NEWS · FEB 5, 2025

Time to get Creative: Medlin on Time Fuse and Spollettes

- Preparation to receive and transfer fire
- Using time fuse for precision timing

Rammed fuse (spolettes)

- General construction and burn rates
- Preparation to take and give fire
- “Drilling back” for precision timing

Time Fuse

- **Typical characteristics**
  - ¼” to 3/8” in diameter
  - Machine made with a black powder core wrapped in combinations of paper, thread. cloth, tar, plastic
- **Origins:**
  - Japanese
  - Chinese

Time to get creative

- To ensure the fuse lights from the lift- and burst-charge, the ends are prepared so they 'take' and 'give' fire more reliably
- The methods below are in common use and can be mixed (where a different method is used on each end)

Priming the ends

- The end of the time fuse is dipped into a slurry of black powder and dipped in grained powder. Sometime coarse titanium is added for better ignition (used with flash bags)
- Sometimes the fuse is first cut at a 45 degree angle to expose more of the powder core



- A variation is to split the end of the fuse to expose more of the powder core and then prime:

reports that explode at the same time or rapid, sequential ignition that creates a spiral of reports or color bursts.

- **Requires using precise fuse cutting tools**
  - For simultaneous ignition, variations in length must be less than 1/32 of an inch
  - For sequential ignition, increments as small as 1/32" in length can be used to get a clear, even sequence
- **Requires special priming techniques**
  - Priming must be on the ends of the fuse (no cross matching)
  - Prime must be applied very thinly and consistently to achieve accurate timing

Demo machines and samples…

- Ram meal powder in 1/4 inch increments

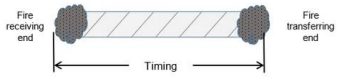
Typical Spolette Timings for Single Break Shells

3-inch	**1" to 1-1/4"**
4-inch	**1-3/8"**
5-inch	**1-3/8" to 1-1/2"**
6-inch	**1-1/2"**
8-inch	**1-3/4"**

Fulcanelli's Spolette Numbering System

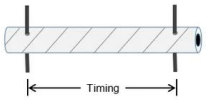
No.	Tube Dimensions	Length of powder charge
No. 1	5/16" x .550" X 2"	1/4"
No. 2	5/16" x .550" X 2"	1/2"
No. 3	5/16" x .550" X 2"	3/4"
No. 4	5/16" x .550" X 2"	1"
No. 5	5/16" x .550" X 2"	1¼"
No. 6	5/16" x .550" X 2"	1½"
No. 7	5/16" x .550" X 3"	1¾"

- starts the time fuse and that adds time.
- The fire giving end probably is a little faster as it doesn't have to completely burn through to ignite the burst charge



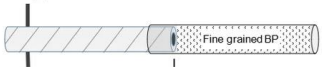
Cross match

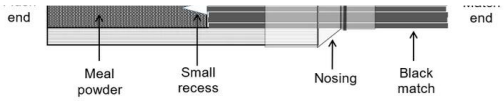
- Timing is based on the distance of time fuse between the cross match.



Inside Priming/Extension

- Timing is based on the distance of time fuse between the cross match or slurry prime.





Tubes

- Thick walled, parallel wound, and typically have an inside diameter of 1/4" – 3/8" and an outer diameter of 9/16" – 5/8"
- Length is 1½" to 4" depending on the size of the shell and length of powder charge required

Compositions used

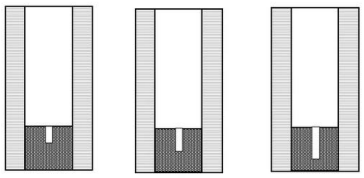
- **Meal Powder** – *Commercial meal is the industry standard*
- Historic/Non-traditional:
  - Meal powder plus potassium nitrate and sulfur (Weingart, Davis)
  - Whistle composition

Construction notes

- Scratch a groove in the flush end that accepts fire
- Using 1/4 inch increments is short enough for 5 - 7- and 9-timed report/spider shells, etc.
- To get shorter timings than are possible with 1/4" increments, a technique called "drilling back" is used

"Drilling Back" Spolettes

- By ramming a 1/4" or 1/2" powder increment and drilling a small hole in the center to a precise depth, very short sequential timings are possible"



- This can be done with a drill press set to stop just at the top of the powder, and then using a progressively smaller drill to

UNCATEGORIZED

Read it online

With the videos and comments: https://www.westernpyro.org/blog/medlin-on-time-fuse-and-spollettes