you banged on the desk. Our servants were all retired or “resting” from show business. A gentleman called Rattlesnake-Oil Emery was handyman. One of the waitresses had done bird calls in a tent show. My father was very fond of people like that.

Well, where I do see some kind of “Rosebud,” perhaps, is in that world of Grand Detour. A childhood there was like a childhood back in the 1870s. No electric light, horse-drawn buggies—a completely anachronistic, old-fashioned, early-Tarkington, rural kind of life, with a country store that had above it a ballroom with an old dance floor with springs in it, so that folks would feel light on their feet. When I was little, nobody had danced up there for many years, but I used to sneak up at night and dance by moonlight with the dust rising from the floor. . . . Grand Detour was one of those lost worlds, one of those Edens that you get thrown out of. It really was kind of invented by my father. He’s the one who kept out the cars and the electric lights. It was one of the “Merrie Englands.” Imagine: he smoked his own sausages. You’d wake up in the morning to the sound of the folks in the bake house, and the smells. . . . I feel as though I’ve had a childhood in the last century from those short summers.

PB: It reminds me of Ambersons. You do have a fondness for things of the past, though—

OW: Oh yes. For that Eden people lose . . . It’s a theme that interests me. A nostalgia for the garden—it’s a recurring theme in all our civilization.

PB: Kane lost his Eden when the bank took him from his home, and you lost yours—

OW: —in Grand Detour? It was called Grand Detour because the Rock River circles there—it’s almost an island. I never even saw the ruins of my father’s hotel. It really was a marvelous little corner in time, a kind of forgotten place. . . .

PB: How old were you in those years?

OW: I don’t know exactly. It was just before and during my time at Todd. It burned down before he died, with all his jade collection in it. And he came out of the fire in his nightshirt after everybody thought that all was lost—came out of the flames with a bird cage and, under his arm, a framed picture of Trixi Friganza. She’d been one of his old girlfriends . . . Can I go now?

PB: OK.

OW: Good night.

How I Broke the Rules in Citizen Kane

GREGG TOLAND

There’s been a good deal of gratifying discussion recently about the photography of Orson Welles’s first movie, Citizen Kane. The gist of the talk has been that the cinematography in that film was “daring” and “advanced,” and that I violated all the photographic commandments and conventions in shooting the picture.

Right away I want to make a distinction between “commandment” and “convention.” Photographically speaking, I understand a commandment to be a rule, axiom, or principle, an incontrovertible fact of photographic procedure which is unchangeable for physical and chemical reasons. On the other hand, a convention, to me, is a usage which has become acceptable through repetition. It is a tradition rather than a rule. With time the convention becomes a commandment, through force of habit. I feel that the limiting effect is both obvious and unfortunate.

With these definitions in mind, I’ll admit that I defied a good many conventions in filming Citizen Kane. Orson Welles was insistent that the story be told most effectively, letting the Hollywood conventions of movie-making go hang if need be. With such wholehearted backing I was able to test and prove several ideas generally accepted as being radical in Hollywood circles.

Welles’s use of the cinematographer as a real aid to him in telling the story, and his appreciation of the camera’s story-telling potentialities helped me immeasurably. He was willing—and this is very rare in Hollywood—that I take weeks to achieve a desired photographic effect.

The photographic approach to Citizen Kane was planned and considered long before the first camera turned. That is also unconventional in Hollywood, where most cinematographers learn of their next assignments only a few days before the scheduled shooting starts. Altogether, I was on the job for a half year, including preparation and actual shooting.

Although it was Welles’s first effort in movies, he came to the job with a rare vision and understanding of camera purpose and direction. It was his idea that the technique of filming should never be evident to the audience. He wanted to avoid the established Hollywood conventions, most of which are accepted by audiences because of their frequent use. And this frequent use of conventions is dictated by pressure of time and reluctance to deviate from the accepted.

As a case in point, depth of field nearly always is sacrificed in Hollywood productions. The normal human eye sees everything before it

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The attainment of an approximate human eye focus was one of our fundamental aims in *Citizen Kane*. It took a great deal of doing, but we proved that it can be done.

