

STEADICAM

Inventing the Steadicam®

Part 1: Code Name “Pole”

by Garrett Brown

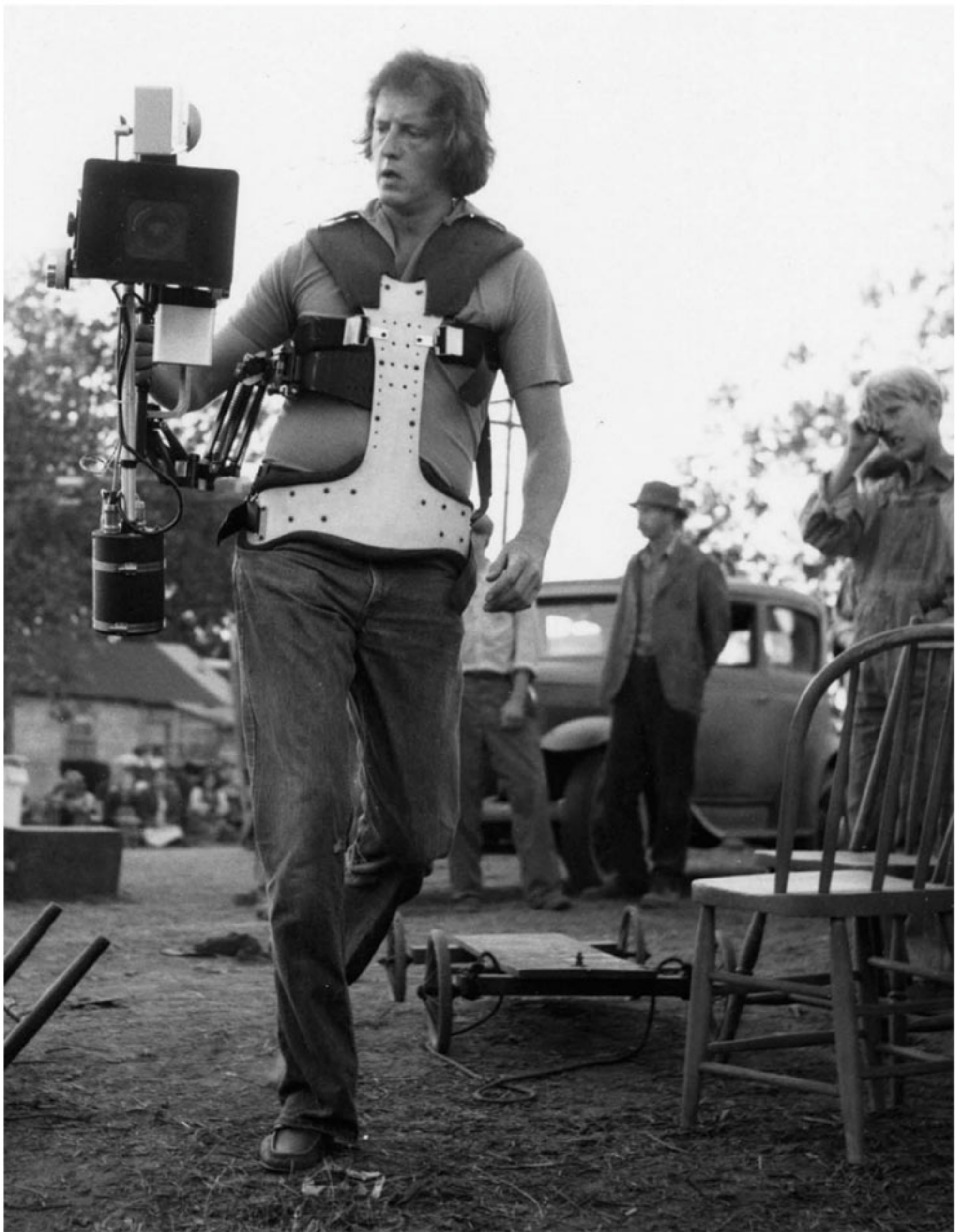
excerpted from his forthcoming book

PHOTOS AND ILLUSTRATIONS
COURTESY OF GARRETT BROWN

Garrett Brown on the set of *Bound for Glory*.

26 CAMERA OPERATOR: STEADICAM / GARRETT BROWN





Introduction

Garrett Brown had been working on a prototype of what would become the Steadicam. He formed The Moving & Talking Picture Company of Philadelphia, New York and Gradyville, with good friend Warren Paul as the company's producer and sales rep in the New York office.

Garrett explains: "The Pole' became our code name for the whole project. My first experimental version had been cobbled out of plumbing pipe and lead ingots, as a simple pole with a weighted t-bar at the back. The camera was bolted to the front and I held it at the center-of-balance and ran around the Pennsylvania backwoods, recording the results on an Akai 1/4" reel-to-reel video recorder."

How the Pole became the Steadicam involved many changes and many people. These three excerpts from Garrett's book chronicle some of the nail-biting events in the process. Note some of the other comical names they used to conceal it!



