

The Cafe - Former

Official Organ of The Society for the Defense of Tradition in Pyrotechny

I.: O.: O.: J.:

“Magna est Veritas et prævalebit.” – I. *Esfdras*, iij: 4I.

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ALLOCUATION OF THE RT. VEN. EDUARDO TELLERINI, G.:C.:

My dear friends and companions, it has been a pleasure to oversee a number of events in the world of fireworks during my watch at the helm of the I.O.O.J. Old friendships have been renewed, new ones born, and understanding reached where conflict had before prevailed.

This is not to say we've planted any flowers in our asses. We've helped to slay our share of dragons, and although we seem to be running out of them, we're prepared to put to the sword any more that arise. Expert nit-witnesses beware; the shadow above just may be a case-former, the glint in the night a pair of scissors. And if you smell something foul and curdled, it'll be too late to run.

We've had a lot of laughs and had our share of fun. So it was meant to be: and so it will continue. To that end we are honored to include in our editorial staff and the *Case Former* an eminent practitioner who will be known as Pulsar, making his editorial debut in this issue. In addition we bring you a host of contributions by our veteran staff. Reports of musical tragi-comedy playing at the P.G.I. Puppet Theatre have inspired several talented lyricists to submit their work for the pyro-musical stage. We have all heard of fireworks shot to music, fireworks shot *with* music (an important distinction), and “show choreography” – these may be the subject of serious discussion (yes, even in the *Case Former*), but that's for another time. Where but the *Case Former* could you find music *about* fireworks, pyrotechnists, and the things and people that bedevil their existence? Yet another first!

Our Grand Manifestation, which followed the P.G.I. convention, was held in Plover, Wisconsin. I was curious about calling a town “Plover.” They said it was some sort of waterfowl. Sounded fishy. I turned the matter over to the I.O.O.J. Historical Research Division. We learned that the “fo(u)l” part was indeed correct.

As those who were present at the P.G.I. convention know, there are rather ancient railroad tracks

running through the town. Digging through the records at the local historical society, we found that in 1880, President Rutherford B. Hayes, *en route* to his famous tour of the American West, passed through the region. Now, as was then, there's no reason to stop in such a place, other than to blow it off the face of the map, as was our purpose. Nonetheless, President Hayes ordered his train stopped there. Apparently seized with severe gastrointestinal distress, and seeing a local rail spur, he relayed instructions to the engineer to *Pull-over!* The brakeman heard it as “Plover” and as such it was logged on the map of the Milwaukee Road. It has been thus named ever since.

It has been my honor formally to transfer the reins of our Order into the capable hands of the Right Venerable Giustiziere Fiammante, one of the most senior and accomplished amongst our Companions. The man throws a party with the best of them. We have accomplished much, dear friends. We have grown about as large as we should get, it seems, without risking the overgrowth that plagues larger organizations.

So take heart and share with me the celebration of the Installation of Rt. Ven. Comp. Fiammante as our new presiding officer; and of Vens. Comps. Moschetteria and Dulcamara as his able seconds. Special thanks to the folks who worked so hard and contributed to our party, which was its usual blowout, and to the many that helped the I.O.O.J. with their suggestions and writings for the *Case Former*. I'd love to name you all, but we don't work that way. ¶

EDUARDO TELLERINI

THE CLOCK

Tempus edax rerum.

OVID, *Metamorphoses* XV, ccxxxiv.

Fugit irreparabile tempus.

VIRGIL, *Georgica* III, cclxxxiv.

Like most pyros, my relationship with fireworks was not arranged. No one forced me down this aisle with a shotgun. Rather, my fascination with fire was

imposed from within, by a force no less natural than instinct.

I've been working with fireworks for over 30 years. Along the way I've done some remarkably foolhardy things and I will recount one of them. I pick this tale from a portfolio of hundreds; some of them spectacular, some of them unfortunate, but all of them more interesting for the inclusion of fireworks as the central theme.



After pulling straight "D's" in ninth grade at public school, my parents decided that the prep school experience was what I needed. Naturally, I disagreed, but after a three-week "run-away-from-home" (spent drinking beer and playing pool in my friend's basement), I acquiesced, and soon found myself in a dormitory full of pencil neck geeks. Actually they weren't all geeks. It was an odd collection of third rate preppies, serious dope-smokers and would-be athletes.

I arrived with a large suitcase full of my pyro supplies. It was an impressive travel kit with plenty of perc and real German dark. I had tools, the old Westech literature, and plenty of tubes begging to be brought to life.

We all lived on the third (top) floor of the main building of the school. It was known as the "flight deck" for the reason that there were always large fans running in the windows of the rooms. These were employed year-round to ventilate the pot smoke.

The highlight of each week was the three-hour period given us each Saturday night to socialize. Guys and girls would all go to a vending machine area that overlooked the football field. Here we would smoke cigarettes and shoot the shit about who was "boffing" whom and where the next party was to be held. This was to be one of my first venues for a public display.

It wasn't long before I constructed a simple aerial salute to be presented on Saturday night. We would walk down to a remote corner of the football field and set the device, to be ignited with a cigarette delay. Then we would casually walk back to the vending area and snicker in anticipation of the show. The mortar would go off and loft a pretty heavy salute skyward. BOOM! For a split second the field was illuminated and one could see dozens of students engaged in a variety of illicit activities. This would always crack us up and it soon became obvious who was creating the displays.

Soon after, I was visited by the R.A. (resident advisor) of the flight deck. I happily showed him my portable lab and asked if I could make him something. Well, he wasn't as big a prick as he could

have been but he advised me to take my explosives home. That I did and the Saturday night shows were canceled. But the finale was yet to come.

I won't go into it here, but later that year I came to possess the keys to just about every building at the school. Most treasured among these was the one to the chemistry lab. Here I had at my disposal all nature of chemicals – analytical grade no less! Being young, my interests centered around flash powders and I whipped up an ungodly brew. Potassium chlorate, sulphur, magnesium powder and anything else that would burn was utilized. At the end of the night I had a pretty serious ground bomb. It would prove to have the power of a stout 3" salute. The next weeks were spent coming up with a use for the device.

I should be noted that almost inevitably, a "them and us" attitude had developed between the school administrators and the students on the flight deck. Several from our cadre had been lost to expulsion and random room searches were becoming more common. It was in this atmosphere that our plot to disrupt the minute to minute operation of the school was hatched.

Classes were conducted in a large building with a voluminous study hall located on the first floor. In this study room, centrally mounted on a wall behind the speaker's podium, was a large, industrial style clock. This clock was linked to a building-wide bell system that signalled the beginning and end of class. It was decided that the clock was a perfect metaphor for the controlling nature of our teachers. It was also decided that, naturally, we would blow it up.

Kirsh was a white guy with an afro. He had a peculiar musculature that pre-disposed him to a sort of "Mr. Natural" gait. This was appropriate because Kirsh was also quite an acid head. He had wild bulging eyes and punctuated almost every sentence with "you know, man?" or "right man?". Anyways, Kirsh had a beef with with school authorities and was an enthusiastic volunteer. Along with Kirsh and me, our merry band consisted of my roommate Spike, and Will-eye, a redneck from Pennsylvania.

A day was chosen at random but our execution was anything but haphazard. We met at midnight (after bed-check) in my room and proceeded from there.

The school employed a night watchman that, not surprisingly, was an old drunk. We called him watchy-bat. Spike was dispatched to locate watchy-bat. Our plan was for Spike and Will-eye to monitor watchy-bat and Kirsh and me to set the explosive. If the drunken watchman wakes up, Spike and Will-eye will run and alert us. It sounds like a good plan.

Spike returns and he has found watchy-bat asleep on a padded bench in the dining hall. It is time for action. Kirsh and I head for the study hall while our partners keep lookout. While slipping through

the shadows of the campus, we are emboldened by the thoroughness of our preparation. This is fun! We arrive at the building and easily pass through the front door. Before us are the wide open double doors of the study hall. Side by side we enter. High in front of us, eerily illuminated by the moonlight, is the clock. It is the only thing alive in this big quiet room. We eye it like a hunter stares at his prey. It boldly ratchets its second hand, each tick a salute to our enemy – the school administrators.

"I want to see it go, man" says Kirsh.

