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# SCIENCE STORIES

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Johnny had to choose between his book on *The Ballistical Method of the Calculation of Rocket Ascents* and the beautiful brunette passenger. Unfortunately, his experience with beautiful brunettes was limited.

By Walt Sheldon

## THE TECHNICAL SWAIN

IT was eighteen hundreds hours — precisely eighteen hundred hours — Earth time, and so Johnny Ryan, First Pilot of the passenger rocket *Selena* went into the lounge for his evening book and beer. He pulled himself toward a chair by means of the nylon loops all over the ceiling and walls. He floated dreamily, like a man under water, since gravity was negligible now that they were twenty-four hours and sixty-thousand miles from earth.

Rossokovsky, the steward, brought his beer in the space-drinker, an enclosed vessel with a spout for sipping. "Thanks Rossy," Johnny said. He hooked the beer to a retainer cord, strapped himself in the chair, and then picked up a weightless book that was also attached to a cord. The pages fluttered in slow motion. The title of the book was *The Ballistical Method of the Calculation of Rocket Ascents*. It was full of charts and tables. It was—Johnny Ryan would have told you—ininitely fascinating.

It must have been. A few minutes

later Johnny and his scowl and the book were one, and he didn't even notice the female passenger who pulled herself gracefully into the lounge. This was especially odd because the female passenger was, to say the least, noticeable. She was young, she had golden-red hair, and she was built. But stacked. She wore a taupe slack suit and the usual corsage the company passed out to female passengers at the middle of each twenty-four hour period.

She glanced at Johnny, looked pleasurably startled for a moment, and then seemed to catch herself at it. She immediately made her herself to another chair, across the aisle from Johnny. The steward floated toward her.

"Coffee?"

"Yes, Miss Watson."

Johnny, hearing the voices vaguely, looked up in a perfunctory way. His mind was still rolling along with his reading matter, going at the steady pace to which he had trained himself. Each period, from eighteen to



nineteen hundred hours, he could absorb about twelve thousand words; he could do this four times each trip, or eight times each round trip, and multiplied by eleven trips per year that made—

Johnny Ryan was jolted from his blithe concentration. His eyebrows rose. One of the passengers, of course, and he hadn't seen her before because he'd been busy charting his synergic departure curve when the passengers had boarded at the New Albuquerque spaceport.

The girl was also reading: her book, clipped to a retaining cord, floated weightlessly and unheld before her, and Johnny could see that it was the Interlingual Phrase Book usually issued to newcomers to the moon. Un-

doubtedly she was going to work for the International Commission in the vast underground city just on the edge of the Mare Imbrium.

She looked up suddenly—probably feeling Johnny's stare upon her.

Johnny tried to drop his eyes, but didn't make it quickly enough.

"Hi," she said.

"Uh—hello," said Johnny.

He was suddenly tongue-tied. He was always this way with girls, and whenever they told him that his short-cropped black hair and strong, round chin was attractive, as they often did, that only made it worse. The trouble was that Space School didn't offer a course in Getting to First Base with Young Ladies. There were so blasted many other things to learn in the long

ten year training period that a fellow just had to skip essentials until he got out. Of course, not all of them ended up with Johnny's sorry plight. Ralph Kingston, his co-pilot, for instance, had an admirable technique with women. But then Ralph didn't spend the time Johnny did with things like The Ballistical Method of the Calculation of Rocket Ascents. But then Ralph was still a co-pilot—

"You're Captain Ryan, the pilot, aren't you?" the breathlessly stacked dream was saying, smiling at him. "I'm Margot Watson."

Johnny managed to make a sound. It came out, "Oh."

"I suppose you must always get the same questions from passengers every trip, so I won't bother to ask the ones I can think of. Only I—well, I have to admit I'm excited by the whole thing."

"Your first trip?" It was a major effort for Johnny to think of that. As he heard himself say it, it seemed the sort of thing he ought to say. For him it was a kind of triumph.

Margot Watson nodded. She had a fresh, cool face, he thought; capable and untroubled, and he'd noticed before that International Commission girls usually had this air. With her it seemed even more natural and less studied. "I'm to be a secretary with I.C. But I supposed you must have guessed that."

"Uh—yes," said Johnny.

Rossokovsky floated back in with her coffee then, she clipped the space-drinker to a cord, and took a cigarette case from her pocket. She held a ci-

garette, looked up at Johnny and said, "*Usted have feuer?*"

"What?" said Johnny.