We solved the depth-of-field problem by means of preproduction testing and experiment. We built our system of "visual reality" on the well-known fact that lenses of shorter focal length are characterized by comparatively greater depth, and that stopping down a lens increases the depth even further.

The tendency in Hollywood has been to stop down to \( f/3.5 \) occasionally in filming interiors. More often the working aperture is between \( f/2.3 \) and \( f/3.2 \). The use of the \( f/3.5 \) aperture is still uncommon enough to be cause for conversation in the film capital. Yet any professional or amateur who has used short-focus lenses knows that the increase in depth obtained by stopping down from \( f/2.3 \) to \( f/3.5 \) can make quite a difference.

But we wanted to stop down considerably further. By experimenting with high-speed films we discovered that lens aperture could be reduced appreciably, but that we still weren't able to stop down enough for our purposes. This meant that an increased illumination level had to be obtained. And since we were already violating Hollywood tradition by using ceilinged sets, we were unable to step up illumination by means of extra lights mounted on catwalks or strung above the scene.

The Ward "Opticoating" system developed at the California Institute of Technology, proved to be one factor in the eventual solution of our lighting problem. Being essentially a method of treating lens surfaces, Opticoating eliminates refraction, permits light to penetrate instead of scattering, and thus increases lens speed by as much as a full stop. Our coated lenses also permitted us to shoot directly into lights without anything like the dire results usually encountered.

Another aid in solving our small-aperture problem was the twin-arc broadside lamp, developed for Technicolor work. We began to employ these lamps before we hit upon the use of the high-speed film which we eventually chose. The combination of coated lenses, arc broadside lamps, and the fastest available film made it possible to photograph nearly all interior scenes at an aperture of \( f/8 \) or even smaller. I shot several scenes at \( f/11 \) and \( f/16 \). That's a big jump from \( f/2.3 \) and it's certainly unconventional in Hollywood filming.

Even the standard 47- and 50-mm. lenses afford great depth of field when stopped down to \( f/11 \) or \( f/16 \). And the shorter-focus wide-angle lenses act virtually like human eyes, providing almost universal focus at such small apertures. In some cases we were able to hold sharp focus over a depth of 200 feet.

I referred previously to the unconventional use of ceilinged sets. The *Citizen Kane* sets have ceilings because we wanted reality, and we felt that it would be easier to believe a room was a room if its ceiling could be seen in the picture. Furthermore, lighting effects in unceilinged rooms generally are not realistic because the illumination comes from unnatural angles.

We planned most of our camera setups to take advantage of the ceilings, in some cases even building the sets so as to permit shooting upward from floor level. None of the sets was rigged for overhead lighting, although occasionally necessary backlighting was arranged by lifting a small section of the ceiling and using a light through the opening. The deep sets called for unusually penetrating lamps, and the twin-arc broadsides mentioned earlier filled the bill. The ceilings gave us another advantage in addition to realism—freedom from worry about microphone shadow, the bugaboo of all sound filming. We were able to place our mikes above the muslin ceiling, which allowed them to pick up sound but not to throw shadows.

There were other violations of Hollywood tradition in the photographic details of *Citizen Kane*. One of them resulted from Welles's insistence that scenes should flow together smoothly and imperceptibly. Accordingly, before actual shooting began, everything had been planned with full realization of what the camera could bring to the audience. We arranged our action so as to avoid direct cuts, to permit panning or dollying from one angle to another whenever that type of camera action fitted the continuity. By way of example, scenes which conventionally would require a shift from closeup to full shot were planned so that the action would take place simultaneously in extreme foreground and extreme background.

Our constant efforts toward increasing realism and making mechanical details imperceptible led eventually to the solution of all the problems we had created for ourselves. As we avoided direct cuts, so we steered clear of traditional transitions. Most of the transitions in *Citizen Kane* are lap-dissolves in which the background dissolves from one scene to the next shortly before the players in the foreground are dissolved. This was accomplished rather simply with two light-dimming outfits, one for the actors and one for the set.