This is a departure from our plan. We are supposed to set a cigarette delay and get the hell out of the building.

"What?! We can't watch it!" I say.

"Come on, man. It'll be cool and then we'll split, right man?"

I knew right then that we would stay and watch it go off. Kirsh knew too. He knew that I, as a co-conspirator, could always be counted on to do the right/wrong thing.

So the bomb was placed behind the clock and a 6" piece of visco was hand lit. Kirsh and I retired to a safe position 50 feet away behind a study cubicle. BOOM!

Talk about "time flying". The clock jumped 30 feet off the wall and fell to the floor with a satisfying crash. Kirsh turned to me and said three words: "Un-fucking real, man."

We booked out of the building and scurried up to our room to meet our home-based accomplices. They reported that watchy-bat didn't even wake up! No one will know until 7:00 a.m. tomorrow. We disbanded to our rooms and tried to sleep. It is hard to rest when the revolution has started and nobody even knows it yet.

The next day scheduled classes were disrupted – but not very much. The bell system was operated manually. Surprisingly, our fellow students weren't aware of the metaphorical value of our actions. I was amazed to see so much ignorance in a house of higher learning.

Of course a disciplinary meeting was quickly convened with me as the target of the investigation. Featured was a beer-bellied local constable who asserted that he could match my fingerprints with those removed from the salute. (yeah, sure.) Also testifying was Mr. Stein, a "nazi" history teacher who attempted a pathetic entrapment ploy that was easily eluded by this young 16 year old pyro.

In the end however, I was suspended for two weeks even though no conclusive proof was ever offered. This episode itself was perhaps the most instructive lesson of my prep school experience. That being: if you're guilty, you're guilty – the rules of evidence notwithstanding. ♪

LANCE VÆRCK

CROSSROADS

... *Nessun maggior dolore
Che ricordarsi del tempo felice
Nella miseria.*

DANTE, *Inferno* V, cxxj-cxxij.

Jesse glanced furtively out the slats as the clackety-clack of a crossroads announced another town. Shit, Jesse thought, still in Illinois. A singularly bleak, stark, and cold place in February. "Land of Lincoln," huh? Figures. Well, he can have it, Jesse mused, as he read the water tower announcing Fairfield.

The cattle car was abysmally loud and cold, and Jesse's only comfort was that it beat a jail cell. Yeah, you bet it did. Jesse's brother, Johnnie, "Reb," had covered himself as best he could with hay in the corner, where he did his best to sleep. "Jess?", Reb muttered, hearing the crossing and inquiring, with no real hope, whether they were there yet. They both knew that they'd get home. Question was, was home far enough? How bad had the blast been? Had they killed anyone? Lord, they hoped not. It had been a prank, an accident. How could they have known? Jesse huddled next to his brother and retrieved the battered Sony Walkman from a tattered pocket and resumed his scanning of the airways for news – a dreaded but necessary task. The brothers' minds gnawed away at the same torturous thought, "Dear Lord, let us not have killed anybody."

It hadn't been a good year for the brothers. They had started doing fireworks on the carnival circuit, at which they excelled. They had been trained by a crotchety, volatile and cantankerous old man of Mediterranean origin. He had methodically and thoroughly taught the boys about professional fireworks – the chemistry, the construction, the set-up, the display.

The brothers had struck out on their own, after the strange disappearance of their mentor and teacher, whom they'd lovingly dubbed "the Old Man." They were both at a loss as to why such a master of the art of fireworks had taken so much time and effort to teach them what he knew.

They'd all met one night several years earlier at the Albany, Georgia, State Fair. After the fireworks were over, the brothers waited until all had gone home except the few lovers and drunks that traditionally find themselves leftovers at such events. Harmless enough, they thought, as they scaled the cyclone fence that enclosed the fireworks area. They weren't there to steal, after all. Jesse and Reb had always harbored more than could ever be described as a strong interest in fireworks. No, this was a passion. Some damned shrink would have called it an obsession, but so what?

The mortar lines were emplaced for the next several night's shootings, and this was their first up-close look at REAL fireworks. Entranced, the brothers wandered down the lines of mortars ("Gee, Reb,

these things ain't rockets a'tall"). Jesse spied what looked like a small Frisbee with all sorts of string attached to it. It was cardboard, and the strings had clearly been broken. Yet an intricate and organized pattern remained a telltale of some unknown craftsmanship. The brothers studied it in awe. Next came the flag. Not the same kind they saluted; the one here had fifty stars. Theirs had but thirteen, crossed diagonally. Yet the pattern could be adapted... It all seemed to be strung together with paper fuse. Yes, there was much to be learned here.

Out of the shadows a short, barrel-chested figure appeared, as though a part of the night itself. Silent and slow, with the dreadful stealth of a big cat, the man approached within whispering range, despite the autumn's fallen wealth in hues of brilliant to dusty gold, red, and purple. A dry autumn, the leaves of the nearby oaks and maples were sent dancing by a newborn breeze. Yet none crackled beneath the workboots of this man.

"That's quickmatch," said the stranger, chuckling lightly as the brothers nearly leapt from their skins, Jesse instinctively whipping their third brother into place: a Smith and Wesson Model 66 revolver, chambered in .357 Remington Magnum.

This amused the stranger to no end. He could easily see the five jacketed hollow-points riding in their cylinder; a sixth surely aligned with the barrel.

A gale of laughter brought about the man's first words. "Gottsha!", the old man cried, tears running down his ruddy cheeks as he fought to control his laughter. This was odd, thought Jesse. Few men found the business end of the S&W an amusing sight. A lunatic, then.

The smiling face before them, swarthy complexion, stubble beard, and steely grey eyes turned cold.

"Hell of a way to treat an old man, come to say hello," the stranger said. "I thought I saw one of those damned Orientals go blind; you got to find 'em 'fore some kid do. Now put that thing up and help me find it," the old man commanded.

Jesse simply did so, wordlessly tucking the pistol in his belt. "You do the fireworks here, Mister?," Reb asked with some awe. He'd always wanted to meet such a man - a Fireworks Man - as had Reb.

The man picked up a jagged piece of plastic and snorted, in apparent disgust.

"No. I sell them some of what I make. And then they go and do THIS!", he shouted at the broken little plastic orb, which quickly found its way under a crashing workboot.

"GUASTAMESTIERI!", snarled the old man. Then his face softened and relaxed some. A shy smile crept across a now embarrassed face.

"Please forgive me, boys. I get upset when they take my work and chain it to this HORSE BRAND SHIT!"

The boys saw the old man's attempts to control what was obviously a savage temper. Yet they saw a kindness there, too, not unlike that of their father,

now only a memory. This man was spontaneous, emotional, but in some way clearly honorable. In a glance the brothers exchanged a day's worth of conversation. It said, "Yes, dangerous to be sure. But not to us." Intuitively they knew he had come for them, not for the "blind Oriental," whatever that might be.

Yet sure enough, a parched little ball was there, in the high grass, wet with dew. Reb had stepped on it.

"What went wrong with it, Sir?" Jesse asked as he examined the sorry little thing. An elder, no matter how eccentric, is called "Sir" in places such as Georgia.

"Timer, son. See the cross match...?"

And there began the Waters' brothers tutelage, under the old man's patient steel grey eyes.

He lived simply, in a small country house of native pine and tin roofing. His trappings were not ancient, but seemed to be intended to appear so. A shop adjoining the shanty was where he spent his waking hours. His home, tools, and surroundings suggested the appearance of movie props. His bed was never clearly slept in, and though a good tutor, he remained an enigma to the Waters brothers.

And it seemed to show in their faces. Confusion, fear, disbelief. They couldn't be masked. The old fellow himself seemed most out of place at all. An Italian back in the piney woods of Georgia, making fireworks? No. Yet they went to county fairs and carnivals where he was known with great respect. A little too much, really. The carnies and country folks beheld the brothers as though mad. It was as if Jesse and Reb were the only ones left out of some monstrous secret.