"I'm just practicing my Interlingual," she said, laughing. "I think that's the right way to ask for a match."

"Oh. Sure," said Johnny, and found his lighter. He gave it a little push and it floated in mid-air across the aisle to her. He had never bothered to study Interlingual, which was a combination of six languages used as official jargon on the moon. He knew that it had been developed by a World Assembly committee after about a year of haggling, with each nation trying to get a majority of its own vocabulary and syntax accepted.

Now she was looking thoughtful. "I said I wasn't going to ask questions, but there's one I can't resist. Hope you don't mind. This one's been bothering me. If there's no air in space, how on earth do you use the rudders to steer the rocket?"

It was as if a control lock had been removed. Now Johnny could function. Now he was in his element and he could talk. He brightened. "Well, as a matter of fact they aren't rudders, they're fins, and they aren't used to steer the rocket, merely to support it, end up, on the ground, and stabilize it slightly during the first few seconds of ascent in atmosphere. Change of direction utilizes the third law of motion, which is the basis of rocket science. In effect we spin large wheels, mounted on three planes, transversely, longitudinally and horizontally, and the ship then turns in the opposite

direction to the spin. However, it continues upon its original course until we give a blast from the rockets, that forces it into a new path."

"Oh," said Margot, looking bewildered herself now.

Johnny was hot. He leaned forward and kept talking. He discussed exhaust velocity and mass ratio and Keplerian orbits. He rattled off the long formula for calculating velocity through diminishing air resistance and discussed the relationship of current mass ratio to braking under conditions of reduced gravity.

"Oh," Margot kept saying. "Oh."

Johnny was happy.

And then abruptly his happiness was shattered as Co-pilot Ralph Kingston pulled himself into the compartment. Kingston was a big, friendly looking man with ginger-colored hair, fine teeth and a perpetual grin. For all his bulk he moved loosely, like a boxer. The moment he saw Margot his grin widened, and he gave himself an extra hard pull so that he sailed like a paper dart to the chair beside her. He stopped himself neatly on the nylon loop there. "Howdy, miss!" he said. "Getting the low down from Johnny here? He's the boy can give it to you. My name's Kingston. Call me Ralph. You must be Margot Watson. Saw your name on the passenger list. Whatcha drinkin'? Coffee, eh? How about a Martini. Rossokovsky makes the best Martinis in space."

"Well—all right, thanks," said Margot, still trying to adjust herself to this sudden change of pace.

Johnny frowned at Kingston. "Did

you get that fix on Regulus and the ecliptic already?"

"Sure," said Ralph. "We're on orbit. Stop worrying." He turned toward the galley, bawled Rossokovsky's name, then turned to Margot again. "Going to work for I.C, I'll bet, huh? Look, we're laying over ninety-six hours on the moon and you're going to need a good guide to the underground city. How about it?"

"You mean—you?"

"Mrs. Kingston's little boy Ralph," said Ralph, and Johnny winced.

Margot laughed and said, "I'd love to. I've heard so much about the underground city."

"Nothing like it," Ralph said.

And he started to tell her all about it. He worked in a good deal of information about Ralph Kingston, too, and Johnny had to admit to himself that the boy was good. His voice was pleasant, his timing was just right, and he had a way of holding interest. Margot was turned toward him, laughing, hanging on his words.

Johnny sighed. He unbuckled himself then, floated to the middle of the aisle, grabbed a loop and said, "Guess I'll go forward and check the course again."

"Sure, Johnny, do that," said Ralph happy and unoffended. "You can't be too careful about these things."

In the control cabin Johnny strapped himself in again and stared at the big screen that showed the moon just off the port bow and the black infinity of space beyond it. The stars didn't twinkle out here, beyond the atmosphere. They glared

at him. He glared back at them. He felt suddenly unreal and lonely; he felt as though he, at this moment, was the only living being in all of space. But he also felt disturbed and excited and his wrists tingled. It took him quite a while to figure out just what had happened to him. When he finally did he tried her name a couple of times, saying, "Margot . . . Margot," savoring it—and then he looked at the moon and stars and sighed again.

Johnny took his sleep period as soon as Kingston relieved him and he tossed on the bunk for a long time without sleeping.

