

# **PROBLEM IN SOLID**

**BY GEORGE O. SMITH**

## PROBLEM IN SOLID

Martin Hammer should have been prepared for anything. As the world's foremost producer of motion pictures, he should have taken any situation from earthquake to fatherhood without a qualm or a turned eyebrow. But Hammer had not seen everything—yet.

A noise presented itself at Hammer's office door. Not the noise of knocking or tapping, nor even the racket made by attempts to breach the portal with a heavy blunt instrument. It was more like the sound of a dentist's drill working on wood, or perhaps one of those light burring tools, or maybe even a light scroll saw.

Then, with all the assurance in the world, a man's hand came through the door, the fingers clenched about an imaginary doorknob. The hand swung an imaginary door aside and as it moved, the wood of the real door fell to the floor in a pile of finely-ground sawdust.

Once the imaginary door was thrust aside, the rest of the intruder entered, leaving the exact outline of his silhouette in the door.



He smiled affably and said, "I trust I'm not intruding!"

He was still holding the imaginary door open with his right hand. As he finished speaking, he stepped forward a step, turned, pulled the imaginary door shut a few inches, transferred it to take the inside knob in his left hand, and then stepping carefully forward, he thrust the imaginary door closed, his hand clenched around the imaginary knob. The act ended as his hand entered the real doorknob and there was the high-pitch whine of metal against metal like cutting a tin can with a bandsaw.

The intruder turned, walked across the office, and stood there in front of Martin Hammer. From a pocket he took a cigarette and a match and lit up, blowing a cloud of fragrant smoke into the air.

"I am delighted to meet you," he said.

At which point, Martin Hammer blew up.

He had been patient. He had been astounded. He had been sitting there with his chin getting lower and lower and lower as this ... this character walked through his door with all the assurance in the world. Then the bird had the affrontery to behave as though he had not invaded Hammer's office; had not ruined a fine oak door; and as though Hammer should have been glad to see him.

What added fuel to Hammer's explosion was the fact that the intruder seemed absolutely unaware of the ruination of the door.

"What the—" yelled Hammer. He leaped to his feet, ran around his desk, and faced the intruder angrily for only an instant.

Hammer launched himself at the intruder with intent to do bodily harm, mayhem, and perhaps a little bit of second-degree murder that might be juried into justifiable homicide.

He did not connect. The stranger disappeared at that instant, and Hammer's well directed blow fell upon thin air. Hammer, finding no resistance before him, fell flat on his face, which mashed the cigar into his mouth and burned a hole in his fine Persian carpet. He turned over and sat up, spitting out bits of tobacco mixed with equal parts of very bad language. Blankly he ran his hand through the spot where the stranger had been.

"Now," he said in puzzlement, "what in the name of—"

"May I apologize?" came a voice at the door. Hammer whirled and saw the intruder again, standing there with a rather dumfounded expression on his face.

Hammer grunted. At least he is now cognizant of his ruin-production, he thought. This was true. The intruder no longer had that fatuous expression that ignored the damage.

"Apologize?" exploded Hammer.

The intruder stepped through the ruined door. "I got the focus wrong," he said, "otherwise the image could have—"

"Image?" yelled Hammer.

The stranger nodded. "Image," he said. "Look, Hammer, you don't really think that I actually walked through that door, across your office floor, and then disappeared into thin air, do you?"

"Well ... and who are you?"

"My name is Tim Woodart. I'm an engineer."

"Look," said Hammer shakily, "I'd like to know what's been going on. As a producer of motion pictures, I am beginning to see the glimmerings of a fine idea. I sort of resent the destruction you've created, but it certainly carried off its point."

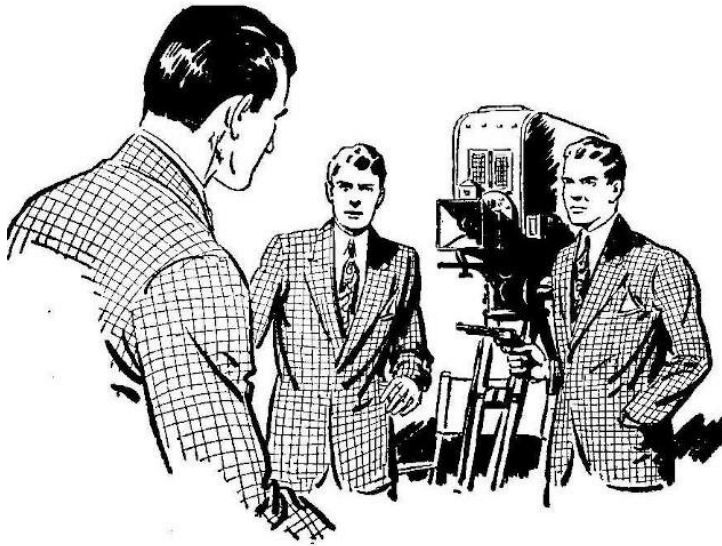
"I'll bring in the gear, too," said Woodart. "If you don't mind."