Whatever he had been, or appeared to have been, ceased on a foggy morning in late October. Jesse and Reb had rented a mobile home just across the tracks, headed for town, but a few miles shy of being to town. They arrived one morning to work with the tension as thick as the fog. Something was amiss here, and it couldn't be ignored any longer. The good folks at the local watering hole shunned the boys, and it became clear that the only tracks in the red dirt road were theirs; the aged Italian never left his place. Not on wheels, at least, though he owned an old Ford pick-up, which seemed as much of a prop as the other stuff. The pick-up's tires had sunk into the red clay soil after the last hard rain, and that was a month ago.

That October morn was the one they knew had to come sooner or later. As they made their way through the fog, Jesse driving, the brothers were silent. They knew the time was here. Through the fog they could see kudzu laced across the road that they'd rode on the night before after work. Their tire marks had vanished. Jesse checked the Smith & Wesson in the glove box. He put it in his waistband wordlessly, Reb and Jesse exchanging knowing glances. Reb motioned with his head to the rack be-

hind them, where the double 12 gauge rested. Jesse loaded and checked it, then nodded to his brother. Ready. Not really, and they knew it, but as ready as a country boy could be.

They were right; they weren't ready. The old man's house was a tangle of kudzu and poison oak. The tires on the truck were flat, and had clearly been so for years. Vines from the big live oak swirled around the fenders.

They could go in, but they knew what they'd find: more of the same; rats, brown recluse spiders in webs at head level; probably a water moccasin here and there. No, this was enough. "You only mess with what you understand," their father's words came back to them simultaneously. Good, good advice.

And so it had all been an illusion, a dream. All vanished. Time to go. Time to run. Time to leave this place. Whatever had been was gone. Adios, lads.

And yet whatever the old *fugiste* had been, "haint" or not, he had been a friend, hadn't he? Yes, he had. He'd taught them well. They were now skilled pyrotechnicians, and that foggy morning they opened up Scratch's package store, and shook off the goose-bumps of the morning with a whistle of Rebel Yell. That seemed to put the day into perspective, although they'd seen something that they both knew is never seen without some price. And they had yet to pay it, they both knew. That would have to wait.

The brothers worked the carnival circuit, going from Birmingham to Nashville to Little Cock,... er...Rock, that is. You know, the home of our president. From there the troop made its way about the country, eventually landing in Eau Claire, Wisconsin.

It was early September when they got fired. The brothers saw it as the fault of the Burnem & Helly Circus. Jesse and Reb were the pyros, dammit, and they didn't know squat about assembling rides. But they made them do it anyways, in the freezing cold that is a hell only a Southerner can understand. Who could blame them for breaking out a bottle of Rebel Yell from the locker? And had they put those bolts in wrong or had they just broken? No way to tell, really. Or so they hoped.

Shame that Representative Finebig's daughter was in the car that departed from the tilt-a-whirl. Reb had watched it arch through the sky; its occupants screeching their way through the cold air toward the roller-coaster tracks. Oh, the timing had been perfect. Reb wondered if the folks that climbed out of the wreck, holding each other and thanking God for their survival, had had any notion that the coaster had just completed a dazzling immelman, and was bearing down on them at 50 m.p.h. He guessed not. After all, how much bad luck can one have in a half-minute?

It was a mess royal. Jesse was sleeping, and Reb ran to help, but there was little to be done. The coaster had jumped the tracks, and if anybody lived it was a miracle.

"Gotta split, Brother," Reb whispered, shaking Jesse awake.

"Huh?," Jesse drawled.

"That fool tilt-a-whirl just let go. I reckon we'd better do the same."

"See your point, brother," Jesse said, not awake and listening to the song of the siren. Lots of 'em. Yeah, LOTS. Time to be gone.

Reb was right; it had been very bad. Miraculously, no one was killed, but the injuries had been so numerous and ghastly that, as Jesse said, "Damn the difference."

They had their consciences to tangle with, but damned if that would include the law. And theirs was a particularly onerous situation: two Southern boys, almost broke, homeless, stuck north of the Mason-Dixon line with winter coming on. They could live off the land comfortably in their home, but they'd surely freeze to death if they didn't do something fast, for the days were getting shorter at an alarming rate, and what was now merely uncomfortable would soon prove fatal. "Reb, reckon we'd best find work, or... something else," Jesse said, patting the pocket where the .357 rested.

Reb shook his shaggy head, his blue eyes an essay in misery. "No, Jess, we might poach some deer, but that's as far as I want to go that way."

Jesse knew what his brother meant. The tilt-a-whirl might have broken anyways, and they hadn't wanted to hurt anybody, but they still smarted from the incident. And though they wouldn't have known what bad karma was, they surely understood the concept intuitively, and they'd have no more of it.

"Jess, we know fireworks, right? Let's see if we can get us a job for the winter, save up bus fare, and go home first chance we get. Whadda' you say, brother?"

Jesse knew Reb was right. Poor country boys though they were, they were brought up to know better than to rob folks. It hadn't anything to do with the law, which was rarely a consideration to them. This had to do with common, Christian decency.

After a hitch-hike that cleared them of their debacle with the carnival, Jesse and Reb shoplifted a pint of Jim Beam and huddled under a railroad bridge, where a trooper was unlikely to spot them, and considered their situation. They had no resumes, credentials, or even I.D. Where to start?

"Jess, might as well try the yellow pages. Someone's got to do fireworks around here," Reb said bleakly. It was a long shot and they both knew it. But the brothers were surely due a trifle of good luck and sure enough the area north of Milwaukee had several fireworks firms. All they had to do was call and see who needed employees. Telephones... they'd need change. Reb still had a saettine in his pocket, and as he stuffed it into the coin return slot of a pay phone, he grinned at his brother, realizing that it was the first time they'd smiled in far too long.

The phone booth was instantly white with smoke, and it rocked and pitched from the force of the blast. The folding door flew open amid a hail of quarters, dimes and nickels. An added bonus was the dollar bills that floated along lazily, for this phone had been one equipped to accept dollar bills and give change. There were more coins and currency that the brothers had ever imagined would fit into a pay phone. They quickly collected what they could, many of the bills much the worse from the rather taxing explosion. But what the hell; they were gathered up as well, and the boys beamed at their newfound wealth. The dollar bills were like a series of jigsaw puzzles, but they painstakingly matched the scraps and reassembled them. Not a bad take, all in all: \$37.50.

And so it was with sense that their luck had changed for the better that the job search commenced. And, for a while, their luck soared. The third call landed them a job with Acme Fireworks, of Beaver Dam, Wisconsin, although the locals jokingly called it "Damned Beaver." Jesse and Reb lived in a trailer on the plant's property; another piece of good fortune. It was primitive and filthy but it was heaven to the two homeless brothers.

The work was long and tedious, paid little, but surely beat their other options.

All went well for the boys for several weeks, until time to make the polverone. Although their old mentor had taught them how to make the homemade gunpowder substitute, something had gone wrong with this batch. It worked, burning reasonably well, but not well enough to suit the boss, a very demanding man nicknamed Glow Worm, though not called that to his face. Glow Worm sputtered and railed, his face beet red (thus his nickname) as he lambasted the brothers for wasting nearly three hundred pounds of chemicals.

"I don't care what the hell you do with this lousy crap, just get rid of it!", Glow Worm bellowed. "I want it out of this plant TODAY!"

Jesse and Reb were almost shaking after that chewing out, for winter was here and they still hadn't the means to get home. And they'd almost been fired. And so it was with urgency that Jesse dragged out the fifty-five gallon drum, while Reb emptied the seemingly endless powder bags of their rejected polverone into it.

Reb was about to seal the drum; they had planned to borrow a boat and deep-six the whole thing in nearby Crater Lake, when Jesse, who'd been gazing pensively at the thing, said, "Reb, sure seems a waste just to scuttle this stuff. Works O.K., or close to it. Just cause Ol' Glow Worm doesn't like it doesn't mean it's worthless."

"Thinking on selling it, Jess?", Reb asked darkly. They both knew they'd be fired if caught doing that.

"Not thinking on selling it, no. I was thinking on setting it off someplace. Look at it, brother. It's jam-packed with good powder, I don't care what Glow

Worm says," mused Jesse.

Reb was tickled by the thought, but at the same time horrified. "Jess," he said, "we set this thing off anywhere near here and we're fucked. Too much powder, man. We'd break windows for forever and Glow Worm would turn us in. I'd love to do it too, but we'd really better toss it in the lake."