He made a couple of brave tries the next day. He found, at least four times, excuses to go back into the passenger compartment. The first time Margot was busy studying her Interlingual Phrase Book again, and she didn't see him, and he couldn't quite find the nerve to interrupt her. The second time she was staring at the space screen and she did notice him from the corner of her eye as he entered. She turned her head and smiled at him. She smiled wonderfully.

"Uh—good morning," Johnny said.

"Good morning."

"Everything okay?"

"Just fine."

"Well—uh—I just wanted to make sure everything was 'okay,'" said Johnny. He went back to the control cabin.

The third time he slipped into the empty seat beside her. He managed to steel himself enough to do that.

"Doesn't get too boring just sitting here, does it?" he asked.

"It hasn't yet." She nodded at the screen. "The stars fascinate me. And the edge of the moon there, getting bigger all the time."

"Yes," said Johnny. "The reason that you see the edge, and not a full view, is that we're actually on a curve which is a segment of an ellipse, with one of its focal points in the center of the earth."

And he was off again. He gave her a full course in ballistics. He couldn't help himself. It was the only way he could make himself talk.

The fourth time he came into the passenger compartment Ralph Kingston was there ahead of him. They were talking and laughing and Ralph had his arm lightly over the back of Margot's chair.

He went back to the control cabin and looked at space again. Glared at it. The age of specialization, he thought. Anything a man did these days was so difficult to do it didn't leave him time to learn anything else—unless maybe he just wanted to coast along the way Ralph Kingston did. He pictured Ralph. He went over his measurements mentally. Big lad, Ralph—he wondered if he could take him if he got in a fast poke right away and achieved the psychological advantage of surprise. Only what good would that do? No, the only thing that would help would be for him to get to Margot and start talking like a human being instead of a textbook on space. Only how could you make yourself into something you weren't?

He wished he was a robot. He wished he had a switch on him that said in one place SPACE PILOT and in another place JUST ORDINARY GUY and he wished he could click it back and forth to the convenient setting. . .

Kingston came in after a while. He floated forward, pulled himself into his co-pilot's seat and rubbed his hands. "Lovely dish, lovely dish," he said.

Johnny kept his eyes on Ursa Major, mentally calculating the declination, right ascension and parallax in seconds of arc.

"The layover's gonna be a pleasure this time," said Kingston. "Too bad we have to go back to earth so soon. Oh, well, there's plenty of asteroids in space, as the saying goes."

Johnny growled, "Take over," and left the control cabin.

At eighteen hundred hours that evening he almost forgot to go into the lounge for his usual book and beer. He was, in fact, six minutes late and Rossokovsky looked at his watch, then looked at Johnny curiously as he brought his beer. Johnny was through with *The Ballistic Method of the Calculation of Rocket Ascents* and now had with him *The Linear and Polar Coordinates of Space Curvature*. He opened it to the first of the tables. Ordinarily the figures, the progression and logic of everything would have given him a great deal of esthetic pleasure, in the way that a fine musician can enjoy reading a symphonic score. But right now he couldn't concentrate. He kept glancing aft, wondering when and if Margot Wat-

son would appear.

She came finally, a floating vision, a thing of infinite grace sailing through the air in the lounge. She smiled and said hello, but there was a certain brightness lacking. She held her Interlingual Phrase Book with a kind of determination—as if to show Johnny that she meant to read, not talk.

He made a desperate try.

"Uh—of course it's none of my business," he began.

She looked up and said, "What?"

"Well, I was just wondering how you happened to get hooked up with I.C. Hope I'm not being nosy."

Some of the brightness returned. "Not at all." Then she started to talk about herself, and she told Johnny how she'd been bored in an insurance office in San Francisco, and how she'd lived in a girl-bachelor apartment there, and how she originally came from Minnesota where the folks had a farm, but didn't want to go back to the farm, and how she suspected at times that being a career girl wasn't what it was cracked up to be.

"Well, gosh, I should think lots of guys—I mean, I shouldn't think you'd be alone very much—what I mean to say is, somebody like you—" It had sounded right in his head when he started to say it, but for some reason it came out clumsily. He hated himself. He hated space, and rocket theory, and Ursa Major and the moon.

Margot laughed and said, "Haven't you seen the latest statistics? The male population has declined so much

in the last century that a gal hardly has a chance any more."

"Statistics are a remarkable thing," he said, groping for high ground. "Take the average speed of gaseous molecules." He started to tell her about the average speed of gaseous molecules. He saw the brightness fade again. He knew it was wrong even as he did it—he was completely unable to help himself.