Hammer nodded. Whatever it was, Martin Hammer had just had his door broken in by the first of all true three-dimensional photography!

Harry Foster stood on a lonely stage and smiled at some mythical point in the mid distance. Dramatically he pointed, and as he pointed, across his face there came a change over his features. Normally handsome, Harry Foster's "bad" face was thrice as bad for the distortion into hatred. It was excellent acting.

The man beside the camera nodded. It was not only excellent acting but it was rather emotionally troublesome to be confronted

by a living, breathing image of yourself. You, watching you do something that you had done previously.



Harry Foster's hand stole up alongside of the cutoff button and he thrust it down viciously.

The scene stopped instantly and disappeared.

Foster, remaining beside the camera, swore. He rereeled manually a few yards and restarted the camera. He caught a previous scene's ending: a beautiful woman smiling shyly at another man. The scene's ending was brief, to a flash-over of Harry Foster standing in the center of the stage, and going through the same motions of smiling offstage, with the features changing from smile to scowl of hate.

Again Foster's hand flipped the switch and the image of Foster disappeared as did the settings on the stage.

Foster swore again. "There must be some way—How does he do this anyway?"

Foster opened the cabinet-like side of the solid camera and looked at the circuits. They were enigma to Foster, but there was some logic to it—there must be. You create an image and then wipe it away to make place for the next image—just as in common cinema. But in normal cinema it is possible to halt the film and project a still. That's what Harry Foster wanted—

He pulled a single tube from one circuit and snapped the camera on. The stage was blank. He replaced the tube and tried another tube removed by some distance from the first. He started the camera, and the stage flashed into being once and then went blank again. There was a tiny flash from the bottom panel of the machine and Foster looked down to see the indicator of a blown fuse.

Foster nodded. Obvious. To stop the wipe-away would mean that the next frame would be placed on top of the first. A double exposure would not work in the solids. Not without repealing that law of nature that states that two things cannot occupy the same space at the same time.

What he had to do was to stop the projector at the same time he stopped the wipe-away. Tim Woodart had fixed the machine so that the wipe-away completed the scene after stopping the works. Just a matter of safety.

Foster puzzled over the machine and restarted it again. He waited until the image of Harry Foster stared off stage and then he grabbed two tubes and jerked them out simultaneously.

The projector stopped; the scene remained. The image of Harry Foster stood there dumbly. Then it turned vaguely and looked at the camera and the man beside it.

"Hello, hero," sneered Foster.

The image blinked. "I've wondered what might happen," said the spurious Foster.

"Yes," chuckled the real Foster, "we have, haven't we?"

"I—," started the image, but he stopped and looked wildly around. "What do you want?"

"You know."

"I'll not do it! You ... we ... ah ... well, it's no go."

The real Harry Foster sat down in the director's chair. "I've had more time to plan," he said. "You're just an image—"

Foster snarled back, "Not now I'm not. I'm just as real as you are!"

"I'm the original; you came out of that camera."

"Someone is going to have a time proving it," replied the image Foster.

"Yeah," drawled the real Foster, "that's what I'm counting on!"

From within his coat, Foster took a revolver. Holding it on his image, Foster replaced the tube and watched the scene resume,



with a third Foster going through its paces. He snapped off the camera and the set disappeared, leaving the bare stage. He wiped his fingerprints from the place and then nudged the image Foster with the revolver.

"Out," he snapped, pointing with the gun barrel.

They went—in a death march.

A half hour later, the real Foster handed his image a drink. "Drink deeply," he said sarcastically. "You needn't be afraid to die—you never lived, you know."

The image Foster shook his head. "I've been alive as you have!"

The real Foster lifted his revolver and snarled: "We can put a stop to that!" He fired thrice and each shot slammed into Foster's stomach driving the man back against the wall. He crumpled, finally.

Then Harry Foster took a look around the living room of his apartment, shrugged, and left, tossing the pistol into a corner.

Lieutenant Miller looked down at the corpse. "Someone sure hated him," he said.

The man in the business suit nodded. "They had reason to," he said. He was Jacobson of the F.B.I. "Too bad. I'd rather he were legally punished."

"Me, too."

"What about his wife?"

"She's in the next room. Which reminds me—"

Lieutenant Miller went to the door and looked in quietly. "Look, fellows, just establish her. Don't bother grilling her."

