

# Arthur Lange and The Spectrotone Chart

By [Peter Lawrence Alexander](#) / June 6, 2009

A 66-year old undiscovered gem for orchestration, MIDI mockups and mixing is found in a box, shrink wrapped and ready to go.



Arthur Lange was a songwriter, composer, orchestrator and conductor who came out of Tin Pan Alley. He composed music for over 120 films. He was nominated four times for an Oscar. But he never won one. In 1929, he became head of the music department at MGM. Throughout his career, he was music director at several studios and in 1947 organized the Santa Monica Civic Symphony which he conducted. He also helped create ASMAC, the [American Society of Music Arrangers and Composers](#).

Arthur was an educator and he wrote numerous books, including, for 1926, the definitive guide to dance band arranging called *Arranging For the Modern Dance Orchestra*. He taught at the Los Angeles Conservatory of Music which later became Cal Arts.

But Arthur also created a unique booklet and matching colorized chart. And it's that combination that merits our attention.

He titled the booklet/chart combination with a pseudo-scientific name that while sounding right for 1943, today sounds more like something you'd use to pick the right paint color for your home at Lowes. He called his colorized chart, the *Spectrotone Chart*. And the companion booklet, which is only a series of 8.5 x 11 sheets folded sideways and held together with two staples, he called *The Spectrotone System of Orchestration*.

Don't be put off by the quaint name, because what Arthur created, which has daily practical use for both live and electronic scoring, and mixing, is nothing less than the Rosetta Stone of orchestration.

In his own words, the Spectrotone System of Orchestration is, "a colorgraphic exposition of tone-color combinations and balance as practiced in modern orchestration."

The chart is organized by the 88 keys of the piano with each key numbered. The bottom A is 1, and the highest C is 88. Eight colors are used with the lowest pitches colored Purple and the highest, White. The simplistic view is that the chart follows the keys of the piano scale wise. But the real view is that the colors reflect not only the individual instrument's range but also the timbre of the instrument's sound as it's played up the overtone series.

The color choices make a lot of sense enabling not only precision orchestral combinations, live and electronic, but also provides a gracious way to communicate with producers and directors in a language they'll understand since each color has a single adjective to describe it.

White = Brilliant  
Yellow = Bright  
Green = Pleasant  
Blue = Rich  
Orange = Golden  
Red = Glowing  
Brown = Warm  
Purple = Mellow  
Shaded (Cross-hatched) = Dull  
Black = Indefinite

Each tone color has an additional timbre description, and multiple adjectives that indicate how intensity changes per articulation used for greater definition.

Lange's next step is showing how combinations are created. He has four: perfect, close, complementary and remote. As an exercise, I looked at the French horn in the Purple range to see what it blends best with. Working my way down the chart, I could easily see the zones where the French horn blends with the trumpet, tuba, the G-string of the violin, the C-string of the viola, and so on. When I compared my findings back to scores from Debussy to Mancini, it was a perfect match.

There's more to it than what I just described, but you get the idea.

How I found it is the stuff of accident.

This past week we re-launched the 50th Anniversary edition of Joseph Wagner's *Professional Orchestration: A Practical Handbook*. For the promotion, I kept looking for pictures and info on Dr. Wagner, all to no avail. Not even Oxford Online had a paragraph on him. On what must have been my 43rd search on Google, I found a monograph about Dr. Wagner written by Lance Bowling. So now I had to search for Lance Bowling. That search lead me to [Cambria Music](#).

Ever the detective, I called the Cambria number on a Sunday afternoon expecting to leave a message. Mid-message this fellow picks up the phone, and identifies himself as Lance Bowling, the *president* of Cambria Music and a former student of Dr. Wagner when he taught at Pepperdine.

During our conversation, Lance casually mentioned the Spectrotone Chart and gave me a thumbnail description of it. Hearing the interest in my voice, Lance sent it to me, along with two symphonies of Dr. Wagner's on CD, both of which had been conducted by Howard Hanson.

Inside the FedEx box was the booklet, the chart and a small ingenious work showing how to work out string stops.

It only took a few seconds to recognize what I was reading. In the 1920s, a classmate of Maurice Ravel's, Charles Koechlin, wrote the pre-eminent work on orchestration, detailing, unfortunately, in classical French language, insights into Impressionistic scoring, especially volume, and intensity. I have those books. And every so often I type in a few pages trying to use various free French-to-English online translators to learn.

It is long dreary work especially if you don't read or speak Classical French, which I don't. I even had a native French person try reading it to me. It was too difficult, even for her, because Koechlin wrote in the older classical French. So the knowledge is locked away, and the publishers, aren't too keen on the Yanks and the Brits getting a copy, which is one reason they never translated it into English.

But what Arthur Lange put in this 32-page booklet held together by two staples and accompanied by an 8-color chart is a visual key for understanding the kind of French coloristic writing that defines American film scoring.

And like so many wonderful things, they were just sitting in a box, actually several boxes, waiting to be rediscovered.

[Now they have been.](#)

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