Garrett with the "handheld crane" prototype.

From Chapter 8, "New York"

It was clear to Warren and me that ordinary unconfident mortals might not be good prospects for something as radical as the Pole, but a month later we suddenly got a customer. John Wilcox was a genuine hotshot. He was hired to direct a segment for ABC's *Monday Night Sports Special* about Robyn Smith, the celebrated and beautiful female jockey who would become Fred Astaire's youthful bride. Wilcox had heard about my invention from his cameraman, Urs Ferrar, who owned an equipment rental house in New York. Urs and John watched my little video demo and hired me on the spot. They had been scratching their heads over a sequence that was a perfect opportunity for my mysterious rig. Wilcox wanted a single, long, uncut tracking shot preceding Robyn as she walked the 200 yard flagstone path from the 'weighing room' at the Saratoga Springs racecourse to the paddock where the crowd

could inspect the thoroughbreds.

John said, "Do you have a version in 16mm?"

I said, "Of course."

It was July 14th. We had three weeks.

I had already tried hanging my Eclair on the iron pole but it was heavy and much too flexible—the camera visibly whipped around as I walked. I met Warren in Manhattan the next day to go to Canal Street, home of New York's remaining WWII surplus stores, where bargain-lots of just about every human artifact were still to be found. Warren had remembered seeing racks of rectangular aluminum box-beams in all sizes, thin-walled and light, but immensely rigid.

We drove downtown and parked his old Volvo and within a half hour had bought several eight-foot lengths of rectangular one-inch by two-inch extrusion. We set a piece between the curb and the street, and Warren stood on it to prove that it was strong.

Back in Gradyville, Carl Ewing helped me square off the ends and make an impressively stiff and shiny T-bar rig with a handle that could lock at the balance point between the camera in front and vertical section in back where our new Kenyon gyro replaced the weights. John Wilcox didn't intend to record Robyn's dialogue, so he wouldn't care if my rig sang with the gyro's high-pitched duet of beating tones. Carl also helped me mount the five-foot fiber optic bundle from Dr. Siegmund so its lens could peer through the eyepiece of my camera, and we attached the viewing end to the headband.

The result wasn't miraculous. Because the 16mm image had to squeeze through an 8mm bundle, it was exceedingly dim and the real world was comparatively, painfully brilliant. Only if I squinted the other eye like Long John Silver, could the viewfinding eye see what I was shooting! At the last minute, I cut a hole through one lens of a pair of dense sunglasses, threaded the bundle through the opening, and committed my fortunes to that notoriously absent-minded

guardian angel of inventors (and fools).

On August 8, 1972 I stood on my opening mark outside the weighing room door, holding the handle of my newly built, complicated-looking rig, whose mysterious bulges—cardboard boxes draped with black velour—concealed the fact that underneath it was still a pole. The camera was in front, the disguised gyro sang its intriguing song in back, the black garter snake viewer writhed up and through the hole in my shades. I felt like the cyborg from a cheesy science fiction film, but Robyn Smith was oblivious—she had in mind only the impending race and her fierce competition with the male jockeys.

Wilcox called 'roll camera' and on 'action' the door flew open and Robyn came striding out, brilliant in her silks and walking fast. I backpedaled frantically, the miniature flickering figure in my right eye looming into a head-and-shoulders shot as I lost my way through the over-bright monocular world in

my other eye. My assistant unhelpfully whispered "No!" as I backed up the wrong path, and Smith, ignoring me, continued on her way to the paddock. For 50 frantic yards, I carried her in an increasingly distant profile twisting my head around to see how I might get back near her; finally lurching across a flower bed, blindly lifting my legs like a stork as she entered the paddock. I held the 'pole' up as high as possible, shooting between the top two rails as she mounted her horse and jogging alongside as she circled the enclosure.