Sergeant Mullaney looked up in surprise. Miller nodded. "This is one case I'm not going to kill myself solving," he said. "I just want to be certain that the murderer of Harry Foster isn't as obvious as a stone pillar on the corner of Hollywood and Vine. Is Mrs. Foster clear?"

Mullaney nodded. "Spending the whole evening with a friend."

"Friend corroborate it?"

Mrs. Foster smiled wanly. "She will if asked," she said.

Miller nodded. "My only regret, Mrs. Foster, is that his insurance will just about cover his embezzlements. The rest—"

"I wouldn't touch it—or him—with a ten-foot pole," she blazed.

Jacobson met Miller at the door. "He got around," he said. "Blackmail, embezzlement, and outright larceny. There's been talk of drug-peddling and white slave traffic. Why or how the bird managed to be such a thorough stinker and still maintain his position here I'll never tell you."

Miller looked at the coroner, who was just polishing up his job. Miller said, "Whoever did it did Foster a favor. Between you and me, we'd have had him between nutcrackers in another week."

Jacobson nodded. "Couldn't have been suicide?"

Miller shook his head. "After filling himself that full of lead, he was too dead to toss that gun. Furthermore, he was shot from greater than arm's distance. No," said Miller, "someone 'done him

in' and should possibly be commended. Plain case of: 'Too bad, thank God!'"

Martha Evers watched her image on the stage in the studio theater. Beside her was Martin Hammer who was watching the performance with interest. Martha was watching with wonder; Hammer had seen this thing at work before and was more concerned with the technical portions of the opus than the wonder of watching a life-sized, living, breathing, talking image perform.

On the other side of Martha Evers was Tim Woodart, who was just watching. He was more or less out of a job since professional photographers had taken over the job of making the performance.

"But how is it done?" she asked him.

"Same like any other of its kind," smiled Tim.

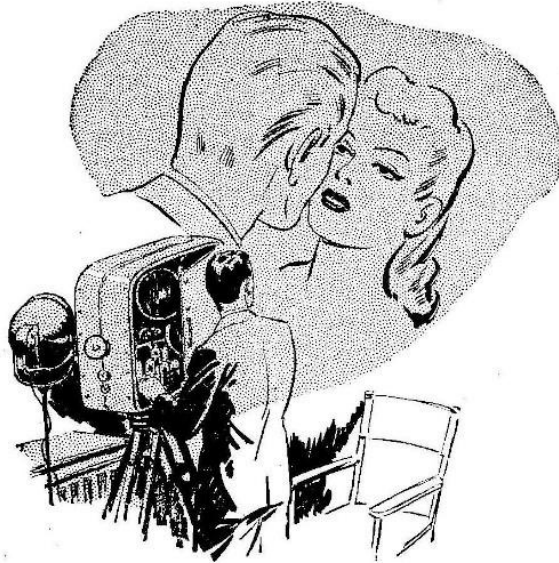
"But there isn't any other."

"Television is, sort of," he said. "Anyway, there is a three-way scan taking in the volume to be reproduced. Each atom in the original has its own characteristic charge and mass: this charge and mass is registered. When the reproducer replaces the real people with the image, the same scan forms real atoms where the real atom was in the original. The follow-up scan wipes the atom clear to make room for the next frame."

"How about this building atoms?" puzzled the girl. "Doesn't that make for radioactivity?"

"Uh-huh," he said, "but the radioactivity is really energy that we use to operate the machine."

The scene on the stage switched to a close-up of Martha and the picture's villain, one Jack Vanders whose leer was known across the continent.



The woman on the other side of Tim Woodart stood up and called "Cut it!" in a low contralto.

The stage cleared in a twinkle and the lights went up.

Martin Hammer leaned across the seats and spoke to the standing woman. "What's wrong, Mrs. Foster?"

"That won't do," she said. "Bad shot!"

Hammer thought for a moment. "There's nothing wrong with a close-up," he said. "It's done daily."

Jenny Foster smiled. "Yes," she agreed, "the screen fills up from top to bottom with the face, and the eyes look softly into the camera lens as the girl murmurs, 'I love you' and it is effective because in the two-dimensional cinema, the trick of looking into the camera lens makes it appear as though the girl were gazing softly into your own eyes—no matter where you are in the theater. But this is solid, Hammer. When the gal looks at you, I can tell that she's looking at you from here."

"So?"

"So I'm resentful of the guy who has the preferred seat," she said.

Martin Hammer smiled. "You can't have all the seats in the theater within a two-foot circle," he said. "But there must be some way to lick it."

"You'll remember what I had to say?" she asked.

Hammer nodded. "We'll work on it," he said. "Like all other media, solid performances require their own techniques. But until we locate the techniques, people will take to solids for their novelty."

