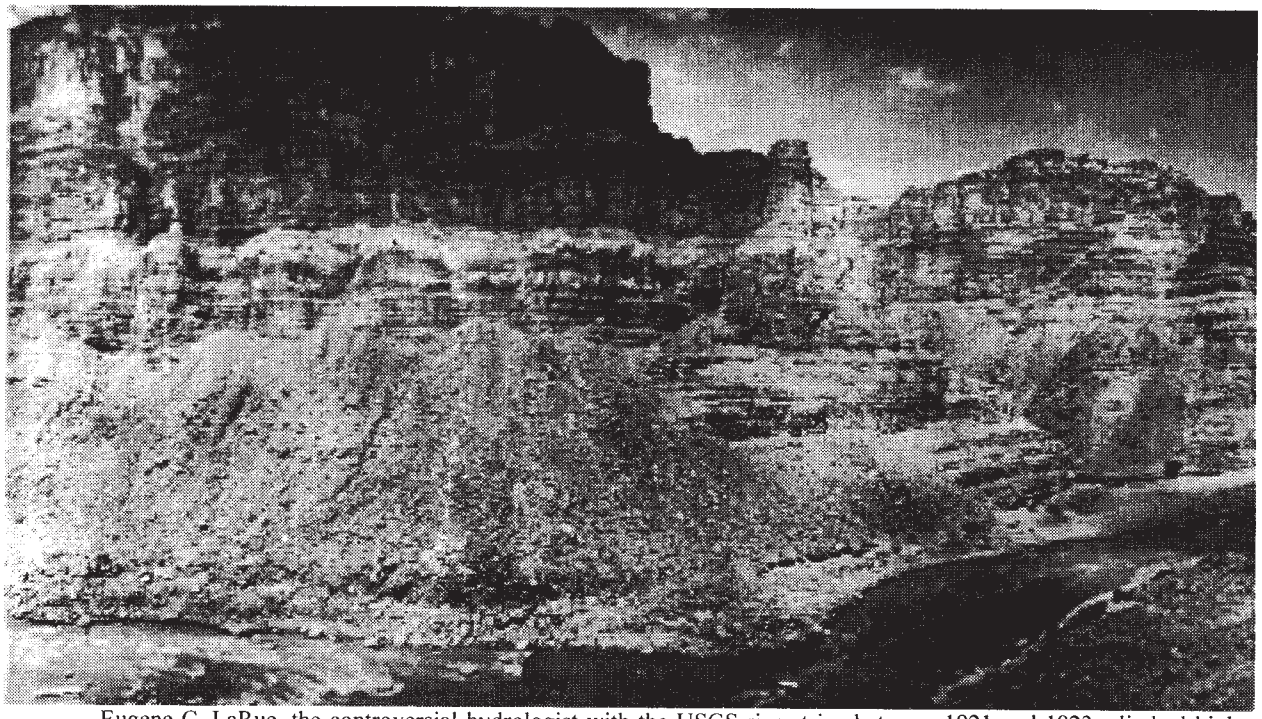


Eugene C. LaRue, the controversial hydrologist with the USGS river trips between 1921 and 1923, climbed high above Rapid 15 to take two panoramic photographs of Mile Long Rapid. This is a cropped section of one of the panoramas showing the river from Range Canyon (Rapid 13) to Capsize Rapid (LaRue 96, courtesy of the U.S. Geological Survey Photo Library).

THE CHANGING RAPIDS OF THE COLORADO RIVER
Capsize Rapid (Rapid 15)

I first became acquainted with the reputation of Capsize Rapid on my first Cataract trip in 1991. It was low water – about 5,000 ft^3/s – and we were camped on a nice little beach above Rapid 24. Sunset was fading, and we looked up from our martinis to see an apparition coming downstream: a raft with no boatman, passengers, cargo, or even frame. One of the ports was deflated. George, one of the best boatmen I know, quickly jumped into his kayak and paddled out to the raft, but he couldn't hold it before it entered the rapid. Oh well, morning would reveal all.

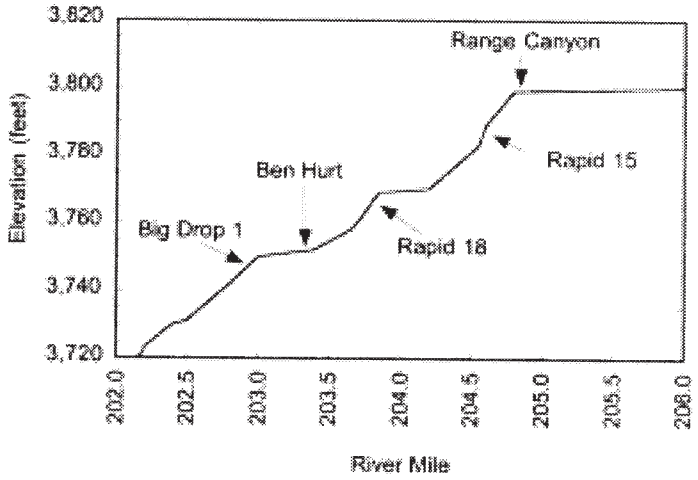
All the eddies downstream were filled with river-trip debris, which we carefully scooped out, including some Heinekens. The raft had grounded at the head of Imperial Rapid, so we rolled it up and stowed it, thinking perhaps we had scored an easily repairable 18-foot Avon Spirit. So we're down on the lake – and it is obviously lake where we had stopped to match a photo – and here come two overloaded boats. Turns out the trip leader had 11 Cataract trips under his belt, and he knew exactly what to do when his boat wrapped on Capsize Rock: he plunged his handy knife into the rear port. He'd heard that the current would pull the boat free if it was partially deflated. It did all right, leaving the frame and duffle to sink at the front of the rock. One of the passengers asked me: "Are we through the Big Drops yet?" I gave him the Heineken, he needed it more than I did.

