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AUTOPSY

6" Smiley Face Pattern Shell

Manufacturer: *Sunsong*
Shell Weight: *1084g*
Lift Charge: *98g 2FA black powder*
Burst Charge: *757g BP on Hulls, 4:1*
Pattern Stars: *1/4" dia. round stars*
Shell Type: *6" paper ball shell*
Time Fuse: *Chinese time fuse, 4.5 sec delay time*

Figure 1: Double time fuse with plastic bag for lift charge.

Figure 2: String wrapped around hemis before pasting.

Figure 3: Densly packed rice hull burst charge.

Figure 4: Cardboard template holding pattern together at center of shell.

Autopsy Report:
Pattern shells an be tricky items to dissect without disturbing the pattern. Since the pattern usually lies at the center in the same plane as the seam where the hemispheres fit together, dissecting the shell at this seam can disrupt the pattern stars if they are not securely held into position. For this reason the shell was given a lobotomy just above the hemi seam.

The quality of this particular shell seemed surprisingly low, at least in the grade of materials used. The time fuse seemed to almost look home made, and the leader contained only a single strand of black match. The shell itself was somewhat crushed, as if something heavy was placed on top of it during shipment. Even the pasted paper was an inferior quality that was easily torn off by hand- a feat which would be almost impossible with well pasted shells using virgin kraft.

Figure 5: Pattern held solidly together by both cardboard backing and tissue wrap around stars.

Figure 6: Typical Chinese rice hulls with BP on them.

Figure 2 reveals that six strands of twine were wrapped around the hemispheres after the shell was closed, which also attached to the loop of string used to lower the shell into the mortar.

The shell was densely loaded with typical Chinese rice hulls containing a coating of meal powder in a ratio of what appeared to be about 4:1. Figure 6 shows the appearance of Chinese rice hulls that were used to fill the entire shell.

The smiley face pattern was securely bound to a thin cardboard template that connected all the face elements together. This allows the patterns to be assembled prior to building the shell and simply inserted into one hemisphere after being filled with break charge. Figure 4 and 5 shows both sides of the pattern insert. Each row of stars was securely wrapped in a gampi type tissue paper as if they were pea pods.

To the amateur hobbyist trying to duplicate this shell I might point out that I have tried attaching individual stars to similar cardboard templates using hot glue with no success. Hot glue tends to hold long enough for the cardboard to tare and be thrown from the shell before the stars free themselves from the cardboard pieces. This results in odd clusters of stars that ruin the desired pattern.

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