

# in the final analysis

*“Say, any of you boys smithies? Or, if not smithies per se, were you otherwise trained in the metallurgic arts before straitened circumstances forced you into a life of aimless wanderin’?”*

—Ulysses Everett McGill, *O Brother, Where Art Thou?*

Most people who spend any time with me quickly learn that I’m a guy who loves movies. Old movies, new movies, international cinema, animation, the spectrum of genres, classic or cult, talkie or silent, award winners and so-bad-they’re-good turkeys, I appreciate them all. Ask me what my favorite movie is, however, and I won’t be able to give you an answer. It changes from day to day and moment to moment. Sure, I have a go-to set of films comprising candidates for “favorite” status . . . *The Maltese Falcon*, *Chinatown*, *Singin’ in the Rain*, *Paths of Glory*, *The Seventh Voyage of Sinbad*, *Some Like It Hot*, *Frozen* (yes, I said it), *Memento*, *The Lord of the Rings* trilogy, *Run Lola Run*, *Metropolis*, and so many others. The one that floats near the top most days is Joel and Ethan Coen’s rendering of Homer’s ancient Greek epic poem, *The Odyssey*, which they called *O Brother, Where Art Thou?* The Coen brothers’s adaptation takes place in rural, Depression-era Mississippi. It is rich in sepia tones, “old timey” music, and quirky performances. It even features a reference to metallurgy as quoted above—framed as a question asked by a chained escapee from a prison farm to hobos traveling in a railroad freight car. Fate intercedes, and he doesn’t get his answer, . . . but I’d like one.

The vagabonds look dirty, numb, and despairing, and I wonder what the odds would have been of a blacksmith or someone trained in metallurgy being forced into the era’s dispirited community of rail-riders. I do know that Depression-era unemployment peaked at about 25% in the U.S. and that many industries shuttered or scaled back as demand dropped. So, the period’s metallurgists surely felt the squeeze to some degree, but I suspect that their training and high value in the workforce didn’t keep them unemployed for too long. Such was certainly the case in the recent Great Recession of the late aughts, when U.S. unemployment reached about 10% for the general public but only about 5% for the engineering community. From that relatively low point, engineering unemployment quickly retreated to about 2%. To quote a *U.S. News and World Report* headline from May 2012, “You’re an Engineer? You’re Hired.”

The assurance of that headline is one that I like to keep in mind as we have a rich and timely opportunity to tell young people that this is a great time to pursue careers in science, technology, engineering, and mathematics (STEM). In good times and bad, these jobs are essential to making the world a better place, to lifting our quality of life, and to offering the likelihood of life-long job security. In the STEM fields, there will be good jobs. Even during the trying times of the 1930s, we still saw the Hoover Dam and Golden Gate Bridge open, the first modern commercial airliner introduced (the Boeing 247), Teflon and nylon invented, and the uranium atom split. The marvels of every age since have only come faster and faster thanks to our powerful community of STEM professionals.

As one of my favorite aspects of going to the movies is seeing the slate of coming attractions, I’ll give you a preview of what is coming at TMS regarding outreach to young people with these positive messages . . . we are working through the American Association of Engineering Societies to undertake work that would formalize a core body-of-knowledge of key engineering concepts for K-12, the advocacy of STEM is one of the central talking points of TMS leadership when we engage in Congressional visits on Capitol Hill, and a sub-committee of the Society’s Public and Governmental Affairs Committee is developing a high-school focused program called *Materials Explorers*. In good sequel fashion, *Materials Explorers* is the follow up to our popular outreach-to-youth program called *Comic-tanium™* (“the super materials of the superheroes”).

Efforts like these and complementary initiatives by so many other well-meaning organizations will hopefully result in us never having to ask, “O scientist or engineer, where art thou?” (Sorry, that’s a bonafide groaner.)

# JOM

Volume 69

Number 3

March 2017



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