And at this moment the first inkling of the thought that was to bring them to their Waterloo bubbled forth from Jesse's mind. Reb had seen this look on his brother's face before and it meant, invariably, trouble. Reb shrank from it, for he knew from the gleam in Jesse's eyes that it would be big trouble this time.

Jesse's gaze grew dreamy and distant. Slowly, a crooked smile crept over his face; a smile not unlike that of their mentor.

"Okay, Reb, you're right. We'd better just dump it in the lake. But what you say we put a real slow chemical time fuse in there with it? Remember those acid/chlorate jobs Skeeter taught us about? He learned 'em in 'Nam, as I recall."

Reb was nonplussed by the idea. What the hell could that harm? "Jess, how long would it take to go? And what would it do?", Reb asked.

His brother pondered this a while before speaking. "The things work as a function of temperature, as I recall. Skeeter said that in the jungle, they'd go in a day or so. That lake is likely to ice over, so who knows how long? Might not work a'tall. Ice'll be pretty thick. Probably crack it though, what with three hundred pounds. Might even send some flying. Then again, it might just sound like a rumble. You know, an earthquake or somethin'. No telling 'till we try it, brother. But one thing's for sure; nobody going to be out in that God-forsaken place by the time it blows. It's already close to freezing. I reckon folks around here just hunker down for these damned winters."

Reb nodded thoughtfully. Seemed to make sense. "How do you make one of those timers anyways, Jess?"

"Well, you take a little chlorate, a cork, and some battery acid..."

Several hours later the brothers were cursing the cold as they rowed the fishing boat, riding perilously low in the water from the weight of their cargo, out into the lake. They were planning to dump the drum in the middle, but the icy wind was against them. Finally they looked back at shore. Their frozen, aching arms told them this was far enough. Three hundred yards? Yes, what the hell.

They almost overturned the boat getting the drum over the transom, but they finally horsed it over and watched its bubbles as it found its watery grave.

For a day or so the boys were anxious, wondering if they'd maybe done something rash. It *was* a lot of powder, but as the days turned to weeks, it was put out of mind, the hopeful theory being that the timer just wouldn't work. As winter deepened

and the lake froze over, the drum had become a thing of the past. The brothers used their strangely acquired talents to build, string, and pastewrap some very fine shells that awed even the Glow Worm.

Then, riding to work with some of the other crew, they saw a dark shape that looked vaguely like a motorcycle racing across the frozen lake. A truck was parked out there too, unloading plywood. The former was a snowmobile, no doubt, which they'd heard of. But the plywood and truck were a mystery – and a troubling one at that – for it was quite close to the resting spot of their drum of polverone. Nobody else in the van even commented on it. Strange.

On the Monday morning following their odd observation, the ride to work took them past the same spot. This time, a small town of strange little shacks had appeared on the ice. Right over their drum of polverone, wouldn't you just know. Confusion and horror washed over them in waves. What the hell? Before they could find their voices to ask, Danny, riding beside them, commented, "Looks like it's fishing time."

"FISHING!", Reb yelled. Danny chuckled and said, "Bet you boys never been ice fishing. Hell, you guys don't see ice unless it's in a mint julep."

Jesse and Reb looked at each other with identical expressions of doom. Expressions reserved for climbing a gallows, a stroll to the electric chair, contemplating a failed parachute; that sort of thing. Reb shook his head in utter bewilderment. Jesse lightly rubbed his temples, eyes closed. Silence.

The day was much that way. The brothers made inquiries about this "ice fishing," only to blacken their despair. These maniacs apparently camped out on the ice in these makeshift huts, drinking and telling lies, while pretending to fish. In actuality they were escaping the rolling-pinned wrath of their "Brunnhilda" wives. They would gladly perish from hypothermia than suffer a cabin fever that usually led to the flight of skillets, lamps, and all manner of houseware in the direction of our ice-fishermen.

The day was filled with contemplations of options. Tell them what they'd done? Out of the question. Disarm it somehow? Too impractical. What was left? Run, what else? Reb's walkman, with one earpiece, provided the needed inspiration.

Marshall Tucker sang, "Gonna catch a freight train, all the way to Georgia, 'til that train run out of track." And on the heels of that, "Can't you see...oh can't you see...what that woman (well, in this case polverone) she's been doing to me."

And it sounded good. Time to go. Again. No way to stop what might or might not happen. But good to be gone. Good riddance. Oh, to be in the South again. They had planned on it; now their hand was forced.

"Jesse, I just don't see any other way," Reb said wearily. Jesse's head was hung low as he sipped a beer that evening, heavy with the knowledge that this was his idea. Things always seemed to turn out

this way, no matter what they did. Jesse wondered for a moment if this was the price they'd pay, the deal they'd made with (the devil?) whomever that old man had been, for their knowledge of pyrotechny. With that thought came the awful certainty that the damned thing would explode.

The morning found the brothers trudging through the snow with all their worldly belongings towards the tracks. They found a bend in the tracks where a freight would have to slow down, and they could hop on. They'd done it before. No big deal. No big deal except the sense of urgency that pervaded them. It *was* going to blow.

A Georgia-Pacific finally passed by, and Reb caught it first, catching his brother's hand. A cattle car. Shit. The wind blew through the slats like razor blades. But they were out of there after all, weren't they? Yes, and that was what mattered. Well, sort of. There was that drum to think about, wasn't there? Oh yes.

It was in Watertown, where the tracks took a sharp curve, that they saw it. They moved as one to look out the slats to the north, where a greyish mushroom cloud had risen to a titanic height. An industrial accident, plane crash, a lot of things could have explained it. But the Waters brothers knew exactly what it was. And they could see it from fifteen miles. Must have been a daisy.

Wordlessly anguished, they settled back and let themselves succumb to the rhythm of the rails. And the miles rolled by. Jesse monitored the airwaves with his half of a Walkman, but budget crises and foreign turmoil were the only news. And so it went, but outside of Jackson, Tennessee, a garbled blurb, hissing with static, seemed to tell of ice fishermen using too much dynamite. Garbled again, the word "rescue" came through. The the word "explosion".

They wouldn't know until later that it had been a mess, all right, but not a fatal one.

For in Memphis, the train stopped. Who knew why? As they looked upon the green wealth of the South, even in winter, they saw a figure walking lightly toward the cattle-car the brothers had endured for days. The man looked vaguely familiar; the gait of the man perhaps. The brothers were too weary to care.

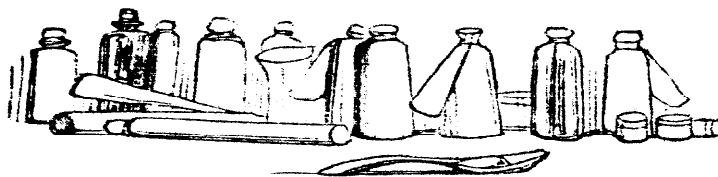
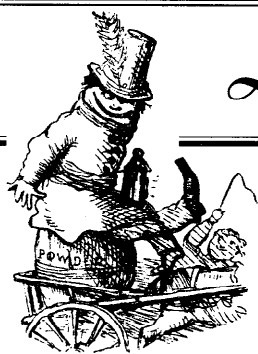
Then Jesse sat bolt upright, the color gone from his face. He looked out again, and a stocky, steely grey-eyed man was standing by the cattle car. He grinned and laughed, shaking his head in merriment, as the train rumbled forward again. Reb didn't see the man; he was sleeping, exhausted. But Jesse did. The last time either of them saw the old man was in Memphis, at the Crossroads.

Many others have encountered a grizzled, barrel-chested old man who knows a lot about fireworks. He appears where he is needed, it would seem, or at his whim. But if you want to learn from this man, be prepared to pay a price.

In the deep South, blues country, we call it Dues.

EDUARDO TELLERINI

Salnitropyromedica



Since chlorate of potash was covered in our first article, we thought it appropriate now to discuss medicinal uses of other common oxidizing agents.