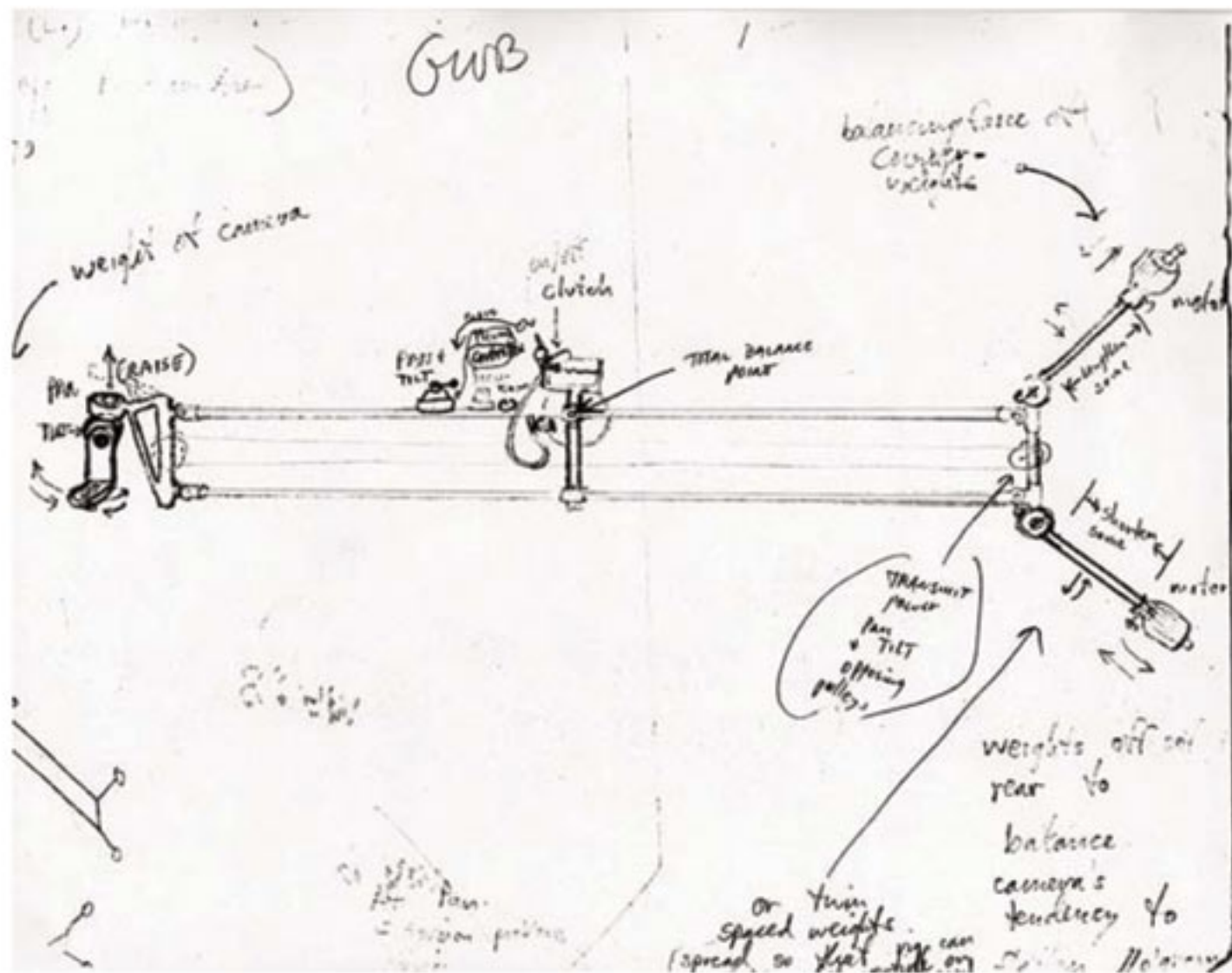
There was only one take. John Wilcox was a veteran, not given to conversational flourishes. He said, "Have we got any usable pieces? I said "Yes."

I drove home in a cloud of exhaustion and unhappiness. The protruding fiber bundle had jerked the eyepiece and caused the image to swim in and out of view, so I was quite unsure of the results. Urs Ferrar had been kind, but the other cameramen gazed upon me as if I was from Mars.

A couple of weeks later I called John and asked how the shot had turned out. He laconically said 'fine' but I missed seeing it on the air and didn't have the nerve to ask for a videotape. Wilcox recently told me he used the entire shot from beginning to end in the broadcast; and his boss at the time, the late great *Roone Arledge*, pronounced it to be sensational!—the look, the 'bally' operating choices, the diverging and rejoining, the changing sizes!

I never knew. *Roone* was a hero of mine and his reaction would have helped my morale, but it was already clear that even with the black cloth and phony lumps and bumps, no simple T-bar was likely to stand the movie business on its ear. My attorney, *J Donald McCarthy*, had given me a sheaf of 'Agreements-of-Secrecy,' and I had awkwardly insisted that John have his entire crew sign them, even though the object itself remained hidden under black cloth, but I couldn't conceal the thing forever! Worst of all, *Howard K Dearborn* had come to light in my patent search, and his vaguely similar (and equally primitive) contraption, circa 1960, would have rendered the simple Pole unpatentable.

I specifically remember being puzzled, even alarmed, that *Howard Dearborn's* device had apparently not been successful.



Early sketches and notes, some nearly indecipherable now, show the genesis of the "crane" version.

His gadget and mine shared one irritating characteristic—if you tilt up a camera-on-a-stick, it also rises in the air—but still, where was it? Why wasn't it being used and why hadn't *Howard* become famous and rich?

I dragged out dozens of my sketches from the early days of the Pole concept and spread them out on the floor and repeatedly studied them over a long weekend retreat in a motel. Some were bizarre—dawn's earliest alpha-wave glimmers. Others might actually have worked, but were too weird to be carried onto a film set.

The most detailed and practical drawing of all showed a parallelogram arrangement of pipe—like a miniature hand-held crane—that would preserve the stability of the pole but keep the camera level when it boomed up and down!