They all sat down. Mrs. Foster turned to Tim Woodart and asked him how it was done.

"You mean the whole thing?"

"No, the job of making enlargements."

"Easy," he said. "We just have a repeat-scan that repeats the same atom in between true signals. Same like cramming a whole twelve-story building on a busy street. We cut out certain patterns—sometimes every other signal, sometimes every third, sometimes

four out of five are eliminated in the recording. The number cut is a definite statement of the 'times-size' of the reproduction."

"Sounds simple when you say it fast," she smiled.

"I'll tell you about it later—" he suggested.

"I'd like that."

He was too silent for a moment, and Jenny Foster knew it. "Tim," she said, "if you're worrying about the ... the—"

"Well," he admitted slowly, "I was. Not that I care, but you—?"

She smiled bitterly. "It's often said that no one knows another person until you've lived with them for some time. It was between our first meeting and three years after I married Harry Foster that I was his wife. That was when I found out about him. I—"

"Look," said Tim, worriedly, "there's been something worrying me ever since we took these shots yesterday. Now I know what it is. Let's get out of here and I'll buy you a drink."

"*Shhhhhh!*" insisted Hammer.

"Stop it," returned Woodart.

"Make notes," said Hammer. "I want to see these rushes to the close."

"But—"

"But nothing. Tell me later."

"Let's go," said Tim plaintively.

"It'll only be a minute. What are you worrying about?"

Tim looked at the stage. This was a comic shot. In it, the head of the butler filled the stage and looked out at the audience through half-closed eyes. A middle distance shot previously had shown the butler taking a sniff of pepper, this was the aftermath—

"No!" yelled Woodart.

He was too late. His yell was covered by the explosive sneeze. A hurricane of wind blasted at the tiny theater. A window went out in back, and Martin Hammer's toupee left for Kansas.

As the echoes died, Tim Woodart said, "That's what I meant."

Hammer blinked. "I'd hate to pull an Alfred Hitchcock and have a .45 pointed at the audience—close-up."

Back of him, the photographer looked at the stage and made a quick estimate. "That," he said, "would hurl a nine-foot slug of lead at the audience!"

Tim Woodart left quietly.

Tim Woodart led Jenny Foster to a small table and ordered Martinis. Jenny smiled at him and said: "Tell me how you came to invent this thing?"

"Easy," he grinned. "I'm an avid reader of science-fiction and there was a yarn in one of the leading magazines some time ago that dealt with a matter transmitter. Written by a crackpot electronics engineer by the name of George O. Smith. He was rather explicit in a vague sort of way, but it gave me the initial idea, and here we are with it!"

She laughed. "Is this character going to get any royalty?"

"Oh," said Tim Woodart expansively, "I offered him some, but he refused, saying that his idea was nothing but a fiction idea and that any bright engineer would know how to send matter by radio."

"Oh."

"Besides, he's in Philadelphia, now, and the men in the white coats wouldn't let him write with anything but a blunt crayon."

"Well, could you send things by wire with it?"

Tim smiled, "Not at present," he said. "There isn't a transmission line with a broad enough band-pass to accept the signal frequencies necessary."

"Now," said Jenny, taking a sip of her Martini, "you're getting in way over my head."

Tim Woodart pulled out pencil and paper, but Jenny stopped him by laying a gentle hand on his. "Don't," she said plaintively. "I don't even know what happens when I snap on the light switch, let alone understanding transmission lines."

Uncertainly he replaced the pencil and paper in his pocket. Then he laughed. "Shall we dance?"

"That," she told him, "I understand."

They danced—and they danced well together. And while they were getting better acquainted, a hundred miles to the south a man was stopped by a motorcycle policeman for traveling too fast.

"Name?" snapped the policeman.

"Harold Farman."



"Driver's license?"

"Why ... er ... I—"

"No license?"

"Well, it's here. But—"

The policeman nodded. "Gimme," he snapped.

Harry Foster cursed himself for forgetting. For even trying to run under an assumed name without changing every bit of evidence. But the policeman looked rather rough, and Harry handed over the license.

"This says 'Harry Foster'," grunted the cop.

"I'm Harry Foster."

"That wasn't the name you gave me," said the cop pointedly.

"Look, officer, I'm about to meet a young lady—we're meeting at the Border to marry in Mexico. Her father objects, and he's influential enough to send out word that I'm to be picked up on some pretext and held. That's why."

The officer nodded sensibly. "Sounds reasonable," he said, "and logical, and just about as silly as the usual guy who tried to elope."

"Well—thanks, officer. And may I bet you fifty that today is Sunday?"

"Today's Tuesday," replied the officer.

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