Some of these compounds are hardly remembered today, while others would stretch our “dual purpose” theme to the limits. The hypochlorites and peroxides used as antiseptics theoretically could serve as fireworks, but are generally unstable and offer no apparent advantages. Potassium iodate is as much an oddity in medicine as in pyrotechny, but enjoyed limited use around the turn of the century in the same localized inflammations where the chlorate is recommended. As it can liberate oxygen or iodine depending on the conditions, it may be worth remembering. (Potassium iodide, useful in a wide variety of systemic diseases, has entirely different actions and is obviously outside the purview of this article.) Potassium perchlorate (in the bloodstream, this is) has a unique property not possessed by the chlorate. The perchlorate ion suppresses thyroid function! Clinical use has been quite rare, if only because suitable hyperthyroid conditions not requiring surgery are rare. Hypothyroidism, requiring supplementation with thyroid tablets, is a vastly more common disorder. One modern trade-named product, “Tapazole”, is used to control hyperthyroidism, but the demand is small enough that it is only manufactured sporadically. We remember one particularly obtuse (and of course agitated and hyperactive) fellow who had trouble understanding this, and narrowly escaped a dose of perchlorate.

Potassium nitrate was a popular medication until quite recently; most members will recall when the small drugstore containers bore directions for use as a diuretic. A typical dose was 5 to 20 grams dissolved in water, repeated several times daily. Other potassium salts, such as the acetate, share the same useful property without being so irritant to the stomach and kidneys. Nonetheless, it was saltpeter which caught the public’s fancy, and even many professionals used it to a surprising extent. According to a 1935 Mayo Clinic report, a 13-year old boy managed to choke down six grams daily for a whole year, controlling a severe case of edema. The nitrate ion also reduces blood pressure, although its duration of action is too short and variable to make it useful in treating chronic hypertension. It causes dilation of veins which may lower body temperature, and was

thus a popular remedy in acute fevers at one time.

No discussion of saltpeter would be complete without mentioning its anaphrodisiac reputation. While many “home remedies” and so-called medical folk tales are actually survivals of earlier professional practice, this one does not appear to be. Nineteenth-century authorities list various drugs, including conium and the bromides, for reducing carnal desire – but we have never seen nitrate of potash among them. This legend appears to have originated in the twentieth century, and probably in the military – certainly it was an article of faith among the troops by World War II. It is mentioned in such literary classics as George Leonard Herter’s *How to Live with a Bitch* (1969), and in the popular television program M*A*S*H. Personally, however, we must express doubt as to whether saltpeter has this effect, at least as any kind of specific property. Any drug which depresses major bodily functions can have anaphrodisiac effects by default – and impotence is still one of the common side effects of drugs used to reduce blood pressure. In one experiment, taking five *drachms* of saltpeter a day caused “general weakness, lowness of spirits, constant disposition to sleep, and slow and weak pulse” – the latter as low as twenty beats per minute. Being distracted by women was the least of this fellow’s worries – and it would be difficult to disguise such massive doses even with Army coffee! It would be safer to rely on the traditional cold shower – or perhaps watch a feminist fashion show.

Finally we come to potassium permanganate, a rather hazardous oxidizer occasionally used in specialized flash powders. The author has a steel can of permanganate bearing the penciled date – presumably the day it was received – of December 7, 1941. We can only imagine how the course of history might have changed had it been delivered under Hirohito’s throne, together with half its weight of German Black and a suitable timer.

Potassium permanganate was once widely used as an antiseptic, and is still a worthwhile item to keep in one’s first aid kit. Aqueous solutions ranging from 1:1000 to 1:5000 may be employed as skin wash, gargle, douche or injection into the bladder, depending on the infection and one’s level of confidence. If used to disinfect the hands it leaves a purple stain, which may be removed with such reduc-

ing agents as oxalic acid or sodium bisulphite. The solution has been taken orally to oxidize and destroy certain poisons, including white phosphorus and many of the alkaloids. In such cases the antidote must be drunk soon after the poison is ingested, while it remains in the stomach and small intestine.

In the African bush, permanganate was used so often and with such confidence that it became a verb. John Taylor, for example, speaks of "permanganating" a beater who was mauled by a lion. In such desperate cases (the felines' bites being especially nasty sources of infections), the permanganate was rubbed into the flesh in pure crystal form. Other famous African hunters swore by it for snakebites, where it is believed to oxidize the protein-based venom. It also oxidizes the protein-based patient, but when one is far from a surgeon this is not all bad, for the cauterizing effect helps check the bleeding. It is safe to say few of these "white hunters", who loved to regale Americans with their exotic tales, knew the original source of their favorite remedy. The permanganate treatment for snakebite was introduced by Dr. Amos Barber of Wyoming, who also served as governor of that state. With this observation we have come full circle to explosives, as anyone who knows the fate of sheep flocks during the 1890s range wars will attest. Whether permanganate was used when dynamite ran out we may never know. At any rate it all reminds us of a time when both politics and medicine were not completely closed to people with common sense. 1892 - Amos Barber. 1992 - the very model of a female surgeon general!

SCOPPIETTO DULCAMARA, *I.O.O.J.*,
B.M., B.Ch., B. Pharm., P.G.I., etc.

THE SAGA OF THE CHLOROPHYLL CLOUD

"What's that sign mean, uncle Bill?"

We were headed north on a fishing trip when we came upon a large billboard:

FARGO NORTH DAKOTA
BIRTHPLACE
OF THE CHLOROPHYLL CLOUD

"That happened several years ago," I informed my inquisitive passenger. "I was there at the time."

"Tell me about it, Unk."

Thus, for the first time in years, I began to tell the story...

In early August 1993 a Pyrotechnics Guild International convention was held in Fargo. A group of us were gathered together in the empty sheep barn at the state fair grounds. We were a diverse group with various occupational backgrounds: a sawbones, a vet, a sculptor, a tooth straightener and a couple

of offspring. We had been waiting for the preacher for several hours. We were assigned to the barn for construction of our pyrotechnic presentations by the authorities, who liked to get the "Rocket Men," as we were called, into areas as far away from everyone else as possible. Most of us enjoyed the isolation and I'm sure that more than one of the group appreciated the ambient aroma and nostalgia for certain illicit pleasures of youth. But I digress.

We were sitting around the barn shooting the breeze, eating pork sandwiches, putting together rockets and "special" pop bottle headings, while swatting mosquitoes the size of small sparrows.

About half past two, with open shooting still more than three hours away, someone mentioned that he was getting a strong urge to light a fuse. He described it as a "hump in his back," a metaphorical reference to a dog in a state of serious sexual need.

One of us, who shall remain unnamed, stated he had some chemicals which if mixed and initiated with sufficient energy would produce a good bang loud enough practically to guarantee reduction of the "hump".

When asked where one could fire such a therapeutic device I recalled a swampy area north of the city dump. Almost immediately a chant went up "We can get rid of the hump just north of the dump". Let it not be said that our talents were limited to pyrotechnics. I wonder what they could have done with "landfill".

We mixed the chemicals, capped two loads, piled in the van, and headed for the dump with a growing sense of anticipation. The preacher was late, but we couldn't wait, and we had to leave without him.

With Dylan's nasal intonations and frequent "get rid of the hump just north of the dump" recitations, we bounced across the prairie.

Several miles out of town we came across a large railroad embankment which intersected our apparently abandoned road. We drove up and over the tracks and there it was, a swampy area surrounded by heavy grass and weeds four to five feet tall. A bridge that crossed the water appeared to offer an excellent spot from which to drop a load.*

We tied a long string on the device and attached it to the bridge so that it could be retrieved in case of failure. We lit the fuse, dropped it in the water and promptly retired behind the van. After what seemed like minutes, a "WHOOMPH" was followed by a good sized water spout.

The general feeling was "Fun, but no release."

Realizing that the water muffled the blast, we walked back into the field with the tall weeds and lit the fuse to the second device. We retreated hastily to the van and waited. The breaths came faster and the hearts pumped harder when BOOOOM!!! The sun disappeared and the entire sky turned green. The van was camouflaged with green bits of vegetation

* *metaphor optional.*

and several green men stood with looks of awe and bliss. But not for long – discretion determined that it would be a good plan to vacate the area. We noted as we looked back from the railroad embankment a large round area, completely devoid of vegetation.

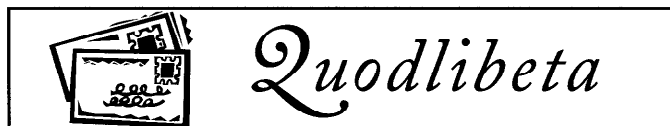
The trip back to the sheep barn was accomplished with alacrity. We'd truly left our "hump out north of the dump".