I distinctly recalled the euphoria that accompanied finishing this drawing. I stared and stared at it and began to exult all over again. [See illustration above.] It was complicated! It was probably patentable! It would do the wonderful Pole-type inertial trick, but the lens could be at any height from floor to ceiling, booming smoothly up and down while I strolled effortlessly along, with the quintessential 'look' on my face, peering through my new big fiber-optic bundle at the bright and perfect image!

My weary present-day eye looks at this sketch and sees its obvious flaws. My too-eager 1972 eye was dazzled, shot through with the same moonbeams that have lured inventors on, ever since a hirsute ancestor tried holding the arrow and releasing the bow! I knew that this baby would be a success. I

GBS
Garrett Brown
Cinema products

C.P.B.

CINEFLEX

Film

Cine

FREEDOM 35
~~Aerocam~~ TRANSCAM
CPB-35
CP-35-B

~~FREECAM~~

CINEBURDEN

CINECAM

Aerocam

Hovercam

Stabile

AMBICAM

TRAVCAM

Steadicam

STEADICAM

Float

Glide

TRANSINE

CINETRAN

Fly.

Cine glide CINEGLIDE

TRANSCAM

Liberate

5000 SHARES @ 10⁰⁰ per.

worth 5.60
will issue for 16⁰⁰ - 18⁰⁰

+ 1/2 royalty

Press on patent

TRANS CAM

EAGLE

Hawk

shorten torpedo tubes

pelvicam

knew that the Hand-held Crane would revolutionize the movies and get an Oscar, and I fell asleep at the table with my head resting on my wonderful drawing.

Funny. I've never been able to recover that degree of pure self-delusional excitement—even when the real thing finally came along and the Oscar was clutched in my mitts!

From chapter 9, "Bridgeport"

The Pole was too simple and too impossible to protect, but the parallelogram version still lured me on. I believed that it would work better and look plenty complicated and might even be patentable.

At his machine shop Carl Ewing introduced me to a customer named Ren Meisenhelder, a local engineer with some metal-working machinery of his own. Ren signed my agreement of secrecy, but when I stripped the concealing clutter from the simple T-bar I had used at Saratoga, he said, "That's it?" He inspected my sketch and my remaining pile of aluminum box beams and listened to my vague plan to pan and tilt with a system of gear-belts. He dryly told me his rate: ten dollars per hour. Over the next two weeks Ren spent fifty-two hours on a series of beautiful drawings, each more complicated than my most feverish dreams.

Two months and several thousand dollars later, Meisenhelder had turned my remaining Canal street aluminum into a deluxe-looking hand-held crane; but three ever-more-precise worm-gear sets had proved too jittery to pan the camera on its welded yoke.

The tab for machining and aligning the final 'grade-fourteen' worm set alone would be thousands more; and we hadn't begun to deal with the web of belts for tilting or even the means to raise and lower my increasingly massive stabilizer.

Meanwhile Dick DeFrenes at NFL Films had milled a wide rectangular opening into the top of the Eclair camera and made its normal viewing optics removable on a stalk. But when the big fiber optic bundle arrived from Dr Siegmund, its narrow custom end block scraped against the fragile rotating disc of the Eclair's shutter. Dick thought we could machine away an additional sliver of the thin metal cover, but Siegmund predicted disaster: "Squeeze it once in a vise and it'll go black, black, black!" The Cine-Turkey was therefore still ludicrously non-functional when we were offered a 16mm job in Hartford, Connecticut which the aforesaid guardian angel may have intended as a test.

The Nature Valley Arts Center occupied a long narrow converted mill, which as a public service was heated by



Garrett and 'The Pole': First use of the 'big' fiber-optic bundle, on a Fidelity Bank spot.

Connecticut Natural Gas, who wanted a visual tour of the building showing the local painters, potters, printmakers, weavers and metalsmiths cheerfully clanking and clacking away in sight of one another, flanked by a multitude of windows that would have let 'ordinary' heat escape expensively into the firmament. I unhesitatingly offered them something revolutionary: The "Brown Walking Boom" would 'fly' the lens, without dollies or rails, over, around and through the work areas of the artists in a single long uncut two-minute shot. I hung up in a cold sweat, stunned at my recklessness. I had specifically promised to boom up and down... and pan and tilt... and levitate and transmute lead into gold for god's sake! And we were due in Hartford in a week!

An LA inventor named Chad O'Connor had just announced a miniature balanced version of his famous silicone-damped tripod head. After a marathon telephone call he agreed to let me have his 'Model 20' prototype to bolt onto the front of my crane. Now I could at least lean forward and tweak the camera's angle by hand if required. And since the top of the Eclair had been opened to the elements but the big bundle wouldn't yet fit, Dick DeFrenes agreed to jury-rig the small fiber optic viewer in its place.

Contemplating the job of both directing and operating, I prudently hired big strong Dave Watts to give this new baby a spin. (We would later joke that the biggest strongest cameraman in the land had been "sent home in a pillowcase" after one day with the old 'Brown Walking Boom'!)