She interrupted him suddenly in the middle of an equation. "Johnny 'Yes?'"

"I'm sorry, Johnny—I just don't understand half these things you talk about. I—" she was looking at him closely and queerly and Johnny could almost hear her mind say it was too bad it had to be this way—"I think I'll go back to the passenger compartment to study."

She moved off with her usual outward confidence and poise, but there was a sense of haste this time.

The minute she left the lounge Johnny took *The Linear and Polar Coordinates of Space Curvature* and hurled it to the floor. It bounced at almost the same rate of speed, struck the ceiling, slammed off in another direction, and kept whisking back and forth for another minute before it finally got caught behind a chair and came to rest.

Then Johnny saw that Margot's Interlingual Phrase Book was still hooked to the retaining cord. He reached for it, and scowled at the pages. She'd miss it in a moment of course and be back for it. Well, it would be better if he wasn't around.

He'd only start telling her about the relationship of mass and nozzle diameter to exhaust velocity again. He read the headings idly as he flipped the pages of the book. All of the phrases were in neat little departments: Correspondence, International Money, The Market, The Home, The Kitchen, Man's Dress, Woman's Dress, Terms of Love and Endearment—

Ralph Kingston floated in from the forward hatch. "Hey! Where's the blonde? Where's the luscious dish?"

Johnny turned and glared at him. "Think I'll go cheer her up," said Ralph. "She's looking for a husband, but Mrs. Kingston's little boy Ralph will do till one comes along!" He laughed, pleased with himself.

"Lay off," said Johnny.

Ralph said, "What?"

Johnny said, "You stay here. I'm going back there. I'm going to keep her company."

"You?" Ralph pointed; he looked astonished for a moment and then he started laughing.

"You heard me," said Johnny.

Ralph said, "Make way for an operator. Make way for a real technician."

"No. You stay here."

"Oh, pulling your rank, huh?"

"That's not an order. I'm just telling you."

"Well, if it's not an order, move aside, chum. That little old gal needs me. She needs Dr. Kingston's little old treatment for lonely blondes—"

Johnny couldn't help himself. He



swung, and it wasn't quite voluntary. He caught Ralph on the jaw, rather neatly, he couldn't help but notice, and Ralph, with no gravity to hold him to the floor started bouncing back and forth. Johnny left while he was still bouncing.

In the passenger cabin Margot was looking at the screen again, staring into space. Johnny sat down beside her. She turned and stared at him in surprise. He held the Interlingual Phrase Book and it was opened to the section on Love and Endearment.

"I lieber usted," said Johnny.

She said, "What?"

He said, "Don't talk English. Talk Interlingual. That's the only way I'll get to say anything. I don't know how to talk about rockets in Interlingual. I lieber usted."

"That means 'I Love you.'"

"Yes. I mean—*da*."

She stared for just another moment and then she said, "Johnny. . . darling. . ."

He tossed the book into gravityless space and it went bouncing gaily around the cabin. Ralph pulled himself into the cabin just then. He entered just in time to see them come together. He frowned, rubbed his jaw, thought for a moment, then shrugged and went forward again.

Margot took a deep breath between Kiss Two and Kiss Three. "Darling," she breathed, "it's wonderful—you don't have to talk—you don't have

to say anything—you don't have to tell me about parabolic curves or anything."

"Ellipses, actually, not parabolae," said Johnny. "The difference is in the placement of the focal points. Ballisticians thought for years that the path of a projectile was a parabola when, as a matter of fact—"

She grabbed him and put a quick stop to it.

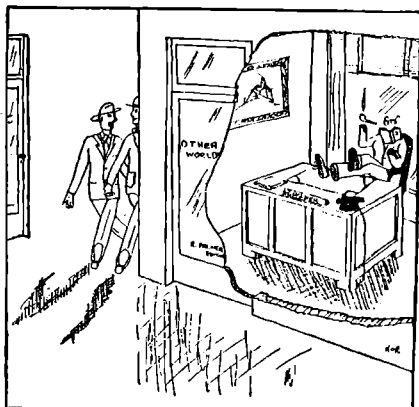
The other passengers stared.

The *Selena* coasted blithely through space on its Keplerian orbit to the moon.

First Pilot Johnny Ryan making up for lost time.

Fella could easily devote a lifetime to the study of something like this, he was thinking. . . .

THE END



"You'll like Palmer—he's real gone, and so's his magazine."