Later I was told of an orange-vested gentleman standing at the fairgrounds watching the growing green mass in the northwest followed by a large explosion. He exclaimed, "What was that!?" A bystander stated, "That looks like a chlorophyll cloud." After furiously checking the voluminous rule book he hollered, "But that's not allowed!" "What's not allowed?" "A chlorophyll cloud."

"That could make a catchy tune. What do you think, boy?"

"I suppose so Unk, but what's a 'mysterious crop circle?'"

I didn't have to say, "That's another story..." ♪
PULSAR



Dear Pasquino,

Thanks for the copy of the last *Case-Former*. I haven't even finished it yet I feel compelled to write. I believe it is possibly the most literate, erudite, entertaining publication being published today! I'm not blowing smoke. I read a lot. The two issues (including the *Best of...*) I've read rank at the top.

Eduardo's experience with nitroglycerine brought to mind an experience I had in my basement – age 14, 1953 or so – with the same chemicals. I can't remember all the details. Ace and I had a room in my basement devoted to various chemical experiments (most involving fire of one kind or another), frank sexual discussions ("wonder what it feels like," while viewing Marilyn Monroe's famous calendar), and, primarily, smoking cigarettes on the sly.

We waited until Johnson's Market had some dry ice in, and then launched into it using instructions from an old chemistry book. I'd never heard of Dr. Davis (fortunately, or I'd have been in even more trouble than a certain pipe bomb precipitated, causing a 30+ year hiatus in my pyro pursuits). Anyway, we felt that to explode the test tube of materials properly, it would probably be safer (God protects the stupid) to freeze it in the freezer right outside the door of the lab. After a day or so, we took it out in order to detonate it with a BB gun, much like Ed's experience. The walk up the steps was slow, oh-so-careful with each step so as not to jolt the tube. Something caused Ace to drop it halfway up the steps and it seemed to take about half an

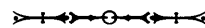
eternity to hit the floor (strange how a person doesn't enjoy the time distortion associated with moments like these when they are likely to be his last on earth). (I must stop speaking parenthetically but it seems to be required by my disordered thinking or something.)

It hit the step and NOTHING HAPPENED! The story could end there, but it doesn't. We took it to the back yard, put it in the crotch of a tree, got the trusty Daisy pump-action, and shot the tube. The tube broke and that was it, no explosion. We never made it again, but, like Ed, went to making gun-cotton as well as black powder tree-splitters, and smoking, and looking at the calendar, and later attempted making plum wine. Another story.

Hate to bore you with the above, but I noticed some similarities in the stories so thought I'd pass it along. Ain't pyro fun!

...Well, that's enough for now. Again, I love the *Case-Formers!* Keep up the great work. They will become classics in pyrotechnic literature, mark my word.

—AESCULAPIO GIOCONDO



...Readers of *il dottore* Dulcamara's article "Halinitropyromedica" on pp. 8-9 of the *Case-Former*, Vol. III, No. 1, may enjoy the following. It appeared in the "50 and 100 Years Ago" column of the *Scientific American* for March, 1995:

MARCH 1895.

"It is a well-known fact in chemistry that red phosphorus – one of the constituents of the safety match box rubber – combines with explosive violence with chlorate of potash; but the possibility of such a reaction taking place in a person's pocket has not been foreseen. However, several papers recently reported that the simultaneous occurrence of a safety match box and chlorate of potash lozenges in the same pocket led to a series of small-scale explosions, setting fire to the clothes of the unfortunate wearer and severely burning his legs."

—E.E.

SYMPATHETIC DETONATIONS

News Notes From All Around

ANNOUNCEMENT

We are pleased to announce that Mr. and Mrs. Babar Krookshankkee have recently adopted the Wheeze baby. The underweight sickly little squirt was swaddled in a pair of size 56 bermuda shorts and sent packing to its proud new parents. With a diet of treachery and deceit supplied by them, the little monster may thrive. May God have mercy.

THE USE OF HIGH EXPLOSIVES IN FIREWORKS

Scire tuum nihil est, nisi te scire hoc, sciat alter.

—AULUS PERSIUS FLACCUS

Half a decade and half a world away, yours truly sat at the dinner table with a fireworks factory manager, a noted pyrotechnic artist, a notorious expert witness and his wife. Your servant had the temerity during the conversation to suggest that there were potential uses for high explosives in fireworks. The expert witness spluttered, "Why, that would be completely illegal!" Not thus put in his place, your servant responded that just as what was legal or illegal had little relation to what was right or just, so did it have little relation to what was safe; and from a standpoint of safety, high explosives had the advantage over flash powder or even black powder for purposes of generating noise. A fire leak around a time fuse or at some other point can cause flash powder to ignite prematurely; indeed, it can ignite at any time from its making until it is ultimately used, from the merest spark. A properly-selected high explosive will, on the other hand, detonate only from the proper use of a blasting cap, and will be much less sensitive to shock, friction, or flame than are flash powders or any other pyrotechnic compositions.

Indeed, the purported illegality of using high explosives in fireworks is very recent, if, indeed, it obtains in any meaningful sense now that flash powder has been regulatorily re-defined as a high explosive. The earliest mention of a high explosive the writer has been able to find in any pyrotechnic reference is to picric acid, under the heading "Of Detonating Powder from Indigo," in James Cutbush's *System of Pyrotechny* (1825). As the description is brief, it is quoted in full:

"That indigo produces a detonating powder by treating it with nitric acid, is evident from experiment. As it produces a *purple* light, it might, perhaps, be used advantageously in small fireworks.

"The process described by Dr. Thomson (*System of Chemistry*, VOL. IV, p. 80, *Amer. edit.*) is to boil one part of indigo in four parts of nitric acid. The solution will become yellow, and a resinous matter appear on its surface. The boiling is to be stopt, and the liquor cooled; The resinous matter is then to be separated; and the solution evaporated to the consistence of honey. This is to be re-dissolved in hot water, and a solution of potassa added, which will throw down yellow spicular crystals, consisting of *bitter principle*, combined with potassa. When the resin is again treated with nitric acid, the same bitter principle is produced. The spicular crystals, when wrapped up in paper, and struck with a hammer, detonate with a purple light."

Cutbush thus knew both picric acid and potassium picrate, but quotes no formulæ using either one, and appears to have had no idea how they were ultimately to be used in pyrotechnic practice.

Picric acid as an additive to colored flame compositions was described by Paul Tessier in his *Chimie pyrotechnique* (1883) and similar compositions were quoted by T.L. Davis (*The Chemistry of Powder and Explosives*, 1941) and Weingart (*Pyrotechnics*, 1947). Weingart's warnings that stars containing picric acid should be used only in rockets, not in shells, for fear of detonation from set-back shock, reflect an ignorance of the properties of picric acid that, though sad, is not so sad as that of those who ignorantly repeat it. Picric acid is not particularly sensitive to shock; it was used as a cast shellfiller in French 75-mm. artillery projectiles during the first World War, and these, it must be agreed, underwent considerably more shock on firing than does the typical firework shell. The real hazard of picric acid is the readiness with which it combines with metals like lead and copper to form picrates that *are* extremely sensitive to shock, so much so that they may be classified as primary explosives.

Although potassium picrate (and sodium and ammonium picrates) are high explosives their principal use has been in whistling fireworks, as well explained in the older pyrotechnic literature. There has been some use of ammonium picrate in colored flame compositions, also.

Some years ago the writer acquired a copy of a formula book compiled by Clare B. Allen, a fireworks man active from the 'twenties through the early 'sixties. He had worked in many fireworks factories, from which he had collected formulæ, and had doubtless acquired others through acquaintances. Amongst the compositions listed were several attributed to Thomas G. Hitt, inventor of the "flashcracka" and numerous other commercial successes of the 'twenties and 'thirties. Some of the color compositions contained trinitrotoluene (TNT). If indeed these compositions saw viable industrial use (this writer has had no opportunity to try them), the TNT may have served a purpose akin to that of picric acid in the compositions of Tessier, Davis, and Weingart. Picric acid is trinitrophenol, similar in structure to trinitrotoluene. TNT, however, does not have picric acid's propensity to react with metals to form salts that are primary explosives, and thus has a safety advantage. Moreover, quantities of TNT have from time to time been available as war surplus, and in the halcyon days before overregulation, Thomas G. Hitt may have found some at bargain prices, and experimented with its use.