On the evening before the shoot, Ellen and I met at Meisenhelder's home shop before heading off to Connecticut. She had picked up the little O'Connor fluid head from the Greyhound depot and I brought my camera. We still needed a half-dozen holes to be precisely drilled and lacked two small—but vital—machined parts to make the crane itself functional. We arrived at Ren's at seven o'clock—a half-hour later than planned. ➔



Dave Watts muscled the cranerig for the Connecticut Natural Gas spot, past painters and potters...

Perhaps he was annoyed that we were late, perhaps he was hungry, but he drilled two holes and then suddenly, astonishingly, announced, "I can't work on this any more."

I said, "Why not? We have to be in Connecticut tonight! We shoot tomorrow morning!" etc, but he started putting away his tools.

Ren Meisenhelder's face and physique have departed without prejudice from my memory. I think he was a spare lean man, perhaps with a fussy mustache, but I have total recall of poor Ren's immortal exit line—we've quoted it ever since to avoid chores we don't feel like doing. He said, "I have Men to Supervise tomorrow!"

And that was that.

Ellen's mute shocked disapproval was almost more persuasive than all my spluttered protestations but Ren didn't yield. We gathered up the bits and pieces and departed in anger. I never saw him again. (He recently located me on the net and sent me a beautiful hand-made drawing of the Brown Walking Boom.)

Ellen and I stopped at the first interchange on the New Jersey Turnpike and worked the payphones for an hour to find a machinist somewhere, anywhere, on the way up to Hartford. I knew that Bridgeport, Connecticut was the original home of the American machine-tool industry and the eponymous 'Bridgeport' was the world's best-known milling machine. But operators could only give out one number at a time. After trying a number of hypothetical company names, mine gave me the number of a company called Bridgeport Machine and I dialed, but there was no answer. Ellen, however, bonded with her operator and persuaded the woman to read on down the page. She told us that a company called Bridgeport Tool and

Die had the only after-hours emergency number listed. It was 10pm. After twenty rings it was answered by a tired-sounding, slow-talking man. I can't now recall the breathless arc of my story. I must have touched on our struggle to revolutionize camera work, our great opportunity; the refusal of our machinist to make the last couple of pieces—at which point the man interrupted to say that he couldn't help us in any event. They were closed. He was the owner, not a machinist. He hoped we would find somebody, but he couldn't help us.

I told him what Ren had said. There was a pause, and something between a chuckle and a sigh. "Men to supervise, eh?"

There was an even longer pause when he heard that we were still in New Jersey.

At 12:30am Ellen and I pulled into the parking lot of a long dark industrial building in Bridgeport, Connecticut. A Cadillac was sitting in a pool of light at the side entrance. Its owner was a short, stocky, silver-haired old man with big hands, who got out and looked us over and said simply, "I'm Wilson. Let's see what you've got," and he unlocked the big door.

By 8am the next morning we were standing at the doorway to the Nature Center, strapping the fiber-optic headband on Dave Watts' broad forehead.

Mr Wilson had fumbled in the dark to find the light switches and with a series of echoing clacks, progressively lit up one end of his immense shop. Stretching away for a hundred yards into the gloom were giant lathes and mills and presses and grinders of a scale to turn locomotive parts, many covered with dust and apparently disused.

The old man inspected our few dinky pieces and gravely listened to my description of the work remaining and shook his head, saying he hadn't done any of this in years. But with the

ghost of a twinkle he bustled off into the dark, turning on distant lights, returning with drill-bits, poking around the least-enormous lathe to find the heavy key and tightening my slender axle-shaft into the jaws of its giant chuck.

He said, "Here goes," and punched a green button, and the lamps dimmed as the big machine began to turn with a sound like a trolley-car starting down the tracks. Wilson's years seemed to drop away as he twirled the cutting tool along to shave a traveling sliver of excess steel from the shaft and took its measure with an oversized micrometer.

At the end, he refused to take any money. "Men to supervise! I'll have to remember that one!" he said, as he waved us on our way at 2am.

The Gas Company commercial was a hit. Watts hugely exerted himself, twisting his head to body-English his shots, writhing with the bundle strapped so tightly to his head that his temples bulged. He held the crane up by its handle, and manipulated the camera with his other hand, and Ralph Hotchkiss darted alongside to delicately adjust the lens without bumping the rig. Watts glided past potters and painters and appeared to be enjoying himself. The footage was amazing. I was convinced that nothing like it had ever been seen, but watching someone in the act of operating the 'Walking Boom' was unnerving. It looked extremely awkward and heavy but Watts was game and joked that it was a 'gas.'

At the end of the day I finally got to pick the thing up, strap on the bundle and try a run down the long porch. Even in my immense weariness, the dim image in my right eye was thrilling—smooth and powerful—the lens rising up from just above the floor to chest-height as it rushed along. But one pass down the 200 foot porch and I was whipped.