The dissolve is begun by dimming the lights on the background, eventually fading it out entirely. Then the lights on the people are dimmed to produce a fade-out on them. The fade-in is made the same way, fading in the set lights first, then the lights for the people.

Intercutting was eliminated wherever possible, with the idea of achieving further visual simplification. Instead of following the usual practice of cutting from a close-up to an "insert" (which explains or elaborates upon
the close-up), we made a single, straight shot, compressing the whole scene into a single composition.

Here's an example. Where the idea is, to show an actor reading something, we don't show a close-up of the actor and then follow it with a cut to the reading matter "insert." We simply compose the shot with the actor's head on one side of the frame and the reading matter on the other. In one such case in the filming of *Citizen Kane* the actor's head was less than sixteen inches from the lens, the reading matter was about three feet away, and a group of men in the background was twelve to eighteen feet away. Yet all three components of this scene—actor in foreground, reading matter, and group—are sharp and clear to the audience.

My focusing was based on the principle of depth of field. Knowing the focal length and other characteristics of the lenses we were using, I worked out the various focal points as I came to them. By following a depth-of-field table in using any lens, you can always tell just where to set your focus in order to attain overall sharpness within required limits. It's an important fact, however, that much depends upon the properties of the lens in use at the time—and its characteristics should be determined carefully before any attempt is made to use this zone-focusing technique.

Such differences as exist between the cinematography in *Citizen Kane* and the camera work on the average Hollywood product are based on the rare opportunity provided me by Orson Welles, who was in complete sympathy with my theory that the photography should fit the story. I have been trying to follow that principle for some time in an effort to provide visual variety as well as a proper photographic vehicle for the plot. Fitting *Wuthering Heights* and *Grapes of Wrath* and *Long Voyage Home* to an identical photographic pattern would be unfair to director, writer, actors, and audience.

Style too often becomes deadly sameness. In my opinion, the day of highly stylized cinematography is passing, and is being superseded by a candid, realistic technique and an individual approach to each new film subject.

You will accomplish much more by fitting your photography to the story instead of limiting the story to the narrow confines of conventional photographic practice. And as you do so you'll learn that the movie camera is a flexible instrument, with many of its possibilities still unexplored. New realms remain to be discovered by amateurs and professionals who are willing to think about it and take the necessary time to make the thought a reality.

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**Score for a Film**

BERNARD HERRMANN

*Citizen Kane* was the first motion picture on which I had ever worked. I had heard of the many handicaps that exist for a composer in Hollywood. One was the great speed with which scores often had to be written—sometimes in as little as two or three weeks. Another was that the composer seldom had time to do his own orchestration. And again—that once the music was written and conducted; the composer had little to say about the sound levels or dynamics of the score in the finished film.

Not one of these conditions prevailed during the production of *Citizen Kane*.

I was given twelve weeks in which to do my job. This not only gave me ample time to think about the film and to work out a general artistic plan for the score, but also enabled me to do my own orchestration and conducting.

I worked on the film, reel by reel, as it was being shot and cut. In this way I had a sense of the picture being built, and of my own music being a part of that building. Most musical scores in Hollywood are written after the film is entirely finished, and the composer must adapt his music to the scenes on the screen. In many scenes in *Citizen Kane* an entirely different method was used, many of the sequences being tailored to match the music.

This was particularly true in the numerous photographic "montages," which are used throughout the film to denote the passing of time. When I first saw the picture I felt that it might be interesting to write complete musical numbers for these montages. In other words, instead of a mere atmospheric or rhythmic cue, a brief piece would be written. Welles agreed, and once the music was set, cut many of his sequences to match the length of the pieces.

The most striking illustration of this method may be found in the "breakfast montage" between Kane and his first wife. Here, in the space of three of four minutes, Welles shows the rise and fall of affection between two married people. The setting is a breakfast table. The young couple enters, gay and very much in love. They talk for a few seconds, then the scene changes. Once more we see them at the breakfast table, but the atmosphere has changed. Discord is beginning to creep into the conversation. Brief scene after brief scene follows, each showing the gradual break-