The black, non-mercury snakes that became popular after Vörbringer discovered the properties of nitrated naphtha pitch customarily contain a quantity of some agent to facilitate their burning. Weingart suggests the use of picric acid. Clare B. Allen de-

scribes, in convincing detail, a process for making snakes using tetryl (yet another aromatic nitro compound). Conversations with a knowledgeable and long-time member of the fireworks industry have confirmed that tetryl was indeed used, among others, by the old United Fireworks Co. of Dayton, Ohio. This writer well remembers the snakes made by United Fireworks as late as the mid-'sixties. They were flat little pellets in the shape of a triangular prism with rounded corners, and the shape and length of the "snake" ash could be varied by how one set them on the ground and where one lit them. The composition was mottled, like a sort of marble-cake, with flecks of off-white or yellowish tetryl clearly visible in the dark grey matrix of nitrated pitch.

This brief tour through pyrotechnic history should suffice to prove that there is indeed ample precedent for the use of high explosives in a remarkable variety of pyrotechnic applications, and, whether "illegal" or not, it ought to be considered a legitimate field for pyrotechnic exploration and exploitation. This having been said, we come now to the "original" part of this essay: "original" in inverted commas because, while to the writer's knowledge none of the technique that follows has ever been set down in print, he cannot claim to have invented it. The credit for that, if aught be due, belongs to the late Bill Hoyt.

The best candidate amongst commercially-available high explosives for use as a noise generator is the pentolite primer. Pentolite is a 1:1 mixture of pentaerythritol tetranitrate (PETN) and trinitrotoluene (TNT). It is cast in cylindrical shapes using thin spiral-wound casings with pressed fibre end-caps (similar to those used in some methods of shell construction) as forms. Common sizes are 1/3 pound, 3/4 pound, and one pound. The industrial use of these primers is as "boosters" in the initiation of blasting agents that are not cap-sensitive. Since pentolite *can* be initiated by a cap, its detonation in turn initiates the ammonium nitrate/fuel oil mixture or other blasting agent.

The best size to use for a 3" single-fire salute is the one-pound. These are about 2-1/4" in diameter and 5-1/2 - 6" long. They have a central lengthwise hole that goes clear through them, about 3/16" in diameter or a trifle larger, and an off-center lengthwise hole 2-1/2 - 3" deep and about 5/16" in diameter on one end, this being the end that is covered with the fibre end cap. In ordinary use dynamite fuse is strung through the central hole, crimped into a cap, and the cap inserted into the off-center hole. This results in a 180° bend in the dynamite fuse and is supposed to avert the possibility of the cap being pulled free from the primer, which would result in a failed blast.

To prepare the primer for pyrotechnic use, we ignore the off-center cap well and enlarge the central hole on the fibre-capped end so that it will accommodate a No. 6 fuse blasting cap. This is best done by using a 1/4" drill bit in a tap stock. Working

very gently, and slowly, shave out enough pentolite so that a cap will just fit; drill down far enough so that it will seat in the hole, its edge flush with the end of the primer.

A No. 6 blasting cap is about 2" long, one inch of which is hollow for the insertion of the time fuse, the balance being filled with the fulminate or azide of choice. Japanese 1/4" time fuse will fit in a No. 6 cap. Cut a piece perhaps 2-1/2" long, making sure that one end is neatly cut square and the powder core is not disturbed. Measuring from this end, mark the fuse 1-1/4" to 1-1/2" in from it. Insert the neatly-cut end of fuse into the cap and crimp using a cap crimper, *not your teeth!* Now tie a knot right at the juncture of the fuse and cap using tarred twine. Pull the fuse through the hole in a 2-1/2" disc punched for 1/4" fuse. It will stop at the knot.

Cut some chipboard strips to the width of the primer, grain with that width. Roll the primer up tightly in the chipboard until its diameter has been built up to 2-1/2". At this point interleave a sheet of 70-lb. kraft paper, 2" - 2-1/2" wider than the primer and 24" long, with the last turn of the chipboard, and roll it up so that an equal amount of paper overhangs on either end. Put a solid disc on the bottom end of the primer (the one not prepared for the cap), and pleat the overhanging paper down in the usual manner for a cylindrical shell. Now place the fused and capped disc into the other end, making sure the cap is properly aligned with its central well; seat the disc, pleat the paper down, and place another thin punched disc over the pleats to hold them in place. Putting a thin solid disc over the bottom pleats, spike the resultant "shell" as for a regular 3" color shell; paste with 3 turns of 40-lb. kraft in the usual manner, and dry.

Cross-match the shell at the mark on the time fuse and prepare for lift using a pass-fire (in other words the shell should be top-fused as in the writer's opinion any shell should be). Because the timing is a trifle longer, and the weight a trifle more, than the typical 3" shell, extra lift is necessary. One and one-half to two ounces of FFA powder is suggested.

From this description it may be seen how the smaller sizes of pentolite primer may be used as insert reports ("pentadelles") in larger shells, or how a large bottom shot for a 10", 12", or 16" or even a 24" cylinder shell might be made using a prepared primer centered in a main charge of ammonium nitrate blasting agent. Every large shell is made more soundly with a bottom shot, and such a bottom shot is indisputably safer than one made with flash powder. Of course there will be those who squeal about NFPA limits of 2-1/2 ounces and other such claptrap, most of them being people who have no experience making shells of any kind, much less extremely large and elaborate ones that call for a high level of pyrotechnic accomplishment. Some of the squealers are self-described "experts." There are those

in our acquaintance who would more candidly describe them as wimps and weenies, and even worse, but this being a dignified publication, we could not possibly venture an opinion. ¶

ERNST PFANTODT

BILL LYMAN, R.I.P.

It is with deep regret that I announce the passing of our friend, Bill Lyman. How difficult it is to find words to express our regret at the death of this splendid man. Bill combined a special charm with unlimited energy and the highest personal integrity. The genial personality and the generous instincts of this fine gentleman will be missed by all members of our Order as well as by all who knew him in the P.G.I.I. I am sure that he will be regarded as an ideal by the fireworks industry he so loved, and he will continue to serve as an example for our inspiration.

I wish to express the deepest sympathy to Bill's family and friends from the membership of the I.O.O.J. We will all miss him. ¶

MILANO GIANSLAVI

ED. NOTE: *The following reminiscence of Bill Lyman was received from a long-time P.G.I. member, who asked us to publish it.*

REMEMBERING THE WIZARD

I first met Bill more years ago than I care to remember. He was a fixture at any P.G.I. convention he chose to attend. Combining a unique sartorial style, a ready wit, an ever-present smile, and a love for fireworks and people – that was Bill.

Bill remains one of the most unique people I ever met in fireworks. What can you say about a man who invented the Gerbe-Morte, the Rocket-e-Morte, the Shell-e-Morte, the Lance-Morte, etc., etc. Bill was the kind of person who always pushed the envelope, expanding our horizons. Sure, some of his stuff may have exploded but who cares. Ron Nojunas was lighting it anyway, and he knows how to get out of the way! This might sound funny and irreverent, but Bill would have appreciated it more than a solemn, long-winded dirge.

Bill was an old-time fireworks man who in his day worked with some of the greats, Vic Barnaba, Benny Bello*, and many others. He was an accomplished firework-maker. In 1994 he became the only man to enter *all* of the P.G.I. competition categories. For this reason alone he should be remembered. I once asked him why he didn't build cylinder shells, why he had switched to ball shells. He said, "Oh, I already know how to build them, now I want to learn

to make ball shells or maybe a combination of the two." He then told me that he planned to make cylinder shells for the Muskegon convention in 1996 as a surprise for everyone who didn't know he could do it. He also told me that he wasn't sure of his memories after all of the medical problems, including open-heart surgery, that he had undergone. I told him not to worry about it, if need be we would find someone to light all of his entries, and not all of them could possibly explode. Bill was still laughing at that two days later.

In closing I'd like to tell you my three fondest memories of Bill.