I had my 60th cigarette since leaving Bridgeport, and headed back toward Gradyville.

From Chapter 10, "Movers & Shakers"

The frenzy of work grew and grew, ostensibly to pay for each new cycle of stabilizer upgrades. The six-foot fiber-optic snake would soon give the Éclair a brilliant, unique remote viewfinder, greatly useful by itself and indispensable to the Brown Walking Boom, and though lightweight dollies like the new Italian Elemack were beginning to appear on location shoots all over the world, I still hoped that my clumsy contraption would make them all obsolete.

We used it on a couple of jobs, amid blizzards of secrecy agreements, but its most serious drawback had not yet been discussed with Sandie or Warren or Ellen. The camera could reach nearly down to the floor, but a far more common need was to raise it to eye level and the crane simply wouldn't boom up above chest-high by itself. It had to be further lifted by

hand, and even for the Herculean Watts, it was too heavy to hold up for long. The dead weight of the Brown Walking Boom would need to be "floated" by something other than one's good right arm.

Poking through my old equipment, I found a beat-up body harness called a Leo-Pod, designed to support the early news cameras. With a piece of surgical tubing, I suspended the handle of the crane from the Leo-Pod's protruding shoulder bracket and the rig bounced alongside me; but as soon as I tried to lift it up the rubber slackened and my arm had to do all the work. Without even knowing who Robert Hooke was,

my unwitting encounter with his famous Law demonstrated that short springs or elastics provide a relatively hard 'ride' for whatever they suspend.

Even today, puzzles of that sort can send me off to roam the aisles of local hardware stores in search of inspiration, though our modern shrink-wrapped emporiums have fewer loose gadgets and implements out in the open that can actually be held and fiddled with and thought-provokingly examined.

That morning I came home with a brass pulley and an eight-foot length of industrial bungee cord and an urge to find out just how fifty pounds of weight might behave if suspended from a much longer 'spring.'

With the pulley tied to a rafter overhead and the bungee running up through it from the handle of the rig, I stretched it until the crane floated up off the floor and hovered lightly next to my hand. The difference was amazing. The entire rig rose up or

down several feet with just fingertip pressure.

With growing excitement I wondered if a series of pulleys at the top and bottom of the LeoPod's chest-piece, with that big bungee cord running up and down through all of them, might preserve the anti-gravity feel since the whole length of the eight-foot cord would still expand and contract.

A quick visit to a yacht supply store and some drilling and bolting and it was done. I strapped on the crusty old Leo-Pod. I hooked one end of the bungee onto the handle and stretched the other end up and down through all the pulleys and tied it off just as the rig lifted up and hovered alongside.

With the lightest possible grip on the handle I walked a few feet, and then began to run, faster and faster, right out the barn door and half-way along the back path before euphoria yielded to a new, soon-to-be-familiar pain in the right shoulder; but the 'floating' trick worked astonishingly well. The crane wasn't any less burdensome; in fact its mass now all hung from that one unfortunate muscle, but its height smoothly averaged out and it could be easily raised and lowered, even at a dead run!

For the first of many times to come, I had vanquished



The crane acquired a Kenyon gyro and was supported by a bungee cord running through yacht pulleys.

Hooke's famous Law by adjusting the 'rate' of an elastic suspension system; and since I could now both lift and boom the crane arm I could shoot with an astonishing range of heights from ground level to seven feet in the air.

The Moving & Talking Picture Company of Philadelphia and New York (if no longer of Gradyville) shot bank and car dealer and insurance commercials and our clients and their clients and all of our crews good-naturedly signed agreements before we trotted out the ever-more-secret 'Moving & Talking System' with its gyro singing from beneath the black Duvetyn.

The Device—formerly-known-as-the-Pole yielded ever more

afternoon I took the rig into Philadelphia and pursued Ellen through dockside alleys and under the dark approaches to the Benjamin Franklin Bridge and finally, impulsively, down the broad then-unremarkable steps of the Philadelphia Art Museum. That shoulder muscle still throbbed when the footage came back from the lab but the view through the lurching fiber optic finder hadn't prepared me for how hypnotically powerful it would all look on screen.

I cut the best five minutes into a continuously moving demonstration film and on Monday afternoon I cold-called the presidents of the two companies in Los Angeles that might plausibly shepherd the BELCH (Brown Effect Level Camera

The thing was as manifestly, painfully, absurd as if my ancestor's next try at the bow and arrow had been a huge teetering catapult, lethal to man or beast, but hopelessly non-portable!

seductive moving shots, in nearly every new script that came my way, and film folks were genuinely impressed, but I was unsatisfied and increasingly anxious and finally, during a 'walk & talk' of the now-familiar sort across a field for Agway Insurance, I looked over at cameraman Phil Parmet, stumbling gamely over the cowflops, floating my massive contraption, his shoulder racked by its bungee festoon, his fiber-optically constricted forehead twisting to see, and my heart sank. The thing was as manifestly, painfully, absurd as if my ancestor's next try at the bow and arrow had been a huge teetering catapult, lethal to man or beast, but hopelessly non-portable!

