo was a very ornate affair, a product of one of our foremost manufacturers, and in the "ne plus ultra" class. He played a few solos for us, and rather apologetically told us that there was something the matter with his instrument; he had not been getting as much tone out of it lately as he had in the first few months after he bought it. He asked us if we could help him find out where the trouble lay. One look at the bridge told the story—all four strings were completely buried in the wood, and the bridge had absorbed considerable moisture and proved soft when we tested it with a finger nail. He stated that he had not changed the bridge since he first got the banjo, which was six months before. The instrument had been used at afternoon and evening performances every day during that time in addition to his practice hours. We gave him a new bridge, and the improvement in the tone of the banjo was then so great that our friend was almost incredulous. He asked us for some facts on the subject of bridges which we were glad to give him. He had been so discouraged with the tone of his instrument that he had been on the point of buying another one of a different make, which leads us to believe that banjo manufacturers would do well to advise their dealers and players to change bridges frequently.

A bridge will frequently absorb moisture rapidly, particularly when the instrument is played in cabarets and dance places where the humidity is high, Winter and Summer. When it does this, the tone immediately suffers and if the bridge does not appear chipped, the player will think that the trouble is elsewhere in the instrument. The only way to prove this is to try out a new bridge and the safe way for a professional player is to change bridges frequently. The cost may amount to a dollar a month, which is a small item in upkeep compared to the wages that professional players receive to-day for their work. We strongly urge all banjoists to use good bridges and to change their bridges frequently, for a poor bridge or one that is not correctly designed can materially injure the tone of the best banjo ever made. A fact that we have stated for many years, and one that experience will always prove correct is—"a banjo is no better than its bridge."

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