I'll bet every working guide in Canyonlands knows a story or two or three concerning low-water runs of Capsize Rapid. Yes, ol' No. 1 Sunk and Down, Hell to Pay, walk the passengers over there to look at the inscriptions. Innumerable pins and near misses have occurred here. To avoid becoming one of the statistics, some guides have little tools to help remember the run. Some people think of the low-water run as a baseball game with the massive rocks

protruding from the current as the bases, to be avoided instead of reached. Others just run the damned thing. I don't care much for baseball or memorizing runs through rapids, but Capsize fascinates me. I'd like to add to your knowledge of what makes rapids, and to try and convince you that some of the stories about this rapid are not necessarily true.

The first written record of Rapid 15 comes from the Best Expedition of 1891. They wrapped their boat and had their well-documented epic, but few people know that the rock they wrapped on is not what is now called "Capsize Rock." The photographer for the Best Expedition, one John McCormick, photographed the scene, the first of many historical photos of Capsize Rapid. The boat was pinned on one of the larger rocks near the right shore. Some people call this rock "Third Base," as if the batter faces the pitcher from second base. We've matched 13 other historical photographs of Capsize over the last decade, and most of the original photographs were taken between 1891 and 1927. They reveal a rapid that has changed considerably since the Best Expedition's unfortunate visit to "Third Base."

The first thing to realize about Capsize Rapid is that it is part of a much larger rapid, recognized by Powell and Stanton and called Mile Long. High-water boaters experience some big waves here, at the start of the South Seas, but they aren't as threatening as just a little further downstream. In fact, Mile Long Rapid appears to be one big rapid that starts from debris-flow outwash at Range Canyon (Rapid 13) and extends down to the island at Been Hurt Rapid (Rapid 20). The low-water rapids (Rapids 13-19) are created by the combination of the outwash from Range Canyon, which sets the overall gradient, and debris flows from smaller tributaries on river left. Much of the debris on the island at Been Hurt likely came mostly from Range Canyon.



The longitudinal profile of Cataract Canyon from Lake Cataract to Big Drop 2, from the 1921 USGS survey data. The profile starts in Lake Cataract (on right) and ends in the Big Drops (on left).

Capsize, the first significant rapid in the group, illustrates most of what creates the low-water rapids. The right side of the rapid hasn't changed very much, other than the occasional rock rolling over or splitting in half, and all the big rocks in the rapid were there in July 1891. The rocks on the right side are related to occasional rockfalls from the cliffs on river right, reworking of boulders from a large pile of sediment that looms over the downstream part of the rapid, and boulders washed down from Range Canyon.

The left side is a completely different story, because rocks are pushed into the river by debris flows from a canyon that is a little larger than it looks from the river. That canyon has flashed slurries of debris several times in the last century, including a relatively large event between 1921 and 1964 and smaller debris flows in September 1997 and 1999. As a result, the little debris fan on river left has risen as much as 6 feet and the rapid is a little narrower than it used to be, particularly at high water. All the low-water obstacles in the rapid have been there

since Best's expedition, although some appear a little more rounded now. All the changes to the rapid are to the left of Capsize Rock.

B. (March 31, 1994). Panoramic photographs are difficult to match, and this view is the left half of A., showing Rapid 15 and its debris fan. Two debris flows aggraded the debris fan after this photograph was taken (Gary Bolton, Stake 3080a).

Range Canyon, then, is one of the most significant producers of coarse-grained sediment (*e.g.*, boulders) in what remains of the free-flowing Cataract Canyon. One wouldn't come to this conclusion merely by looking at docile little Rapid 13, which runs around the enormous debris fan issuing from the mouth of Range Canyon. But consider the following on your next Cataract trip: that debris fan, and the canyon that created it, are the reason for Lake Cataract, which extends back upstream, drowning out Rapids 11 and 12. Just picture what kind of flood, or series of floods, it would take to push all that sediment out of the canyon and flush it downstream to Ben Hurt. Pretty awesome, huh?

Finally, what if the drop through Mile Long Rapid was bigger? River-polished gravels over on the left side above Rapid 13 suggest that the Colorado was flowing as much as 20-30 feet higher than the current river level at some time in the last few thousand years. And the next time you visit those inscriptions at Capsize Rapid, look up at the pile of red dirt just downstream on the right side. That sediment came from the little tributary on river left, and the river once flowed to the right of that pile high above where the river is now. Yes, most of the features in Capsize Rapid are the same as they were more than a century ago, but a century is

just a little blip in geologic time. Mile Long Rapid, and it's little part now known as Capsize, is far from being stable over the long run.

Rapid 15 from River Left. (October 17, 1999). A monitoring photograph showing the combined effects of the 1997 and 1999 debris flows on the left side of Rapid 15 (Dominic Oldershaw, Stake 3922).

-- *Bob Webb*

Editor's note: With regards to the informal renaming of "Capsize" to "Hell to Pay" (see issue #23) obviously Bob hasn't heard. I was not able to reach him once I received the article for publication because either I was on the river, or he was on the river. The official name on the USGS maps remains Rapid #15- although I think as a group we could get the number names changed if we applied to the department of place names. There's a project for someone.-*Dave*