I couldn't imagine real-world movie-types lining up to buy this gizmo or having the nerve to bring it out on a set. The patent application was ready to file but I told J Donald McCarthy to hold up until we could get some sort of outside opinion (at least outside Philadelphia), as to the worth of my so-called invention, before we spent thousands more to protect its dubious particulars.

On a hot August weekend at the farm I loaded roll after roll of 16mm film and tried every moving shot I could think of. I strolled with three-year-old Jonathan down the back wagon road and wore myself out chasing Sandie running through the tall grass and bicycling around the driveway with Jonathan peering at me from his little seat over the back wheel. On Sunday

Holder) into the movie industry. Of course I didn't call it that. I didn't know what to call it! Nor did I know that these two men were soon to become bitter rivals.

An operator, a secretary and a vice-president listened to my headlong pitch and at last connected me to Robert Gottschalk, founder of Panavision, the world's leading camera-rental company. He had never heard of *Making Films in New York* magazine, much less of my 'Giant Periscope' helicopter rig, but he listened quietly as I described my impossible shots and declared my invention to be a 'revolution in cinematography.' Aware that Gottschalk had just announced his own much-heralded revolution—the silent hand-held 35mm Panaflex camera—I had the sense not to mention my vacuum blimp. Robert fished casually to see if he could extract any details and then abruptly transferred me back to Michael, his secretary, to schedule a screening several weeks hence in Tarzana. I was sweating by the time I hung up. This guy was smooth and self-assured in ways that I had never personally encountered—as if his achievements were real and didn't require my sort of wishful puffery.

Edmund DiGiulio was president of Cinema Products Corporation, newly famous for its popular CP-16 news camera. He answered his own phone and listened to my story and was completely forthright. He said, "If your gadget does do what you say it does, I want it." He even promised to sign my agreement of secrecy and we arranged that I would bring my film down to West Los Angeles directly after the visit to Tarzana.

The next morning I met Warren in New York to bring the workprint of our demo uptown to show Dick DiBona, head of General Camera, a rental house that coincidentally was Panavision's East Coast Agent. Dick brought in his partner, Milt Keslow, and both pronounced my unnamed invention to be sensational! DiBona immediately

suggested that there should be just one of these things in the world. Ever! General Camera would rent, and I would operate, the one-and-only prototype and we would keep the 'guts' perpetually secret (I had described only its black cloak). We would charge \$20,000 a week and split it 50–50!

"Kid, this thing'll never stop working!"

[The problem] was the undisclosed deficiencies of the CineTurkey, its weight and size and clumsiness and non-existent belts for panning and tilting.

DiBona had no interest in manufacturing and selling them—he just wanted General Camera to have proprietorship of this miracle-gadget and earn big hunks of rental income that wouldn't have to be shared with Panavision. Considering the state of my finances his scheme was terribly seductive, but we didn't pursue it. Warren and I just couldn't picture keeping the Device under wraps forever, sleeping beside it on location and never leaving it unattended! (In fact, a piece of blatant industrial espionage two years later on the set of *Marathon Man* would recall this dilemma.)

Warren also arranged screenings at CBS and RCA but both parties sent draconian 'disclosure' agreements, guaranteed to fend off any and all disclosures and we backed away.

A week later, Warren Paul and I flew out to LA with two 16mm prints of my demo. Panavision's new headquarters in Tarzana was immense, serene with skylights and atriums with

full-sized trees. I found out later that Gottschalk had recently hosted an open house during which he oddly, smirkingly, showed upstart rival DiGiulio one of Ed's own CP-16 cameras submerged in an indoor pond.

The Panavision projectionist let us into their state-of-the-art theater and took away my little film can and there we waited,

concealing our uneasiness from whoever might look down from the booth. After twenty minutes Gottschalk, balding and intense in an incongruous Hawaiian shirt, appeared beside us and said, "I'm Robert Gottschalk; let's see what you've got," and sat down across the aisle.

My film, a virgin print, was now somewhat dirty, as if much handled, but it did look amazing up on the giant screen. Gottschalk said "That's interesting" and glanced over at me several times but was increasingly fixated on the images—he acted like a Roman general being shown the 'effect,' but not the cause, of a machine gun.

After the lights came up there was an awkward pause and Gottschalk said 'interesting' again, but added that my device would be little more than a curiosity unless it could 'handle' a 35mm camera. If so, I asked, would he want to make a deal? He looked me up and down and then said "Of course." We danced around the questions that followed. It was clear that we had somehow provided remote viewing since no one's eyeball could possibly have stayed in contact with the camera. We also let on that the operator's hands were relieved of the weight. I told him that it could probably 'handle' a Panaflex, and he asked about the power requirements of the invention, which we assured him were minimal. (I already knew I'd have to get rid of the noisy, power-hungry gyro).