I was out on the line with the Safety Committee this year. When Bill asked if anyone wanted to light his twelve, Ron Nojunas and I were loud in our protests of what it would do, or how loud the detonation would be. Someone remarked during this exchange, "it sure sounds like that guy has no friends." Ron looked down upon him and said, "No, everyone here is his friend. Otherwise, we wouldn't be here."

The next night, after one of the most boring product demos I have ever seen, we had the Gerbe competition. One competitor's entry was supposed to have twenty effects. When lit the resulting explosion rocked the stands. The second of the pair performed exactly the same way. The announcer said, "Well, at least he's consistent." As the contestant's name was about to be read, everyone around me chimed in, "Bill Lyman!" The next day, Bill showed up wearing a badge saying, "Bill Lyman, Inventor of the Gerbe-Morte."

My fondest memory of Bill was when at dinner one night he told me I could piss off a roomful of people just by walking in. Then he told me if I didn't come to next year's convention, he would not have any fun.

I spoke with Bill only a few days before he died, and he told me he was ready for the convention, ready and waiting. Bill's friends will miss him, for he had more than one can count. The P.G.I. will miss him – he was one of its finest members. The fireworks world will be quieter with his passing. How will the Guild ever be the same without him?

PAUL BREGEL

* *When I last spoke with Bill Lyman he gave me a formula for a "strong white fountain." He said it came from Benny Bello, "one of the old East Coast Italians," as he put it. Here it is:*

Barium nitrate	6
Saltpetre	1
"Standard aluminum" (possibly #808)	3
Sulphur	1
Atomized aluminum	1-1/2

Properly consolidated in an appropriate case, this should not give a "Gerbe-Morte."

 *Ask Eduardo* 

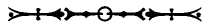
De omni re scibili, et quibusdam aliis.

—VOLTAIRE

Dear Eduardo,

I'm puzzled over my apprehension in my recent bombing of the Federal Building in Oklahoma City. What went wrong? Help!

TIM M.



Dear Tim,

You did everything right except ride home without a license plate and with a Glock on your hip, you dumb-ass. You came so close to pulling it off, too.

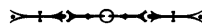
On the positive side, though, that was a sweet little firecracker you boys put together. My hat's off to you.

And nobody likes the damned Feds. Let's face it, we all wish they'd just go away. Yet all in all, the nursery taking heavy losses and such, a much smaller device, well disguised and delivered to a specific target, would have been more in order.

Next time try taking several stacks of computer paper and either nitrate them, soak them in a solution of PETN or RDX, and deliver them to your target's office. Collateral casualties will be minimal, and if you plan well, you won't be caught. Remember, think of these things ahead of time.

Thanks and good luck.

—EDUARDO



Dear Eduardo,

I am contemplating a very special display at the next PGI Convention. This will include a "dunce-pack" fustilage of 200 "crap" shells. This is more "crap" than even I have ever shot! I am proposing this event in an effort to determine what the odds are of creating a large, deep hole in the ground vs. one giant flowerpot that sprinkles unlit pellets of class B explosives that I have been known to sell out of the back of my van prior to my career as a pyro stoolie.

Would it be appropriate to ask that the P.G.I. fund this vital information gathering exercise? Naturally, I won't do any work, lest I get anywhere near to a ACTUAL FIREWORK, but I am willing to direct, pontificate and otherwise bluster and blather on about the intricacies of the aforementioned project.

I am not looking for any money for this urgent research project, but it will cost you \$3,000 for my materials: donuts, coffee, etc.

Whaddya say?

K.K.

Dear K.K.,

I believe you have touched on an area that does need research and could quite possibly be financed by a grant from P.G.I. funds.

However, be advised that after your research, you must write an article for the Bulletin, so woefully lacking in information content or actual meaningful information, that the Officers will have to refuse to pay the grant until you fluff it up and rewrite it so it is at least half a page long. However, you may still point to your publication in court as your proof of being an expert.

Also, as information, we will need to know if you will be the President, General Manager, Vice President, General Counsel, Research Assistant, Technical Assistant, CEO, or Lackey of your research lab this year? You can be something different each year, but you cannot be more than two in any one given year. That is of course, unless you keep changing the name of your labs or companies or develop some new RapCrap or regulate yourself out of business, at which time you can become an extortionist.

Please advise.

—K. RAND

(standing in for EDUARDO)

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THE FUGEY'S LAMENT

(Air: "Tit-Willow," from *The Mikado*,
by Sir Arthur Sullivan)

One day in the park
I a pyro espied,
O! 'sanko, Ko-sanko, Ko-sanko.

As with care he his
bundle of fireworks untied,
O! 'sanko, Ko-sanko, Ko-sanko.

With mortars and bombs
and skyrockets inside,
O! 'sanko, Ko-sanko, Ko-sanko.

Then with ashen-faced grief
he himself was beside,
O! 'sanko, Ko-sanko, Ko-sanko.

For even if with laws he
most truly complied,
O! 'sanko, Ko-sanko, Ko-sanko.

His prospects in court
down the drain would subside,
With 'sanko, Ko-sanko, Ko-sanko.

Petition in hand,
I ran up to his side;
It's not weakness of intellect
Pyro, I cried -
Not a very tough problem
for you to decide
About 'sanko, Ko-sanko, Ko-sanko!

With a nod and these words
then the pyro replied,
No 'sanko, Ko-sanko, Ko-sanko.

Recently one of our officers attended an auction to purchase a set of Gilbert and Sullivan records, more for personal enjoyment than organizational use. Recent victories have been so comprehensive that the incisive satire of Mr. Gilbert would scarcely find any worthy targets left in the P.G.I.

However, we took advantage of the sale to acquire several lesser products of the musical stage at a very modest price, among which was *The Sound of Music*. Unlikely as it seems at first, the cheerful tone of this production is not unlike the current state of our Order. Certain details would have to be changed: for example, where the nuns could at best only "Climb Every Mountain," we might well "Shake Every Mountain," or perhaps "Level Every Mountain." The project received another flash of inspiration from Miss Giulietta Andriani, who, on a recent episode of the news program "60 Minutes" showed us some favorite things we never expected to see.

Here, then, from the genius of Richard Rocketts and Oscar Hammerschell, is the I.O.O.J. version of

OUR FAVORITE THINGS

Heavy steel mortars which load from the muzzle
Musical satire by Bishops who guzzle,
Brown paper cylinders tied up with strings -
These are a few of our favorite things!

Single-malt whiskies and rich seafood chowders,
Chlorates and sulphides and fine metal powders,
Elephant rifles with gold-plated springs -
These are a few of our favorite things!

Girls in black dresses with cleavage outrageous,
Maximal passion and minimal ages,
Chinese techniques that date back to the Mings-
We must admit these are favorite things!

When the tax bites - when the law stinks -
When the agent's a cad -
We simply unleash all our favorite things,
And then we don't feel soooo bad!

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THE EXPERT WITNESS'S SONG

The musical score is written for voice and piano. It consists of six systems of music. Each system has a vocal line on a treble clef staff and a piano accompaniment on a grand staff (treble and bass clefs). The lyrics are written below the vocal line. The key signature has one sharp (F#) and the time signature is 3/4. The score includes various musical notations such as notes, rests, slurs, and dynamic markings.

Perjur'd am I by all proofs one can muster, That in the lawbooks can
commonly be found. Round me the sy-cophants clutter and fluster, And ignoramuses
Frolick around. Be-ing once paid, I'm no longer a-mu-sing. To Court I
hie myself pyro-tech-nists to de-feat; Sham-ming and ly-ing past
all hu-man enduring, Till common de-cen-cy is tread beneath my feet.

THE EXPERT WITNESS'S SONG*

(Air: "Virgins are like the fair flower in its lustre," *The Beggar's Opera*)

Perjur'd am I,
By all proofs one can muster,
That in the law-books
Can commonly be found.
Round me the sycophants
Clutter and fluster,
And ignoramuses
Frolick around

Being once paid,
I'm no longer amusing.
To Court I hie myself
(pyrotechnists to defeat);
Shamming and lying
Past all human enduring,
Till common decency
Is tread beneath my feet.

* or, "The Uproar ain't over till the fat guy in Bermuda shorts squeals."

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