Gottschalk gave us a tour of Panavision's un-barn-like spaces with ranks of immaculate milling machines and then took us upstairs to his office—the biggest I had seen since Al Dana and I were ushered in to meet RCA producers 'Hugo & Luigi' whose identical desks sat 60 feet apart. Robert brought out his amazing Panaflex camera and Warren and I passed it back and forth while he skimmed my agreement of secrecy and took a phone call from the set of *Tom Sawyer* where, to his unconcealed irritation, his only other prototype had just been dunked in the Mississippi. He invited us to turn the camera on and I could barely hear the mechanism, even though film was rolling through it at 90 feet per minute!

Ten minutes later, Warren and I were back in the parking lot with our film in hand. I think Gottschalk hadn't quite believed his eyes. There on screen was my young wife and my child and my ancient house and barn, and here before him was myself: an obvious rube, a hick savant—like that banjo-playing kid in *Deliverance*—who had somehow stumbled over the Holy Grail of camera tricks which he, Robert Gottschalk, should logically have invented! Here was visible proof that the trick was feasible but unlike my later 35mm demo (which Stanley Kubrick would famously decode), there was no telltale shadow



‘The Pole’ underwent considerable changes before Garrett arrived on the set of *Bound for Glory*. Here he stands, with Haskell Wexler, on the Titan crane track that would be used to lower him into the migrant camp to begin his historic shot following David Carradine.

to suggest how these two-dozen shots might have been accomplished. And though enthralled by Gottschalk’s Panaflex, with its stylish leather panels and black anodized surfaces and creamy perfect paint, my thirty-one-year-old self had somehow remembered not to spill any of the beans!

Gottschalk never did sign our agreement. He expressed concern that The Lawyers, his and ours, were bound to cause trouble, and when Panavision’s much-modified document eventually showed up it was similar to the ones from CBS and RCA, and now unexpectedly stated: “...the camera stability problem is of course something that Panavision has already been working on.”

I would learn years later that our visit stirred up a secret hornet’s nest of activity behind closed doors in Tarzana. For months, while I was being distantly stalled and strung along and for two years thereafter, Gottschalk and his engineers spent over four million dollars trying to accomplish this stunt themselves. Gottschalk later averred that his inspiration had been those elastically suspended fish-carrying lunchpails he had seen swaying in back of delivery bicycles in Japan (which of course could be copied with impunity), but once he set his engineers to fishing in those unproductive waters, fate had delivered him a lunch of red herring!

That same afternoon Ed DiGiulio, a friendly, vital fellow with an impressive black mustache, came out to greet me in the reception area of Cinema Products’ new one-story build-

ing in West LA. He rounded up his boisterous engineers who sat around the conference table while my remaining virgin print ran through the projector and they hooted their amazement over the parade of astounding shots up on the pull-down screen with nary a scratch nor speck of dirt.

DiGiulio did not trouble to conceal his enthusiasm and said immediately that he was interested. I told him that I had already showed the demo to Gottschalk but Ed said nothing adverse about Panavision except to relate his dismay over Robert’s strange prank with the CP-16. He offered no disclosure document and said, “We are not working on anything like this; we would like to make a deal.”

But as we were leaving, he also stressed that the invention must be made to work in 35mm!

I said “No problem!”

Warren slept on the redeye all the way to Philadelphia, but I was wakeful and worried, and not because of any possible chicanery at Panavision—it was the undisclosed deficiencies of the CineTurkey, its weight and size and clumsiness and non-existent belts for panning and tilting. Despite the lightness of the Éclair, every shot in the demo had been accomplished in a stew of sweat and weariness. Saying that it added ‘only five pounds’ to the camera’s weight had been an outright lie: the thing could never handle a payload as heavy as the Panaflex unless we recruited an orangutan to carry it.

Worst of all, I had no way whatever to view a 35mm image. A fiber-optic snake with that huge cross-sectional area would cost \$30,000 and its two million glass fibers would outweigh a boa constrictor!

It was maddening and faintly sickening to contemplate. I had just showed the Hollywood movers and shakers that the impossible could be done, that human beings could walk and run and climb stairs and deliver sensationally smooth shots—but I neglected to say that only masochists need apply!

Back home, at the three extremities of my frantic orbit, no time remained for thinking about any of this. In Philadelphia, Anne Winn and I had begun recording the Kodak spots that would again bail out my unsteady finances, and my weekly visits to New York were tied up with Warren’s sales meetings. Early mornings at the farm were best, but Jonathan often came into our bedroom at dawn to make sure we were cheerful, and the alpha-wave cavalry never arrived—no inspired thunder-clap, no bolt from the blue, no ‘eureka’ leap-out-of-the-bath inspiration, showed up to redeem my unwise, incautious, snake-oil salesman ass...



© 2006 Garrett Brown. All rights reserved.

Camera Operator Magazine is grateful to have been chosen by Mr Brown to publish a first look at his autobiography. We eagerly await the opportunity to bring our readers more as it becomes available. We encourage you to send your feedback and comments to Garrett via www.soc.org